



Knights of Pythias Greenwood Cemetery

Cemetery Head House
Assessment of Period of Significance
Adams Street | Philadelphia | Pennsylvania

EWINGCOLE PROJECT NUMBER: 200900569

November 6, 2009

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EXECUTIVE SUMMARY

1.1 GOALS AND OBJECTIVES

The purpose of this report is to define the primary period of significance as based on examination of the physical construction and details of the building combined with the existing archival research for the house and property to guide the restoration of the historic house at the Knights of Pythias Greenwood Cemetery.

The efforts on the part of the EwingCole team include examination of the physical structure, review of nail types, review of joinery methods of framing that is visible in the house, examination of the foundation detailing and masonry work, stucco analysis on several locations on the building, review of maps of the site, review of other structures in the region from the full range of the periods to be investigated and review of the archival research compiled in advance of this effort. The details and findings of these components are included in this report.

In addition to this effort the team was prepared to recommend additional destructive and non-destructive methods to understand the construction but, due to the findings noted in this report it was determined that this additional effort was not needed for the exterior renovation.

Concurrent with the EwingCole effort, the Philadelphia Historical Commission hired a separate consultant to complete a dendochronological analysis to determine the age of the framing materials used in the home. EwingCole was on site as the samples were selected and taken. The results and conclusions from the consultant are included as an appendix to this report.

1.2 RECOMMENDATIONS

The conclusions from the review of the materials and the details noted in this report sets the period of significance at a time ranging from approximately 1830 and 1850.

The exterior of the home will be restored to this range of dates. A photographic image recently after the period of significance that aligns with many of the regional details from the period of significance along with typical details will be used in the recommendations and the development of the contract documents to restore the exterior of the home to the period of significance.



Image of home just after the period of significance.

EXECUTIVE SUMMARY

There were several later renovations made to the property but none of the materials reviewed indicate that the home was built in the 18th century or used materials from the 18th century. Maps from 1843 do show two buildings on the site the sequence of these maps. An annotated analysis of these maps is included later in this report.

1.3 NEXT STEPS/PATH FORWARD

The conclusions and recommendations of this report are used in the development of the exterior restoration of the house. Additional survey is recommended that includes a comprehensive paint analysis for each area of the house in addition to compiling the information from each room to inform the evolution of the entire interior of the house. The exterior scope of work overlaps with the interior of the building at the window and door openings, floor and roof framing and

The appendices at the end of the report include supporting information, photography and documents as referred to throughout the report.

PROJECT NARRATIVE

2.1 PROJECT DESCRIPTION

EwingCole was contracted to investigate and develop contract documents to stabilize the Knights of Pythias Greenwood Cemetery Head House. The groundwork for this effort began after some initial inspections and presentations to lay the ground work for approvals with the Philadelphia Historical Commission. The documents presented to the Commission provided initial repair and compliance guidelines. At this time there was some discussion and debate about the age and ownership of the house. According to the current owners, they were informed of informal surveys and of archival information related to the ownership of the property from several well historians.

A goal of restoring the Cemetery, House and Perimeter Wall was established by the Cemetery and supported by EwingCole. The team presented an approach to stabilizing the house where the exterior would be restored and the interior restoration would follow as a later project.

Since the Commission approvals, EwingCole has performed visual investigations of the property and has reviewed the archival research and documentation provided from the historians reading the ownership of the property.

The initial investigations were performed without the archival information and included photographic documentation. Images from all investigations are included in the appendix of this report. From these initial observations there was evidence that the house had been remodeled many times over a period of years however, there were visible signs that portions of the building were likely built between 1820 and 1915.

Later investigations had the benefit of the archival research including two photographs; an image from prior to 1914 and another likely shortly after 1914. The exact dates of each photograph are not known. In addition to these images, well documented title and deed records were provided to indicate that with very little doubt that Benjamin Rush did own property that now is included in the Knights of Pythias Greenwood Cemetery. The information EwingCole received is included as an appendix to this document.

The investigation involved very minimal invasive exploration and the documentation provided is primarily from visual inspections. The analysis included stucco sampling and analysis. The entire stucco analysis document is included as an appendix to this document.

The inspections served not only to inform the period of significance for the house but also to provide information for the development of the contract documents for the exterior restoration of the house. These contract documents will be based on the previous commission approved documents and scope. The documents will also clearly identify areas for additional research to inform the final preservation contract documents for all three of these elements as the purpose of these documents is to stop further deterioration and improve the appearance of these elements without compromising contributing historical fabric or materials.

