The Myth of Restoration

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The New York State Bureau of Historic Sites oversees the restoration and interpretation of 30 historic properties and over two hundred buildings. They range widely on the restoration spectrum from reconstructions based on scanty evidence, to homes of Founding Fathers which have undergone major demolition and restoration to return them to something like their original appearance, to homes like "Lorenzo" in Cazenovia, and "Olana" in Hudson, which remained in the builders' families until the State took them over, and which came complete with furnishings and photo documentation of their historic appearance. We even have one "preservation site," the Adirondack Mountain cottage where Ulysses S. Grant spent the last 5 weeks of his life working on his memoirs.

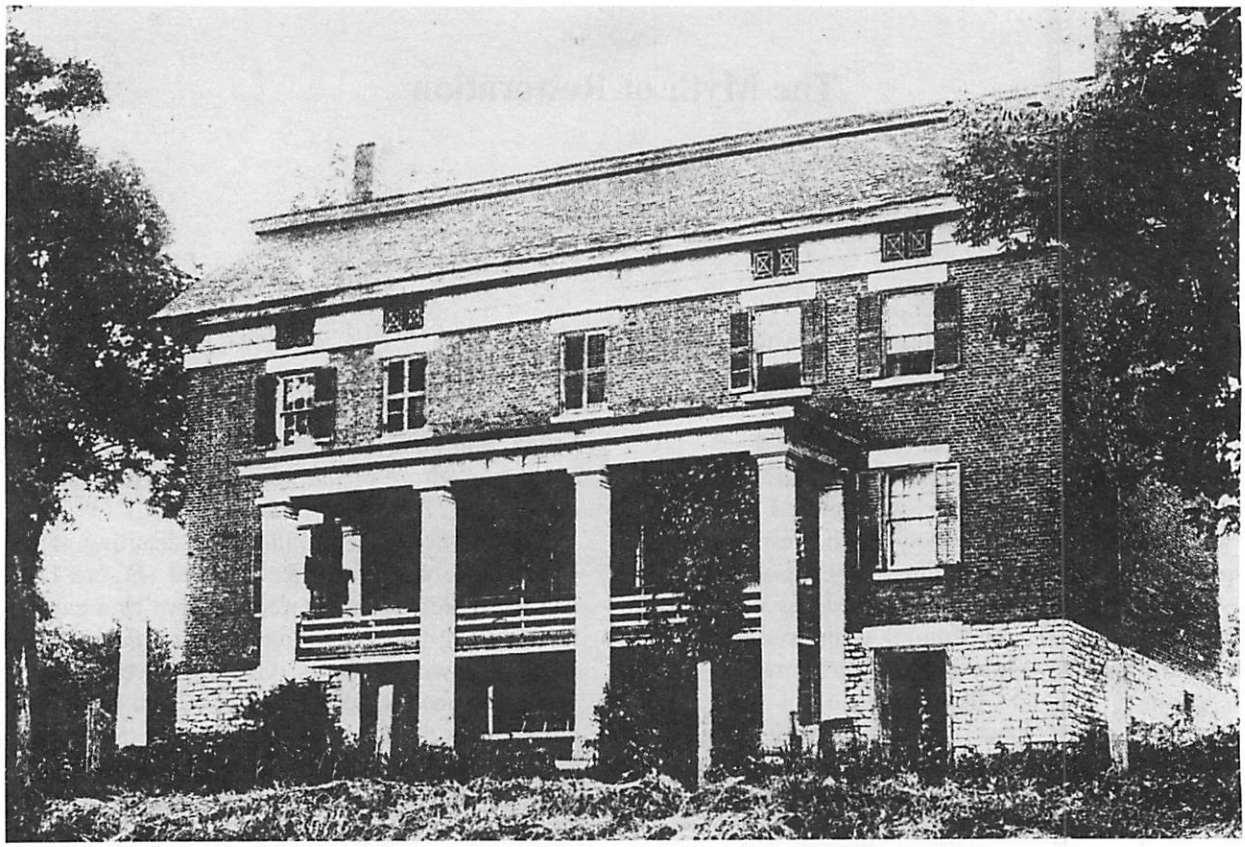
Over the 14 years that I have worked for the Bureau, watching and participating in its activities, I have come to be distrustful of the concept of restoration. At best, restoration should be viewed as a part of a process, limited by our ability to know, and influenced by the tastes and prejudices of the restorers. (Interestingly, it is easy for us to understand the truth of this as applied to our predecessors, but much more difficult to recognize that it applies to us as well.) At worst it can be a destructive process which, despite the best of intentions, takes a building of limited historical value, i.e., with a lack of architectural integrity, and turns it into one with even less.

A good example is Herkimer Home State Historic Site, in Little Falls, New York. The original stylish Georgian brick home was built in the 1750s by Nicholas Herkimer, the wealthiest and most prominent member of the German Palatine community in the Mohawk River valley, and later a Revolutionary War hero. The house passed out of the family after Herkimer's death in 1777.

In the 1840s, the architectural detailing of the front facade was Greek Revivalized (Figure 1) and the building was altered to serve as a canal tavern along the recently constructed Erie Canal. In the following decades, Gothic Revival trim was introduced in some rooms. Canal traffic dwindled in the late 19th century and the house declined. It appears to have been divided into multiple dwellings, and was eventually abandoned altogether (Figure 2).

In 1913, New York State acquired the property and, under the guidance of the State Architect, "restored" the porches based on early 19th century prints of the building. In the 1950s and 1960s, aided by the State Historian, the Superintendent of Historic Sites and a preservation consultant specializing in Pennsylvania Dutch architecture, the State Education Department undertook a much more radical restoration. Although little documentation of this work survives, all parties seem to have concurred with the consultant's assessment that "The two primary reasons for preserving this house as an historic shrine are, of course, association with an important figure in the history of the valley and its architectural interest as an example of large house construction *under frontier conditions.*" [Italics added].[1]

The consultant's perception of Herkimer's lifestyle as relatively primitive and circumscribed is reiterated in his report and reflected everywhere in the "restored" house. Under his guidance at least 80% of the existing woodwork--including all the window sash and

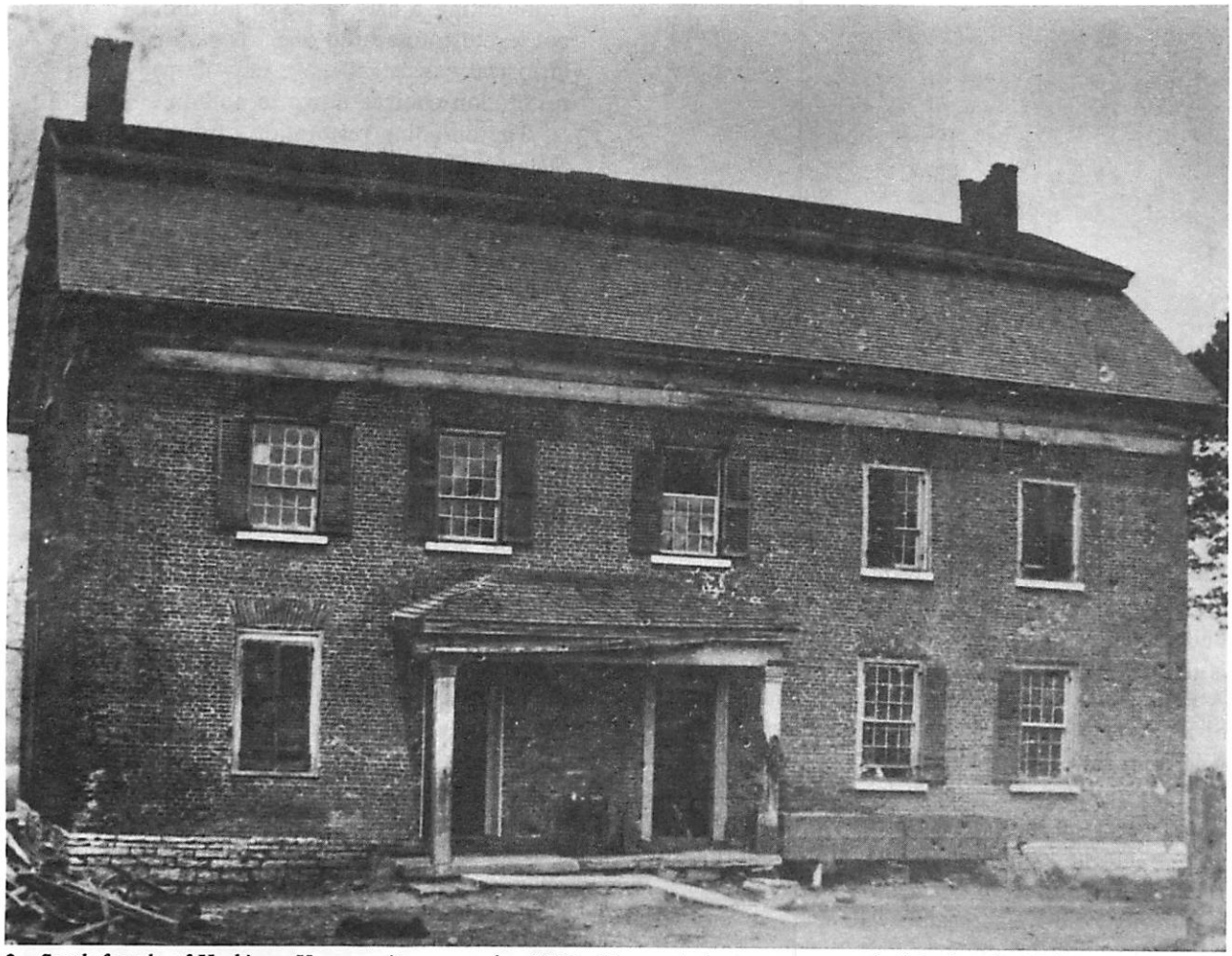


1. Front (north) facade of Herkimer Home as it looked after renovations in the Greek Revival style.

surrounds, all the mantels, all stairs, almost all the doors, most of the baseboards and chair rails, both the c.1914 porches, etc.--was removed and replaced with "reproduction" woodwork. The prototypes, if any, on which all these reproductions were based have been lost. But to current restoration specialists, the "knotty pine" atmosphere in the house is out of keeping with the small amount of building fabric and the few collections which are now believed to be original to the house. These are high style and English-influenced.

It is important to note that the documentation which has survived indicates that considerable research was done, albeit much of it in the form of investigative demolition. The work was designed and implemented by professionals in accordance with the professional standards of the day. And while the restoration may be more correct than we are currently aware, the point is we will never know. A building with a fair amount of loss of original fabric in the 19th century had suffered an enormous loss of original and later historic fabric by the 1960s, and there is no way of recovering the information that was lost in the process.

It would be comforting to rationalize the example of Herkimer Home as an exceptionally destructive restoration, the kind of thing that couldn't happen anymore. This may be true, or it may be a matter of degree. After all, periodic re-restoration of historic sites is the norm. Not only does the pool of knowledge on which restorations are based continually deepen, but ideas about how best to present and interpret historic structures also change. Washington's Headquarters State Historic Site in Newburgh, New York, which was acquired in 1850 and was the first historic house museum in the country, has undergone three major, and several partial restorations. Several State Historic Sites acquired in the early 20th century have undergone re-evaluation and re-restoration on an average of every 30 years. In many cases, the re-restorations were prompted by new interpretations of the sites which went beyond

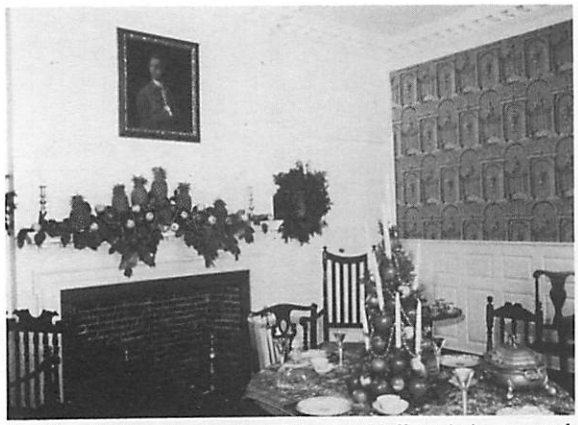


2. South facade of Herkimer Home as it appeared c. 1900. These windows were untouched during the 1840s renovation but were replaced in the 1960s by "reproduction" windows.

the original rather narrow focus on the famous men who built them.

History tells us that restorations, however thoughtful, should not be viewed as definitive. Nevertheless, those of us who are involved in these overhauls take comfort from the notion that, with each restoration, we are getting closer to some sort of historical TRUTH.

While this is no doubt true in some areas, it is obviously untrue in others. A striking example of this dichotomy is Johnson Hall in Johnstown, New York. This Georgian mansion was built in 1763 by Sir William Johnson, Baronet, and King George III's Superintendent of Indian Affairs for the northern colonies. During the 11 years that Johnson lived there, the house swarmed with people--Johnson's common-law Iroquois wife, Molly Brant, and their eight young children, as well as a constant stream of guests, political and business associates, groups of Indians--not to mention any number of animals and house pets. Johnson's own correspondence and contemporary descriptions of his home and his life[2] indicate that the historical truth is most likely that the house was noisy, crowded, dirty, smelly (this despite a large staff of house servants and slaves), and teeming with activity. Yet in many ways, Johnson Hall today resembles most other 18th century house museums (Figure 3). It is a clean, quiet, elegant Georgian mansion decorated with beautiful antiques--with animal skins and Indian artifacts introduced as indicated by the inventory taken after Sir William's death.[3]

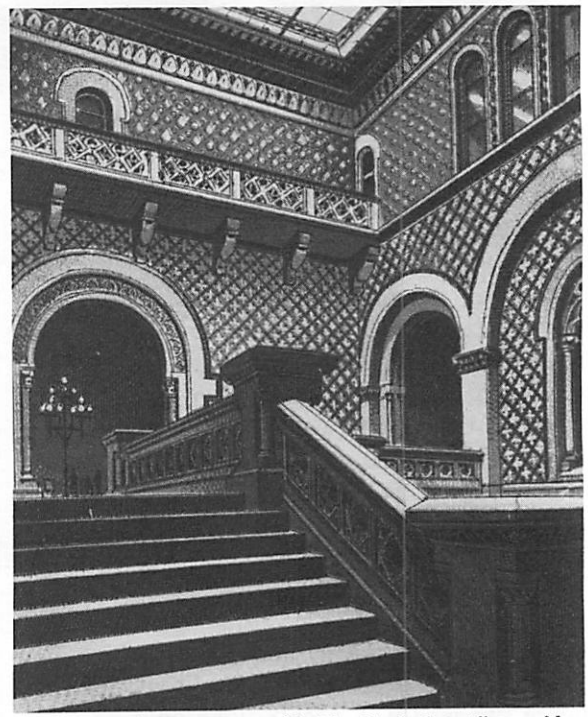


3. The "White Parlor" at Johnson Hall as it is currently furnished. (Photo: NYSOPRHP)

I maintain that the present incarnation of Johnson Hall is unlike its 18th century self in more important ways--important to understanding Sir William Johnson's life--than it is like it. Quite frankly, this is to be expected. A huge estate has been reduced to a small plot of land and a few buildings. More importantly, it is clear here that a house museum is not a building that has been taken back to some point in the past. In the process of turning historic homes into house museums, we create hybrids. Even as our ability to correctly identify and restore historic finishes and wallpapers, oven types, furniture groupings, and other interior features improves over the years, still, in our roles as stewards and museum managers, we chose to introduce utilities, HVAC systems, security systems, fire detection and prevention systems and other modern elements. We try to maintain high standards of hygiene and housekeeping, public safety and comfort. We may have to make alterations to comply with building codes, ADA, and other legislated mandates. In these ways we knowingly and willfully depart from what we know to be historical truth.

True restoration is not what we do. In a very real way, it is beyond our reach and perhaps not even an appropriate goal to aspire to. One of the primary tenets of restoration is the prohibition against creating historical anachronisms: Thou shalt not create a building that never existed at any point in the past. But we are constantly doing this. It is more appropriate to think of restoration as representing a new phase of a building's history, not a return to an old one. If we insist on historical consistency, we may narrow our restoration choices down to nothing.

The on-going restoration of the New York State Capitol is a dramatic example of the pitfalls of aiming for historical consistency. Construction began on the Capitol in 1867 and continued, under the guidance of four different architects (two of whom, Leopold Eidlitz and H.H. Richardson, worked simultaneously but not together), until 1900. A fire in 1911 destroyed at least one fourth of the building; although the exterior was rebuilt in general accordance with the original plans, new Classical Revival interiors were created in the fire-damaged spaces. Additional structural and aesthetic changes were made throughout the 20th century. Localized rehabilitation, redecoration and restoration, beginning in 1889, has occurred concurrently. Given this somewhat chaotic construction history, it is understandable--perhaps even inevitable--that The Master Plan for the New York State Capitol identifies a variety of different restoration target dates for various parts of the building.[4]



4. This rendering appeared in The Capitol at Albany, New York, *published by Witteman Bros. in 1882.*



5. A June 1885 photograph of General Grant and his family on the porch of the cottage.

I have recently been involved in a project to research the historic finishes in one of the Capitol's major spaces, the Assembly Staircase. The staircase was opened in 1878, decorated in 1879, altered in 1885 by the introduction of three arched openings at the fourth floor level, redecorated several times during the late 19th and early 20th centuries, then radically altered in the 1940s when the skylight at the top of the space was removed and a coffered ceiling was introduced at the fifth floor level, cutting off two floors' worth of open space. In the process of installing the ceiling, an original carved stone string course was chopped out, a balcony was removed, and the decorative stencilling on the upper walls was obliterated. Figure 4, an artist's rendering, is the only known evidence of what the upper reaches of the original space looked like.

The *Master Plan* calls for the ceiling to be removed, the skylight put back and the staircase restored to 1885, the year the arched openings were cut through. A purist would have to conclude that at this point, because of a lack of evidence, the space is unrestorable to any date before the 1940s. But why should this be? Because we cannot practically remove the ceiling, is it really necessary to keep the bland 1940s beige color scheme and forego the original gold leaf and scarlet and blue and black? Who benefits from this? Surely not the visitors; surely not the building or the people who work there. Isn't it perfectly possible for people to understand, if we tell them, that we have restored the original finishes to these walls, but that the space was altered in the 1940s so that the original staircase cannot be recreated? Yes, we would have created a new reality, one that never existed at any point in the past. But

if we removed the ceiling and attempted to recreate the missing elements of the composition from inadequate evidence, we would just as surely--and more insidiously--be doing the same thing.

At the opposite end of the "consistency" spectrum from the New York State Capitol is Grant Cottage in Wilton, New York. Theoretically the first floor is preserved as it was when General Grant died there in 1885. At the moment of his death, one of Grant's sons stopped the hands of the mantel clock, and the creation of a shrine began. Indeed, the site has a certain ghostly fascination. Dying of cancer, Grant was photographed sitting in a wicker armchair on the porch (Figure 5), and there is the chair. We also see the upholstered armchair where he completed his memoirs and in which he normally slept, as well as the bed where he died. Theoretically, nothing has changed (Figure 6). But in fact, time has altered everything.

Constructed in 1878, moved and perhaps redecorated in 1883, the house was only a few years old when Grant moved into it in 1885. Wallpapers, draperies, furniture, upholstery--everything was virtually new. Now papers and fabrics are brittle and bleached, furniture has darkened. Funeral wreathes, once multi-colored, are now the color of dust. In fact, the scene that confronts the modern visitor is quite different from what it was in 1885. We have not have recreated or preserved the building as it existed at any point in the past.

I suggest that we, as professional restorers and museum administrators, acknowledge the goal of historical consistency as unattainable and perhaps not even desirable, and proceed to restore to whatever period makes the most sense to us at any given time. At the same time, I believe that we can best serve history, the buildings and, ultimately, the public if we restrict our "restorations" to those things which are truly reversible--essentially to decoration--and leave the added porch and the enlarged windows and the marble mantels and the rebuilt rooflines. These anachronisms can be dealt with in the same way we deal with the lack of circus



6. A photograph of Grant's bedroom taken in the 1890s.

atmosphere at Johnson Hall: through imaginative interpretation. My bet is, our audience can handle it if we can.

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NOTES

[1]G. Edwin Brumbaugh, "Report of Inspection" (unpublished report on file with the New York State Bureau of Historic Sites, Waterford, NY, July 18, 1957), p.1.

[2]In a letter written in 1764 to the British General Thomas Gage, Sir William wrote: "I have inexpressible trouble, every Room & Corner in House Constantly full of Indians, each individual of whom has a thousand things to say, & ask and any person who chuses [sic] to engage their affections or obtain an ascendency over them must be the greatest Slave living & listen to them at any hour" (*Sir William Johnson Papers*, ed. Alexander C. Flick [Albany: The University of the State of New York, 1925], 4:370)

Lord Adam Gordon travelled in New York in 1765 and wrote in his journal: "...about 14 Miles back, Sir Wm. Johnson has...built himself a very comfortable house. At this place he is generally crowed with Indians, mostly of the Five Nations, who are generally our friends, when properly used--I passed some Days at Sir Wm. Johnson's, but no consideration Should tempt me to lead his life... I know no other man equal to so disagreeable a Duty." (*Travels in the American Colonies*, ed. Newton D. Mereness [New York: The Macmillan Company, 1916], pp. 417-418).

Another traveller, Ralph Izard, wrote the following in an account of his journey from Albany to Niagara in 1765: "Dined with Sir William at Johnson Hall...The office of superintendent very troublesome. Sir William continually plagued with Indians about him, generally from three hundred to nine hundred in number--spoil his garden and keep his house always dirty." (*Journey to Niagara*, Ralph Izard [New York: Wm. Osborn, printer, 1846], pp. 5-6.

[3]The inventory appears in Volume 13 of the *Sir William Johnson Papers*.

[4]New York State, Temporary State Commission on the Restoration of the Capitol, *The Master Plan for the New York State Capitol*, 1982, pp. 17, 25.

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Architecture, Furnishings, Fixtures, and the *Authentick* Interior

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It is useful to say in beginning that there is no longer a need to stand before such an audience as this and plead the case for restoring interiors instead of adapting them. The idea, at least, is fairly universal, if the perception of what it means is usually vague. In the restoration of interiors--in the sense of the entire ensemble of architecture, furnishings, and fixtures--I think we are not much farther along in accuracy than restoration architecture itself was in the 1930s, when Williamsburg was taking shape. Of course we play our games with mosquito bars, slipcovers, and the like, but these are *appliques*, covering what is usually frail substance beneath. There is still a great uncertainty of execution in nearly all restored interiors that gives rise to the two approaches I would like to make to this general subject of interiors today: First I would like to speak about the historical interior re-created for purposes of teaching and illustration, such as those in museum houses; secondly, I would like to talk about the adapted interior of the building preserved for modern-day use.

No one involved at work in the actual planning and execution of historic interiors is unaware of the double-prong this field has developed. In my own case, I was first involved entirely with historic house museums--a natural step from a career elsewhere in education--and have been almost entirely involved for the past decade in nonmuseum public buildings. The problems of the two are similar only in a sense. In most respects they are very different, yet in the resulting appearance both require credibility.

The object of the museum interior is to be accurate. Accurate to what? Accurate, I would say, to the whole picture of the way it was--principally, therefore, accurate to the way the particular place was used in some time in its past, and the details fall off of that. It becomes absolutely essential, then, that the attention to fact be minute. That is, understanding that the house serves public functions as a museum and these must be accommodated, it must, to really qualify, be very complete. The color of paint is not only important, but the way the paint was presented is important--what was the surface texture? What was the sheen? Wallpaper, as well--what did it really look like (and usually not like the silkscreen reproductions used today). Upholstery is form as well as textile and pattern, and this form is usually rendered wrong, showing the tailored preferences of modern taste, rather than the earlier preference and the same is nearly always true of curtains, which seldom hang as they should.

Of course, it depends upon which period you are talking about. We are learning a lot about the earlier periods, through the middle 19th century; we're still confused about the Victorians and don't know how to see a Victorian room apart from the traditional borrowed object-by-object art history approach as an ensemble. And in the historical periods of the nineties through the thirties and forties we are mere babies. The level of sophistication of finish was very high and we have a lot to learn about rubbed paint surfaces, gesso base, various kinds of gilding and polishes, wall coverings, ornament--a host of things.

We agree to a thousand compromises unnecessarily, limited by our own lack of knowledge and cursed with pressure to complete

a job before truly adequate and useful research is carried out. In interiors we remain married to style concepts and overlook the historical approach, which, if we really restore, is the only approach. We destroy original fabric to replace it with copies--wallpaper, fabrics, carpeting, in particular, when the replacements really do not look like the original and what is more, they lack the credibility. I recall, for example, a set of crimson silk taffeta curtains that once hung in Wade Hampton II's house in South Carolina. They came to the restoration I was involved in because since the day General Sherman had marched on the town of Columbia and burned the Hampton's Millwood house, they had been used for packing silver and china. We hung them up at the Hampton-Preston House in Columbia in 1970; they were true to the family, not the house. The reaction of the public to the old relics was remarkable. Tattered and torn, they hung there for a decade, the prime feature of the house, until replaced--and truly the replacements are meaningless off the shelf so-called "reproduction" fabrics that look almost nothing like the originals. In losing its crimson tatters the house has lost a measure of its magic. I would have left them up, till the last fragment fell away, for the issue here was the relic, not the design. The need was for preservation, not reconstruction. We seem to understand this on structures now, but not on the parts of interiors.

As scholars, we have only begun to move out from architectural history in our studies of restoring old buildings. Architectural history has limited us to the building and how it was built, with an overpowering emphasis upon the exterior. Decorative arts scholarship has not served interiors much better in its art history approach, object-by-object and its steadfast refusal to understand rooms in the broader, holistic sense. Ever wonder why so many historic house interiors look like they would be right at home in *House & Garden*? That is why. The parts may be possible, but the tone, arrangement, and overall look is modern-day and usually painfully so.

