

INTRODUCTION

Scientific paint analysis is based upon the removal of small samples of the accumulated paint layers on original architectural elements of a building, in order to determine by microscopic investigation the early colors of such elements, the sequence of application of finishes, and an appropriate color match for restoration.

PROCEDURE

In November 1996, three hundred and thirty (330) samples were removed from the interior and exterior of the Tenement Museum, located at 97 Orchard Street, in New York City. Interior samples were taken from the 3rd, 4th and 5th floor halls, toilets and apartments, and the exterior samples were removed from the facade storefront. Included in the study were fragments from the walls, floors and ceilings, doors and door frames, window sash and frames, cabinets and plumbing pipes and gas lines.

In January 1997, seven (7) additional samples were removed from the 2nd floor apartment in the northeast corner of the building. These samples were taken to confirm observations about walls that had been moved.

The samples were removed with an X-acto blade, and contained portions of the substrate as well as complete surviving paint layers. Samples were taken to the laboratory and examined in cross-section using a stereo-binocular microscope at twenty to eighty power magnification. Information derived from laboratory work includes:

- color chronology of each cross-section
- color matching of appropriate finishes
- chemical identification of some pigment components

Color matching was done under a fiber-optic light with daylight simulating filters. Colors were matched to the Munsell Book of Color (1976 edition). The Munsell color number follows the significant color layers identified in the color chronology listings for each feature, located in Appendix I. Color chronologies begin with the first finish found in the sequence and end with the color presently visible.

The color name chart devised by the national Bureau of Standards has been used as a guide to color names for significant paint layers in this report. They are referenced by the initials NBS following the color name.

PAINT SAMPLE LOCATIONS

Exterior Store Front (Appendix 1, Page 1)

- E-1 window frame
- E-2 rope mold on column - corner of window
- E-3 beside corner column - door frame
- E-4 center door - jamb
- E-5 original cast iron storefront at street level

Windows (exterior face unless otherwise noted) (Appendix 1, Pages 2-3)

- W-1 3rd floor hall toilet frame
- W-2 3rd floor hall toilet sash
- W-3 Apt. 9 - sash of air shaft window
- W-4 Apt. 8 - sash of air shaft window
- W-5 Apt. 9 - frame of air shaft window
- W-6 Apt. 8 - frame of air shaft window
- W-7 upper sash of window on floor in front apt.
- W-8 lower sash of window on floor in front apt.
- W-9 interior face of upper sash of window on floor in front apt.
- W-10 interior face of lower sash of window on floor in front apt.
- W-11 Apt. 8 - air shaft window frame
- W-12 5th floor - air shaft window frame
- W-13 lower 2/2 sash (found in parlor of Apt. 12, propped against wall)
- W-14 upper 2/2 sash (found in parlor of Apt. 12, propped against wall)

2nd Floor Hall (Appendix 1, Page 4)

- H2-1 gas riser at head of stairs

3rd Floor Hall (Appendix 1, Pages 5-7)

- H3-1 pressed metal wall
- H3-2 metal ceiling
- H3-3 metal ceiling
- H3-4 ceiling under metal
- H3-5 ceiling under metal
- H3-6 stair riser
- H3-7 bars to Apt. 10 bedroom
- H3-8 bathroom door frame
- H3-9 Apt. 7 door frame
- H3-10 Apt. 7 door
- H3-11 Apt. 10 frame of bedroom window

Paint Sample Locations, continued

- H3-12 gas riser to front apts.
- H3-13 gas riser to back apts.
- H3-14 gas riser to hall lights @ head of stairs
- H3-15 wall surface beneath pressed metal, outside of Apt. 10
- H3-16 metal ceiling under stairs
- H3-17 beaded board wainscot
- H3-18 east toilet door
- H3-19 burlap covering on wall

4th Floor Hall (Appendix 1, Pages 8-10)

- H4-1 pressed metal wall
- H4-2 beaded board wainscot
- H4-3 metal ceiling
- H4-4 ceiling under metal
- H4-5 stair baluster
- H4-6 stair stringer
- H4-7 bars to bedroom window of Apt. 13
- H4-8 Apt. 13 door frame
- H4-9 Apt. 13 transom frame
- H4-10 Apt. 13 door, lower panel
- H4-11 east toilet door frame
- H4-12 east toilet door
- H4-13 gas riser - rear of building
- H4-14 gas riser - front of building
- H4-15 Apt. 14 door frame
- H4-16 Apt. 14 transom frame

5th Floor Hall (Appendix 1, Page 4)

- H5-1 pressed metal ceiling

3rd Floor Toilets (Appendix 1, Page 11)

- T3-1 east toilet - front of west wall
- T3-2 east toilet - back of west wall (1905 renovation)
- T3-3 east toilet - rear wall
- T3-4 east toilet water supply pipe
- T3-5 east toilet gas line
- T3-6 west toilet water supply pipe
- T3-7 west toilet gas line

Paint Sample Locations, continued

4th Floor, East Toilet (Appendix 1, Pages 12-13)

- T4-1 west wall, upper portion, near door (now cream)
- T4-2 west wall, lower portion, near door (now green)
- T4-3 west wall, upper portion, near window
- T4-4 west wall, lower portion, near window
- T4-5 south wall, upper portion
- T4-6 south wall, lower portion
- T4-7 window frame
- T4-8 window sash
- T4-9 water pipe
- T4-10 gas pipe

Apartment 7 (Appendix 1, Pages 14-21)

Kitchen

- 7-1 wall beside gas shelf
- 7-2 wall behind small sink
- 7-3 beaded board below window in front of tub sink - upper portion
- 7-4 beaded board below window in front of tub sink - lower portion
- 7-5 beaded board enclosure for tub sink
- 7-6 chair rail - west wall
- 7-7 chair rail - south wall
- 7-8 baseboard - south wall, behind door
- 7-9 baseboard - north wall
- 7-10 baseboard - west wall, under window
- 7-11 ceiling
- 7-12 kitchen/parlor window - sash
- 7-13 kitchen/parlor window - inner stile of frame
- 7-14 kitchen/parlor window - outer molding of frame
- 7-15 kitchen/bedroom window - sash
- 7-16 kitchen/bedroom window - frame
- 7-17 kitchen/parlor door - lower portion of frame
- 7-18 kitchen/parlor door - upper portion of frame
- 7-19 kitchen/parlor door - transom
- 7-20 kitchen/hall door - transom
- 7-21 gas shelf
- 7-22 glass-door cupboard in SW corner
- 7-23 shelf with water pipes underneath

