

***A SUMMARY OF THE WOOD FLOOR
RESTORATION –
The Henry Morrison Flagler Museum
Whitehall***



***Palm Beach, Florida
September 1998 – June 2005***

Overview

Constructed in 1902, Whitehall was the winter home of Henry Morrison Flagler and his wife Mary Lily Kenan Flagler. This 60,000 square foot mansion was designed by the distinguished team of John Carrere and Thomas Hastings. Both had trained at The Ecole des Beaux Arts in Paris and apprenticed with the New York firm of McKim, Mead & White. Whitehall was instrumental in Mr. Flagler's vision of turning the southern coast of Florida into, as he put it, "the American Riviera". From Christmas until late February, Whitehall was the center of the social world for the Gilded Age. Mr. Flagler made good use of Whitehall and the Royal Poinciana Hotel in his strategic thinking to showcase the Florida coast to potential investors. Guests would arrive via Mr. Flagler's rail line, the Florida East Coast Railroad and stay at the 55 room Whitehall, the Royal Poinciana facing Lake Worth or at his beachfront hotel The Breakers. There was a constant feeling of electricity as the guest list included the movers and shakers of the Gilded Age.

Whitehall stayed very active until 1913 when Mr. Flagler died. It was closed for several seasons and was visited by Mr. Flagler's widow only once more in 1917. She died later that year.

In the mid-1920's Whitehall was sold to a group of investors who added a ten story, three hundred room tower and converted the building into a hotel. The hotel operated from 1925 until 1959. With its closing in 1959 and under the threat of demolition Mr. Flagler's granddaughter, Jean Flagler Matthews, formed a nonprofit organization to purchase the property and launch it on its current journey as one of America's top historic museums.

In the 1990's, John M. Blades assumed the stewardship of Whitehall as Executive Director. Along with Sandra Barghini, Chief Curator, the two embarked on an ambitious restoration program that would bring Whitehall back to its original luster and position as the cornerstone of the Palm Beach social world. It is only fitting that the home Henry Morrison Flagler, constructed to help build and develop the state of Florida, still serves the community with exhibits, lecture series, concerts and a host of other cultural events that enrich and

broaden the lives of the Palm Beach community. Within recent years the Flagler Museum has expanded its facilities with the addition of the Kenan Pavilion. The inspiring architecture of the pavilion, Mr. Flagler's private rail car and the handsome view of Lake Worth further compliment an already historic structure. Due to the investment of resources, time and talent of the Executive Director and the Board of Directors, Whitehall has emerged as one America's premier historic museums showcasing the life and times of one of America's greatest visionaries, Henry Morrison Flagler.

Scope of the Restoration of the Wood Floors

Under the best of circumstances the wood floors of any 100+ year old structure would be faced with challenges. Considering the history of Whitehall, especially its 30 year life as a hotel and the climate of south Florida, these challenges were multiplied. In the initial inspection of the wood floors, several conditions were noted that underscored the issues that needed to be resolved;

1. Significant termite damage from previous termite infestation. In time, it was determined that the most significant damage occurred in the corner rooms of the home (The French Parlor, The Colonial Chamber & Green Room, The Morning Room and the Master Bedroom) and in rooms with maple flooring.
2. Excessive loss of original flooring materials from multiple and cross directional sanding from previous refinishing. This was particularly true in rooms where the design of the wood did not allow for sanding to follow the direction in which the wood was laid. Examples would be the herringbone pattern of the maple floors in the French Parlor, the herringbone pattern in the quarter sawn oak of the Music Room and the French parquet pattern of the quarter sawn oak of the Ballroom.
3. Selective or partial sanding around area rugs and furniture. A common practice in large homes with large decorative area rugs. The rugs would be rolled or folded back so that the work was only on wood flooring exposed around the perimeter of the rug. This would often result in

