Welcome to PAST!

The Shane Candies Confectionery at 110 Market Street in the Old City District of Philadelphia, PA.

Paul Marr, Ph.D., Editor, Department of Geography | Shippensburg University | 1871 Old Main Drive | Shippensburg, PA 17257 | pgmarr@ship.edu

Deborah Slater, Layout Artist | By Design Communication Graphics | debs@bingenheimer.com

PAST consists of papers and abstracts of papers presented at the annual meeting of the Pioneer America Society: Association for the Preservation of Artifacts and Landscapes. Any paper that was presented at the previous year’s annual meeting is eligible for publication in this Journal. Manuscripts are not peer-reviewed, and the Editor will make grammatical corrections only. Authors should consult the most recent edition of PAST for examples of the preferred editorial style. Manuscripts should be submitted directly to the Editor via email as Word attachments or via conventional mail on disk or CD-ROM as Word documents. Photos and illustrations should be submitted electronically as .jpg files. “On the Road” is an annual collection of photographic essays devoted to topics relating to material culture in the Americas, and the editor will consider submissions from any member of the Pioneer America Society. Address inquiries, including copyright permission, reprints, inquiries about manuscript and “On the Road” submissions, and letters, to the Editor.

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Katie Algeo, Treasurer, Pioneer America Society: Association for the Preservation of Artifacts and Landscapes | Western Kentucky University | Department of Geography and Geology | 1906 College Heights Blvd. #31066 | Bowling Green, Kentucky 42101-1066 | katie.algeo@wku.edu

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Echoes of the PAST
Letter from the Editor

This issue of the Pioneer America Society Transactions (PAST) contains nine manuscripts from papers presented at the 2012 conference in Philadelphia, PA. The first of these, Lynn Alpert’s “The Philadelphia Corner Store,” traces the history of corner stores in Philadelphia, focusing on the changes to one corner store in the Fairmount neighborhood. She pays particular attention to the façade alterations as the store transitioned from business to residential use.

Siobhan Fitzpatrick examines the architectural and design motifs found at the James Library in Madison, New Jersey in her article “The James Library: House of Knowledge,” and links these motifs to the broader mission of the library: the “desire to provide space for learning and educating the public.”

The influence of the landscape on how people organized their economic lives in 18th century southern Pennsylvania is the topic of Terry Necciai’s article “Indiscriminate Location: The Geography of Organic Farm Boundaries.” Farm boundaries, structures, and activities are shown to be inextricably bound to the land, and that rather than being ‘indiscriminate,’ southern Pennsylvania’s farms were highly organized.

In the article “Philadelphia Encapsulated: Popular Prints and Photographs at the Library Company of Philadelphia,” Erika Piola notes the importance of a few key donations to the library, graphics of the built environment of nineteenth-century Philadelphia. For example, the commercial advertising graphics found at the library “provide both a micro and macro vision of Philadelphia cityscape at the dawn of its notoriety as the workshop of the world.”

Keith Sculle takes his examination of the American gasoline station in a new direction with “Social Memory and the Power of Adaptive Re-Use,” and concludes that gas stations may be among the most adaptable of commercial buildings and their reuse charts a new future while acknowledging the past. Further, he notes that “[h]ow people remember a specific building and associate it with a broader building type can help alter a landscape.”

As the granddaughter of Lebanon Valley College professor Paul A.W. Wallace — author of the wonderful Pennsylvania Historical and Museum Commission book The Indian Paths of Pennsylvania — Edie Wallace traces the Minquas Path from Wrightsville to Fort Manayunk (now the Philadelphia Airport) in her article “Following Grandpa’s Footsteps: Retracing The Indian Paths of Pennsylvania.” Although much altered over the intervening centuries, much of the path and the reasoning behind its specific course remain intact.
In “The Bethel Colony: Intersections of Culture and Built Form,” Janet R. White examines the built environment of a utopian community. Although communal in the broad sense, the built environment belies a certain degree of individualism within the family unit.

Arthur Lawton gives an in-depth review of the manners in which early structures could be designed and laid out without the use of scale drawings in his article “Pattern, Tradition and Innovation in Vernacular Architecture.” He then shows the usefulness of the ‘plan-net’ technique when applied to a series of historic vernacular buildings.

Wayne Brew offers an illustrated guide to the 2012 conference Philadelphia field trip in “Philadelphia: The Vernacular to the Spectacular, An Illustrated Field Trip of the City of Brotherly Love,” complete with a series of images of the locations that were visited.

This issue we have a new occasional section of PAST called Student Research, which highlights recent student research projects. The first of these is by Rebekah Johnston, whose article “A Cultural Landscape Report: Beaver, Pennsylvania and its Central Public Squares” documents the shift in public square use from open space geared primarily towards agriculture to public leisure space. She focuses her research on a single square, following its transformation over time and finds that the shift in use can be traced to a single event — the installation of a war memorial.

And finally, this issue of PAST would not be possible without the help of Deborah Slater. Her web and image editing skills give the journal a truly professional look that allows for the incorporation of graphics in a way that cannot be accomplished with traditional print media. I hope you find this issue of PAST as enjoyable a I have.

Paul Marr, Professor of Geography, Shippensburg University
The Philadelphia Corner Store

Lynn Alpert

Figure 1. Corner store, 1713 Wolf Street, Philadelphia. Photograph by the author.

The corner store is a commercial structure on an otherwise residential block within a residential neighborhood. It is part storefront and part row house. This distinct combination was created to serve the needs of residents on the periphery of city centers in a specific historical moment, the latter half of the nineteenth century into the early twentieth century. The corner store is still a common aspect of urban neighborhoods in the United States today, including many in Philadelphia. Bodegas along with small shops, restaurants, and bars bring vibrance and vitality to Philadelphia’s row house neighborhoods. They are economic drivers and support an active street life. At the same time their extant historic fabric is a visual reminder to residents and visitors of the history of these neighborhoods and can help them to understand the integral role these properties played in the development of the city. Though their uses have changed greatly over time, corner stores are finding new lives as people again are appreciating the benefits of walkable urban neighborhoods and begin to reuse these stores which were so important to the building of these communities over a hundred years ago.

Defining the Corner Store

The design of the typical corner store has been explored extensively in studies of commercial architecture (Figure 1). Corner stores are house-over-shop commercial
structures as exemplified by architectural historian Richard Longstreth in his guide to American commercial architecture (1987). These buildings have existed since antiquity in use, but did not become prevalent as a noticeable and designed type until the early 19th century. Shop-houses express their two uses through a clear division between commercial use on the ground floor and residential use above. This is expressed visually on the façade through different treatments of the first and upper stories. The first story of most historic corner stores have a canted corner entrance that is low to the ground, as compared to the front-facing entrances of adjoining row houses that are raised several feet above ground level for privacy. Corner stores also have large picture windows on the first floor which are located at eye level for the easy display of goods, while the upper stories contain smaller double-hung windows. This division is solidified visually through a first-story cornice that separates the retail space below from the private residential space above.

What sets the corner store apart from this well-studied type is location. Longstreth begins his study by narrowing his scope to strictly commercial areas (1987). The house-
over-shop buildings that Longstreth defines are, inherent to his scope, located on commercial strips or main streets, separated from purely residential areas. The corner store, placed within an otherwise residential zone, is an anomaly in Longstreth’s strictly segregated urban environment. Yet research shows that this residential-commercial mix was not an anomaly at all; it was the norm for these mid-nineteenth through the early twentieth centuries row house neighborhoods. These stores served many needs in their communities. They were typical corner groceries as well as butcher shops, bakeries, dairies, hardware stores, barber shops, and bars.

Historic maps show that corner stores were common in Philadelphia’s residential neighborhoods by the mid- to late nineteenth century (Figure 2). The neighborhoods that contain these stores were some of the first suburbs of Philadelphia. Though technically located within the city limits, they were a part of a trend of urban expansion that was taking place in cities all over the country. Expansion was possible due to advances in transportation and industrialization which led to an influx of workers to cities. Corner stores served the needs of the residents of these newly-formed neighborhoods. This historic pattern of residential development, which placed commercial uses on most corners, can still be seen in the built fabric today. It was prevalent enough still in the 1960s to have left a lasting mark on the city’s zoning code, which was still in use until August of this year, when the city finally adopted an entirely new code. Many corner properties in residential neighborhoods were still zoned as C1, “Mixed-Used ‘Corner Store’ Commercial” properties up until that time and commercial uses are still seen in many neighborhood corner stores today.

**Historic Context**

It may seem odd to us today that such a large number of stores were necessary in these neighborhoods, but there were many reasons for their proliferation. First, the advances in transportation that created these new neighborhoods were not as life-changing as later inventions, such as the car, would be. Though omnibuses and trolleys made it easier for people to travel to and from work, they could be expensive and time consuming and would therefore not necessarily be utilized for shopping. Also, before refrigeration people still needed to shop every day for groceries, and this was not a one-stop shop. Meals were collected from the grocer, the butcher, the bakery, the dairy shop, and the produce market (Beasley 1999; Liebs 1985). As many housewives were not taking the new modes of transportation into the city center, the ability to walk from home to all of these stores was essential. Corner stores also housed local pharmacies, hardware stores, and general stores. Corner bars and saloons were hallmarks of many of these neighborhoods as well. In working-class neighborhoods in particular, the corner bar often double as a community center (Kingsdale 1973). Saloon-keepers were often seen as leaders in the community, and the saloon was one of the few places that locals could go to use a telephone, as well as to find out game scores, pick up mail, and cash a check (Sismondo 2011). As many of these bars were divided along ethnic, racial, and class lines, they were also extremely localized institutions and the majority of neighborhoods had at least one saloon for every block (Sismondo 2011). For all of these reasons, commercial properties on every corner were necessities in these early suburbs.
As the twentieth century progressed, many threats to corner stores, and to the neighborhoods that housed them, developed. The invention of the car had strong effects on commercial architecture and the segregation of commercial uses from residential (Cutler 1980). Cars provided greater freedom of mobility and choice of neighborhood than had ever existed before, and people of means began leaving dense urban neighborhoods for the less-populated suburbs beyond the city limits (Cutler 1980). This “white flight” from urban neighborhoods coincided with other technological advances that significantly changed how people lived and shopped. New large-scale assembly line manufacturing meant that products were more affordable and more widely available (Blumin 1985). People no longer shopped in small stores, but in larger one-stop groceries and department stores, and cars made it possible to fully segregate these new commercial uses from residential neighborhoods, rendering the corner store obsolete in new suburban neighborhoods. By the mid-twentieth century, franchise stores were also becoming the norm, replacing smaller independent retailers (Satterthwaite 2001). In addition, larger groceries and chain stores often require specific floor plans and layouts that do not fit physically within the confines of historic structures. When these stores replace smaller independent stores in urban neighborhoods they cannot move into the historic buildings that many of these independent stores inhabited and must instead demolish and build new or move to other areas, leaving corner commercial buildings vacant. This problem, compounded by the urban disinvestment of the urban renewal period, left a great number of corner stores neglected by the end of the twentieth century.

Figure 3. An abandoned corner store that has retained some historic fabric in South Philadelphia. Photograph by the author.
Figure 4. A residential conversion in Queen Village. Photograph by the author.

Figure 5. A corner store with extensive contemporary renovations in South Philadelphia. Photograph by the author.
Philadelphia’s Corner Stores Today

Not all Philadelphia neighborhoods were victims of white flight and urban renewal. As such, the corner stores of different neighborhoods are in different states of preservation, disrepair, and use depending on what changes these neighborhoods went through over the past fifty years. For instance, in neighborhoods that suffered a good deal of abandonment, many corner stores retain historic architectural details but are in serious states of disrepair and are often vacant (Figure 3). In areas that have seen a lot of recent renewal and gentrification, corner stores have been stripped of much of their extant fabric. Though some have been reused as commercial properties, these are often upscale bars and restaurants, and many first stories have gone through extensive changes to be converted to complete residential use (Figure 4). In some areas, though, residents of fifty or sixty years ago still remain. The stores in these neighborhoods continue to be used as butcher shops and bakeries, pharmacies and barber shops, but they have often lost much of their original fabric in the interest of “updating” or “modernizing” the exterior (Figure 5). Though they exist in these various states of preservation and use, corner stores remain ubiquitous elements of their historic neighborhoods.

A closer examination of the history of one corner store in the Fairmount Neighborhood illustrates how these broad trends in American history took shape on the ground in Philadelphia. Some corner stores are still in use in Fairmount, as pharmacies and corner bars, as well as yoga studios, cafes, and medical offices, but a significant number

Figure 6. 829 North 26th Street as it looks today. Photograph by the author.
of these buildings have been converted to residential use on the first story. The dwelling at 829 North 26th Street currently looks like a typical Philadelphia row house, but when it was completed in 1876, the first story contained many storefront details (Franklin Fire Insurance Company of Philadelphia 1876) (Figures 6 and 7).

A Franklin Fire Insurance Company survey of the building, survey number 52385 completed for John Lyons on May 3, 1876, confirms that there was a store in the front half of the first story as early as that date. It also gives a detailed description of the storefront. Originally the building had a corner entrance that was angled at 45 degrees from the façade, with double doors and a transom above, as well as marble steps. The upper stories of the building cantilevered over the entrance, forming a small covered porch which was supported with a cast-iron column. Side lights and pilasters flanked the entrance and a cornice with frieze extended across the length of the west facade and continued along the south façade to the end of the doorway. These architectural details represent many of the defining characteristics of Philadelphia’s historic corner stores and of house-over-shop commercial architecture.

Upon closer examination of the current structure, it is not too difficult to see the traces of this original commercial design. The front entrance, though no longer canted, is only two steps up from the sidewalk (see Figure 8). This is much lower than the entrances of the adjoining residential properties, as was common for storefront entrances. What would have been the historic storefront area has been faced in a layer of brick.
that is clearly from a different period than the brick on the upper stories and which projects out from the flat plane of the original façade (see Figure 9). This brick covers the entire first story of the west façade and continues along the south façade for several feet, a space that clearly correlates to the area of the storefront described in the 1876 survey. The entire area is capped by a synthetic shingle awning which also correlates to

Figure 8. Detail of the front entrance at 829 North 26th Street. Photograph by the author.
the historic cornice and frieze location. Many of the historic storefronts in Fairmount have undergone these changes as more and more historic shop-houses have been converted to residential use.

The building at 829 North 26th Street is located in what is now known as the Fairmount, or Art Museum, neighborhood. Historically it was a part of the Penn District. As the district grew, it attracted inhabitants from many social classes and is an example of the socioeconomic mixing that was still evident in Philadelphia’s suburbs into the late 19th century (Gillette 1980). The area attracted more proprietary workers as it grew, but by 1880 artisans still outnumbered them (Gillette 1980). The Penn District is marked by the standardized lots and speculative rows that would dominate urban expansion in America at this time, and historic maps show that corner stores and corner bars opened up almost as quickly as parcels could be subdivided, developed, and sold (Hexamer and Locher 1859; Hexamer 1876). The neighborhood was built up over the latter half of the 19th century. Like the property at 829 North 26th Street, the majority of these corner properties were likely designed to express their commercial use on the exterior.

Like many corner stores, this one went through multiple changes in ownership, occupants, and use over time. John S. Miller, a German immigrant, was the first long-term owner of the property (U. S. Census Bureau 1880). Miller was a grocer who lived with his family at 827 North 26th Street, just across the street from 829 North 26th Street, and likely ran his grocery business from the first story of the building (U. S. Census Bureau 1880). Miller was successful enough in his business to purchase the property across the street as a rental property. One of the earliest tenants in the building was the Brill family. John Brill was a Prussian immigrant who ran a tavern, likely the bar room that is listed as the first-story use of the building on an 1876 Hexamer map (U. S. Census Bureau 1880).

The Miller family continued to have success. By 1900 they owned three of the four properties at the intersection of 26th and Parrish Streets (U. S. Census Bureau 1900). 829 North 26th Street had new tenants by this time. The first story changed from a bar to a shop, though the particular use is unclear, and the upstairs was being run as a boarding house (U. S. Census Bureau 1900). In 1910 the shop was more specifically in use as a drugstore (U. S. Census Bureau 1910). The proprietor of the store, Otto Kraus, moved to Philadelphia to attend the Philadelphia College of Pharmacy and Science (U. S. Census Bureau 1910; England 1922). Of German descent, but born in Connecticut, Kraus purchased the property from Miller’s daughter, Ida Ostertag, on June 28, 1916 (Philadelphia Deed Abstracts). By 1920 two of Miller’s daughters, who had been living at Parrish and 26th and running their father’s grocery business up to this point, had both retired and moved to the more remote suburb of West Philadelphia (U. S. Census Bureau 1920).

Otto Kraus owned this property until 1945, when he and his wife sold it to Theordore Ziegler, and it is likely that he continued to run his drug store there until this time (Philadelphia Deed Abstracts). In 1950 the property was still being used as a shop, but by 1958 it had been converted to residential use (Sanborn 1917; Sanborn 1950).
early change from a shop-house to a dwelling may explain the severe loss of historic fabric related to the storefront. Many corner stores in the area were still operating as shops as late as 1958, including the Millers’ old property on the northwest corner (Sanborn 1917). Still, early conversions to residential use such as this may have set a precedent.

Figure 9. Detail of the projecting brickwork where 829 North 26th street meets the neighboring row house. Photograph by the author.
in the neighborhood for the complete removal of storefront fabric when making this type of alteration.

**Conclusions**

Fairmount has changed greatly over the past twenty years, but a number of Fairmount’s historic corner stores are still in use as businesses. There are a few pharmacies and bodegas in the area, but the one traditional use that has stood the test of is the corner bar. The area gentrified rapidly over the past few decades, and upscale bars and restaurants within walking distance, and generally located in historic corner storefronts, have given the area appeal to young people who may have grown up in the suburbs but have decided to live in a city. The neighborhood is vibrant and walkable, and is made safer due to the active street life that these bars and restaurants promote. In this way, corner stores are now serving many of the same purposes that they did when they were first built. They offer services that meet the specific needs of their residents and therefore attract more people to the city. They also reflect the specific history of these early suburbs in a time when dense and walkable neighborhoods are on the rise. In this way, their historic purpose is being reborn and helping to bring these neighborhoods back to life.

**References Cited**


**Author Biography**

**Lynn Alpert** is an Architectural Historian at Richard Grubb and Associates in New Jersey and recently earned her M.S. in Historic Preservation from the University of Pennsylvania. Her research interests concentrate on urban vernacular architecture, both in the United States and abroad.
Philadelphia: The Vernacular to the Spectacular— An Illustrated Field Trip of the City of Brotherly Love

Wayne Brew, Montgomery County Community College

Physical Setting
Over 250 million years ago a great super-slow-motion collision took place when Africa and North America came together to form part of a large super-continent called Pangaea. This resulted in mountain building and the remnants are the ancient uplifts of the Appalachians. In the Philadelphia region the collision altered the rocks with pressure and heat creating metamorphic rocks. Many structures in Philadelphia are built with the most common of these rocks called the Wissahickon Schist, which is characterized by its shiny (mica) striations. Another useful rock found in the region is a thin band of limestone which creates excellent soil conditions for farming. Further west the limestone underlies large areas in Lancaster County. These rock formations create the foothills of the Appalachians and are referred to as the piedmont. To the east, these formations are buried under sediments deposited from the weathering and erosion of these rocks from the north and west creating the coastal plain. This change in topography is referred to as the Fall Line; it is delineated by the first rapids on the rivers stretching inland. The Fall Line plays a crucial role in the location of many cities along the east coast of the U.S. This is the furthest point that ocean going vessels can navigate. Falling water also provides energy to turn wheels leading to grist mills and later textiles. It also fosters the construction of roads, canals, and later railroads to move goods in and out. Philadelphia has an excellent site; fertile soils, relatively mild climate, large areas of flat land for expansion. The situation is not as good, specifically a harbor 80 miles away from the ocean. The situation is what quickly made New York City the dominant location for trade and eclipsing Philadelphia as the largest city in the U.S. Philadelphia turned to manufacturing as a strategic response to this situation.

People
Prior to the Europeans, the indigenous people who occupied the site were the Lenni Lenape Native Americans who established several villages in the vicinity of present day Philadelphia. Philadelphia was founded by William Penn. Penn and his merry band of Quakers were not the first, but followed other Europeans that got there first including the Dutch, Swedes, and Finns.

William Penn (1644 – 1718) is the son of Admiral Sir William Penn who fought for Oliver Cromwell and the Parliamentarians during the English Civil War. Admiral Penn also maintained contact with Royal forces throughout the conflict and after the Restoration both Charles II and James II rewarded him. Cromwell’s reward to Admiral
Penn was pilfered lands in Ireland. Son Penn grew up well educated in middle class privilege, but developed a habit of embracing free thinkers and their radical ideas. While attending Oxford, Penn developed sympathies for the non-conformist Religious Society of Friends which caused trouble at school and home. Penn officially join the Quakers in 1666 and was later arrested and placed in the Tower of London for eight months under solitary confinement. Authorities gave him a pen and paper so that he might write an apology. Instead Penn composed another anti-authoritarian pamphlet called No Cross, No Crown. It did not prove to be a favorite among Anglicans or the palace set. Eventually insiders negotiated a release.

Nearing death, Admiral Penn came to accept and begrudgingly admire his son’s radical ways. He cut a deal with the Duke of York and in return for his long-term service to England he received a promise to protect his son. This pact led the crown to give Penn land it did not really own for money it did not have (the early form of mortgage derivatives?).