Paint Sample Locations, continued

- 7-24 solid door cupboard
- 7-25 drain pipe
- 7-26 wall behind drain pipe
- 7-27 old water pipe
- 7-28 water pipe bolted to wooden shelf
- 7-29 gas pipe over stove area
- 7-30 corner pipe chase
- 7-31 baseboard - west wall between windows
- 7-32 baseboard - east wall

Apartment #7 - Parlor

- 7-33 floorboard - NE corner inside closet
- 7-34 ceiling
- 7-35 window frame
- 7-36 panel beneath window
- 7-37 door frame - lower molding
- 7-38 door frame - upper molding
- 7-39 transom frame
- 7-40 closet door
- 7-41 cupboard

Bedroom

- 7-42 east wall
- 7-43 south wall
- 7-44 baseboard - east wall
- 7-45 baseboard - north wall
- 7-46 floorboard - NE corner
- 7-47 ceiling
- 7-48 bedroom/kitchen window - frame
- 7-49 bedroom/hall window - frame
- 7-50 frame of door to adjoining apartment

Miscellaneous

- 7-51 parlor - west wall above chair rail
- 7-52 parlor - west wall behind chair rail
- 7-53 parlor - west wall below chair rail
- 7-54 kitchen - transom frame
- 7-55 kitchen - west baseboard
- 7-56 parlor - north wall, NW corner

Paint Sample Locations, continued

Apartment 8 (Appendix 1, Pages 22-29)

Kitchen

- 8-1 north wall beside gas meter shelf
- 8-2 north wall below small sink
- 8-3 wood support for small sink
- 8-4 north wall behind tub sink, east of seam near baseboard
- 8-5 north wall behind tub sink, west of seam near chair rail
- 8-6 north wall behind tub sink, west of seam near baseboard
- 8-7 chair rail - north wall, east of seam behind tub sink
- 8-8 chair rail - north wall, west of seam behind tub sink
- 8-9 beaded board tub enclosure
- 8-10 south wall, SE corner
- 8-11 south wall, fireplace segment
- 8-12 south wall, SW corner
- 8-13 west (parlor) wall
- 8-14 east (bedroom) wall
- 8-15 baseboard - SW corner of south wall
- 8-16 baseboard - west wall
- 8-17 floorboard - SW corner
- 8-18 ceiling
- 8-19 gas shelf
- 8-20 open shelves, north wall
- 8-21 glass-door hanging shelf, north wall
- 8-22 hanging cabinet - south wall
- 8-23 kitchen/parlor window - frame
- 8-24 kitchen/parlor window - sash
- 8-25 kitchen/bedroom window - frame
- 8-26 kitchen/hall door - lower portion of frame
- 8-27 kitchen/hall door - upper portion of frame
- 8-28 kitchen/hall door - transom frame
- 8-29 kitchen/bedroom door - lower portion of frame
- 8-30 kitchen/bedroom door - upper portion of frame
- 8-31 kitchen/bedroom door - transom frame
- 8-32 kitchen/parlor door - lower portion of frame
- 8-33 kitchen/parlor door - upper portion of frame
- 8-34 kitchen/parlor door - transom frame
- 8-35 parlor door

Paint Sample Locations, continued

- 8-36 drain pipe
- 8-37 vent pipe
- 8-38 water pipe semi-embedded in wall
- 8-39 water pipe not embedded in wall
- 8-40 gas pipe at north wall
- 8-41 gas pipe in SE corner for water heater

Parlor

- 8-42 east wall, below window
- 8-43 west wall
- 8-44 floor board - NE corner inside closet
- 8-45 ceiling
- 8-46 parlor/kitchen window - frame
- 8-47 window frame
- 8-48 cabinet in NE corner

Bedroom

- 8-49 north wall
- 8-50 south wall at chimney
- 8-51 south wall west of chimney
- 8-52 bedroom/hall window - frame
- 8-53 air shaft window - frame

Miscellaneous

- 8-54 kitchen - north baseboard, east of seam
- 8-55 kitchen - north baseboard west of seam
- 8-56 kitchen - tub sink

Apartment 9 (Appendix 1, Pages 30-36)

Kitchen

- 9-1 kitchen wall, SE corner
- 9-2 kitchen wall SW corner beside fireplace
- 9-3 kitchen wall beside gas meter ghost
- 9-4 beaded board beside sink
- 9-5 beaded board behind removed sink

Paint Sample Locations, continued

- 9-6 kitchen face of wall between bedroom and kitchen
- 9-7 kitchen face of wall between parlor and kitchen
- 9-8 window frame between kitchen and parlor
- 9-9 transom between kitchen and parlor
- 9-10 door frame between kitchen and parlor - upper portion
- 9-11 kitchen/parlor door - lower portion of frame
- 9-12 kitchen/hall door frame - upper portion
- 9-13 door frame between kitchen and hall - lower portion
- 9-14 kitchen shelves - front face
- 9-15 kitchen shelves - 1/4 round shelf support on west side
- 9-16 kitchen drain pipe and surrounding plaster
- 9-17 water pipe

Parlor

- 9-18 parlor face of wall to kitchen
- 9-19 north wall beside closet
- 9-20 north wall, in corner beside fireplace
- 9-21 east side of fireplace
- 9-22 north wall, under wallpaper samples
- 9-23 door frame - stile
- 9-24 door frame - outer molding, south of seam
- 9-25 door frame - outer molding, north of seam
- 9-26 door
- 9-27 baseboard - north wall
- 9-28 baseboard - east wall, between windows
- 9-29 baseboard - south wall, beside fireplace
- 9-30 fireplace molding
- 9-31 fireplace enclosure boards
- 9-32 floor in corner near east wall

Bedroom

- 9-33 wall to kitchen
- 9-34 wall on opposite side of hall
- 9-35a SE corner wall
- 9-35b upper reveal of transom
- 9-35c original water pipe partially embedded in wall

Paint Sample Locations, continued

Kitchen Pipes

- 9-36 pipe A
- 9-37 pipe B
- 9-38 pipe C
- 9-39 pipe D
- 9-40 pipe E
- 9-41 pipe F
- 9-42 pipe @ south wall beside fireplace, from ceiling
- 9-43 pipe for water heater, coming up from floor
- 9-44 gas pipe behind kitchen door - horizontal section
- 9-45 gas pipe behind kitchen door - lower pipe vertical section, near ceiling
- 9-46 top gas pipe, coming in from hall

Apartment 10 (Appendix 1, Pages 37-42)

