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THE SITE DEVELOPMENT OF "BLACK ROCKS"  
LOCATED IN LOWER MERION TOWNSHIP  
MONTGOMERY COUNTY, PENNSYLVANIA

ElizaBeth Anne Bede

A THESIS

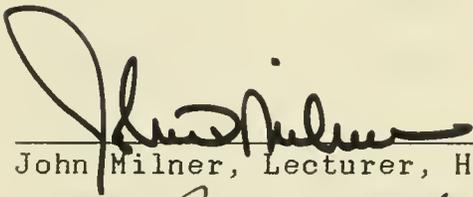
in

The Graduate Program in Historic Preservation

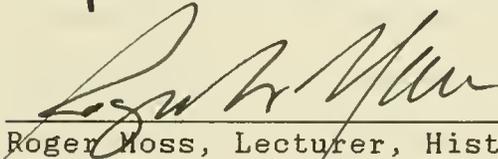
Presented to the faculties of the University of Pennsylvania  
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for the Degree of

MASTER OF SCIENCE

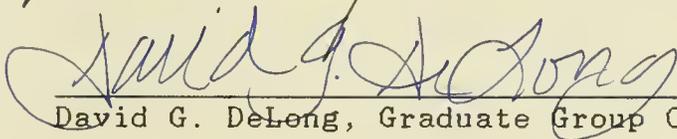
1990



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## PREFACE

Throughout history the treatment and arrangement of shelter have revealed more about a particular people than any other products of the creative arts. Housing is an outward expression of the inner humans nature; no society can be fully understood apart from the residences of its members.

Kenneth T. Jackson<sup>1</sup>

Furthermore, Norberg-Shulz suggests that architecture extends beyond a mere aid of subsistence; it encompasses the total process of living. Throughout history societal perceptions of individuals or groups have been molded in part by their method of dwelling. The symbiotic relationship between function and aesthetics yields a sense of place indicative of its creator and its inhabitants, as well as society as a whole.<sup>2</sup>

While a structure reflects all of these influences to some extent, how one determines responsibility for any one component is by examining the principle motivators of its design and function. Thus while one cannot fully comprehend any society without an examination of its housing form, the converse is also true. One cannot fully physically, aesthetically or socially locate a structure without a conscious acknowledgement of the society in which it was built. The two are not mutually exclusive. The complex interdependence of form and social reality is a fundamental aspect examined in the field of historic preservation.



## INTRODUCTION

This thesis is an attempt to trace the transition of a particular site within its societal context. The site chosen, "Black Rocks", is located at 636 Black Rock Road, Bryn Mawr, in the township of Lower Merion, Montgomery County, Pennsylvania. (Figure 1) This thesis sketches the evolution of Black Rocks from the colonial settlement to the present. Each chapter is divided into two sections. Section A provides an overview of the events and trends of society for a specific time period. Section B traces the activities directly related to Black Rocks within the contextual setting provided in Section A.

The foundation for this research was attained during the summer and fall of 1988. The author and another consultant conducted a township-wide survey of the cultural and historical resources in Lower Merion. Black Rocks was one of approximately one hundred sites for which the author and co-consultant prepared a Pennsylvania Resource Survey Form. In addition the consultants conducted a windshield survey resulting in an additional list of approximately three hundred noteworthy sites. This list was adopted by the Lower Merion Historical Architectural Review Board in February 1989.

While it is acknowledged that all of the surveyed sites have metamorphosed over time, Black Rocks was chosen due to



its distinct evolutionary periods. The research methodology in establishing and verifying the events of each time period relied, first and foremost, on various forms of primary documentation. The sources ranged from the written, i.e. deeds, wills, papers of architects and owners; to scientific investigations, i.e. mortar analysis; to the graphics, i.e. photographs, maps and architectural drawings.

Black Rocks attained its name due to the rare and bizarre rock formation on the site. These black rocks are a portion of one of the two extensive serpentine belts in Montgomery County. As is obvious from its color, this formation is not a pure serpentine (or greenstone) deposit. Only the inner core of the rocks is serpentine. The outer layer is talc.<sup>3</sup> Botanist Margaret B. Harvey describes the site's formation in the nineteenth century as:

...a curious outcropping of a vein of serpentine. The formations at this spot were so fantastic, so strange, so weird, as to remind one of all the old legends he had ever read about "Devil's Walls", and Ogre's Castles". The wild luxuriant vegetation, overrunning the rocky tract, heightened the effect.<sup>4</sup>

Indicative of a serpentine formation is the growth of specific vegetation that utilize the serpentine mineral by-products.<sup>5</sup> Harvey relates thirty-two species of ferns flourished in the vicinity of Black Rocks. "Among the rare ones...the 'walking fern' or *Camptosorus rhizophyllus*, with a rooting tip at the end of its leaf."<sup>6</sup>



Local histories relate that the Indians were drawn to the rare formation and vegetation.<sup>7</sup> However, available primary documentation does not verify an Indian association with this site. Despite the lack of available factual documentation, local histories repeatedly perpetuate this association. Thus, over time, this popular conception of a Black Rocks Indian tradition has enhanced the aura of the picturesque site. Therefore, a discussion of this phase of Black Rocks' history is essential. Chapter One discusses the Indians of Montgomery County and the corresponding Black Rocks citations.

The foundation of the remaining four chapters is primary documentation. Chapter Two discusses the Black Rocks area during the Great Welsh Tract period; Chapter Three traces its agricultural development; Chapter Four relates the evolution of the area into "The Main Line"; and, finally, Chapter Five concludes with the development of Lower Merion as a commuting suburb. This research is not an exhaustive analysis of the site. The author hopes further research will occur concerning Black Rocks. With this in mind, the chapter endnotes have been utilized not only to record source documentation but also as commentary concerning conclusions and sources.



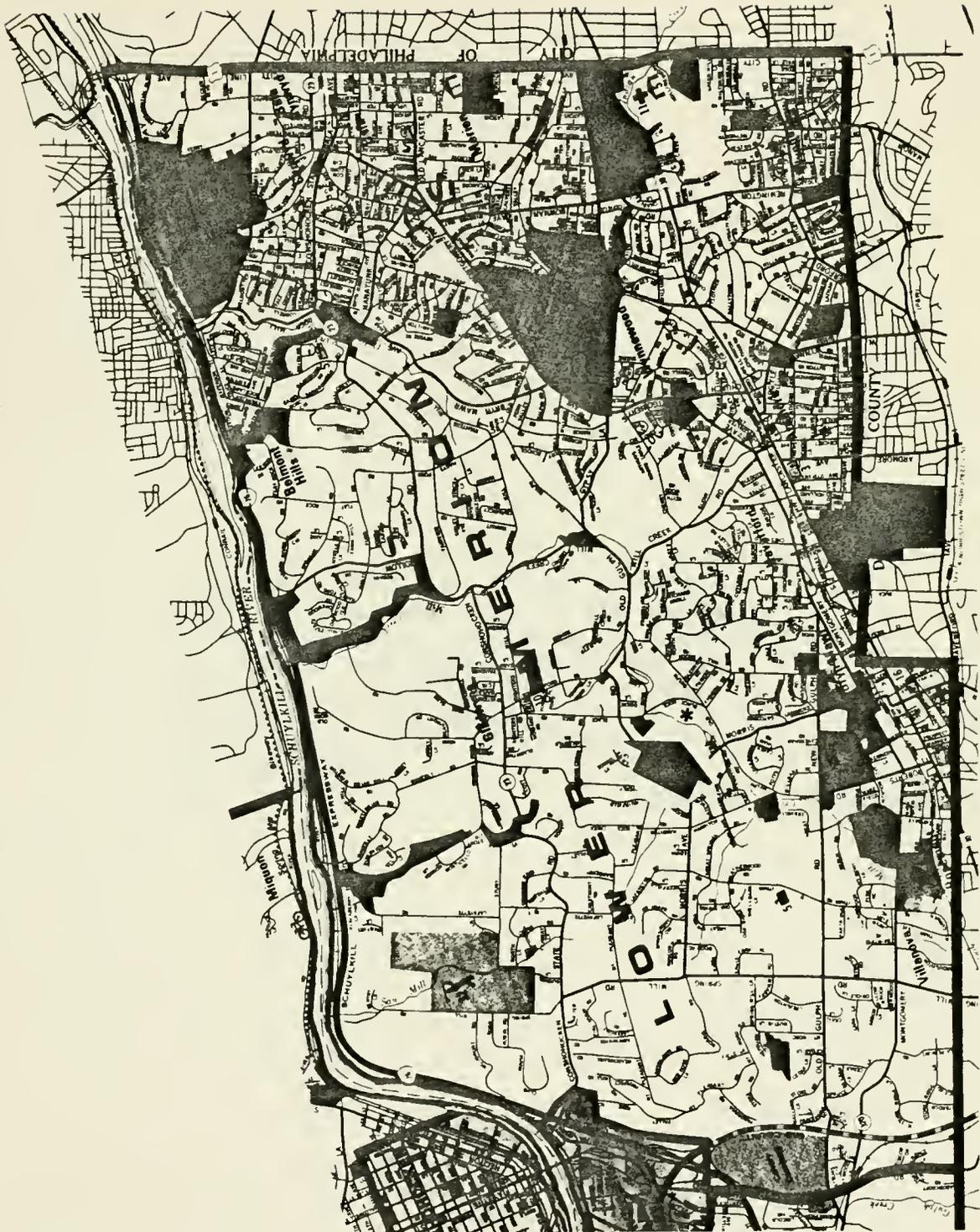


Figure 1: Location of Black Rocks in Lower Merion, Montgomery County, Pennsylvania. Map from Jean Barth Toll's Montgomery County: The Second Hundred Years vol.2. (Norristown: Montgomery County Federation of Historical Societies, 1983), map supplement



From the first act of its creation,  
through its long life to the present  
day, an historic building has artistic  
and human 'messages' which will be  
revealed by a study of its history.  
A complexity of ideas and cultures may  
be said to encircle an historic building  
and be reflected in it.

Bernard M. Fielden<sup>e</sup>



## ENDNOTES: INTRODUCTION

<sup>1</sup> Kenneth T. Jackson, Crabgrass Frontiers: The Suburbanization of the United States (New York: Oxford University Press, 1985), p.3.

<sup>2</sup> Christian Norberg-Shulz, Genius loci: towards a phenomenology of architecture (New York: Rizzoli, 1980).

<sup>3</sup> Bryn Mawr College Geology Department, General Records of concerning student case studies conducted at Black Rocks, c.1950.

Clifton S. Hunsicker, Montgomery County, Pennsylvania: A History, vol.1, (New York: Lewis Historical Publishing Company, Inc., 1923), p.19-20 discusses the various Montgomery County geological formations.

Main Line Times, "Lower Merion Rocks Tell a Story of Fiery Intrusions and Earthquakes", undated, Ardmore, PA. An article specifically concerned with the Black Rocks.

Attempts to explain its prehistoric formation.

Academic Sources concerning geological formations include:

Henry Darwin Rogers, The Geology of Pennsylvania: A government study (Philadelphia: J.B. Lippincott & Co., 1858). A.J. Eardley, Structural Geology of North America (New York: Harper & Row Publishers, 1952) and Charles Hughes, Igneous Petrology (New York: Elsevier Scientific Publishing Co., 1982) among others.

<sup>4</sup> Dora Harvey Develin, Historic Lower Merion and Blockley (Philadelphia: George H. Buchanan Co., 1927), p.31.

Since the formation was quarried at the end of the nineteenth century, the present day formation is only a fraction of the original.

<sup>5</sup> Robert Brooks, Serpentine and Its Vegetation: A Multidisciplinary Approach (Portland, OR: Dioscordies Press, 1987).

Frederick Pough, A Field Guide to Rocks and Minerals (Boston: Houghton-Mifflin Company, 1960).

<sup>6</sup> Develin, p.31.

<sup>7</sup> The earliest citation is in: Margaret B. Harvey, "Something about Lower Merion:", Sketches, vol.1 (Norristown: Historical Society of Montgomery County, 1895), p.162. Other citations will be discussed in depth in Chapter One.

<sup>8</sup> Bernard M. Fielden, Conservation in Historic Preservation (London: Butterworth, 1982), p.1.