**What’s so Funny About Peace, Love, and Understanding?**

Penn wanted order and peace so he decided that his City of Brotherly Love and colony would welcome people from all backgrounds and religions in what is referred to as the “Holy Experiment.” He negotiated fairly with the Native Americans, at least at first, and advertised to the landless and persecuted people of Europe that if you buy land and follow the rules that you will be left alone by authorities and prosper. Penn decided that Philadelphia would be surveyed as a one-mile-by-two-mile grid with broad streets running east-west and north-south and meeting at angles. He did not want Philadelphia to be a dense city like London; instead he wanted a “Greene Country Towne” with each block a mini-farm. Penn had seen the results of the catastrophic 1666 fire in London and this led him to want a less dense city with buildings made of stone or brick. This ordered, cardinal-compass approach had an influence on the township and range system implemented by the federal government and the many cities in the U.S. founded after Philadelphia. Figure 1 shows the boundaries of the original city along with the townships established in Philadelphia County which was consolidated as the present day area of the city in 1854.

**Workshop of the World**

After New York surged ahead to become the most important city in the U.S. Philadelphia found an advantage in manufacturing. The great farmland that surrounded Philadelphia, well documented by Lemon in “The Best Poor Man’s Country,” meant abundant harvests of grain that could be processed and shipped. Many of the immigrants coming to Philadelphia were skilled workers, especially in textiles, mechanics, and brewing. This provided a valuable and experienced pool of labor to draw from. Anthracite coal was discovered not far to the north, providing a power source used in great quantities after improvements in transportation technologies (canals and railroads) and the steam engine.
By the late 1800s and up until 1930 Philadelphia was known as “The Workshop of the World.” Philadelphia had some very large industries; the Baldwin Engine Works, a sprawling complex that made steam locomotives for the whole world, comes to mind. But most industry in Philadelphia consisted of small- and medium-sized shops that were specialized using highly skilled labor. As large as the Baldwin works were, each locomotive was unique and was designed with the criteria each client wanted. This led to a great quantity of output of all sorts of consumer goods (textiles, shoes, cigars, etc.), but more importantly the quality of the work was exceptional. Another major industry in Philadelphia, this one concentrated along the Delaware, was ship building. The Cramp’s shipyard was one of largest. During World War I a large ship-building
complex was built on Hog Island. The workers who rode the ferry to the island started calling the sandwiches they took for lunch “Hog Islands.” Eventually this term would be corrupted to give name to a famous Philadelphia tradition: “Hoagie.”

The qualities mentioned above that made Philadelphia a great industrial center were also the undoing of this great complex. Philadelphia industry boomed during World War II, but after the war the efficiencies of the mass production system, that brought down prices and quality, and a shift in consumer preferences for more novelty and quantity led to a steady decline in the fortunes of industry in Philadelphia. Companies that could turn out the same item cheaply and consistently through the mass production system were the winners. Mass production also has very different infrastructure and transportation requirements that were not available in the city limits of Philadelphia. All of these factors led to a steady decline of manufacturing in Philadelphia which led, along with other factors, to population loss to the suburbs.

The Row House

When Penn’s original idea of the “Greene Country Towne” did not materialize and landowners and speculators realized the value of the land, they solved the problem by subdividing the lots into slivers with back alleyways to cram in as many structures as possible. The row-house was not invented in Philadelphia, but it was fully embraced, with brick as the building material of choice. One can take the symmetrical characteristics of the Georgian Style house and chop two-thirds away, connect them together and have a continuous line of row-houses. The larger lots could accommodate row-houses that are one room wide, but two to three rooms deep and several floors high. On the back alleys many were built that are only one room deep and these are referred to as band-box houses or trinity houses. The basic design of a row-house has remained the same, but the facades have been altered to reflect the changing popular styles. The early row-houses reflect the Federal and Adam styles with some classical revival motifs. As the 19th century progresses one finds Gothic, Italianate, Mansard, and Queen Anne elements incorporated into the structures. In the early 20th century one can find the eclectic styles that were popular, including Tudor, Spanish Revival, Dutch Colonial that appear in the facades along with elements of the bungalow style in a flattened, almost cubist, nature. After World War II a return to colonial styles and to a lesser extent a turn to neo-eclectic styles is evident.

Early Transportation

Once the port of Philadelphia was established and it was realized that the Schuylkill River was not navigable above the Fall Line, Native-American pathways were utilized. Many of these pathways were improved and turned into turnpikes. Ridge, Germantown, Passyunk, Lancaster, Frankford, and Baltimore are good examples of the early pikes that cut across the formal grid established leading to center city. Canal projects were planned early, but not executed until a two-mile segment of the Schuylkill Canal was completed in 1819 just above East Falls. Pennsylvania, through both private and state funding, built the most extensive canal system (1356 miles) in the United States. Unfortunately, by the time many of those projects were complete they were made ob-
solete by the railroads. There is a rich railroad history connected with Philadelphia that is beyond the scope of this effort.

Ben Franklin Parkway
Our trip begins by leaving the hotel and making our way to the Ben Franklin Parkway. It may appear to have been built into the original plan for Philadelphia, but it was not part of Penn’s Plan and is a great example of what is referred to as the “City Beautiful Movement.” The idea for the parkway was first proposed in the late 1800s, but this diagonal one-mile stretch cutting across Penn’s grid was not executed until 1917. The parkway was designed by Jaques Greber and Paul Cret to open up a grand entrance way to Philadelphia and was influenced by the Champs-Élysées in Paris. The parkway is a large footprint and was accomplished by tearing down an area of industry, warehousing, and modest housing. The buildings you see were all built after the completion of the parkway and the area is dominated by museums and landscaping. Recently much effort has been put into making the parkway more pedestrian friendly. Figure 2 is a set of images that document this part of the trip.

Art Museum
The Art Museum (see Figures 2b and 2c) was designed by architects Shay and Abele and completed in 1928. It is one of the largest museums in the U.S. and attracts 800,000 visitors a year. The steps are famous in popular culture for the “Rocky” franchise of movies when Sylvester Stallone climbs the steps to rousing music. After Rocky III was filmed Mr. Stallone donated the statue to the Art Museum who turned it down saying, “The statue is not art, it is a movie prop! Remove it please.” For years the statue sat outside the Spectrum Arena in South Philadelphia. In 2006 a compromise put the statue in a grassy area off to the side of the steps. It is a popular for tourists to run the steps and then take a photograph with the statue (see Figure 2c).

West Philadelphia, Fairmount Park, and 1876 Centennial Grounds
West Philadelphia was opened for suburban development after the bridging the Schuylkill River with horse cars and later, electric streetcars providing access. You can see this reflected in the Italianate, Mansard, and Queen Anne house styles. Lancaster Avenue is an old turnpike that cuts diagonally across the grid that was extended into West Philadelphia which is also part of the Lincoln Highway.

The genesis of Fairmount Park begins with the waterworks and the protection of the water supply coming from the Schuylkill River. Some wealthy Philadelphians started building summer homes outside the city proper for the cooler air and away from yellow fever epidemics. Starting in the 1850s these estates were donated or purchased and pieced together to create one of the largest urban parks in the world spanning over 9000 acres. The bulk of the park straddles the water sheds of the Schuylkill River and Wissahickon Creek, but also includes smaller tributaries. A large segment was developed for the 1876 Centennial Celebration.
Figure 2 is a collection of images from the beginning of the tour. (Top to bottom) 2a: A view of the Ben Franklin Parkway from the Art Museum steps. 2b: The front of Art Museum. 2c: The first movie prop on our tour, The Rocky Statue.
Figure 3a (top) is Memorial Hall, one of only two buildings from the 1876 Centennial Celebration. Figure 3b is the other surviving building, the Ohio House, which is now a restaurant.
The International Exhibition of Arts, Manufactures, and Products of the Soil and Mines, now known as the Centennial Celebration, ran from May to November in 1876. The grounds and most of the buildings were designed to be dismantled after the event. The event was 10 years in planning, but the bulk of the work was done just in time to open a month later than planned. The statistics are staggering: 450 acres, over 200 buildings (five of major size), over 30,000 exhibitors, over ten million visitors (roughly 20 percent of the U.S. population at the time), all enclosed by a three mile fence!

Only two original structures survive. Memorial Hall was designed by Hermann Schwartzmann, who was an engineer and never had designed a building before, to be a permanent building to house the Art Galleries for the exhibition. It is a great early example of beaux-arts architecture. After the exhibition it became the Pennsylvania Museum of Art and its collection was later transferred to the Philadelphia Museum of Art. The Fairmount Park Commission took over in 1958 and converted it into a recreation center. It fell into disrepair and by 1982 it was being used as a police station. In 2005 the Please Touch Museum started an $85 million renovation, opening for business in 2008 (see Figure 3a). A scale model of the fairgrounds is still housed in the building.

The Ohio House (Figure 3b) is the other remaining building that was constructed using many varieties of sandstone from Ohio. After the fair it was in the hands of the Fairmount Park Commission. It was eventually listed on the National Register in 1972 as a contributing structure and was rehabilitated for the Bicentennial Celebration. In 2006 the Fairmount Park Historic Preservation Trust leased the building for adaptive reuse as a café, undergoing extensive restoration in the process, and opening to the public in 2007.

One of the great losses was Horticultural Hall, which was also designed by Schwartzmann to be a permanent structure, and once housed a great botanical collection. It was the largest conservatory at the time and was constructed from iron and multi-colored glass panels to create a large greenhouse completed in a Moorish style. It was surround by 35 acres of landscaped gardens with a large reflecting pool. As the years went by the building attracted fewer visitors and fell into disrepair. It survived a devastating fire in 1931, but the upkeep was expensive, and minor damage during Hurricane Hazel (1954) was used as an excuse to demolish the building in 1955. Its collection was “sown by the wind” to the New York Botanical Garden and Bronx Zoo, with some specimens sold at public auction. The demolition fever was quelled by $200,000 that was raised to save Memorial Hall from the same fate in 1958.

**Girard College**

Stephen Girard was born in France and left home at 14 working on a ship and learning the business of trade from the bottom up. He arrived in Philadelphia in 1776 and spent the rest of his life here engaged in shipping and later banking becoming one of the richest men in the U.S. Girard never had children, but most of his wealth was bequeathed to build and operate a school for “poor, white, male orphans.” The school grounds are walled and encompass 27 acres. When Girard College (Figure 4) was constructed in
1833 it was far away from the heart of the city. Founders Hall is a magnificent example of Greek Revival and was designed by Thomas Ustick Walter. Eligible African-American males were not admitted until 1968 after a long battle in the courts. Reverend Martin Luther King, Jr., spoke at the front gates in 1965.

**Eastern State Penitentiary and Northern Liberties**

Eastern State Penitentiary was started in 1822 and completed in 1829 as a Gothic fortress (Figure 5a). The layout was designed in spokes like a wheel and individual cells with the belief that solitary confinement was the best way to rehabilitate convicts. The design is credited with 300 more prisons built in a similar manner. The prison has a footprint of eleven acres and held some notable prisoners over the years—Willie Sutton and Al Capone, to name just two. The prison operated until 1971 and was then abandoned and left to crumble. The prison is listed as a Federal National Historic Landmark in 1965, but very little is done to preserve it until 1991 with daily tours starting in 1994.

The Northern Liberties section is an old part of the city that developed just north of the original city limits along the Delaware River. This area was gentrifying rapidly before the 2008 crash. Schmidt’s Brewery once occupied fifteen acres here, but when torn down provided much space for new development (Figure 5b). Schmidt’s was started in 1860 and was the last surviving brewery in Philadelphia when it was closed in 1987.
Figure 5a (top) is Eastern State Penitentiary. 5b shows the large scale development projects that replaced the large footprint of the Schmidt’s Brewery.
Penn’s Steps and Penn Treaty Park

Front Street reveals the remnants of port activities that were so vital to the city’s early history and includes a set of steps (Figure 6a) that were installed by Penn’s order to provide public access to the port. Penn directed that steps like this to be installed all along the water front and these are the only ones that have survived.

Legend has it that under an elm tree in the Native American village of Shackamaxon, Penn signed a treaty celebrated for never being broken. If this really happened or not will never be known, nor will the exact location if it did occur, but the elm tree was recognized and celebrated as the location for many years until a storm blew down the tree in 1810. Wood from the tree was used to make many souvenirs; one piece ending up as a small box given to Abraham Lincoln. A shoot from the tree was planted in Bay Ridge, NY by the family that owned the tree. It was moved on rail flat cars to another one of the family’s estates to Wilkes-Barre in 1887. Over time shoots from this tree and also later generations were planted in other locations including here in the park (Figure 6b). The myth of this event and location is so powerful that the statue of Penn on top of City Hall faces this location. The tree ends is prominent in Edward Hick’s famous painting “Peaceable Kingdom” completed 40 (1848) years after the tree was gone. Penn Treaty Park was established and became part of Fairmount Park in 1894. The obelisk commemorating the location (Figure 6c) was erected in 1827.
Figure 6a (facing page) is the last surviving set of steps that provided public access to the waterfront.  
6b (above): A plaque to commemorate the lineage of clones of the Treaty Elm that have been planted at Penn Treaty Park.  
6c: Shows the monument to honor the original location of the Treaty Elm.
**Fishtown**

Legend says that Fishtown was named by a visiting Charles Dickens, but it was actually named for the seemingly inexhaustible shad that migrated up the Delaware River. The shad proved to be exhaustible, but the name stuck (Figure 7a). After a long absence enough shad have returned to hold festival every April where more beer is consumed than shad eaten. When the shad ran out the river front became devoted to ports (especially coal exports), ship building and other industries. The Sugar House Casino (Figure 7b) was named after a large complex that once refined Jack Frost brand sugar that ceased operations in 1984 and was demolished in 1997. The neighborhood filled in over a long period so you have architectural styles that reflect that including trinity (band-box) row houses, federal period, romantic, and Victorian elements. Recent gentrification has added some interesting contemporary house structures to the mix. This neighborhood felt the effect of the federal bulldozer when I-95 was constructed in 1985 which effectively “fileted” Fishtown.

**Palmer Cemetery**

The sign says 1732, but the historic record documents 1765 as when Palmer Cemetery was officially established. A survey of land in 1750 indicates that this area was already being used as a burial ground, but for how long is unclear; thus the sign. What is clear is that Palmer Cemetery (Figure 7c) holds veterans of most of the wars, a multitude of victims of the yellow fever epidemics (169 for the 1793 episode that killed about ten percent of Philadelphia’s population), and continues to take in local residents and is considered one of the oldest free community cemeteries in the country. Anyone that lives within the borders of Fishtown can claim a spot by driving poles into the ground and hitting no obstacles.
Figure 7 are images from the Fishtown section of Philadelphia. 7a (opposite page): A colorful mural in Fishtown celebrating the mighty psychedelic shad. 7b (top): The Sugarhouse Casino is not operated by Native Americans, but is sited just south of Penn Treaty Park. 7c: A scene from Palmer Cemetery.
North Philadelphia

Along Broad Street there are remnants of the great mansions that were built along this major thoroughfare. Temple University has recently brought significant changes to the surrounding neighborhood due to increasing enrollments and students who want to live in an urban setting. When Temple was established (1884) this was a prosperous neighborhood, but it declined with the closing of the nearby factories. The Temple on Broad Street, adaptively reused as a preforming arts center, was recognized with a certificate of merit for historic preservation by PAS:APAL. On Germantown Avenue is Fair Hill Cemetery that was started in 1843 near a Quaker Meeting House (1703). When it was established it was at the far-edge of urban development, but eventually it became an island in a densely developed area. It is the resting grounds of many who were involved in the Underground Railroad including feminist and abolitionist Lucretia Mott and abolitionist Robert Purvis. With the decline of the neighborhood the site became a trash strewn (even abandoned cars) weedy lot that was used by drug dealers and users. The neighborhood decided to take back this treasure and cleaned it up and it was listed on the National Register in 1998.

James Logan and Stenton

William Penn was not known for his good judgment of people, but he chose well for his assistant with James Logan. He met Logan in Bristol working as a teacher. By the time (1701) Logan came to Pennsylvania to be Penn’s representative he had command of five languages (beyond English): Latin, Greek, Hebrew, French, and Italian (And later in life he added Arabic, Persian, and Syriac). He was also a brilliant mathematician, not only having the only copy of Newton’s *Principia Mathematica* in the New World, but most likely the only one who understood it. Logan was a Renaissance man who also dabbled in botany and able to decipher how the maize plant is pollenated. His private library held 2500 books which are still held by the Library Company of Philadelphia. He proved to be a great manager of Pennsylvania and he became a wealthy man in the process. Logan was one of the first in Philadelphia to use his wealth to build an estate in the country so he could have some peace and quiet to pursue his intellectual interests. He called the estate Stenton, named for his father’s birthplace. Stenton was completed in 1730 and is considered the first of the Queen Anne Style built in the region. The estate has been reduced to a six-acre oasis in what became a densely developed industrial area. The buildings, grounds, and barn have been preserved (see Figure 8).

Germantown Avenue

A plethora of historic buildings and sites can be found along Germantown Avenue with architectural styles that cover the colonial to the contemporary. In the Chestnut Hill business district a concerted effort was taken in the 1950s and 1960s to ‘colonialize’ everything, so you will see pent roofs added to Spanish Revival buildings. A transplanted modern structure (Figure 9) was added which is covered in PAS member Kevin Patrick’s *Diners of Pennsylvania* book and it now called the Trolley Car Diner (previously the Joe Palooka Diner in Wilkes-Barre). The tracks and wires are still in place along Germantown Avenue, but the trolley has not run since 1992 on what was the longest route in the city.
Figure 8 shows the Stenton house and PAS members getting a tour of the buildings and grounds.

Figure 9 is the Trolley Car Diner in Mount Airy.
Chestnut Hill

Chestnut Hill is a good description for this early example of a railroad suburb; it is the highest point in Philadelphia and it still has a great deal of tree coverage. Chestnut Hill first started as a crossroads village created in the early 1700s where Bethlehem and Germantown Pikes met. Both roads were extended and improved in the early 19th century.

Figure 10 are images from the east side of Chestnut Hill. (Left to right, top to bottom) 10a: I-House on Germantown Avenue. 10b: Italianate style mansion. 10c: The Baptist Church in Chestnut Hill early on added a clock and bell tower. Other churches in the area delayed installing towers content to be “on Baptist time.” 10d: The Graver Lane train station. 10e: The water tower built to serve Chestnut Hill.
as turnpikes and became the lifeline for this gateway village. You can see this reflected in an I-House that is now used for business (Figure 10a). Several roads were built perpendicular to Germantown Pike to allow access to the grist mills along the Wissahickon Creek. There was limited development beyond farming until the railroad.

The Reading Railroad built a line to Germantown in 1832 and extended it to the East Side of Chestnut Hill in 1854. This allowed wealthy people to live in the cooler and greener areas outside the city and still maintain the amenities of the city a short train ride away. You can still see the homes built near the train station in the Gothic, Italianate (Figure 10b), and Mansard styles popular at the time. Figure 10c shows one of the early churches in Chestnut Hill. The Gravers Lane Station (Figure 10d) was designed by Frank Furness and built in 1883. It was listed on the National Register in 1977 and was restored in 1981. The water tower (Figure 10e) was built in 1859 to distribute public water to the area. It was supplied by a reservoir where a recreational center stands now.

**Henry Houston and the West Side**

Henry Howard Houston was a leading Philadelphia businessman and philanthropist who made his wealth as one of the important men at the Pennsylvania Railroad (PRR). Houston was instrumental in building the Philadelphia, Germantown, and Chestnut Hill branch of the PRR in the early 1880s which was in direct competition with the less powerful Reading Railroad (RRR) that was built earlier to this area. This became a successful venture for both the PRR and Houston who had purchased large tracts of farmland in Chestnut Hill prior to the building of the line and stations in 1882.

Houston built and established amenities to attract his upper-class cronies to move to Chestnut Hill. A large resort hotel (see Figure 11a) was built in 1884 with 250 rooms to bring in summer vacationers and potential full-time residents. The hotel was not used for long and now forms the core of the Chestnut Hill Academy. From 1892 to 1908 a large and exclusive horse show was held that eventually moved and has become the well-known Devon Horse Show. The Philadelphia Cricket Club was established in 1854 when the Anglo centric wealthy took to the game that was brought to America by immigrant English hosiery workers. Houston provided a permanent home in 1884 in a Queen Anne structure that was replaced by the current colonial revival building after a fire in 1909. Houston then added at his own expense the Saint Martin-in-the-Fields Episcopal Church in 1889 (see Figure 11b). The church, like most of the buildings mentioned above, was designed by the Hewitt brothers, both of whom had worked with Frank Furness and went on to become distinguished architects on their own.

Houston also built large Queen Anne Style houses (Figure 11c). He rented the houses out to hand-picked wealthy folks like himself, only selling occasionally so that he (and later the estate) could keep control of who lived in this exclusive suburb. This power extended to changing the names of the typically numbered streets to Native American names (Navajo). Houston eventually completed his large mansion/castle in 1886 calling it Druim Moir (great ridge). It is surrounded by 52 acres of lawn, gardens (ornamental and agricultural), deer park, livestock pens, woodlots, and two large
Figure 11 are images from the west side of Chestnut Hill. (Left to right, top to bottom) **11a**: This image shows what was just one corner of a large resort built by Houston to attract potential residents to his development. **11b**: Saint Martin of the Fields Episcopal Church completed in 1889. Houston grew up in western Pennsylvania as a Presbyterian, but converted later in life. **11c**: This is just one of many Queen Anne Style houses built by Houston. **11d**: Robert Venturi’s “Moms House” designed and built for his mother Vanna Venturi. **11e**: The Esherick House designed by Philadelphia Architect Louis Kahn. **11f**: A replica of the George Washington family ancestral English home, Sulgrave Manor.
greenhouses to supply flowers year-round. The front of the estate is now occupied by a private school and the house is not accessible to the public.