Kitchen

- 10-1 wall beside gas meter shelf
- 10-2 south wall, east of seam
- 10-3 south baseboard, west of seam
- 10-4a south wall, seam of baseboard
- 10-4b south wall east of seam
- 10-5 north wall above old sink
- 10-6 west wall below tub sink
- 10-7 west wall behind tub
- 10-8 plaster wall infill below window to bedroom and beaded chair rail behind tub sink
- 10-9 beaded board above tub sink
- 10-10 west wall casement
- 10-11 west wall window frame
- 10-12 kitchen face of door frame between kitchen/bedroom
- 10-13 kitchen/parlor door frame - upper portion
- 10-14 kitchen parlor door frame - lower portion
- 10-15 kitchen/parlor door
- 10-16 kitchen/parlor window frame
- 10-17 kitchen/parlor window sash
- 10-18 glass front hanging cabinet
- 10-19 pipe chase in NW corner
- 10-20 cabinet over sink
- 10-21 gas meter shelf

Paint Sample Locations, continued

- 10-22 steel water pipe
- 10-23 cast iron drain pipe
- 10-24 gas pipe from water heater
- 10-24a gas pipe to water heater

Parlor

- 10-25 east wall in SE corner
- 10-26 NW corner, wall beside fireplace
- 10-27 beaded chair rail, east wall
- 10-28 baseboard, east wall
- 10-29 window frame
- 10-30 cupboard face
- 10-31 door frame, lower portion
- 10-32 north wall, beside chimney, under wallpaper

Bedroom

- 10-33 south wall
- 10-34 east wall below window

Miscellaneous

- 10-35 parlor - north chair rail
- 10-36 parlor - south chair rail
- 10-37 parlor - east chair rail, between windows
- 10-38 parlor - east wall, above chair rail
- 10-39 parlor - east wall, below chair rail
- 10-40 bedroom - west wall, patched area

Apartment #13 (Appendix 1, Pages 43-50)

Kitchen

- 13-1 north wall beside gas shelf
- 13-2 north wall above chair rail
- 13-3 north wall east of seam
- 13-4 north wall west of seam
- 13-5 east (parlor) wall
- 13-6 south wall @ fireplace
- 13-7 west wall (bedroom)

Paint Sample Locations, continued

- 13-8 wood frame for sink, north wall
- 13-9 north chair rail, east of seam
- 13-10 north baseboard, east of seam
- 13-11 north baseboard, west of seam
- 13-12 south baseboard
- 13-13 parlor window frame
- 13-14 parlor window sash
- 13-15 bedroom window frame
- 13-16 parlor door frame - lower portion
- 13-17 parlor door frame - upper portion
- 13-18 parlor door transom
- 13-19 bedroom door frame - lower portion
- 13-20 bedroom door frame - upper portion
- 13-21 bedroom door transom
- 13-22 hall door frame - lower portion
- 13-23 hall door frame - upper portion
- 13-24 hall door transom
- 13-25 gas shelf
- 13-26 open shelves in SW corner
- 13-27 front face of glass-door cabinet
- 13-28 iron pipe @ tub sink location
- 13-29 steel pipe @ tub sink location
- 13-30 horizontal water pipe
- 13-31 gas pipe in SW corner

Parlor

- 13-32 east wall above chair rail
- 13-33 east wall below chair rail
- 13-34 south wall above mantel
- 13-35 floor inside closet
- 13-36 north baseboard, inside closet
- 13-37 east baseboard
- 13-38 north chair rail, inside closet
- 13-39 east chair rail
- 13-40 frame of exterior window
- 13-41 panel below exterior window
- 13-42 picture rail, east wall
- 13-43 picture rail, south wall

Paint Sample Locations, continued

- 13-44 mantelpiece
- 13-45 fireplace enclosure boards
- 13-46 closet in NW corner

Bedroom

- 13-47 south wall @ chimney
- 13-48 south baseboard
- 13-49 hall window frame
- 13-50 air shaft window frame
- 13-51 air shaft window sash
- 13-52 bedroom - east wall
- 13-53 bedroom - air shaft window frame
- 13-54 parlor - wall under picture rail in closet

Apartment #14 (Appendix 1, Pages 51-52)

Kitchen

- 14-1 iron pipe embedded in plaster (front)
- 14-2 iron pipe embedded in plaster (rear)
- 14-3 steel pipe (front)
- 14-4 steel pipe (rear)
- 14-5 pipe enclosure in NW corner
- 14-6 gas pipe at chimney wall
- 14-7 pipe to gas meter
- 14-8 gas pipe @ ceiling

Parlor

- 14-9 wall above built-in closet

Apartment 4 (Appendix 1, Page 13)

Kitchen

- 4-1 Drain pipes from tub sink

Paint Sample Locations, continued

Apartment 6 (Appendix 1, Page 53)

Parlor

- 6-1 south wall baseboard, east of moved wall
- 6-2 south wall, east of baseboard
- 6-3 south wall baseboard in “ghost” of moved wall
- 6-4 south wall, in “ghost” of moved wall
- 6-5 south wall baseboard, west of moved wall
- 6-6 south wall, west of moved wall
- 6-7 ceiling in “ghost” of moved wall

OBSERVATIONS AND CONCLUSIONS

The sheer number of paint layers on each sample removed from the Tenement Museum makes analysis difficult. Apartment walls that have never been altered exhibit an average of 37 to 39 layers of paint. Because the building was occupied for 72 years (from 1864 through 1935), simple statistical analysis shows that the interior surfaces were painted approximately every two years. This is believable in a rental building with a high rate of tenant turn-over, where repainting would have been used as a way to freshen apartments. Counting the layers of paint, and using a rough guide of two years per layer, provides a crude dating tool, but it is one that can only be used in the aggregate. Using layers on one sample to date an individual feature is suspect because any one sample cannot be reliably complete unless compared with others from similar features.

There are many reasons why individual samples may be incomplete. The thick build-up of paint breaks apart easily, and this fracturing occurred both during sampling, and during the use of the building. Thus, two samples from the same element, say a baseboard, from different sides of a room, may have different color sequences when seen under the microscope. It is possible, though not probable, that the baseboard was painted different colors in different parts of a room at the same time. It is more likely that the uniformly painted baseboard was accidentally chipped as part of normal wear and tear, or purposely scraped during repainting, so that new paint was applied over much earlier, intact layers, though not necessarily the layer which had chronologically preceded it.