The scholarship accepted for most restorations is not on a level that would be acceptable in a course of history in most universities. What we've lived with for a half-century--really since the museum type restoration houses began--is fact finding about individual things--the furniture, the lighting, etc. Headhunting, it might be called. There are issues for the accurately restored interior that go beyond this, making this sort of information only the base, only a feature of a broader body of research. How was the interior actually used and therefore how did it look everyday? How was it kept warm? Lighted? How was it arranged? What were its quirks? Did it change over time, within the same context of the restoration dates? It is amazing how much of this obscure sort of information can be found through research and, almost as important, the interpretation of that research.

In truth, all of this sort of thing should be known before the interior is restored physically. Tremendous damage can be done to the historical evidence, otherwise. Of course we all know about structures reports, but how many of these probings into the inner parts of buildings have taken place when all the information was not yet in hand? How often has this taken place when the researcher really did not know to any great extent what to look for. Only a few months ago Sarah Chase identified three levels of 19th century floorcloths in the orangery of an early 19th century house in Maryland. They were little circular artifacts--pieces about the size of postage stamps--left beneath the feet of 1910 radiators and they merely looked like part of a painted floor that had not been sanded. However, reasoning that an orange house, formal though it was, would have required the watering of tubbed plants, this odd stone was turned and the results gratifying. The evidence was very nearly overlooked. Now those little scraps comprise the only documented floorcloths in Maryland.

It would be difficult to overemphasize, of course, the great importance of research of all kinds. Research hardly ever ends--who would ever bind a research report, with the idea that it was done? The hard realities of completion deadlines are often the first obstacles to good restoration to try and move or modify at the time they are first mentioned. There is seldom a valid reason why this cannot be done with a historic museum house, although it is rarely possible with the adaptations. Research, to be really useful, must be creative. It is easy to equate the concept for a historic restoration with writing a book. One is into a book before it is

really firm in its concept, and it is edited. The interior part of restoration compares to the descriptive passages in a written book--they give the "book" its detail, its closeup, and its flavor, and if they do not ring true, or are not blessed with credibility, the battle is lost. Imagine then, the breadth and depth of research necessary to carry this out. There is no mystery to it, particularly. It's called the historical method. Only it has not been very well known nor used by historians of architecture or decorative arts, who, object-oriented, shy away from the written page or document except in its most obvious application.

We are in an age of science in museum-level restoration. Those slide-rule people we all saw running about in college are everywhere, applying their notions to old wood, tile, and paint. The breakthrough to that sort of research has had a worthy effect on the state of the art. I will say, however, that the more orthodox historical sources are too-seldom brought to bear. For as humans inhabited the houses in questions, they generated the documents we study and through them we see these houses on a level that we cannot see them otherwise. For, while it is not generally made much of, restoration is a humanist endeavor and belongs as much and ultimately more in the field of humanities than in science. It is the humanist side that is nearly always neglected in the restoration process--and then coped with haphazardly thereafter, in what is often in the historical sense a ruin.

A far greater issue today in the historic restoration of interiors is the interior adapted in a historic building. We have grown up in our 200 years to the charms of re-using what has been built before. This has a rather sad history in this country, because the adaptive use was turned over entirely to people who dealt in new buildings. To accommodate the shortcomings of these practitioners, we accepted for some years the saw: "Combine the best of the past with the best of today." Translated that means "keep the old building, but you can also use what you learned in architecture school." In other words, you can still find application, even in a restoration, for what you learned back in architecture school. In this state of mind, we endured the flag period; we are, I hope, about out of the light-bulb period, as at the Old Post Office here in Washington. And all along there was the brutal, irreversible approach as exemplified with perfect heavy-handedness in the Bar Association building in Albany, once a Greek-Revival row house. Such fads as this are much more easily tolerated in new buildings; however, they tend to destroy the old and are hard to condone, even over a stretch of time. How much happier the solution reached in 1991 by the China Club in a 1920s Art Deco building in downtown Hong Kong. Here the romance of the China Sea era is re-created--style-lag and all--and the touch of the California fern bar style is no place to be found. This interior is knowledgeable, a group of the most detailed series of some thirty rooms, large and small, in which Chinese mahogany that is some traditionally Chinese and some also western style is mingled with silks, porcelains, wicker, lanterns--a whole range of probably predictable artifacts (if one gave it some thought) in such a way as to extend the appreciation of the building beyond the architecture and into an experience through interiors with the history of the time in which the building was built.

We see certain changes. But change is only beginning to come. I like to think the state capitols are leading the way, for legislators, in their hopeless ignorance of decorative arts, do demand that their capitols say something about their state's history. In fact, in my experience, politicians can be far tougher in demanding historicity than historic house committees. It is because they can grasp the intellectual practicality of the concept. They deal in concepts. We restorers on such projects deal in taste to a great extent and they are far ahead of where we are.

The actual work of restoring a building's interior for adaptive use is different from the restoration of a particular place to a particular time in its own past. It involves more creativity and quite as much and perhaps more historical knowledge. Any interior decorator will tell you he or she can do this work, when only a small fraction of them can--we see the unhappy results every day in hotels, offices, and B & B's, as well as private houses. Our problem as restorers is that the state of the art in this area is in our hands and we have a lot of work to do to bring it up to where it belongs. What we address here is a mode of interior decoration and

finish to apply to adapted historic buildings; I'd not hesitate to say that it is entirely new, if I was any less aware of Beaux-Arts interior furnishings and design. This is different from that, and I think the crux of the difference lies in our modern day humanistic approach, rather than that of pure "period" design, as espoused by Ogden Codman, Stanford White, Edith Wharton and others at the end of the 19th century.

What I'm talking about is a way of finishing and furnishing historic buildings that reconciles not only the architecture with the contents, but the history with the architecture. This might be an office building where some antique objects are mingled in lesser quantity with functioning office furniture, and where, for example, as in the Michigan Capitol, carpet style, color, lighting, wall and woodwork finishes were all carried the full historical way, to more or less overwhelm, but where the functioning furniture was designed in what might be called the "old" way. The whole, as it were, was made greater than its parts. Another building, with another purpose, might be furnished with a very careful and deliberate mixture of classes of style and cabinetry. Yet the impression and sense of the place reflects something historically appropriate to the structure or its particular past.

What shall we call this way of doing things? I can come up with no more than *Authentick*, borrowing from the Gothick of the 18th century. I consider the art relatively new. I consider it more an effort than the mere furnishing of rooms period-style. I consider it a new and permanent phase in the recycling of historic buildings in the United States, beyond the flags, Judy-lamps, tweed carpeting, and recessed lighting--but also a giant step beyond the wing chairs, Queen Anne card tables, oak hat racks and oak captains' chairs that proliferate today in restored building and fern bar alike. Some order has to be made of this sort of work, some philosophy upon which to base sensible concepts, and prevent the big letdowns we feel on entering renovated buildings in every city to find that the magic ends at the door.

In an adaptive restoration, the interior is usually the least used resource. Of course, one has to allow for imaginative contemporary solutions in renovated factories, barns, and the like, but in such as banks, office buildings, and houses there was an established level of human use that it is desirable to recapture, in the sense of what it was, if not in an entirety of function. At the most this is usually carried so far as finishes--often wrong--and some effort to reproduce lighting devices and flooring, but it is very rarely extended beyond that. The result is a half step beyond the "best of both times" approach of twenty years ago. The interior can be so much more. What we usually get represents only a superficial understanding of the possibilities. Everyone, after all, did not necessarily use car siding and brass, nor every pre-industrial interior lead paint on the woodwork and whitewash on the plaster. A look at the facts tells us that many more things were possibilities than we know. In knowing the possibilities, the outcome is better interiors.

The French have perhaps the best view of historic interiors. They do adapt; they do make contemporary settings inside old stone walls; they do have a flimsy tone, often, to their interior work.

But when they work in the language of the past, their extensive knowledge serves them well. Their interiors lack the pedantry of ours and those restored in England. They have a flair, a playful sense of past. The most obvious examples I can call to mind of this adapted sort of thing here in America are the state rooms of the White House. If you will compare those executed in 1962 and 1963 under the Kennedy administration by the French decorator Stefan Boudin with those some eight years later during the Nixon administration you will find artistry in the first and a less-interesting museum self-consciousness in the second. Boudin did the interiors of the Grand Trianon and also of Malmaison. In the first he combined various periods of French history and usage of that place, while in the second he worked very particularly in the records of the Empress Josephine to restore the rooms Percier and Fontaine created for her in the early 19th century. Still the common denominator is decorative arts style.

The Authentick interior, an American modification of this idea, should provide more. We are not restoring palaces and in most cases not especially opulent houses. Yet each building is likely to have a character of its own that should form a major current in the theme of its

interior adaptation. Moreover, because it must be used for modernday purposes, a close adherence to what the place was originally like--even if known in detail--cannot be followed. That does not mean that the historical ambiance must be abandoned. There are choices appropriate to the time and the building that might work within the new program and not rob the house, as contemporary effects certainly do, of its sense of history.

Paramount in beginning this is an understanding of the original finishes. Does the investigator making the judgements on the building really know what he is looking for? Does he know all the possibilities of what might be present at this given time? Once the accurate details are ascertained, it is not always easy having them reproduced. I find it remarkable that so few craftsmen seem to know about historic finishes and how to effect them.

On public projects this is complicated by the required bidding systems, for sole source is usually a rare exception. Pre-qualification for the trades is even sometimes risky and specifications--though the meat and bread of architects' offices--sometimes simply cannot be written tightly enough to control the character of the desired finishes. It is unusual indeed to totally throw out the use of modern technology to re-create historic finishes, but it assumes that those making the decision are really aware of what the finish should look like. For example, argue though one might, modern automobile paint is not a substitute for the electroplate bronze or the bronzing powder finishes of the 1870s. And some of the gilt finishes I see on 1850s gas chandeliers worry me--they look like gilt paint, and yet many gilded surfaces used in the same period in the same class of rooms--mirrors, picture frames--have a decidedly, though imitation, gold-leaf appearance. I am suspicious. And furniture finish is even more complicated, though it looks similar. (I'd like to meet the inventor of satin varnish).

In the area of furnishings, interiors in an adapted building need not be finished with exact copies of known historical models. Depart from the models and have free play with the mode. What, necessarily, is the glory of having an axminister copy of a Brussels carpet? Can't new carpets be designed in the old way, using modern technology? Some can't, most can. The same applies to the other elements of the interior. Office furniture has never been uglier, and it is the uglier for its ugly wood finishes (wood imitating vinyl). Through a careful search, unobtrusive office furnishings can be found, to mix with other things, and I hope someday pressures will improve the design character of what we see on the market of office furniture.

It would take a very long time to close in on the countless elements of the restored interior (museum or adapted). The general idea is about the same, however, with them all. We have a long way to go. Those of us who are scholars of historic buildings, that is, working with them and researching on the subject, find our delights and out frustrations. We learn that the workings of the practice of architecture and the practice of interior decorating are sometimes at odds with perfection in restoration. Certainly on a historic house museum a one-contract arrangement, with deadlines, is folly. On buildings that are adapted, there is seldom another choice. Experience shows that a squandering of time on looking, researching, and analyzing the research helps stop some of the horrors that take place in the work itself.

In addressing restoration, we are addressing a field that is here to stay. At last the USA has learned to save at least some of what its past has produced and re-involve it in ongoing life. The way we adapt is probably the biggest problem in design today. We have not yet sharpened ourselves to the details, to the nuances of building and design and craftsmanship that are so important in old buildings. Don't tell me it costs too much. We all know better; we all know how much can be done when you know what you're doing from the outset.

It is difficult to be very sanguine about the adapted buildings we are passing on to the next generation. My best hope for the field of restoration in interiors is with the adapted buildings, that through our research and experience, our broadening points of view, we arrive at a level of taste--yes, taste-- that is uniquely suited to the historic interior. It will be something different from what we have now.

* * *

Restoration as History: Are There Different Standards?

Travis C. McDonald, Jr.
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The 1980s reflected a major shift in how we view, restore and operate historic house museums. We now find ourselves in an era of re-restoration and revisionist history. Many of those early house museums, interpretively frozen for so long, have undergone a regenesis through their second or even third restoration. With these restorations have come new methods, new professional standards and new models. This new activity coincides with nation-wide changes within the preservation movement itself. At the same time, different administrative and interpretive practices have exposed the restoration process to the public in very meaningful ways. The public now experiences history not only through the end project of restorations, but also through the interpreted restoration process.

I will attempt to explain the restoration zeitgeist of our present era and offer a philosophical basis for the restoration trends of today. I will also suggest that changes in restoration are related to changes in public history, interpretation and the process itself. Most importantly, we now realize that change is as much a part of the restoration field as any other field of history. Yet at the same time that we have professionalized restoration and interpretation techniques, there are still many dilemmas and gray areas which need to be addressed.

As we all know, the earliest historic house museums began as commemorative sites associated with the history of great men or the sites of great events. Historic preservation at this time meant just that, the preservation of "history." Buildings were generally vehicles to interpret something other than architecture, such as the early efforts of the APVA, for example Jamestown's Church ruin, Mt. Vernon for its Washington connection, Monticello for its Jefferson connection, Stratford Hall and Arlington House for their Lee connection. As the national preservation movement matured, rare, unusual or representational examples of architecture were preserved or valued along with the historical shrines. This then, is the basic difference: earlier sites were preserved for their historical associations and felt to be hallowed by significant people or events and later sites were just as likely to be included in preservation as a representative example of history.

The early 1980s seem to have been the beginning of this re-restoration watershed in Virginia. Two events seem pivotal in this movement. A national harbinger came in 1979 when William Seale published his book *Recreating the Historic House Interior.* Through this book, professionals were given the primer they needed to implement physical and interpretive change in historic interiors. In Virginia, the refurnishing and reinterpretation of that venerable site, the Colonial Williamsburg Governor's Palace, provided the vanguard for putting new ideas into action. New scholarship and fresh questions boldly pushed their way to the fore at the reconstructed Palace, shocking and educating all those devotees of colonial houses who had grown up with a different version of a past time. Once the shock waves rippled through the state, boards of directors were slowly won over to the movement in neo-

realism. Like brick dominoes, the other shrines of Virginia history fell into line in the new era of re-restoration: Gunston Hall, Jefferson's academical village, the Wickham-Valentine House, the White House of the Confederacy, Monticello, and Mount Vernon. Other sites such as Stratford Hall, Ash-Lawn, and Kenmore began new architectural investigations. At about this same time, two new shrines had also entered this distinguished roll call: Thomas Jefferson's villa retreat Poplar Forest and James Madison's Montpelier. Both are bona fide shrine attractions but both were coming on the scene as first-time restoration projects during the new professional era. These are just Virginia examples but many more regional and national examples could be used.

Regarding the sheer quantity of historic house museums in the country, a National Trust survey in 1988 revealed some amazing statistics: 59% of all historic house museums in the country had their start after 1960; an average of one every three days! Even more amazing is the fact that 65% of all house museums had no full-time paid staff-- not to mention professional staff. 19% more had only one paid staff person. 54% of all historic houses had fewer than 5000 visitors each year and 80% operated on budgets of less than $50,000 per year.[1]

These statistics are important when considering the shifts in the slowly evolving consciousness of how we restore and interpret the past through house museums as well as competition for public visitation. Some early house museums remained completely static during the 1980s, while others made either a slow adaptation or a quick leap into a new era. Professional and economic changes have produced a Darwinian process in which house museums are being forced to adapt professionally and physically in order to survive. This adaptation has meant renewed life for those who struggle to keep up. By itself, this shift might be explained as a new generation's reinterpretation of history, as new scholarship or as professional competitiveness. But seen in the perspective of the history of the preservation movement, there is another reason for this change: shrinking financial support. This produces a vicious circle of need: to remain up-to-date and competitive with your restoration neighbors, you need to incur more expensive projects to capture or interpret the latest authenticity. It is fundraising which is equally responsible for affecting the growth of re-restoration. Some administrators with public relations and marketing foresight have seen new and different opportunities in the process and product of restoration as it relates to fiscal reality. The intellectual resources driving the project need not be divorced from the financial needs. In fact, scholarly and conceptual ideas put a project behind, or in front of, the mainstream. In many instances the amount of money raised is in direct proportion to the progressiveness of research and interpretation. Therefore, both conceptual and financial resources become inextricably linked.

This linkage produces fundamental changes in the processes of restoration and interpretation as they relate to those ubiquitous terms: time and money. Projects reflect both the way money is used over time and the way time is ordered by money. Conceiving educational opportunities provides the key. In other words, the process of restoration has now become part of the product as a means of survival.

The more traditional project was ordered something like this: you identify a restoration project goal; you raise money for the restoration; you close the site to the public; the process of research, restoration and interpretation take place; and you open the project in its new form. This traditional scheme represents an isolation of the process from the public. In other words, the restoration medium was only a means to the completed restoration message. In terms of the time/money factor, this type of process severs the potential flow of capital resources once the product is presented to the public. The museum then faces a long, slow, decline of living off of that product. It depicts a short-sighted view.

In the 1980s the process has been transformed into more than just a means to an end. The professional medium has really become the restoration message. This occurred concurrently with the disappearance of traditional resources, with more clever ways of finding resources, with better forms of restoration technology and with new issues of interpretation. The updated process is ordered something like this: a restoration project begins with a research or development phase; the

concept for the project then emerges with a professional plan; and a number of phased, restored products and their funding campaigns result over a period of time, with the project site open and interpreted to the public the entire time. In this way the medium (restoration process) has become an important part of the message (finished restoration product).

Progressive restoration techniques and current historical interpretation form the mini-products toward the goal of a long-range project. Examples of such mini-products might include: measured drawings documentation, archival research, dendrochronology, historic paint analysis, building material conservation, furniture conservation, archaeology, landscape archaeology, architectural archaeology, environmental monitoring, restoration craftsmanship, restored finishes, restored landscape, restored architectural features, refurnished interiors, and published written history. The heretofore non-public restoration process thus becomes an educational and a fiscal resource when it enters the public arena. In this manner, time and money have not been separated but have become interrelated. By buying the best restoration technology, and by using that technology in an educational way, a track record is achieved for securing additional funds. In effect, history, as seen in historic house museums, becomes a business.

The business of keeping projects solvent has coincided with another fundamental change in restoration. Restoration has shifted from an art connoisseurship model to that of a site-specific science model. In other words, the process of restoration has become very scientific regarding authenticity. The process of architectural investigation is not only a *de riguer* feature of most re-restorations, it is an essential part of the interpretation. Laboratory analyses of mortar, plaster, paint and wood are not only helpful in understanding the evidence, they are things for show-and-tell. The process has become as interesting to the public as the product. This has made some preservationists wonder if we are more concerned about the *how* of preservation at the expense of the *what* and *why*. The *how*, as I have attempted to explain, has come about because of a process-oriented approach to fundraising and because of a scientific model for technique. The *what* and the *why* are related to changes in preservation philosophy and changes in interpretation. Let me try and explain what I have observed.

There has always been an awkward relationship between history, architectural history, architectural restoration and historic house museums. One of the answers to *what* we are restoring lies in the altered sequence in which these four things combine. Let me simplify this change into two models. The first or *commemorative* model represents the older, traditional house museum in which commemorative history was the driving force. A hallowed site was preserved as a house museum because of its association with a great figure or event. Later it might undergo some architectural restoration to return it physically to a certain time period. It then becomes known architecturally by historians for its restored details and to make the circle complete, the restored house is viewed historically by the public as a literal image of a past time.

The second or *interpretive* model represents what is happening today. In this model interpretive history is the driving force determining *what* will be restored, re-restored or reconstructed. For example, Colonial Williamsburg decided to interpret several overlooked areas of eighteenth-century history in the 1980s, such as the eighteenth century hospital for the insane, an industrial blacksmith site and a typical plantation slave quarter. First came the interpretive need and idea. This was followed by exhaustive research as to their appearance. These buildings were then reconstructed with the most accurate methods, techniques and details. They are then visited as museum settings by the public who bring it full circle and now visualize what the "real" history was like in its physical form. The obvious difference between the models is that interpretive, rather than commemorative history, is the driving force regarding *what* is being restored. This includes many types and forms of history beyond the commemorative sites. Let us now turn to the *why* of restoration.

Central to the question of why we restore, re-restore, refurnish or reconstruct, is the "character" issue of preservation. One of the longest-running debates in the history of preservation is that of interpreting the history of a building as an evolutionary artifact, with all of

its changes intact, or as it was at one moment in its history. The dilemma for professionals is interesting: how do you preserve history without affecting the process of historical change? Whether you preserve it as is, or restore it to a point in time, you are changing the normal course of history by interrupting the process of change over time. On the one hand, if you exhibit a house with all of its changes, you are preserving the "reality" of historical change-- yet you are also stopping that change and the house will reflect one frozen moment in time when you stopped the clock. On the other hand, if you decide to take away all the historical changes to depict a historical moment in past time, you are preserving something thought to be "real" at only one moment and not beyond. It's the same issue. Which is more real?[2]

I'd like to suggest that the reality of any restoration is change itself. Whatever you do, you are both interrupting the process of historical change, and you are participating in the process of change. What we now know about the history of restoration is that it is cyclical and that whatever we do at the present will be stamped with our own spirit of the era. We can also predict that our work will be redone sometime in the future.

This same philosophical debate has extended to re-restorations. A famous historian of the preservation movement has argued with me that historic houses should not be re-restored because they are monuments to their restorationists. To me personally, changing the way houses look, assuming that you can change them more accurately, is nothing more than creating a better history. To use an analogy: a restored house is like a history book. Who would argue that just because someone wrote a good history text 50 years ago that it should still be used for teaching if a better, more accurate history has been written? Historic house museums can be seen as large three-dimensional text books rather than as historic shrines.

If then, we have made the analogy of restoration as history, the next logical extension of that is the equation of restoration detail with historical truth. Yet I would bet that most of you do not question the facts of an academic book as much as you might question the details of an historic house. Why is this?

The word "authenticity" is practically a cliche in restoration projects. I dare say that its definition and practice vary greatly. In many instances it becomes a matter of where to draw the line. How far do you go toward replicating a feature or material for the sake of true replication and how much do you just deceive the viewer into thinking it is correct? Is a reasonable effect as valid as an authentically reproduced one? Authentic details and materials have often lost the battle against expediency, difficulty, practicality and cost.

There are several possible reasons for this capitulation. To begin with, approximations of the past have been around a lot longer than factual portrayals of the past. This might be called the Hollywood syndrome in which houses are seen as stage sets. Or in the case of house museums, they are seen as containers for other interpretive exhibits. Historic houses, especially the early shrines, have also become images as much as real things. A good example is the "historic" White House whose hallowed interiors might be called "hollowed" interiors. Historic houses have also been the scene of ritual. Ritual is defined as the form for ceremony. And ceremony is defined as "an action performed only formally with no deep significance" or as "a routine action performed with elaborate pomp." Both these definitions might describe our inherited view of early house museums. All these reasons lead to a resistance to change in many cases. The historic values for which many house museums were preserved have now been mixed with the preservation values which preserved them. We will always have to deal with the public's attraction to shrines, regardless of historic accuracy. A recent opening of the Walton's Museum in Schuyler drew more people on one day than the incredible Prestwould Plantation site gets in a year. The hypothetical Jamestown Festival Site gets as many people as the real Jamestown Island nearby. These places offer an intangible sense of history which is many times felt and not seen. And let's face it, there is a security associated with cultural icons.

The dilemma then, as professionals, is to restore and interpret both for the uninitiated public as well as for the sophisticated professionals. The dual approach creates the dilemma of interpreting the indeterminate truths of restoration science for professionals who

expect the truth, and at the same time, interpreting history to the public in more traditional ways. Due to our knowledge of cyclical restoration and to our immersion in the site specific model of restoration, we must both protect the artifact and the evidence for our future colleagues, and at the same time, present the exhibit of architectural history in accurate ways. In many cases the public is not always ready to appreciate clever techniques of both honesty and exhibition. It is not always enough to interpret for the professional constituents who come equipped with permanent virtual reality goggles and who can imagine a restored setting in their mind. We must not lose sight of the *what* and *why* at the expense of the *how*.

To summarize then, we have learned that restorations, like history, are not frozen in time but are reinterpreted by different generations. There is a scientific model for how we restore houses today which puts an emphasis on the process as well as the product. Changes in how projects are funded and organized have affected both the interpretation of the process and the detailed nature of technique. Interpretation, rather than historical association, drives most current restoration. Re-restoration and reinterpretation are necessary in order to display and teach more accurate history. Physical facts are the equivalent of historical truths. And the dilemma facing professionals today is to both protect the artifact for future generations while exhibiting it to the public in a meaningful way.

What difference does good historic house restoration make? The difference is that good details are good history and good history is good education. To quote Thomas Jefferson:
We are glad to catch a glimpse of truth here and there as we can, to guide our path through the boundless field of fable in which we are bewildered by public prints, and even by those calling themselves histories. A word of truth to us is like the drop of water supplicated from the tip of Lazarus's finger. It is as an observation of latitude and longitude to the mariner long enveloped in clouds, for correcting the ship's way.[3]

* * *

NOTES

[1]Gerald George, "Historic Property Museums: What Are They Preserving?" *Preservation Forum*, Volume 3, Number 2, 1989, pp. 2-4.

[2]An excellent discussion of the art vs. science model and the restore vs. preserve debate is found in William C. Baer's article "Should Art or Science be Preservation's Guiding Metaphor?" *Historic Preservation Forum*, July-August, 1991, pp. 34-40.

[3]Thomas Jefferson to John Quincy Adams, 1817, cited in John P. Foley, *The Jefferson Cyclopedia*, Funk and Wagnalls, New York, 1900, p. 405.