## CHAPTER ONE: INDIANS: THE ORIGINAL INHABITANTS

### Section A

If an European comes to see them (the Indians), or calls for Lodging at their House or 'Wigwam' they give him the best place and first cut. If they come to visit us, they salute us with an 'Itah' which is as much as to say 'Good be with you', and set them down, which is mostly on the Ground....If you give them anything to eat or drink, well, for they will not ask; and be it little or much, if it be with kindness, they are well pleased, else they go away sullen, but say nothing.<sup>1</sup>

William Penn's efforts to establish peaceful relations with the Indians are well documented. Accounts, such as the above cited, comprise the bulk of primary documentation concerning the original inhabitants of the Lower Merion area.<sup>2</sup> Associations with Penn were not, however, the Indians first encounter with Europeans. By 1680 the Native Americans had been in contact with the Europeans for nearly eighty years. The sparse Swedish and Dutch settlements reportedly fortified themselves against the Indians. Penn, aware of the tension between the two races, was determined to achieve peaceful relations with the area Indians. The local tribes with whom Penn communicated included the Lenni Lenape, Susquehannocks, and the tribes of the Five Nations: Onondagas, Cayugas, Oneidas, Senecas and the Mohawks. Reportedly, the Lower Merion vicinity was dominated by the Lenni Lenape Indians.<sup>3</sup>



## THE LENNI LENAPE INDIANS

The Lenni Lenape, or original people, were an Algonquian-speaking tribe. They roamed the wide-spread region from northern Maryland into New York and extended east-west from the Atlantic seaboard to the western edge of the Delaware River. The Lenni Lenape's domination of the Delaware River banks earned them the title of the Delawares. However the English did not discern between the Lenni Lenape and other Algonquian-speaking tribes. Thus the appellation encompassed a number of common-languaged tribes. John Oldmixon, an Englishman touring the colonies, wrote in 1708: "the Delawares were generally tall, straight, and exceedingly well proportioned; many with fine Roman features ...very friendly and civil."<sup>4</sup>

The Lenni Lenape were semi-nomadic<sup>5</sup> and their nation was divided into three sects: Unamis, the turtle tribe; Unalachtgos, the turkey tribe; and Monseys, the wolf tribe. While a few of the turkey tribes domiciled in the Lower Merion area, the vast majority of area Lenni Lenape tribes were from the wolf sect. A 1952 article in the Pennsylvania Magazine of History and Biography discusses the 'important Indian paths' habitually utilized by these periodically mobile wolf-sect tribes. The major trail traversing the Lower Merion area was the Allegheny path. This track linked the Delaware and the Susquehanna Rivers. Initiating in Philadelphia it crossed the area via present day Montgomery



Avenue through Bryn Mawr, Paoli and westward.<sup>6</sup> Assuredly many other paths throughout Montgomery County existed, but as Henry Wilson Ruoff writes in 1895: "no account can be found at this late date of their trail and war paths which were in daily use when the early settlers came into the city (Philadelphia)."<sup>7</sup>

In the immediate vicinity of the paths the semi-nomadic Lenni Lenape tribes reportedly established small villages. In the spring they planted corn (maize), beans, and squash.<sup>8</sup> On their temporary dwellings Penn wrote: "Their Houses are Mats, or Bark of Trees, mostly chestnut, set on Poles, in the fashion of the English Barn, but out of the power of The Winds, for they are hardly higher than a Man; they lie on Reeds or Grass."<sup>9</sup> In the winter the Indians abandoned the villages and followed their hunting prey. They often traded their surplus goods with the Europeans. A 1691 letter from Dr. Edward Jones to friends in Wales, relates: "the Indians brought venison to our door for six pence ye quarter."<sup>10</sup>

In the early twentieth century, Dr. George P. Donehoo exhaustively researched the local Indian nations. He attempted to verify and establish the locations and names of the Indian villages. As stated by Ruoff years earlier, the extant primary documentation was scarce at best. Donehoo however was successful in determining the existence of a few Indian sites in the Lower Merion area. The only well-



documented site was the village of Arronemink. It was reportedly located at the "mouth of the Schuylkill River, not far from the region of Woodlands Cemetery, Philadelphia."<sup>11</sup> Arronemink was the only village for which he was able to establish an exact location. He established the existence of villages named Niantic<sup>12</sup> and Ogontz in Montgomery County but was not able to pinpoint their site. He concluded, since Niantic translated to mean "at the point of land on a tidal river,"<sup>13</sup> its location was probably along a river. He, however, was unable to substantiate this hypothesis. John F. Watson's Annals of Pennsylvania yielded another village in the region of Philadelphia. It bore the title Nittabakonock.<sup>14</sup> However, it was not necessarily situated in Montgomery County. There was one fact Donehoo was able to establish exclusive to Lower Merion. The body of water which entered the Delaware below Kensington was entitled Cohocksink--"where there are pine trees."<sup>15</sup> It is presently called Mill Creek.

Regardless of locations of Indian sites, by the end of the eighteenth century the Indians no longer retained any legal land rights in Montgomery County. The Indian leaders had released all of the land to William Penn. He wrote: "Some Kings have sold, others presented me with several parcels of Land."<sup>16</sup> The earliest purchase in Montgomery County occurred on June 25, 1683. The grantor was Wingebone, who represented the Delaware tribes. The



encompassing area included the land west of the Schuylkill commencing at the lower falls.<sup>17</sup> A few weeks later, on July 14th, Penn obtained all the land Manayunk and Macopanackhan (the Schuylkill River and Chester River respectively) north to Conshohocken Hill (opposite the present borough of Conshohocken) from leaders Secane and Idquoquehan, among others. Penn continued to expand his Montgomery County territory with acquisitions on July 14, 1683;<sup>18</sup> June 3, 1684;<sup>19</sup> June 7, 1683;<sup>20</sup> and July 30, 1685.<sup>21</sup> The final purchase of land within the Montgomery County boundaries occurred on July 5, 1697. The agreement between William Penn and the tribal leaders Tamany, Weheeland, Wehqueekhom, Yaqueekhom, and Quenamockquid, embraced all land lying between Pennepack and Neshaminy Creeks. It extended northwestwardly as far as a horse could travel in two days.<sup>22</sup> Thus, by mid-1697, all legal land rights of the Indians were extinguished in Montgomery County.

Even though the Indians had acquiesced their legal rights to the land, they continued to traverse the area: "That we may Freely pass through any of Their Lands as well which is not purchased as that which is without molestio(n) as They do quietly amongst us."<sup>23</sup> It is not clear when the Indians abandoned the area. Primary documentation does not yield information concerning the westward movement of the Indians. However an abundance of secondary sources agree the last living Indian in the area died in 1800. Most



sources generally cite the 1760's Indian Massacres as the initiator of the Indian's mass westward migration. By the close of the Revolutionary War all able-bodied Indians had reportedly vacated the area.<sup>24</sup> Therefore it appears by the nineteenth century the Lower Merion area was no longer graced with the presence of its original inhabitants.

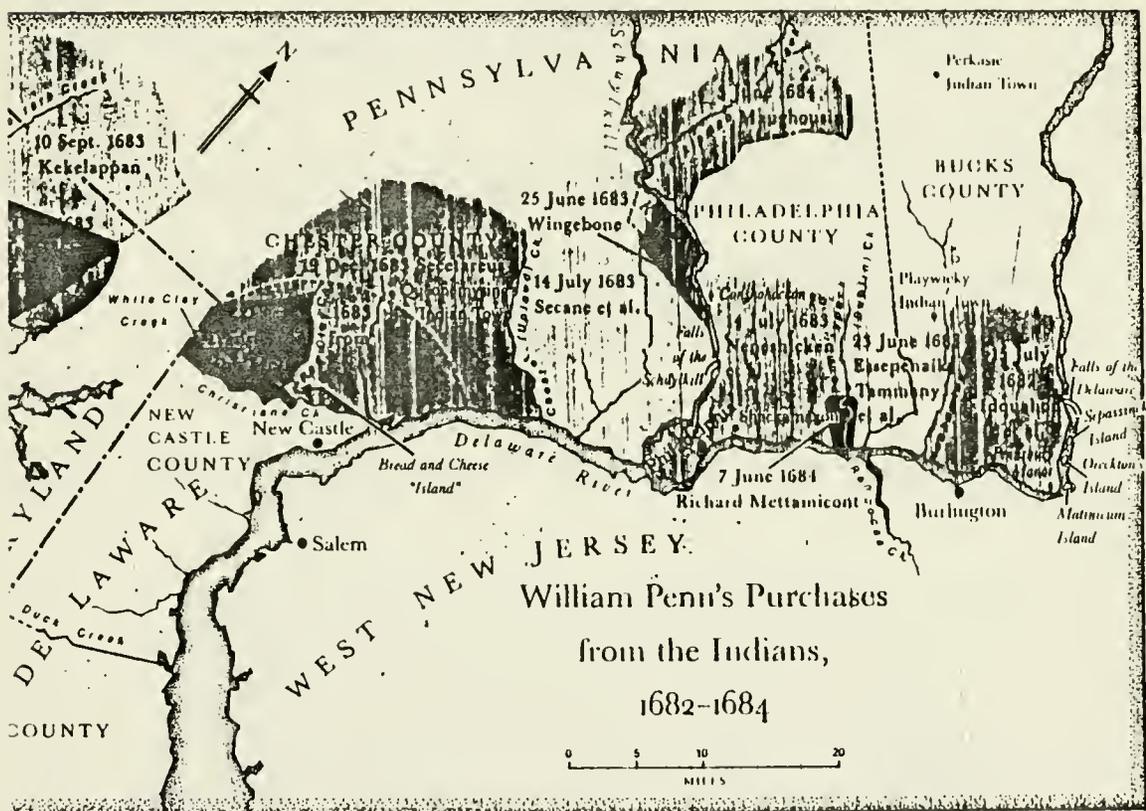


Figure 2: "William Penn's Purchases from the Indians" from Richard S. & Mary M. Dunn, eds., The Papers of William Penn 1680-1684, p.491.



## Section B

### BLACK ROCKS: UTILIZED BY THE INDIANS?

Over the last one hundred years secondary sources have repeatedly linked the Montgomery County site of Black Rocks with the Indians. The chronology and evolution of this tradition is traced by the following citations:

1895: Margaret B. Harvey "Something about Lower Merion"

"Black Rocks...to the historian a spot of rare interest in that it was the last Indian Reservation of Montgomery County."<sup>25</sup>

1927: Dora Harvey Develin Historic Lower Merion and Blockley

"From prehistoric times the Black Rocks were known as known as the site of an Indian Graveyard. The tract was the last Indian Reservation in Montgomery County. Old residents of Merion, as the late William Miles and James B. Harvey, remember seeing Indians encamped here and displaying their skill in shooting arrows. When white people were present the targets were often copper pennies."<sup>26</sup>



c.1950: Main Line times "Last Native Indians in County Clung  
to Black Rocks Vicinity"

"The Indian Council Tree at Black Rocks was well named. The great ash, whose trunk is 10' around, appears to grow on solid rock and spreads its limbs over a natural semi-circular amphitheater. It is easy enough to invoke a picture of tribesmen holding a conclave within this crescent of fantastic serpentine formations. The Black Rocks held charm for the redmen. They clung to this spot long after the rest of their race were crowded westward and...was the last spot in Montgomery County where the aborigines dwelled. There is little known about the Indians who lived in this area...This much is certain--the Indians did live at the Black Rocks....The University of PA's museum contains corn grinding objects found here... One resident...(heard) from her grandmother how...(they) would visit the Black Rocks to see the Indian babies."<sup>27</sup>