The consistency of the colors found within the individual indicates that paint for the building was derived from a common source. The building owner probably provided repainting services to apartments as needed, and used a common palette for rooms.

Paint analysis confirms the impression of earlier studies that the inhabitants of 97 Orchard Street worked hard to make their small apartments a home, and to conform to popular, middle-class ideas of interior decoration and design. The paint colors and decorative schemes are within the range of accepted fashion for their day. The introduction of each distinct decorating phase lags about a decade behind the first popular adoption of the style or color scheme in high style buildings, but the same delay is evident in the acceptance of popular architectural styles in rural communities.

The materials the residents had to work with, such as the owner-supplied paint and the patched-together walls and trim, were occasionally supplemented by materials from the tenant's own resources. How else to explain the high-quality gold leaf that was applied to the wooden chair rail in Apartment 10? An occupant who used gold leaf, perhaps in sign painting, carefully decorated an apartment for no other reason than for personal pleasure.

Although exact layer-by-layer comparisons are difficult to make even within a single room, fortunately the paint history of the building went through clearly identifiable stages. Multiple

layers of the same colors were applied over a period of time, in a consistent pattern, in each type of room in all the apartments. It is these groups of layers, or “color periods”, composed of anywhere from two to twenty-seven individual layers of paint, which provide a basis for comparison throughout the building. The large number of samples taken in this investigation, which share consistent results in the hues and sequencing of the “color periods”, gives confidence that the conclusions are accurate for the entire building.

The “color periods” fall into four main groups. A logical estimate of the length of a color period can be estimated by averaging the number of layers found and multiplying by two, for the average length of time that one paint was exposed. Other evidence seems to support these rough dates, but additional investigation into the building may reveal information which will refine or refute these dates. Thus, a large part of the report is organized around the visually distinct “color periods” with dates suggested, rather than stated as firmly fixed fact.

A word of caution: Once this information has been organized into the four color periods, it becomes extremely tempting to fix the results into neat, hard-bound categories, and to assign firm dates to each. Attempts should be made to guard against this kind of approach. The distinct color periods for the walls do not chronologically match the color periods for the trim. Tenants came and went, apartments saw periods of vacancy, and aesthetic changes lagged a few years behind popular culture. All of these facts contribute to a building in a constant state of flux; any changes that occurred appear to have been implemented incrementally. The results here summarize general trends within all the apartments, but no one apartment tested can be described as “typical”.

THE APARTMENTS

First Period

- Bedroom and kitchen walls painted with blue or green calcimine
- Parlor painted with blue, cream, pink or salmon calcimine
- Ceilings painted with lavender, blue or green calcimine
- Trim finished with crudely executed “oak” graining comprised of tinted varnish over a base of cream paint

The first period of consistent color treatments began with construction of the building in 1863-64, and continued for only a very short time, certainly less than a decade.¹ During the first

¹ Where calcimine is found on walls, there are typically only two layers. Given that calcimine was a fragile finish, which might only have lasted two years or so in normal usage, and the estimate that painted surfaces

period of the building's decoration, the walls and ceilings of the rooms were painted with calcimine paint. Calcimine was an inexpensive, water-based paint, rather like a thin lime wash with pigments added. The finished appearance was of a "dry" or matte surface, and colors tended to vivid pastels because of the admixture of the pigments with a white lime or chalk filler. The most common calcimine colors were clear blue, light green, pink and lavender. All these shades are found at 97 Orchard Street during the first period.

The difficulty in identifying calcimine paints in historic buildings is that the finish was intended to be removable. A good scrubbing with hot water would remove much of the paint (and dirt) from walls and ceiling, providing a clean surface for a new application. Annual renewal of calcimine painted walls and ceilings was recommended in many 19th century almanacs as a good housekeeping practice. How frequently the walls were washed and repainted at 97 Orchard Street is unknown, but the difficulty in carrying water up the stairs from the rear yard, where the water supply was located at this time, is certainly imaginable. The presence of multiple layers in many samples indicates that the recommended housekeeping was not practiced before later layers were applied. Particularly in the kitchen, where splashing water could dissolve the paint, it is remarkable that a complete sequence of the earliest paints survives.

Enough material survives in several of the wall samples to conclude that in the first period, all the walls within an apartment were painted with calcimine paints in shades of light blue, light green or salmon pink. The plaster ceilings in the apartments were consistently painted light blue in this earliest phase as well. A lavender-blue seems to have been preferred for bedroom walls and ceilings, while a clearer blue was typically used in the parlor. Kitchens exhibit the most color variety, with shades of blue and green being used from the earliest period. The range of colors available in calcimine paints was not a broad one, and the light blues, green and lavenders were recommended in painter's manuals of the mid-19th century as the most popular shades for the material.

The woodwork throughout the apartments at this time was grained in a light tone, similar to oak.

The graining was created with a base coat of white or creamy-white paint that is often so thin as to be nearly invisible to the naked eye. Golden-brown tinted varnish was applied on top of the paint to provide the finish and simulate the pattern. In color, the graining most closely resembles oak, but the grain pattern is not distinctive of any particular wood. The graining was repeated in successive layers, each very thin, and the decorative intent remained consistent for a number of years.

Graining was a common finish in the 19th century, even for the most humble dwellings.² The graining found at 97 Orchard Street was considerably simplified from the classic technique described in painters' manuals of the period, where two, three, or even four paint colors were applied and successively worked to create careful reproductions of wood grain from an

were renewed every two years or so, the first period may have only lasted two to four years.

² Gail Winkler. *Victorian Interior Decoration: American Interiors 1830-1900*. Henry Holt and Company, New York, New York, 1986, pp. 77-78.

identifiable species.³ The graining in these apartments was a very simple two-coat system, and the upper varnish layer was worked with a comb-like tool to produce a linear “grain”.

Graining was recommended in contemporary sources, including A.J. Downing’s pattern books, as a durable and washable surface.⁴ The ability to clean the smooth varnished surface of the woodwork, instead of repainting it, may mean that the woodwork did not have to be repainted as often as the plaster walls.

Second Period

- Bedroom and kitchen walls finished with blue or green oil paint, often sealed with a coat of varnish
- Parlor walls painted with pinks and rosy reds. Colors early in sequence are light, moving toward rosy terra cotta later in period
- Ceilings painted with blue or green calcimine
- Trim finished with crudely executed “oak” graining

The second period is announced on all the walls in the apartments by the introduction of oil-based paints. Oil-based paints have been used for architectural work since ancient times, but in 19th century America there was a long search for alternatives to the traditional lead-white-in-oil paint. Some of the innovations were motivated by a desire to find a substitute for lead as the primary ingredient, as its harmful effects, particularly on the painters who worked with it every day, were well known. Some innovations were spurred by nationalism - a desire to create “American” products with native materials. Other innovations, like calcimine paints, were developed and marketed with low cost being the primary benefit.