PROJECT NARRATIVE

2.2 ASSESSMENT METHODOLOGY

The team performed multiple visual examinations of the property on the interior and exterior. Because of the deterioration of portions of the property there were several locations where the team was able to review the construction conditions where they might otherwise be concealed and require selective demolition to observe these conditions.

Archival information and photographs were collected by the team and were provided to the team. This information was used to compare and understand the multiple changes and renovations that have occurred on the property.

With a general understanding of the chronology of construction the team reviewed framing details, nail types, wood trim profiles and tested the composition of the stucco on the exterior of the property in several locations.

2.3 FINDINGS AND CONCLUSIONS

The findings are noted below to support the conclusion that the period of significance for this property is a period spanning from 1830 to 1850 and that to date there is no physical evidence that this structure was built in 1700's.

Exterior

The house is comprised of a main rectangular 2 story building with an attic, three additions and an enclosed single story porch. The additions are all at the rear of the house with a 2 story half gable end addition, a single story addition nestled adjacent to the two story addition and a small single story concrete block addition on the end of this addition.

PROJECT NARRATIVE



Rear View from March 2008

The main house is a stucco clad two story property with a pitched roof. The opening locations, roof type and chimney configurations are similar to vernacular homes built in the early 19th. Homes built in the mid 18th century of this scale and type were more often exposed stone with a single chimney also fabricated from stone.

There is no photographic information on the home known at the writing of this report about the rear of the home. All images are of the front and partial side elevation of the property.

The roof is currently clad with asphalt shingles and has two dormers on the front façade and one on the rear façade. The main building contains two brick chimneys, one at each end of the house. There are a variety of windows and exterior storms around the entire perimeter of the home.

The stucco is delaminating in locations where water has penetrated the structure and has a series of patches of a variety of materials. The original stucco was a smooth stucco surface different than the pebble dashed finish that exists on the property today. The scope of work to restore the main house to its original condition is to remove the existing stucco and apply a smooth stucco finish to the entire building.

All of the windows have been replaced and modified through time and none of the current windows appear to be from the period of significance as there was a comprehensive renovation on this building sometime just prior to 1914. All the windows will be replaced with wood double hung windows with the exception of the attic windows on the North and South elevations. Because of their size it is not likely that these were six over six double hung windows but were more likely two over two double hung windows.

PROJECT NARRATIVE

The roof on the main house will be restored to a wood shingle roof and the chimneys will be repaired, re-built and capped to ensure they shed water. The chimneys will be exposed brick and not stucco clad. The gutter system on the main house will be restored to the original pole gutter with down spouts at the south ends of the front and rear elevations.

Below is the photograph used in conjunction with the physical survey to define the exterior conditions and recommendations for the restoration. Following that image are the existing condition images of each elevation and the cad files for the plan dimensions and heights.



Image of property from near the Period of Significance (1830 -1850)