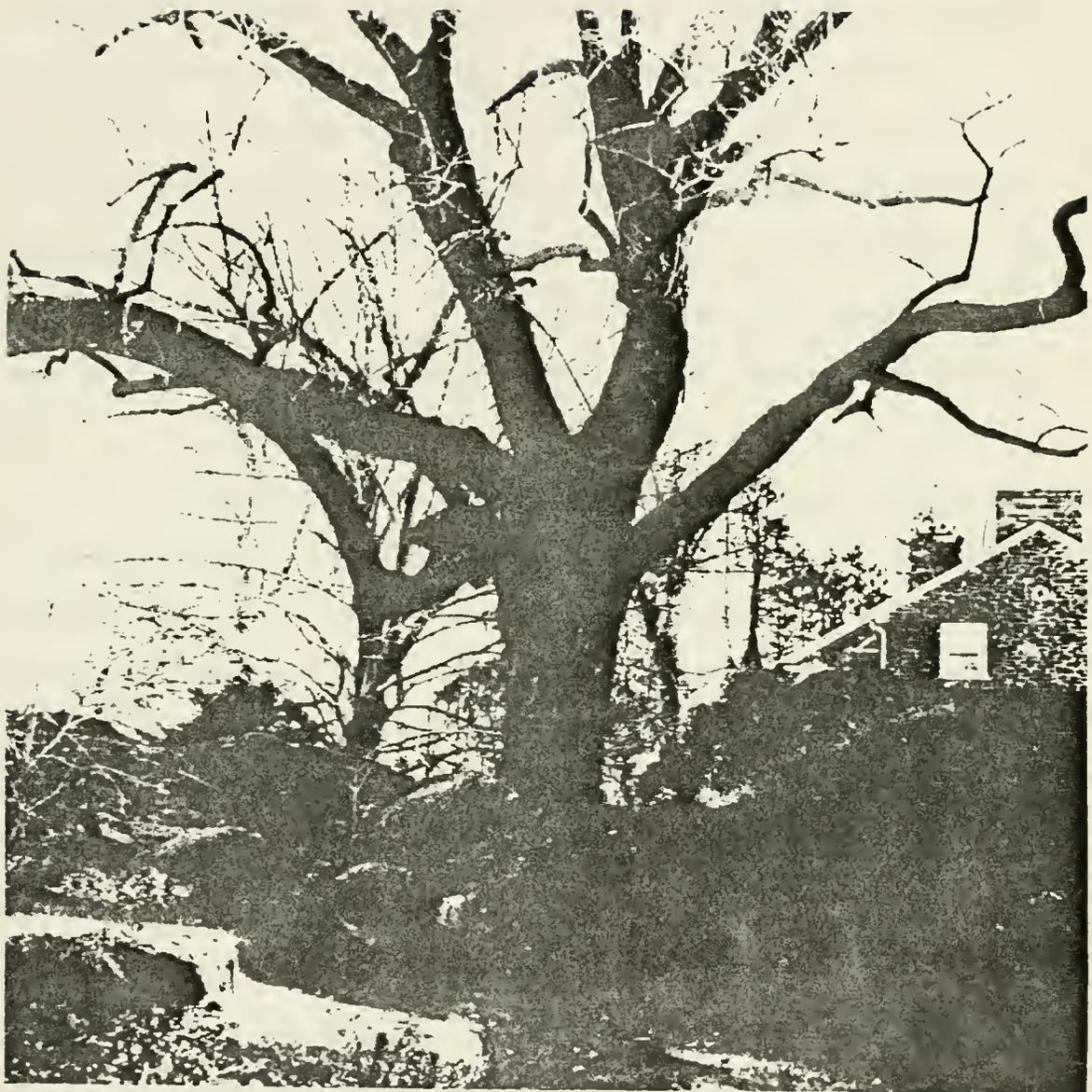
1975: "Montgomery County, PA Inventory of Historic and Cultural Resources"

#49 Black Rocks..."This tree was known as the Indian Council Tree where the last known Indians in Montgomery County used to meet."<sup>28</sup>

1981: Main Line Times "Looking at History Along the Main Line: The Leni Lenape"

"(At Black Rocks) Indian mothers were known to have hollowed out soft rocks to make a sheltered spot for their papoose."<sup>29</sup>





OLD TREE growing through Indian Council Rock on Black Rock Rd. in Bryn Mawr.  
(Bob Swartz-Lower Merion Historical Society Photo)

Figure 3: "Looking Along the Main Line", Main Line  
Times, November 26, 1981, p.17.



## A FOUNDED TRADITION?

The first written record of this tradition appeared to be issued in 1895. Margaret B. Harvey's statement related only to the site of the last Montgomery County Indian Reservation. However, the author was not able to locate documents substantiating a Lower Merion Indian Reservation. Furthermore, the author's research experience coincides with the lament professed by both Ruoff and Donehoo concerning the lack of Indian documentation for the Montgomery County area.

The Montgomery County Historical Society maintains an Indian file containing only one piece of paper, a letter, dated March 18, 1948, to Mr. Bunting from the noted local historian, Charles R. Barker. The first paragraph reads: "The enclosed seems to be all that I concocted on the subject of Indians in Lower Merion." His research yielded a reprinted article entitled "One Hundred Years Ago (From Poulson's Advertiser of February 13, 1824)". The article stated the Indians emigrated westward during the onset of the Revolutionary War. A handful of Indians too feeble or old to travel were left behind. The last survivor of this deserted group was called Hannah. The article is primarily a tribute to her and a recording of various reminiscences of her life. Also within the text is the mention of an Indian boy named Isaac who lived "sometime around the year 1745." Isaac was reportedly very adept with his bow and arrow and



"white boys would put up a penny as a mark for him to shoot at. If he struck it, it was his. If he missed it, he gave one."<sup>30</sup> This story may be the basis for Develin's 1927 statement of a similar nature.

The only other relevant Indian citation was found in a scrapbook housed also at the Montgomery County Historical Society. It contains a Times Herald article entitled "Up and Down Montgomery County". It was written by Germantown historian Edward Hocker in 1927. His research likewise concluded that at the time of the Revolution only a few "decrepit indians remained" in the county. Furthermore, he stated the last tribe to vacate Montgomery County had resided in Lower Salford township; thus contradicting the various above cited sources. His article did not provide sources for his information.<sup>31</sup>

Dora Harvey Develin stated that William Miles and James B. Harvey personally remember Indians at Black Rocks. However, she did not explain the context of their association. It is interesting to note the earliest citations of the Black Rock Indian tradition involve the surname Harvey; although a familial relationship between Margaret B. Harvey, Dora Harvey Develin and James B. Harvey was not established. Furthermore, while the Harvey's are perpetuating this tradition, other contemporary local historians do not mention a Black Rocks-Indian connection. One source, written in 1876 and dedicated totally to the



Indians of Pennsylvania, was Reverend John Heckwelder's History, Manners and Customs of the Indian Nations who once inhabited Pennsylvania and The Neighboring States. While chapters are devoted to villages and council sites of other counties, Montgomery County is addressed in a few paragraphs. Black Rocks was not mentioned as an Indian site. William Buck, another noted local historian, was chosen to annotate the 1871 Atlas of the County of Montgomery County in the State of Pennsylvania. Buck's rendition of local Indian history did not include Black Rocks. Furthermore, the first comprehensive history of the county, published in 1884 by Theodore Bean, also does not refer to Black Rocks. Primary documentation of a Black Rocks Indian site may have surfaced after these publications; however, if this had occurred, it is highly probable that recording of the source would have been a priority. Therefore, the author highly doubts the existence of primary written documentation verifying an Indian association with Black Rocks. The foundation of the above recorded citations may lie totally in the realm of oral history.

Completing this assessment of the written statements concerning the Black Rocks-Indian association is a brief discussion analyzing the progression of associations. In 1895 Black Rocks was cited as the last Montgomery County Indian Reservation; an undocumented statement contradicted



in 1927 by Hocker. By the printing of the next citation in 1927 Black Rocks was not only the last reservation but also an Indian graveyard. Secondary reminiscences without context are added concerning copper penny targets. Circa 1960, the site was elevated to an Indian Council site. While a reservation was not mentioned, this citation implies the Indians were unwilling to leave this hallowed spot. Furthermore, the article suggested the white ash was an Indian Council Tree. However, the ash is conspicuously absent from a compilation of local historical trees entitled Penn's Woods 1682-1932.<sup>32</sup> This source, as well as John F. Watson's Annals of Philadelphia, substantiated the existence of an Indian Council Tree...an elm located in Philadelphia. It was the supposed site of two land treaties between Penn and the Indians. A marker presently denotes its location on the east side of Beach Street above Columbia.<sup>33</sup>

In addition to the Indian Council Tree profession, the article also declared the University of Pennsylvania Museum was the proud beneficiary of artifacts found specifically at Black Rocks. Eileen DeVinny, of the Registrars Office, University of Pennsylvania Museum, states the museum's accession records contain no account of Indian artifacts from anywhere in Lower Merion.<sup>34</sup> Thus, the author has not been able to verify any of the quoted statements concerning an association between the Black Rocks site and a specific Indian activity.



The lack of primary documentation concerning Montgomery County Indians does not suggest their absence in this area. As a matter of fact, the hypothesis that Indians had settlements in Lower Merion or at least resided there frequently is highly probable. Penn's many personal accounts verified their presence in the vicinity. These accounts even conveyed a sense of their customs. The semi-nomadic lifestyle of the Lenni Lenape Indians probably attributed to the lack of exact village locations. Therefore to suggest a specific village or graveyard location is premature at this stage without more substantial primary documentation.

While primary documentation of the Indians in the Lower Merion area is scarce, at best, documentation of the local European inhabitants contemporary with William Penn is abundant. The next chapter discusses the establishment of an autonomous barony of Welsh Quakers within the boundaries of Lower Merion.



## ENDNOTES: CHAPTER ONE

<sup>1</sup> Albert Cook Myers, William Penn: His Own Account of The Lenni Lenape or Delaware Indians 1883 (Delaware County, PA: Albert Cook Myers Moylan, 1937), p.32.

Catalog and transcription of papers located at the Historical Society of Pennsylvania, Philadelphia, PA.

<sup>2</sup> William Penn Papers, Manuscript Department, Historical Society of Pennsylvania, Philadelphia, PA.

Three excellent sources which cataloged and transcribed this collection are: Myers; Richard S. and Mary Maples Dunn, eds., The Papers of William Penn 1680-1684, 2 vols., (Philadelphia: University of Pennsylvania, 1982); and Donald H. Kent, Early American Indian Documents: Treatises and Laws, 1607-1789 vols.1&2, (Washington D.C.: University Publications of America, 1979). (primary editor of the 10 volumes: Alden T. Vaughan).

When possible the original document was consulted and a document or microfilm number is provided for future reference. However the total collection was not available. These references were then used as primary sources.

<sup>3</sup> Dr. George P. Donehoo, Pennsylvania: A History, vol.1 (New York: Lewis Historical Publishing Company, Inc., 1926), p.9.

<sup>4</sup> John Oldmixon, British Empire in America, vol.1 (London: printed for John Nicholson, 1708), p.172.

<sup>5</sup> Donehoo, p.10.

<sup>6</sup> John Wallace, "Historic Indian Paths of Pennsylvania", Pennsylvania Magazine of History and Biography, vol.76 (Philadelphia: Historical Society of Pennsylvania. October 1952), p.433.

<sup>7</sup> Henry Wilson Ruoff, Biographical and Portrait Cyclopedia of Montgomery County, Pennsylvania (Philadelphia, Biographical Publishing Company, 1895), p.11.

<sup>8</sup> Dunn, vol. 2, pp.126-7.

<sup>9</sup> Myers, p.31.

<sup>10</sup> Dr. Edward Jones, Letter, Dr. James Leverick Papers, Manuscript Department, Historical Society of Pennsylvania, Philadelphia, Pennsylvania.

<sup>11</sup> Donehoo, p.8.



<sup>12</sup> Donehoo, p.129.

<sup>13</sup> Donehoo, pp.131-2.

<sup>14</sup> Donehoo, p.130. Cites John F. Watson's The Annals of Philadelphia, p.230.

<sup>15</sup> Donehoo, p.33.

<sup>16</sup> Myers, p.34.

<sup>17</sup> "Delaware Indian Deed", Nead Paper (Micro 4:253), Manuscript Department, Historical Society of Pennsylvania, Philadelphia, Pennsylvania. Also cited Dunn, p.261.

<sup>18</sup> Kent, p.103.

<sup>19</sup> Kent, p.107.

<sup>20</sup> Nead Papers (Micro 4:253). Also cited in Dunn, p.404.

<sup>21</sup> Kent, p.107.

<sup>22</sup> Kent, p.109.

<sup>23</sup> Dunn, pp.264-5.

<sup>24</sup> Theodore H. Bean, History of Montgomery County, Pennsylvania, vol.1 (Philadelphia: Everts & Peck, 1884), p.17; William J. Buck, "History of Montgomery County, Pennsylvania", Atlas of the County of Montgomery in the State of Pennsylvania (Philadelphia: G.M. Hopkins & Co., 1871), p.6; Dr. George P. Donehoo, A History of the Indian Villages and Place Names in Pennsylvania, (Harrisburg, PA: Telegraph Press, 1928), p.3; Donehoo, Pennsylvania: A History, vol.2, p.3; Rev. John Heckewelder, History, Manners and Customs of the Indian Nations who once inhabited Pennsylvania and The Neighboring States, (Philadelphia: Historical Society of Pennsylvania), 1876), p.172; and Hunsicker, vol.1, p.25. These sources are among the more academic secondary sources containing the aforesaid statements.

<sup>25</sup> Margaret B. Harvey, "Something about Lower Merion", Sketches, vol.1 (Norristown: Historical Society of Montgomery County, 1895), p.162.