In the decade following the Civil War, several American manufacturers developed ready-mixed paints that could be stored and sold in resealable cans. For the first time in history, oil-based paint was available to the consumer in a usable form. Painting moved from a craft, with a carefully structured apprentice system, to a trade, and even to a do-it-yourself skill. Consequently, the cost of an oil-painted surface plummeted, by reducing the cost of both materials and labor. Manufacturers moved from providing raw materials for painters to factory-mixed paints in fashionable, marketable colors, and shipping these products across the country.⁵ By the 1870s, wide availability and low prices made ready-mixed oil paints a realistic choice for most American architectural decoration.

³ *The Paper Hanger, Painter, Grainer, and Decorator’s Assistant*, 1879, (Reprint, American Life Books, no date), pp. 115-119.

⁴ Andrew Jackson Downing. *The Architecture of Country Houses*, 1850, (Reprint, Dover Publications, New York, 1969), p. 367. Although first published in 1850, this book of designs and ideas for houses was so popular that it ran to six editions, the last being published in 1873. The ideas Downing presented for the decoration of cottages (and simple homes everywhere), including the use of grained woodwork and tinted whitewashes (calcimines) for walls, must have continued in use wherever his book was found well into the 1870s.

⁵ Roger W. Moss, ed. *Paint in America: The Colors of Historic Buildings*, The Preservation Press, Washington, D.C., 1994, p. 56-57.

In the parlors, the second period decoration was dominated by the oil-painted walls, done in shades of pinkish-orange, salmon-pink, and warm red-brown. The kitchens and bedrooms throughout the building were painted in green or blue-green colored oil paints. Particularly in the kitchen, the paint was sometimes coated with varnish, most likely in an attempt to make the surface as washable as possible. As in the first period, the limited range of colors, and their apparently random layering in different apartments, suggests that the landlord painted the rooms as needed, dictating the color scheme of rosy-red parlor and green-blue kitchens and bedrooms. However, the shades were slightly different with each repainting, and the bedroom and kitchen were not necessarily the same color at the same time.

Throughout the second period, the woodwork continued to be finished in the oak-like graining pattern. This treatment is evident on baseboards, door frames, window frames and cabinets that date from this period. Generally, four to five coats of cream paint exist, each covered with a tinted varnish.

Third Period

- Bedroom and kitchen walls finished with blue or green oil paint and often sealed with a coat of varnish
- Parlor walls are papered
- Ceilings papers installed
- Trim finished with crudely executed “oak” graining in early years; a later switch to graining in darker colors
- At the start of the period (date uncertain, possibly mid- to late-1880s) architectural changes are made that include moving the parlor wall to enlarge the size of the kitchen.
- Late in this period (1905) architectural changes are made to south side apartments, including the installation of hall toilets, insertion of an airshaft and the reconfiguring of bedrooms

Dramatic changes were made within the apartments to mark the beginning of the third period for the wall finishes. This seems to have occurred sometime between 1885 and 1890. The wall between the parlor and the kitchen was moved about one foot, enlarging the kitchen at the expense of the parlor. The evidence for this change appears in paint samples taken in the kitchen close to the parlor/kitchen wall. There, the green and blue-greens of the typical kitchen wall sequence are preceded by up to ten layers of the rosy-pink paint found exclusively on the parlor walls.

In a significant departure from the earlier periods, the parlor face of the newly constructed

parlor-to-kitchen wall shows no paint at all. From this point in time forward, right through the closure of the building in 1935, the parlor walls were covered with wallpaper. The presence of wallpaper in a tenement building at this time is supported by other studies which document the availability of low-cost papers, and the proximity of stores near to 97 Orchard Street selling wallpaper.⁶

Typically, the old paper was not removed before new paper was applied to the walls. This is not true, however, for the ceiling papers, which would have loosened under their own weight and the pull of gravity. The wallpaper study completed concurrently with this paint analysis contains more details, but it documents the existence of as many as twenty-one layers of paper on the parlor walls. This layering also supports the rough dating indicated by parlor wall paint layers; that is, refreshing of the interiors on an average of every two years. Knowing the building closed in 1935, and subtracting forty-two years (for twenty-one layers of paper, each representing two years), puts the start of the third period for the parlor wall approximately to 1893. This is close to the dating arrived at by counting paint layers, and corresponds to a period when changes in ownership may well have triggered changes in the building.

During the early years of the third period, the papered walls were paired with trim finished in the light toned, oak-look graining that had been used throughout the two earlier periods. There are generally a total of four to six layers of the varnish-on-white graining; this finish is estimated to have lasted for twenty-five to thirty years, and it is thought that only the topmost layer in this sequence was in place during the third color period. In many areas, the final layer of this sequence is marked by the use of an acid-looking, greenish-yellow varnish that is a departure from the warm reddish tones of the earlier coats.

By the mid to late 1880s, though, there was a consistent shift to grained woodwork in tones of dark brown. The darker graining colors are in marked contrast to the earlier periods' lighter appearance, although the dark color graining seems to have been no more realistic in imitating an actual wood species than its predecessor. The shift to a darker palette for the decoration of the parlor is consistent with the trend in American decorative taste toward darker, richer colors, both inside and out, beginning in the 1870s and continuing through the 1890s.⁷

During the third period, other changes occurred at 97 Orchard Street. Its builder, Lucas Glockner, sold the tenement to Moritz Werner in 1886; he held the property only until 1888, when the building was again sold, to Nathan and Emily Loewy. They owned the property from 1889 to 1900.⁸ The new owners apparently made some investment in the building. Paint analysis suggests that among their improvements was the addition of a wooden picture rail in several apartments. This element visually divided the wall into a broad upper frieze area and the lower, painted wall. The division of the top eighth or so of the wall into a wide frieze is a

⁶ Kimberly Liddle, "Wallpaper at The Lower East Side Tenement Museum, 97 Orchard Street, New York City", unpublished paper done for Bard Graduate Center, April 19, 1995.

⁷ Gail Winkler. *Victorian Interior Decoration: American Interiors 1830-1900*. Henry Holt and Company, New York, New York, 1986, pp. 130-132.