PROJECT NARRATIVE



Front Elevation from October 2009



Rear Elevation from October 2009

PROJECT NARRATIVE

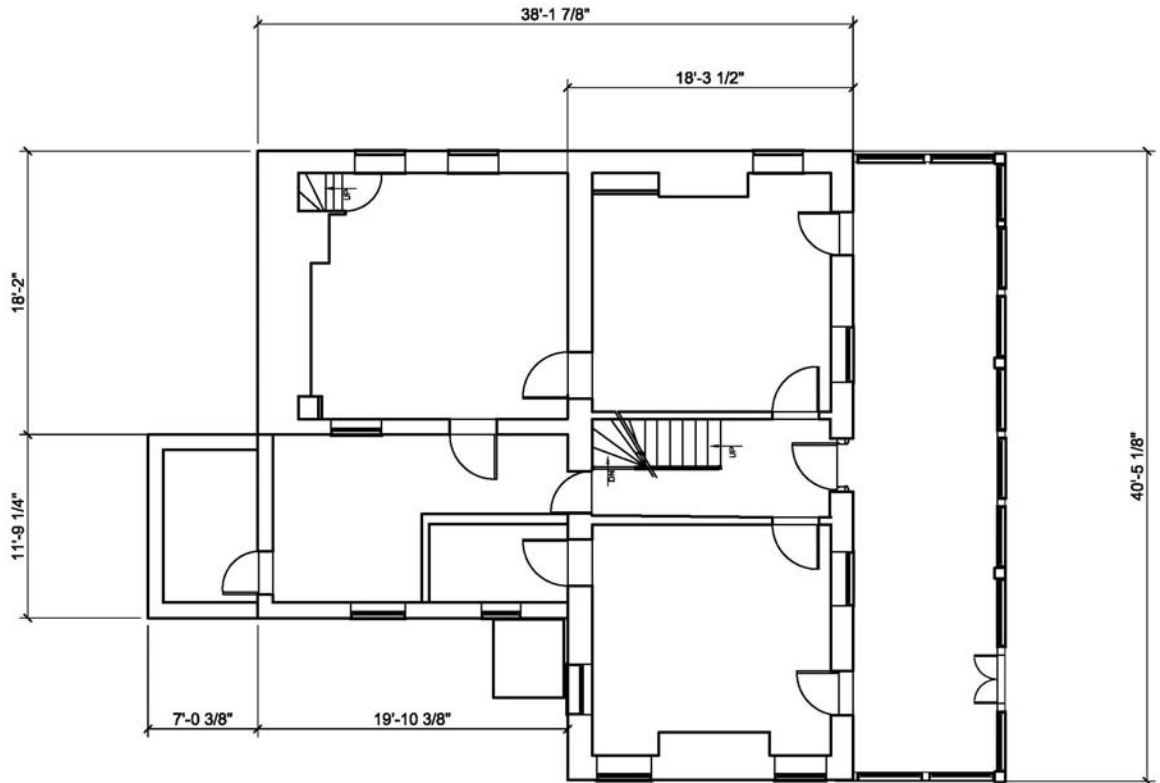


South Side Elevation from October 2009



North Side Elevation from October 2009

PROJECT NARRATIVE



First Floor Plan – Existing Conditions from November 2009



South Elevation – Existing Conditions from November 2009

PROJECT NARRATIVE

Additions

The two story half gable end addition has finishes similar to that of the main house. The restoration described for the main house will be the same for this addition. The only difference is that the small double hung window on the west elevation will not have any divides in the lights.

The concrete block addition will be removed and the single story addition at the rear of the building will be removed and the single story addition will be clad in stucco with single lite double hung windows and a metal roof. The metal was selected as the low slope and relationship to the existing window openings on the main house and two story addition indicate that the slope was likely always as it is seen today. The single lite windows were selected as the windows that exist there today are not likely the original location as some variations were noted in the image of the renovated home from sometime around 1914.



Rear View from March 2008

PROJECT NARRATIVE



View of North façade of two story addition from March 2008



View of the additions on the house in the early 1900's: note the metal roof and window locations on the single story addition.

PROJECT NARRATIVE

Porch

The porch on the home appears to be original to the construction during the period of significance as there is physical and photographic evidence of the open porch. Over time the porch was renovated and eventually enclosed as it is seen today in the sequence of images below.



Image of property from near the Period of Significance (1830 -1850)



View of the porch on the house in the early 1900's: note interior ceiling height of porch

PROJECT NARRATIVE



It is likely that the porch was an open roof structure during the period of significance and will be restored to this configuration during the exterior restoration. The photograph from around the period of significance seems to present a shadow that appears to contain an open roof and in addition to being a common detail for this period of construction the fan lite over the door has been truncated by the enclosed ceiling as seen in the images below. This is not likely a desired or original detail.

PROJECT NARRATIVE



Image of edge of porch showing shadow at roof from near the Period of Significance (1830 - 1850)



Image of front door interior with fan light from October 2009

PROJECT NARRATIVE



Image of front door exterior with fan light from October 2009: note truncated trim at top of window



Image of porch interior from October 2009

PROJECT NARRATIVE

Interior

Additional Interior investigation will be required for the interior restoration of the home. The interior survey noted in this report was completed to inform the definition of a period of significance and for the exterior renovation.

Foundation

The basement foundation exists under the main house and two story addition. The single story addition has a crawl space that is connected by smaller openings from the two story addition basement space. The connection between the main house basement and the two story addition basement spaces appears to be part of the original construction and not a later modification that lends to the conclusion that the addition and house were built at the same time.

There was no visible evidence of earlier foundations with in this space. There are later masonry piers constructed within the existing foundation to support the floor joists as they have deteriorated and no longer bear on the original foundation wall.