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Interpreting the Process of Restoration and Research To the Public

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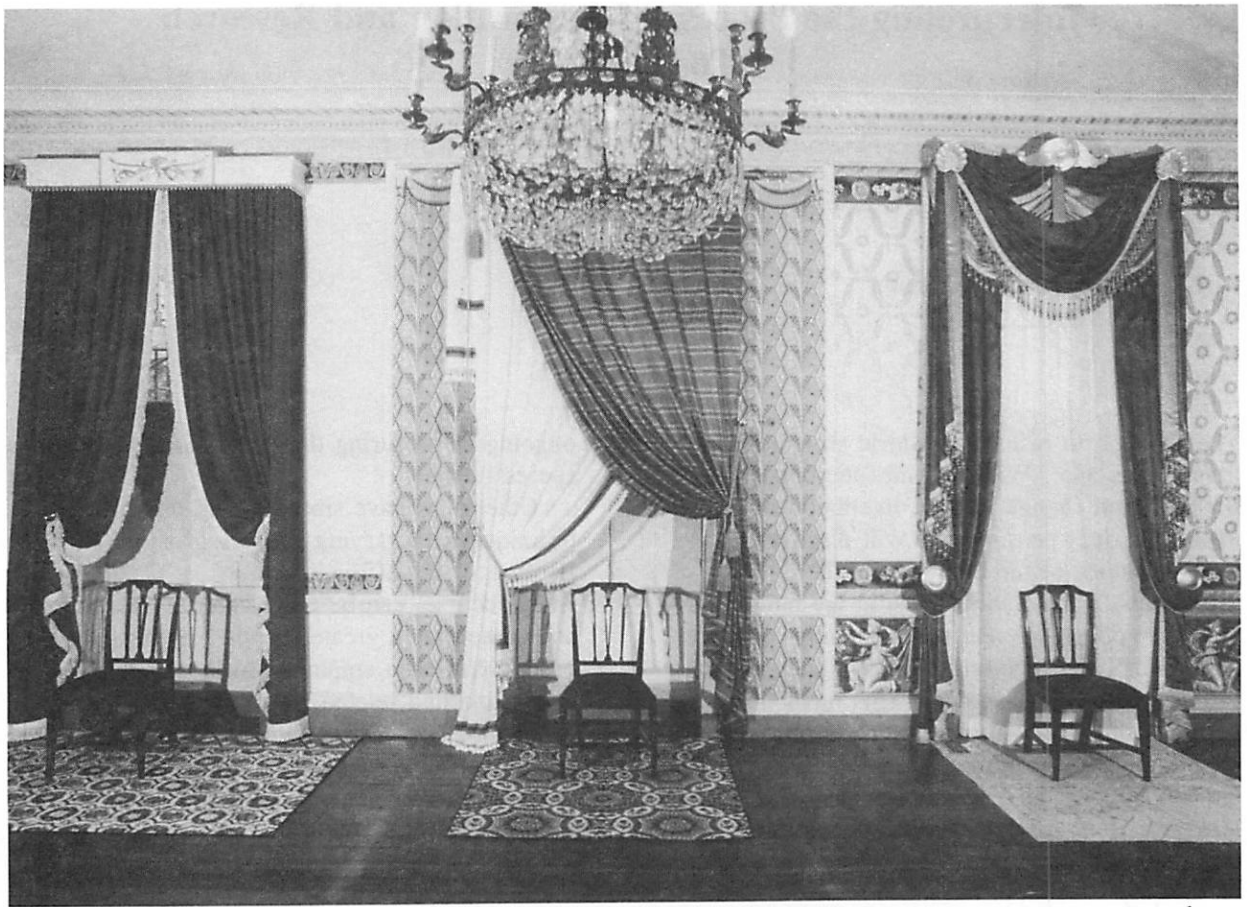
The decision to restore a historic structure is a momentous one. With it comes the opportunity for profound change and the likelihood of great upheaval. It is possible one will discover a variant history of the building and its inhabitants, a major difference in the building's physical appearance and concomitantly a new method of interpretation. Such a climate is rich for the "process" approach. This methodology permits public access to information about the restoration and the research undergirding it. In the following paper I will present this approach, look at various restoration sites that have applied this technique and review the merits and philosophy of its application. I have not canvassed the entire field of potential sites that may apply this technique. Therefore this paper is presented as an overview, rather than a detailed examination of the technique at large.

I initially saw the value of this approach about ten years ago while at Gunston Hall. There the investigation and restoration were open to public view, and techniques to illustrate a sense of the restoration process were applied. For example, in the beginning phases of the restoration, the ghost marks of attached pilasters were found in the main hall. The return of these architectural elements would greatly change the spatial appearance of this area. To evaluate the hypothesis and to prepare docents, visitors and benefactors, full scale press board models were installed. Guides were prepared to discuss the radical change to the public. This intermediate trial step allowed a time of transition before the actual work was completed. It was apparent that at Gunston Hall this concept of keeping the structure open and presenting the ongoing work during the restoration was a successful one.

Other sites have since applied this process technique with varying degrees of success. Because of my affiliation with The Octagon, this site of course, can be more carefully scrutinized and presented in greater depth. At the Octagon process has been employed in the areas of both restoration and related research. In depth study of the structure and its inhabitants was designed to include public response to the work in progress. It was anticipated that such feedback would enrich the end results of the restoration.

The initial attempt with this approach was in the five-part, five-year, research component including books on each topic by outside historians, exhibitions with accompanying checklists, five-week teacher training programs in the local public schools, and lecture series. Each year a different segment of the research was explored in this way.

Perhaps the more successful aspects of this research work were the 3-4 month exhibitions in the galleries with their associative interpretations in the house. In each exhibition it was noted that this was research in progress. Visitors were welcome to contribute their knowledge. One exhibition, for example, was on early 19th century furnishings entitled "In the Most Fashionable Style." While presenting the specific objects explicating the social and cultural aspects of early 19th century design in the gallery, the drawing room of the Octagon presented the design options to the public (Figure 1). An armature was prepared on the wall on which three different floor, wall and window treatments were presented. These three treatments of 1800, 1815 and the 1820s were



1. The Octagon drawing room with exhibition of three early-19th century wall, window and floor treatments presented on a separate armature. Photographer: Lonnie, J. Hovey, AIA; The Octagon Museum.

potential interpretations the Octagon might follow once the restoration is completed.

The intent was to present the choices with more in-depth information on these periods in the exhibition. Docents and the public had an opportunity to familiarize themselves with the potential change, and researchers had the chance to see how the various treatments worked with the scale and spatial environment of the Octagon's drawing room. When we complete the furnishing and interpretive plan several years from now, this material will be drawn upon.

Similarly, in the late 1980s, The Wickham-Valentine site, also open during its restoration, presented three full-scale window treatments illustrated on styrofoam in their drawing room. Though unsolicited, visitors voted on which treatment they liked the best. According to the museum's staff this process technique engendered much discussion, as it had at the Octagon.

Monographs by outside historians also accompanied the Octagon research exhibitions. The general topics were chosen several years before by a group of historians and staff. It was clearly stated in each that the research presented was work in progress. As Orlando Ridout stated in *Building The Octagon*:

"It must be recognized that historical interpretation of a subject as complex as the Octagon will continue to evolve as further research is undertaken and new sources are uncovered. A second important goal, therefore, has been to frame new questions that merit further investigation."[1] It became clear, particularly with this second volume, how significant this research would become to the restoration. It was agreed that a section of this book would be the introduction to the Historic

Structures Report later completed by the restoration architects.

Published work on research work related to restoration projects is not unusual. Notable is the outstanding work completed on Colonial Williamsburg's Governor's Palace. The book by Graham Hood details the research process that permitted the Palace's accurate recreation. One of the differences between the Octagon and Colonial Williamsburg's efforts was the timing and the definitive nature of the work. The Octagon's publications have been phased to occur simultaneously with the restoration. The Palace work was published after the Palace work was completed.

Another aspect of the research process was the teacher training programs in the District of Columbia public schools. This was an opportunity to approach each of the research projects with a slightly different focus and to rethink the information for a new audience. With the teacher's participation in preparing classroom lesson plans from the Octagon's source material, a whole new product is being devised. In copartnership with Toby Levine Inc, an education consulting firm, we are turning the research material, with the teacher's suggestions, into an interactive computer program for high school students. It is intended that this will be marketed nationally and will provide access to restoration technology and early 19th century cultural and social history. Students will participate in the process through this end-open hypercard system.

The process format for research was similarly applied to the restoration effort. The process of restoration can be no better represented than actually seeing the work occur at restoration sites. This activity is fortunately now quite commonplace. One of the earliest uses of this technique may have been at Hyde Hall in New York in the early 1970s. Restoration craftsman Doug Clinton has explained the restoration work he has been doing on the Hall to visitors for more than twenty years. Though the tour guides are well briefed regarding the restoration, Clinton enjoys the opportunity to talk with visitors about each new activity. He says: "Any person with a feeling for historic buildings will make the time to chat." He's happiest when "everything is opened up" to the visitor and he claims it doesn't slow him up a bit to talk while he works.

Crafts people have become more accustomed to being in the public view and are often very cogent and eager to explain their work. However it is incumbent on the owner or general contractor to protect the crafts persons from onslaughts of visitors' questions. There are several different ways sites have presented craftsmen's work yet have prevented continual interruptions--for not all crafts people are as facile as Doug Clinton.

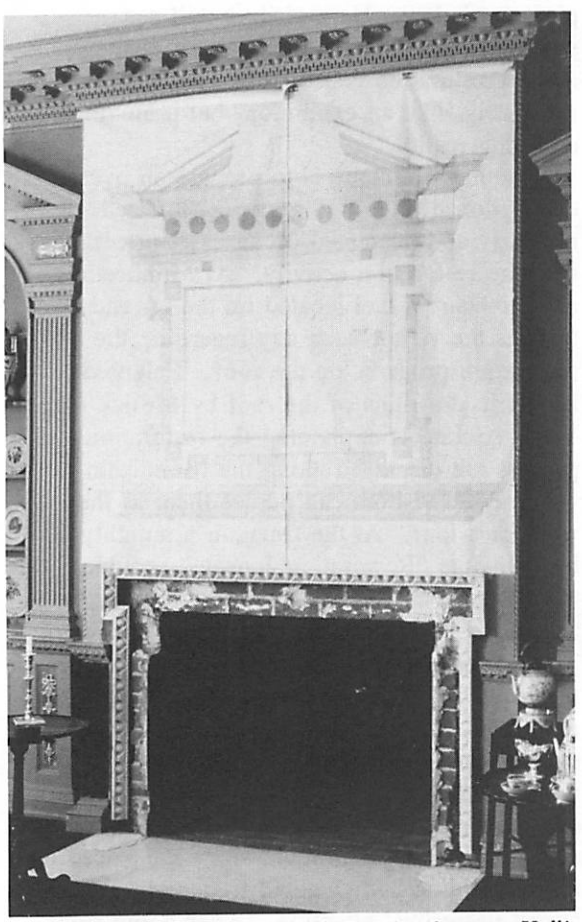
Poplar Forest in Lynchburg, Virginia has experimented with an approach to the viewing of archaeologists at work. They have renovated a 1915 barn on the property as an archaeology laboratory with a large picture window. Visitors watch the laboratory process as it occurs. This has been so successful that they are now extending the idea by building a restoration conservation laboratory nearby with a similar picture window. Here visitors will see specialists working on architectural elements. As the restoration coordinator Travis McDonald notes it is "like an exhibition--but a moving, changing reality."

Another technique is to prepare an overall description of the ongoing work, updated regularly and presented on an easel or platform near the restoration activity. At Monticello a marker board panel located on the ground updates the visitor each day regarding the restoration progress on the roof. Enlarged isometric drawings of the roof by Mesick Cohen Waite Architects explaining the restoration process are displayed along the Monticello walkway so visitors can peruse them as they wait for a tour. At the Octagon a monthly handout, the "Restoration Journal" provides visitors with answers to the most frequently asked questions about current restoration work. The interest in this publication is evidenced in the increasing number that must be printed each month. At the Octagon as well, labels explaining the exterior restoration process, and noting restoration activities within, have been enormously popular with the public. These two feet by three feet aluminum signs are placed on the scaffolding and changed frequently enough to attract passerbys' attention. After doing some visitor evaluations we found that more people were entering the museum as a result of this

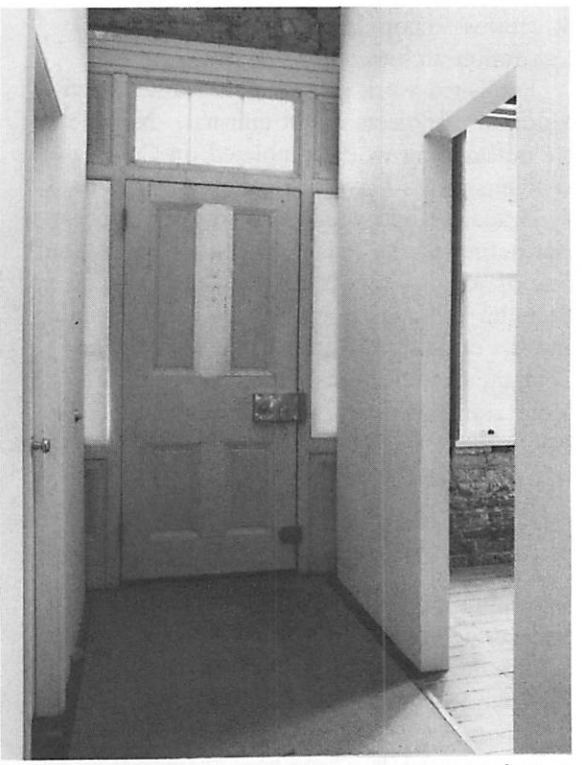
signage--their curiosity piqued by what might be going on inside.

As previously noted with Gunston Hall, sites also effectively use simulations or mockups of architectural or design details to inform their visitors, provoke discussion or to check scale. Interestingly, Gunston Hall continues to use this technique effectively. They have prepared blueprint overmantel designs in the palladian room, have created a mockup service stair in the first floor bedchamber with string for treads and posts to outline the space and even showed how the second floor space could have been occupied by presenting a trompe l'oeil slave in livery moving down the stairs (Figure 2).

Poplar Forest has also been most creative in their simulations. A bed alcove was established initially with a painted plan of the bed on the plywood floor. When the staff found this demonstration confusing to the public they made a foamcore model--again it didn't get the point across--so they now have established a full size bed of sheetrock built into the alcove, with the ghost marks of the wall studs still visible for verification. Like Gunston Hall, they have established a working model of Jefferson's stairs using modern materials and have recreated the passage walls to give an appropriate sense of space as one enters the house (Figure 3).

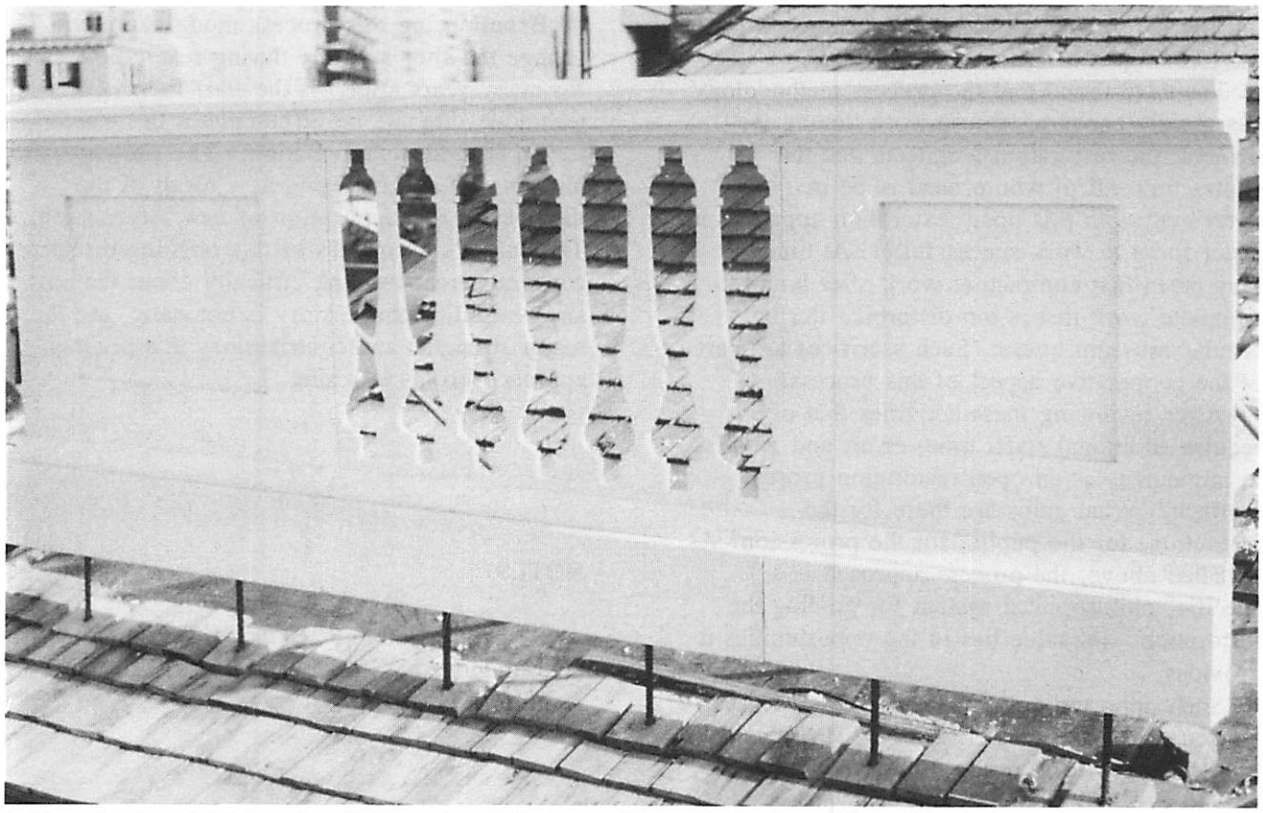


2. Drawing of overmantel design in Gunston Hall's palladian room. Photographer: Dennis McWaters; Courtesy of the Board of Regents, Gunston Hall.



3. The entry passage walls as a temporary mock-up at Poplar Forest. Courtesy of Poplar Forest.

At the Octagon a plywood mockup of a balustrade was installed on the roof of the building (Figure 4). There were both didactic and practical purposes for this installation. We knew that such a radical change to the exterior would be difficult for many to accept. By giving observers a chance to see a portion of the balustrade in place, with its appropriate color and scale, we hoped to mitigate the skepticism of docents, supporters and even staff. We also used photographs of the mockups in presentations to our local preservation review board. In retrospect, we could have extended this concept by making a small scale model of



4. Plywood mock-up of the balustrade on the Octagon's roof. The Octagon Museum, The American Architectural Foundation.

the balustrade for docents to present on tour, for I believe many visitors were slightly bemused by this "thing" attached to our roof. It was a bit too far up, too far away and too small to be an appropriate teaching tool. Such a methodology was successfully used by Sir John Soane in the early 19th century when he designed architectural models for his builders. These could be disassembled, thereby enabling his master builders to see clearly the process of his buildings' construction. Following Soane's example, we hope to create a model, with movable parts, to explain the roof and its complicated drainage systems to our visitors.

We have found that our openness has also heightened and generated great interest, not only from the general public but from professionals and students as well. One must be prepared to permit and provide additional access to the site through symposiums that explain the work, special restoration walking tours by the site professionals, as well as internship opportunities. The latter has been a particularly fruitful way to engage upcoming professionals in the restoration process. The Octagon's internship programs are principally run in the summer under a qualified architectural conservator or archaeologist. The architectural conservation program, established by our preservation coordinator, allows students to engage in research pertaining to the site and includes "hands on" participation in the restoration work. These programs are generally six to eight weeks in length with one half day devoted to restoration activities and the other half to research work. This curriculum is quite similar to archaeological field school programs established by Mt. Vernon, Poplar Forest and Monticello.

Having a site open to the public during a restoration has its obligations and responsibilities. Visitor safety must be a constant concern. It is imperative that those in charge know exactly what operations will be performed by the contractors each day. This hopefully will preclude the visitors from participating in a portion of the "process"

unexpectedly--such as receiving a shower from the cleaning of a masonry wall.

We have found that the process methodology has greatly encouraged teamwork among the owners, the restoration architects and the contractors--all of whom need to be in agreement with this open restoration approach in order for it to work successfully. At times, it may mean that contractors work after hours to complete work that is too disturbing during regular museum hours. Such sacrifices are part of the cooperative aspect of this process.

After reviewing these activities that often require additional staff, time, effort and monies to implement--is an open restoration process worth it? What gains are there for the institution, for the public, for the profession? As revealed above, the process approach is a specific, philosophical system for guiding the restoration. Its value lies in the opportunities it provides.

Such opportunities for the institution exist in both practical and empirical areas. Practically, fund raising for the restoration is much aided by this process. Benefactors find the work engaging. Seeing the activity of interns, skilled crafts people and staff verifies the reality of the restoration. Several individuals have arrived at our site with skepticism and have left with enthusiasm and a desire to contribute.

Visitors have found this type of tour experience an interesting and fascinating opportunity. Visitor surveys completed at Gunston Hall have confirmed this response. One survey administered verbally by the docents indicated that 97% of the visitors found the open restoration process added significantly to their experience of the site. When other visitors completed a written survey, 70% noted their satisfaction with this methodology. Large numbers of visitors indicated that they would prefer to leave the site unfinished and expressed reluctance to see the work completed.

Sharing the process of research and restoration creates an effective "buy in" from docents, members and the public. They are a part of the activity--explaining, exploring, questioning and often modifying the end result. Ultimately, then, it is their building, restored with some of their input. This good will furthers the site, increases visitation, and promotes the visibility of the site with the press.

Experiencing this process mode likely will change the site, not only during restoration, but for many years after. If the staff follows this technique, the site never completes the search for an accurate interpretation. The site is always vital and changing as a result of the discoveries and application of new information. The public's awareness of this ongoing research, encouragement to think critically about the past, and realization that history is not static, are the major strengths and contributions this process approach brings to a site.

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[1]Orlando Ridout V, *Building The Octagon* (Washington, D.C.: The American Institute of Architects Press, 1989), p. x.

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Training Volunteers in Long-term Restoration Work

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The goal of the project was to restore the interior of Hope Lodge, an historic house. This was established in 1987 by the Pennsylvania Historical and Museum Commission and the Friends of Hope Lodge and Farmar's Mill following completion of an historic structure report and paint analysis. The steps needed to reach the goal were many and ranged from the usual searches for funding to the actual implementation of the restoration work. This work was physically accomplished by the perseverance of many volunteers under the supervision of trained professionals.

Hope Lodge is an historic house museum owned and operated by the Pennsylvania Historical and Museum Commission (PHMC) located just north of Philadelphia. The house, built between 1743 and 1748, is an excellent example of early Georgian architecture. Due to its architectural significance, and because it has changed very little in its 245 year history, Hope Lodge is listed on the National Register of Historic Places.

As a museum, Hope Lodge compares and contrasts the lifestyle and furnishings of the original owner of the site, Samuel Morris, with those of the 20th century owners, William and Alice Degn. The Degns collected 18th and early 19th century decorative and fine arts and attempted to recreate Hope Lodge as they believed it looked in the 18th century. There are both Morris and Degn period rooms set up in the house to illustrate this comparison--the Colonial versus the Colonial Revival at Hope Lodge.

The Friends of Hope Lodge and Farmar's Mill is the non-profit, community-based support group for Hope Lodge. The Friends exist to "assist in the development of Hope Lodge and Farmar's Mill to their full potential as historic sites of major significance." Their purpose is met by providing volunteers and financial resources to present public programs for both adults and children; providing clerical assistance; operating the museum shop; and assisting with maintenance and restoration around the site. The Friends currently have about 125 members, with approximately 25 who volunteer on a regular basis and 70 who volunteer for special events. Membership is open to everyone who supports the historic site, and our members include doctors, lawyers, teachers, students, retired executives, and other individuals.

After completing a detailed historic structure report and paint analysis in 1987, the PHMC and the Friends set as a goal in their long-range plan the interior restoration of Hope Lodge. The restoration work involved refinishing the rooms inside the house according to the time period interpreted therein--Samuel Morris' Colonial rooms would be restored to their c.1750 appearance; the Degns' Colonial Revival rooms would be restored to their 1920s appearance. The scope of the project included carpentry repairs, plasterwork, painting, and floor refinishing. This paper focuses on the paint restoration.

The search for funding to begin restoration work began in earnest in 1990. Neither the PHMC nor the Friends had the resources required to conduct a large-scale project--one requiring specifications and bids, and then hiring a paint contractor to perform the work. However, the PHMC did offer to provide the services of John Bowie, historical architect, and Matthew Mosca, historic paint analyst, to provide the training and supervision for the Friends, who could supply a volunteer labor force and purchase necessary supplies to conduct the project. The Friends held a fundraising drive among their membership to raise the money needed for supplies. They used this arrangement to finance Phase I--restoration of the Colonial Revival period rooms; they received grant funding to do Phase II--restoration of the Colonial period rooms.

Recruiting volunteers to help with the Paint Project was surprisingly easy. A number of board members were interested, including the president and the property committee chair. Other volunteers who were closely involved with public program planning or with fundraising events expressed an interest. Inspiration was conjured up from the vision of how bright and impressive the house would be after the work was done, given the chance to make the changes. With the funds in place, the Friends were ready to move ahead.

There were prerequisites for volunteers interested in working on the Paint Project. They had to have some experience participating in other Friends' projects, and they had to have an interest in restoration. Although it was not necessary to have any previous construction experience, they did need a heightened awareness of the integrity of the historic building and understand their limitations (of skill) so as not to attempt work that would otherwise only be performed by an experienced craftsman. Some PHMC professionals from the Architectural Services Division also took this opportunity to learn first-hand about the restoration.

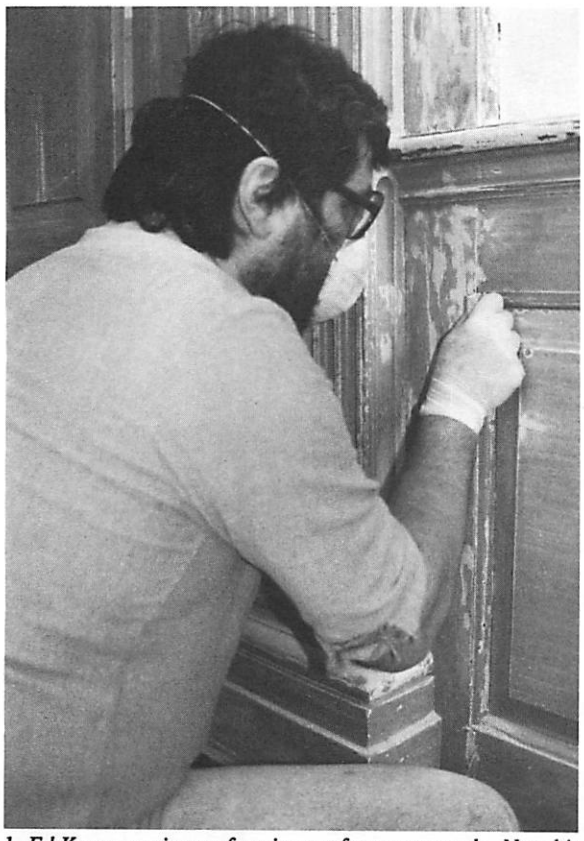
Proper training for the volunteers was critical to the success of the Paint Project, which had become a pilot project for the PHMC. It was the first time the PHMC had permitted paid professionals to train volunteers to perform restoration work on one of their historic houses. Because of this, numerous steps were taken to instruct the volunteers and then subsequently monitor their work. Messrs. Bowie and Mosca were used on the project during both phases. Mr. Bowie provided information on construction details in the house, and advised on techniques of preparation work and carpentry. Mr. Mosca provided information about paint colors, paint materials, preparation, and application techniques.