<sup>26</sup> Dora Harvey Develin, Historic Lower Merion and Blockley (Philadelphia: George H. Buchanan, Co., 1927), p.31.



<sup>27</sup> "Last Native Indians in County Clung to the Black Rocks Vicinity", Main Line Times (Ardmore, Pennsylvania: c.1950)

<sup>28</sup> Montgomery Planning Commission, "Inventory of Historical and Cultural Resources", (Norristown, PA: 1975), p.35.

<sup>29</sup> Gerry Mason, "Looking At History Along the Main Line: The Lenni Lenape", Main Line Times (Ardmore, Pennsylvania: November 26, 1981), p.17.

<sup>30</sup> "One Hundred Years Ago (From Poulson's Advertiser of February 18, 1824)" Indian File, Montgomery County Historical Society, Norristown, Pennsylvania.

<sup>31</sup> Edward Hocker (under Norris byline), "Up and Down Montgomery County", Times Herald, November 4, 1927, Scrapbook B-7, Montgomery County Historical Society, Norristown, Pennsylvania, p.138.

<sup>32</sup> Dr. Edward Wildman, Penn's Woods 1682-1932 (reprinted by author, 1944).

<sup>33</sup> Wildman, p.13. Also see John F. Watson, The Annals of Philadelphia, vol.2, p.98; records primary documentation citations.

<sup>34</sup> Eileen DeVinney, Office of Registrars, University of Pennsylvania Museum, interview with author, January 22, 1990.



## CHAPTER TWO: THE GREAT WELSH TRACT

### SECTION A

#### SUFFERINGS OF THE CYMRIC SOCIETY OF FRIENDS

In 1536, by an Act of Union, England and Wales were united under the rule of Henry VIII. Occurring concurrently was the Protestant Reformation. During the sixteenth century the state's control over all laws secular and non-secular was generally accepted throughout Wales and England. However, in the seventeenth century several sects developed in retaliation to the state's dominance of the church. One sect was The Religious Society of Friends, usually known as Quakers.<sup>1</sup>

The society was founded in 1652 by George Fox. It was primarily established as a rebuke to the blending of church and state, and against certain church doctrine and ceremonies that were felt to be inclined towards Roman Catholicism. The teaching of Fox was based on the belief that the spirit of God is in every human being. Furthermore, one did not need the aid of a minister, priest or laws to follow this spirit and discover 'true belief' or 'righteous religious conduct'.

George Fox attracted many followers who were first known as 'Children of Light', 'Publishers of Truth' or 'Friends of Truth'. Eventually they were recognized as the Religious Society of Friends. While Fox preached primarily



in England, the Friends in Wales were guided by John ap John.<sup>2</sup> These Friends were very public in the advocacy of their beliefs. They often interrupted other church services; they refused to pay tithes, and objected strongly to the taking of oaths. Friends believed that oaths were forbidden by the scriptures and would not pledge allegiance to anyone but God. This was particularly disquieting to the government who at the time required all citizens to pledge allegiance to the King and to the state religion. They also declared oaths of truth to be meaningless since one should always be truthful. Under the Conventicle Act of 1664 the Welsh were forbidden to hold any religious meetings except ones of the state religion. Heavy fines were exacted on those caught preaching other religions and holding unauthorized meetings. As a form of protest against the meaningless formalities and extravagances of the time Friends refused to remove their hats as a mark of respect--even before the King. In addition they dressed plainly modelling themselves after the working class. Most Friends were of a class 'well-born.'<sup>3</sup>

The Quakers were publicly punished and imprisoned for these obvious displays of disrespect. Although these punishments were intended to purge the Quakers from their beliefs, it did not deter the movement. It is reported that even if all the adults in a particular Quaker community were imprisoned the children would carry on the meetings. In



retaliation the frequency of punishments or 'sufferings' were increased. Reportedly, George Fox estimated that during 1656 there were seldom less than 1,000 Friends in prison at any one time. One particular purging act related by Humphrey Owen, a Pennsylvania immigrant, is recounted by Thomas Glenn in Merion in the Welsh Tract. He recounts that Owen along with several other Quaker families were chained with their hands behind their backs and forced to march for miles at night through fields of mud.<sup>4</sup> The 'sufferings' of the Welsh Quakers is well-documented both in Wales and later in the American colonies.<sup>5</sup> It was to escape such persecutions that a community of Cymric Friends decided to send a group of representatives to England to meet with William Penn.

#### WILLIAM PENN AND HIS HOLY EXPERIMENT

William Penn was a prominent minister of the Quaker faith in England. King Charles II granted Penn land in the new colonies as payment of a 16,000 pound debt owed to his father. Penn, obviously aware of the 'sufferings' of the Cymric Friends, advertised his province as an ideal asylum. In May of 1681 a group of twelve leaders representing the "Welsh Nation" met with Penn in England to discuss the logistics of immigrating to his new colony. Reportedly this group included: Dr. Thomas Wynne from Caerwys, Flintshire, John ap John from Ruabon, Denbighshire, and Hugh Roberts



from Llanvawr, Merionethshire.<sup>6</sup>

The details of the meeting were never officially recorded. The leaders returned to Wales with a verbal agreement from Penn allowing the purchase a large tract of land in the new territory to institute a Welsh Barony. The Welsh Quakers desired to establish an autonomous entity to preserve their language, customs, and laws. Perhaps inspired by this meeting, a document entitled "Certain Conditions or Concessions agreed upon by William Penn, Proprietary and Governor of the Province of Pennsylvania, and those who are the Adventurers and Purchasers" consisting of twenty articles outlining rules and regulations for his new colony was issued on July 11, 1681.<sup>7</sup> This document was targeted at any person wishing to purchase land in the new territory and it launched "Penn's Holy Experiment." It does not acknowledge the establishment of baronies.

In September 1681 various individuals returned to England as a representatives for seven 'companies' of Cymric Quakers. These companies were formed to provide sufficient resources for the purchase of large tracts of land:

Where any Number of Purchasers...whose Numbers of acres Amounts to five or Tenn thusend Acres desires to Sitt Together in a Lott or Towneshipp, they sh(all have their Lott) or Towne Shipp Cast together in such places as have...Convenient h(arbours or?) Navigable Rivers Attending it, if such can be found...<sup>8</sup>

The large land purchases also made them eligible for bonus lands.<sup>9</sup> The sale agreement was for one hundred pounds



sterling for every 5,000 acres purchased in addition to a yearly quit rent of one shilling per hundred acre. The leaders of the companies and the amount of acres purchased is recorded as:

Co.1	John ap Thomas of Laithgwm, Merionethshire Dr. Edward Jones of Bala, Merionethshire...	5,000
Co.2	Charles Llyod of Dolobran, Montgomeryshire Margaret Davies, widow, of Dolobran	...5,000
Co.3	John Bevan of Treverigg, Glamorganshire	...2,000
Co.4	John ap John of Ruabon, Denbighshire Dr. Thomas Wynne of Caerwys, Flintshire	...5,000
Co.5	Lewis ap David of Llandewy Velfry, Pembrokeshire	...3,000
Co.6	Richard ap Thomas of Whitford Garne, Flintshire	...5,000
Co.7	Richard Davies of Welshpool, Montgomeryshire	...5,000 <sup>10</sup>

Penn sold an additional 10,000 acres to various Cymric Quaker individuals. Thus, The Great Welsh Tract was born.

#### THE DEVELOPMENT OF THE GREAT WELSH TRACT

The first group of Welsh Friends, led by Dr. Edward Jones (Edward ap John), departed from Liverpool in May 1682. They arrived in August two months before William Penn's first visit. Upon their arrival to what is now present day Bala Cynwyd, they discovered that Penn had not yet issued a warrant to survey their land. They were given the rights to lay out half of the tract in Merion, Radnor, Hareford (Haverford) and the other half in Goshen, NewTown and Uwchland.

In England the purchase of the tract was to 'rights' only and were written as a "Lease and Release" (L&R). Once



they arrived and 'settled' the land a warrant was issued from the Land Office to lay out the land. This was followed by a survey (Sur.). Often the survey did not correspond with the inhabited acreage. This usually led to numerous requests for a resurveys until reaching an agreement. For owners of large or many tracts this process sometimes took several years.<sup>11</sup>

In the case of The Great Welsh Tract, it was two and a half years before William Penn even issued an warrant for survey. When finally ordered, it was only to establish the boundaries of the 40,000 acres. The Welsh settlers proposed to determine the barony land distribution themselves. Then each owner individually requested a survey from the Land Office to establish legal ownership. The warrant issued by Penn to Thomas Holmes, Chief Deputy Surveyor, on the 13th.1mo.1684 (March 13) stated:

Whereas divers considerable Persons among ye Welsh Friends have requested me...about 40,000 acres, may be lay'd out contiguously, as one Barony alleging that the Number already come... are such as will be capable of planting the same much within the Proportion allo's by the Custom of the Country, and so not lye in large and useless vacancies:...ye sd tract of Land... ye west of Skoolkill river, running three miles upon ye same, and two miles backward, and then extend ye parallel with ye river six miles and to run westwardly<sup>12</sup>

This survey was carried out by David Powell on 4th.2mo.1684 (April 4) and the boundaries of the Welsh Tract were made public on 25th.5mo.1687 (July 25).

The delay in establishing the boundaries did not stifle



the Welsh Quakers in creating their agrarian and milling community. As stated by Penn in his warrant, the barony was believed to have been farmed by the 'Custom of (their) Country'. The Cymric land-holders in the vicinity of northern Montgomeryshire and Merionethshire, both primary areas of origin of the Welsh Tract settlers, had evidently farmed their places in the same manner for several hundred years.<sup>13</sup> The Welsh always had two places of abode. One of these, the Vottai, was built on a mountainside and was the summer residence. The other house was called the Hendre, or the permanent home. The Hendre was usually erected in the low-lands to provide shelter from the winter winds.<sup>14</sup> In addition they often utilized residences called Havod un Nos, or the house built in one night. These wooden structures were built as temporary summer homes or hunting lodges. Usually the land in the Hendre's vicinity was cultivated for crops. The grazing lands were shared jointly between several Hendres. Thomas Glenn in his book Merion in the Welsh Tract relates that in seventeenth century Wales their agreements were often elaborate and quite particular regarding the utilization of this common property.<sup>15</sup>

The development of a bounded and autonomous barony, with distinctly different customs, was not accepted by the neighboring communities of The Welsh Tract. This was particularly true of the leaders of Philadelphia. Although William Penn in his warrant for the survey of this tract



does refer to a "Welsh barony," a document was never issued by Penn giving the Cymric Quakers the rights to establish a barony. The leaders of the Welsh Tract repeatedly requested that Penn acknowledge in writing their barony agreement as discussed in May 1681. Penn never responded to their petitions. Although it was the Welsh's prerogative to practice their own customs and laws, the one Philadelphia authority to which they were bound was the Land Office. It was this vehicle that was used to dismantle the autonomous barony.

In 1687 Charles Ashcombe, Deputy Surveyor, laid out parcels of land within the Welsh Tract to a group of English colonists. The Welsh Quakers protested to the Land Commission. Since they possessed a legal survey for the land Ashcombe's survey was declared void. This was only the first of continuous efforts to dismantle the barony.

In 1690 the Land Commission informed the Welsh Tract inhabitants that the quit rent was not being paid on the entire 40,000 acres. The commission issued an ultimatum. Either pay the quit rent on the entire acreage surveyed in 1681 or forfeit the unpaid portions of land. It is assumed that the acreage in question was the joint grazing land. The individual farmers were paying the quit rent for the tracts containing their hendre, but the rent on the jointly utilized tracts had been overlooked. On 2nd.3mo.1691 the Welsh responded that they would henceforth pay the quit rent



on the entire 40,000 acres. The commission replied that they must pay all quit rent since 1681 immediately or consider their land forfeited. Reportedly, shortly thereafter, the Welsh responded that they would pay the entire quit rent amount but were informed that they had missed the deadline. Land within the Welsh Tract was sold by the Commission; thus usurping the Quaker's total authority of the area. This, however, was not the final effort to dissolve the barony.