After Houston’s death (1895) his daughter (Gertrude) and son-in-law George Woodward built their own mansion and also continued the tradition of building rental housing, but designed in eclectic styles for more modest incomes. By 1920 he set aside land for Pastorius Park and had completed 180 houses. The area around the park later attracted several modern and famous Philadelphia architects to build houses there. Robert Venturi built a house for his mother in 1964 (Figure 11d). Louis Kahn designed a house (Figure 11e) for Margaret Esherick which was completed in 1961. Another project funded by Woodward near Pastorius Park is a replica of Sulgrave Manor, the ancestral English home of George Washington. A replica was built for the 1926 Sesquicentennial celebration in Philadelphia and proved to be a big draw. Woodward bought the interiors and had one of own architects (H. Lewis Duhring Jr.) design and build a replica (Figure 11f)

Ridge Avenue

Ridge Avenue follows the Native-American Perkiomen Trail that originates in Shackamaxon Village on the Delaware River (Fishtown) and trends northwest to Reading. The road was established as a turnpike in 1706 the name comes from the part of the road that straddles the ridge between the Wissahickon Creek and Schuylkill River in Roxborough (see Figure 1). One of the earliest surviving structures has been dated to 1716 (Figure 12a) Ridge Avenue also has many examples from the 19th and 20th century architectural styles mixed in. Many of the older cross roads (Wise Mill, Lizvey, etc.) were established to transport grain grown on top of the hill to the early grist mills established along the Wissahickon Creek and are named after the mill owners.

Soon after his successful venture in Chestnut Hill, Houston decided to develop the second highest point in the city. The Andorra Section, named for, but not quite as picturesque as the Pyrenees, was the site of his next project. He first bought most of the farmland and then proceeded to make plans to build a branch of the PRR to this area planning to create another exclusive neighborhood like he did in Chestnut Hill. The economic depression in 1893, along with the realization that the railroads were over-extended financially, ended these dreams. Houston died in 1895 leaving his real estate operations to his family. With no direct railroad connection this area remained mostly open land. Over the years several interesting schemes were proposed to get a return on their investment.

After the great success of the 1876 Centennial celebration Philadelphia was eager to host the 1926 Sesquicentennial Celebration. The agents of the Houston Family proposed using their land in Andorra and some exotic ideas were proposed including an almost mile-long escalator to bring visitors from boats plying the Schuylkill up the hill to the fairgrounds. It appears that the development costs scared away the planning committee and the fairgrounds ended up in a reclaimed swamp in South Philadelphia.
In 1926 102 acres of the Houston Estate were purchased by the Episcopal Diocese of Pennsylvania with plans to build the largest cathedral in the world. In the end only the apse and a small side chapel were ever completed (Figure 12b). By the time the depression and WWII are over the enthusiasm dimmed and the plans abandoned. The apse and side chapel continues to be used for services, but the grounds around it were used to build a retirement community.

In an interesting, but little known part of history, Philadelphia was seriously considered to be the permanent headquarters for the United Nations. Once it was determined that it could not be done near Independence Hall, Andorra was proposed and was favored by half of the location selection committee. Only a last minute offer by J.D. Rockefeller of a parcel of land along the East River sealed the deal to bring it to New York City.

The Houston Estate eventually developed the land in the 1950s with post-World War II suburban style housing and a shopping center. Other parcels have been used for more utilitarian purposes like reservoirs and large antennas that would never have been tolerated in Chestnut Hill.

**Water-Works**

Roxborough is the second highest elevation in the city thus making it a great location to distribute water and later to build radio and TV transmission towers. The reservoirs (Figure 12c) date to 1892 and were in use until the early 1960s. Nature has reclaimed them since creating a wetland area on top of a hill. Over the years this 34 acre site has tempted developers; serious consideration was even given to building the NFL Eagles’ practice facility here. In order to preserve this area as open space the Upper Roxborough Civic Association was able to get the neighborhood listed on the National Register in 2001 and expanded it in 2004 to include the reservoirs. The pumping station complex at the bottom of the hill along the river was demolished in 2011.
Manayunk

For a full discussion on Manayunk please refer to a recent article I wrote for PAST (2012). The name Manayunk was created from a Lenape Indian term for this location along the river that meant “place where we drink.” A canal was completed in 1819 that created a sliver of land between the canal and river which soon became crowded with textile mills that were built to take advantage of the water power available along with other industries (paper mills and soap factories). When steam engines improved the mills were no longer tethered to the canal and so you can find mills scattered throughout this neighborhood. You can also find many small two-story structures that housed the workers. Manayunk thrived as an industrial center, but a slow, steady decline took place in the 20th century and by 1960 most of the industry was gone, but not the residents. The once-thriving business district was mostly abandoned by 1960.

It was common knowledge in the early 1980s that gentrification was going to happen, but it did not proceed quickly. There were weak signals that changes were underway in the 1970s, a few antique stores had opened and closed, but not much else that would indicate a major change was coming. Until the mid-1980s Main Street was still dominated by vacant business, building supply firms, and a handful of surviving bars and sandwich shops that catered to locals. The business district may have been mostly abandoned, but the residential areas were still predominantly occupied by long-time residents. There was no significant influx of artists or other “pioneers” until much later in the gentrification process.

The buildings on and near Main Street are turn-of-the-century Italianate and Queen Anne styles, constructed of brick and local stone, and for the most part unaltered (Figure 13a). The changing whims of taste did not get a chance to alter the integrity of the buildings; they were like a time capsule of the past. Along with the architectural charm was an urban landscape built on a human scale of mostly two to three stories that already had a history of businesses at the street level with apartments above. Main Street was designated as a historic district in 1984. The entrance to Manayunk is framed by a railroad bridge (Figure 13b).

By the 2000s the number of long-time residents was declining and newer residents were moving in. The U.S. census shows long-term residents being replaced by renters. The escalating price of homes have attracted outside investors who have bought properties and converted them to rentals. Another main driver of this change was a government policy; a ten year tax abatement for new or significantly remodeled (loft apartments in old industrial buildings) structures. The long-term residents and any interested “pioneers” could not compete well with outside investors and their resources. Housing prices escalated significantly up until the 2008 housing bubble.

“I see dead people”

Laurel Hill is one of the great cemeteries in the U.S. and the first to be designated as a National Historic Landmark (1998). It was established in 1836 and the designers set out to make sure it would be a tranquil and picturesque location along the banks of the Schuylkill River far away from the city. In a time when most people were buried in
Figure 13 are scenes from Manayunk. 13a (top): A scene from Main Street showing the typical architecture. 13b: The arch bridge entrance to Main Street in Manyunk.
churchyards, Laurel Hill was something very different, a non-sectarian cemetery in a
garden-like setting, created in the mold of Mount Auburn Cemetery (1831) in Cam-
bridge, Massachusetts. It was a place designed for both the dead and living with 30,000
visitors in 1848. Laurel Hill expanded to 78 acres and is the resting place of many
famous Philadelphia citizens. Rocky Balboa’s fictional wife Adrian is also fictionally
buried here; another movie prop. See Figure 14 for a set of images from the cemetery.

**Figure 14** images from Laurel Hill Cemetery. **14a.** The grand entrance to Laurel Hill. **14b.** Part of the
cemetery named millionaires row. **14c.** The memorial for Harry Kalas, much beloved announcer for the
Philadelphia Phillies along with stadium seats from Veteran’s Stadium; the microphone is referred to as
the ‘Halas Phallus’. **14d.** A gravestone that a geographer can appreciate. **14e.** An area reserved for Girard
College orphans. When the death rate came down at the turn of the 20th century the amount of room
provided was no longer necessary. **14f.** The grave stone of Andrian Balboa, another movie prop, the last one
(see Figure 2c.)
All Aboard the Coltrane

The great jazz saxophonist and composer John Coltrane lived in Philadelphia during his formative years from 1942 to 1958. In 1952 he bought the Victorian house (Figure 15) on North 33rd Street for himself and extended family. In 1958 he moved to New York, but his mother continued to live in the house until her death (1977) and then his cousin Mary (for whom he named a song) acquired the house. In 2004 it was sold to a dedicated fan with plans to restore the house. It was designated as a National Historical Landmark in 1999 and the current owner has set up a non-profit to continue the restoration.

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**Author Biography**

Wayne Brew is an Assistant Professor of Geography at Montgomery County Community College who teaches introductory courses in Cultural, Physical, World Regional, and Urban Geography. When not busy teaching his research is focused on historical geography including vernacular structures (houses and roadside commercial architecture), remnants of transportation infrastructure (canals, rail, and auto), and cultural landscapes. He has Bachelor of Science degrees in Earth Science (Geology Concentration) and Geography from the Pennsylvania State University and a Master’s degree in Geography from Temple University.
The James Library: House of Knowledge

Siobhan Fitzpatrick, Curator of Collections and Exhibits, Museum of Early Trades and Crafts

The James Library (Figure 1) is located in Madison, New Jersey. It was built and donated to the town by one of Madison’s best-known residents, D. Willis James. As with many of Manhattan’s elite in the late nineteenth century, he was attracted to the bucolic setting of Madison and eventually built a country house in the town. Always interested in philanthropic and educational work, James had been president of the Children’s Aid Society, a trustee of Amherst College and benefactor of several institutions, including the Metropolitan Museum of Art (New York Times 1907). Beginning in the 1880s he turned his attention to the town of Madison, first creating a park for the town and then setting about the creation of the town’s first free public library. Construction of the library began in 1899 and was completed in 1900. His motivation to build the library was two-fold; to give back to the residents of Madison and to educate newly arrived immigrants who worked in the area’s burgeoning rose growing industry. Ultimately the interior decorative motifs of the Madison’s first free public library, which soon after its opening became known as the James Library, reflects the founder’s desire to provide space for learning and educating the public.

The library was designed by the architectural team of Charles Brigham and Willard Adden. While both are well known independently for work on other buildings, their partnership was short-lived; in fact there are only two other known projects that they collaborated on, the James Mercantile Building (completed in 1899), which stands opposite the James Library, and the Atlantic Avenue Station of the East Boston Tunnel, run by the Boston Transit Commission (Delaney 2012). In much of their work, including the James Library, these Boston-based architects followed the increasingly popular Richardsonian Romanesque Revival Style. Developed by Henry Hobson Richardson, this style was characterized by massive stone walls with rough cut sides, extensive use of semicircular arches, and a dynamic new use on interior space (Howe 1998). The decorative details on the building, including all the stained glass and stenciled brick, was completed by the A.B. Cutter Company, another Boston-based organization. It was run by the owner, Arthur B. Cutter, who had received training in a variety of decorative arts, including tile painting and the art of stained glass.

James’ decision to hire Bostonians versus New Yorkers may help to account for the stylistic differences seen in the James Library versus other public buildings in the New York area at the time. While Boston was strongly influenced by the Richardsonian Romanesque Revival, New York tended to favor the Beaux Arts style for many of its public buildings, especially those dedicated to learning, at the turn of the century. The Beaux Arts style which was imported from France by such architect as Richard Morris Hunt, was highly formal, monumental in size and offered extensive decorative details. It was favored for its ability to deliver a strong symbolic message (PHMC 2013). The James Library has ultimately benefited from a preservation standpoint, with its distinc-
Figure 1. Exterior view of the James Library, now the Museum of Early Trades & Crafts, located in Madison, NJ, which was built in the Richardson Romanesque Revival Style.
tion as one of the best examples of Richardsonian Romanesque Revival style in the state of New Jersey.

The library has several motifs that appear throughout the building, including repetitive floral designs and carved stone supports. The figure of the torch appears in the stained glass windows, on the front of the stacks, and along the balcony railings and represents the promotion of education. In the ancient Greek myth of humanities origins, Prometheus, who molded man from clay, steals fire from the gods and brings it to earth where he teaches man how to use it. Of course Prometheus is punished for his actions, but knowledge and technology derived from fire, remain. Thus, in art and architectural embellishments the torch is literally the spark of knowledge as it symbolizes the embrace of knowledge or the advancement of technology. This symbolism is especially appropriate for a library. The James Library further emphasizes the significance of knowledge by pairing the torches with laurel wreathes, symbols of victory and achievement. Also incorporated into the design to promote education are the school’s seals which appear on the arch above the double doors leading into the Trustee’s Room.

Figure 2. One of the many stained glass windows in the James Library, this window section features a quote from Benjamin Franklin and is illustrated with a Franklin Printing Press.
These seven seals represent the original seven colleges in the American colonies. From left to right they read Columbia University (1754), University of Pennsylvania (1740), the College of William and Mary (1693), Harvard University (1636), Yale University (1701), Princeton University (1746) and Queen’s College (aka Rutgers University) (1766) (METC 2012). The original institutions of higher learning in the United States all predate the nation itself; striving for admission to one of these schools was the ultimate educational inspiration that the library could offer.

The building also has many decorative quotes which relate to the promotion of education. These quotes are taken from a wide range of individuals, including many still familiar to modern readers, such as William Shakespeare, Henry Wadsworth Longfellow, and Johann Wolfgang von Goethe. Others are from individuals who were well known at the end of the nineteenth century but have since faded from popular memory, including Edwin Percy Whipple, Herbert Spencer, and Edward Bulwer-Lytton. Altogether the building has a total of twenty-five quotes which can be divided into four main themes: Science & Technology, Religion & Philosophy, Language, and Politics. The majority fall into the two categories of Religion & Philosophy and Language.

Of the four main themes Science & Technology contains the fewest quotes, but the stained glass windows that represent those themes are among the most beautiful in the building. This theme does contain one quote by an American, Benjamin Franklin: “Never leave that till tomorrow, which you can do today” (This quote and all others are copied as they appear in the James Library). While Franklin’s famous saying is still well known, even by modern audiences, the illustration of the quote proves far more illuminating. The window prominently features a Franklin printing press (Figure 2). The image is associating Franklin with his work as a printer, and the printing industry that aided American growth and educational development, rather than focusing on his work in politics or scientific inquiry (Wood 2004).

The next theme is politics. Most of the political quotes revolve around the need for educating the masses, part of the library’s mission. From Horace Mann, major advocate for mass education (Finkelstein 1990), comes the quote, “Education is our only political safety.” This was not a new concept; the idea dates back well over two thousand years with one of the earliest statements coming from the Roman writer Dionysius, “The foundation of every state is the education of its youth” which also appears in one of the museum’s windows. Mann’s quote is illustrated with a simple heraldic device with a center image of an open book reading ‘veritas’ or truth. The image suggests that truth or knowledge can be found through reading. The Dionysius quote on the other hand uses slightly more complex imagery. It features a young man in robes or perhaps a cloak-covered toga being lead forward by a winged woman carrying a lantern. The woman, who looms larger than the youth, is a Christianized interpretation of Muse or Knowledge. The lantern forms a symbolic connection with the torch motif and the myth of Prometheus.

The other two quotes that involve politics or political figures are “They are never alone that are accompanied by noble thoughts” from Philip Sidney, a writer and political figure during the reign of Queen Elizabeth during the sixteenth century (Hamilton
1977), and “Music is a stimulant to mental exertion” by Benjamin Disraeli, a political figure of Jewish ancestry in the nineteenth century (Bloy 2012). Both of these quotes suggest that classical learning, either through musical education or other general learning, will improve the ‘quality’ of the person. The Disraeli quote is accompanied by an image of a woman playing a lyre. The image suggests that she may be one of the muses, a fitting inspiration for anyone trying to learn. The Sidney quote is located in a center window arch accompanied by a quote by Theodore Parker (discussed below). The space allows for little ornamentation but it does contain floral borders and a small circular image at the top featuring an owl sitting atop a stack of books. The owl traditionally has been a symbol of wisdom and books representative of knowledge or learning.

The connection between the Sidney and Parker quotes brings us to the third theme, religion and philosophy. Sidney and Parker make an unusual pair; they did not share a country, a century or a religion. But perhaps what could be said of them is that they did share a love of knowledge and learning. Parker’s quote, “The books that help you most are the books that make you think the most,” reflect his role as both one of the nineteenth century’s most influential ministers whose congregants included Julia Ward Howe, Louisa May Alcott, and Thomas Wentworth Higginson, and also his role in the Transcendentalist Movement (Grodzins 2002). He also has the distinction of being one of the few Americans selected for inclusion in the library. But he does not stand alone- also included are two quotes from the Unitarian preacher William Ellery Channing, who rose to prominence during the Second Great Awakening in the 1830’s and was highly influential for the Transcendentalism Movement, even though he did not approve of it (Channing, 1899). His two quotes remain un-cited in the library. Of the two the one which directly relates to learning appears carved on the fireplace mantel. The quote reads, “God be thanked for books; they are the voices of the distance and the dead, and make us heirs of the spiritual life of past ages.” This quote comes from a longer statement that promotes reading for religious enlightenment among all classes, and would have been prominently visible by anyone visiting the library.
The library also uses three biblical references, two of which relate directly to learning: “Happy is the man that findeth Wisdom, and the man that getteth Understanding” (Proverbs 3:13) and “How forcible are right words” (Job 6:25). Within a library setting their intent would imply the pursuit of knowledge and its use for higher purposes. Both of these quotes appear without illustration, perhaps because biblical passages would have been so well known to a late nineteenth century audience it was deemed unnecessary to clarify the intent with allegorical or symbolic figures (Figure 3).

The last two quotes I wish to discuss are by Francesco Petrarch, the father of humanism (Reeve 1878), and Edward Bulwer-Lytton, a British Victorian writer famous for his poetry, plays and novels, who also served in the English Parliament and became involved in several reform movements. While Petrarch is still widely regarded, Bulwer-Lytton remained a person of importance only until the beginning of WWI when his literary, social, and political importance began to fade from memory due in large part to criticism of his ponderous writing style (Bulwer-Lytton, 2006). Petrarch’s quote reads “Glory is acquired by virtue; but preserved by letters.” Petrarch was noting the transition from an oral to a literate society. While being virtuous might be enough to bring glory to your family, only a written record would ensure a lasting memorial. By the close of the nineteenth century this would ring especially true and act as a warning to library patrons. Petrarch’s quote also uses a variation on the heraldic device, and prominently features a laurel wreath in the center. Traditionally laurel wreaths were awarded to great heroes and artists for service to their respective communities in ancient Greece. Military leaders also wore them after major victories in ancient Rome, and thus the laurel wreath tended to symbolize the achievement of glory. Bulwer Lytton’s quote reads, “The pen is mightier than the sword.” Used for many purposes, including promoting education and advocating peaceful rather than violent protest, these words have developed a complex and layered meaning for a modern audience that makes it difficult to determine their meaning to a late nineteenth and early twentieth century audiences. Placement within a library would indicate that the quote was being used to encourage education, suggesting that even the strongest person might be defeated by an educated man. The quote is accompanied by a rather simple image, a quill pen tied to a scroll; though the scroll has no writing, it is implied that the pen will soon be used for just that purpose.

James’ building remained the town’s library for over sixty years, but by the 1960s the collection had grown too large, and the needs of the town had outgrown the space. As a result a new building was built on acreage with land to expand. When the new building opened in 1969 the James Library closed to the public and its contents were transferred to the new branch. In 1970 the Museum of Early Trades and Crafts (METC) began leasing the building from the Borough of Madison and continues to do so (Delaney 2012). The interior of the building saw some changes while still being used a library. Before World War II the unfinished basement rooms were “fitted out with drywall and repurposed as finished spaces,” and after WWII a bridge was installed joining the “two mezzanine levels used for the upper stacks, replacing a staircase to the mezzanine on the side near the tracks” (Delaney 2012, 6). More dramatic changes were made when the building became a museum. For the Bicentennial “partitions were installed on the
main floor… and a drop ceiling was installed over approximately 2/3s of the main floor to create an attic level for storage;” and then in 1987 part of the lower levels were converted into exhibit space as well (Delaney 2012, 6).

In 1993 the METC began restoration of the building, in part with a New Jersey Historic Trust Grant. Early efforts focused on exterior restorations and preserving the stained glass windows, but in May 1996 the METC vacated the building and interior restoration work began. The building reopened in September 1997 with a fully restored interior and new Americans with Disabilities Act (ADA) compliant rear conservatory entrance (Delaney 2012). Building surveys for these restoration efforts revealed a history of drainage issues in the building and a concerted effort was made to improve drainage. Unfortunately, problems have persisted. Damage on the basement level caused by Hurricane Irene made underlying issues readily apparent. As a result the METC has already undertaken a new building survey and developed a Preservation Plan in order to begin fundraising efforts for what is estimated to be a 2 million dollar, 10-year restoration project for the James Library. The METC greatly desires to preserve this architecturally and historically important building for future generations.

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**References**


**Author Biography**

**Siobhan Fitzpatrick** received her B.A. from Ramapo College of New Jersey and her M.A. in history from Villanova University. She has previously worked with the National Park Service and currently serves as the Curator of Collections and Exhibits for the Museum of Early Trades & Crafts in Madison, NJ.
Pattern, Tradition and Innovation in Vernacular Architecture

Arthur J. Lawton

Introduction

By mid-nineteenth century, architecture’s inherited practices of past geometrical design and lay-out were being forgotten, largely due to improved general literacy and calculating skills and the advent of aids like the retractable tape measure and blueprints. As practical interest in geometry was disappearing, academic interest in geometry developed as a source of beauty, efforts that sought to identify basic principles of harmony and beauty. Early architectural historians sought the Golden Section, the Fibonacci series, square root of two, the triangle, square, pentagon, hexagon or octagon as governing principles of floor plans. They attributed philosophical, religious or folkloric significance to them rather than demonstrating them as practical steps that create plans and buildings. This methodology sought geometrical figures embedded in the plan by superimposing the favored element on plans to identifying coincident points between diagram and plan lines.