- different rates of ageing of the wood and finish as well as slight variations in the height of the floor surface.
4. Massive accumulations of a variety of finishes on the wood surface. In areas where selective sanding had occurred, older finishes were found under the area rug that may have been original finishing products. Although testing was not done to determine the chemical properties, its appearance and characteristics along with what would have been popular at the time would suggest the product was shellac. In areas that had experienced a more recent sanding, the product was moisture cured polyurethane. This high gloss industrial grade finish has long been a favorite in moist and warm coastal climates. Whereas the higher levels of humidity would retard and aggravate the drying and curing of traditional and more conventional finishes, moisture cured urethane would not experience the same problems and thus became a favorite of the wood flooring trade in these areas.
 5. Modest amounts of damage from water and UV exposure around windows and exterior doors. This damage translated into compression set (expansion & contraction creating large gaps) and a wood that was much more brittle and prone to cracking.

Based upon the condition of the wood floors in the various rooms, the objectives of the wood floor work were as follows:

- To remove all surface accumulations without any additional aggressive or traditional sanding that would result in the loss of more wood.
- To remove and replace all pieces of wood showing signs of termite damage. The repairs had to be done without compromising the structural integrity of the tongue and groove installation.
- To finish the floors with the most color stable coatings available and produce a look that would be compatible with the original work.

- To apply coatings that would not require extraordinary and/or exceptional maintenance.
- To conduct the work with an emphasis on dust containment and cleanliness. The museum was fully furnished and although the furniture could be removed, adjacent rooms were not emptied and the museums environmental system could not be compromised.
- To conduct the work in such a manner that the museum would remain operational and that would allow the public to view the restoration work. The safety and security of the museums staff, the visiting public and workers involved in the wood floor restoration could not be compromised.

Photo Documentation

The work on the first phase of the restoration of the Flagler Museum began in September of 1998. The French Parlor was the focus of attention. The floor in the French Parlor was a maple herringbone design in the field with a pattern design around the perimeter of the room of maple, beech and mahogany. The room had significant build up of finishes and widespread termite damage. All flooring was tongue and groove and the thickness and width was non-standard. All replacement wood had to be milled on site, in the room.



This photo is a good example of the type of termite damage to be resolved. This pattern was in the border of the French Parlor. The damaged cavities had been filled with wood filler from previous work.

When the coatings were removed from the maple the termite damage was more visible. Coatings were always removed before any repair work started in order to inventory the scope of repairs needed..



Another photo showing the damage as it appeared in the before stage. The lighter color is the wood filler (sheet rock mud) that had been forced into the cavity to repair the wood.

After the coating has been removed, the contrast reverses with the damaged areas being darker and the wood being lighter. This facilitated identifying the damaged pieces and defining the extent of repair needed.





Here you see one of the workers replacing damaged maple in the herringbone pattern in the French Parlor. The surface level of a damaged piece was lowered by 3/8ths of an inch. This maintained the structural integrity created by the original tongue and groove installation. Once the newly created cavity was cleaned and sized properly, a new piece of maple flooring was glued into place.

A side profile view of damaged wood removed along the border of the Colonial Room. Looking carefully at the top surface no damage is apparent. A side profile view tells the real truth of what was quietly going on!





The proof of the dust containment is shown by the open door between the Music Room, where the work was going on, and the Library which was fully furnished. The door was left open while work was in progress.

The darker outline here is where an area rug had been placed. The floors had been refinished around the rug. The lighter area, on the right side and bottom, were from finishes applied in 1960. The darker area in the upper left quadrant is the older finish that would most likely date back to the time Whitehall was converted to a hotel.