In 1689 the center of the Welsh Tract was politically divided. Merion was delegated to Philadelphia County and Radnor and Haverford became part of Chester County. Although the Cymric Friends continually professed their right to a barony, governed by themselves and answerable only to themselves, they did participate in government elections of Pennsylvania. They wanted to insure the election of an official sympathetic to the barony. Since the Quakers were quite numerous and united they were successful for several years. In 1688, William Penn commissioned John Blackwell, an Englishman, to the position of Deputy-Governor. Blackwell stated that he did not recognize the 'barony' as a political entity. The Quaker elected Thomas Lloyd, thwarted Blackwell publicly; inadvertently inspiring other officials to lobby for the division of Welsh Tract political power. With a portion of the Quakers voting in Chester County, and a portion voting



in Philadelphia County, the barony did not have enough votes to oust John Blackwell or to continually insure that a barony sympathizer would be elected to office. Furthermore, since they participated in the election process, they had bound themselves to the laws of the elected officials.<sup>16</sup> Thus, after 1700, the Cymric Quaker 'barony' became a notion in name only.

Although not a true barony, the inhabitants continued conducted themselves as a united group bound together by their Quaker beliefs and Welsh customs. In fact, outsiders still considered them a separate entity or 'nation'. In referring to the leaders of the Welsh Tract the 1701 Minutes of the Board of Property state: "some of the Chiefs of that Nation in this Province having met..."<sup>17</sup>. Furthermore, Glenn states the deeds and wills of the Welsh often referred to their residence as the Great Welsh Tract in the Province of Pennsylvania.<sup>18</sup> In 1708 John Oldmixon, an Englishman visiting America, also referred to the area as the Welsh Tract and wrote:

(The) Welsh Tract...is thick of Townships; as ... Haverford West, Merioneth and others. 'Tis very populous, and the people very industrious by with means this Country is better cleared than any other part of the County. The inhabitants have many fine Plantations of Corn<sup>19</sup> breed Abundance of Cattle insomuch as they are look'd upon as to be as thriving and wealthy as any in the Province<sup>20</sup>

It is evident that this agrarian community prospered despite the assimilation of non-Welsh inhabitants.



## PRE-REVOLUTIONARY WAR DEVELOPMENTS IN THE WELSH TRACT AREA

The Welsh Tract inhabitants were strongly bonded by their faith. Although they were still determined to remain a separate entity, they were not unneighborly to the new Non-Welsh settlers in their midst. Especially after their 'sufferings' in Wales they desired to live peaceably and, most importantly, practice their religion.

In the Quaker religion social stratification was not based on occupation or wealth but rather contribution to the Meeting community. They wished to abolish the vain distinctions and materialism of the world. The Quakers could not spend large amounts of money except in charity. Since this eliminated expenditures on luxury and 'show' items the difference between the rich and poor was less observable. Monetary riches were not a primary focus. Profits were invested in the Meeting or into the essentials of the home or business. The Meeting supervised all conduct. Business extortion, non-payments of debts, and other unethical actions were punishable with disownment from the Quaker community. Considering that the Welsh Tract communities were either totally or largely composed of Quaker members, it was analogous to living in isolation.

This was especially harsh punishment in a society whose bond was strongly communal. If a Friend met with misfortune, such as crop failure or injury, the other members of the Meeting would compensate with their crops or



labor until the member was functional. In the case of death the remaining family members were taken care of by the community. They especially insured the education of the children.

The Quakers were the great levelers of the region. Throughout the time of their dominance of the Welsh Tract area a lower class did not exist. There were, however, 'servants'. These servants were not viewed as menial. The majority were experienced husbandmen and farm laborers who were indentured for a term of years in exchange for free or partial passage to Pennsylvania for themselves and their families. When their term was served they were given land, usually one hundred fifty acres, within the community to start their own business.

As the persecution of Friends in Wales decreased, the emigration to the Welsh Tract likewise decreased. Lemon states that a steady development of large, family-owned farms and mills, the building of meeting houses and the opening of a network of roads characterized the rural areas of southeastern Pennsylvania from 1690 to 1750.<sup>21</sup> Obviously this continuous development contiguous with a depleted source of indentured servants forced the Welsh to consider alternate labor sources. Glenn states that by the 1700's Negro slavery had entered the Welsh tract. He also infers that Indians were utilized as slaves.<sup>22</sup>

Not all members of the community solved the labor



shortage by slavery. Some hired non-Quakers; thus encouraging 'outsiders' to move within their boundaries. In the 1740's, a slow evolution away from the predominantly agrarian Welsh Quaker community was initiated with the acceptance of these hired workman. In addition, the settlement of the area by German-speaking families and the continuously prospering mill industry along Mill Creek<sup>23</sup> changed the tone of the Welsh Tract.

The rapid population growth during the period 1740-1760 in Philadelphia spilled over into the Lower Merion area. The primary immigrants were German-speaking, and became known as the Pennsylvania Dutch. These immigrants were fleeing the war-ravaged land of the Rhine. They were attracted to Penn's colonies for religious freedom and the opportunity to own land.<sup>24</sup> Since they immigrated for many of the same reasons as the Welsh they sided politically with the Quakers. While each side maintained a mutual respect for each other's differing customs and beliefs, they lived in separate communities.

The growing Philadelphia population, along with the still receptive Great Britain market, aided in the prospering of the farming and milling industry of the area. The most prosperous of these industries remained, primarily, within the Quaker community. Land was consolidated amongst Quaker families and the large farms and mills assured their continual stronghold in the area. During the era of the



Revolutionary War the consolidation of land among the descendants of the Welsh Quaker settlers was one factor that led to conflicts, once again, with those outside their community.

#### THE WELSH TRACT AND THE REVOLUTIONARY WAR

In the years prior to the Revolution there was a rise of factionalism from many quarters: groups pitted against each other on the basis of social or religious difference, or various combinations of both, quickly became politicized ...There was a general suspicion of wealth... "old money" was suspect and somehow smacked of aristocracy. The fundamental principle of republican thinking which carried forward on the eve of revolutionary ideology was individual sacrifice for the public good.<sup>25</sup>

Entering the eve of the Revolutionary War the Welsh Tract inhabitants maintained one strike against them due to previous political clashes with Philadelphian leaders. They were issued their second strike by the 'republican' society as a result of the consolidation of wealth amongst a few dozen descendants of the original Welsh settlers. This classified them in the "old money" category. This problem was compounded when these relatively large Quaker businesses continued to export to Great Britain. The Quaker's adamant stance of pacifism was strike three. Since they did not support the Revolution they were assumed to be against it.

Throughout the Revolution the Welsh attempted to maintain their customary lifestyle. At the commencement of



the revolutionary campaign the Quakers were united on the issue of pacifism. They were directed at meetings to withdraw themselves from all war activities and thus not "violate our Christian Testimony".<sup>26</sup> They were to refuse all business relations that promoted the war; refuse to elect anyone supportive of the war, and by no means were they to share in the spoils of the war. As the campaign heated up and the war began, some Quakers did engage their mills for war business and some even chose to bear arms. These Quakers were 'read out of the Meeting'; in other words were no longer considered Quakers. This was the beginning of a split in Quaker ideology that escalated in the next century.

Those Quakers who upheld their beliefs were victims of continual harassment. Throughout the war effort, and especially during the Valley Forge campaign, their farms, mills and homes were plundered not only by the colonists but also by the British armies. A petition sent to Thomas Wharton, Jr., Esquire, President of the Commonwealth, dated August 15, 1777, with thirty-six Welsh Quaker signatures describes the plundering:

they...shew their aversion for all Law, Divine or Human, abusing Travellers, Robbing the Neighborhood of everything they could lay their hands on, pillaging dwelling Houses, Spring Houses and Barns, Burning Spring Houses and Barns, burning Fence rails, Cutting down Timber, Robbing Orchards and Gardens, Stealing Piggs, poultry and lambs through wantonness or bravado<sup>27</sup>



By the end of the Revolutionary War the list of 'sufferings' was quite extensive and the close of the war did not signal the termination of abuse.

As may have been expected, no retribution was made to the Welsh Quakers; in fact, quite the opposite occurred. A prominent and wealthy Quaker mill owner, John Roberts, was charged with treason. While the story has been embellished over time, the primary piece of evidence, responsible for his eventual hanging on November 4, 1778, was a meeting between John Roberts and a British officer. The explanation offered by Roberts was that he met with the officer in an attempt to negotiate the release of Quaker prisoners. Many of the Quaker prisoners captured by the colonists were exiled while those captured by the British were committed to war prisons and forgotten. John Roberts admitted to several meetings with the British in order to convince them to release Quaker prisoners since they were pacifists.<sup>28</sup> Considering the dim view the 'republican society' had developed of the Quakers it was not surprising that his story was disclaimed and he was found guilty of treason. His sentencing caused an uproar not only from the Quakers but also from other factions who recognized the unjust indictment of Roberts. As a result of this sad affair the surviving Welsh Tract Quaker community drew closer together.

The end of the eighteenth century found the united Quakers attempting to rejuvenate their war devastated homes



and businesses. The boycott of British goods stimulated the economy and aided in this rejuvenation. The opening of the Lancaster turnpike in 1794 further assisted Lower Merion in supplying this demand. Previously the Welsh Tract inhabitants transported their goods to Philadelphia via loosely connected roads to the Schuylkill River and ferried them across into the city. The convenience of the new road enabled more frequent transportation of goods. On the other hand, this convenience also opened the Welsh Tract area to new businesses and inhabitants. The growth of population and the rise of economic prospects of Philadelphia were in a minor way mirrored in Lower Merion. In this predominantly farming area, small businesses began to stir. The nineteenth century ushered in the development of service and residential villages.



## SECTION B

### WELSH QUAKER'S COMPANY FOUR

Black Rocks was a part of the five thousand acres purchased by Company Four on September 15, 1681, by the Welsh Quaker leader John ap John and Dr. Thomas Wynne. Both gentlemen had attended the initial meeting with William Penn in May 1681. Dr. Wynne was a prominent physcian<sup>29</sup> who was, reportedly, one of John ap John's first converts to Quakerism. His high profile in Quaker affairs, from preaching to publishing pamphlets, resulted in a six-year imprisonment by the Welsh authorities. It is not surprising that he was chosen along with John ap John to represent a segment of Welsh Quakers.

Apparently John ap John and Dr Wynne divided the five thousand acres in half and distributed their portion individually. Documentation of the division is found on the back of the patent issued by Penn to John and Wynne:

Here is an account of what I, John ap John have sould out of my part of this deed...I have disposed of ye land as followeth:--

To Thomas Taylor I sould	.....	500 acres
To John Roberts I sould	.....	500 acres
To Treial Reider I sould	.....	400 acres
To Mary Fouk I sould	.....	200 acres
To Richard Davies	.....	250 acres
To Owen Parry	.....	150 acres
reserved for myself	.....	500 acres <sup>30</sup>

It is believed that Black Rocks was a section of the land sold to Owen Parry, yeoman, of Dynullo Issa, Demgigshire.<sup>31</sup>



It is not clear if Owen Parry immigrated to The Welsh Tract. Apparently upon Owen's death his son John inherited the one hundred fifty acres. (Please refer to Appendix A for a full Chain of Title and deed citations.)

On 10th.5mo.1707, John Parry, of Dunhinttery, County of Druby,<sup>32</sup> sold the one hundred fifty acres to Owen Roberts of Merion, County of Philadelphia. Browning reports that this transaction was difficult since John Parry did not possess documentation indicating inheritance from his father. Furthermore he could not produce evidence verifying the John ap John sale to his father. The above cited document was not officially recorded until December 29, 1758. Why the document did not surface until 1758 is not known, although since John ap John did not immigrate it is assumed that the document had remained in Wales. Owen Roberts agreed to purchase the property without documentation and the sale was witnessed by several members of the Haverford Meeting. Browning further relates that 'this sale' was confirmed by Jonathan Wynne, son of Dr. Thomas Wynne, on 23 March, 1727.<sup>33</sup>

#### THE ROBERTS

In 1707, with Owen Roberts' purchase, Black Rocks became a part of a prominent Quaker family where it remained for five generations. There were several Welsh families bearing the surname Roberts in Merion Township, Philadelphia



County (present day Lower Merion Township, Montgomery County). The same surname may not suggest familial relationship; it merely suggests that they were descended from a man named Robert. This must be recognized when reviewing records of the Welsh Tract since there were many men with the same name (i.e. John Roberts). Clarification was made by stating their profession after their name (i.e. John Roberts, miller).