Much of the work during the Paint Project took place on weekends, starting in late January 1991 with training sessions for the volunteers covering topics like the hazards of lead paint, safety on scaffolds, and preparation/application techniques.

It was vitally important that the volunteers be able to accept criticism of their work. Messrs. Bowie and Mosca were often asked to provide evaluations of the ongoing work and point out problem areas as a means of quality control. They also provided extra training for the site administrator, who had to supervise the restoration when they were not on site. Both consultants were readily available by phone, and Mr. Bowie was local to the area and able to make unscheduled trips when problems arose.

Keeping volunteers involved was a real challenge for the Paint Project. Phase I, the restoration of finishes in the four rooms interpreted to the Colonial Revival period, began in January 1991 and lasted into June. Work began in the dining room and a parlor on the first floor. Volunteers had to endure four weekends of prep work, with hand sanding, before any painting could begin (Figure 1). Twelve to fifteen people came out each weekend. These volunteers then learned about the paint and the application techniques for the glossy white Colonial Revival finishes for these spaces. Painting was by far preferred to prep work. Fortunately the weather was mild that winter, since the walls had to be at least 50° F to accept the paint properly. On a few occasions extra space heaters were used to warm the rooms.

After these two rooms were completed, work began on a hall and a bedroom on the second floor, beginning in April 1991. However, there was some difficulty getting the crew to assemble during warmer weather. Somehow painting was not quite as important as yard work or



1. Ed Kaczanowicz performing surface prep work. Note his use of gloves and a dust mask.

gardening!

Phase II of the Paint Project, the restoration of finishes in the Colonial period rooms, began in January 1992 and lasted through mid-August. There was some concern about how many members of the paint crew would come back for another round, but again, twelve to fifteen stalwart people came out on winter weekends to work. Although the crew enjoyed repainting all the glossy white Colonial Revival finishes in 1991, they were really looking forward to painting the brilliant Prussian blues and yellow ochres of the Colonial period at Hope Lodge. Phase II began with the front of the entrance hall, a parlor, and the housekeeper's chamber on the first floor. Messrs. Bowie and Mosca returned to provide training, supervision, and evaluation of the work. Again the crew endured four weeks of prep work. Paints were hand-mixed according to 18th century formulae and applied using round paint brushes characteristic of the 18th century (Figure 2). Because these techniques were different from what had been done the previous year, Mr. Mosca provided extra information for the volunteers, and even allowed them to grind some of the Prussian blue pigment that was used in one of the rooms (Figure 3). These first three areas were completed in March.

The rear portion of the entrance hall and part of the stairs were begun in April 1992. Again it was difficult to hold volunteers as the weather grew warmer. As the last Colonial room, the master bedchamber, was finished in August, only three volunteers remained to help the staff complete the work.

Although the crew dwindled somewhat near the end, the project provided a number of benefits. First, the volunteers provided a high quality, stunning paint job, far better prepped and applied than what would have been done by a customary commercial painter with a bottom line. Second, the volunteer paint crew contributed 656 hours in 1991 and 963 hours in 1992. It is not often that volunteers get to do many hands-on projects in an historic house museum, especially projects involving restoration. Third, the volunteers are still, after all these months, enthusiastic about the hard work involved as well as the outcome. This has fostered a renewed sense of camaraderie between the volunteers and staff. Fourth, the



2. Historic Paint Analyst Matthew Mosca providing instruction on the application of the finish coat in the Colonial parlor to volunteers.



3. Historic Paint Analyst Matthew Mosca supervising Volunteer Vicki Demarest in the grinding of Prussian blue pigment. Volunteer Nancy Gingrich is in the background.

Friends is now a group of people who are not only willing and able to do restoration work, but willing and able to interpret that work to the public.

Another benefit to Hope Lodge is that the Friends are now associated with a house that looks beautiful. A parlor, the dining room, a hall, and a bedroom are painted in their glossy white Colonial Revival color. The entrance hall is painted in its magnificent yellow ochre Colonial color; the housekeeper's bedchamber and the stairway are also yellow ochre. The Colonial parlor and the master bedchamber are both Prussian blue with deep brown chairrails and window sills, white window sash, and black baseboards.

In summary, using volunteers can be a terrific method of performing restoration work on an historic building. To ensure a successful project, the following should be considered:

1. The Site Administrator or Project Director needs to trust the volunteers and know that they will be able to understand and follow the training that they receive. The Administrator/Director must know that the volunteers will be able to recognize problems and ask how to solve them. The Administrator/Director must be confident that these volunteers will be able to take constructive criticism of their work, be able to correct their techniques, and go on with the project without holding a grudge.

2. It is extremely important to have any volunteer restoration project be monitored by a professional. At Hope Lodge it was appropriate to have both an architect and a paint analyst performing this service. It is important for the consultants to be willing to work with volunteers, and realize that this type of project is different from other restoration projects. The

consultants need to be able offer constructive criticism in a manner that is not offensive to the volunteer work force.

In return, the historic house reaps some wonderful benefits:

1. Quality restoration work is obtained at a much lower cost than hiring outside contractors. At Hope Lodge eight interior rooms were painted over a two-year period. In these troubled economic times, it makes sense to spread available resources as far as possible by using volunteers.

2. Volunteers make an incredibly dedicated labor force and contribution base at the historic site. They are a corps of people interested in the site's preservation and restoration; their involvement with one project may spark a willingness to work on other projects at the site.

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All photographs by Brenda Riegle.

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Assessing the Impact of Replacement/Substitute Materials on Historic Interiors

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In planning the proposed restoration or rehabilitation of a historic interior, it may be a simple matter to identify the most significant interior materials or finishes to be retained. However, it is not such a simple matter to determine in a more comprehensive way how finishes or materials may be replaced with similar or substitute materials without compromising the character of the historic interior. When compared with a change in overall room shape, the introduction of multiple new openings, or the substantial lowering of a ceiling height, the impact of replacing original interior materials and finishes may be considered far more subtle and consequently less significant. In fact, however, a radical change in color palette or loss of overall surface detail in an interior may actually have a greater impact on one's experience of that interior than alterations to the interior's general form or configuration. Moreover, the more intimate scale of interior space makes a change in finish or materials far more critical than a similar change on the historic building's exterior.

The replacement of historic fabric raises both practical and philosophical questions. It cuts to the heart of our preservation philosophy when we are confronted with the task of balancing the historic value of original or historic material against the artistic/visual value of the same material in a deteriorated condition. When the original material or finish is missing but well documented, the choice of retaining the original is eliminated but choices of whether to replace it with substitute or similar materials still remain to be made. The debate goes back to another century and continent. In 1848, British anti-scrapist John Ruskin condemned all restoration as a lie because of the inherent loss of history: "Another spirit may be given by another time, and it is then a new building; but the spirit of the dead workman cannot be summoned up, and commanded to direct other hands and other thoughts. And as for direct and simple copying, it is palpably impossible. What copying can there be of surfaces that have been worn half an inch down?"[1] In our century and country, the influence of Ruskin is still strong, but cautious replacement is considered more acceptable. In his 1979 text, *Recreating the Historic House Interior*, William Seale's advice reflects this attitude: "When an actual wallpaper is documented as having been in a certain room in the time you wish to represent, and it is gone, you have a mandate to reproduce it, although your budget may make that a goal for the distant future. If an original paper still clings to the walls, by all means leave it; to justify replacing it with a copy, the paper must be so far gone as to be indistinguishable."[2] The 1990 version of the Secretary of the Interior's Standards for Rehabilitation provides us with our current national standards for rehabilitation and it specifically addresses the replacement of historic fabric. The relevant portions of standards 2, 5, and 6 state:

- The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

• Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

The recommendation to match materials where possible leads to the second key issue in replacement of historic fabric, that of substitute materials. The practice of imitating one material with another certainly has a long history. Likewise, design professionals have long debated the issue of integrity of materials versus substitution. Historically, interiors have often provided the opportunity to fool the eye with substitutions and faux finishes. Back in 1902, Edith Wharton and Ogden Codman's words in *The Decoration of Houses*, reflect the debate: "The line, and not the substance is what the eye demands. It is a curious perversion of artistic laws that has led certain critics to denounce painted architecture or woven mouldings. As in imaginative literature the author may present to his reader as possible anything that he has the talent to make the reader accept, so in decorative art the artist is justified in presenting to the eye whatever his skill can devise to satisfy its requirements; nor is there any insincerity in this proceeding."[3] The integrity of material viewpoint is represented by Frank Lloyd Wright in *The Natural House*: "But in this land of ours, richest on earth of all in old and new materials, architects must exercise well-trained imagination to see in each material, either natural or compounded plastics, their own *inherent style.* All materials may be beautiful, their beauty much or entirely depending upon how well they are used by the architect."[4] The Secretary's Standards clearly place a higher value on replacing materials in kind rather than with substitute materials.

Beyond the philosophical, the practical issues that lead us to the replacement question are varied. Deteriorated conditions, fires and natural disasters, budget constraints, availability of materials, durability of materials, maintenance, new use, accessibility, codes and safety are all factors that affect decisions to replace historic interior materials. Making the broad assumption that for appropriate reasons replacement of historic fabric is contemplated, this paper suggests design criteria that may provide assistance in visually assessing the impact of replacing historic fabric with similar or substitute materials in a historic interior. The proposed design criteria are form, proportion, rhythm, scale, material, color, detail, and finish.

This paper defines each of the eight criterion within the historic interior context and then illustrates the application of each through examples. The criteria do not propose solutions or formulas but instead provide a comprehensive way to begin thinking about the impact of replacement and substitutions of materials and finishes on the visual character of the historic interior. While it is useful to separate the criteria to evaluate their relevance, each operates within the context of the whole and the significance of one criterion often complements or reinforces another. In analyzing any specific interior, these criteria will not all warrant equal consideration; instead, the hierarchy of the criteria will vary case by case. Further, the issues of replacement/substitute materials and finishes must fit within the broader scope of all intended modifications of a historic interior.

In this context the first criterion, FORM, refers to the three-dimensional shape or two-dimensional geometry of various materials. Form may be inherent in the modularity of a material as in the case of ceramic tiles or it may be created by the shapes into which non-modular materials such as terrazzo and plaster are cast. Form is also apparent in the milled profile of wood moldings and the geometric shapes created by the three-dimensionality of wainscot panels. Replacement materials may alter, eliminate, or introduce form within the historic interior. Examples of altered form would be the replacement of an original wainscot with a different panel configuration and profile or the replacement of hexagonal ceramic tiles with square tiles. The elimination of a material form occurs when decorative wood floor borders are covered over by carpeting. Similarly, since the forms created by cast-in-place terrazzo cannot be duplicated with terrazzo tiles, such a substitution would result in a loss of original form. By contrast, the installation of acoustical ceiling tiles suspended below an existing plaster ceiling

would introduce a new material form within the historic interior as well as changing the overall form of the room. Whether a replacement material will modify, lose, or add material form, the overall impact on the interior must be carefully considered. Too often material forms are lost during rehabilitation along with the sense of scale and detail they provided. Also, the loss of form often diminishes the overall order of the space just as the careless introduction of new material forms may conflict with its original spatial unity.

The second criterion, PROPORTION, is closely related to form and refers specifically to the relationship of height to width to depth of a particular material. Clearly the one-to-one proportion of square ceramic tiles contrasts sharply with non-directional sheet vinyl flooring. Such a substitution will result in a loss of any material proportion other than the overall proportion of the floor plane. In terms of proportion, replacement of the ceramic tiles with square vinyl tiles instead would be preferable because the one-to-one proportion would be retained. The proportional strength of pressed tin ceiling panels is particularly strong due to the three-dimensional relief of the individual panels. The loss of such proportional materials generally results in an overall loss of visual order, scale, and detail in a historic interior. Similarly, the introduction of a new proportion within a historic interior through the application of a new modular material often conflicts with the original proportional order of the space. While not introducing a separate proportional form into a space, linear materials such as wooden floor boards and beaded board paneling may reinforce an overall proportional orientation within a historic interior. Consequently, the loss of these materials would weaken the perceived proportion of a historic interior. Altering the orientation of linear materials within a historic interior may have even more drastic consequences for its overall proportions. These examples make the case for careful analysis of the proportion of original materials as well as their role in reinforcing larger spatial proportions within a historic interior prior to selecting appropriate replacement materials.

RHYTHM, the third criterion, refers to the use of repetitive design elements to create a perceived order to a historic interior. Materials play a role in establishing rhythm through recurring patterns and forms. The repetitive nature of modular tiles and paneling as well as wallpaper and carpeting pattern repeats help organize our understanding of a historic interior through rhythm. Material borders and subdivisions of walls, ceilings and floors through material or pattern changes introduce rhythm as well. The rhythm of louvers, grilles, fluting, and repetitive color applications may also be significant. Consequently, the substitution of similar materials without appropriate attention to pattern and color change within that material will result in a loss of rhythm and spatial order. Similarly, the selection of new material patterns and subdivisions will alter or eliminate the previous rhythm.

In this context, the fourth criterion, SCALE, refers to the size of interior spaces, elements, or details in relation to human size. Scale is especially important to address in evaluating interior spaces because we experience interiors in such an intimate way. When material details and modules are simplified or eliminated during rehabilitation, the scale breakdown they provided is often lost. The replacement of mosaic tiles with a substantially larger tile module and the elimination of wallpaper borders or stencils in favor of a uniform wall finish treatment are just two examples of how the scale of a historic interior space may be compromised. Typically, the simplification of molding profiles and material forms results in a loss of scale as well as detail. Certainly altering the height of wood or tile wainscots and eliminating picture moldings or decorative crown moldings will impact the scale breakdown of a wall plane. Similarly, both the substitution of a different pattern of wallpaper and the alteration of paint colors can dramatically change perceived spatial scale as well. Understanding the contribution each original material and finish makes in establishing the scale of the historic interior is essential in selecting appropriate replacements.

MATERIAL is the fifth criterion. Historic interior materials themselves contribute in very significant ways to the overall character of the interior. Cast plaster, embossed wall coverings, marble thresholds, pressed tin ceiling panels,

parquet flooring, and cast iron air registers all call forth distinctive visual images. Frequently the rehabilitation process involves the covering over or replacement of some original materials with substitute materials. Such substitutions should be based on a clear understanding of the significance of the original material to the historic interior and thoughtful evaluation of how the substitute material will change that relationship. Popular substitutions include the selection of gypsum board to replace plaster walls and ceilings, the covering of damaged ceramic tile or wood flooring with carpet or vinyl flooring, and the covering of a plaster or paneled wood ceiling with suspended acoustical panels. Fiberglass moldings replace both wood and cast plaster trimwork. Even when the intent is to match the material in-kind, the replacement often reveals differing characteristics. For example, the graining pattern and color of a wood replacement member may vary even when the same species is specified. Likewise, the pigmentation of a contemporary terrazzo mix or the texture of replacement plaster will result in similar but not identical results. Contemporary wallpaper processes create different parameters for reproducing historic colors and patterns. From a visual standpoint, the appropriateness of any of these substitutions or replacements in a historic interior is dependent on the character-contributing quality and significance of the historic material. From a broader perspective, the value placed on preserving original fabric also must be considered in determining the appropriateness of removing or even concealing the historic material.

COLOR, the sixth criterion, may be inherent in the original material, as is the case with stone, ceramic tiles, unpainted wood, and brass. Or, color may be applied as a coating to various materials as with paints, stains and dyes. Color is a significant, often powerful, characteristic of a historic interior. Not only does the color palette generally associate the interior with a specific architectural period, but color often articulates and enhances the form, proportion, rhythm and scale of an interior. Consequently, varying the hue, intensity, and value of any given color can change both the historic and the spatial character of that interior. Faux finishes, stenciling, gilting, and color glazing are all distinctive color finishes that contribute to the character of the historic interior. The craftsmanship required in replicating such decorative color finishes adds to the challenge of their replacement.

The search for materials that precisely match the original in color adds complexity to any replacement effort. The specific color of marble or slate will vary according to quarry. The same species of wood will vary in color according to microclimate and age. Not only the shapes, but also the colors in which various ceramic and mosaic tiles are readily available have changed over the years as different color palettes have waxed and waned. Notwithstanding the advances in contemporary finish analysis technology, precise color duplicating of historic coatings is often difficult because the pigments and binders of a century ago have been replaced. The homogeneity and opacity of contemporary paints result in less depth and variation in paint films. The replacement or substitution of color, whether it is inherent in the material or applied, must be done with a clear understanding of its impact on the historic interior.

DETAIL, the seventh criterion, refers to the decorative embellishments and stylistic joinery that articulate the historic interior. Cast plaster ceiling medallions, wrought metal hardware, pegged flooring, and carved newel posts are just a few examples of historic details. The unity and attention to details in our historic interiors often reinforce all the design criteria previously discussed but are especially critical in reinforcing scale. An understanding of the significance of each material detail is essential in determining whether it should be retained or replaced in any restoration or rehabilitation. Details that reflect the hand of the craftsman are particularly difficult to replicate. Further, the substitution of materials may prohibit the duplication of details that are inherent in the original material, such as the quality of plaster to be molded or the potential of brass to be cast. Too often detail is sacrificed or compromised in the rehabilitation process with a subsequent loss in historic character and human scale. It is essential that the contribution of material details be clearly understood if the character of a historic interior is to be retained.

FINISH, the final criterion, refers to the texture and reflectivity, or glossiness, of a material or its coating. Texture and reflectivity may be inherent in the material or its finishing process. For example, marble may be honed or polished, plaster textured or smooth, wood carved or milled, leather tooled, and ceramic tiles glazed as they are fired. Texture may also reflect the manufacturing process as in the case of woven carpet, lincrusta, and silk wallcoverings. Often the tactile attraction inherent in many historic material finishes cannot be duplicated in substitute materials. Neither gypsum drywall planes or fiberglass moldings can truly mimic the texture of the original plaster they replace. Similarly, substituting plywood for solid wood panels generally compromises both the finish and the potential detail.

While reflectivity is inherent in most textiles and stones, it is usually the result of applied coatings ranging from flat to gloss paints, varnishes, polyurethanes and waxes for a material like wood. Even a fairly modest decision to replace a waxed finish with a semi-gloss polyurethane coating will alter the sheen of a wood floor. A more dramatic change in sheen will result from replacing ceramic tiles with vinyl tiles. Certainly, covering a high sheen flooring material with a matte carpet compromises the overall reflectivity of a space as well. Changes in color value and intensity can alter reflectivity too. For example, substituting a light value, moderate intensity paint scheme for a dark, somber palette would dramatically alter the reflectivity of a historic interior. Likewise, painting previously stained millwork will result in a change in finish reflectivity aside from the issue of color.

Understanding each historic material and finish in terms of its texture and reflectivity is critical in determining appropriate substitutions. Particularly in the more intimate scale of interior space, texture and sheen can play a significant role in establishing historic character.

Although it is not an easy matter to decide in a comprehensive way how historic materials and finishes can be replaced with similar or substitute materials, understanding the visual character of each material will clarify the significant issues. The thoughtful analysis of the historic material or finish according to the design criteria of form, proportion, rhythm, scale, material, color, detail and finish can establish a framework for evaluating the appropriateness of the replacement selection.

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NOTES

[1]Ruskin, John, *The Seven Lamps of Architecture* (New York: The Noonday Press, 1971), p. 184.

[2]Seale, William, *Recreating the Historic House Interior* (Nashville: American Association for State and Local History, 1979), p. 32.

[3]Wharton, Edith, and Codman, Ogden, Jr., *The Decoration of Houses* (New York: W.W. Norton and Co., Inc., 1978), p. 29.

[4]Wright, Frank Lloyd, *The Natural House* (New York: Horizon Press, Inc., 1954), p. 53.

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Interpretive Planning at the National Trust's Historic Properties: Implied Interiors at Decatur House

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The National Trust for Historic Preservation (Trust) has made interpretive planning a significant goal for its collection of 17 historic house museums: Chesterwood and Lyndhurst in the Northeast, Cliveden, Belle Grove, Oatlands, Decatur House, Woodrow Wilson House, Woodlawn Plantation, Pope-Leighey House, and Montpelier in the Mid-Atlantic states, Drayton Hall and Shadows-on-the-Teche in the South, Brucemore and the Frank Lloyd Wright Home and Studio in the Midwest, and Cooper Molera Adobe, Casa Amesti and Filoli in California. The Trust's desire to promote historic preservation is embodied in sound interpretive planning at its properties. The visitor's experience at these sites consists of a guided tour based on carefully researched and planned exterior and interior spaces. Historic interpretation is the very heart of the historic house museum and fully supports the Trust's mission: "to foster an appreciation of the diverse character and meaning of our American cultural heritage...."

Interpretive planning largely based on Historic Structures Reports (HSR) and Interpretive Self-Studies provides the opportunity for historic sites to fully examine all aspects of their history and physical environment. Once completed, these studies, which are developed using a variety of professional services, serve to aid sites in creating and implementing cohesive interpretive plans which are relatively free of important omissions. The final result of successful interpretive planning yields that unique historic retrospective which will foster a relevant and meaningful experience for its audience.

National Trust

Beginning in 1986, with the leadership of a new vice president for Stewardship of Historic Properties, the National Trust undertook several major initiatives aimed at strengthening preservation and public programs at its properties. All 17 of the properties were involved in a variety of projects and studies to upgrade and improve preservation, conservation and interpretation aspects of their programs. In 1988, a museum interpretation consultant was brought on to conduct in-house assessments of interpretation and public programs at the Trust properties and to work with staff to strengthen those programs. The following year the consultant became Director of Interpretation--a new addition to the Stewardship Department's technical services staff consisting of a registrar, curator, archaeologist, and two architects.

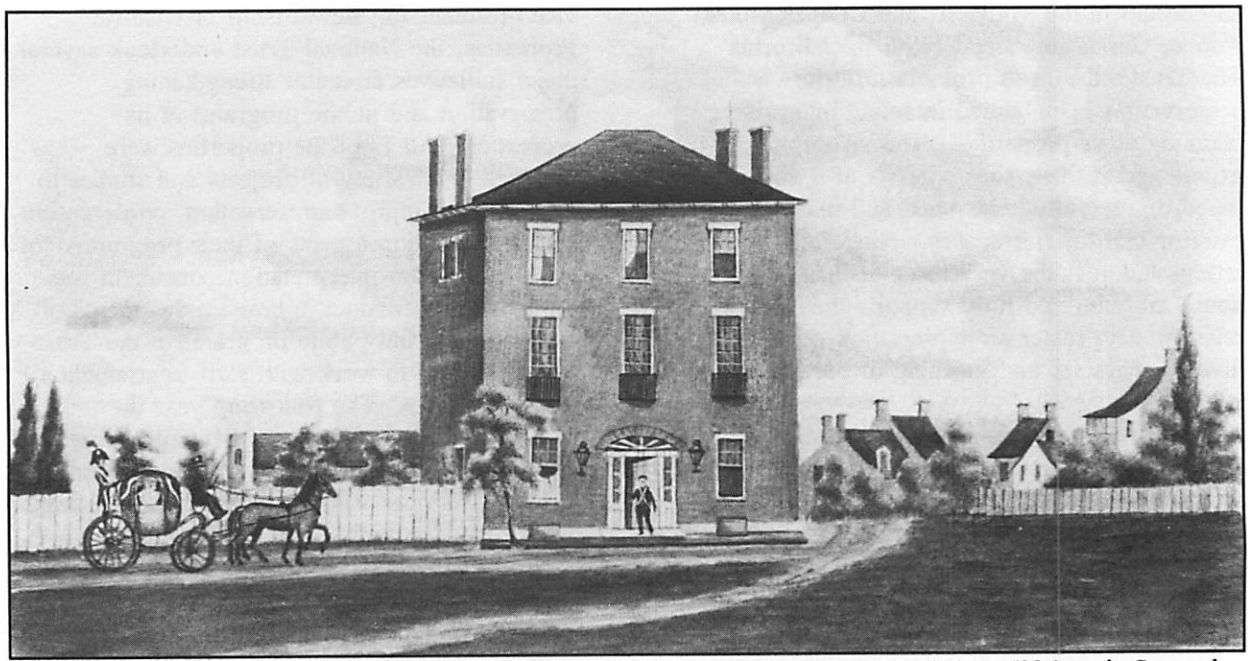
It probably will not surprise you if it is said that the National Trust's focus has traditionally been on the buildings and on preserving their fabric. Over the past four years the educational and interpretive role of the properties has

become more of a central priority. One basic assumption is, for example, that everyone on staff, no matter what their role, is involved in interpreting the site to the public--whether their job is curator or director, or public relations, or maintenance. All staff members share in the primary goal of making the site interesting and educational for the public. Property staff have participated in four annual interpretation seminars dealing with topics such as interpretive mission, thematic interpretation, guide training, interpretation and collections, and managing institutional change.

Trust property directors are dedicated to identifying and embracing the basic architectural and historical truths about their respective properties. In their desire to provide excellence in historic site management, they have secured funding and engaged their sites in multiple studies to fill vital information gaps. To aid the property directors, the Stewardship Department--through the Henry Luce Foundation-- has provided $350,000 to assist with 19 grants for Historic Structures Reports, documents surveys, or historic landscape studies. Most of these funds have supported HSRs. These reports have established knowledge of architectural changes made over time, reviewed primary documentation for research planning, and documented the existing conditions of Trust historic buildings to facilitate planning for interpretation, as well as preservation needs. This is an ongoing process at all Trust properties, and most have completed major portions of HSRs with additional phases to follow. In all, at least ten HSRs in various phases have been completed, providing each site with volumes of vital information previously unavailable.