Recent analysis turned to geometry’s practical role in lay-out practices. In 1967 J. Marshall Jenkins examined Welsh vernacular ground lines, noting that from a circle one can easily construct a square whose side length equals the circle’s diameter.1 On this basis he suggested square and circle were the earliest instruments regulating building

Figure 1. Jenkin’s analysis; rotating the diagonals of an assemblage of squares that circumscribe circles.
Figure 2. Gunzo dreams the plan for Cluny, (Paris, Bibliothèque Nationale MS lat.17716, fol. 43

construction (Figure 1). His analytical method rotated the square’s diagonal to one of its sides to create a $1 : \sqrt{2}$ rectangle. Jay Hambidge called these figures root rectangles in his earlier work on geometry and design.2

While Jenkins accounts for all rectangular components of the Llaethdy floor plan, this analysis is an assemblage of multiple adjacent units lacking whole system unity. However, from this work the present author’s research began, seeking an organically unified plan-development system, functionally effective regardless of the following limitations that shaped pre-modern construction practices; 1. minimal to non-existent calculating skills, 2. lack of the numerically graduated tape measure, 3. restricted durability and size of portable drawing surfaces, 4. information transmission from design to construction by template, 5. identical geometrical steps by divider and straightedge or cord and peg. Given vastly different pre-modern methodologies we are well advised to follow Henry Glassie’s advice to seek “an account not of how a house is made, but how a house is thought.”3
Two practices enable thinking a house without detailed measured drawings. First, proportionally related sequential steps constitute an inter-related system wherein all subsequent steps are governed by information contained in the previous step. Secondly, identical divider-straightedge steps and cord-peg steps enables calculation-free scale change between design and construction. Scholars have raised a critical question on each issue.

Arguing that large construction processes were governed by modular grid and referring to the grid-like geometrical pattern in the twelfth century illumination *The Dream of Gunzo*, Konrad Hecht, asked

“If the miniature does in fact render a proportional pattern, what would the proportional pattern be that exists as some parallel and some rectilinear lines”?

Above Gunzo (Figure 2), Saints Peter, Paul, and Stephen uncoil long cords in a network revealing the ground plans Gunzo must convey to Abbot Hugh.” Hecht argued then that modular measurement governed the lay-out, not geometry. On the other hand John Harvey argued for geometry in *The Medieval Architect*,

“So far as there is direct surviving evidence for systems of medeval proportion, it indicates that they were the result of direct use of geometrical methods, and never involved calculation. Arithmetical and algebraic functions are there, but they went unrecognized by the craftsmen who reached their objective by a different road.”

In *The Wise Masterbuilder* Nigel Hiscock pointed toward a key question regarding scale transformation from design to construction.

“Although the documentary evidence shows that the designing of a plan on parchment and laying it out on site both depended on the employment of geometry, the precise connection between design and dimension remains elusive.”

Plan-net analysis, proposed as a hypothesis, brings together Konrad Hecht’s ‘proportional pattern that exists as some parallel and some rectilinear lines’ and Hiscock’s elusive connection between design and dimension. Answering Hecht, plan-net analysis extracts a network of parallel and rectilinear lines from an initial square base figure, that in answer to Hiscock, is done without calculation through identical divider-straightedge and cord-peg steps. Plan-net lines and intersection nodes mark all plan features and identical geometrical steps transform scale from design to construction. Extracting from its initial base figure an accurate floor plan by means of a plan-net serves to validates the plan-net hypothesis.
Elements Contributing to Plan-Net Methodology

The plan-net as a tool is documented in the foundation texts of Egyptian temple foundations. Alexander Badawy noted they describe ceremonies to lay out ground lines in *Ancient Egyptian Architectural Design: A Study of the Harmonic System*. The house of Rattaoui, “...was loosened by means of the plan-net that was measured perfectly.” Geometry itself is a method of measurement. Badawy says the verb translated as “loosened” also means “unfurl” or “solve,” when marking the building axis or outline (Figure 3). The term “loosening” is made clear in an inscription referring to Thutmosis III, in whose hieroglyphic figures the Pharaoh personally performs a double ceremony, each phase described individually and in differing language.

“The king himself, who performed with his two hands the stretching of the cord and the spreading out of the plan-net, putting it on the ground.”

Badawy believed the first phase, cord extension, plotted the building axis or marked its outline. Based on the second part I suggest the first phase plotted the axis, ritually orienting the plan-net and the second phase staked out the ground lines using the plan-net, w3wt, a word etymologically related, to w3w3 meaning “to plan” or “to project,” and to w3t, meaning “cord.” He continues,

“The scene described by this text usually features the king facing Seshat, the goddess of architecture and reckoning, both driving a tall stake in the ground. A cord is wound around both stakes as a symbol for the plan-net. Some texts define the striking of the nbi stake: He spread out the plan-net, the nbi stake, being in his hand.”

Badawy discussed other texts in which width was determined proportionally to the length by an archived geometrical rule. A text from Dendera says: “Its length is exact, its width according to the formula (ds, d3js), its norm is in excellent work.” He suggested that “loosening” or “solving” implied by the term w3h’ indicated that Pharaoh and priest outlined the building and staff determined inner divisions from plans. I propose that casting the plan-net both marked the outline and position of all internal major elements. Badawy noted that the Pharaoh kept a close eye on ritually significant works,

“King Sahure followed the progress of the work on two stelae for the audience hall ‘to be done in the presence of the king himself,’ and that ‘every day’ his majesty had ‘color’ put on them and had them painted in blue...”

From the New Kingdom several records describe the interest of King Thutmosis III in foundation ceremonies.

“My majesty ordered that the foundation ceremony should be prepared (at the approach of) the day of the Feast of the New Moon, to spread out the plan-net upon this monument....This god (meaning in this case the Pharaoh) assumed the station (for) the spreading out of the plan-net... Behold the majesty of this revered god desired to do the extending of the cord himself.”
Plan-net analysis speaks to the design problem, marking both the exterior building outline and internal plan details and to the non-calculated change of scale problem, manipulating geometrical constructions rather than numbers.

To govern a creative process shaping physical material, the Greek sculptor Polykleitos developed a sequentially proportional systematic canon to extract the whole human form in correct proportions from a single base figure (Figure 4). Richard Tobin reconstructed the process and tested it on the Doryphoros statue in figure four, each new step generated from information contained in the previous step. All steps manipulate geometrical figures rather than numbers.

The base figure is a square the length and width of the distal phalange of the little finger. Its diagonals rotated to one side transform the square to a $1 : \sqrt{2}$ root rectangle. In Figure 5 this rectangular figure marks the width and length of the adjacent medial phalange. Rotating the medial diagonal proportions the proximal phalange and similarly from there to the wrist, from wrist to elbow and from elbow to shoulder top. Each new step advances the diagonal’s pivot point.

For the main body the diagonal’s pivot point in figure six remains the same (Figure 6). The head to clavicle diagonal extends from the head to the nipple, the head to nipple diagonal extends to the groin, from head to groin to the knee, and from head to knee extends to the soles of the feet. From finger to shoulder the pivot point advances with each segment. From head to foot it remains in one place. Tobin’s sequentially proportional reconstruction manipulates geometrical forms, organizing the completed work as a unified whole. Method variation in determining pivot point allows some freedom within the proportional system. He demonstrated extraction of the dimensions and proportional relationships for all elements of a completed sculptural figure from an initial base figure.
Figure 5. The canon of Polykleitos applied to the forearm. (Drawing by Richard Tobin)

Figure 6. The canon of Polykleitos applied to the whole body. (Drawing by Richard Tobin)
Such methods from the ancient world were not forgotten in the later pre-modern world. They were elaborated and appear in part in the textual record in the 1486 publication of Büchlein der Fialen Gerechtigkeit (Booklet Concerning pinnacle Correctitude) by Matthes Roriczer. Lon Shelby noted in his study of Roriczer’s work that,

“The medieval manuscripts by or about masons generally have a theme running through them that clearly establishes the ‘art of geometry’ (frey Kunst der Geometry) as fundamental in producing what Matthes Roriczer called ‘drawn-out stonework’ (ausgezogene Steinwerk)...”

Medieval masons solved stereotomical problems “primarily through the physical manipulation of geometrical forms by means of the instruments and tools available to the masons.” He called this constructive geometry, the construction and manipulation of simple geometrical forms using rule-of-thumb procedures followed step by step with virtually no mathematical calculations. They extracted the “right” form out of the base figure, as Roriczer says in his booklet, Büchlein von der Fialen Gerechtigkeit,

“I have tried ... to explain the beginning of drawn-out stonework – how and in what manner it arises out of the fundamentals of geometry through manipulation of the dividers, and (how it) should be brought into the correct proportions – and to draw these hereafter-mentioned forms...”

Roriczer clarifies that his work was the ‘beginning’ of drawn out stone work, not the full story. The 1459 Regensburg Masons’ Ordinances prohibited anyone from doing mason’s work who failed to how to “take the measure (Mass) or the extrapolation device (Auszug) out of the base plan (Grund),” that is, “extracting” it from the base figure. We turn now to how the base figure is developed and how to extract the elevation from the base figure.

Roriczer begins with three concentric squares that are proportionally related (Figure 7). Points g,e,h and f, and points i,k,m and l are easily constructed center points of their respective lines, but how to construct them in parallel for base figure he does not explain (Figure 8). As constructed by the author figure eight shows three parallel squares in the same proportional relationship (Figure 9). In figure nine, the nested squares are elaborated into the base figure to extract the pinnacle that consists of the body, the cap and the finial. Figure 10 illustrates extraction of the pinnacle body. The extraction device is the central vertical line divided into six equal segments marked I to VI above the square base figure below. Base figure intervals are copied directly onto the horizontal top and bottom lines of the extraction device. Similar steps extract the cap and the finial from the base figure.

Egyptian foundation texts identify the plan-net as methodology and Gunzo’s dream miniature suggests a working plan-net. Polykleitos used sequential proportionality and the root rectangle to extract all human body proportions from a square base figure. Roriczer explained more elaborate constructional geometry solutions for architectural
Figure 7. Roriczer’s first three steps construct three nested and proportionally related squares. From Roriczer’s Büchlein von der Fialen Gerechtigkeit.

Figure 8. How to draw the nested squares in parallel with each other. (Drawing by the author)
design problems. The Sulva Sutras demonstrate cord and peg use to solve problems of architectural lay-out.

**Method and Application of Plan-Net Analysis**

In Figure 11 an early nineteenth century French book on the first degree of Freemasonry displays the tools necessary for plan-net analysis. Within the Pharaoh’s cord are divider and square, Gunzo’s network of cords and on the tablet left of the straightedge a square defined by two pairs of intersecting parallel lines. This square merits our full attention as it is the base figure for plan-net analysis.

The square in figure twelve contains two diagonals, both longer than the sides by $1 : \sqrt{2}$ (Figure 12). To expand the square into plan-net, rotate these diagonals from their corner pivot points to superimpose them on the square’s sides. At the end-points of the diagonals, mark a new line perpendicular to the side lines to form a root rectangle (Figure 13). In subsequent steps diagonal pairs of any existing rectangle may be rotated,
The Sulva Sutras (sutras of the cord) of seventh century Vedic India describe the use of constructional geometry by cord and peg to lay out altars with the precision required by ritual. Altars were all composed of the same number of bricks but constructed in a wide variety of shapes. Sutra technicians worked with circle, triangle and square figures, used cord and peg methods of constructive geometry to assure ritual exactness of size between variously shaped altars.16
Figure 11. Set of Masonic symbols from an eighteenth century French Masonic handbook.
Figure 12. The basic figure of plan-net analysis preserved in Masonic symbolism.

Figure 13. Expanding the plan-net by selecting intersection nodes as pivot points for new quadrangles.
resulting in a growing cascade of new intersection nodes, each additional node a potential starting point for the next step.

How then does one get from initial square base figure to complete floor plan? The ca. 1745 Bertolet House in Berks County, Pennsylvania is a Germanic three-room central fireplace log house (Figure 14). The analysis begins in figure fifteen where square ABCD marks the fireplace width, one jamb inside line DC and the other outside line AB. AD marks the staircase edge (Figure 15). Rotating diagonal BD to E marks the front wall with the front door at $\frac{1}{2}$ DC. Diagonal BD to F marks the left gable wall. From a new and larger rectangle corner, diagonal GB to H marks the staircase turn at the landing and GI to J marks the rear wall, with the rear door at $\frac{1}{2}$ AB. Again from G, diagonal GK to J marks front and rear windows. Diagonal MN to O marks the right gable wall.

The lateral central partition on the right side centers neither on the fireplace back wall nor the right gable wall, but is precisely at $\frac{1}{2}$ of side BC of the square ABCD. Perhaps coincidence, but since all significant plan elements are marked by plan-net lines or nodes, it is plausible that square ABCD was in fact the beginning figure in plan development. Analytical characteristics frequent for this house type are; 1. The initial square defines fireplace location and size. 2. Plan development begins by completely developing the kitchen area. 3. The transverse gable length is determined prior to the lateral length. 4. Transverse development and lateral development are separate stages. 5. The systematic proportions of root rectangles unify the Bertolet plan throughout the whole.

This flexible and simple method is suitable to a small one and a half story log house at the point of initial settlement or the two story stone house with double attic of a well to do community leader such as Henrich Antes. Though the proportions differ somewhat, his floor plan is the same three-room central fireplace plan (Figure 16). What is different is social position and economic means and a slight variation of the steps taken. Like the Bertolet house, the square ABCD defines the fireplace and marks the front and rear door (Figure 17). Added steps make the developed kitchen area wider and mark the full transverse axis. Antes’ variation occurs in the following development of the lateral axis.

Square ABCD marks three fireplace walls, the front door and the rear door. BD to E marks the left gable wall and BD to F marks a break in the firewall where in the Bertolet house it marked the front wall. JE to H marks the rear wall and BI to J the front wall. DB to G marks line GP for the front parlor window and the lateral partition door. Then Antes broke with Bertolet’s pattern. Antes copied interval KH to HM to mark the right gable, making HJ the transverse center line, producing a more square design consistent with houses of his Bürger neighbors in Freinsheim, Germany. Interval JM copied to MO marks the partition between front and back rooms, resulting in a square parlor. Wall and partition positions are now complete. Window and door details are either aligned to the plan-net lines or are at intervals between those lines as copied from adjacent locations. BH copied at right angles to HP marks the single original rear window. The small window to the right is a later addition. The window at U is $\frac{1}{2}$ LQ
Figure 14. The ca. 1745 Bertolet house in Berks County, Pennsylvania.

Figure 15. Four plan-net analysis steps mark out the Bertolet House floor plan.
Figure 16. The 1736 home of Henrich Antes, an immigrant Bürger from the Kleinstadt of Freinsheim in the Rhenish Palatinate.

Figure 17. Antes floor plan; asymmetrical three-room plan and off-center hearth location flanked by symmetrical gables, with right and left halves balanced across centerline HJ.
and the window at R is \( \frac{1}{2} \) QM. The single front window is at line PG, the front and back doors are at line AD and the left gable window is at \( \frac{1}{2} \) KN.

Plan-net lines for exterior walls are inside the walls. On the right gable, window center points neatly quarter line LM. Measured from the outside gable corners these window centers have no unit of measurement common to outside corners and all window centers, suggesting plan-net lines KL and NM played a role in lay-out. For the window at P, there is no rational for division any interval by halves or quarters, but rotating BH to HP fits conveniently.

This analysis renders visible certain elements suggesting transition. The facade, the off-center hearth and the three-room plan are asymmetrical and reproduce exactly the identifying features of both the Bertolet house and the traditional plan by Richard Weiss seen in Figure 18. However, the Antes centerline HJ divides the plan into two evenly balanced halves, the left gable window is centered on the gable wall and the right gable windows are equidistant from the both corners and the lateral center line, all indicators of symmetry.

Figure eighteen presents the Bertolet builder as a conservative agent of vernacular, architectural tradition. Adapting proportions to meet personal needs and resources, his plan is very conservative (Figure 19). Henry Antes was an active social agent, in Pennsylvania a Justice of the King’s Peace, a beloved and respected religious leader and high-
Figure 19. Antes’ asymmetrical plan and façade flanked by symmetrical gables communicate both his upper-class position and his connection to tradition.

Figure 20. Haus Hulscher, 33 Bucherstrasse, Thon, circa 1930. Photo by Rudolf Heim.
ly competent millwright. Given his position, it isn’t surprising to see the traditionally asymmetrical facade and floor plan sandwiched between two symmetrically organized gables hinting of Pennsylvania Georgian symmetry. The interior plan symmetrically balances three asymmetrical rooms across a central fire wall. That Bertolet and Antes actually used plan-net design methods is unproven, but using plan-net analysis to tease out pattern embedded in floor plans provides a new perspective. Correlating plan-net and sociocultural pattern identifies innovative uses of stable traditional methods, communicating social position to the immediate community and effecting change in architectural pattern over the long term.

Pattern rendered apparent through plan-net analysis can contribute to interpreting the architectural fabric of a building (Figure 20). In the 1930s Rudolf Helm photographed and drew the floor plan of a Schwedenhaus in Thon, near Nürnberg, a German house form shown in figure twenty and dating from the fifteenth century.19 Elements of this house such as the kitchen hearth and the parlor heating oven, separated by a fire wall, adhere to tradition and are clearly original. The massive roof seen in figure twenty is supported not by the low walls but by the eight posts in Figure 21. The analysis marks the four exterior walls, the hearth location and the arrangement of posts. Some partitions fall precisely on these lines, but Helm indicated with dotted lines three partitions
incompatible with the Schwedenhaus tradition and whose origin is indeterminate from the building fabric. Not falling on plan-net lines, analysis suggests these three partitions are later alterations. Figure 22 is the proposed original floor plan based on this analysis. Its pattern of spatial division and use corresponds to his many fifteenth and sixteenth century houses plans from Nürnberg.

Plan-net analysis alone does not directly document use of the method for pre-modern design and layout. It does however provide insight into a deeper basis for design, and contributes to interpreting a building’s fabric.

**Endnotes**


**Author Biography**

Presently a PhD candidate at Indiana University, Bloomington, Indiana in the Department of Folklore and Ethnomusicology, **Arthur J. Lawton** lives in Tifton, Georgia. His dissertation examines the geometry and arithmetic of vernacular architectural design and layout. Additional research includes the life of Henrich Antes, an 18th century German millwright and Baumeister in Pennsylvania.
Indiscriminate Location: The Geography of Organic Farm Boundaries

Terry A. Neccai, RA, Preservation Architect and Architectural Historian

The way farm boundaries have been shaped in Pennsylvania and adjoining states is a marker of material culture, settlement history, and agricultural heritage. The irregular-looking lines, seen especially in the southern half of Pennsylvania, developed in response to the hills and hollows that characterize a large portion of the state. Beyond a mere response to topography, they correspond closely to farm design, barn types, and agricultural trends. They reflect, for instance how fields are laid out for pasturing sheep vs. cows. They were a logical way to divide land in preparation for laying out functional farms of the time, generally following the topography and in most cases, placing each farm in only one watershed. Within the bounds of each farm, the seemingly irregular lines relate to the way landscape features were arranged and connected together for functionality. They also reflect the typical scale and other characteristics of the state’s agricultural facilities in the eighteenth and nineteenth centuries, as affected by cultural, historic, and farm management factors.

The legacy of organic lines used for farm tracts across southern Pennsylvania in the eighteenth century continues to affect how the landscape looks today. These boundaries and the patterns they produce, including the outer fields and inner working areas of farms, are important historical evidence and essential aspects of the character of the state. They should be part of what historians seek to identify and preservationists seek to preserve. The boundaries and other features that make up the physical layout of Pennsylvania farms contain rich information waiting to be unlocked, clues that frequently help in explaining how and why agricultural facilities from barns and springhouses to fences were located, designed, and built the way they were (Figure 1).

The southern half of Pennsylvania was almost entirely carved into land grants between 1680 and about 1820. The lines defining the original tracts were only rarely rectilinear, especially after ca.1720 (Figure 2). Land patents in rectilinear shapes tend to date from either before 1720 or after 1787. The largest rectilinear boundaries tend to be the earliest, as nearly level plateaus were divided into the first large speculative tracts granted by the Penns. Notably, these immense, nearly square tracts were carved into smaller farms along organic lines as they were subdivided. The initial property lines for any given area, whether orthogonal or free-form, were usually divided into manageable farms, often for three or four branches of the original family. Non-orthogonal geometry became more and more common as divisions were made, so that property maps of the southern half of the state increasingly resembled a crazy quilt until the trend changed in the 1780s (Figure 3). Following the natural lines of the topography, many of the farms were almost octagonal, often roughly shaped like a six-sided coffin, or sometimes a pentagon, an irregular trapezoid, a triangle, or some other polygon. After 1787, the use of rectilinear boundaries for land grants came back into vogue for the limited areas
still available at the edges of the southern half of the state, as well as generally across the state’s Northern Tier.