Basement Framing

The framing and structure in the basement has been altered as the house was modified. The original framing appears to be a tight mortise and tenon connection between members that was found during the period of significance. Looser mortise and tenon connections would have been common in 18th century construction. With the use of more precise machinery, this connection was made tighter and stronger in the early 19th century.



Image of opening between from the main house basement into the addition basement from October 2009

PROJECT NARRATIVE



Image of the Single story addition crawl space from the two story addition from October 2009



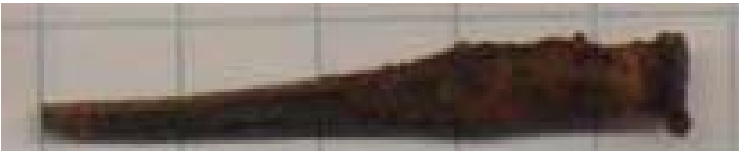
Image of tight mortise and tenon from the main house basement from July 2009

Interior Detailing and Configurations

PROJECT NARRATIVE

The configuration and layout of the rooms is typical of a house from the early 19th century. There are remainders of wood details and some door hardware from that period although there have been multiple renovations to the structure. The main stair railing and newel appear to be more consistent with early 19th century with the simple profiles. The newel is connected to the framing with a mortise and tenon connection while the trim is pinned with square head cut nails.

The Type B cut-nails are found throughout the building. The burrs on same side of their shanks, was not in use in this region until the mid 1800's. These nails are found in the flooring, the wooden lath, in the cabinetry and mantels.



Square head cut nail found in the home used in this area in the early 19th century

The interior lath and structure only indicate one generation of nails. The lath is not a hand hewn but a circular sawn lath. This type of saw was not used in this region until the early 1800's.



Image of circular sawn lath and nailing used in this area in the early 19th century

PROJECT NARRATIVE



Image of the newel and rail from the main house first floor from July 2009

The interior of the center window on the second floor reflects the renovation in the mid 1900's when the window was converted into a door to access the top of the porch roof.

PROJECT NARRATIVE



Image of the interior of the center window on the second floor from October 2009



Image of the porch from the mid 1900's showing a door at the center window location.

PROJECT NARRATIVE

Roof Framing

The roof rafters are half-lapped with wood peg pins at the ridge; plus the "sill" plate has that half-lap detail, again with a wood peg. This could have been inductive of an 18th century solution however the collar ties just below the ridge are not pegged nor let into the rafters, and the sizes and cuts of the joists are not from the 1700s.



Image of the roof rafter framing from October 2009

PROJECT NARRATIVE



Image of the roof framing from October 2009

Interior Anomalies

The doorway between the 2nd floor front and 2nd floor rear two story addition was originally a window. The original wood lintel is still intact about two feet above the door head and the gap is simply plastered - no masonry fill. It is not clear why this would have been a window if the two story addition had always been two stories. It appears that the two story addition was a two stories during the period of significance of the home as the framing detailing is similar to the framing in the remainder of the house. Further investigation on the interior is recommended with the interior restoration project.

PROJECT NARRATIVE



Image of the connecting door that was a window on the second floor of the house from the main house looking into the two story addition from October 2009

PROJECT TEAM

OWNER

Knights of Pythias Greenwood Cemetery

ARCHITECT

EwingCole

STRUCTURAL ENGINEER

Keast and Hood

MATERIALS CONSERVATION

Jablonski Building Conservation

APPENDIX

MILNER + CARR CONSERVATION, LLC

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October 28th, 2009

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Re: Greenwood Cemetery House Investigation

Dear Mr. Danta,

The following is a final summary of our findings. I have included some photos of the house, a sketch that indicates the location of the dendrochronology sample sent to Columbia University and the report from Kevin Anchukaitus, the scientist who conducted the work.

OBJECTIVES

On July 24 2009 John Milner, FAIA, along with staff of Milner + Carr Conservation, LLC , performed onsite investigation of a house located within Greenwood Cemetery at 800 Adams Avenue, Philadelphia. The investigation was performed at the request of the Philadelphia Historical Commission. The objectives of the investigation were as follows:

1. To observe and document evidence that would help to determine the date of the structure.
2. To identify areas of the original wooden frame that would potentially yield the most specific information as to the felling date of the primary timbers used in the structure.
3. To obtain a sample from this area to send to a dendrochronology lab for analysis.