Along with the Historic Structures Reports, a number of the properties have received self-study grants from the National Endowment for the Humanities (NEH) program for museums and historical organizations. NEH self-study grants fund a specialized process for developing a historic properties interpretive plan: an analysis of the building and its collection in terms of its value and potential for interpretation; a review of current programs; an articulation of an interpretive mission and goals; and an outline of program strategies. As of this writing, six Trust properties have completed NEH Self-Study grants.

The Trust encourages its properties to apply for federally funded studies as needed. Directly or indirectly, they all relate to interpretive planning whether they have to do with the preservation of buildings, conservation of



1. Decatur House in 1822, Watercolor by Monsieur E. Vaile, Decatur House Collection. Inscription-- "Maison du Commodore Stephen Decatur Washington June 1822 By M. E. Vaile"

collections, assessing environmental conditions, assessing audience, or studying historic landscape.

Decatur House

Decatur House, located in Washington, D.C., is a federal style house which has been home to a string of politically prominent individuals, including Secretaries of State, foreign ministers, and congressmen. It was built in 1819 by architect Benjamin Henry Latrobe for naval hero Commodore Stephen Decatur and his wife, Susan. A neighbor to the White House for 170 years, Decatur House was the first private dwelling on Lafayette Square and has survived to become a National Historic Landmark owned and operated by the National Trust. Today, Decatur House is a historic house museum which is experienced by the public through a guided tour. The tour, the primary interpretive vehicle, addresses the Decatur era on the first floor and the Beale family occupancy on the second floor.

Decatur House is in the process of reinterpretation-- a re-examination and accessment of the information it disseminates to its public. Because maintaining the site as a museum is the central aspect of its mission statement, the decision to change the tour (the core of its interpretive message) came from a realization that it was narrow in its focus, covered two very different eras and related little to Washington history. Also, it was difficult to fit the Latrobian architecture of the house into the interpretive message. A new tour based upon the historic significance of the property and tied to relevant and cohesive themes became our goal. The staff decision to reinterpret, supported also by a strong Advisory Council, was considered essential for the interpretive well-being of the property. A constant responsibility for the director is to keep things moving and to keep everyone involved on track.

In recent years, the Decatur House staff and Advisory Council have made significant progress in terms of preserving the building and its collections and in achieving financial stability. The reconstruction of the Carriage House for special property use has at once expanded the property's income base and taken pressure off the use of the historic building and fragile collections for rentals, while also providing much needed space for museum programs. The recent restoration of windows and doors in the house was a major preservation project. In September 1990, the firm of Phillips and Oppermann, F.A. prepared a 4-volume Historic Structures Report and in 1991 an NEH Self-Study was completed. These major studies provided the base for interpretive planning. The site has also conducted a collection conservation survey in 1989, an environmental conditions survey in 1991, and an audience assessment in 1992.

Historic Structures Report

The Historic Structures Report records the work of the team of specialists: architects, a paint analyst, and an architectural historian. This surface investigation provided architectural evidence of changes made to our buildings over time. These changes closely relate to written documentation. There are two cases where the examination of the physical building provided information which dovetailed with written documentation and strengthened theories about certain aspects of the site. One reinforced the concept that the front bedroom on the first floor was Stephen Decatur's office, while the other finding supports the newspaper documentation that during his residency, Martin Van Buren added a third floor window to receive signals from the White House. Another part of the HSR provided a review of historic documentation (written and pictorial) with recommendations for additional research. The third part is a comprehensive record of existing conditions which will aid in planning maintenance activities. Finally, a summary of the entire report includes recommendations for a more in-depth examination of certain aspects of the site and puts forth theories based upon the study findings. While this is just a first phase of the Historic Structures study, its conclusions were very exciting.

Interpretive Self-Study

In the preparation of the NEH Self-Study

proposal, Decatur House staff had to analyze the site and its programs in detail, identifying both strengths and areas in need of improvement. The NEH Self-Study award allowed Decatur House to bring together scholars and museum professionals with special expertise in areas related to the site's history and programs. This body of experts convened for a two-day colloquium focusing on the interpretation of the Decatur House. The self-study award also provided an opportunity for the director and assistant director to travel to several historic sites with strong interpretive programs: Henry Ford Museum and Greenfield Village, Historic Deerfield, and Fraunces Tavern. Staff toured the sites, observed public and school programs, and met with site staff. Finally, Decatur House staff and the Advisory Council weathered a process of program evaluation and review of the outside team findings. A guiding theme-- Influence and Ambition; Statesmanship and Diplomacy-- was synthesized from the study findings and the intriguing history of the house and its occupants. This theme will be the focal point for the interpretive plan.

Long-Range Planning

With these two major studies and the various smaller studies completed and reports in hand, a member of the Advisory Council and the Decatur House Director plunged into the preparation of a comprehensive long range plan, assigning time periods to coincide with the funding and implementation of the goals set forth. This was no easy task. For example: the plan to incorporate the third floor into museum period rooms must begin with concerns about structural soundness and accessibility. Interior finishes must be determined and objects secured for the furnishings plan. Then of course, funding must be secured to implement each facet of the plan. No matter how large the problems, the prospect of integrating the new interpretation with an upgrade of the historic fabric provides an exciting challenge-- a challenge to be better, to develop as a museum, and to ensure the preservation and integrity of Decatur House.

A site reinterpretation affects everything-- *everything*. Since the interpretive plan establishes space utilization, it must assume that safe environmental conditions exist throughout the buildings. In interpreting the collections, staff not only gathers factual information, but must be assured that collection pieces are in a stable condition for display. The long-range plan incorporates the work necessary for bringing about the reinterpretation itself-- the necessary research on objects, occupants and relevant history. For example, the long-range plan must also include the needed improvements to the site and the collections, allowing the interpretation to take place. It was not always easy to put in priority order the various areas which needed to be addressed in the long range plan. To expand interpretation and to use more of the site for museum purposes, new funding strategies would need to be developed. In addition, the collections need ongoing conservation and upgraded storage. A Curator of Education will soon join the staff and will be responsible for the development and implementation of the interpretive plan. The curator will incorporate study results into the tour, develop and teach a guide training curriculum, work with area schools to provide specialized school programs, and create program tools and outreach materials. Once its specific components are in place, the plan will address the revised tour, a new room-by-room furnishings plan, guide training, educational programming, and new publicity and marketing strategies to make the site better known.

Below is a simplified version of the long-range plan as it relates to the new interpretive plan.

1. Develop interpretive plan based on *Influence and Ambition, Statesmanship and Diplomacy* theme.
2. Correct environmental conditions and upgrade fire, safety, and security systems.
3. Produce and implement guide training curriculum.
4. Secure funding to expand museum space.
5. Develop furnishings plan and identify and secure new acquisitions.
6. Develop and make an orientation film to introduce the site to visitors.
7. Develop and install an exhibit in the Carriage House which enhances and reinforces new interpretation.
8. Prepare museum spaces for new

installations.

9. Develop school programming.
10. Create new public programs.
11. Develop printed materials and programs for publicizing and marketing the site.

As can be imagined, each of these projects relies on the services of many experts, including: historians, exhibit designers, architects, engineers, historic interiors specialists, craftsmen, curators of decorative arts, film makers, restoration contractors, object conservators, historic paint analysts, and many more. The actual use of their expertise can be made more efficient and economical through careful planning because the possibility of major mistakes due to poor planning is significantly reduced. It is in the planning stages of a historic property's reinterpretation that expensive, destructive, and time consuming errors can be avoided. Teamwork is essential to accomplish the planned projects and requires good preparation so that all players buy into the project. This is doubly important in terms of museum staff, who in addition to their usual responsibilities must participate fully in this ponderous undertaking.

The National Trust for Historic Preservation has encouraged its properties to carefully examine their own physical and written documentation and to establish interpretive programs. It has provided financial support and expert assistance in the process. While it is not intended that history be rewritten, it is important for National Trust historic house museums to maintain high standards in relating historic fact to present and future generations.

* * *

Ensuring Quality of Work: Selecting the Right Architects, Art Conservators, and Restoration Craftsmen

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The General Services Administration (GSA) was established to provide an economical and efficient system for (a) procurement and supply of personal property and non-personal services, (b) utilization of available property, (c) disposal of surplus property and (d) records management. With the exception of the creation of an independent agency from the National Archives and Records Service, its business functions have remained unchanged since 1949.

Its Public Buildings Service (PBS) manages the federal Government's largest civilian real estate portfolio and has the full range of responsibilities for facilities management service, including planning, acquisition, design, construction and operation and maintenance. PBS is primarily funded through the Federal Buildings Fund (FBF), which are rents paid by other agencies to occupy office and support space.

My position as the Regional Historic Preservation Officer is located in the National Capital Region (NCR) of GSA. This region currently includes the District of Columbia, and particular counties of Maryland and Virginia.

My region's projects have gradually developed more of a restoration bent, when appropriate, and always a conservation attitude towards the original design and materials of all properties in the GSA federal inventory. Projects affecting the maintenance and renovation aspects of the original architect's design are approached with care, thereby assuring the ability to conserve rather than replicate building components in the future.

Regarding the selection of architects to perform design services for these properties, the Brooks Act (Public Law 92-582, Selection of Architects and Engineers) provides the basic statutory framework under which agencies contract for architect and engineering services. The Brooks Act provides for negotiation of fair and reasonable prices with the best-qualified firm, in an order of preference determined by the head of the agency.

A/E services are defined in the Federal Acquisition Regulation or FAR. The FAR and agency FAR supplements are the basic sources of policy and procedures applicable to the award and administration of contracts for architect-engineering services.

The FAR provides for public announcement of the proposed acquisition of A/E services. It specifically establishes the acquisition of A/E services as satisfying federal requirements for "full and open" competition. And it covers price negotiation policies and techniques.

The FAR sets forth the statutory 6% limit on A/E fees for design services. It is up to the agency to determine the definition of "design" services as opposed to "supporting" services which are NOT regulated by the 6% limitation. It establishes general cost principles, procedures, and guidelines for the determination and allowance of costs. It states that price or cost is not to be considered in the selection process. If negotiations with the top-ranked firm are

unsuccessful, the second firm will be invited to submit a proposal.

The steps leading up to selection of the design team are tied to several years of planning. GSA surveys its facilities on a five-year cyclical basis. Building Evaluation Reports (BERs) are generated by A/Es, which review the property's code violations and status of building systems. The BERs, in conjunction with the Historic Structure Reports, which analyze the property's material conservation needs, provide the backbone for the GSA/NCR work order item inventory.

Projects under $1.5 million are funded out of the Federal Buildings Fund (FBF). We can spend up to this amount in a particular fiscal year without seeking individual Congressional approval. As rents have been keeping pace with the marketplace, this budget has been steadily increasing and was $28 million for the past three years. Rather than place a unique advertisement for each small project, the A/E work is channeled to our supplemental design A/E contracts.

These supplemental contracts are advertised in the *Commerce Business Daily*. They seek design firms for a particular category of work, e.g., mechanical prime; architectural with emphasis on historical properties; and are negotiated for periods of three to five year durations.

The NCR budget for projects in excess of $1.5 million in recent years has annually fluctuated between $70 million and $150 million. When projects exceed $1.5 million, a Prospectus Development Study (PDS) must be created to secure Congressional funding of the proposed work. A/Es are tasked with developing this study, the PDS, as a planning tool. This document summarizes all technical data and develops a management plan for the temporary housing of the tenant agency, the space planning, and the design and construction activities for the project.

After Congressional funding approval is granted, based on the PDS, NCR develops the A/E scope of work and advertises for design services. If a project is extremely large and complex, we are now contracting with A/Es to develop the design A/E's scope of work.

The NCR inventory is aging and many facilities have hit the 50-year mark. The political climate has been supportive of large-scale renovations of these capital investments, addressing replacement of building systems; alterations for code compliance, both fire safety and handicap accessibility; and restoration of altered, damaged and missing original elements.

The most recent large-scale renovation/restoration procurement for A/E services in my region is the Main Justice Department Building at 9th and Constitution Ave., NW. To establish the desired A/E design team, we involve two discrete selection panels, of 3-5 people each. Most individuals on the panels are regional architects and engineers, but it may also include tenant agency architects and engineers as voting members. The first panel screens the form 255s and 254s (forms giving A/E firm background and team specifics for the project) and the second panel conducts interviews. The ranking established by the screening panel is not divulged to the interview panel. Therefore, the second panel makes a discrete evaluation of those firms chosen for interviews.

For the Main Justice Department Building, the decision was made to advertise nation-wide, opening the search for greatest competition. However, the solicitation recognized a regional hesitancy to pay travel costs by requiring the winning team to establish a "production office" in the region within 30 days after award of the contract, if they were not local.

The reputation of the A/E firms, if they have done previous work for the region, precedes them. Every time an A/E is paid for a deliverable, an A/E evaluation is filled out by the internal design review staff regarding their performance. This information, held in our Contracts Division, is made accessible to both selection panels.

The objective evaluation criteria that will be used by both panels to review the project submissions are announced in the *Commerce Business Daily* solicitation. The most critical aspects of the forms 255s and 254s are their clarity and completeness of information. The list of consultants should be up to date and accurate. The jobs listed for the consultants should be cross-referenced so that the reviewers understand the experience of the team as well as the individual firms and their relevance to this particular project.

There need to be lots of photographs of the ACTUAL work--not just glossies of the main elevation. If the firm is citing creating Historic Structure Reports, it is more convincing to see a copy of the document or even better, some graphics found within it rather than photographs of the property's exterior.

Undeniably, the interview phase of the selection process has great importance. Once the pool of applicants (sometimes 60-80 firms) has been culled down to four to six for interviews, there may be very little to distinguish between them. Therefore, the manner of presentation, as well as the content, is tantamount to success.

The panel members are primed to ask pointed questions regarding the team's experience working together as well as separately, as the depth of project experience as well as breadth is extremely important. In the end, the subtleties of the responses during the interview stage tend to lead the panel toward a particular team.

Firms providing A/E design services which would affect historic properties' restoration and rehabilitation zones, are required to include on the project an individual called a Historic Preservation Team Member or HPTM. For each unique project, the *Commerce Business Daily* advertisement will cite the project as needing an historical architect, architectural conservator, historic landscape architect, architectural historian, art conservator, or some combination of the above. When we are going directly to a supplemental contract for services affecting historic properties, the scope of work will indicate the need for the HPTM.

Several supplemental contracts now require the incorporation of these individuals in the base contract's team. For individually solicited projects, federal classification standards are used to evaluate the ability of an individual to qualify for the role of HPTM. An objective review of his/her training and experience has been developed and is consistently used so that the quality of the design team's work is ensured. The HPTM's contractual role is to provide the following services:

Preservation/conservation oversight

Materials conservation specifications' development

Post construction contract services-reviews of:

1) materials conservation samples;
2) shop drawings for equipment to be installed in restoration and rehabilitation zones;
3) proposed protection methods;
4) bidder competency, such as technicians' pointing skills, to assure that specialty restoration work meets contract performance criteria.

It is preferable that the HPTM not also function as the design architect, thereby providing a counterbalance for the preservation goals of the project. However, if the design architect fulfills the criteria for the role of the HPTM, it is allowed.

To assure that the construction phase has the required building materials restoration skills and art conservation skills, two competency of bidder clauses have been developed--one for each discipline. They are handled as two distinct types of contracts. Art conservation contracts are negotiated and restoration contracts are fixed price contracts.

For art conservation contracts, the competency of each offeror is established, and among those successful firms within this pool, the lowest price offer is accepted. Since art conservators find it difficult to procure bonding, the contracts involve a general contractor, who can meet this requirement for federal construction contracts. We review the competency of the general contractor for the project, who is performing an administrative role and sometimes subcontracting for building materials restoration skills, if they are a part of the contract.

The general contractor must demonstrate experience and familiarity with historic preservation work by submitting three projects that the firm has completed commendably in the past six years which have included restoration of similar spaces of the size and complexity of the proposed project. Photographs, and client references are required as well.

The competency to perform art conservation is determined by an objective evaluation of their conservation training, both academic and practical; project examples; firm experience; use of scientific testing techniques; affiliations; staff education, training, and experience; and proposed work plan.

The contracts for building materials restoration skills are fixed price, sealed bid. Once the lowest bidder is established, a submission of the firm's and all required restoration subcontractors' competency qualifications (which is exhaustively detailed in the bidding documents, including the minimum requirements to meet each qualification), are due within seven days of notification by the Contracting Officer.

For competency of restoration skills, both quantitative and qualitative measures are used to establish competency. In addition to the requirements described for the general contractor, each specialty subcontractor must describe his facility and equipment, provide descriptions of his work, photographs, and client references for a minimum of three projects of comparable in size and complexity, and elaborate on the background (training and job experience) of the restoration technicians. Only those technicians who are pre-qualified during the competency review are allowed to perform under the contract.

For both types of contracts, regarding meeting the competency clauses, the Government allows the offerors/bidders to "make themselves whole" by communicating to them the shortcomings of their submissions. For sealed bid contracts, if it is apparent that the submission cannot meet the competency clause requirements, the Government goes to the next lowest bidder. For negotiated contracts, the offeror is ultimately excluded from the pool of acceptable offers if competency cannot be demonstrated.

The competency of bidder clauses become part of the contractual "basis of award." The construction program's use of this vehicle to achieve quality of workmanship has more than paid for the level of effort required to administer it. This level of effort has been substantial in several instances--one restoration project required the review of the first seven bidders' qualifications before award could be made. It did not result in any protests.

This administrative process allows GSA to pursue the lowest bidder while maintaining the quality of workmanship for both art conservation and building restoration projects. I am very pleased with the level of professionalism that has been achieved in the design and construction phases of our projects. Several of these projects have won significant design awards. I think these results are directly related to the care that my region is willing to expend to assure well qualified teams are hired for all phases of project work on these important buildings.

* * *

Seismic Strengthening--Limiting Interior Demolition

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Recent earthquakes in California have shown that many structural engineers' comments about the seismic issues of historic buildings were correct. In fact, the earthquakes have shown that many historic buildings present serious hazards to life safety. At the same time, they have also demonstrated that many historic structural systems may have more stability than has been recognized by past building codes. Despite the damage to buildings and injury to people, the positive results of the earthquake activity have been a heightened awareness of the need to strengthen historic buildings and an increasing body of data about how they perform and how they may best be strengthened.

With local seismic retrofit ordinances now mandated by California state law, seismic strengthening will become necessary for many historic buildings, even if they have not been affected by recent earthquakes. While seismic strengthening is an important task for the protection of the general public, it is also an essential element in the long-term protection of the building itself. It is important that the task of seismic strengthening not be considered to be a process forced on preservation advocates by engineers and building departments. Rather, like preventative maintenance, it is part of the required stewardship of the building. When approached from this more pro-active frame of mind, seismic strengthening can be seen as a positive event in the building's life, which can and must be accomplished without wholesale demolition of the building's historic materials.

The past few years have seen many developments in the field of seismic strengthening. There has been an increased understanding about the response of buildings to earth movements, increasing sophistication in methods of evaluating the strength of existing material assemblies, and sensitive engineering solutions to problems of strengthening existing structures. These developments have led to many projects which are successful from both an engineering and a preservation perspective, refuting past practices of wholesale interior demolition and reconstruction as a necessary evil of seismic strengthening projects. However, at the same time that many successful projects are occurring, an equal or greater number of highly destructive projects are still being executed.

This inconsistency of results stems partly from different levels of sophistication and interest among engineers in the problems of historic structures. It also arises from many client's lack of understanding of the essential multidisciplinary nature of seismic strengthening; there is the assumption that they need only engage a structural engineer. Frequently preservation architects are called into projects only after an engineering scheme has been accepted, placing the preservation architect in the largely negative role as a critic of the proposed project rather than as a fully engaged member of the team.

While some clients and project consultant teams understand the work elements and sequences of tasks necessary for successful projects, overall there seems to be a general lack of consistency in the methodology of seismic strengthening of historic buildings. This lack of a consistent and well-understood design process results in many ill-conceived projects and frequently unnecessary destruction of interior features. The focus of this presentation will be to outline the basic elements of that design

methodology as well as to identify alternative strategies to limit interior demolition.

The following tasks are the important elements of the seismic strengthening project's work program. They are generally sequential, although there is an interrelationship between most of the tasks.

1. Identify the Members of the Design Team

Perhaps the most important part of the process involves the selection of the design team. It is essential to realize that seismic strengthening is not only a structural engineering project. It frequently involves the entire fabric of the building, crossing many design disciplines. The team should include the following members:

Preservation Architect: All too frequently relegated to a consulting role, the Preservation Architect should lead and coordinate the project. He must be familiar with all of the basic aspects of seismic engineering. In addition, the Preservation Architect may recognize the need for other professional disciplines such as architectural conservators, and mechanical and electrical engineers, and include them in the team.

Structural Engineer: The key member of the team, he must not only be experienced with historic buildings and with all of the most recent developments in his field, he must also be flexible and aggressive in considering alternative design ideas.

Construction Consultant: Ideally this member would be a contractor experienced with historic buildings. His primary role is to consult on the constructability or practicality of various alternative strengthening ideas, and to provide input on construction costs.

Owner (or Owner's Representative): The Owner must be an active participant throughout the process. He will be required to make difficult decisions related to appropriate levels of safety and levels of damage to the building which might be acceptable.

2. Define Applicable Building Codes

This is not as simple as it sounds. There are numerous potential standards to choose from, frequently representing different levels of strengthening. It is necessary to know what the minimum strengthening requirements will be. Codes which may be applicable include:

- Uniform Building Code
- Uniform Code for Building Conservation
- California State Historic Building Code
- Special Local Ordinances

The final choice of code standards is often left open throughout the course of the preliminary phases of the project until the actual physical implications of compliance with different codes is better defined. It is occasionally determined that higher than minimum standards can be met without extensive additional loss of historic fabric or greater construction cost.

3. Outline Preservation Objectives

If a Historic Structure Report has already been prepared, it will serve as a starting point for assessing the relative significance of different areas of the building. If an HSR has not been prepared, a preservation assessment should be made of the building, identifying significant spaces, and areas which might be available for alteration. Consideration should be given to exterior versus interior significance. Strengthening may be done from the outside if less impact would result to significant elements. Finishes which must remain in place should be identified, as well as those areas of finish which can be dismantled or reconstructed. There should also be consideration of other programmatic or functional needs for the building. These must be coordinated with the structural work, and frequently these programmatic concerns can help to dictate strengthening systems. The outline of

preservation objectives will serve as an important guideline for the engineer.

4. Understand the Risk

The engineer, without much specific study, will be able to describe the expected response of the structure to an earthquake. Probable areas and levels of damage can be generally predicted based on past experience with that type of structural system. In many situations, although the building may not meet structural expectations, the probable damage and life safety risks are low. In other situations potential hazards may be very great. The type of occupancy and the occupant load also are factors in recognizing the level of risk to life safety which may exist.

Frequently, with historic buildings, there are non-structural hazards related to ornamental finishes. While these hazards do not relate to the stability of the overall structure, they may represent serious life safety hazards or may simply represent potential damage to historic fabric. Understanding the level of risk and the probable hazards is an essential pre-design task.

5. Understand the Building's Capacity

Past structural practice in strengthening historic buildings tended to ignore the existing capacity of the building's original structure. This approach resulted in strengthening schemes which placed a complete new "reliable" structural system adjacent to the original. It was a convenient approach because the strength of the new system was quantifiable and very little exploration or understanding of the original system was required. Greater understanding of the performance of historic building systems has allowed engineers to consider the inherent capacity of the building in their calculations. In order to be able to do that, in-place testing of existing materials and exploratory demolition to reveal connections and structural assemblies are necessary tasks. The increasing sophistication of testing methods for existing materials has led to added reliance on the strength of existing building materials resulting in less loss of historic fabric. In addition to developing information about the materials' capacities, geotechnical information is developed providing criteria for expected ground motion.

6. Criteria Development

This phase of the process deals with the question of how strong the building should be. Different levels of strengthening usually result in different amounts of expected damage from an earthquake, different levels of safety, different levels of construction cost, and different amounts of intervention and consequent historic fabric loss. Balancing the relationship of these four factors is the central challenge of seismic strengthening of historic buildings. Answering the question of how strong the building should be can only be done by studying strengthening alternatives at a conceptual level to begin to understand what the impacts of different levels of intervention will be on the building.

7. Alternatives Development

This is the schematic design phase. In order to fully understand the relationship of potential strengthening measures to safety, cost, and preservation, it is essential that several different alternatives be considered. Not only should alternative methods of strengthening be considered, but also alternative locations of strengthening elements within the building should be studied. Engineers often think in terms of rational and consistent strengthening system concepts. This approach may result in a logical and cost effective structural system, but may also result in considerable interior damage to building. Historic buildings often demand consideration of a mixture of structural systems, resulting in a combination of structural solutions. Plywood shear walls may be necessary in one area of the building, while core drilling of masonry is required else where, and concrete shear walls may be acceptable in other locations. The resulting combination, while not theoretically pure, may strengthen the building with less damage to historic materials.

A number of strategies may be considered in the process of alternatives analysis:

Conventional Strengthening Methods: Alternatives including conventional shear walls, braced frames, diaphragm strengthening and connections of structural elements should be developed, in different combinations which may vary in constructability, cost, and historic fabric impact.

Stress Reduction: Separating the building from the ground movement by base isolation is an extremely promising development for strengthening of historic buildings. In simple terms, this process involves the installation of shock absorbing elements between the ground and the structural elements of the building. These elements reduce the amount of force which is transmitted to the upper building, thus reducing the amount of structural strengthening necessary. Installation of isolators is expensive and space-consuming but the resultant reduction of stress in the building often saves historic fabric as well as money.

Blind strengthening methods: Core drilling is a method of reinforcing existing unreinforced masonry walls by drilling vertical holes in the walls and inserting a reinforcing bar in epoxy grout. It is a relatively new system and represents an alternative which can limit impacts on interior finishes. In early applications, drilling required application of water into the drilled hole. Dry coring methods have been recently developed which eliminate the risk of water intrusion into interior finishes.