Land boundaries in Pennsylvania, thus, tend to fall into three periods. The first was when William Penn (1644-1718) was still alive. Penn employed a surveyor, and together they sold some of the most level land in expansive plains and plateaus, dividing it into large tracts, usually with rectilinear boundaries. By the time of Penn’s death, the Pennsylvania Land Office had descended into chaos. Settlers continued to lay claim to land, but the colony’s legal system for finalizing ownership remained dysfunctional until the land office was reorganized in 1732 (Klein and Hoogenboom) shortly after
Figure 3: The stark contrast between rectangular (south, east, and west) and free-form farms (center north area) marks the map (below) of land patents in Richhill and Gray Townships, Greene County (western edge of the county at the state’s southwest corner). The rectangular tracts are from the 1780s, likely speculative and/or tracts granted as military payments. The non-orthogonal lines are dated either 1780s or even later, in the 1800s, but may be pre-1780s settlements by families who secured their land titles later.

Figure 4: On the above relief map, lines have been added to show the areas where rectilinear farm boundaries were used on the majority of land grants after 1787. Though not all level, this area is beyond the larger mountains, closer to Lake Erie, and at the headwaters of rivers where the plateaus tend to be less eroded. The inset at the bottom right shows the areas Pennsylvania purchased from Native American tribes at different times. The grid pattern is in some of the last areas granted within land purchased between 1768 and 1792. (Larger base map from Relief Map of Northern Appalachians, U.S. Geological Survey, 1908. The inset map at the bottom right was prepared by the Pennsylvania Historical and Museum Commission in 1933 to illustrate the purchases and the formation of counties. Available online at: http://www.pabookstore.com/gemapofco.html.)
Lancaster County was formed. By that time, however, a new approach had evolved on the frontier, and the Pennsylvania government wisely accommodated it, as did the governments of several other states, notably Virginia. Settlement moved swiftly across southern Pennsylvania between ca. 1730 and ca. 1790. The population was growing and Pennsylvania purchased land in large swaths from the Native Americans and then redistributed it to settlers. By the end of the Revolution, the land available to settlers and investors was limited generally to the state’s western fringe, plus the northern half of the Commonwealth (Figure 4).

The use of rectilinear boundaries after 1787 was most likely influenced by a controversy that had unfolded nationally about how to divide land in what was to become Ohio. While Pennsylvania was still distributing tracts according to state-level policies, the land policies for Ohio were under the control of the new federal government. Thomas Scott, the congressman representing the southwestern corner of Pennsylvania fought the hardest to accommodate non-orthogonal farm boundaries in Ohio (Pattison). Some Virginians sided with him, but they were far outnumbered by representatives from states further north who were focused on New England’s interests.

The controversy was not rooted so much in the question of farm boundaries as it was in a concern about municipal government and the ideal form of democracy at the local level. New England’s representatives to Congress wanted to see New England style townships in Ohio. New Englanders had already begun to move to Ohio in groups, naming new settlements after the New England community from which the group had come. Pennsylvanians and Virginians, on the other hand, wanted settlers from their states to be able to go west one family at a time and select individual farms based on matching the land to the farm characteristics they understood, in accordance with the traditional land division methods used on the frontier as it had moved from the center of Pennsylvania across the Appalachian Mountains and associated plateaus and to the Carolinas, Kentucky, etc. The New England representatives, in their attempt to perpetuate their system, ridiculed the Pennsylvania-Virginia approach, labeling it “indiscriminate location.” The compromise was the Cartesian grid that developed for the Midwest in which a township was more a measurement of land, and not necessarily a community. The organic system of setting farm boundaries in Pennsylvania and Virginia thus got caught in the crossfire of this debate, and afterward, even Pennsylvania shifted back to using rectilinear boundaries.

In the frontier areas of Pennsylvania and Virginia, between 1718 and 1787, the custom was that the family interested in acquiring land went out in search of unclaimed territory, typically just west of the most recent areas to be settled. They selected a suitable site and began making improvements. They looked for a water source and preferably a meadow, (i.e., a small wetland or grassland clearing) that could provide a readymade grazing area and hay source for their cows and sheep. They lived on the land in a log cabin or some other crude accommodation for as much of each year as they could, afraid to leave for fear someone else would lay claim to the land and the meager improvements they had made (Munger). Clearing a few acres, planting grain, and building a cabin were considered the first steps in retaining rights to a given parcel
(Munger, Doddridge, Leyburn, Hoefling). On the frontier, these improvements were usually respected. It was taken as an unwritten law (Munger) that anyone who had made a sufficient dent in the forest had the right to retain the land they had chosen. The settlers would also mark trees, delineating the perimeter of what they felt was the appropriate domain around the spring and meadow they had chosen and/or the cabin or other buildings they had built. In general, settlers preferred to locate their houses just out of view of the nearest neighbors in each direction. This placed the farmsteads at a relatively uniform distance from one another. Most families selected a small valley (“or hollow”), or a section of a longer valley, delineating their land according to the topographic features. The watershed form usually funneled all water and activities down to the spring and meadow they had selected.

Ultimately, the settlers found ways to divide the land into tracts that contained between 100 and 400 acres. An amazing number of land claims settled in at about 300 to 400 acres. Pennsylvania codified these numbers into their land claim laws, some years allowing only 300 acres, and in other years, allowing 400 (Bioren, Harper, Fletcher, Leyburn). In those rare areas where no one seemed to want the surrounding land, the occupant of the initial farm was allowed to lay claim to up to 1,000 more acres.

The settlers understood that acreage was not just an abstract measurement of land area. The concept of an acre had evolved in various cultures as a measurement of one day’s work with a team of oxen and a plow. A surprising number of land claims on the frontier consisted of 365 acres or a very close number. Some literature indicates that settlers felt that 300-400 acres, or approximately one acre per day per year, was all one family had a natural right to claim (Hall). In Virginia, settlers were allowed much larger claims. However, the Virginia system also went hand-in-hand with slavery.

In truth, a family primarily raising grain and a few animals could not clear or manage 365 acres in a single generation. But many families divided the land among three or four sons. The result was farms averaging around 100-120 acres. Land was cleared at a pace of one to two acres per year. By the 1850s when the majority of the land had been cleared, 120 acres represented a manageable farm for a medium-sized family. About one third of the acreage was planted each year in crops, while some fields were rotated into pasture, hay, and/or green manure, and some of the acreage remained in woods or other uses. On a farm of 120 acres, the amount of plowing needed to keep crop fields in production in a given year (20-40 acres) could be accomplished in about a month.

Reflecting on the frontier in 1824, Rev. Joseph Doddridge explained the farm design that settlers had in mind as they selected their land:

The division lines between those whose lands adjoined were generally made in an amicable manner, before any survey of them was made, by the parties concerned. In doing this, they were guided by the tops of ridges and water courses, but particularly the former. Hence the greater number of farms in the western parts of Pennsylvania and Virginia bear a striking resemblance to an amphitheatre. The buildings occupy a low situation and the tops
of the surrounding hills are the boundaries to which the family mansion belongs.

Our forefathers were fond of farms of this description, because, as they said, they were attended with this convenience "that everything comes to the house downhill." (Doddridge)

The Doddridge quote is a kind of Rosetta Stone for early farm design in Pennsylvania and Virginia. Doddridge is pointing out why the ridges were used as boundaries, where the house and barn were placed with respect to sloped land, the functional relationships of crops coming downhill from upland fields, and so forth. Doddridge adds a comment about land divisions in Ohio at the end of the passage:

In the hilly parts of the state of Ohio, the land having been laid off in an arbitrary manner, by straight parallel lines, without regard to hill or dale, the farms present a different aspect to those on the east side of the river opposite. There the buildings as frequently occupy the tops of hills as any other situation.

The explanation Doddridge gives apparently resonated across Appalachia. His 1824 book was privately published and only distributed to a few friends. However, it made its way to far flung places in Virginia, Kentucky, and beyond. The book is brief, but it contains extensive information on how people on the frontier traveled, hunted, cooked their food, built houses, celebrated weddings, used alcohol, and similar topics. Perhaps in the interest of honoring Doddridge and helping him distribute his narrative throughout the greater Appalachian region, several other authors quoted the entire book, or most of the book, verbatim, as a chapter in regional histories that appeared a quarter century or more after the initial 1824 publication (Figure 5). These later books usually attribute the narrative to Doddridge, but the passage has frequently been misattributed by modern historians who apparently noticed only the main author’s name on the title page of the larger book. This suggests that Doddridge’s explanation for farm design, as well as log construction and other topics, not only struck the mid-nineteenth century authors as applicable to other Appalachian areas, but also that the twentieth century authors also see it as an authentic description of those places. It is an accurate explanation for how non-rectilinear boundaries were set throughout Appalachia, and it relates directly to farm design as it developed organically, farm after farm, on hundreds of thousands of sites across several states before the Continental Grid was established for Ohio and beyond.

Among the things that Doddridge does not explain is how the organically set boundaries became increasingly important to the mix of farming activities and animals that farmers, largely from Pennsylvania, took with them as they moved west across the state and southwest through Appalachia. Pennsylvania’s agricultural system was geared to producing grain at least until the 1820s. Though focused on grain, the farmers called the system “mixed farming” or “mixed husbandry.” Most settlers showed up on a given tract with a couple of heads of cattle and a couple of sheep, some of each gender. They may have had hogs, geese, chickens, and other animals as well, but the emphasis was on cows and sheep. They kept these animals, partly because the frontier family relied on
the milk, wool, meat, and other animal products they provided. (Too often, though, modern commentators have assumed that the animals were kept primarily for these products.) They also used some of the male cattle as oxen to pull plows and carts, at least until horses became common. However, it is clear in the earliest literature\(^\text{13}\) that farmers understood that they needed animals principally to produce manure in order to keep grain fields productive. Sheep ate stubble and lesser quality materials from last year’s grain, essentially “turning it into manure,” and barn manure (mainly from cows) was mixed with straw and other grain by-products to compost everything left over from reaping, threshing, and winnowing into fertilizer to get the nutrients back onto

Figure 5: The map above (from Peters, Ohio Lands…) shows the states where state laws and customs set the rules for land grants (in green), with several grid systems for federal lands west of them (in other colors). Overlain are the dates and names of authors of regional history books that copied the Doddridge narrative, with arrows pointing to the areas where the narrative was considered applicable.
the fields. They were widely praised in early literature for the way they ate weeds and leftovers from last year’s crops and for being the only animal that produced more value in the form of manure than it cost to keep them (Steele, Randall).

The farm families built their flocks and herds based on what their specific farm needed to stay fertile. As the land was gradually cleared, sheep became increasingly important in those counties where the topography of the typical farm was curled up at the outer edges, because such land was the natural habitat of sheep. The steeply sloped outer fields were not suitable for pasturing cows in rotation, and they could not be easily fertilized with carted barn manure. For this purpose, the sheep needed to be out-of-doors as much as possible, and because of predators, they needed to be watched from a central vantage point. Therefore, land “over the ridge” in the next watershed was of little use to a farmer whose outer fields were kept fertile by pasturing sheep.

Farms with sloped land at the boundaries came to rely heavily on sheep in proportion to the grain they produced. They became increasingly fertile as long as the sheep were kept out in the outer fields. These farms initially tended to be further from urban markets and ports; therefore, grain, alcohol (distilled grain), and wool were critical as cash goods, especially before the arrival of steam travel and railroads, because they were the longest-lasting farm goods of the era. Farmers were not initially concerned about

Figure 6: Diagram developed as part of the author’s Peterson Fellowship project to show the parts of the typical Pennsylvania Farm Landscape.
PAST

selling wool, meat from the sheep, or sheep as livestock. Their concern was to keep their grain fields productive.

In those areas closer to the early cities and shipping centers, such as Philadelphia, level land could ultimately support more lucrative farming centered on cows and a variety of crops. These farms could focus on producing perishable but more valuable goods like milk and meat. The Lancaster Plain, for instance, had farms where the ridges were

Figure 7: Greene County, an area with steep fields and historically many sheep, often has small barns as shown here. The upland fields are still being cleared on the farm shown here. As with most sheep farms, all the fields are in easy view of the house. (Caldwell, Atlas of Greene County…)}
so close to level that they were nearly invisible. The outer fields stopped at “dividing ridges,” but they were barely perceptible lines between minor watersheds in land that otherwise looked level. The same farms often relied on wells because the land did not slope enough to create a natural fall line with springs. Initially, before the majority of the land was cleared, Lancaster County had substantial flocks of sheep and many fulling mills. However, the farmers gradually moved toward emphasizing cattle in response to landscape characteristics and the availability of markets for perishable goods. An adequate and growing market for dairy and beef existed in Philadelphia, Lancaster, and other nearby cities. Because the outer land is as level is it is, farms with larger herds of dairy cattle could keep the fields in production by composting barn manure and carrying it out to the fields.

Thus, the irregular boundaries of Pennsylvania farms led to a specific kind of farm layout that came in at least two subtypes, those farms with steeply sloped outer fields growing steeper toward the ridges where sheep were typically regarded as indispensible, and those with nearly level land at the ridges between watersheds where cows and crops beyond grain could be emphasized. There is undoubtedly a range of variations between these two types. The variations are reflected in barn design. When sheep were kept to produce manure for the fringe areas of the farm, there was less need for a centralized barn with a large stable and more need for scattered field barns. Smaller, scattered barns could be used to store hay and bring sheep in when the weather was most inclement. Still, in many cases, a farm with a large flock also often had a large threshing barn because the sheep helped to keep the grain operations productive.

Expansive level fields and level land at the ridges, on the other hand, made a farm more suitable for a large dairy herd (to the extent that the market for dairy products was close enough). These farms had larger centralized barns and more emphasis on the design features of the stable, along with more granary space for animal feed in the upper story of the barn, as opposed to functions related to threshing. The barns were designed or modified to have carefully walled barnyard areas for manure often sheltered by straw sheds (straw was used as bedding to soak up urine, which was also considered a valuable form of manure; when dry straw was gradually added into the manure pile, it facilitated the composting process) (Harris and “Agricultural Discussions…”).

The current landscape continues to reflect these subtypes and variations. In certain counties, sloped land is still associated with sheep, even though today the market for wool, mutton, lamb, and sheep as livestock is minimal. The areas where the open fields of neighboring farms meet at level ridges also continue to have one large barn per farm, larger dairy or beef herds, and crop strips to the edges of the tract as clearly seen in current aerial photography (Figure 6). In the oldest areas (such as Chester County) where some longstanding, often stone barns were built before the land was cleared, each barn was initially designed for a few sheep and a few cows, but by the mid-nineteenth century, appendages had been added to create more room for cows as the farm moved away from sheep. The same barns often have watertight barnyard walls added later for composting manure. Above the composting area, or dungyard, the barn often has projecting roofs and sheds built for straw.
Nineteenth century illustrations, such as atlas drawings, typically show these relationships. Meadows, water features, fall lines, sloped upland fields, woodlots, dungyard walls, stackyards (nearly level, well drained outdoor areas for stacks of hay and straw), and similar features can be readily identified. Yet there has been little commentary by modern agricultural historians and geographers on how the working parts of the outer landscape affected the layout of the farmstead and the design of the barn (Figure 7).

In the atlas drawings for sheep-oriented areas, the outer fields almost always rise above the buildings in the image (Figure 8-11). Scattered small barns are seen in the middle ground in the fields. Farmers are shown plowing steep perimeter fields where the land turns up to the ridges and boundaries. Sheep are prominently displayed in many im-

**Figure 8:** The John Rose Farm in Morgan Township, Greene County, is depicted (below) with sloped fields pasturing sheep in view of the house. The main barn has a pile of manure and/or straw outside the stable wall, probably composting. But the pile is surrounded by a wood fence instead of a stone wall, because there was little concern for conserving every bit of manure run-off in the counties where sheep were plentiful. Note that the upper edges of the fields rise well above the buildings. (Caldwell, Atlas of Greene County…)

**Figure 9:** The image above (Futhey and Cope) shows the Samuel Worth Farm, East Bradford Twp., Chester County. The low side of the barn is surrounded by a dungyard wall. A large upper story strawshed has been added to the original stone form partially sheltering the manure pile. The addition extends around two sides of the barn. Many early stone barns in Chester County were altered when farms added cattle and moved away from sheep. The land is sloped, but note that the buildings rise above the landscape horizon.
ages. To the nineteenth century agricultural mind, this combination communicated that the sheep were doing their job keeping the outer fields clear of weeds and fertile. After machinery came to dominate grain farming, the sloped fields almost completely lost their value. On farms that gave up on raising sheep, the fields became overgrown by invasive plants. Current crop patterns in level areas, on the other hand, corroborate this evidence, especially in areas like Lancaster County where outer fields remain productive to the flat-ridged boundaries with a variety of crops beyond just grain.

The angled boundaries that mark the land in southern Pennsylvania and throughout much of Appalachia are evidence of eighteenth century assumptions in farm design that became realities as land was cleared and as farms evolved and developed in the nineteenth century. They represent a geographic characteristic whose distribution is traceable and reflects the internal organization of farms as well as design of the buildings and other resources. The functional aspects of farming that they embody varied in subtle ways from one area to another, depending upon the importance of activities like sheep raising, dairy production, and crop specialties. However the geographic domain of non-orthogonal boundaries stops abruptly near the Ohio state line, where it also ended historically as the federal government imposed the Cartesian grid system now sometimes called the American Continental Grid. The controversy over what New

![Figure 10:](image)

Figure 10: On the Washington County farm below, a steep upland field is being plowed. Cattle are in the more level fields and sheep are in the sloped middle ground field where there are several barns. Note that the upper edges of the fields rise well above the buildings. The artist has under-represented the sheep and acreage (showing only about 6 sheep on what appears to be about 150-200 acres); a directory in the back of the atlas says McNary had 238 acres and a flock of 550 sheep. (Caldwell, Atlas of Washington County…)
Englanders labeled “indiscriminate location” brought a sudden end to an important tradition of organic farm design in Pennsylvania and Virginia (including what is now West Virginia), even leading Pennsylvania to reintroduce rectilinear geometry in areas claimed after 1787. The system can be further studied as a geographic phenomenon that correlates closely to the distribution of the Pennsylvania barn and its variations in style and design.

**Works Cited**


Doddridge, Joseph (Narcissa Doddridge, and William Thomas Lindsey,) *Notes on the Settlement and Indian Wars of the Western Parts of Virginia and Pennsylvania*, Pittsburgh: 1912 edition of 1824 text.


**Endnotes**

1 This paper, as delivered at the 2012 PAS/APAL Conference, summarizes much of the research and analysis of a project entitled “The Pennsylvania Farm Landscape as a Historic Resource” the author prepared as the Athenaeum of Philadelphia’s 2011 Charles E. Peterson Fellow. Much of the analysis was a collaborative effort with Pioneer America Society member Laura Walker, an anthropologist and working farmer. It is also based on a paper presented at the 2010 Pioneer America Conference in Castleton, VT. It is also based on a paper Laura Walker presented at the 2001 PAS/APAL conference on the field barns used for sheep on farms in southwestern Pennsylvania.

2 The three original counties of Pennsylvania were Philadelphia County, with Bucks County north of it and Chester County southwest of it. Penn and his first surveyor, Thomas Holme, began with a street grid at Philadelphia, laid out generally rectangular farms on a grid-like diagonal in Philadelphia County, and then extended the patterns into Bucks and Chester Counties one township or cluster of farms sold at a time.

3 The Pequea Settlement in Lancaster County was one of Penn’s last efforts at selling land before he died (Wenger, Mombert). Like most of the land Penn sold in his lifetime, the tracts were based on rectangles, but tilted on an angle of 20-45 degrees with respect to north; some were among the largest tracts he sold.

4 Many of the towns in the Western Reserve, or northeastern quadrant of Ohio, are named for towns in Connecticut from which a group of settlers came. Another aspect of this difference between southern Pennsylvania and areas north and northwest of it is that the northern
settlements involved large purchases by land speculators who then helped relocate a community; further south, land speculation was less trusted.

5 This pattern extended into North Carolina, Kentucky, and other adjoining areas with the topography of hills, hollows, eroded plateaus, and other features that typified the Appalachian region.

6 Chester County historians describe the importance of meadow in selecting land (Futhey and Cope). While this is one of the oldest parts of Pennsylvania, the explanation fits later farm selection further west.

7 The acre was originally an oblong unit, from a time when European crop fields were sometimes bounded by stone walls. The oblong shape was a way to limit the number of furrows because of the difficulty of turning the team and plow at the end of the furrow. The length of an acre was a “furlong,” a word that came from shortening the phrase “a furrow long.”

8 This was initially the author’s observation in studying land patent maps, but the nineteenth century sources confirm a sense of a moral limit to land claims (Hall), which corresponds closely to 365 days/year.

9 This topic is the source of some historical commentary about the southwestern corner of Pennsylvania, where Virginians claimed an area containing five modern day counties in the 1770s. A considerable number of Pennsylvania natives wanted the area to be included in Virginia to allow larger land grants.

10 Doddridge was a frontier minister who served Episcopal churches in what is now the Northern Panhandle of West Virginia, at the Pennsylvania state line. He was born in 1769 in Bedford (just west of center in the southern half of the state), which, beginning in 1771, became Pennsylvania’s county seat for all the areas from there west. The area beyond Bedford was rapidly expanding as a result of a new land office opening in the year of Doddridge’s birth. When the family relocated in 1773, they moved 125 miles west to what is now Independence Township, Washington County, close to the state’s western line.

11 Noted geographer, the late Terry Jordan, an active participant in PAS/APAL, told the author at the 2000 Pioneer America meeting that he found the Doddridge narrative to be among the most useful and reliable known texts by an early nineteenth century historian on frontier farm culture and log construction.

