

Draft
TOSY

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From March 1977 through September 1977, the North Atlantic Historic Preservation Center conducted an investigation of Touro Synagogue's interior and exterior finishes. The purpose of this investigation was to determine the earliest (1763) finishes used at the structure and to recommend restoration finishes.

Investigations -- Determination of the 1763 appearance of Touro Synagogue requires identification of 1763 architectural fabric and the subsequent taking of paint samples from this fabric for analysis. In an effort to identify 1763 architectural fabric, a review of historical documents was conducted. The most important document reviewed was an article written by Esther Schwartz concerning the restoration of Touro Synagogue in the late 1950's. This article presents Mrs. Schwartz's views regarding the physical history of the structure. It is Mrs. Schwartz's belief the structure was severely damaged during the Revolutionary War and that the Ark original to 1763 was subsequently replaced in the latter part of the 18th century. Furthermore, Mrs. Schwartz feels that large portions of this Ark were replaced in 1827, when extensive restoration of the structure took place. Therefore, according to Mrs. Schwartz, the existing Ark does not date from 1763. Furthermore, if one accepts Mrs. Schwartz's hypothesis that the structure was severely damaged during the Revolutionary War, then one is forced to conclude that little of the interior architectural fabric dates from 1763. In an attempt to confirm this hypothesis, portions of the Ark and sections of the railing surrounding the bema were investigated. This investigation focused on the types of nails and screws used

*U. H. C. is
1763
1827
1850
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000*

in the Ark and in the railing. X-rays were taken of these areas. It was hoped that these x-rays would show what types of nails were used and thus help to determine whether these areas date from 1763 (wrought nails would have been used) or late 18th century (cut nails would have been used). The x-rays indicate that some of the nails used to construct these areas might be wrought, but the majority of the nails appear to be cut and, therefore, later than 1763.

In addition to the x-ray investigation, two screws were removed from the Ark door hinges and compared with other early screws. This comparison indicates that one of the screws was hand-made and could in fact date from the construction of the Synagogue in 1763. In contrast, the other screw was machine-made. This suggests the possibility that the doors date from later than 1763 and that the hand-made screw was reused in these later doors. Another possibility is that the existing doors do in fact date from 1763 and that a number of the original hand-made screws were replaced with machine-made ones at an early date. In summary, the x-ray investigation and comparison of screws did not provide a basis for conclusive verification or refutation as to the age of the existing Ark.

Paint Study -- In conjunction with the attempts to determine 1763 architectural fabric, paint analysis was conducted. Paint samples were taken from 47 locations throughout the structure and returned to the North Atlantic Historic Preservation Center for study. This paint study consisted primarily of visual analysis employing a binocular microscope. The paint sequence was recorded and the resulting data compared. From this study as well as the other studies, the 1763 finishes of Touro Synagogue appear to be the following:

Interior --

Walls: Unpainted ^{plaster} or Whitewash

Trim: Gray

Exterior --

Walls: Unpainted Brick

Trim: Cream

Restoration Recommendations -- With respect to the paint study, it should be noted that we do not recommend that the 1763 colors be used for restoration purposes. This recommendation is based on the fact that the principle interior element of the Synagogue, the Ark, probably does not date from 1763, but rather from the late 18th or early 19th century. Besides the fact that ^{restoration of} interior finishes ^{to their 1763 appearance} would have no relation to the existing Ark, restoration of the exterior ^{to its 1763 state} would result in accelerating the deterioration of the brick. Given these facts, it is recommended that restoration be to ^{exact date?} ~~the 1828 period~~ - The earliest ^{time} ~~period~~ that all portions of the present Ark can be dated to. Furthermore, restoration of the exterior to this period would contribute to its preservation and would result in an authentic representation of the finishes of Touro Synagogue at one point in time.

APPENDIX

Paint Analysis --

On the following pages are records of the aforementioned paint analysis. The paint layer sequence is recorded and subsequently followed by selection of the layer(s) to be color matched for recommended finish restoration of the Synagogue. The color comparison was conducted under a light which approximates a northern sky light (a light which eliminates a large percentage of the color distortion inevitable with other lights). In some instances the samples were placed under an ^{near} ultra-violet light for bleaching purposes. The samples were compared with the Munsell Color Notation System, Benjamin Moore's Moor-o-Matic Color System, and Lucite Designers 1 Color System. Future analysis should include color matching incorporating the spectrophotometer. Also, a more thorough study of pigments and materials is imperative for a comprehensive paint analysis. All samples used in this study are on file at the North Atlantic Historic Preservation Center in Boston, Massachusetts.