⁸ Andrew S. Dolkart, "97 Orchard Street: Architecture and History", unpublished report prepared for Li-Saltzman, Architects, New York, June 1989.

decorative device introduced with the Aesthetic Movement of the 1870s, and became broadly popular in American domestic architecture in the 1880s and '90s. This stylistic treatment reinforces the idea that the residents of 97 Orchard Street were aware of popular fashions, and desirous of imitating them in whatever way they could.

The turn of the century marked profound changes in the appearance of 97 Orchard Street, and of other tenement buildings around New York. The Tenement House Act of 1901 required changes be made to the old style tenements in three areas -- light and ventilation in public halls, light and ventilation in apartments, and toilet facilities. The new law was the direct impetus for changes in the building, such as the introduction of the hall toilets and the insertion of the airshaft. Within the south side apartments, the bedroom-kitchen wall was moved because the addition of airshaft and toilets cut into the size of the bedrooms. The reconstructed wall between the bedroom and kitchen included smaller, higher internal windows because the bedroom now had a separate window into the airshaft. The painted plaster walls show less paint accumulation on the bedroom/kitchen wall partition, verifying that they post-date the other, original bedroom walls.

Fourth Period

- Bedroom and kitchen walls finished with blue or green oil paint and often sealed with a coat of varnish; later painted cream or yellow
- Parlor walls are papered
- Ceilings are papered
- Trim painted cream or white

Sometime after the turn of the century, with the advent of the Colonial Revival Style, the dark grained woodwork of the 19th century was abandoned in favor of trim painted in light shades of cream or white. Throughout most of this period, however, the bedroom and kitchen walls remained either green or blue in color and the parlor walls continued to be papered. It was only during the final few years of the building's occupancy that the kitchen and bedroom walls were painted creamy white.

While the number of paint layers from earlier periods remains fairly consistent, the number of cream layers varies from one to sixteen, depending upon location. The build-up varies not only from one apartment to another, but also between the rooms of individual apartments, with kitchen baseboards, door and window frames and cabinets painted cream or white much more frequently than the woodwork in either the parlor or bedroom. This is most pronounced in Apartment 13, where the kitchen trim received between fourteen and sixteen coats of light-colored paint, the bedroom received three coats and the parlor shows only one coat of cream paint. Undoubtedly the wear and tear on the kitchen fabric was much greater than in other areas, necessitating more frequent repainting.

It also appears that during these final years, occupancy rates in the building dropped. As apartments became vacant, painting and general maintenance stopped, which may account, in part, for the discrepancies in the number of cream layers from one apartment to the next.

THE APARTMENTS

General Observations

A number of random observations were made during the process of removing and studying the paint samples. Although these do not fit neatly into one category or provide definitive information about the apartments, they often point to interesting trends, raise puzzling questions, or appear to be anomalous, and are therefore noted. Perhaps in the future, when combined with additional research, these seemingly random facts will fall together to shed additional light on the construction history and use of the building.

Window Frames

The window frames from the bedrooms of each apartment into the hall contain the full sequence of grained finishes that is found on original fabric throughout the hall. This indicates that these small openings, which would have provided a minimal amount of air circulation through the apartments, were part of the initial construction of the building.

The larger internal windows still extant on the north (non air-shaft) side of the building also have a paint sequence which indicates that they were installed within the woodwork first period, for they have the characteristic light-toned graining as their earliest finishes. They do not have quite as many layers of early graining as elements in the apartment that are known to be original, but it is clear that, here too, the internal kitchen-bedroom windows were added relatively early in the building's life.

It is known through other documentation that the kitchen/bedroom walls on the south side of the building were relocated during construction of the airshaft in 1905. However, there was a tremendous reuse of materials within the building, which suggests that the current openings may be cased with wood which framed the earlier, probably larger, window. The frames of the small openings between the kitchen and bedroom on the south (airshaft) side of the building exhibit the early grained sequence, although with fewer layers than are on the original bedroom and kitchen woodwork. This indicates that the kitchen/bedroom windows were not part of the original construction, but were added soon after the building was occupied. Adding the bedroom-to-kitchen window would be the only way to provide any cross-ventilation to the kitchen when the apartment door into the hall was closed.

Transoms

The observation of a consistent "plinth" insertion at the bottom of each door frame suggests that throughout the building, the original door frames were raised and transoms inserted above the doors for increased light and ventilation. Samples were taken from a number of door casings in order to determine when this alteration occurred. Paint removed from the upper portion of the

frames shows the typical sequence of four layers of “oak” graining, followed by graining in darker tones, topped with numerous layers of creamy white and yellow. This is consistent with other woodwork in the apartments, and seems to represent a complete chromochronology of the woodwork from the construction of the apartments. Samples removed from the lower section of the door frame, which appears to be inserted, are very similar, lacking only one or two of the earliest graining sequences. Like the addition of internal windows, the addition of transoms to the front doors of each apartment evidently occurred quite early in the history of the building, probably within the first ten to fifteen years of use (*i.e.*, ca. 1880).

Viewing the evidence provided by both the door and window frames, it appears that in the early years of the building’s occupancy additional ventilation became a priority. Poor air circulation seems to have prompted the installation of the transoms and openings in the wall between the kitchen and bedroom. Is there, perhaps, a correlation between these changes and the use of gas in the building?

Wall Patches

Frugality was the order of the day at the 97 Orchard Street; building materials were reused and damaged walls were patched time after time. One example of this is the north kitchen wall of Apartment 13. Upon initial observation the samples removed from this wall were entirely baffling; after much study, however, it became clear that this one wall embodies the construction history of the building and the chromochronologies began to make sense.

Sample 13-2 was removed from the northeast corner of the wall, above the chair rail, in what was originally part of the parlor. This explains the eight layers of pink paint that appears early in the series, following three layers of calcimine paint. The pink series is then followed by eighteen layers of the green and blue paints ordinarily found in the kitchen, topped with four coats of the creamy yellow paint typical of the 20th century. This sample, which contains thirty-four layers of paint, appears to have been part of the original fabric of the building.

Sample 13-3 was taken from the tub sink area of the north wall, slightly to the east of the seam that marks the original location of the kitchen/parlor wall. Although this sample was also removed from an area that was originally part of the parlor, the early series of pink paint is missing. Instead, this sample begins with thirteen layers of green paint, indicating that the area was patched, perhaps following the installation of the sink, thereby obliterating the earliest pink layers and five of the green layers as well.