12 E.g., David Hackett Fischer attributed the Doddridge narrative to Samuel Kercheval (Fischer, page 760).

13 As early as 1728, Pennsylvania’s governor, Sir William Keith, wrote apologetically to the British Crown defending the fact that his colony was producing wool contrary to Britain’s Woolens Act of 1699. He explained that the wool was simply the by-product of keeping grain fields in production. In Gov. Keith’s words: “Their principal product is stock and grain, and consequently their estates depend wholly upon good farming and this can not be earned on without a certain proportion of sheep (which in a good pasture there, lamb twice a year and every ewe generally brings two and often three lambs at a time) so that the wool would be lost, if they did not employ their servants at odd times, and chiefly in the winter season to work it up for the use of their own families.” Other sources indicate that the farmers themselves knew they needed sheep to raise grain on sloped land near ridges.

14 Washington County, where there were over 1 million sheep by the 1880s, was topographically prone to lose fertility on cleared land from erosion, but kept returning to remarkable fertility as a result of the sheep.

15 Farmers regularly operated distilleries across Pennsylvania in the 1700s to make grain surpluses into something of equal value that was less perishable and easier to transport. The difficulty of preserving and transporting grain surpluses, vis-à-vis the way taxes (presumed to be
on a luxury item) threatened that system, was the central concern of farmers in the Western (or Whiskey) Insurrection of 1794.

16 An eighteenth century passage to this effect is frequently quoted about early agriculture in Lancaster County, but generally without explanation. The passage is, in part, “…he entertains the same prejudices as the rest of the farmers in favour of flat ridges, and against sheep…” (La Rocheleoucauld-Liancourt, Schneider). The point is about certain farmers preferring, and migrating to, land with nearly level outer fields as a step toward using carted barn manure rather than sheep to keep them fertile. In time, this prejudice led to much more thorough crop coverage on the Lancaster Plain than what typifies Pennsylvania.

17 Lancaster farmers developed an interest in a specific breed known as Tunis sheep before 1800. Fulling mills were facilities, similar in some ways to grist mills (sometimes water-powered) where woolens woven or knit at home from homespun thread were cleaned and beaten to remove lanolin and lock the threads together. Lancaster County had over 30 fulling mills by the 1830s (Gordon), suggesting it was then one of the state’s more productive counties for homespun woolens. Sheep quickly fell out of favor after this.

18 Farmers frequently expressed concern in Lancaster (Schneider) and Chester Counties over whether one’s neighbors were adequately conserving all the nutrients they could from their barn manure, a major theme in nineteenth century written commentary by farmers in the area, a theme scarcely mentioned on sheep farms.

19 For additional information on how stackyards, or “rickyards” were designed, see Clowes.

20 The illustrations can be as symbolic as much as they are representative. However, the idea that they may be symbolic does not necessarily mean they are exaggerated to show more than what was actually there. Caldwell’s Centennial Atlas of Washington County has a farm-by-farm directory at the back listing owners, acreage, and so forth. The column for sheep precedes the owner’s name implying it is the most important information. The numbers given are generally much higher than what the illustrators showed in the images.

21 Richard Beach paid special attention to the effect of removing sheep from the landscape in Two Hundred Years of Sheep Raising in the Upper Ohio Area, as well as in his earlier doctoral dissertation, The Sheep Industry in the Upper-Ohio Valley, 1770-1973: A Geographical Analysis. Beach’s work was groundbreaking specifically in its concern for identifying landscape features on fine-wooled sheep-oriented farms in southwestern Pennsylvania. The research for the current paper began by drawing heavily on it.

**Author Biography**

Terry A. Necciai, RA, has worked as a preservation architect and architectural historian since 1981. He has written many National Register nominations, including 16 for southwestern Pennsylvania farms. The Athenaeum of Philadelphia awarded him the 2011 Charles E. Peterson Fellowship to study “The Pennsylvania Farm Landscape as a Cultural Resource.”
Philadelphia Encapsulated: Popular Prints and Photographs at the Library Company of Philadelphia

Erika Piola, Associate Curator, Library Company of Philadelphia

The Library Company of Philadelphia, the first successful subscription library in the country, was founded in 1731 by Benjamin Franklin and his Junto, a discussion group of mechanics, who sought to create a reference collection of books compiled from their own suggestions to aid in their scholarly debates. In the years following its inception, the Library Company also became a repository of art objects, artifacts, and graphic materials, often gifted by its supporters like nineteenth-century Philadelphia antiquarians Charles A. Poulson, and John McAllister Jr. and his son John A. McAllister. These prescient men collected visual materials that encapsulate the people, places, and events that embody the ethos of Victorian-era Philadelphia. They had the foresight to realize the future historical value of the stereographs, advertisements, and political cartoons that were viewed in the parlors, posted in the streets, and purchased in the print shops of their contemporaries. Collectors with a mission, Poulson and the McAllisters acquired several hundreds of these types of graphics, which were gifted to the Library Company in the latter half of the nineteenth century. The materials later served as the core collections in the formation of the Print and Photograph Department. This article aims to explore the significance of the department’s collection as a primary resource for the study of nineteenth-century Philadelphia as a physical and ideological place.

The Print and Photograph Department is rich with graphics for the study of the built environment of nineteenth-century Philadelphia. Visual, material, and popular culture, are represented by the two revolutionary mediums of nineteenth-century mass image production; lithographs and photographs. Philadelphia served as a center of early development for each process. Bass Otis created the first successful American lithograph in the city in 1819 and local silver-plater Robert Cornelius was one of the country’s first daguerreans in 1839. Visual materials of this kind from which the library’s strong graphics holdings have grown are due to Poulson and the McAllisters.

Charles Augustus Poulson (1789-1866), a journalist, editor, and son of a Library Company librarian Zachariah Poulson, collected books, manuscripts, and visual materials, as well as created scrapbooks of newspaper clippings to preserve the cultural heritage of his life-long city of residence. Ever an eye to graphics, Poulson salvaged hundreds of antebellum-era lithographic advertisements depicting local businesses, as well as commissioned photographs of the changing architecture of the city. Bequeathed to the Library Company at his death in 1866, his collections, so significant today to the history of Philadelphia as a place, had already been realized as such by his peers. This was evident in his obituary, which noted “Very many localities in and about the city that would be entirely strange to the rising generations of Philadelphians have been drawn and painted at the private cost of Mr. Poulson in order to preserve, as far as possible,
the early history and appearance of the city.”6 The McAllisters acted as kindred spirits, and the elder as a collaborator, in this pursuit.

The McAllisters descended from the Scotch émigré John McAllister Sr. (1724-1797) who had established a cane and whip manufactory in Philadelphia in 1781. In response to the burgeoning photography profession, by the mid-nineteenth century the family business had transformed into a successful opticians’ shop, McAllister & Brother. Original successor to the business John McAllister Jr. (1786-1877) focused on collecting printed and graphic materials about the history of Philadelphia and was a respected authority on the subject. His son John A. McAllister (1822-1896) anticipated the archival value of ephemera produced during the Civil War, a watershed moment in the cultural history of the United States. In 1886 these materials that symbolize the intertwined business and personal lives of the McAllister men became a permanent part of the collections of the Library Company when accepted from John A. McAllister by the library’s Board of Directors.7

Figure 1 William and Frederick Langenheim, North-East Corner of Third & Dock Street. Girard Bank, at the Time the Latter was Occupied by the Military During the Riots, May 9, 1844. Daguerreotype. Courtesy of the Library Company of Philadelphia. SEE LARGER
John McAllister Jr. was an early proponent of photography. The family’s opticians’ shop was one of the earliest to carry camera lenses, and in 1840, John Jr. was the first to sit for a portrait at the studio of the aforementioned Robert Cornelius.8 The daguerreotype process, the first widespread practical method to create photographs invented by Jean-Louis Daguerre in 1839, produced one-of-a-kind images developed on highly polished, sensitized plates. The daguerreotype contemporarily touted as the truest form of reproduction, a “recreation of nature,” started the impending debate for years to follow about whether photography was art or photojournalism.9

Before his death in 1896, John A. McAllister gave the library a daguerreotype of the Girard Bank by American pioneer photographers the Langenheims. The brothers William and Frederick, former journalists, operated one of the first daguerreotype studios in the city, serendipitously across the street from the financial institution (Figure 1).10 One of the earliest news photographs taken in the country, it shows the bank during the notorious Nativist Riots of May 1844.

The anti-Catholic Riots represent an ugly moment in the history of the city founded on religious freedom. The deadly and destructive uprisings, begun from a rally of the American Nativist Party in the predominately Irish-Catholic neighborhood of Kensington, were squelched after the Pennsylvania militia was called to the city following a declaration of martial law by mayor John Morin Scott. The Girard Bank as documented in the scene served as the headquarters of the militia.11

The Langenheims captured the view through the use of a prism over the camera lens to prevent a reversal of the image – the natural outcome of daguerreotypy. The daguerreans, as past newspapermen, wisely understood the intrinsic appeal of a “real” view of the event would be lost if the spectator was distracted by visual inconsistencies. The context; the content, that of a view as opposed to a portrait; and the photographers of this image make it a treasure of the graphics collections. One of the earliest photographic pieces in the department showing the built environment of Philadelphia, its medium, subject matter, and provenance evokes questions about its role in understanding nineteenth-century popular meanings of photography that the McAllisters and now the Library Company preserves for future researchers. While the possession of the Langeheim daguerreotype conceivably stemmed from the unmitigated antiquarianism of the McAllisters, their large collection of stereographs given to the library certainly represents the McAllisters access to modes of popular material culture through their profession.

Stereographs, a quintessential form of nineteenth-century parlor entertainment, form one of the larger segments of the Print Department’s photographic collections.12 An interactive visual medium, stereographs were composed of a double-sided photograph mounted on card stock that when viewed with an instrument known as a stereoviewer created a three-dimensional image. The photographs, issued by the major firms in the 100,000s per year by the 1860s, provided nineteenth-century viewers with a venue to learn about their own local haunts as much as about foreign places, and are a primary resource for modern-day researchers of cityscapes, popular culture, and visual history.
The McAllister family firm, as an opticians’ shop, was a major purveyor of stereographs in Philadelphia. An interesting set of stereographs distributed by the firm symbolizing an intersection of a medium and its content representing popular and material culture, as well as intentionally ephemeral Philadelphia architecture are a series of photographs published by William Langenheim of the Great Central or Sanitary Fair, the Civil War fundraiser in Philadelphia.

The event held June 7–28, 1864 on Logan Square, now Circle, was one of a number of national fairs that displayed art, craft, and historical exhibits to benefit the soldier relief organization the U.S. Sanitary Commission. The photographs portray major exhibits like the Horticultural Department, the Relics and Curiosities Department, and the Penn Parlor, which contained William Penn memorabilia and antiquities. The views also saved for posterity an idea of the smaller exhibits, donated prizes, and award-winning machinery, much of which lined Union Avenue, the heavily decorated arched central thoroughfare of the fair. Described by a member of the fair committee as “impossible to imagine anything more imposing in its effect...singularly novel and picturesque...festooned at its apex with green boughs hung lower down with banners and trophies..., as in some great baronial hall of the middle ages,” the stereographs attest it “made up a dazzling picture such as no eye had ever looked upon on this continent” (Figure 2).13

About 250,000 people, a number equal to about 1/3 of the city’s population bought tickets to the fair that also included a restaurant, receiving area for donations, and

Figure 2 A. Watson, No. 1 Union Avenue (Philadelphia: American Stereoscopic Company, 1864). Albumen on stereograph mount. Courtesy of the Library Company of Philadelphia.
conveniences, including public restrooms and ladies’ changing areas. Visitors often frequented the benefit several times per week, or even per day. The Langeheim stereographs allowed individuals to partake in the monumental Philadelphia event from their parlor if they were unable to be a part of it in person. The series also allowed fair visitors to relive the experience, purchase the views as souvenirs, and/or feel like the possession of the photographs contributed to the patriotic cause.

Needing a larger than existing structure in which to house the exhibits, volunteer craftsmen completed a temporary complex on Logan Square. The public space was chosen by fair organizers because its “broad walks…had been so laid out that they could all be occupied with suitable buildings, properly in communication with each other.” Additionally, the trees in “full foliage deprived the fair of that barrack-like effect” that such structures would have possessed in their “unadorned ugliness.”14 In only forty days the artisans created a 200,000 square foot complex with central thoroughfare after the designs of Henry E. Wrigley and Strickland Kneass. Boasted as the “grandest ever erected on this continent for any similar purpose,” the temporary structure thankfully found a life in perpetuity through not only stereographs, but a chromolithograph of the exterior (Figure 3). The print proves significant for another reason. The graphic plays a critical role in the visual history of the city. It is a harbinger of the rise in production of chromolithographs, that is color printed lithographs, as a desirable medium for popular art.

Chromolithography was still perceived as a novel, imperfect art form in America at the start of the Civil War. Unfavorable comparisons with European works had slowed consumer acceptance of frameable, American-made chromolithographs. This chromolithograph promoted a new level of interest in Philadelphia for the printing process when demonstrated on the central promenade at the fair. Reported in the fair’s daily publication as attracting “the attention of every visitor,” the view printed in nine colors was made available for sale daily by the renowned Philadelphia lithographic printer

P. S. Duval (1804/5-1886). Designed by James F. Queen (1820/1-1886), one of the most respected, versatile, and prolific lithographers of the era, the souvenir print showing the site of its production could be had by visitors for $2 with the proceeds given to the Sanitary Commission. Such funds helped the fair raise over $1,000,000 for the organization, whose member’s work is reflected in the Langenheim stereographs.

Figure 4 Frederick De Bourg Richards, *Library Street, Southside, Between Goldsmith’s Hall and Fourth Street*, ca. 1859. Salted paper print. Courtesy of the Library Company of Philadelphia.
After retirement from the family business, John Jr. focused his energies on his antiquarian interests. Acquiring photographs of the changing cityscape of mid-nineteenth century Philadelphia encompassed part of this pursuit. The elder McAllister’s friend and fellow antiquarian Charles A. Poulson helped to provide the means when he commissioned Philadelphia artist and photographer Frederick De Bourg Richards (1822-

Figure 5 Frederick De Bourg Richards, *Jayne Building, 240-242 Chestnut Street*, ca. 1859. Albumen print. Courtesy of the Library Company of Philadelphia. Originally built 1848-50 after the designs of architect William J. Johnston, the building was expanded in 1851 after the designs of Thomas. U. Walter.
1903) to photograph the vanishing and transforming architectural landscape of Philadelphia. Between circa 1855 and 1862, Richards produced over 100 of some of the earliest extant paper photographs of Philadelphia streetscapes that document public, commercial, and residential buildings. The views depict reallocated buildings such as the “Military Hall” on the 400 block of Library Street near Chestnut Street (Figure 4). The former arsenal building built as a print shop in 1810, is captured in its current life as a lager beer hall operated by prominent local brewer Gustavus Bergner. The photographs also show the construction of the Continental, a “modern” luxury hotel, built on the former site of a theatre building in 1858 and the Jayne Building, a harbinger of the skyscrapers to come, in about 1859 (Figure 5). Completed in 1850 for patent medicine mogul David Jayne, and expanded in 1851, the towering structure was then known as the most extensive and expensive private building constructed in any city in the country. It was razed in 1957.

Created as records of disappearing and emergent architecture, the ancillary and incidental aspects — signage, street traffic, playbills — also provide a window into the experiences of the city residents as pedestrians, consumers, and citizens as they walked the city streets. The images evoke the physical and cultural atmosphere of the city of the 1850s and represent eighteenth-century architecture redesigned and repurposed to accommodate the new needs of nineteenth-century Philadelphians. The views commemorate the past as well as tacitly acknowledge the necessity of change to keep a city vital through developments such as the erection of a fashionable hotel and the re-appropriation of a structure to prevent its obsolescence.

The prints and photographs collection also contains a variety of formats of printed nineteenth-century advertisements symbolizing the marketing methods of that era. Plates removed from city directories, trade cards, and advertising circulars all enhance the collection to learn about the urban landscape. The increasingly diverse methods for advertising went hand in hand with the urban development. Poulson, in line with his commissioned series of photographs, salvaged near 100 different lithographic advertising prints between the late 1830s and 1850s. These depicted the facades of a wide-range of Philadelphia businesses and manufactories, ranging from bakeries, dry goods stores, cabinet makers, and hotels, to iron foundries and a match manufactory (Figure 6). Often dated and the addresses occasionally plotted by Poulson on the prints, the lithographs tend to include partial views of adjoining properties, and portray a design composition with regard to the façades that appears particular to Philadelphia lithographs.

Lithography, the flat-surface printing process invented in Europe circa 1798, transformed American printing in the 1820s. More efficient and allowing more versatility in design and in larger sizes, the process helped to spur the production of large format views of urban centers like Philadelphia. The Print Department holds a number of Philadelphia cityscape lithographs in its collections, of which the Poulson advertisements form a significant part.16

While produced as advertisements, the prints also provide both a micro and macro vision of Philadelphia cityscape at the dawn of its notoriety as the workshop of the
world. Analyzed in detail through photographs and contemporary written descriptions from the period by urban historian Dell Upton, the prints, as astutely concluded by the author, are simultaneously accurate and misleading when viewed from a more concentrated perspective.17 Although Upton focuses more on the accuracy of the architectural details in his overall analysis, the effusive signage portrayed provides the analytical focus for this author (Figure 7).

Figure 6 William H. Rease, P. Maison’s Biscuit Bakery (Philadelphia: Wagner & McGuigan, 1847). Lithograph.
Figure 7 Wm. W. Clark, Drug & Chemical Warehouse (Philadelphia: Wagner & McGuigan, 1847). Lithograph. Note Poulson’s inscription in the lower margin.
Although seeming anachronistic for that era, the breadth of signs adorning the buildings was not added for affect, but actually pervaded the commercial cityscape. The profundity of such advertising had hit such a level that the local paper *Evening Bulletin* devoted a three-column article to the “problem” in 1857. Described as garish, in bad taste, and in “contempt of orthography,” the signs, according to the argument of the newspaper, produced a sensory overload that caused the spectator to become blind to the advertising. The crux of the article; newspaper advertising that circulated widely and that was not stationery best served the marketing goals of store proprietors. It is a case of antebellum mass media competition. However, these lithographic advertisements prove a foil for the *Bulletin’s* self-serving position of the supremacy of newspaper advertising. These prints posted in lobbies, rail cars, and shop fronts also circulated, and often to wholesalers in other parts of the country. The lithographs certainly facilitated a more direct marketing approach. A possible patron did not need to wade through columns of promotion to learn about a business when your store provided the main focus of the image, with ironically, the chastised signage often serving as the most eye-catching advertising text.

The prints also engage the modern-day viewer for their intentionally portrayed glimpses of interiors visible through open entryways and shop windows crammed with merchandise displays. Clerks with patrons, shelves of inventories, and the shop’s manual laborers on the job more often than not were included as pictorial details that added to the aesthetic of a prosperous business. Foot and street traffic comprised of draymen, patrons, and pedestrians also served to signify the increasing importance of a society of consumers. Although a blatant marketing device, these not so incidental portrayals prove even less incidental as primary visual evidence for the cultural scholar of Philadelphia. Crates marked with their destination document the national market for Philadelphia goods; drays and wagons demonstrate the vital role of nineteenth-century horsepower; and the oft-depicted pedestrian and street congestion not yet able to be reproduced photographically allude to the city’s demographics.

To further elucidate this question of accuracy in these graphics, the shadowy partial views of adjoining buildings in many of these advertisements must be addressed. The details serve a purpose in understanding how the larger picture of the city becomes subsumed through such focused imagery, particularly from the 1850s. As noted by Upton in his conclusion to his essay, the visual trope belies the nascent skyscrapers emerging at mid-century, as portrayed in the Richard’s photograph of the Jayne Building (see Figure 5), that are dwarfing the repurposed buildings that deceptively appear so prominent in the prints. In addition, the peripheral details in the graphics imply that placing a series of the views side by side would in theory recreate an entire block. Unfortunately, such a “panorama” cannot yet be realized. As is the nature of extant historical graphics, it is unclear if individual prints of every building on a commercial block ever existed or just did not survive. Perhaps, the partial views were for pure artistic affect or to entice the minimally featured shop owner to also commission a print, or possibly the peripheral depiction signified that the shop proprietor paid a small commission to be alluded to in the advertisement. A visual scholar must often walk this fine line of
Images that portray Philadelphia as an ideological, as opposed to a physical space, also form the collection, particularly through political cartoons. Usually printed by lithography by the 1830s, cartoons are the epitome of popular culture due to their immediateness in production and contemporaneity in comprehension. Sold in the hundreds, and sometimes thousands, by print shops and often circulated at coffee houses and taverns or displayed at workshops, these satiric graphics reflect the fashion of the times, aesthetically, politically, and socially. The department holds hundreds of cartoons, ranging in date from the early eighteenth century to the early twentieth century, with a large cluster parodying Democratic president Andrew Jackson and his administration during the early 1830s. One of the most atypically delineated cartoons held by the department comes from this cache. Titled *The Downfall of Tyranny*, the 1832 satire lambastes the autocratic policies and the re-election of Jackson (Figure 8). What makes the cartoon so atypical is that it is in essence a facsimile of a transparency that adorned the hotel of Samuel Carll, the Whig headquarters in Philadelphia during the election. Using an ironic visual trope based on the Coat of Arms of Virginia, the cartoon is not only an historical artifact of political sentiment, but also the city’s built environment and visual culture during the 1830s. While most cartoons do not embody
such a triality, this one is highlighted to make the point that historic graphics must be conceived of in their whole context if not to be unintentionally underestimated and underutilized as historic primary evidence.