BUILDING -- Touro Synagogue

LOCATION OF SAMPLE -- East Exterior Wall

NAHPC IROS CODE NUMBER -- P 2201 012

BASE MATERIAL -- Brick

NUMBER OF PAINT LAYERS IN SAMPLE -- Approximately 19

SEQUENCE OF LAYERS -- Brick
Brown with Sand
Cream
Red
(5) Cream
Light Green
Cream
Light Green
(3) Cream
(5) Beige

RECOMMENDED RESTORATION

→ COLOR NOTATIONS -- Munsell 7.5YR 8/4 with sanded finish

Lucite Bain de Soleil 63-4-B

COMMENT -- Based on the fact that the exterior walls are laid up in Flemish bond, as opposed to common bond, it seems likely that the exterior in 1763 was unpainted. The earliest finish that was applied to the structure was the brown with sand and may date from the 18th century. It is felt that the red is from the mid-19th century when a number of prominent structures were so painted.

BUILDING -- Touro Synagogue

LOCATION OF SAMPLE -- Portico

NAHPC IROS CODE NUMBER -- P 2201 046

BASE MATERIAL -- Wood

NUMBER OF PAINT LAYERS IN SAMPLE -- Approximately 17

SEQUENCE OF LAYERS -- Wood

(2) Cream

Dark Brown

(2) Cream

(3) Redish Brown

(3) Dark Redish Brown

Dark Brown

Brown

Light Brown with Sand

(2) Dark Brown

Light Brown with Sand

RECOMMENDED RESTORATION

→ COLOR NOTATIONS -- Munsell 5YR 4/1

Lucite Uptown 78-5-D

COMMENTS -- It seems likely that the creams preceding the dark brown correspond to the period the body of the structure was unpainted. The dark brown probably corresponds to the period the body of the structure had a sanded finish.

BUILDING -- Touro Synagogue

LOCATION OF SAMPLE -- North Wall of Gallery

NAHPC IROS CODE NUMBER -- P 2201 041

BASE MATERIAL -- Plaster

NUMBER OF PAINT LAYERS -- Approximately 11

SEQUENCE OF LAYERS -- Plaster
Oil
Cream
Carmel
Light Carmel
Cream
Gray
(4) Off White
Cream

RECOMMENDED RESTORATION

→ COLOR NOTATIONS -- Munsell not matched

Whitewash

COMMENTS -- This sample is a 1/4 inch skim coat put over the original plaster surface. This coat was probably put on in 1827-28 when extensive restoration of the Synagogue is believed to have taken place. Since no paint was found under the skim coat, it seems likely that the interior walls were originally whitewashed or left unpainted.

BUILDING -- Touro Synagogue

LOCATION OF SAMPLE -- Fragment of Trim Removed from President's Seat
in the 1950's

NAHPC IROS CODE NUMBER -- P 2201 047

BASE MATERIAL -- Wood

NUMBER OF PAINT LAYERS -- 3

SEQUENCE OF LAYERS -- Wood
Gray
Red
Green

RECOMMENDED RESTORATION

→ COLOR NOTATIONS -- Green - Munsell 5GY 8/2

Benjamin Moore 20-61

COMMENTS -- The color corresponding to the Ark presently in the Synagogue is the green. The red and gray are the interior trim colors used when an earlier Ark was in place. Munsell and Benjamin Moore colors were matched for the red and gray and are noted below:

Red -- Munsell 2.5R 3/6
Benjamin Moore 30-35

Gray -- Munsell N 6.5/
Benjamin Moore 16-37

BUILDING -- Touro Synagogue

LOCATION OF SAMPLE -- North Door of Ark Hinge

NAHPC IROS CODE NUMBER -- P 2201 028

BASE MATERIAL -- Metal

NUMBER OF PAINT LAYERS -- Approximately 15

SEQUENCE OF LAYERS -- Metal

Green
(3) Light Yellow — Light Green
(6) Cream
Burgundy
Green
Dark Gray
Light Gray

RECOMMENDED RESTORATION

→ COLOR NOTATIONS -- Munsell 5GY 8/2
Benjamin Moore 20-61

COMMENTS -- Based on research conducted by Esther Schwartz in the 1950's as well as our study of the screws used to attach the hinges to the Ark doors, we do not believe the present Ark is original to the 1763 construction of the structure. Therefore, the green color matched probably

dates from the late 18th century at the earliest. However, Mrs. Schwartz's

research indicates that this color dates from the 18~~20~~28 restoration of

the Synagogue. -- the color found beneath the painting of the Decalogue above the Ark and dated to 1828.

is this the color behind the painting.

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