Other methods of blind strengthening include potential grouting of existing wall cavities, or installation of bond beams in hidden spaces. Many buildings present opportunities for some amount of strengthening in existing void spaces.

- Exterior vs. Interior Strengthening:
In the past, the exterior of a structure was considered more sensitive than the interior for structural interventions. Alternatives should consider the relative impact of exterior strengthening.

- Exposed Shoring:
Alternatives for strengthening with exposed elements may be appropriate in some situations in lieu of removal and replication of finishes. There also may be situations where a non-destructive shoring system can be installed pending future funding or technological development.

- Restraint of Potential Falling Hazards:
In some situations, the addition of physical restraining elements may be the only reasonable solution short of removal, replication and reinstallation of decorative ornamental elements.

The product of the alternatives development phase is a number of alternative schemes. The schemes may vary in relative strength, cost, expected damage in a major earthquake, and initial impact on historic materials. Analysis of the schemes by all members of the project team and frequently also by peer reviewers result in the selection of a preferred scheme for development of design.

8. Preferred Scheme

Because of the rational process that has been followed and the inclusiveness of the design team, the preferred scheme should be defensible against incursions by cost conscious administrators, historic preservation advocates, peer review engineers, and even FEMA representatives. The preferred scheme can then be developed through design and into construction.

Having begun with a positive attitude, assembled a well-qualified design team, and executed a well thought-out design process, a seismic strengthening project has a very good chance of being successful. It requires one more element: creativity. Creativity implies a willingness to solve design problems in new ways. This is especially important on historic buildings where almost every design situation and detail is unique. Standard solutions applied to historic buildings will not work. Creative solutions are those that recognize and adapt to the special circumstances and requirements of the building. With this added commitment, seismic strengthening of historic buildings can occur without loss of their significant features, assuring the buildings' presence for future generations.

* * *

An Equivalency Approach to Code Compliance for Historic Buildings

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As the appreciation for buildings of historical significance continues to grow, more emphasis will be on developing a use for an existing structure requiring a certain amount of upgrades to the building. Regardless of the circumstances, the need to maintain or increase the life safety systems of an existing building must be considered.

It is the design team's responsibility to maintain the historical characteristics of the structure and to maintain a standard level of life safety.

When certain code requirements are not feasible, then alternatives must be considered. However, these alternatives, or "equivalencies," must meet the intent of the applicable codes by providing equivalent safety, as well as be acceptable to the authority having jurisdiction.

Although not a new approach to addressing potential deficiencies in historical buildings, proven active fire protection systems are becoming more acceptable to the authority having jurisdiction as providing an equivalent level of safety for meeting specific code requirements. These systems, including automatic fire suppression, fire detection, and automatic smoke management, are becoming more effective in the annunciation and control of a fire. Additionally, computer simulations can be utilized for evaluating existing hazards and alternative solutions.

The following presents an overview of how certain active fire protection systems are being accepted by code enforcement agencies.

Codes

The minimum requirements for evaluating a building's life safety and fire protection systems are found in the applicable codes. However, finding the specific applicable requirement is usually not readily apparent. The cause for most of the confusion is the fact that code language is not always clear; certain codes are performance oriented and offer only guidance without stating specific criteria, and certain codes base compliance on the cost associated with the renovated work. Other codes require a "scorecard" method for determining existing building compliance requirements. Actual code compliance requirements for the building are always subject to the code enforcement agency.

Furthermore, for most historic structures, there was most likely not a building code in existence when the building was constructed to compare current code criteria. This makes analyzing the fire resistive characteristics of building components difficult. For example, in an existing building there may not be a listed fire resistive assembly that compares with the existing structural element.

Therefore, when evaluating an existing building, the code approach must focus more on the intent of the requirements rather then on the specific criteria. Before addressing any requirement, certain questions must be asked. For example: Why are two exits required from a floor? Is an automatic fire detection system needed? Why limited combustible materials? What are the fire resistive ratings?

Once the intent of the code requirement is realized, then developing equivalent alternatives to correct life safety design deficiencies becomes easier. Implementation of corrective features is more effective--and stands a better chance of acceptance by the authority having jurisdiction--when the intent of the code is known.

The best approach is to develop a Fire Protection Master Plan Report that clearly defines the code requirement and intent, explains the building's deficiencies, and offers equivalent approaches to correct the deficiencies.

Probably the most common problem in existing buildings is exiting. For example, a code requirement is that two exits enclosed in fire resistive construction must be provided from each upper level, and these exits must discharge directly to grade. Many historic structures only have one exit. Although this hypothetical exiting arrangement is "code deficient," the arrangement is also deficient in "life safety" because an opportunity for occupants to egress the building prior to being overtaken by the products of combustion does not exist or is not readily apparent. The approach should be to determine what is required that will allow occupants to safely evacuate the building. The corrective approach does not necessarily mean that another exit must be provided.

Due to building configuration and preservation of historic characteristics for most existing buildings, equivalent approaches need to be developed to address and then correct life safety deficiencies.

Trends

What is new about the equivalency approach is not the approach but the technical improvements and broader use of active fire protection systems. Additionally, the use by designers of computer simulations to analyze fire growth and smoke movement is growing. Such simulations are also growing in acceptance by code enforcement officials.

Fire Suppression Systems

A properly designed and maintained fire suppression system is probably the most efficient system for reducing fatalities and minimizing property loss as a result of fire. Several documented cases exist where automatic fire suppression systems eliminated or significantly controlled fire spread with only one or two sprinklers activating. Not only does a fire suppression system have a proven history, the automatic sprinkler system also adds a degree of comfort to the code enforcement agency, the fire department personnel and also to the designers and occupants of the facility.

The trade-offs associated with an automatic fire suppression system are well documented in all building codes throughout the country. For example, increased travel distances are allowed, greater exit capacities are permitted, and certain construction requirements for buildings are modified.

An automatic sprinkler system contains the following inherent advantages to protect life and property:

- Extinguishes and/or controls fire and fire spread.
- Permits an opportunity for occupants to evacuate a building.
- Offers suppression support for fire fighting personnel.

The installation of a fire suppression system will require a certain amount of demolition to an existing building. However, once installed, the automatic suppression system will generally be unnoticed.

Although the "trade-offs" associated with an automatic sprinkler system are specified in the codes, quick response sprinklers are fast becoming acceptable for other trade-offs and equivalencies.

In general, quick response sprinklers activate sooner then standard sprinklers. The sooner a suppression system activates, the more effective the control of fire. More building codes and enforcement agencies are recognizing the advantages of quick response sprinklers. For example, quick response sprinklers are being accepted in lieu of automatic detection systems in certain occupancies.

The 1991 edition of NFPA 101 - Life Safety Code contains life safety requirements affecting new and existing buildings. The Life Safety Code recognizes the advantage of quick response sprinklers by allowing the deletion of other fire protection systems such as automatic detection and smoke dampers.

The use of quick response sprinklers also may impact water supply requirements. In general, water supply demands are less for a quick response sprinkler system than for a sprinkler system using standard sprinklers. In an existing building, this may impact pipe sizes as well as space requirements for a fire pump and water reservoir.

As stated above, a reduction in the fire resistive rating of exit enclosures is possible when an automatic sprinkler system is installed. A concern in most existing buildings is that sometimes exits or other floor openings are not enclosed. Depending on the number of floors that are connected, an automatic fire suppression system may be used in lieu of a fire resistive rated enclosure; or, to continue the "open effect" originally desired in the building, the floor opening could be enclosed with glass and a specially designed automatic sprinkler system. For example, several systems are currently available that utilize glass. These systems can achieve a 2-hour fire resistive rating. The glass is mounted in gasketed frames that allow the glass to move and expand to prevent cracking. The specially designed automatic sprinkler system also helps to keep the glass at a certain temperature to further prevent breaking. The location of sprinklers to properly wet the glass is critical in maintaining the fire resistive requirement of the assembly and to protect the floor opening.

These systems are approved and have been accepted by code enforcement officials for use in existing as well as new construction.

Automatic Fire Detection Systems

Another active fire protection system includes automatic fire detection systems. Automatic detection systems are becoming, and are considered by most, to complement a total reliable fire safety package. The advantage of the early warning capabilities of a fire detection system is that occupants become aware of a potential fire before the fire becomes large enough to threaten their egress routes. Therefore, the hypothetical example of the floor that has access to only one exit may be considered if an automatic fire detection system is installed throughout the building. This would allow an opportunity for occupants to use the one exit prior to that exit becoming untenable. Obviously, other factors must be considered such as the floor height above grade, combustible load, and configuration of the building.

Fire detection devices have not changed dramatically. The major application of a fire detection system is still to detect smoke. Certain advancements have included the use of beam detection for large open areas and UV (Ultraviolet) detection devices to detect fire.

Fire detection systems are now so available that the number of false alarms is significantly reduced. This feature adds a certain degree of comfort to the authority having jurisdiction, because the user tends not to disarm a properly designed and installed fire detection system.

An automatic fire detection system contains several advantages which include:

- Early warning notification to occupants to evacuate the building.
- Automatic annunciation for summoning Fire Departments.
- Capable of being used in connection with other fire protection systems such as smoke control systems or automatic door release.

As with the automatic fire suppression system, a certain amount of demolition is required to install a fire detection system. This demolition generally results in minor penetrations required for electrical conduit. Certain systems virtually eliminate the smoke detection device from sight. For example, in lieu of smoke detectors, air sampling tubes may be used which are barely visible.

Smoke Control Systems

Smoke and other products of combustion pose the greatest threat to occupants and fire fighters. An effective smoke control system can help increase the amount of time an egress route is tenable, and also improve the conditions a fire fighter may face. A smoke control system also is an active fire protection system that may be used in lieu of meeting other code requirements. For example, code requirements for exit corridor ceiling heights allow a sufficient volume for smoke to accumulate. Because minimum clear ceiling height may be difficult to achieve in an existing building, a method of exhausting smoke from the corridor could be

considered as equivalent in lieu of raising the ceiling height.

Advantages of a smoke control system include:

- Provides an opportunity to access and use an exit should the egress route become smoke filled.
- Allows an opportunity for fire department to conduct fire fighting operations with increased visibility.

However, installation of a smoke control system will require a sufficient amount of space for ductwork, fans and motors. Additionally, proper zoning of the system to achieve smoke exhaust is sometimes difficult and expensive in an existing building.

Computer Simulations

An evolving method acceptable to code enforcement agencies is the use of computer simulation to address potential deficiencies to life safety. The purpose of computer simulations is to assist in predicting the environment to which occupants may be exposed in the event of fire within the building. In computer simulations, a computer fire program and a timed egress computer program are used together in order to predict the level of fire exposure to occupants as a function of time. The fire simulation program predicts the development of the hot smoke layer as it descends from the ceiling. It is primarily the hot smoke layer which is expected to affect occupants. The egress program predicts the evacuation time of occupants. The predicted development of the smoke layer in a compartment is compared to the predicted evacuation time for that compartment. This comparison is used to assist in determining the amount of time the space may remain tenable.

Additionally, computer simulations may also aid in determining the fire resistive rating of existing structural elements such as columns, beams, and floor/ceiling assemblies. Many times the fire resistive rating of structural elements and separations is not known and the configuration of the assembly is not specifically identified in reference materials addressing archaic construction. A computer simulation helps to determine the fire resistive rating of the assembly.

The basis for most programs is the result of actual fire tests and timed egress simulations performed. Actual tests adds credibility to the application and accuracy of computer programs. The use of computer simulations has the following advantages:

- Depending upon the results, changes to the configuration of a historical structure may not be necessary.
- If building changes are necessary, the results of a computer simulation may help to cost-effectively reconfigure the building.
- The use of computer simulations may support the use of other active fire protection features in addressing a deficiency.

Computer simulation and modeling help to show how well an existing building performs in the event of a fire. These results can then be compared to the intent of the code.

For example, computer simulations have been accepted by several code enforcement agencies when the conditions in an existing building were such that the number of exits of the exit capacity were deficient.

One such example is an existing building which contained a large atrium. Not only were the number of exits deficient in the building, but the means of egress and the exits from the upper levels opened to the atrium. A computer simulation was performed to analyze how smoke originating from a fire in the atrium would affect the conditions of the means of egress on the upper levels. The computer simulation showed that because of the large volume of space created by the atrium, the egress path remained tenable for a given period of time. A separate timed egress computer analysis was also performed to predict the time required for the occupants to evacuate the building.

The end result showed that a reasonable amount of time was provided for occupants to exit the building. The need to separate and enclose the egress path from the atrium was avoided.

Conclusion

An effective approach to minimize the threat of fire to life and property and to increase the current level of safety in a historic building will utilize one or more of the fire protection systems

discussed above. The proper combination of these systems will address the predominate deficiencies of historic buildings, which typically include egress and building construction.

To gain acceptance for a proposed method of correcting a deficiency, the deficiency with respect to the intent of the code must be clearly presented to the authority having jurisdiction. Once the code official understands the deficiency, a better understanding of the method to correct the deficiency can be communicated. When an equivalent approach to code compliance is recognized by all parties, the design team can move forward in implementing credible fire protection systems throughout a historic building.

* * *

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Success Has Many Fathers: The Alexander Hamilton U.S. Custom House Restoration

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If failure is an orphan, and success has many fathers, then the restoration of the Alexander Hamilton U.S. Custom House (Custom House) can be likened to a contested paternity suit brought for an orphan previously victimized by neglect.

Historical Background

Designed by architect Cass Gilbert and constructed between 1900 and 1907, the Custom House is rich in both architectural and historic significance. A splendid seven-story Beaux-Arts composition, the building is a National Historic Landmark. The Custom House was built on the southern end of Manhattan Island on a site formerly occupied by the original Dutch settlement of Fort Amsterdam. Located at the foot of Broadway and fronted by Bowling Green, a venerable colonial park, the Custom House was conceived as a secular palace to celebrate nautical commerce, the wealth that it generates, and the custom duties due the U.S. Treasury.

Prior to the imposition of income tax and the establishment of the Internal Revenue Service, custom duties were the U.S. Treasury's primary source of revenue. Custom duties collected on ocean-borne imports cleared through the Port of New York accounted for 80% of total duties collected nationally. The government made it clear in its competition, which selected Cass Gilbert as architect, that it wanted a building which proclaimed the importance of the Port of New York and the magisterial nature of the U.S. Treasury.

A Rich Symbolism

Both the facade and interior spaces are richly embellished with nautical and commercial motifs depicting sea shells, dolphins, anchors, tridents, and the images of Neptune and Mercury. On the building's main, north-facing facade, the sixth floor cornice supports twelve heroically scaled figures representing history's dominant seafaring commercial powers: Greece, Rome, Phoenicia, Genoa, Venice, Spain, Holland, Portugal, Denmark, Germany, England, and France. Four gigantic sculptural groups on huge pedestals frame a monumental central stairway and the two flanking street level entrances. Designed by Daniel Chester French, the sculptures allegorically represent the four continents of Asia, North America, Europe, and Africa, as romantically viewed with early 20th century prejudices. Although "politically incorrect" by today's standards, these four pieces are among the finest examples of American Beaux-Arts sculpture.

Axial Procession

The building's central axis is strongly established by monumental stairs which spill from the building beneath a vaulted arch. This stair leads to a vaulted, marble-clad, two storied

Great Hall on cross-axis to the entryway. Sky-lit, elliptical stairways terminate either end of the Great Hall's axis and soar the full height of the building. Beyond the Great Hall, a barrel-vaulted vestibule leads to the sky-lit domed Rotunda. Elliptical in plan, the space is 180 feet long, 85 feet wide, and 48 feet high. As originally built, a large altar-like marble writing desk commanded the Rotunda's center, while Custom Service clerks were corralled behind marble counters along the room's perimeter. In this heroic inner sanctum, way bills were presented and custom duties assessed. Within ten years of completion, the counter was relocated to its current central location, and the public was pushed to the room's perimeter, radically altering Gilbert's spatial intent.

The Rotunda's dome is constructed of Guastavino vaulting and divided into sixteen panels framed with decorative plaster garlands. In 1937 Reginald Marsh painted a series of eight murals on the Rotunda dome depicting contemporary shipping passing through New York harbor. Alternating with his harbor scenes, Marsh painted full-figure portraits of eight early explorers of America on the remaining eight panels of the Rotunda dome. Off the Great Hall is the Collector's reception room. This ceremonial space features oak paneling by Tiffany Studios, ten murals depicting 17th-century Dutch ports by Elmer Garnsey, and a deeply coffered, multi-faceted, polychromatic ceiling. This richly decorated room was intended to be used by the U.S. Secretary of State for ceremonial purposes when visiting New York City.

Abandoned

The Custom Service vacated the building in 1973, and the building was left untenanted, unheated, unmaintained, and unguarded. The General Services Administration (GSA) attempted unsuccessfully to dispose of the building. (New York City refused its free transfer because of anticipated renovation expenses.) Numerous citizens and public interest groups voiced their concerns over the building's potential loss. In 1976, the New York Landmarks Conservancy published Brendan Gill's pamphlet on the Custom House and launched a popular movement to save the structure and find new tenancy.

In 1981 GSA responded to the public's concerns and commenced Phase I of the Custom House renovation project. In 1987, subsequent to major building systems, windows, and the Rotunda's skylight being replaced, the U.S. Bankruptcy Court was ensconced in renovated space on the fifth and sixth floors.

Renovation: Phases II and III Build Out for Full Federal Occupancy

In 1990 GSA negotiated design services for a two-phased building renovation project with the New York architectural firm of Ehrenkrantz and Eckstut.

Designated as Phase II, the first scope of work entailed the construction of sixteen public bathrooms, restoration of building corridors, exterior pointing and cleaning, a new loading dock entry bay, and the restoration of the building's art properties, including exterior sculpture. Phase II had a $5 million estimated construction cost.

Phase III was defined as building two bankruptcy courtrooms and judicial chambers, a public lecture hall for 350 people, and all necessary tenant work to provide for "full Federal occupancy." The estimated construction cost was $20 million. Phase III design and construction were to be sequential to Phase II.

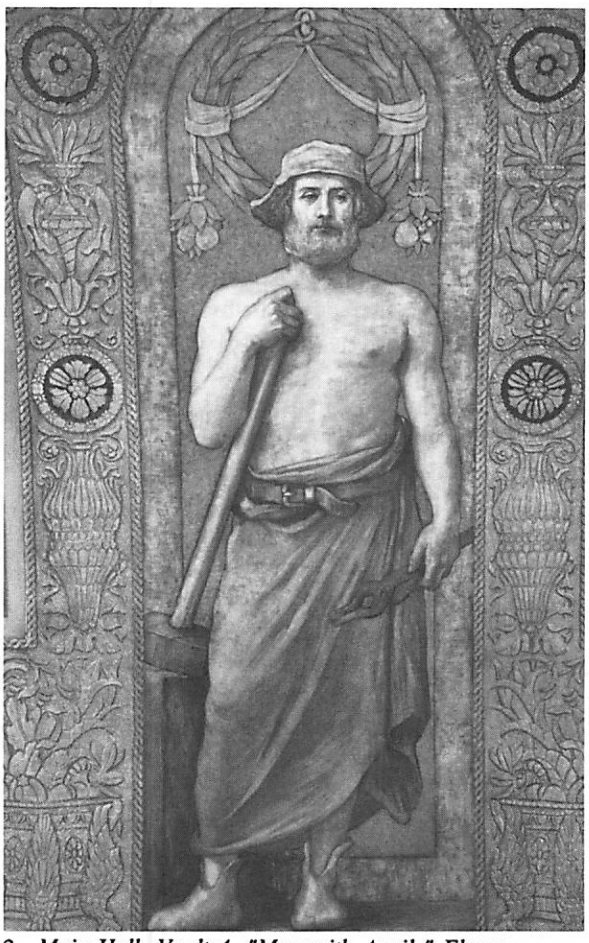
Several months into the Phase II design effort, I was appointed project manager for both phases of the restoration. It soon became clear the scope of work did not encompass items required to achieve the government's intended overall project goals. We have since modified the design contracts numerous times to better tailor the design effort to the needs of the building to serve the project in a responsive and responsible way and to ensure that no original material will be destroyed or lost.

Interior Finishes

The interior finishes and colors are the result of a close collaboration between architect Cass Gilbert and Elmer Garnsey, the period's leading decorative painter and colorist. Much of their



1. Main Hall, Vault 4--"Man with Anvil," Elmer Garnsey. Before treatment, overall figure, note previous cleaning test; normal light.



2. Main Hall, Vault 4--"Man with Anvil," Elmer Garnsey. After treatment, overall figure; normal light.

project correspondence was archived and was referenced throughout the project. The Great Hall is finished in a variety of colored marbles. Garnsey's palette of mauves, greens, greys, and tans is derived from these marbles. This palette is used throughout the building's vertical and horizontal public circulation areas: stairs, elevator lobbies, corridors, and the Great Hall's mezzanine and ornate vaulted ceiling. This three-dimensional color scheme creates a unique sense of spatial integration.

The ceiling of the Collector's Office, Great Hall, and Rotunda had escaped previous restoration efforts due to their general inaccessibility. Age, color transmutation, water infiltration, and thermal shock had left them in peril of imminent loss and in desperate need of consolidation and cleaning. Stairways, elevator lobbies, and corridors had originally been coated with a calcimine wash and had to be stripped of seventy years of failed paint and the underlying plaster stabilized. Much original hardware and many metal lighting fixtures and decorative elements were missing. Decorative bronze and plated metal grills and fixtures were badly corroded.

The Phase II restoration would therefore be a complex and difficult project requiring the skills of many highly trained material conservators and technicians in need of constant direction to keep overall composition in balance. What eighty-plus years of "benign neglect" had saved, we now wished to conserve and restore.

Restructuring and Repackaging

As the predesign materials and site investigation phase of the architect's contract progressed, it

became clear the restoration's bid documents should be rethought.

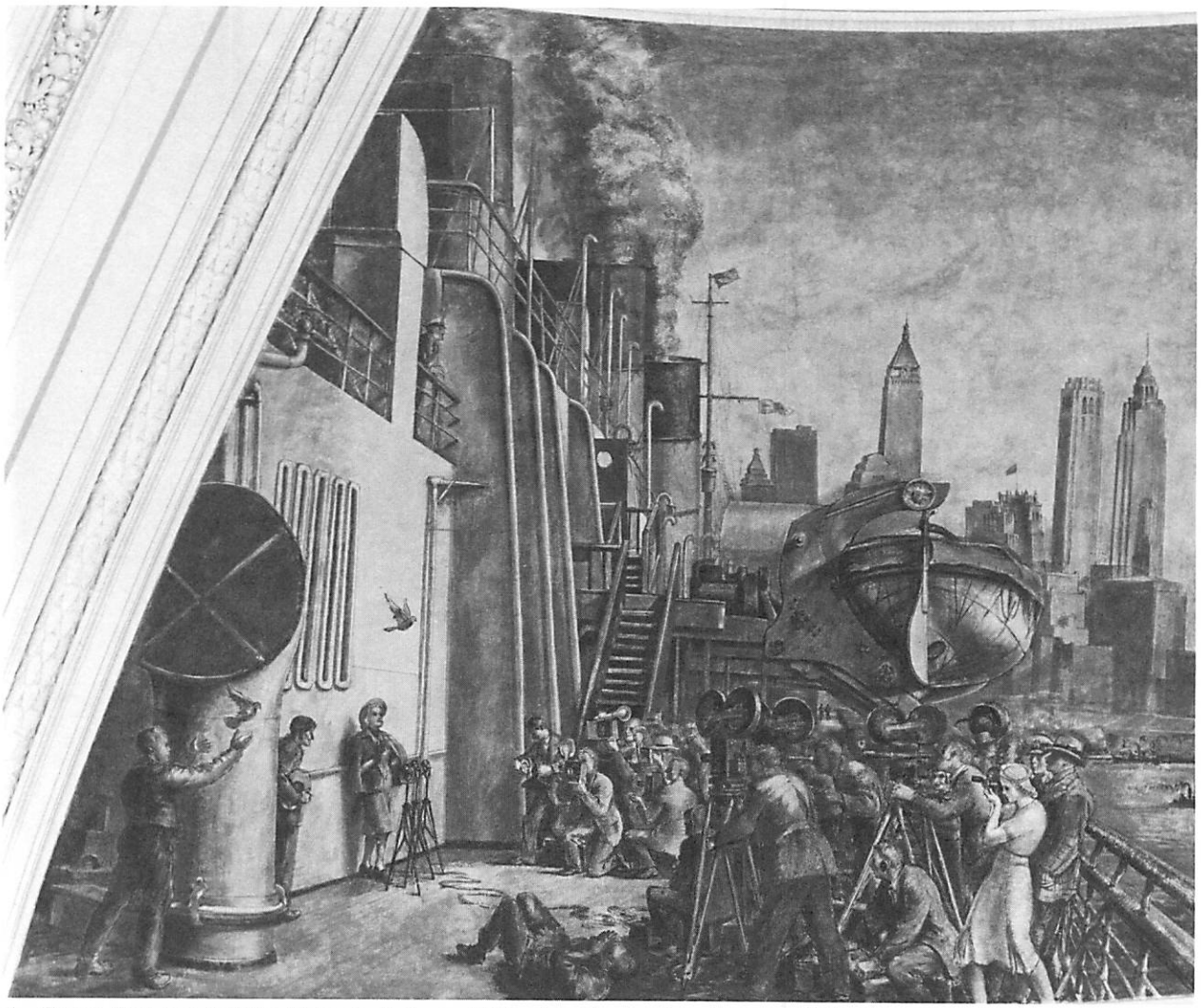
Many of the painted surfaces had unique materials, applications and levels of disintegration (Figures 1 and 2). The Great Hall ceiling of canvas, raised gesso (pastiglia), gold leaf, metal powders, oil paint, colored glazes and proteinous sacrificial coating was further complicated by extensive scumbling and stippling of the surface. Furthermore, the pastiglia showed signs of excessive cleavage and imminent failure.