Mass-produced, marketed, and circulated, visual materials available to all classes of people with all levels of education and wealth provide a means to understand the society that produced, viewed, and incorporated the graphics into their lives, as well as the images’ messages into their collective and individual consciences. The mass availability and production of graphic works propelled by photography and lithography during Poulson’s and the McAllisters’ lifetime created a more modern visually literate society whose culture contemporary scholars continue to research. The Print and Photograph Department at the Library Company contains the visual materials, from the mundane to the sensational held, seen, and contemplated in the daily existences of Philadelphians of the Victorian era. Through collectors like the McAllisters and Poulson, and institutions like the Library Company, we are fortunate that the visual culture of the Philadelphia of yesteryear remains in constant dialogue with the visual culture of the city of today.

Endnotes
1 In the mid-twentieth century the library transformed into a closed-stack research facility to provide the best access to its nationally and locally significant collections of books, prints, manuscripts, and ephemera strong in not only the research of Philadelphiana, but Americana, including African American history, Women’s history, economics, and natural history.

2 In 1971 the separate Print Department was conceived with the majority of its core collections comprised of the Poulson and McAllister collections of graphic materials. Over the last decade, grant-funded projects and the initiation of a Visual Culture Program (http://www.librarycompany.org/visualculture/index.htm) have enabled greater focus on the research and interpretation, as well as online accessibility of the library’s visual materials collections, which include near 100,000 items in the Print and Photograph Department.

3 An earlier version of this paper was presented at “Material Culture: Museums and Libraries,” Session 8 of the 44th Annual Conference of the Pioneer America Society: Association for the Preservation of Artifacts and Landscapes, September 28, 2012.

4 Although officially titled the Print and Photograph Department, the department is colloquially referred to as the Print Department and will be often referenced as such in this essay.


6 Commercial Lists, March 24, 1866.

7 For a concise history about the provenance and the library’s acquisition of the collection, see Sandra Markham, “John A. McAllister Collects the Civil War,” The Magazines Antique (August 2006): 102-137.


9 Several texts have been published addressing the cultural role of early American photography. Recent volumes analyzing the historical debates about the mimetic nature of photography include Marcy Dinus, The Camera and The Press: American Visual and Print Culture in the


11 For a contemporary account of the riots, see A Full and Complete Account of the Late Awful Riots in Philadelphia (Philadelphia: John B. Perry, No. 198 Market Street., 1844).


14 Ibid, 21.

15 Our Daily Fare, no. 11, June 20, 1864.

16 In 2007 the Library Company of Philadelphia embarked on Philadelphia on Stone, a three-year collaborative project that examined the first fifty years of commercial lithography in Philadelphia, 1828-1878. The project culminated in a digital catalog, an online biographical dictionary of lithographers, an exhibition, and an illustrated volume of thematic essays of the same title published in 2012. The Philadelphia on Stone online collection can be accessed at www.lcpdigital.org.


**Author Biography**

**Erika Piola,** Associate Curator of the Prints and Photographs Department has worked at the Library Company since 1997. She recently served as editor of Philadelphia of Stone: Commercial Lithography in Philadelphia 1828-1878 and is Co-Director of the library’s visual culture program VCP at LCP.
Social Memory and the Power of Adaptive Re-Use

Keith A. Sculle

Landscape studies of late have commonly hewed to matters of social memory, not elite aesthetic judgment about their positive contribution nor their debasement of life. Rather, how do the people who pass through but especially those who live in a particular landscape see it and feel about it? Architecture that has come to be associated with the commercial strip remains largely a category for judgment. It is not a pragmatic search about what it enables its occupants, who are often less affluent, to achieve. Fifteen years ago, Timothy Davis (1997) beneficently and broad-mindedly as a citizen, and as a prescient scholar, called for looking at how people adapted the Strip and its individual buildings came into play for other than their original purposes. But, he cautioned: beware of nostalgic glorification! Darrell Norris and Brian Coffey already had begun surveying adaptively re-used gasoline stations along transcontinental US 20 for scholarly purposes (Norris 1995; Coffey and Norris 2000).

Gasoline stations may well be among the most adaptable building types now categorized as Strip architecture. Their impacts, however, do not necessarily have to be degrading. Before the seemingly pervasive domain of the automotive Strip, gasoline stations were often designed to blend into residential neighborhoods, to be “good

Figure 1. The real estate office in decline (2008), after nearly 50 years in business at the site.
neighbor”, and within convenient physical reach of car owners who did not want to refuel at long distances from home. Cottage style designs of big and small petroleum marketers alike became the common means for many to find a place welcomed within prestigious residential neighborhoods of the early-twentieth century. In 1927 and 1928, Phillips 66 and Pure Oil respectively pioneered big oil company sales from standardized cottage-style stations. Social memory of quaint architecture became an asset manipulated for profit.

![Image](image.jpg)

**Figure 2.** The men’s barber shop for sale, 2010.
It was a “story book building.” Some in the neighborhood call it the “Santa Claus House,” perhaps for the building’s white mass which the occupant before LaBonte trimmed in red. Robert LaBonte remembers in this favorable aura the former service station, which became a cleaners, then a real estate office, and lastly a men’s barber, at 1037 N. Fifth Street in Springfield, Illinois. LaBonte remembered it from the time in the early 1970s when he drove by it daily on the way to and from high school and even earlier when he often passed it coming back from the Illinois State Fair. In that building, now under his ownership, LaBonte operates a bicycle sales and repair shop. He opened there on May 1, 2012.

The cottage had fallen into minimal use and disrepair since it first opened in 1932 (Figure 1). Immediately before LaBonte’s revitalization of the building, a man’s barber shop had operated out of the building. Rats had eaten through the floor and left their excrement, LaBonte recalls (Figure 2).

LaBonte’s Bicycle Doctor contributes to the gradual dawn of the neighborhood into a new positive social light. Its position near the northern edge of the Enos Park neighborhood puts it close to an early commercial constellation. By no means a patrician neighborhood, it was a desirable location of mixed upper and working class residents. Since its founding in 1989, the Enos Park Neighborhood Improvement Association considers that significant changes for the better have occurred in the neighborhood. Although not necessarily seeking praise for his businesses’ contribution, LaBonte notes...
Figure 4. The new addition under construction beside the original building, 2012.

Figure 5. The garage area (not high enough for a lift) adapted to a work room, looking forward to the sales counter, 2012.
that it is one of the neighborhood’s three businesses (Figure 3) and that he helped found the nearby Springfield Bicycle Kitchen. The latter repairs donated bikes to low-income residents. Socially aware, LaBonte is also an environmentally aware entrepreneur. He installed solar panels on the back of the former station for assisted electrical energy. Springfield’s weekly newspaper singled out this feature alone to report about the bicycle shop’s part in a sustainable landscape (Illinois Times 2012). As to urban ambience, the city’s daily newspaper recently reported at length on the problems occupied gasoline stations represent.

LaBonte calculates that the building’s assets outweigh its shortcomings. It is on a busy street, was cheap to purchase — although it has cost about $30,000 to improve — and believes the neighborhood welcomes his business. He has added a building beside the front facade, in a style consistent with the original building (Figure 4), to add storage space lacking in the original building (about 800 square feet) (Figure 5).

How people remember a specific building and associate it with a broader building type can help alter a landscape. Will this adaptively re-used gasoline station do this in Springfield, Illinois, that is, help create a new image for a neighborhood with historic residential architecture? Will adaptive re-use help achieve more than the preservation of the building itself, the rationale most commonly advanced for reuse? Will stakeholders eventually include people beyond the neighborhood? How ironic that a gas station building once inserted into a residential neighborhood by disguise as a domestic ally should now face the prospect of helping revive that residential neighborhood and housing a shop for bicycles, which preceded the automobile in extending mass mobility.

References
Author Biography

Keith A. Scullle, long concerned with the automotive roadside business landscape, takes adaptive re-use to his study agenda. He is the retired Head, Research and Education, Illinois Historic Preservation Agency.
Following Grandpa’s Footsteps: Retracing The Indian Paths of Pennsylvania

Edie Wallace

“May your moccasins always be dry, your path free from logs and briars, and may the sun shine long in your lodge.”

In 1949, my grandfather, Paul Anthony Wilson Wallace, began a 16-year journey to identify and trace the Indian paths of Pennsylvania. A professor of English literature at Lebanon Valley College, Dr. Paul A. W. Wallace was already the author of several books, including one on the Iroquois Confederacy, The White Roots of Peace (1946), and one on the historic contacts between whites and Indians in the region, Conrad Weiser Friend of Colonist & Mohawk (1945). He was an accomplished researcher and writer and his deep appreciation of American Indian history and culture made him perhaps the most obvious candidate for the project, sponsored by the Pennsylvania
Historical and Museum Commission. The result, *The Indian Paths of Pennsylvania*, traced the routes of 131 paths across every county in Pennsylvania and formed the basis for the ubiquitous blue and yellow metal historic signs we see along the roads across Pennsylvania today (Figure 1).

The many Indian paths that crossed and re-crossed the mountains and valleys of Pennsylvania at the time of European contact and colonization were not well-developed roads. “The Indians of Pennsylvania,” notes Grandpa Wallace, “…built no roads like those of the Inca, whose wide stone highways spanned gorges with suspension bridges, traversed high mountains, and ran through galleries cut out of solid rock to fend off avalanches.” Still, he observed, “Our Indian paths were good of their kind, good for the uses to which they were put and for which they were intended: the moving about of moccasined men and women.”

The First Americans who occupied the land that would become “Penn’s Woods” were a loosely organized group known as the Lenni Lenape (Delawares), within the “empire” of the Iroquois Six Nations. Pennsylvania Indian paths moved hunters to their hunting grounds, were routes of trade, warrior’s paths, or avenues of peace, such as the Iroquois “Ambassadors Road.”

That they were well laid out is attested by the fact that, even in the broken mountain country of this Commonwealth, where the road problem
is complicated by countless springs from the hills, the Indian paths served
the white man’s needs for a hundred or more years after his arrival… (p. 2)

In a letter to William Penn, written in 1758, General John Forbes wrote that the Indians “have foot paths…through these desearts [sic], by the help of which we make our roads.” (as cited, p. 2)

Up through the early twentieth century, until the automobile changed the way we use roads, observed Grandpa, many routes still largely followed the Indian paths along the “dry, level, and direct” river terraces “above flood level” or the “modest elevations in the midst of wide valleys overlooked by the mountains.” As population pressures moved the Indians ever westward, paths evolved:

Trails were widened into bridle paths for the traders’ pack trains. By the time of the Revolution, bridle paths had been converted into wagon roads as far west as Pittsburgh. After the Revolution the movement continued, converting wagon roads into railroads west “to the setting sun” and the Western Sea. (p. 11)

And of course, many wagon roads evolved into early turnpikes and later highways, while many continued in use, relatively unchanged, as county routes.

“In Pennsylvania today,” wrote Grandpa in the early 1960s, “it is seldom possible to walk an old Indian path.”

Most traces have been obliterated by farming, lumbering, road making (whether wagon road or railroad), house building, and strip mining,…

Nevertheless it is possible to map the old paths with a fair approach to precision. There are many sources of information available, many kinds of evidence which can be used as guides.

Since the Indians themselves did not leave written records of their pathways, Grandpa’s research relied on early maps, travel journals, letters, land warrants and surveys, noting “The Bureau of Land Records at Harrisburg is the pathfinder’s paradise.” (p. 11) More modern sources included road viewer reports and archaeological reports. Significantly, because Grandpa’s research was taking place around 1950, he was able to interview older road workers, whose memories of alterations to routes, particularly in the 1930s were key to identifying historic routes.

My own journey as an historian in Maryland can be traced back to my roots in Pennsylvania, and my father’s career as an historian with the National Park Service at Independence Hall. I was equally inspired by Grandpa’s studies of Indian culture, my grandmother’s love of archaeology, and my uncle’s tenure as an anthropologist at the University of Pennsylvania. I come by it honestly. My personal fascination with old maps and historic roads came in handy recently when I was tasked with the job of tracing the route of the ‘Great Waggon Road to Philadelphia’ as it passed through Maryland and across the Potomac River at Packhorse Ford into Virginia. From there the road followed the Shenandoah Valley south to the Cumberland Gap in Kentucky.
Figure 2. “Key to the Indian Paths of Pennsylvania,” large map inside the book cover showing the 131 paths followed in the book. This detail shows (white arrows) the Minquas Path.

Figure 3. 1736 “Survey of the northern neck of Virginia” by John Warner, annotated in 1747 (Library of Congress)
Roads lead us along the paths of our history – to the hunting ground or trading post, to the mill, church, or courthouse, or to the western frontier.

I chose to retrace my Grandpa’s footsteps along just one of the 131 paths he researched for his book – The Minquas Path from Wrightsville to Fort Manayunk (now the Philadelphia Airport), following the routes he suggested with the patient and enthusiastic help of my driver/husband. How much had the modern routes changed since the 1965 publication of my Grandpa’s book? Could we still sense the reasoning of the Indian route? And how did that path tie into the ‘Great Waggon Road to Philadelphia’ that crossed into Maryland and forded the Potomac River just outside my front door? And who doesn’t “love any book that opens to a map”? (Wayne Brew, personal communication)

But first we had to find a route from our home on the Potomac River in western Maryland to the Susquehanna. Back to Grandpa’s book (Figure 2). The Monocacy Path conveniently (for us) came out of Maryland at Taneytown leading to the west bank of the Susquehanna River at Wrightsville, directly connecting Maryland to the Minquas Path (Figure 3). The Monocacy Path, an Indian path followed in the 1720s and 30s by settlers heading for the Shenandoah Valley of Virginia, was a branch of what became known as ‘The Great Waggon Road to Philadelphia’. The road crossed the Potomac River at Packhorse Ford, less than a half mile from my front door (Figure 4). My recent research for a National Register nomination of the Packhorse Ford and nearby cement mill provided a unique connection with my grandfather’s research.

Figure 4. The Packhorse Ford of the Potomac River, Maryland side looking toward West Virginia (EBW 2012)
Figure 5. “Monocacy Path” (Wallace, p. 105)

Figure 6. Detail map of the Great Minquas Path (Wallace, p. 65)

Figure 7. Mortonville Road along Brandywine Creek, just east of the Susquehanna River (EBW 2012)
Our route led us across Antietam Creek at the Antietam Iron Works, over South Mountain at Crampton’s Gap, and northeast through Frederick and Carroll Counties, through Taneytown to the Mason-Dixon line. In Pennsylvania we continued to New Oxford, along Route 30 through York (Figure 5). Approaching the river we hit traffic stopped dead at the bridge so we turned off onto the older Lincoln Hwy bridge to Columbia and turning right along the bank of the Susquehanna River, began to follow the Great Minquas Path – as identified by my grandpa (and Google maps!) (Figure 6).

Over this path the Susquehannock Indians yearly brought great wealth in beaver skins to the eastern trading posts. The Minquas Path not only laid foundations for Pennsylvania’s commercial development. It also provides a key to much of the Commonwealth’s early history. “The struggle by Holland, Sweden, and Great Britain for the possession of the Delaware River,” writes George P. Donehoo, “was in order to control the trade with the Minquas living on the Susquehanna.” (Wallace, p. 64)

The Minquas or Conestoga Indians were the “last of the once mighty Susquehannocks” who lived in small settlements along the Conestoga Creek. Their trading pathway followed the creek from the Susquehanna River, crossing higher ground to the Brandywine Creek. The country road we followed along the Brandywine was indeed little more than a foot path (Figure 7), at times sharing the dry ground above the creek with a railroad line (Figure 8).

From Columbia to West Chester our route was rural, passing through historic farm-land and following routes little changed from their historic path. Then we came into Swarthmore. With that the joy of the journey, now 6 hours later, was gone. Though a lovely town, the surrounding mess of roads and houses and commercial strips were too much. We never made it to Fort Manayunk (now the Philadelphia International Airport). Our 6 hour journey there was a mere 2 1/2 hour drive home on Interstate 95.
likely a several days journey by foot or horse. Remarkably for much of the journey we could clearly sense the original path.

The Indian Paths of Pennsylvania is a remarkable resource for anyone doing research in and around Pennsylvania, still as relevant today as it was 50 years ago when my Grandfather was stalking the roads and records. Grandfather Wallace wrote that he hoped “other students of outdoor history may find this work helpful in building a still closer knowledge of our Indian heritage.” It is my hope that other researchers will pull the book off the shelf, blow off the dust, open it to that awesome map, and reacquaint themselves with The Indian Paths of Pennsylvania.

**Author Biography**

**Edie Wallace** is the granddaughter of Paul A. W. Wallace. She continues the family vocation as historian with the cultural resources consulting firm of Paula S. Reed & Associates in Hagerstown, Maryland.
The Bethel Colony: Intersections of Culture and Built Form

Janet R. White

The town of Bethel, once the site of the Bethel Colony, sits on a gentle slope rising from the bank of the North River in Shelby County, Missouri, about 45 miles west of Hannibal. In the fall of 1844 a group of colonists of Germanic origin, led by Dr. William Keil, arrived at what was to become their new home. They found a tree-lined creek, an Indian trading post, a small gristmill, and a few scattered farms set in a seemingly endless vista of rolling prairie grass. One year later a town had been laid out, houses were being added as fast as they could be built, and construction of a large, new, steam-powered gristmill was underway.

The Bethel Colonists were Bible communists: land, buildings, and means of production were held in common. They found the inspiration for their communal life in the Bible, specifically in the Book of Acts, which records that in the early church “as many as were possessors of lands or houses sold them and brought the proceeds and laid them at the apostles’ feet; and distribution was made to each as any had need” (RSV, Acts 4:34-35). Communal ownership at Bethel applied only to “lands and houses,” or in modern economic terms, real property and means of production, and not as in some of its contemporary utopias to such items as clothing. The Colony functioned on this communal basis for thirty-seven years, until the death of Dr. Keil and decreasing commitment to the communal ideal led to the assets of the community being divided among its members in 1881.

The focus of this paper is on the intersection of the economic structure of the Colony with the built form it produced over the course of its existence; specifically, it focuses on how the unique aspects of their way of life influenced their architecture and site planning. At least twenty of the buildings constructed by the Bethel Colony in and around the town of Bethel are extant, though some are in poor condition and others have been significantly altered. Parts of the town look today much as they did in Colony times, and the street pattern has not been changed since it was laid out by the colonists. In addition to the primary settlement at Bethel, the Bethel Colony built three groups of houses in the immediate vicinity to which were given the names Elam, Mamri, and Hebron, and they founded a branch settlement called Nineveh in adjoining Adair County.

The economic structure of the community was unusual among 19th-century communal utopias in that the members were permitted small private incomes. These were earned by selling items of individual production, such as surplus vegetables from household gardens, at a community store where non-members from the surrounding areas were welcome cash customers. Both the architecture and the site planning of the Bethel Colony exhibited this same unusual mix of the collective and the private. Communal-
ism at the large scale of the community was combined with variation, choice, and room for initiative at the individual level.

This combination of large-scale communalism and individual-level variety can be seen in a comparison of three of the houses built at Bethel. All three houses were measured by the author; the plans in Figures 3 to 5 were developed from these measurements.

The first two are the Bair House, the first house to be built by the Colony, and the Zeigler House (Figures 1-2). At first glance they look very similar, and in many ways they are. Both are two story structures clad in clapboard. The windows and doors are exactly the same size, suggesting that they were produced in a common workshop; the windows of all the Bethel buildings were 2'5” wide. The earlier windows are two panes over two; later they began to use six over six or even nine over six, but all within the same frame size. In plan, both houses have two rooms on the ground floor with a central fireplace (Figures 3-4). This was the standard plan for a typical Bethel Colony house.

Much of the construction done at the Colony in the earlier years used the fachwerk technique typical of German vernacular architecture of the era, a construction method in which heavy, hand-hewn, timber framing creates a rigid box of structure and the spaces between the timbers are filled in with nogging material. At Bethel, this material was usually hand-made brick baked in one of several wood-fired kilns scattered throughout the community (Bower 1972).

Originally the exterior timber and brick work was stuccoed, but the harsh Missouri winters soon led the Colonists to add a layer of lapped horizontal wood siding for additional insulation.

The inside of the houses was generally plastered, so that little visual evidence of the fachwerk remained.
The Miller House was built in 1855, ten years after the Bair House (Figure 5). By this time, the Colony was building in thicker brick walls, without the clapboard, but the window sizes remain the same, as does the basic two over two floor plan.
Though the three houses are similar in all of these ways – basic floor plan, window size, etc. – they are not identical. They are not exactly the same size in plan or exactly the same shape. The location of the door is different, as is the location of the stair. Furthermore, the Zeigler and Miller Houses are a full two stories, while the Bair House is really one and a half, although it has second story windows. In the Miller House, built later than the first two, the chimney is moved from its central location and a stove is incorporated into the second room on the first floor. In other words, in their architecture we see a fundamentally communal environment within which individualism in detail occurs – the same pattern as in their economic structure.

Unlike many 19th c utopias, such as its contemporaries at Oneida and Bishop Hill Colonies, at Bethel Colony the utopian vision did not challenge the primacy of the nuclear family. The nature of the family and its relationship to the collective at Bethel
appear at first glance to differ only slightly from the cultural norm -- the norm in mid-19th century America still being a nuclear family with a large number of children who live in a single family house which, in the 1850’s, was most likely to be located on a farm. The Colony was organized by nuclear families, each family housed separately. The makeup of the individual households varied, but examination of the detailed U.S. Census records for 1850 and 1860 reveals that the typical Bethel house was occupied by a husband and wife, their children, and one to four additional individuals. While there was a communal living space, the Grossehaus, the Census data reveal that those

![Figure 5. Plan of Miller House (drawn by author)]
who lived in the Grossehaus were almost all individuals who did not have nuclear family ties in the Colony. Moreover, the Census data show that a number of such unrelated individuals lived in the houses of – and one assumes shared the life of – one of the nuclear families, much as a hired hand or hired girl might in a typical American farm household of the time. So at Bethel Colony, the individual family in the single family house remained the locus of domesticity.