According to Charles Barker, a noted local historian, the Roberts family under consideration consisted, in its earliest Welsh Tract generation, of three brothers--John, Edward and Matthew. Barker states that there is no documentation of their origin or date of immigration. It is recorded that Edward Roberts, yeoman, married in 1699 at the Merion Meeting<sup>34</sup> and purchased land from John Davies in 1700.<sup>35</sup> Owen Roberts, who purchased the tract of land encompassing Black Rocks, was the son of Edward. (please refer to Appendix C: Roberts Family for descendants of Edward Roberts)

Owen Roberts<sup>36</sup> blacksmith, died on March 26, 1733, leaving the "Dwelling house<sup>37</sup> plantation and all the Land...by Estimation about one Hundred & Sixty Acres to my Brother Edward."<sup>38</sup> Edward Roberts, cooper, in his will written in 1775, cites that he 'dwells' with his nephew Joseph. Furthermore he bequeathed his estate of one hundred fifty six acres<sup>39</sup> jointly, to his 'cousins'<sup>40</sup> Owen Roberts,



John Roberts, cooper, and their sister, Rebecca Roberts, singlewoman.<sup>41</sup> It therefore appears that at his death in 1778 Edward was not living on the land he inherited from his brother Owen. It should not be concluded that the land was not utilized. In 1765 Black Rock Road was constructed in response to petitions of farmers in the vicinity; thus implying considerable farming in this area. The new road provided a more direct route to the Schuylkill River.<sup>42</sup>

During this era, the Quakers were preoccupied with familial possession of their farmlands and businesses. This is exemplified in the wills of Roberts family. Not only did they insure that a relative inherited the family property but they also declared which relative of the next generation will obtain the land. On November 29, 1799, Owen declared that all his land (which consisted of 1/3 Uncle Edward's land<sup>43</sup> and 1/2 of his father's land, the other half belonging to his brother Joseph) was bequeathed to his brother John during John's natural life. Furthermore, Owen stipulated that upon John's death the property was to be devised to their niece Tacy. (Tacy was the daughter of their sister Ann who had married her first cousin William). On the same day Joseph Roberts filed a will with the same stipulations. On December 10, 1800, Rebecca Roberts filed a similar will, indirectly, through John, leaving all her land to Tacy. John Roberts, the youngest brother of the seven children, likewise bequeathed all his land to Tacy in his



will written in 1800.<sup>44</sup>

Therefore, not only have the Roberts insured that the land will stay in the family in the distant future, they have insured consolidation of their father's and Uncle Edward's land. Of the seven siblings only the two sisters, Elizabeth and Ann, married and had children. (Please refer to Appendix C: Roberts Family) Joseph Price, in his diary entry of June 30, 1804, notes the passing of "old John Roberts, cooper, ...four Brother of them I remember, he the Last neither never married, the name lost."<sup>45</sup> Perhaps since they were the last of the Roberts, in name, and since their second cousin John Roberts, miller, had been hung for treason and his property confiscated, they were determined to insure familial possession of their land.

In 1801, Rebecca Roberts and Tacy Jones inherited John's (brother and uncle) property--which included Owen and Joseph's property. In 1807, they sold to Jonah Miller twenty-four acres of Uncle Edward's one hundred fifty-six acre estate.<sup>46</sup> Nonetheless, in 1812, at the advent of Rebecca's demise, Tacy became the owner of over two hundred fifty acres of Roberts family land. In 1822, widow Tacy Jones, of Tredyffin, sold two hundred and nine acres of this land, containing a messuage, to her daughter Rebecca Ann Jones also of Tredyffin.<sup>47</sup>

Joseph and Owen's will written in 1799 cite Tacy as 'of Tredyffin.' The 1810 and 1820 Chester County census records



indicate that Tacy, her husband Benjamin, a blacksmith, and their daughter, Rebecca Ann, were residing in Tredyffin. So even though the consolidated land remained in the family's possession it was not inhabited by a Roberts family member. When Rebecca died in 1822 the land became vested in fee to her son Richard, Jr., subject to the life of his father, Richard C. Walker. Census records indicate that Richard Walker, Jr., resided in Tredyffin prior to 1850--at which time he sold the land. No conclusive indications of the use of the Black Rocks land during this period have been located. Since the area was primarily agrarian it is concluded that it was utilized as farmland.



## ENDNOTES: CHAPTER TWO

<sup>1</sup> Reportedly the Friends were called Quakers because they quivered with religious emotion. George Fox was often quoted as saying, "Tremble at the word of the Lord". At first a disparaging nickname it eventually lost its derogatory meaning and the members of the Society began to call themselves Quakers.

<sup>2</sup> 'ap' means the son of; i.e. John the son of John. Eventually, after immigration to America, the ap was dropped.

<sup>3</sup> Glenn, p.15.

<sup>4</sup> Thomas Allen Glenn, Merion in the Welsh Tract, (Norristown: Herald Press, 1896), p.15.

<sup>5</sup> "Sufferings of Friends" Friends Historical Library at Swarthmore College (FHLSC), Swarthmore, PA. Collection of stories, minutes, and other primary documentation of occurrences in both Wales and Pennsylvania.

<sup>6</sup> Charles R. Browning, Welsh Settlement of Pennsylvania (Philadelphia: William J. Campbell, 1912; rpt., Baltimore: Genealogical Publishing Co., 1967), p.25.

<sup>7</sup> Dunn, vol. 2, pp.98-101, also Document 205, appendix 630-657.

<sup>8</sup> Dunn, Document II:81-2, conditions, p.98.

<sup>9</sup> The bonus lands were originally lots in the city of Philadelphia. Eventually, however, there were not enough city lots and land lots were set aside north and west of the city--Liberty Lands.

<sup>10</sup> Browning, p.33.

<sup>11</sup> An excellent source explaining the process of warrants and surveys is William Henry Egle's Early Pennsylvania Land Records (Baltimore: Genealogical Publishing Company, 1976; original published as Vol. XIX, 2nd Series, Pennsylvania Archives, Harrisburg, 1983).

<sup>12</sup> Dunn, II, pp.526-7.

<sup>13</sup> See Alwyn D. Rees, Life in a Welsh Countryside (Cardiff: University of Wales press, 1950) for a discussion of the diffused society of these areas in Wales. It should also be



noted that seventeenth and early eighteenth century Welsh Tract territories, such as Lower Merion, were also distinguished by this dispersion of homesteads over open tracts of land. The English and Dutch neighbors grouped their homesteads around a central focal point and radiated outward.

<sup>14</sup> The extant National Register property, Harriton, the Rowland Ellis house, c.1704, is believed to be typical of the Welsh houses that characterized The Welsh Tract and was reminiscent of their Welsh ancestral homes.

<sup>15</sup> Glenn, pp.188-9.

<sup>16</sup> Edwin B. Bronner, William Penn's "Holy Experiment": the founding of Pennsylvania 1681-1701 (New York: Temple University Press, 1962).

<sup>17</sup> William Penn Papers, "Minutes of the Board of Property", 1701, Manuscript Department, The Historical Society of Pennsylvania, Philadelphia, PA.

<sup>18</sup> Glenn, p.53.

<sup>19</sup> The term corn to Oldmixon, an Englishman, meant English wheat, not the corn of present day (of Indian origin), which they called maize.

<sup>20</sup> Oldmixon, vol.1, p.177.

<sup>21</sup> James T. Lemon, The Best Poor Man's Country: A Geographical Study of Early Southeastern Pennsylvania (New York: W.W.Norton, 1972).

<sup>22</sup> Glenn, p.1

<sup>23</sup> This refers to present day Mill Creek. It should be noted that during the seventeenth and early eighteenth century there was another body of water called Mill Creek (such as the Mill Creek mentioned in the 1707 deed between Rob Roberts and Edward Rees). This was a stream which ran parallel to the Pennsylvania Railroad line from Merion to Overbrook and "emptied into the Schuylkill just south of Woodlands Cemetery." Charles Barker, "Glimpses of Lower Merion History" Bulletin of the Historical Society of Montgomery County, PA vol.XI, Fall 1957-Spring 1959 (Norristown, PA: Montgomery County Historical Society, 1959), p.130.

It is not clear when the present day Mill Creek received its name but it appears to have been in the late eighteenth century.



<sup>24</sup> For further reference Russell Gilbert Wieder's A Picture of the Pennsylvania Germans 3rd ed. PA History Studies: No.1 (Gettysburg: Pennsylvania Historical Association, 1971).

<sup>25</sup> Gordon S. Wood, The Creation of the American Republic, 1776-87 (New York: W.W.Norton & co. Inc., 1969), p.84.

<sup>26</sup> FHLSC, Misc. MSS, 28th.9mo.1776.

<sup>27</sup> Pennsylvania Archives 2 XIII, pp.103-4.

While it is true that the entire Lower Merion area was plundered during the Valley Forge campaign the Quakers were often singled out as a group by both sides. Letters, petitions and demands for repayment in protest to this plundering were issued in multitudes. Many are preserved at FHLSC--the Friends Historical Library at Swarthmore College, Swarthmore, PA in the Radnor Records (Minutes of the Radnor Meeting and Record of Sufferings). They can also be found in the published volumes of the Pennsylvania Archives.

<sup>28</sup> Respublic v. John Roberts, Oyer and Terminer Docket 1778-1822, Philadelphia City Archives, Philadelphia, PA.

This document supports the cited statements concerning John Roberts indictment.

There exists, however, a persistent story that John Roberts, forewarned that flour from his mill was to be confiscated, ground up glass and mixed it in the flour. This flour was used to bake bread for Washington's soldiers and caused horrible sufferings and deaths. There is no mention of this story in the trial papers. John Watson's Annals of Philadelphia published in 1850 appears to be the first written source of this story and henceforth repeated continuously.

Another John Roberts legend that has acquired widespread circulation is the haunted house story. According to the legend, John Roberts was hung from a tree in his yard and then buried beneath it. His ghost, reportedly, roams the house to exact revenge for his unjustified indictment. John Roberts is actually interred at the Merion Meeting Burial Ground.

<sup>29</sup> Browning, p.183. Browning relates that the minutes from the Quarterly Meeting of Merionethshire, among other sources, refer to Wynne as a barber-surgeon, or a barber who practiced surgery. It is believed that Wynne never received the degree of M.D. although he was reportedly a noted physician in London. Both he and his son-in-law, Dr. Edward Jones, have been hailed as two of the first physicians in The Great Welsh Tract. Present day Wynnewood was named after Dr. Thomas Wynne to commemorate his contribution to establishment of the Quaker community.



<sup>30</sup> Patent Book H9, Philadelphia County Recorder of Deeds, Philadelphia, PA, p.330. Please refer to Appendix A for a full chain of title.

<sup>31</sup> Browning states that the Welsh name of Owen Parry was Owen Pusey. He provides no documentation for this statement.

<sup>32</sup> It is not clear if John Parry himself settled in the Welsh Tract since is cited as from Dunhinttery. Philadelphia County Deed Book E4, vol.7, p83.

<sup>33</sup> Browning, p.177. Browning is not clear as to which sale he is referring to in his text. It is known that Jonathan Wynne was involved in confirming the sales within his father's tract since there was evidently unsold or unaccounted for parcels of land.

<sup>34</sup> Charles Barker, Roberts Family files, Montgomery County Historical Society, Norristown, PA. Edward marries Anne Humphrey, spinster. This is obviously his second marriage since it is documented that he dies in 1705 leaving behind six children. (please refer to Appendix C: Roberts Family) Furthermore Barker cites the burial records of the Merion Meeting "1731-4-18 Anne Roberts, widow, about 88 years".

<sup>35</sup> DB H vol.10, Philadelphia County Recorder of Deeds, Philadelphia, PA, p.508. John Davis, carpenter, to Edward Roberts, Merion, yeoman, 200 acres on the Schuylkill River, 2nd.12mo1700. Edward died intestate in 1705. Anne his wife was named the executor and the land was allotted to their eldest son John.

<sup>36</sup> Charles Barker cites that Owen was single. (Roberts family file MCHS) Browning, p.177 states, without documentation, that Owen and his wife Ann had a certificate from the Haverford Monthly Meeting confirming the sale between them and John Parry. The actual document does not mention Ann. There is no record of a marriage at the Haverford Monthly Meeting between an Owen Roberts and Ann (FHLSC). Owen Roberts, in his will, does not mention a wife but does mention Ann, the daughter of his brother Robert.

<sup>37</sup> It is assumed that this dwelling house does not fall on the present day six acres of Black Rocks. When this one hundred sixty is subdivided in later years a dwelling is not mentioned. Please refer to Appendix B: Deeds--Land Conveyances for further clarification.

<sup>38</sup> Will No.303, Year 1733, Philadelphia County Registrar of Wills. Philadelphia, PA.



<sup>39</sup> Owen's will cites about 160 acres. Edward's will cites 156 acres. No record of a four acre sale by Edward was found in either Philadelphia or Montgomery County. It is assumed that a proper survey of the parcel was done between 1733 and 1778 and the actual acreage was 156.