Finally, Sample 13-1 was removed from the northwest section of the north wall, beside the gas meter shelf. It contains only eight layers of blue and green paint, followed by four layers of cream, indicating that this area was patched, probably during the early 20th century, when the shelf was installed. Thus, three samples removed from this one wall combine to more thoroughly explain the construction of the building.

Cupboards

Throughout the apartments are a variety of cupboards and shelving units. Paint analysis confirms the suspected installation periods. Each kitchen contains a cabinet with glass doors. Based on appearance and hardware style, the majority of the hanging kitchen cabinets appear to date to the last quarter of the 19th century. This is verified by the cabinet in the kitchen of Apartment 8 (Sample 8-21) which exhibits twenty-one layers of paint, including an early sequence of cream and varnish. This places its installation in the final stages of the “first period” woodwork decoration, which elsewhere has been estimated to have concluded by the mid-1880s. In contrast, the cabinet in the southwest corner of the same apartment has hinges and latches which appear to be from a post World War I vintage. This observation is confirmed with paint analysis, which shows only one coat of primer and a layer of cream, indicating that it was installed only a short while before the building closed.

Samples from the glass-fronted kitchen cabinets in Apartments 9, 10 and 13 match that of Apartment 8; each exhibits approximately twenty layers of paint, and all include one cream/varnish sequence. Throughout the building, the trim was originally painted with four layers of cream with varnish before switching to a darker color series; these cabinets contain the top-most layer of the cream/varnish sequence, indicating that they were probably installed during the 1870s or ‘80s.

Parlor Closets

Because the parlor closets fit so neatly against the kitchen wall, they appear to have been installed in many apartments at the same time that the kitchen/parlor wall was relocated. This is believed to have occurred in the mid to late 1880s. Without exception, however, the closet paint sequences tested in this study exhibits at least three layers of cream with varnish. If original trim contains four layers of this cream/varnish combination (which is believed to be the case based on the study of all the paint samples), then the evidence of three layers on the closet fabric indicates that they were constructed very shortly after the building was first occupied, probably within five to seven years, or in about 1870, before the parlor wall was moved to its current location.

Additional field study seems to show that the closets were added into the parlors after the original construction period, by carefully cutting the simple wooden side wall to fit around the baseboard and chair rail. The presence of acorn-finial hinges (common in the 1850s to 1870s) on the closet in Apartment 8, supports the idea that at least some apartments had parlor closets installed at an early date in the life of the building. Hardware and construction differences suggest that closets were rebuilt in apartments over a period of time. During the repositioning of the wall between the parlor and kitchen in the 1880s, existing closets were likely moved and reinstalled, continuing the practice of reusing as much material within the building as possible. Evidence for this is seen in the way the wooden wall of the closet joins the kitchen-parlor wall at right angles, with the baseboard cut out to receive it.

In some apartments, notably Apartment 13, a picture rail installed within the parlor, stylistically

datable to the 1880s, is even found within the closet. Surely it was not installed within a closet that already existed. More likely, the picture rail predated the closet in this location, and existing material, salvaged from another apartment or elsewhere in this one was used to create this closet at a later date.

Fireplaces / Mantels

Many of the fireplaces in the parlors of 97 Orchard Street have been sealed. These alterations were completed at different times and in different ways -- in some cases the openings were simply boarded up, in others the existing mantels were removed and the entire wall was replastered. Samples removed from the parlor mantel in Apartment 13 indicate that this fireplace may have been boarded shut very early, as the combination cream paint with thick black varnish from the enclosure boards matches that taken from the mantel itself. Similarly, in Apartment 9, although the first two layers of paint removed from the mantel and enclosure boards differ, the remaining layers are identical, indicating that this fireplace was also sealed off quite early. With a cooking stove operating more-or-less continuously in the kitchen of the small apartments, it is unlikely that an additional heat source was really needed, and the drafts produced from the chimneys may have been counterproductive to attempts to heat the rooms.

Decorative Painting

Specialized decorative treatments were undoubtedly by, and at the expense of, the tenant. In every case that we discovered, decorative painting was confined to the front room, which served as the parlor. The most stunning example of this occurs in Apartment 10 where high-quality gold leaf was applied to the chair rail on the east and south walls of the parlor. The appearance of this costly material in an apartment of this type raises many questions. How was the sheet gold procured and installed? Was the tenant employed in a trade that utilized gold-leafing? Why was the metal applied only to the chair rail on the south and east walls of the parlor?

Similarly, the parlor picture rail of Apartment 13 (Samples 13-42 and 13-43a) was covered with gesso and finished with a bronzing powder. This was an inexpensive way to approximate the appearance of gold-leafing.

Floor Painting

The only sample that provides definite evidence of floor painting was removed from the parlor of Apartment 8. Here, terra cotta paint was confined to the perimeter of the room, in the area that was not covered with carpet. The sample was removed from inside the closet, indicating that the floor was painted prior to the installation of the closet.

Pipes

Paint does not adhere well to metal and can be forced off of the surface during the rusting process. Due to the nature of the metal substrate, it is not at all certain that full paint stratigraphies were acquired or even available. Therefore, speculation as to installation dates is inadvisable without corroborating information.

In apartment 10, the relocation of the wall between the kitchen and bedroom has led to the pipe to the water heater (which used to be in the kitchen) to be “stranded” in the bedroom. This situation is found on other southeast apartments. As the color difference between the kitchen and bedroom (both were typically shades of blue and blue-green) were not as dramatic as between the kitchen and the parlor, it is not clear from the paint analysis when the pipe was installed.

The wood pipe chases in Apartments 7 and 10 were sampled, and both appear to have been installed during the early 20th century. The chase in Apartment 7 showed only two layers of cream paint, while that in Apartment 10 contained a layer of blue-green (which may be a splash of wall paint) topped with six coats of cream.

Tub Sinks

The sample removed from the tub sink in Apartment 8 (Sample 8-56) begins with five layers of green paint. This is followed by a sequence of ochre, tan and salmon, which is hard to explain as these colors were generally reserved for trim; the sequence finishes with eight layers of cream paint. The beaded board tub enclosure, however, (Sample 8-9) contains only three coats of cream paint, and was obviously constructed sometime following the installation of the sink.

Apartments 8 and 10 both exhibit nine layers of paint behind the tub sink, and as many as 21 layers above it. Approximating two years per paint layer would indicate that the tub sinks may have been installed in the mid-1880s, when it is thought that the kitchen/parlor wall was relocated.