The difference in site planning that does not strike one immediately between the Bethel house and the house of the typical American household of the time is that the Bethel house is no longer located on a farm; it is set on the street of a town. The fields and barns of Bethel Colony were large communal enterprises outside of the area delineated for the town streets. There were a few specialists – the tailor and the school master, for example – but most of the men and boys of the Colony worked at agricultural tasks in this communal setting. Both the labor and the product of male work was communal.

The belief of the Colony leader, William Keil, that all should work for the common good did not, however, extend to communalization of traditional “woman’s work.” Housekeeping in the individual family homes remained the rule. Each household prepared its own meals, ate in its own home, and made clothes for its own children and female members. It also produced much of its own food: though red meat and staples were obtained from communal stores, individual kitchen gardens and orchards provided vegetables and fruits; and individual coops of chickens and geese provided the household’s eggs and featherbeds.

The community did provide some communal efficiencies that must have made it easier for Bethel’s women to do their work, but each household remained responsible for making use of them. A cow from the communal herd was brought to each household’s barn each evening, but it was members of the individual household who milked it and made any butter or cheese the family would have. There were several communal ovens, but women made their own bread and brought it to the ovens to be baked. A laundry shed next to the mill had hot water from the steam boiler piped in, but each family did its own laundry in the shed on an assigned day. Not having to fire your own oven or carry and heat your own wash water was no small improvement over the life of the typical farm household, but it did not relieve you of the basic task. The individual housewife, with whatever assistance she might receive from her children or other adult women living under her roof, remained individually responsible for house, garden, orchard, and henhouse.

Nothing in the scant written evidence left by the Bethel Colony suggests a reason for the difference in treatment of male and female labor or production. Dr. Keil did not leave documentation of his beliefs or reasons for them; he was opposed to such records, stating on one occasion that “under no condition would he be bound and fettered by any written agreement. If a man’s word was not as good as a written law, then he could and would have nothing to do with the project” (Bek 1909, 267). Whatever the reason, male labor and production were communal at Bethel and female labor and production were not – and the site planning of the Colony reflects this unique situation.
The 1785 Land Survey grid had created a norm for the physical environment of the American nuclear family. A traveler in the 1870’s described a scene like that which still greets the eye in many parts of the Midwest:

From the point where you leave the Alleghanies [sic] at Pittsburg [sic], until after crossing the Missouri . . . a railway run of some thousand miles, there is a uniformity of landscape greater than could be found along any one hundred miles of railway in Western Europe. Everywhere . . . one travels past farms of two or three hundred acres, in everyone of which there is a spacious farmhouse among orchards and meadows (Jackson 1972, 62-63).
Thanks to the grid pattern of landownership imposed by the Land Survey, these “spacious farmhouses” were both widely and evenly spaced. They sat not just among “orchards and meadows” but among vegetable gardens, wellhouses, chicken coops, woodsheds, and outhouses, which created what I will call a farmstead zone, a denser zone of both built form and activity between the house and the open fields. Activities conducted within this farmstead zone were traditionally the responsibility of the farmwife. It was she (with the aid of daughters and sons too young for the fields) who tended the gardens, harvested and preserved their production, fed and slaughtered the chickens and gathered their eggs, and carried in the wood for her stove. The larger barn and its yard, while situated near the farmstead for convenience, were nevertheless distinct from the farmstead zone and separated from it by roads or fences. Though the entire family might be needed in the fields at harvest time, the fields and barn around the farmstead were understood to be the domain of male responsibility.

The only piece of this traditional picture that was changed at Bethel was that the crop fields, pastures and large livestock facilities of the typical American family farm, the territory of male work, were physically separated from and located at considerable distance from the farmstead domain of female work. Farmsteads nearly a half an acre in size were then lined up next to each other on the streets of Bethel, with all their traditional functions complete. The significant physical change, in other words, was economic in origin: the collectivization of both the fields of the family farm and the male workforce.

That one change, however, collectivizing male labor and its setting, created something entirely new (Figure 6). The built environment of the town of Bethel consisted primarily of single family homes on nearly half-acre lots. The size of these lots and the consequent distance of one house from another meant that separating home from field did not simply recreate the form of the farm village in Europe or parts of early New England, in which houses placed close together for ease of protection housed farmers who went out to their fields by day. Nor did it produce the built environment typical of the American rural small town, in which the homes of those who serviced the surrounding farms (bankers, doctors, retailers, etc.) were typically placed in closer proximity to each other than were Bethel houses, and furthermore were often the site of male work, in offices or first-floor commercial space. Instead what it produced were streets of houses sitting right on the corners of large, open lots, which were the province of women and children during the day, while the men went off to work and came home to their dinners at night. To a late-20th century American this has a familiar ring; long before the 1950’s post-war sprawl, the Bethelites had created an American suburban environment.

Bethel’s was not the “borderland” version of a suburban environment that existed in the mid-19th-century near larger American cities, a zone Stilgoe defines as “between rural space and urban residential rings” (Stilgoe 1988, 9) in which well-to-do, commuting, city workers established ornamental country seats to which they could retreat from “the withering blasts of city living.” (Stilgoe 1988, 37). The town of Bethel sat squarely in rural space, 160 miles over mostly dirt roads from St. Louis, the nearest
city, and not on a rail line. Instead, its nearly half-acre house lots on tree-lined streets created an early manifestation of what was a century later to become the aspiration of middle-class America: the low-density bedroom suburb.

There were, of course, certain obvious differences; if today’s upper-middle-class suburban housewife grows vegetables for the table on her half-acre it is by preference, not necessity. Change in both the specifics of and the physical difficulty of “women’s work” in the past century do not, however, alter the fundamental similarity; in Bethel, as in the “Stoneybrooks” and “Fox Hills” spread across American landscape in the latter part of the 20th century, men went elsewhere to work in company while women labored in relative isolation at home.

The low-density bedroom suburb has been called a creation of the capitalist system; it is therefore interesting to find that the same physical form serves both corporate capitalism and radical Christian Communism. The example of Bethel suggests very strongly that it is not capitalism per se that calls this particular suburban form into being, but the physical segregation of male labor from female domestic labor under either economic system.

The Bethel Colony was unlike other contemporary communal utopias, such as the Oneida Colony or the Bishop Hill Colony, in its economic structure. It allowed individual profit-making by members; a similar tolerance for individualism can be seen in its architecture. It did not communalize traditionally female work; this radically influenced its site planning, resulting in creation of an early manifestation of a low-density suburban plan. The particularities of its economic structure can thus been shown to be reflected in the built form it produced.

**Works Cited**


**Author Biography**

Janet R. White is an Assistant Professor at the UNLV School of Architecture. She earned her Master of Architecture degree from Columbia University and her doctorate in the History of Architecture and Urbanism from Cornell University. Her research interests include utopian and visionary architecture, particularly of the 19th century.
A Cultural Landscape Report: Beaver, Pennsylvania and its Central Public Squares

Rebekah Johnston

Introduction

Beaver, Pennsylvania is a town of quaint feeling and historic values. Established in 1793, the town is located at the tributaries of Beaver and the Ohio Rivers in Western Pennsylvania, although it was not incorporated as a borough until 1802. With predominately Victorian homes lining the residential streets within the original town plan, Beaver reminds one of a bygone era. The significance of Beaver’s town plan is its historic urban form centered on existing public squares that have remained largely intact over 200 years of development. The four central public squares, Agnew, Quay, McIntosh and Irvine, historically functioned as a place to weigh hay, feed animals, and gather water for the home. Over time, the public squares transitioned from common ground to leisure park.

The purpose of the research was to explore and document the historic evolution of these public squares as a means of informing contemporary urban planning and design. Specifically, this study investigated the design and evolution of McIntosh Square, including the installation of the Soldiers and Sailors Monument. Additionally, I offer suggested treatment measures for any public use deficiencies that were found. The public squares of Beaver were designated by Governor Mifflin to be used for public space. Irvine Square had as many as three buildings, two churches and a school, in the early years before map making of the town was available. McIntosh and Quay were always left as open space with no structures for hay and water, and Agnew Square always had a courthouse. Though town council officially started making changes to the public squares in the 1870s, before the two churches were removed, these changes began the process of signifying that the public squares were no longer common ground. Residents could no longer retrieve water or hay from these public squares. They were now to be used as a location of relaxation and public events.

Beaver was also selected for this study because its historic urban form has undergone limited change. Beaver has been nominated and registered as a historic place, but based on the nomination form, was considered primarily for its architectural characteristics. The historic nomination form documented prominent architecture styles, for example Italianate and Romanesque (Taylor and Taylor 1994, 89B). However, the landscape of the town was not specifically discussed, and the grid pattern was only briefly noted with regards to the original survey. The use of the public squares and their relationship to the town were also not addressed in previous research. Given the relatively few revisions since their foundation, the public squares became the focus of the study. The primary research question was: what is the historical significance of the public squares and the use of the land through Beaver’s history? Observation and research of the landscape
history documentation of McIntosh Square will provide insight into the placement of the Soldiers and Sailors Monument.

**Overview of Historic Preservation and a Cultural Landscape Report Approach**

Historic landscapes are considered built landscapes that have heritage with significance and should be considered for preservation status or researched to protect the history of the site or structure. Historic landscape preservation is a newer field within landscape architecture. Prior to the 1970s, historic landscape preservation was considered a dominant field for architecture but not landscape (Melnick 1983, xi). Increasing interest in historic landscape preservation generated more research and writings in the field. One method that was developed to guide historic landscape research and writing was the cultural landscape report (CLR) approach.

Cultural landscapes are defined as landscapes affected by people either through design or by impact. The CLR approach guides scholars in the analysis of landscapes that have had a significant impact within the community, environment or an event in history. The framework for documenting a CLR was written in the 1990s, but the writings on historic landscape preservation began in the 1970s.

CLRs are a detailed report containing three main ideas to guide the researcher in the documenting process of a historic landscape. Each section documents the history of the site, analysis of the site, the existing conditions of the site, and treatment recommendations. Beaver as a topic for the research through a CLR was a candidate to understand the changes to the town, the urban form of the town and the changes to the public squares. The CLR approach was methodology that was born out of the historic landscape preservation movement. A cultural landscape report allows the historian to examine and explore the history of the landscape. The report discusses the memory of those who experienced or were part of the landscape, either in design, in an event or through the person who made the landscape significant. The CLR approach also examines and analyzes the historic significance of the landscape. Analysis of the landscape discusses the importance of the existing features and the history of the landscape. The history of the landscape is the key element justifying preservation. The National Trust for Historic Preservation recognizes that landscapes of historic significance should be preserved as part of our cultural history (The National Trust for Historic Preservation in the United States 1976, 186). Documentation of the landscape should also consider the ecological significance of the site as a means of ensuring preservation (Schuyler and O’Donnell 2000, 73). As landscape preservation moves forward and additional landscapes are documented, the body of knowledge grows, and the practice becomes more relevant while furthering the field of landscape architecture.

**Research Process**

In 1996, Beaver, Pennsylvania was accepted onto the National Register of Historic Places. The nomination form required that the town be considered for Historic Preservation but did not address the relationship between the grid pattern and similarities
found in the urban form of Philadelphia. In addition, other 18th-century towns platted by the Commonwealth of Pennsylvania included Warren, Waterford, Erie, Franklin and Allegheny City. Beaver and Allegheny City, now called the North Side in the city of Pittsburgh, were established in order for the land to be sold to replenish the funds of the Revolutionary War. The remaining four towns were established to expand the commonwealth’s land holdings to the west of the Allegheny Mountains. All followed a grid pattern and are all registered as historic districts. As seen in Figure 1, Beaver is distinguished by its four central and four outer public squares, similar to Philadelphia, strategically located in the center and corners of the town.

The research for Beaver was done under the exhaustive category, which allowed me to discuss with residents the changes made to McIntosh Square, as well as review the historic documents, maps, Beaver Council Meeting Minutes, postcards, and photographs. Historic maps included Daniel Leet’s layout of the town in 1793, Sanborn Fire Insurance Maps from 1886 through 1925, and a 1941 Works Progress Administration Map, documented the changes made to the form of the town as well as its four central public squares.

**Historical Setting**

Though Philadelphia was surveyed in 1681, the plan of William Penn and Thomas Holme, Penn’s Surveyor, showed that Penn and Holme wanted the city to have large lots and be in a grid pattern for easy access and public squares (Oberholtzer 1912, 20).
Beaver was surveyed in 1793 and Daniel Leet’s plan of the town, showed a certain similarity of grid pattern use, street width and the number of public squares. Leet’s town plan was the only city development to contain more public squares than Philadelphia. The uses of these public squares have changed since 1812, from a common public square to a more recreational use for public gathering such as festivals. The town’s residents changed from agricultural workers to lawyers and businessmen as the little town grew into a more prominent role as a county seat. Since the 1870s when the borough implemented an improvement to the town, adding trees and allowing a more natural feel to the public squares have been a focus for the town and have provided a more prominent opportunity for the residents to be involved in the use and beautification of the public squares.

In the celebration of the county’s 100th anniversary, a more significant change occurred in the public squares with the addition of the Soldiers and Sailors Monument. With this addition, it established that the town council no longer viewed the public squares as a location for gathering water and hay, but as a place to stroll and sit, as public benches were also added at this time. The installation of the Soldiers and Sailors Monument set the stage for the other public squares and all of the public squares were used in a leisure purpose.

The plan of Beaver that was established in 1793 has seen relatively little change. The “out lots” that were established in 1793 were eventually subdivided and became the suburb of Beaver; but that did not happen until World War II in the late 1930s and 1940s. The squares of Beaver with the “in lots” has also seen very little change. Historically, this is significant, since Philadelphia expanded out of Holme’s and Penn’s controlled grid pattern within 20 years. Beaver has grown structurally, as most towns and cities will, but the structures that have been added to the town have remained predominately on the same lots that Leet laid out in 1793.

**Analysis and Existing Conditions**

The historical value of McIntosh Square is not just the community’s use of the land but also the intactness of Beaver as an historic town. Public squares in the other Commonwealth towns have been subjected to various changes in the use of the land; however, Beaver’s town council and residents have maintained McIntosh Square as a public space with community events, but not with open recreation, such as baseball or football. In the urban form of town planning for Beaver, the public squares’ maintenance and use have been significant to the community. Without the public squares the town’s public use space may have been limited or non-existent.

Analyzing the town required overlaying maps to document the changes of the town. As seen in Figures 2 and 3, these two maps from 1891 and 1906, show where the original dividing lines of Daniel Leet and the new buildings of the town surrounding, just the central public squares had changed in a 15 year span. The two years also document the how the public squares went from common public ground to include the courthouse and two churches, to leisure parks with the installation of the monument in 1900 and the demolition of the two churches. These two maps also document that McIntosh
Figure 2: Overlay of 1891 Map (Sanborn Perris Map Company, “Beaver, PA,” map, October 1891)

Figure 3: Overlay of 1906 Map (Sanborn Map Company, “Beaver, PA,” map, December 1906)
Square had relatively few changes that affected the physical features of the public square and provided passive recreation for the community with a walkway surrounding the monument. The contemporary use of Beaver’s public squares started in 1870 when the Town Council began a tree planting program, and since then the town council has gradually transformed the squares into a leisure park.

Some of the changes over time involved safety, seating, and cleanliness. Around 1903, lighting was added to the squares; however, there is no current pedestrian lighting. As a treatment recommendation, I recommended providing appropriate lighting for the public squares to offer a sense of security and safety to the residents (10 Principles for Successful Squares, Project for Public Spaces). Just prior to the dedication of the Soldiers and Sailors Monument, in 1900, twelve benches were purchased and placed in the public squares (Borough Meeting Minutes 1900, 364). The meeting minutes did not document which public squares would receive the benches and how many were to be in each square. Those benches were eventually replaced with the existing benches that are on concrete slabs and have concrete legs with wooden slates. Beaver Borough Meeting Minute’s also discuss the trash receptacles. The minutes discussed adding receptacles in the public squares in the 1930s (Borough Meeting Minutes 1930, 56). As a treatment recommendation, I recommended new trash receptacles that are larger and could blend in with the historic characteristic of the public squares.

The only dedicated monument to grace the interior of a public square in Beaver is the Soldiers and Sailors Monument in McIntosh Square which was installed in 1900.
Once the town council agreed to the monument’s placement, the other three public squares began to be used in a more leisure fashion. Prior to the installment of an honor roll and gazebo in Irvine Square, the use of the public square was to house the Chautauqua festival, from 1923 to 1930. After those years, Irvine and Quay Squares were designated as Honor Rolls locations, which were located off the main sidewalk, surrounding the external perimeter of the squares. As seen in Figure 4, the Soldiers and Sailors monument is located in the center of McIntosh Square. Placing three other memorials to honor various other wars in McIntosh Square would have detracted from the significance of the Soldiers and Sailors Monument.

The Soldiers and Sailors monument was designed to be viewed on all four sides, and the circular walk enhances that view. Since the incorporation of the Soldiers and Sailors Monument, McIntosh Square has sustained a number of landscape planting changes. The monument was placed amongst trees planted in the 1870s. There was no designated plan then, and after the storm of 1924, the designated plan was abandoned, so trees were once again planted “randomly.” Even with the landscape plan of 1925 that was never installed, the walk and most of the trees present on the site are from the late 1920s, as can be seen in Figure 5.

The impact of populations moving away from city centers toward suburban sized lots and lower density environments have raised the awareness of what it takes to create livable cities. Studying towns like Beaver that have sustained themselves over more than a century can provide valuable insight into the development of modern day town plans. Most of Beaver is walkable and one can gain access to any public square or store by bike or walking. Though the average age of the population of Beaver may be older, there is public transportation available. New housing developments may be miles from the city and can only be accessed by car, but the “out lots” of Beaver still provide quick access to the town. Figures 2 and 3 are two of ten overlay maps that were produced for the research of Beaver to understand and document the minimal changes made to Beaver and the Central public squares. This analysis of the maps and the analysis of photographs of the public squares showed how much Beaver retained most of the original format of the town from 1793. Figure 6 is the final overlay map of the analysis to document Beaver in 2011 with a combination of all the previous maps with existing structures and then including Geographical Information Systems (GIS) mapping and Google Earth for structures to determine overall the changes to Beaver between the 1940s and 2011. This final map also shows how little change there has been in the urban form of Beaver, and how the town has been able to retain its small town sensibility.

**Summary**

Throughout history, the concept of the “public square” has been to provide a gathering space or a significant spatial relationship with the surrounding architecture (Zucker 1959, 11). The key goal of the public square is to provide residents and visitors a location to come and intermix (10 Principles for Successful Squares, Project for Public Spaces). The public square gives residents a place to sit and communicate with family and friends. The public squares have served as a multi-purpose avenue for the residents of Beaver. Beaver residents can walk to businesses within the town center and can walk
Figure 5: Soldiers and Sailors Monument prior to 1932 (Beaver Area Heritage Museum)

Figure 6: Overlay of 2011 Map (Michael Baker Corporation, “GIS Beaver Parcel Data Map,” map, (accessed June 29, 2011)
to any of the eight public squares as they have down for over 200 years. The preservation of these historic landscape features, surrounding the use of the land of the public squares, allows future planners and preservationists to consider that public squares, no longer a place for the domestic livestock, are a place to gather together as a community.

Beaver contains a similar layout and design to Philadelphia, especially compared to other 18th-century towns platted by the State of Pennsylvania. When Leet laid out Beaver, Philadelphia was already transformed into a city that was beyond its original boundaries. Thus, studying the intact urban fabric of older towns that have not been greatly influenced by 21st-century growth can illustrate historic standards and principles of town planning that are not otherwise visible in larger urban centers.

The changes surrounding Beaver’s four central public squares show the significance of the small degree of change over a long period of time. Through historical analysis and the documentation of existing conditions, we can see that the use of McIntosh Square transformed from being open public land to a public leisure park. The key moment of change was the dedication of the Soldiers and Sailors Monument in 1900. Although subsequent changes were minimal, they eventually resulted in dramatic shift in the use of the square. However, these slow and incremental changes allowed Beaver to maintain its historic urban form.

I would argue that the eight public squares, particularly McIntosh, Agnew, Quay and Irvine, have provided a cultural, physical and historic center for the community. As the history of the public squares have proven that the land transitioned from common ground, used specifically for the residents of the town to gather, water and hay, to leisure park, the ability to use the park in a more social or natural setting. Once the Soldiers and Sailors Monument was installed in 1900, the installation solidified that the use of the public squares had changed and would no longer serve as common ground, but leisure park. The use of the central public squares became a location for large cultural and social events. This research documented the role of the public squares as a vital and important part of the story of Beaver and should be preserved for future generations as a model for contemporary planning and design.

References


**Author Biography**

**Rebekah Johnston** graduated from Chatham University, May 2012 with a Masters Degree in Landscape Architecture. She received her Bachelors of Science in Communications Design from La Roche College in May of 1999. She worked with the Beaver Area Heritage Museum, Beaver County Genealogical and History Center, and obtained information from the Historical Society of Western Pennsylvania as well as the Carnegie Library in Oakland for historic research on Beaver, Pennsylvania and its Central Public Squares. The thesis was completed in defend to fulfill the requirements of the Masters of Landscape Architecture Program in April of 2012.