<sup>40</sup> 'Cousins' is a term used interchangeably with niece and nephew by the Welsh during this period. Charles Barker states that it is well documented that Owen, John and Rebecca were the sons and daughter of his brother Joseph.

<sup>41</sup> Will No.154, Year 1779, Philadelphia County Registrar of Wills, Philadelphia, PA.

It should be noted that the author does not agree with the statement by Browning (p.177) that Owen Roberts's executor sold his property to John Walter (no documentation for this statement is provided). Owen Roberts's executors were his brothers John, Robert, Joseph and William (note Browning cites executor--singular). The Philadelphia and Montgomery County Grantee indexes that cite John Walter do not cite a Roberts as the grantor. Since Edward Roberts was alive at the time of Owen's death it is questionable why the executors would have sold the property. Furthermore, Edward Roberts does not appear as a grantor or a grantee indexes of Philadelphia or Montgomery counties. Since Edward obviously does have property (156 acres) as cited in his will; the author has concluded that the land cited in his will is the land he inherited from Owen (about 160 acres).

<sup>42</sup> Barker, p.259.

<sup>43</sup> Present day Black Rocks is a portion of Uncle Edward's land. Montgomery County Deed Book 27 pp.814-6 cites the sale of the father, Joseph Roberts's, 156 acres to William Hagy by Tacy and her husband in 1807. Please refer to Appendix C: Roberts Family for clarification of the passage of land within the family.

<sup>44</sup> The following deeds are recorded at the Montgomery County Registrar of Wills, Montgomery County Courthouse, Norristown, PA.

Owen Roberts RW 5575 written November 29, 1799  
proved November 18, 1800.

Joseph Roberts RW 5392 written November 29, 1799  
proved April 9, 1800.

Rebecca Roberts RW 5603 written December 10, 1800  
proved August 2, 1822.

John Roberts. RW 5397 written December 10, 1800  
proved June 2, 1806.

Rebecca Ann Jones's estate cited DB 38 Recorder of Deeds, Montgomery County, Norristown, PA, p.295-7.



<sup>45</sup> Joseph Price, Diary, Manuscript Department, Historical Society of Pennsylvania, Philadelphia, PA. p.210.

<sup>46</sup> Deed Book 23, Montgomery County Recorder of Deeds, Montgomery County, Norristown, PA, pp.297-9. Grantor: Rebecca Roberts, Tacy and Benjamin Jones. Grantee: Jonah Miller, innkeeper, Haverford. Deed cites that this is 24 acres of Edward Roberts's 156 acres left to Owen, John and Rebecca Roberts.

<sup>47</sup> Deed Book 38, Montgomery County Recorder of Deeds, Montgomery County, Norristown, PA, pp.356-8.



## CHAPTER THREE: THE AGRICULTURAL SUBURB

### Section A

At the turn of the nineteenth century a new age was ushered into the Lower Merion area. Time had virtually erased the scars and destruction of the Revolutionary War. The Welsh had eventually re-established their farms and mills. These enterprises were no longer subsistence-oriented; their goods were produced to meet the growing needs of the infant republic. New technological and transportational systems aided in the manufacturing and delivery of the products. This integration of the Welsh into the American marketplace exemplified an overall assimilative trend. While the Quakers still retained a strong religious community, their neighborhood and business associations were rapidly transforming with the materialization of the new country. The vision of a political Welsh barony had dissipated.

### A NEW PERCEPTION OF THE WELSH

While early nineteenth-century census records indicate the majority of the Lower Merion inhabitants were Welsh, societal perceptions and influences about this community were transforming during these decades. For example, the Pennsylvania census for 1800 cites 1422 inhabitants in Lower Merion. As expected the majority of these are Welsh and



their occupations are listed as farmer or mill owner. The non-Welsh inhabitants are primarily listed as laborers. While some non-Welsh farmers, mainly German, are listed, their real estate evaluations are considerably less than those of the well-established and consolidated Welsh farmers.<sup>1</sup>

In 1787, with the Pennsylvanian ratification of the U.S. Constitution, Friends accepted the new government. This vanquished any lingering dreams for a true barony. Some Welsh moved west; reportedly in hopes of establishing a barony elsewhere. However the majority of the Lower Merion Welsh elected to remain.<sup>2</sup> As cited in the previous chapter, the Welsh immigration had climaxed by the turn of the eighteenth century. Consequently, the contemporary nineteenth-century Welsh were removed several generations from their homeland, and their loyalty to Welsh customs had become diluted over time. Thus Glenn attributed their willingness to stay in the new republic territory of Lower Merion to a lack of personal identification with Wales.<sup>3</sup> The focus of these third- and fourth-generation Welsh inhabitants was, primarily, their religion. The Constitutional guarantee of religious freedom aided in solidifying their desire to remain in their well-established homes.

Public recognition of the dissipated Welsh barony is exemplified by an Act of Pennsylvania Assembly in 1806. On



March 31, Lower Merion was established as a separate voting district. This enactment was the final acknowledgement that the Quakers were no longer considered a political threat to the new republic. Thus commenced the total political, social, and economic integration of the Welsh Quakers into 'American' society.

#### SUCCESS OF AN AGRICULTURAL AND MILLING COMMUNITY

Advancements in the field of transportation directly attributed to the success of the Welsh's integration. The first direct transportational link between Philadelphia and the Lower Merion area occurred in 1792-4 with the construction of the macadamized Lancaster Pike. Towns along its path like Humpreysville and Athensville (present day Bryn Mawr and Ardmore) developed as focal points for the area. These towns provided definition for this widely dispersed rural community. Another transportational introduction occurred in 1810. In this year, the first bridge to span the Schuylkill River into Montgomery County was built--Flat Rock Bridge. The construction of a canal followed in 1818. Both aided directly with the rising success of the farming and milling communities. They increased the accessibility to the urban center of Philadelphia--then the largest city in the nation.

The influx of people to manage these industries was another contributor to the transformation of the previous



autonomous Welsh Tract area into a primary agricultural supplier of Philadelphia. Census records for 1800, 1830, and 1860 indicate a steady rise in population from 1422 inhabitants to 2524 to 4427 respectively. While in absolute numbers the Welsh remained the largest ethnic group, the greatest percentage increase in population was accounted for by the growth in the non-Welsh sector. This increase in the labor pool was welcomed as the earlier paper and grain mills were transforming into more labor-intensive industries, such as textiles. As the century progressed, farm and mill owners were no longer exclusively Welsh. The Germans, English and a few Irish attained this bourgeois level. This mixture was obviously successful; the 1870 census estimates farm and farm implements of the township at \$4,896,609--the only Pennsylvania township with a farm evaluation exceeding \$4,000,000.<sup>4</sup>

Another factor attributing to the success of agricultural and milling community was the Industrial Revolution. The Revolution produced processes which were less labor intensive and time consuming. As a result efforts became more effective and correspondingly businesses became increasingly lucrative.<sup>5</sup> This spurred the development of numerous farms and mills along the abundant streams and creeks throughout the county. The largest local water source was Mill Creek which was fed by approximately fourteen tributaries. Toll estimates at least sixteen mill



complexes thrived along Mill Creek corridor. The majority of these complexes contained a factory, a mill owner house and a series of worker homes.<sup>6</sup> Their products ranged from lamp wicks and buttons to gun parts and cotton.

The technological advances of the Industrial Revolution initially aided the milling industry. However, by the end of the nineteenth century this industry waned with the advent of more efficient city factories. A devastating flood of the Mill Creek corridor in 1893 was the final blow to the industry. Thus, mechanization caused the rise and fall of the local milling industry. Another technological advancement whose effects were initially beneficial, but ultimately detrimental, to the area's rural working class was the railroad.

#### INTRODUCTION OF THE RAILROAD TO THE LOWER MERION AREA

The concept of the railroad was introduced in America early in the nineteenth century. By the century's end it had become "the symbol" of the mechanization of society. The campaign to introduce the railroad to the Lower Merion area began as early as 1811. Locally it was met with stiff opposition from several factions. The stagecoach, tavern and innkeepers along the Lancaster Pike had developed successful businesses catering to those travelling across the state. These business owners realized quite early that the inception of the railroad would supplant their



livelihood. They comprised one of the earliest and most adamant local anti-railroad factions. They were joined by farmers marketing hay, grain or horses. Likewise the demand for their products would be severely depleted with this new transportational mode.

These specific groups, with economic-based concerns, were supported by many individuals with other concerns. The basis of these apprehensions was the destruction of Lower Merion's pristine agricultural environment. The foci vocally lamented were the detrimental effects of the smoke and noise of the trains, as well as the breaking up of farm tracts along the proposed route. However there was also an underlying level to these practical considerations. Society was consciously and unconsciously concerned with the moral implications of the evil mechanical monster traversing their revered, God-given and untainted natural environment. In addition a clannish farming mentality, reminiscent of the barony, prevailed in this rural community. A direct link to ship their goods was acceptable; a direct link for city dwellers to their environs was not acceptable. Little did they realize the pendulum would be swinging in the other direction and they would be supplanted by the city elite by the end of the century. In the interim, the adamant public opposition voiced by the Lower Merion inhabitants stymied the inception of the railroad. In addition to which was later accompanied by mismanagement and poor planning of the



railroad industry.

However, while the concerns of the group thwarting the railroad construction were based on the microcosmic levels of the Lower Merion community, the railroad advocates had a broader macrocosmic foundation. The Philadelphia business community was competing, as a whole, with other communities throughout the country for commerce. The Philadelphia trade market, both foreign and domestic, had begun to languish. This was primarily attributed to the construction of the Erie Canal. The manufacturers and farmers of the west utilized the canal for both importation and exportation. Thus bolstering the New York market and depleting the resources available to Philadelphia tradesmen and manufacturers.

Increased trade competition with Baltimore provided another stimulus for the construction of an east-west transportation corridor--climaxing in Philadelphia. Especially since Baltimore proffered a similar westward railroad campaign. If successful Baltimore would most certainly appropriate what was left of the Philadelphia market. Western Pennsylvanian towns, aware that the railroad movement was primarily trade-oriented continually opposed the movement. The towns along the proposed path resented the 'intrusion' especially since they considered this massive undertaking to be exclusively beneficial to Philadelphia. In 1826, due to continual and increasing



pressure of Philadelphia businessmen and despite opposition, the Columbia, Lancaster and Philadelphia Railroad Company was incorporated.®

#### LOCAL CAMPAIGNS OF THE PENNSYLVANIA RAILROAD

Under the jurisdiction of the Main Line of Public works an interconnected system of canals and railways commenced in the 1820's. Its goal was to provide direct access from Philadelphia to Pittsburgh. After surmounting many obstacles the east-west corridor was realized in 1863. Upon completion the new owners, The Pennsylvania Railroad Company, addressed the issue of efficiency and targeted various areas along the line for rerouting. They were determined to provide the most direct and least time consuming route for its customers. One pinpointed area was the section between the stations of Athenville and Morgan's Corner (present day Ardmore and Radnor).

The proposal included the 'straightening' of the meandering two-and-a-half mile tract and the addition of a new station (Bryn Mawr). As a result the Pennsylvania Railroad bought four hundred and twenty-four acres of land from the farmers along the newly proposed 'straightened' route in 1868-9. This was in excess of the amount of land required for the project. The railroad had been pressured into buying the full farm tracts since the farmers declared that their farms would be 'irreversibly affected.' This



land became known as the Bryn Mawr tract." The purchase of the Bryn Mawr Tract was the catalyst for many events that affected the Lower Merion area.

The railroad's involvement did not terminate at the station or at the end of the railroad ties. Universally across the United States railroad companies became a commercialized entity who were in the business of 'selling' locations along its line to encourage customers. Beautification of the landscape along the line was accomplished with picturesque stations. In Lower Merion Joseph Wilson (later of the Wilson brothers) was hired to create such stations for Haverford, Athensville and Humphreysville.

In general the stations were often complemented by gardens and sometimes adjacent parks. For the long distance traveler additional plantings of trees, flowers, etc. were maintained along the railway path. In the Lower Merion area this is best exemplified by the Merion Station. Edward Bok, editor of The Ladies Home Journal, planted several thousand rose bushes trackside yielding "over one million roses at one time: a veritable blanket of pink bloom." In addition, as passengers disembarked at Merion they walked through a park. It was comprised of 250 flowering fruit trees "running the gamut of the cherry, the plum, the crabapple and the white and pink peach so that I should have a succession of bloom."<sup>10</sup>



Thus Bok was utilizing fruit trees in quite a different fashion than his Welsh predecessors. The changing function of fruit trees reflects on a diminutive level the changing societal trends of the area. The Welsh had planted fruit trees for their own consumption. Later farmers harvested the fruit for income. By the mid-nineteenth century fruit trees were for purely pseudo-agrarian purposes. Nature was no longer utilized but manipulated. The railroad wished to exude a picturesque and pristine rural aura along its line. The experience of travelling along their line was to be the antithesis of the city. It was to be beautiful and peaceful --not polluted, noisy, crowded or factory-ridden.