THE HALLWAY

General Observations

Paint analysis confirms that the pressed metal walls and ceiling that currently exist in the hallway are not original to the building. The plaster surface behind the metal wall covering is covered with a primer coat and one layer of blue calcimine paint. Over this occur eight layers of green oil paint, each of which is finished with a coat of varnish. Directly under the metal is a layer of dark red burlap. This fabric shows no evidence of dirt or wear, and appears to have been installed just prior to the pressed metal.

Because the pattern of the metal wall covering is consistent on each wall, and because of the

large number of paint layers beneath the material, it is believed that this material may have been installed in 1905, when the toilets and airshaft were added to the building. One layer of green paint covers the metal surface, followed by three layers of cream.

Paint analysis of the pressed metal ceiling presents a slightly different picture from that of the metal wall covering, however. Beneath this the metal ceiling is the original plaster ceiling, covered with one layer of light blue calcimine and possibly two layers of cream paint, far fewer layers of paint than appear under the wall covering. The metal ceiling material is coated with a layer of light blue oil-based primer and topped with as many as nine layers of cream paint, each of which is protected by a coat of varnish. It appears from this evidence that the metal ceiling is not original, but was installed very early, and was in place for a much longer period than the metal wall covering.

The beaded board wainscot that covers the lower portion of the hall walls may be original to the building; if not original, it was certainly installed at an early date. The condition beneath the wainscot was not inspected, but may provide additional information as to the installation period. Covering the beaded board are six to seven layers of cream paint, each with a top coat of tinted varnish or, in one case, red shellac. Samples removed from hall trim that is believed to be original, items such as the stair stringer and apartment door frames, show between eight and nine layers of paint and varnish, and also exhibit the distinctive layer of red shellac late in the sequence. There is, therefore, a two layer difference between the wainscot and the other trim, which indicates that the wainscot may have been installed after the building was occupied for a period of time.

As expected, the trim from the toilet doors, which were installed in 1905, shows only five layers of cream paint combined with a layer of tinted varnish. The doors to the apartments, however, consistently exhibit eight layers of cream paint, each of which is combined with a tinted varnish in a simulated graining pattern.

Hallway Gas Risers

An interesting discrepancy occurs between those gas pipes serving the front (east) apartments and those located at the back (west) of the building. The rear risers show three to four layers of green paint, topped by five coats of cream paint sealed with varnish. The pipes at the front of the building, however, present a different sequence of layers. The third floor front riser exhibits one layer of blue-green paint, topped by four layers of cream paint with varnish. The fourth floor front riser lacks all evidence of green paint and contains five layers of cream paint with varnish.

Toilet Pipes

Paint samples from the gas and water pipes in the toilets of both the third and fourth floors pose an interesting dilemma. Those samples removed from the water pipes (Samples T3-4, T3-6, T4-9) exhibit, without exception, only one layer of cream paint. However, a rather thick buildup of paint can be found on the gas pipes (Samples T3-5, T3-7, T4-10), including four layers of green

and ending with one coat of cream. The sequence of paint layers on the gas pipes matches that on the walls and it appears that both were painted with the same regularity and in the same colors. It is reasonable to assume that the water pipes were installed during the 1905 remodeling, yet the paint samples indicate that they may be a more recent addition.

Window Bars

The bars of the bedroom window in Apartment 13 show eight layers of cream with varnish, the same finish that was used throughout the hallway, in addition to an early layer of green paint which in all likelihood is a splash of wall paint. Because of this full sequence of cream (all original hall trim contains eight layers of cream paint) the bars to Apartment 13 are believed to be original fabric. Although the bars to the bedroom window of Apt 10 show only four layers of cream paint combined with tinted varnish, they are also believed to be part of the original installation. Due to the unreliability of metal as a substrate, the paint sample may have been fragmented or removed from an area that had previously been chipped and repainted.

EXTERIOR STOREFRONT

Samples taken from the wooden storefront on the main level of the facade indicate an extreme build-up of paint. The elements tested suggest that the storefront was treated monochromatically, without “picking out” of details in different colors. The first six layers on the wood are composed of a light yellowish brown (NBS) color lead-based paint, finished with a dark brown varnish. This two-part finish seems to have been intended to give the storefront a glossy wood-colored appearance. If this represents an exterior use of graining, it was quite crudely done. Exterior graining was used, particularly for front doors, in the mid-19th century.⁹

The graining ceases with the seventh layer of paint, where the use of dark yellowish green (NBS) begins. The storefront has remained dark green to the present time. There are occasional layers of white or bright pink, but these are not consistent through all samples, and may be related to signage for the building.

Through Building Department records, it is known that the storefront was reworked in 1905. The wooden storefront on the building was added at that time, although stylistically, its rope-turned columns and wooden windows appear to pre-date 1905. The storefront may have been re-used from some other building in the neighborhood. Further support for this comes from the cast-iron storefront which survives on the ground level of 97 Orchard Street. Although largely covered by later alterations, at the southeast corner of the building, an inch or so of the original cast iron is visible. This was tested in a previous paint analysis (Acroterion, 1991), and was found to retain several layers of dark green paint. As it is unlikely that upper and lower

⁹ Roger Moss, *A Century of Color: Exterior Decoration for American Buildings, 1820-1920*, The American Life Foundation, Watkins Glen, New York, 1981. On pages 22 through 24 of this book, plates from John Riddell's pattern book *Architectural Designs* (1861) are reprinted which show the exterior face of front doors of Italianate style houses with a grain-painted finish. There is no known documentation of grained storefronts.

storefronts would have been painted different colors, it may be that the remodelling of the facade in 1905 to insert a second layer of storefronts re-used wooden material, and made old and new elements harmonize with a single, dark green paint scheme.

Dark green colored paint was a preferred complement for red brick buildings in the latter 19th century. Although entitled *House Painting*, a Sherwin Williams Company paint manual from 1884 discussed painting commercial buildings as well. It suggested dark greens for storefronts, and a matching or harmonizing tone in the cornice, where it needed to be painted.¹⁰ The same source also advised that window sash be painted a dark reddish brown, “as it is a warm color, besides being dark, and it harmonizes perfectly with all warm colors.”

No original exterior sash are in place, so that paint samples could only be taken from sash found inside the building. These sash are severely weathered, and have only spots where any paint clings to the wood. The samples taken generally show early layers of white paint. The most recent repainting of the exterior sash were in green colors -- first a bronze green, and later a brighter green. This is in contrast to the windows to the airshaft, which are known to have been added in the 1905 renovations to the building. These bear only one layer of white paint and are encrusted with a thick, black layer of dirt.

¹⁰ Ibid., p. 97.