The Rotunda's Marsh murals showed less complicated problems (Figures 3 and 4). Marsh had replastered the ceiling panels using a mixture rich in sharp sand. The pigments which had been applied to the dried plaster had effloresced and were tenuously clinging to the surface. The pigments needed to be consolidated and inpainted. Cleaning, it was proposed (and later proven true), would only remove pigment from the the sharp ends of the sand and result in irrevocable damage. Given the fragility of the surfaces where one frequently cleaned through a strata repeatedly before developing a technique, it was decided not to allow test "windows" to be opened by potential respondents to the government's solicitation.

The paintings conservator developed an interesting model for fine and decorative painting which protected the art work but entertained individualized conservation treatments. Simply put, the specifications would record the condition survey, material investigations, and sample treatments. On award of the restoration contract, the chosen contractor would be required to issue a detailed project schedule describing their proposed materials and methods for investigative testing, preparation of treatment standard samples, and final execution. Each step would require approval to proceed. On acceptance of the completed work, a project manual documenting the process photographically and textually would be required. This model allowed the contractor the greatest flexibility in treatment while giving the government the greatest measure of control. It also committed the government to extensive investigative and monitoring commitments. Eventually the Phase II work was procured as three contracts. The art properties contract was expanded to include fine and decorative painting, wood paneling, and decorative metals. A sculpture conservation contract was modeled on the art properties package and both were procured under the source selection process where price is secondary to the technical quality of the proposal. The general construction contract was let by competitive bid to firms which could prove comparable work in similar scale historic restorations. The Construction Quality Manager (CQM) was compelled to hire two recognized "experts" in the conservation field to monitor and evaluate the art and sculpture submissions and to advise the contract architect of what was acceptable treatment. It was hoped the arts and sculpture restorations would proceed in a spirit of collegiality and that site consultations would eliminate timely review periods. Due to the previously unanticipated high number of works requiring conservation treatment, however, the estimated cost for execution rose. To prevent having to contract the two art packages over two phases, $5 million was reprogrammed from Phase III to Phase II.



3. "Press Meets an Arriving Celebrity," Reginald Marsh. Before treatment; detail showing water damage; normal light.



4. "Press Meets an Arriving Celebrity," Reginald Marsh. After treatment; normal light.

Punched Out

Phase II was punched out in January, 1993. Phase III has been awarded to the lowest bidder. Phase II required extraordinary effort since it encompassed rethinking the architect's contract, time-consuming source selection, and closely monitored conservation practices. Phase II, in requiring the employment of recognized "experts" to monitor the work, assured the government of advice not unduly influenced by project demands of schedule and budget. Our pledge that the art work would be treated as it deserved, free of temporal expedience, was kept. The result is a restoration that responds to the aging of various materials in a harmonious way and does not appear to be anything more than a graciously aged well-maintained building of remarkable architectural and decorative merit. The Custom House restoration is ongoing. Now that the building has emerged from years of neglect, government officials compete for small projects to rectify small blemishes. High standards of maintenance are being pursued. Top governmental officials are constantly requesting tours. The building has generated sufficient interest to assure adequate funding for its care.

Most important, GSA has prepared an Historic Buildings Preservation Plan (HBPP) for the Custom House. The HBPP has zoned areas and features of the building according to historic significance. Important elements are described

and appropriate treatments are synthesized into logical sequences. The HBPP has replaced individuals with good intentions as the building's protector. The parade of architects, conservators, technicians, workmen, and government employees continues through the building. Many bring their families to show what they, as proud "fathers," accomplished for their building.

* * *

The Role of the Building as Client: A Voice for Preservation

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As we enter the Decade of the 90s, we find ourselves in a unique situation. The recession has produced a surplus of new, underutilized buildings as well as a vast stock of older structures, many of which are quite grand, often historic and usually very well located. As one very knowledgeable developer told me last year, the time is gone when we expect to simply assemble an urban site, clear the buildings and build new to suit the tenant. More often than not, we will find our current stock of existing buildings becoming, if not the total resource for the new project, at least the major core of new development. This is indeed an exciting time for our urban and suburban cores; a decade which I believe will bring a new awareness for the context of our urban scale, a renewed respect for the value of our existing buildings, and an enlightened sense of our total environment. This is truly a period of great opportunity. The question is, what will we make of it?

For preservationists, answering that question will be the most challenging. In my view, to be successful, the inevitable growth must not only incorporate the old but redefine within the existing structure all of the excitement that this growth offers. "Adaptive use allows the recapture of the value the original building once held, using it and transforming it into new energy for the future. The success of adaptive use lies in the architect's ability to seize the potential of an existing structure and use it in its new life."[1] As the title of this paper implies, I believe the building itself will be a major player in the resolution of the ultimate solution, or, in other words, the building will have a say in the determination of its best use: it will be a voice for preservation.

"Most structures chosen for adaptive use have stood for over half a century. Some have already seen more than one use. The very fact that they still stand, while so many neighboring structures have been demolished, means they have some kind of special character.... The secret of successful adaptive use is to identify that special value or character in the existing structure and fit it to the new planned use. All good architecture, old or new, must have that something special. In new buildings, the architect can create it; in old buildings, the architect must discover it."[2] In this paper, through a series of examples drawn from various buildings, I will attempt to describe the voice the architect must listen for . These examples respond to a set of issues that I have found to be most useful in attempting to better understand the unique voice of each building.

Before we start this dialogue, let me identify the issues and put them in an order with which I feel most comfortable. Not every issue exists in every building and certainly others exist, but these are the ones most likely, in my opinion, to define the qualities that create the special and *unique* characters of each building:

1. found space
2. new circulation/space organization
3. alternate space for continuing use
4. addition of new Mechanical, Electrical & Plumbing systems
5. ability to keep the building in operation/phasing
6. "usefulness" of space and "quality" of space
7. costs related to the above

So let's begin a dialogue with each of these issues, citing examples from a series of buildings that help demonstrate to me how each had a unique response to certain issues which in turn help define the ability of that building to evolve successfully into a new life. The buildings mentioned in the text are identified more precisely in the appendix, in alphabetical order. Of course, it will help if you now visualize each building, the building sensing that you have its best interest at heart and, therefore, informing you through various "clues" just how it could help you in its new life... if you listen very carefully!

1. FOUND SPACE. Central to the issue of Adaptive Use is the ability of our older buildings to provide previously underutilized space, by today's standards, to allow various new configurations that are or are perceived as more efficient, more dramatic, or simply the critical mass or area. The normal response of the architect today in "re-planning" existing buildings is, unfortunately, to re-plan in two-dimensional ways; ie., often ignoring volume, views or the visual! The ability to respond to the "three v's" can have the rewarding outcome of saving grand old buildings, which might otherwise have been destroyed, for years of renewed use. Here, the building is the best partner. Let's listen (and perhaps look) for some of the clues.

In 1968, when we first walked into Old City Hall in Boston, we found ourselves in a center area with central stairs and open cage elevators rising from the floor--and all around us thick masonry walls saying, "Keep Out." When we looked at earlier adaptive plans, there were many "bumps" of necessary fire stairs, toilets, etc., impinging on the various spaces. Yet, when we concentrated on the pattern of the masonry walls, we sensed a calm (perhaps a "sigh") of clearly delineated spaces defined by these walls. That was our clue and the solution was obvious: place all of the intrusive bumps into the single, center circulation zone and free the exterior zones for new open, rentable areas. What had been 60% usable to gross was now 80% (almost 90% for a single floor user).

In the mid-70s, H.H. Richardson's last building, the New London Train Station, was about to be razed to be replaced by a new bus station because it was old, dirty and underutilized. When we walked into its main floor, we saw a very high ceiling framed with modest timber beams supporting a second floor filled with offices off a central corridor. Looking further, we observed large trusses spanning wall to wall in a very high attic. Upon seeing the large roof trusses, the smaller second floor beams seemed to be "saying," "Look Ma, no hands," or was it "columns?" Simple examination uncovered two rods in each beam line supporting the second floor beams from the roof trusses. The logical conclusion: no structural walls on the second floor and no supports at all on the first double height level. The result: a usable basement level; new mezzanine space on either side of the new AMTRAK space; a second floor with an open plan served by a corridor on the west wall; an office floor in the attic between the trusses with an office mezzanine built on the top chord of the truss--a net add of three whole floors in addition to the original two; and the bus station located in the baggage structure.

In the early 80s, Harvard wanted to convert the Radcliffe Quadrangle, a block full of separate residential dorms around a central green, into two more traditional "Houses": a system of suites off entries supported by dining rooms, libraries, study and social spaces. The majority of the dorms were not connected; the larger ones had separate kitchens and dining areas. A new master plan by Harvard suggested the construction of two *new* buildings to provide the desired number of rooms. When we first walked through the space, we found a labyrinth of corridors, stairs connecting different building levels and in one case, a trip across a roof deck on a wooden walkway to bypass a kitchen area to reach other dorm areas. It was as if we were being told, "Someone put the stomach where the heart ought to be." From that point it was easy. The "dorms" were connected underground to a central area where one kitchen served two dining rooms at the lower level, freeing the ground floor for circulation. Rooms were developed in suite configurations which extended into the attic and captured areas of the former corridors, maintaining the separation of the existing dorms and the integrity of the central green. The result: the room count was achieved without building the proposed new structures and the

new "found" room spaces proved to be the most popular on campus.

Ellis Island was being restored to the original majesty it knew at its peak of immigration service around 1917. Its restoration challenge was clear, though difficult; the main hall with its magnificent Guastavino vaulted ceiling would be wonderfully restored. The question: how/where to interpret and present its history. As we stepped beyond this central main hall, framed by four stair towers, we felt a complete change in scale, entering corridors that passed courtyards "crying out" for use. These courtyards became the central circulation area which supports the exhibit and interpretive space.

2. *NEW CIRCULATION/ SPACE ORGANIZATION.* Our first priority issue leads directly to our second, because, usually, the issue of found space generates the necessity for new circulation to support it as described above. An existing courtyard, previously used to provide common light and air to surrounding offices now offers a different kind of "common" use, that of connection and circulation. This becomes a more common theme in existing office buildings that require larger areas for open plan office systems where we tend to draw the corridor to the window wall to maximize usable areas. We first heard this cry in the early 80s with our initial work for GSA, the Auditors Building. Faced with a minimum budget, a maximum space requirement, and a testing of the Cooperative Use Act for Public Buildings, we began with a single fact: new elevators had been added on the exterior wall. Their voice was clear--"Come to me, baby," and, without the budget to move them, we moved the corridor to the outside wall. The result was immediately effective; large open areas developed, the "funny" assemblage of isolated wings now became efficient open office centers. And in the first major reuse of an existing historic structure, the new GSA office standard of 135 SF/person was achieved. [NB: Experience has shown that this was achieved only because of total use of open system furniture. More normal mixes of office and open space areas are more nearly in the range of 150 SF/person.]

This same premise was validated in our most recent office re-use for the Department of Veterans Affairs Headquarters Building, where corridors were shifted to a large courtyard edge providing major open space on the ground floors and open areas in the wings. An interesting added benefit being considered is the potential to glaze the open courtyard and provide significant energy savings by reducing the heat loss of the sizeable number of linear feet of exterior walls in this complex courtyard configuration. The exterior walls almost return to meet each other and we might say this reaching out "asks" for closure as well as a major economic savings.

3. *ALTERNATE SPACES FOR CONTINUED USE.* Sometimes there are wonderful buildings in which viable uses still function, although all of the original space is no longer needed. Train stations serving varying needs are the most obvious example. New London "found space" in the basement supplemented its reduced first floor area. In Boise, Idaho, Morrison Knudsen purchased the local station to preserve this major landmark for the city, wishing also to maximize its use for themselves as well as to make the former grand spaces available for public functions. The challenge was clear; with only two trains a day (and those during the night), how could we serve AMTRAK and still show off the grand spaces of the original waiting room? We "tried out" three different locations for AMTRAK-- 1) in the original waiting room: minimum use, maximum space; 2) in the baggage room: second class space; and 3) in the original office area: an exact match for current AMTRAK standards for floor area, with its own separate entrance and parking area and separate orientation. The third solution "expressed" comfort as well as delight. As a result, the baggage room provided maximum use for MK's Rail Group marketing offices and the main waiting room can be restored to its original grandeur for public functions and civic pride. Simply stated, once the options were uncovered and stated, the answer was loud and clear.

4. Introducing *NEW MEP SYSTEMS* into the existing structure is often the first issue considered. I would like to suggest that this priority is wrong. This is not meant to be an outrageous statement. Once we define a clear organization of space, the location of systems

becomes obvious. For instance, in Old City Hall where major air supply ducts were considered for penetrating the two foot thick core wall, the sound was clear: "ouch!" Pipes were the choice. In the Auditors project, original ceilings were exposed with uplighting reflected off the exposed vaults and systems furniture task lighting was used, replicating the same approach used for the earliest building users--the engravers of the Bureau of Engraving and Printing. In order to use existing wall chases for original exterior fan coil locations, new pipes were run in existing wall channels and above dropped ceilings in the office areas to allow complete restoration of the historic corridors of the Ariel Rios Building. These pipes connect to existing mechanical areas in the high attic floor.

We first used this "found" attic space in the mid 70s for Mechanics Hall in Worcester, Massachusetts. On the other hand, where the top floor in the Veterans Affairs Headquarters Building is fully utilized, separate air handlers are provided on each floor to minimize ceiling drops throughout the open floor area. What is most interesting is that in each case these solutions which were developed during the detailed study of the buildings--the"dialogue," so to speak--were contrary to the original prospectus studies which were developed more abstractly.

5. This discussion of systems also leads us logically to our next issue, *KEEPING THE BUILDING IN OPERATION/ PHASING.* Almost every adaptive use project we have done has included phasing as a part of the process for a simple reason; if the building is working now, it makes sense not to lose that value. Beginning in 1970 at Old City Hall, we began "phasing" with an empty building, because the space was so popular that each floor was rented as it was finished. The more typical example is our Veterans Affairs project today, which uses existing systems to maintain operation in one half of the building while the other is being finished--work which includes new mechanicals. A switch over will occur to remove the old system during the final phase.

6. The next two issues are what it is all about: the creation of *USEFUL SPACES* and *QUALITY SPACES*! And in preservation projects, we often see the best of both worlds--wonderful quality spaces that have now become, or continue to be, useful. In its most simple form, we see the existing high office space that we would not build new today, and therefore, when simple solutions are provided for continued new use, the elegance and grandeur take on new life. The Russell Senate and Cannon House Office Buildings are most obvious examples; a complete retrofit of electrical and communications networks are fed throughout existing corridors through simple lowered and accessible ceilings to provide total new service to Senate and House offices. New ceilings in perimeter office areas of the Ariel Rios Building provided new mechanical distribution and preserved the very grand wood-trimmed and vaulted corridors of the original building. The secret to restoring the grand spaces in Ellis Island without any mechanical intrusions, while also supplying new museum quality systems, was simply to remove a wall of the existing mechanical plant building, install total new systems, rebuild the wall and run replacement supply services underground to the main building. In short, solutions to these issues are the products of clear thinking and imaginative use of the many clues provided by the building itself.

7. Finally, we come to *COSTS*. Certainly we can spend as much as we want! But because we are dealing with existing buildings which have innate value, it seems only reasonable if not completely obvious that the final cost can be less than building new structures, even with the special benefits of grander spaces and joyous details. I truly believe this. The only caveat is that we must really listen very carefully to the building so that we do not spend dollars without real gain and in this case, perhaps more than any other, the building knows best. I'll cite two quite different examples.

In converting an abandoned Central Grammar School to elderly housing in the 1970s, we achieved a cost of $25/SF compared to a new elderly housing project two blocks away, being built at exactly the same time for $42.83/SF. This allowed us to utilize the larger, existing classrooms (less demolition) and provide 900 SF apartments at a cost of only

$22,500 each compared to the newly constructed "cells" of 600 SF costing $25,700 each. This was documented by the Urban Land Institute.[3]

On a more current note and much different scale, our Ariel Rios project took on the difficult task of accepting a design-to-budget of $42 million compared to the prospectus budget of $48 million. The building is now under construction at $41.6 million.

In conclusion, the issues you have seen presented above have led from the discovery of the potential unique to each structure to a solution born of the building itself, a very willing partner. Take advantage of the opportunities .... and listen carefully!

* * *

NOTES

[1]George M. Notter, Jr., "Adaptive Use," *Encyclopedia of Architecture, Design, Engineering & Construction*: New York, NY, John Wiley & Sons, 1989.

[2]*Ibid.*

[3]*Adaptive Use: Development Economics, Process and Profiles*. Washington, DC: Urban Land Institute, 1978.

* * *

APPENDIX

Buildings Cited

Ariel Rios Federal Building, Washington, DC
Auditors Main Building, Washington, DC
Central Grammar Apartments, Gloucester, MA
Department of Veterans Affairs Headquarters Building, Washington, DC
Ellis Island National Museum of Immigration, New York Harbor, NY
Harvard University, Radcliffe Quadrangle, Cambridge, MA
Mechanics Hall, Worcester, MA
Morrison Knudsen Railroad Depot, Boise, ID
New London Railroad Station, New London, CT
Old City Hall, Boston, MA
Russell Senate and Cannon House Office Buildings, Washington, DC

* * *

Successful Alternatives for Accessibility Compliance

Milford Wayne Donaldson, FAIA
Chair
California State Historical Building Safety Board

The Americans with Disabilities Act (ADA) was signed into law on July 26, 1990 by President Bush. The purpose of ADA was to establish a clear prohibition of discrimination on the basis of disability in private sector employment, public accommodation, public service, transportation and telecommunications. Ready access to commercial and public facilities by persons with disabilities may have a profound physical and visual impact on historic buildings and their character-defining features.

The ADA specifically recognizes the importance of historic preservation and includes a number of special provisions for addressing historic properties, including their interiors. However, the intent of ADA is to have historic buildings comply with accessibility requirements in the same way as non-historic buildings. Wheelchair accessibility has been the primary focus in California for the last 14 years. However, under the ADA, a disability is defined more broadly as a permanent or temporary physical or mental impairment that substantially limits one or more major life functions.

Types of Disabilities

ADA disabilities include orthopedic, visual, speech and hearing impairments, cerebral palsy, epilepsy, muscular dystrophy, multiple sclerosis, cancer, heart disease, diabetes, mental retardation, emotional illness, specific learning disabilities, HIV disease, tuberculosis, drug addiction, and alcoholism. A person is also considered to have a disability if he or she has a record of an impairment, such as someone who has recovered from cancer, or if he or she is regarded as having an impairment, such as a burn victim who is not impaired, but who may be erroneously regarded as disabled because of it. Clearly it is important to understand the broad range of disabilities in designing accessibility provisions in any interiors of a historic building.

Accessibility Requirements and Exceptions

The ADA accessibility requirements apply to public accommodations, commercial facilities, and state and local government entities.

A place of public accommodation is a facility that falls within specific ADA categories. A facility is defined broadly to include any portion of buildings, structures, sites, complexes, equipment, rolling stock or other conveyances (such as cruise ships or floating restaurants), roads, walks, passageways, parking lots, or other real or personal property, including the site where the building, property, structure, or equipment is located.

A commercial facility is one that has operations affecting commerce and that is intended for nonresidential use. This term is broadly defined and includes factories, warehouses, office buildings, and other buildings where employment may occur.

A state or local government entity includes any department, agency, special purpose district, or other instrumentality of state or local government. Buildings and facilities that house any such office will be affected.

The ADA specifically exempts certain types of buildings and facilities from coverage. For instance, a place of lodging with five or fewer

rooms that is also the residence of the proprietor, such as a small bed and breakfast, is exempt from the requirements of ADA.

Private clubs and religious entities are also specifically exempted. Finally, the ADA does not apply to a private home that is used exclusively as a residence. However, if part of a historic home is used as a place of public accommodation, for example a dentist's office or knitting shop, the portions used in such a manner are covered. Thus the ADA would apply to any doors, entryways, hallways, restrooms, and any other portion of the residence, interior or exterior, used by customers or clients of that place of public accommodation.

Accessibility Compliance Alternatives/ State of California

Under the ADA, interior modifications to existing historic buildings should conform to the Americans with Disabilities Act Accessibility Guidelines (ADAAG). Deviations from ADAAG are acceptable when full compliance is not readily achievable as long as they do not pose a health or safety risk to people with disabilities. Alterations to the interiors of historic buildings, including restorations and rehabilitations, must meet specific accessibility requirements.

The State of California established the State Accessibility Standards for Physically Disabled Persons in 1976 as published in the California Building Code, Title 24, Part 2. These standards applied to all buildings and sites, regardless of their historic significance. Full compliance with these access requirements sometimes resulted in destroying the character-defining features of historic buildings, especially interior portions.

In 1974, the California State Department of Parks and Recreation created the California Landmarks Advisory Committee (later to become the State Historical Resources Commission). The Landmarks Committee created the California History Plan. Finding No. 11 of the History Plan expressed the need for a new building code to meet the intent of protecting the public health and safety by allowing "enough flexibility to allow restoration of a historic building while still retaining its historical integrity." The History Plan further stated that "...restoration... is frequently made difficult by unnecessarily rigid interpretations of building codes."

The State Historical Building Code (SHBC) became State law effective January 1, 1976. In 1985, the SHBC became the mandatory code of use for all qualified historic buildings. On September 7, 1990, the SHBC was extended indefinitely and imposed a state-mandated local program of enforcement of the SHBC. An appellate body, the State Historical Building Safety Board, acts as an appeals board for the enforcement of the SHBC.

Under the provisions of SHBC, new work is to conform to the regular code, while all the elements of the existing structure, including questions about egress, accessibility and site, are afforded the latitude of appropriate alternatives. Further, both old and new work is expected to meet the Secretary of the Interior's Standards for the work performed on historic buildings. Moreover, program and design decisions regarding the work should, in turn, be informed by a Historic Structures Report. This report documents the resource, describing, analyzing, dating and evaluating historic materials and finishes. In this way, a comprehensive record of the building is established, and a hierarchy of historic values and significance can be developed with which to direct both program and design. The adverse impact to a historic building and its interior spaces, features and materials as a result of meeting accessibility standards can then be determined in a more exact and logical fashion.

On April 20, 1989, the State Historical Building Safety Board clarified and adopted the definition for a qualified historic building or resource. "A Qualified Historical Building or structure is any structure, collection of structures, and their associated sites, deemed of importance to the history, architecture, or culture of an area by an appropriate local state, or federal governmental jurisdiction. This shall include designated structures declared eligible or listed on official national, state, or local historic registers or official inventories such as the National Register of Historic Places, State Historic Landmarks, State Points of Historical Interest, and officially adopted city or county registers or inventories of historical or architecturally significant sites, places, or

landmarks. Structures included in inventories submitted to the Office of Historic Preservation shall be considered qualified if they have been evaluated by the Office and given any rating other than ineligible."

California law mandates the use of the State Historical Building Code for all qualified historic buildings within the State. Included by statute are all State buildings at least 50 years old, unless specifically excluded by a current official listing of historic resources published by the agency having jurisdiction and approved by the State Historic Preservation Officer (SHPO). Any work on such buildings, which could affect the historic integrity of the structure or its setting, requires review by SHPO and, as appropriate, consultation with the State Historical Building Safety Board. Under the Americans with Disabilities Act the SHPO should be consulted if a building owner feels that full access compliance would "threaten or destroy" the significance of a qualified historic property. The SHBSB has submitted the SHBC to the Justice Department for their review and codification.

The Purpose and Intent of the SHBC

It is the purpose of the SHBC to provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy so as to preserve their architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, to provide reasonable means of access compliance, and to provide for the safety of the building occupants.

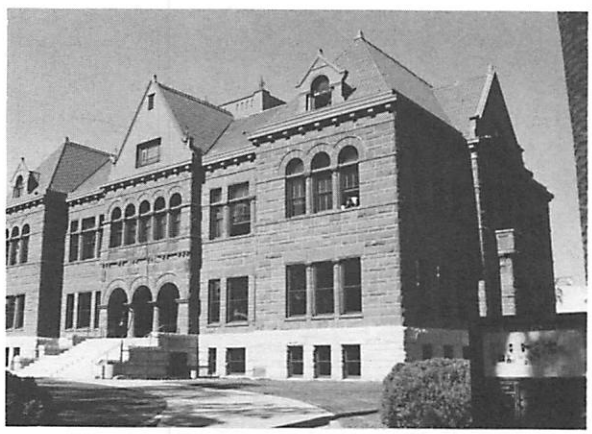
It is the intent of the SHBC regulations to provide means for the preservation of the historic value of qualified buildings and sites and, concurrently, to provide reasonable safety from fire, seismic and wind forces, or other hazards, for occupants of such buildings. The code is also intended to provide full and reasonable access to all portions of a historic building, and thus to provide for the independent enjoyment of the disabled community while maintaining the significant historic fabric.

The regulations control and allow alternatives to prevailing codes when dealing with qualified historical buildings or sites. The SHBC is intended to meet the special provisions of the ADA.

Since 1976, the SHBSB has reviewed and acted upon 236 cases. Of these cases, over one-third or 87 access compliance cases have been reviewed. The SHBSB keeps on file all appeal cases for reference by the general public. The SHBSB encourages that meetings be held with the local enforcing agency and the local accessibility compliance agencies to provide reasonable alternatives for ADA compliance. Following disagreement and the inability to reach a conclusion, the project can be appealed to the State Historic Preservation Officer in consultation with the SHBSB.

Case Study: The Orange County Courthouse

The following project was reviewed for compliance with Title 24, California State Accessibility Standards for Physically Disabled Persons using the provisions of the State Historical Building Code. The solutions presented do not necessarily comply with all of the requirements set forth in the Americans with Disabilities Act. The project presented emphasizes the approved mitigation measures to meet the intent of Title 24 Accessibility Standards and to protect the historic fabric and



1. Orange County Courthouse, South Facade.

character-defining features of the building.

The Orange County Courthouse, a Richardsonian Romanesque three-story sandstone building was built in 1901 as the County seat (Figure 1). In 1988, a new County Courthouse was built and the old Courthouse was rehabilitated for use as a museum with County and Federal offices. A portion of the rehabilitation was to improve resistance to seismic (earthquake) forces and to provide full accessibility for disabled persons. A museum-quality restoration of the Courthouse following the Secretary of the Interior's Standards was performed.