SUMMARY OF INVESTIGATION

The house investigated at Greenwood Cemetery bears substantial physical evidence indicating that it was most likely constructed between 1830 and 1840. The results of the dendrochronology run by Columbia (see attached report) do not provide a definitive felling date – rather provide possible dates that reoccur during analysis that may be used to compliment other data. These dates are 1644, 1781, and 1834. We have considered the possibility that timbers were felled in 1644 implausible– therefore have looked closely at the physical evidence that may support the two possibilities that timbers used to construct the house dates to 1781 or 1834. We have concluded that although is not impossible that timbers used to construct the house date to 1781 –

Jorge M. Danta
Philadelphia Historical Commission
Greenwood Cemetery House
October 28th, 2009

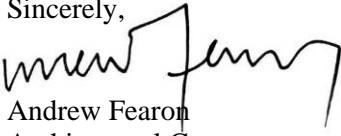
the existing evidence of the physical fabric of the building bares a greater relation to the 1834 date. This evidence can be summarized as follows:

- The original fabric of the house (including exterior masonry walls, wood floor and roof framing, interior partitions, mortise-and-tenon framing connections, wood flooring, woodwork and cabinetry, fireplaces and mantels, window and door frames, doors, and plaster finishes) remains substantially intact, showing little or no signs of alterations. The one story additions to the rear and the enclosed front porch are obviously twentieth century additions. The design and technology represented by these features and materials are consistent with those employed for building construction in America in the second quarter of the 19th century.
- The original building was L-shaped in plan with a rectangular two and one-half story main (front) block, with gable roof, and a two story shed roofed rear wing. The building has a rubble stone foundation, visible from the basement. The character of the stone masonry is consistent throughout the basement of both the front block and rear wing, indicating that it was all constructed as part of a single construction campaign. The doorway opening in the stone wall separating the front block and the rear wing is original, and shows no evidence of having been “cut through” at a later date. There is no evidence of the incorporation of earlier foundation walls (or portions thereof) in the existing foundation.
- The first, second and attic floor framing systems are composed of rationally arranged wood joists and beams that are representative on a single period in time. The sizes and surface textures of these framing members are consistent throughout the original L-shaped building, indicating that they are all part of the original design and construction campaign for the building, and are representative of construction practices in this region during the second quarter of the nineteenth century. There is no evidence of the incorporation of an earlier framing system (or parts thereof) in the existing framing.
- The plaster finishes throughout the house are applied to wooden lath with saw marks produced by a circular saw not in use in America until the 1830’s.ⁱ
- Type B cut-nails are found throughout the building. This technology, with nails having burrs on same side of their shanks, was not in use in America until the 1820’s. These nails are found in the flooring, the wooden lath, in the cabinetry and mantels.ⁱⁱ
- Wood screws, characteristic of the 1830’s, are found throughout the building to attach door hinges to door jambs. The screws are those with threads gradually cut by lathe onto a shank, without a gimlet point and with a hand filed head.ⁱⁱⁱ
- The molding profiles found on wood doors, window and door trim, mantles and other millwork are stylistically consistent with those of second quarter of the 19th century America.

Jorge M. Danta
Philadelphia Historical Commission
Greenwood Cemetery House
October 28th, 2009

Please feel free to contact me with questions regarding any of the above information. We hope that this material helps the Commission to resolve some of the questions surrounding this site.

Sincerely,



Andrew Fearon
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ⁱ Viser, T.D., (1997) *New England Barns and Farm Buildings*, University Press of New England, Hanover, ,
pg. 26-27

ⁱⁱ Nelson, L.H., (1968) *Nail Chronology As An Aid to Dating Old Buildings*, *Technical Leaflet 48*.
Nashville American Association for State and Local History.

ⁱⁱⁱ White, C. (2002) *Observations on the Development of Wood Screws in North America*, Museum of
Fine Arts Boston, Boston, MA

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House at 930 Adams Avenue, East Elevation



House at 930 Adams Avenue, North Elevation

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House at 930 Adams Avenue , West Elevation



Area of sample GWCH01, ground level joist – near stairs.



19th century technology found within interior (lath, nails and screw)



North Interior Elevation, 1st Floor



North Interior Elevation, 1st Floor, Mantle



Area of wood flooring, 2nd Floor, with 19th century evidence



Stepped Cornice of Door Architrave, 1st floor.