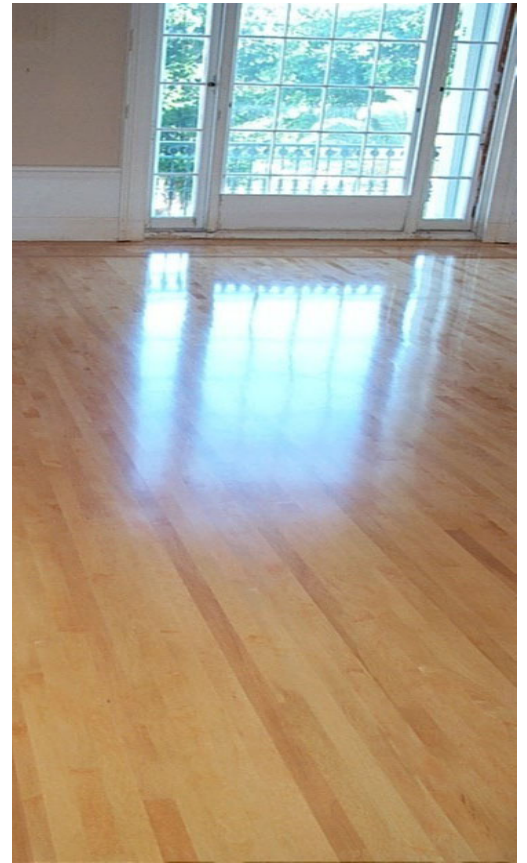
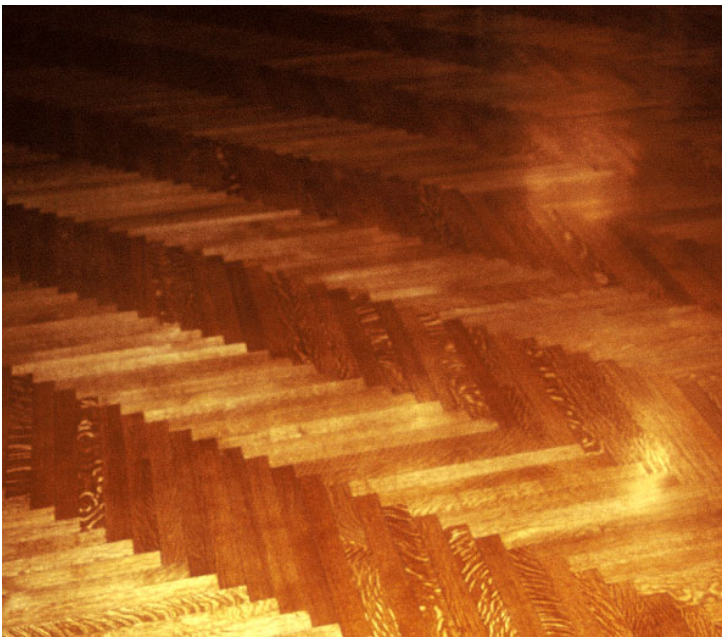
Here you see the results of the coatings coming off the oak floor in the Library. In the foreground is the old honey colored coating prior to its removal. In the background you see the bare quarter sawed white oak after coatings have been removed. No sanding was involved in the removal.

The black circular object in this image is the old honey colored finish after it has been put back into solution using the chemical cleaners. The honey background color around it is a result of the wood being wet. Once it dries out, it will assume the lighter color as the oak flooring seen above. It has been determined that the darkness of this pool is actually from the dirt that the old finish had accumulated over the years. The blue object is a roll of masking tape to help judge the dimensions of the pool.



The remaining photos being presented are a collection of images that reflect the challenges faced, their resolution and a collection of “afters”.





The restoration work on the wood floors of the Henry Morrison Flagler Museum in Palm Beach, Florida began in September of 1998. The work was divided up into 10 separate phases. Each phase lasted an average of 5 weeks. The final phase was completed in June of 2005. The total square footage of wood floors completely restored was in excess of 23,000 square feet. Over 11,000 hours of labor was required to complete the work. All original flooring restored was never sanded using conventional machinery or methods. There was no measurable loss of original wood flooring material. All chemicals used were VOC compliant, biodegradable and did not generate any hazardous materials. During the restoration work, over 3,000 individual pieces of damage wood flooring were repaired. During the restoration the Flagler Museum was open to the public and there were no interruptions of the museums work or activities. In most instances the visiting public was able to observe the work in progress.

The Rosebud Co. is deeply indebted to the staff and Board of Directors for providing us with the opportunity to work on one of America's premiere historic properties.

Michael Purser

Rosebud Co. – Atlanta, Ga.