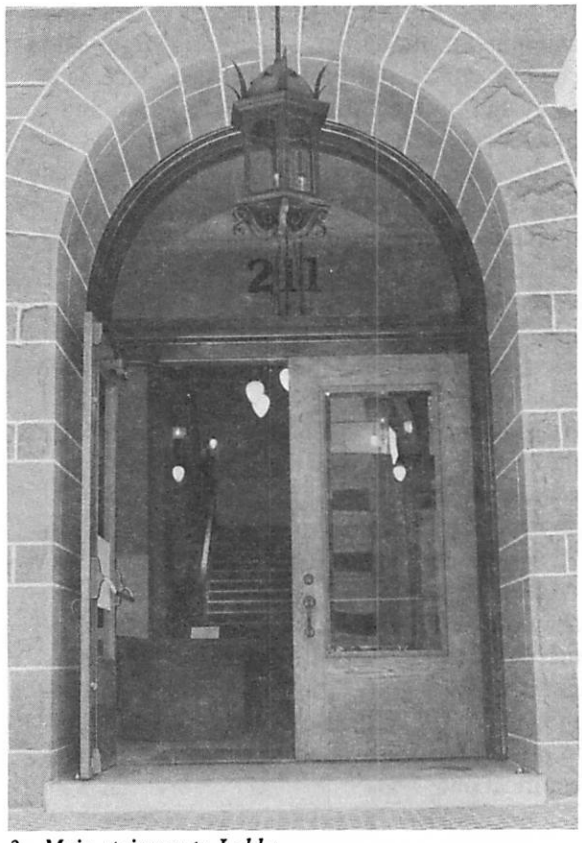
The following changes were made to the existing Courthouse to accommodate and promote the use by the disabled community:

1. Exterior Access. The original exterior granite stairs were kept intact (Figure 2). The introduction of automobiles replaced the horse and buggy front "parking lot." The parking area was now at the north side of the building and became the main entry by all persons to the Courthouse. A portion of the original walkways was regraded to provide wheelchair access. A simple, non-intrusive ramp was designed to allow disabled persons and the general public to enter the Courthouse. A push-paddle handicap entry level with an automatic door opener was retrofitted to the existing wood basement door.

2. Elevator. The original elevator was kept, even though it did not meet rescue criteria for gurney access. The original elevator controls were maintained and raised markings, flashing alarm lights, voice floor indicators and an emergency telephone were added for the blind and hearing impaired. The elevator was directly off the first and second floor lobbies. The original lever activated floor stop control had been modified in the 1960s for automatic response.



2. Exterior granite stairway to Main Lobby.



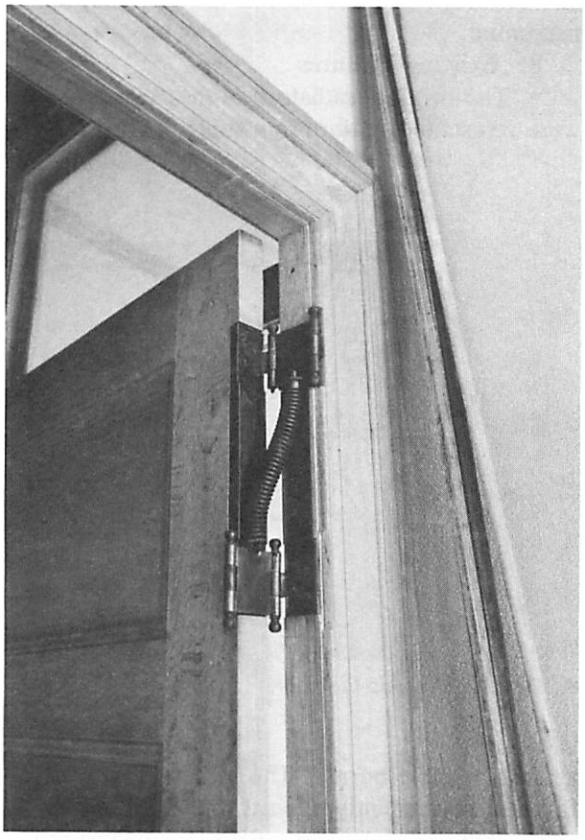
3. Main stairway to Lobby.

3. Doorways. All of the existing doors were 36" wide with knob type hardware, friction hinges and wood thresholds 1" thick. The friction hinges were retrofitted with ball bearing inserts. The knob-type hardware was able to be set in an open position so the doors could be easily pushed open at public areas (Figure 3). The existing pot-belly type door closers were machined and rethreaded to allow the doors to be opened with less than 3 lbs. pressure. A 12" kickplate was added at the bottom of the door at the exterior hinge side only. The wood thresholds were slightly beveled to a ¼" thickness at the public corridor side to allow wheelchair access and the slope of the bevel was 1:4 ratio. Offset hinges were installed at doors less than 32" wide to help provide a larger

opening (Figure 4).

These modifications to the doors were minor and did not change the character-defining features of the historic fabric.

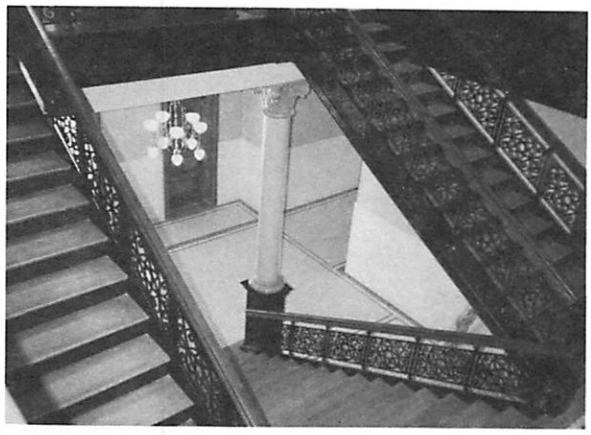
4. Accessible Restrooms. The historic restrooms on the second floor were original, with very few modifications over the years. There was a strong desire to restore the restrooms to the historic 1901 condition. Therefore, new men's and women's restroom facilities with full access compliance features



4. Detail of offset door hinge hardware.

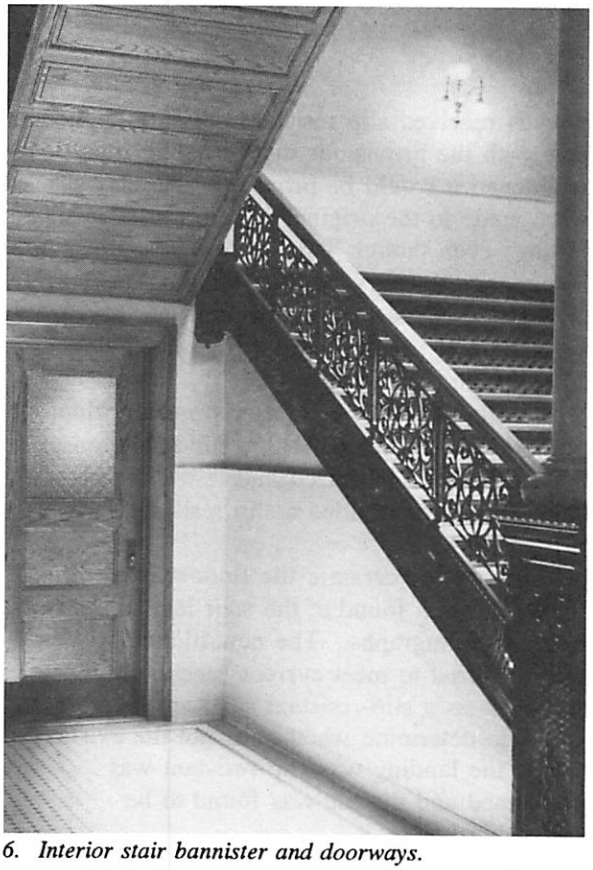
were constructed within an existing storeroom on the first floor. Doors to the new restrooms were retrofitted with lever type hardware. The historic restrooms were restored and are used by the general public.

5. Stairway. The existing stairway was restored to its historic condition (Figure 5). The historic ornate open grillwork at the risers allowed air movement throughout the building via the large central louvered tower. Since this was an important feature prior to air-



5. Entrance with prismatic glass walkway.

conditioning, the fire marshal allowed the opened grillwork to remain with additional fire sprinklers. The grillwork was also allowed to remain even though the openings did exceed the maximum ½" opening of Title 24 handicap requirements (Figure 6). All marble stair



6. Interior stair bannister and doorways.



7. Courtroom doors with historic hardware.

threads received slip resistant pressure applied tape with the provisions that on-going maintenance would be provided. No changes were made to the original handrail or protective railings even though Title 24 requires full compliance to stairways in a building served by an elevator. The original handrail has a grip surface of 3" across, greater than the Title 24, 2" maximum requirement.

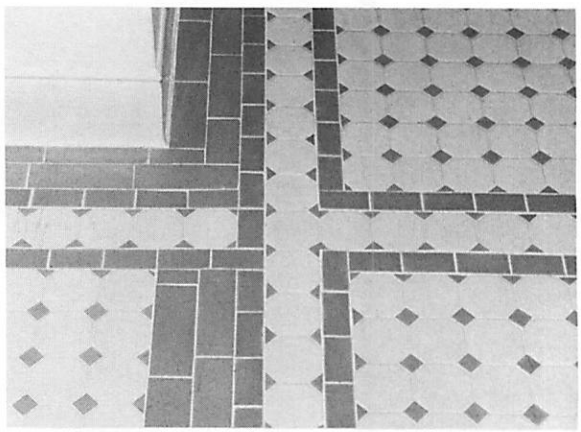
6. Flooring. The exterior prismatic floor glass lites were treated with a mild solution of muriatic acid, neutralized and tested for pH balance. This provided a slip resistant surface (Figure 5).

The interior ceramic tile floor was recreated from remnants found at the stair landing and historic photographs. The new tile was manufactured to meet current accessibility standards as a slip-resistant surface (Figure 8). A test to determine whether or not the existing tile on the landing was slip-resistant was performed and the tile was found to be acceptable.

7. Lighting. Reproduction fixtures were made using for documentation historic photographs and construction details from the historic salvaged fixtures found in the attic. The original light levels were increased by larger bulbs to help facilitate the visually impaired. However, several of the original wall sconces were installed at the original height of 5'-0". To date, there have been no problems with persons running into them, although Title 24 requires a minimum of 80" clear. The original push-button light switches remained in place at 42" off the floor, well within the Title 24, 54" maximum.

8. Existing Features

- The original radiators in the corridors were reinstalled but are non-functional to protect against possible burns. The radiators were also fastened permanently against the walls to prevent overturning. No barriers were installed, since the radiators were against the wall and could easily be touched by a cane.



8. Detail of ceramic tile floor.

- The ceramic tile wainscoting was recreated. All fire pull stations were mounted at the top of the wainscot at +52", well within the 54" maximum.
- A new accessible drinking fountain and public telephone were installed near the elevator lobby. These elements are out of view from the historic lobby.
- The Courthouse was restored to its original condition as a museum. Wheelchair access to the witness stand, jury box and judge's

bench was not provided because it would have destroyed the historic furnishings.

- Fire Exit signs from the 1930s were retrofitted with a higher illumination bulb to provide better visibility.

In summary, the Orange County Courthouse provides equal and reasonable access and use by disabled persons. In most cases, the modifications to the existing historic fabric were sensitive and modestly performed. A detailed plan of action and compliance was the result of a cooperation between the Office of the State Architect, the Orange County Building and Safety Department, Heritage Orange County and the Orange County Historical Commission, Access Compliance Officer and the Architect. Several possible solutions were discussed and analyzed before they were implemented. The result is a museum-quality restoration which provides the highest level of accessibility, and meets the Secretary of the Interior's Standards.

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All photographs by Milford Wayne Donaldson, FAIA.

Planning and Implementing Modifications for Accessibility in Historic Buildings

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To provide independent physical access to historic buildings, careful planning is required to ensure that both the goals of access for persons with disabilities and the preservation of the historic resource are met. With the passage of the Americans with Disability Act of 1990 (ADA), it is now a fundamental civil right for all members of society to have access to most public places, including historic properties. The Americans with Disabilities Act builds on earlier Federal accessibility legislation, namely the Architectural Barriers Act of 1968, the Rehabilitation Act of 1973, and the Fair Housing Act of 1988. Federal historic preservation legislation must also be considered. The Historic Preservation Act of 1966, as amended, is the Federal law which established a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic sites, objects, buildings, landscapes, and structures. Only by proceeding in a systematic way can the goal of achieving the highest level of access without threatening or destroying those elements that convey the historic significance of the resource be met.

The Americans with Disabilities Act (ADA) recognizes that "qualified" historic buildings (those listed or eligible for listing in the National Register of Historic Places, and those designated as historic under state or local laws) may not be able to achieve full accessibility as required for new construction or renovated non-historic buildings. For this reason, Congress established minimum standards for access to historic buildings that might otherwise be seriously affected by implementing complete barrier removal. Most historic buildings undergoing renovation can meet or exceed these minimum standards without threatening or destroying those elements that make a building historically significant. The challenge then is to find solutions that provide a high level of access within a preservation context.

A 3-step planning process provides a useful framework for identifying and implementing appropriate accessibility solutions:

- Identify the architectural materials, features, and spaces that convey the significance of the historic property.
- Evaluate the historic property for compliance with accessibility requirements.
- Evaluate alternative solutions for accessibility within the preservation context using the Secretary of the Interior's Standards for Rehabilitation.

Identifying Significant Architectural Materials, Features and Spaces

Because the Americans with Disabilities Act (ADA) affords protection to those qualities that make a property significant, a critical first step is to identify exactly what must be protected. A good resource for identifying significant elements of historic properties is the National Register of Historic Places Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, which outlines criteria for listing in the National Register. The State Historic Preservation Office (SHPO) and local historical societies are also helpful sources for information when collecting data on a property and

evaluating its significance.

The most significant elements of a resource must be identified if they are to be preserved. Elements that contribute to the historic character of the property, both when seen at a distance and at close range, should be identified and listed according to their contributing value: primary, secondary, or non-contributing. Primary or highly significant character-defining elements would include those spaces, features and finishes and materials that clearly reflect the design intent of the architect or builder; major spaces and their sequence in plan; decorative elements and finishes that exhibit a high level of craftsmanship; and character-defining site and landscape features. These elements should be protected to the greatest extent possible when making modifications for accessibility. On the exterior, character-defining elements might include articulated front entrance porches, decorative wrought iron railings, landscaped walkways, or carved door enframements. Interior elements might include primary public spaces, public corridors, floor finishes, decorative trim, or main staircases. Secondary elements might include less visible elevations of buildings, side entrances, service corridors, and support and service spaces. Non-contributing elements might be modern additions or alterations which are insensitive, or do not relate to the building or site's period of significance. This hierarchical listing will be important when options for alterations are considered after evaluating accessibility needs.

Evaluating the Historic Property for Compliance with Accessibility Requirements

The first step in evaluating accessibility requirements is to know exactly what is required. Federal, State and local governments, as public entities, are required to provide access to all programs and to the extent possible all public buildings. Private owners of buildings used for public accommodations and commercial enterprises have varying responsibilities to provide access under the ADA based, in part, on what is readily achievable and whether there are any forthcoming alterations. Because State laws and local codes may in fact be more stringent than the accessibility required under Federal law, assistance from State accessibility compliance officials as well as accessibility specialists may be helpful. In any event, the most stringent accessibility requirement for each element should be followed if more than one law or code applies to the building or site.

In order to evaluate a property's compliance with accessibility requirements, it is advisable, particularly for larger projects, to undertake a building evaluation or an accessibility audit to identify architectural barriers. Depending on the size and complexity of a historic property, it may be advisable to hire an architect or consultant to conduct an accessibility audit. These audits generally will cite deficiencies for the visually and hearing impaired in addition to identifying architectural barriers.

At historic properties undergoing alterations, the following areas must be evaluated:

- Access from parking or public right of way (van parking, special designated parking for persons with disabilities, curb cuts, etc.)

- Path of travel across site to building or feature (texture of walk, grade and cross slope, ramps, railings, obstructions)

- Access into building (ramps, platforms, thresholds, door swings, door widths, door hardware)

- Path of travel on principal floor (corridor width, door widths, clearances, level changes, pressure required to open doors, floor surface, protruding objects)

- Access to goods and services on principal floor (access to rooms for meetings with offices located on inaccessible floors, telephones, water fountains, and bathrooms, if provided)

- Vertical access to other levels within building (exterior grade changes, elevators -if provided, lifts, stairs)

While an important goal of the new accessibility laws is to improve access into existing buildings that are not accessible, or have limited access, the greatest challenge for owners of historic buildings may be providing adequate access to public areas inside without compromising

historic interiors. Depending on the size, plan, corridor widths, existing door widths, and the possibility of including vertical circulation, it may be difficult to eliminate all the barriers identified in the audit because doing so might threaten or destroy those elements identified as significant to the historic property. Under all federal accessibility laws, changes are not required that would "threaten or destroy" the significance of a building or facility.

Considering Accessibility Solutions within a Preservation Context

While various design guidelines, such as the Americans with Disabilities Accessibility Guidelines (ADAAG) and the Uniform Federal Accessibility Standards (UFAS), can assist a building owner in altering entrances and removing physical barriers, all changes must be evaluated to determine whether or not significant elements can be preserved in the process of making the building or site accessible. Under the ADA, if an owner of a qualified historic property feels that alterations required to make the property accessible would threaten or destroy significant elements, special provisions may be invoked if the State Historic Preservation Office (SHPO) is consulted. If it is determined by the SHPO that compliance with accessibility requirements would threaten and destroy the significance of the property or facility, then the following minimum requirements may be used:

- One accessible route must be provided from a site access point to an accessible entrance. Using a ramp with a 1:6 slope is permissible for a run of up to 2 feet.

- One accessible entrance must be provided. If it is not possible to make the public entrance accessible, then an alternative, unlocked entrance is acceptable. Directional signage at the primary entrance and a notification system at the accessible entrance must be provided.

- If toilets are provided, only one must be accessible, and it may be unisex.

- Public spaces on the level of the accessible entrance must be accessible, and other public levels should be accessible whenever practicable.

- Displays and written information should be located where they can be seen by a seated person. Horizontal signage should be no higher than 44 inches above the floor.

While technical guidelines have not yet been issued to define the key threshold phrase, "threaten and destroy," the Secretary of the Interiors *Standards for Rehabilitation* (revised 1990) are useful for gauging the impact of accessibility alternatives for historic buildings. The Secretary of the Interior's *Standards for Rehabilitation*, developed in the 1970s, provide guidance for approaching physical work on historic properties. They acknowledge the need for historic buildings to be adapted to changing uses and to be modified to meet new requirements, such as fire safety, new mechanical systems, and barrier removal for accessibility. At the same time the Standards recommend preserving significant materials, features, finishes, and spaces. When rehabilitation projects are undertaken that include work to comply with accessibility requirements, the Standards that are particularly applicable are numbers 2,5,9, and 10 (see page 8-39).

In light of modifications that would be required to make a historic property accessible for persons with disabilities, the following guidance is suggested:

- Preserve and retain historic materials to the maximum extent possible.

- Preserve the historic character of the resource; alterations should not threaten or destroy those elements that make the property significant.

- Alterations should be compatible with the scale, proportion, materials and quality of workmanship that comprise the historic resource.

- Additions to the historic property should be compatible in size, scale, and materials, and, for the most part, should be reversible, so that if removed in the future the essential form and integrity of the property remains intact.

• The design of new features for a historic property should be compatible with the design of the historic property but discernable as a new feature

Depending on the modifications required to make each property accessible (based on the building audit and the owner's financial ability to undertake renovation), solutions should be considered that provide the highest and most direct level of access. This option should then be considered in light of its impact on historic features. For example, if a designated parking space for use by a disabled person can be located close to a building's public entrance without a significant impact on the building or its landscape, this option should be given early consideration. If the entrance can be made accessible with a threshold modification and an automatic door opener, then these changes should be implemented as well.

When historic features, such as monumental stairs, are critical in defining the historic character of a building and they cannot be altered without threatening or destroying the building's significance, then alternative entrances on secondary elevations should be considered. For less significant entrances where there are only a few steps, it may be possible to rebuild the steps to form a smooth and sufficiently sized entrance platform incorporating either a ramp or a mechanical lift, if well positioned and detailed.

Further, if it determined in consultation with the State Historic Preservation Officer (SHPO) that compliance with the alternative minimum requirements would also threaten or destroy the significance of a historic building, alternative methods of access may be used. This exception is a narrow one and will apply to a very small group of buildings. For example, if a subterranean feature of a museum, such as an icehouse, cannot be made accessible without altering the essential historic qualities of that icehouse, it may be possible to provide a photographic exhibit adjacent to it or a video at the accessible visitors' center. Or if a restaurant is located in a narrow row building in a hilly historic district and the only entrance cannot be made accessible, then carry-out service or home delivery should be considered as an alternative.

Modifying Historic Interiors to Improve Accessibility

Historic interiors require careful planning to provide the most effective path of travel to public spaces, and to minimize change to significant interior features and spaces. The widths of door frames, for instance, may pose an architectural barrier that may or may not be appropriate to remove. Whenever possible, significant interior space configurations should not be altered, particularly if another solution would be equally effective when located in an architecturally less significant space. In large buildings, there are generally more options for meeting most accessibility requirements for doors, floor surfaces, bathrooms, amenities, seating, and vertical circulation.

While design guidelines, often containing hundreds of pages, are quite explicit for required changes when major renovations are undertaken, it is less clear how historic buildings, each of which is unique, should be modified. Some barriers will be readily evident, and may have been brought to an owner's attention by a code official or by a person with a disability. Some barriers can be removed by designating a path of travel that circumvents them; others may need to be physically removed. Some common accessibility solutions for historic interiors are outlined below.

Doors are one of the most common barriers to persons with disabilities. Doors can be modified in several ways to improve accessibility without destroying their character. It may only be necessary to retrofit some doors with add-on lever handles, or to change a small number of door knobs to lever handles. Another solution is to fix interior door knobs in the open position to retain historic doorknobs. At the same time, it may be necessary to improve door opening pressures on historic doors, and this can be accomplished by adding automatic door openers, or by retrofitting hardware on historic doors. The width of a historic door opening can be increased by 1 to 1 1/2 inches by installing off-set hinges which swing the door out of the clear opening. Most guidelines call for 32" clear openings; most wheelchairs are 26"-28" wide and can fit through many existing doorways less than 32" clear if no structural modifications are planned. All of these solutions

can usually be implemented with minimal impact to the character of historic interior doors.

Floor surfaces may require modification to improve accessibility. Door thresholds greater than 1/2" are often barriers in historic buildings, but can be sympathetically modified. Two methods are generally acceptable: adding bevels to each side of the threshold or removing the threshold entirely. Stable, slip-resistant floor surfaces are required for interior spaces, and occasionally this may necessitate the selective application of adhesive grit tapes at level changes or on stairs. Many historic floor finishes have been covered in the recent past with carpeting which can impede the movement of a wheelchair. These original finishes, such as wood and tile, can be restored to their original appearance and fully meet the surface requirements.

Historic bathrooms may have significant fixtures such as structural glass partitions, urinals, or pedestal sinks that are characteristic of the historic period of the property. Larger bathrooms can often be reconfigured to provide fully accessible toilet units. Care should be taken to follow the design guidelines, including covering hot water pipes and providing an accessible mirror, sink and towel dispensers. If it is not possible to make a bathroom accessible, it may be acceptable to install a new, unisex bathroom in a secondary space on the accessible floor.

Other historic features may require modification. *Seating* in historic interiors, such as a theater, for example, can be made accessible by selectively removing seats along the aisles or at the center of the front and rear sections. Whenever possible, the location of the accessible seating spaces should be varied to afford people with disabilities a choice of seating, and the seating should be along an accessible route. *Amenities* must also be considered for persons with disabilities. Significant historic *water fountains* should be retained, and if they are not accessible according to the requirements for height and projection, new water fountains should be sensitively integrated in historic interiors. If *telephones* are provided, it may be possible to install the same unit at a more accessible height, or replace it with one that provides a TDD (Telecommunications Device for the Deaf) for the hearing impaired. Historic mail chutes and lobby *postal boxes* integrated into paneled or marble interiors may be especially significant to historic interiors and inaccessible to persons using wheelchairs. Whenever these amenities cannot be modified without threatening or destroying their significance, additional new amenities or services should be provided.

Elevators and Lifts

The addition of elevators may or may not be required by various codes depending on the size and use of the renovated historic property. Large historic buildings, such as hotels and offices, often contain banks of elevators. Care should be taken to preserve significant public lobbies and historic elevators. If the existing elevator cab size is adequate, it is often possible to successfully retrofit the cabs with new electric eye safety beams, a second lowered operator's panel, or a wand lever if the historic panel cannot be lowered.

Mechanical lifts can often be used on the historic interior to overcome several steps at level changes. This can be accomplished with a small elevette lift or with an inclined lift. Again, as with any major feature, care should be taken to plan the location and design of these new elements in a way that preserves significant historic spaces, features, and finishes.

Stairs and Railings

Historic stairs and hand railings are sometimes the most significant features of historic interiors. Often these features do not have to be removed or even substantially altered. In some cases, additional rails at the proper height and configuration can be added, leaving the historic features intact. Color-contrasting adhesive and tactile strips can also be added sometimes to stair nosings to assist people with visual impairments. In corridors or lobbies where the underside of the staircase may project into the path of travel, it is important to design a feature, such as a planter, balustrade, or seating arrangement, to prevent those with visual impairments from inadvertently walking into this space.

Conclusion

Historic properties require a special stewardship to ensure that they will be preserved to the maximum extent possible. Accessibility is a civil right for all persons, and as Americans we must strive to make existing buildings accessible. Special provisions have been established for "qualified" historic buildings to prevent modifications that would threaten and destroy their significance in the process of making them accessible. The challenge at hand for buildings owners is to follow through on the three-step planning process of identifying the significant elements of their historic properties, determining what accessibility regulations apply to their specific projects, and evaluating available options for making these properties as accessible as possible within a preservation context. Owners cannot usually do this without some assistance. It takes a team approach using specialists in both accessibility and historic preservation to balance the needs of both. By using the Secretary of the Interior's Standards for Rehabilitation as a guide for evaluating modifications that do not threaten or destroy the significant spaces, finishes, or features of a property, the goals of the ADA and existing accessibility legislation can be met.

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