This deliberate effort to create a marketable environment extended far beyond the station grounds. Within Lower Merion, deed restrictions were placed on the excess Bryn Mawr Tract land. These prohibited the construction of manufactories, stores, liveries, in short the "building of any offensive occupation."<sup>11</sup> They were determined to insure the 'image' and 'growth' of pleasant residential towns adjacent to their line.

In addition to general landscaping and residential development, the railroad utilized its role as a developer to establish resorts along its route. Thus they provided for both the group wishing to relocated to the pristine rural environment as well as those city dwellers desiring a temporary reprieve. Massive advertising campaigns were



undertaken. Enticing description such as the following for Lower Merion's Bryn Mawr Hotel were commonplace:<sup>12</sup>

It seems that you have but to step into a train at Broad Street, look out a window and instant as the wheels whir beneath you and the brakeman calls in the door, before you have time to think: 'Bryn Mawr!' You catch a glimpse of its beauties from the station platform. But you don't know the joy of living till you've spent a week there. A week amidst its pleasures, with the vim and action of city life merged into the seclusion and cool comfort of country life<sup>13</sup>

#### THE EVOLVING 'COUNTRY LIFE' OF LOWER MERION

The combination of these advertising campaigns and the relatively easy access to the city, triggered a tremendous population growth. In 1859, Bryn Mawr is said to have consisted of twenty-one housing units; by 1881 it swelled to over three hundred units. Likewise, the dwellings within Ardmore's limits increased five-fold.<sup>14</sup>

The vast and successful advertisements and efforts of the railroad industry "fashioned" the area into a highly desirable suburb of Philadelphia. One could reside and partake in the pristine environment while maintaining a daily business connection with the urban center via the railroad. Simultaneously, real estate values increased. In 1847 a farm along the Lancaster Pike sold for \$100 per acre; by the end of the century the average price per acre was \$732.<sup>15</sup> Prices cited in newspaper advertisements for farms in other Philadelphia suburbs reflect the high desirability of this area. An 1887 Philadelphia Inquirer advertisement



cited the selling price of a fifty-two acre farm in 'nearby New Jersey' as \$3500; a mere \$67 per acre.<sup>16</sup> As a result, as will be discussed in the next chapter, the Lower Merion area developed into an elite enclave known as "The Main Line".

Thus, although Lower Merion continued to exude an agrarian atmosphere, the function and form of the farms altered with time. Throughout the decade working farms were purchased by wealthy Philadelphians for country estates. While many of these farms remained functioning, they were utilized as 'gentlemen farms.' Their owners did not farm to produce income. Rather they desired the aura of working the land. This triggered the commencement of the pseudo-agrarian lifestyle adopted by many wealthy Lower Merion residents. A trend that extended into the twentieth century.



## Section B

### SUBDIVIDING A WELSH FAMILY TRACT The Black Rocks Site

Throughout the nineteenth century, subdivisions of the large family-owned Welsh tracts of land were commonplace. As previously stated, these smaller tracts were primarily purchased by either the railroad or individual farmers. The Black Rocks area was no exception. As established in the previous chapter, Richard C. Walker, Jr., of Spring Garden, Philadelphia, a descendent of an early Welsh family, inherited over two hundred acres of land in Lower Merion. By 1850 Richard, Jr., had subdivided his land. He sold a thirty acres portion to his father, Richard.<sup>17</sup> Two years later Richard C. Walker and his wife, Martha, of Tredyffin, sold the same thirty acres to a farmer, Francis Sheldon.<sup>18</sup> Since both deeds cite Richard as 'of Tredyffin' (and no contrary evidence was found) it is assumed that Richard never inhabited the property but resided in Tredyffin.

Francis Sheldon's purchase fulfilled the subdivision trend of large Welsh family tracts. The John Levering Map of 1851 (Figure 4) reveals that Francis Sheldon owned an additional twenty acres nearby along a branch of the Mill Creek (off of present day Mt. Pleasant road). The map indicates a building on Sheldon's twenty acres tract, but no structures on the Black Rocks thirty acre tract.<sup>19</sup>



Furthermore, the recording deed between Richard Walker and Francis Sheldon cites the sale of a "certain tract or piece or parcel of land."<sup>20</sup> (Please refer to Appendix B: Deeds-Land Conveyances for compilation of conveyances) Therefore, due to the lack of depicted structures and citation of only land, it is assumed that farmer Sheldon bought the tract for grazing or planting land. In 1856 Sheldon sold 16 acres of the tract to brothers Hamilton and Norman Egbert.<sup>21</sup> Soon thereafter documentation suggests a structure on the property.

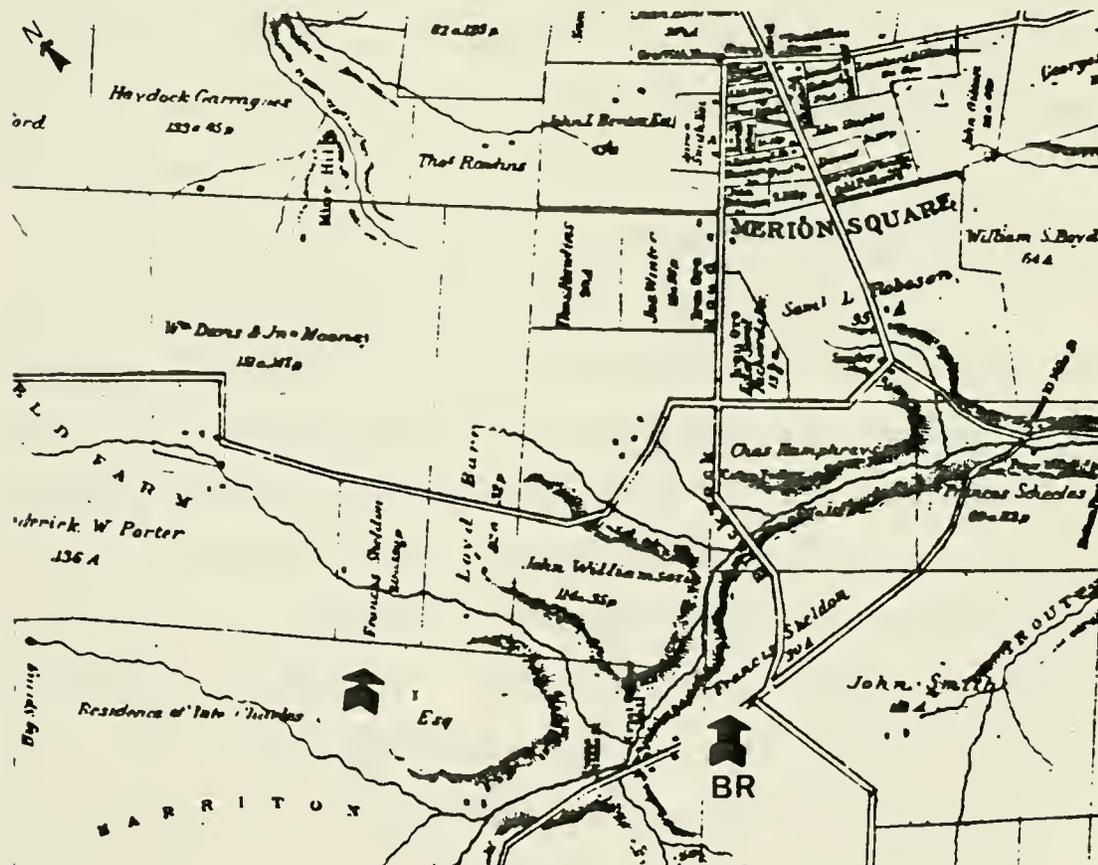


Figure 4: "John Levering's Map of the Township of Lower Merion, Montgomery County, PA--1851" in the Manuscript Department of The Historical Society of Pennsylvania, Philadelphia



## THE EGBERTS

The Egberts were a well-established family in the cross-roads town of Merion Square (present day Gladwyne). Hamilton and Norman Egbert were two of twelve children born to David N. and Maria Yocum Egbert.<sup>22</sup> In 1823, David Egbert moved to the War Office (in 1824 the name was changed to Merion Square) where he, in addition to his function as Justice of the Peace, was the merchant of the General Store and a lumberman. Local histories indicate that Hamilton, as a youth, worked summers for his father. In 1840, at the age of nineteen, he became a partner in his father's business. In 1846 David Egbert retired and relinquished the business to his sons Hamilton and Norman.<sup>23</sup>

The John Levering 1851 **map** indicates that David Egbert owned 40 acres 132 perches of land at the center of Merion Square. Situated on this plot was a store, a hotel and a post office. Due east of David's forty acres is a property labelled "Hamilton Egbert and others." This property, located along Mill Creek, consisted of 12 acres and 110 perches and contained at least two structures; one of which is labelled 'factory.'<sup>24</sup> As cited previously, Hamilton and his brother Norman purchased the Black Rock tract of land from Francis Sheldon in 1856. No documentation has been found indicating the brothers', residential or business intentions for this tract. It has been concluded that the brothers erected a structure on the site, c.1856. The basis



for this conclusion is outlined in the following section.

#### DATE OF HOUSE CONSTRUCTION

Reviewing deed descriptions and purchase prices for the Black Rock property, between the years 1856 and 1866, raises several questions concerning the date of house of construction. Francis Sheldon purchased 30 acres for \$1600 in 1852.<sup>25</sup> When he sold 16 acres of this land to Hamilton and Norman Egbert he received \$1500. Whether this is due to the increasing value of area real estate or attributed to improvements on the property has not been determined. The deed between the brothers and Sheldon cites "all that certain tract or piece of land."<sup>26</sup> Three years later the recording deed between the brothers and Thomas Thompson contained the same phrase. The price was \$2500.<sup>27</sup> Once again the question arises concerning the substantial price increase occurring over a period of only a few years; this time \$1000.

An extant datestone bearing the dates of 1856 and 1900 is now located at the northeast corner of the present tenant house patio floor. (Figure 5) (The 1900 date indicated the year of the Furness, Evans & Company addition). While an 1859 datestone is depicted on the east facade in 1900 drawings of Furness, Evans & Company, (future architects of Black Rocks)<sup>28</sup> (Figure 20) the above cited datestone was the one implemented. A photograph, dated c.1940, indicates the



placement of the datestone. Since the two dates on the stone appear to have been carved by the same hand and planned as an unit, the stone is determined to be the initiative of Furness, Evans and Company. Whether they possessed documentation citing 1856 as a date of construction is not known. In addition no documentation revealing why the date of the drawings differs from the date on the drawings has not been found.



Figure 5: Photograph Extant Datestone, 1990, located at northeast corner of tenant house patio, formerly located on east facade (1900-1937)

Regardless, when Thomas Thompson, plasterer, sold the property back to Hamilton Egbert in 1866 the transaction recorded on the deed is for "a certain messuage or tenement and lot."<sup>29</sup> This is the first time a structure is mentioned in the deeds and suggests that the original section the



Black Rock homestead was built between the years of 1859 and 1866. However, the price of sale in 1866 was the same as in 1859. The real estate values of Lower Merion were rising, strongly indicating that no improvements were made to the property--especially not as substantial as a house.

Contradicting these primary sources is a much quoted Lower Merion history. It characterized the original section of the Black Rocks complex as a "fine example of a Pennsylvania stone farm house" dating back to the late eighteenth century (c.1780).<sup>30</sup> This history is undocumented. Eighteenth- and some early nineteenth-century deeds do cite structures on the property. However, these are much larger parcels. When the large tract of land was subdivided message citations vanish. (Please refer to Appendix B:Deeds--Land Conveyances) Furthermore, the one piece of substantial documentation, the John Levering Map of 1851, does not depict structures on the site. The combination of these two primary sources strongly indicates a land-only site prior to 1850.

It is therefore concluded at this time that the original portion of the house at Black Rocks was built after 1850. Deed research indicates construction occurred before 1866. Since no evidence contrary to the 1856 datestone was uncovered, the western section of the present-day Black Rocks house will be referred to in this text as the original section, c.1856. Regardless of the original construction



date, by 1866, when the site is purchased by Hamilton Egbert, it is no longer undeveloped land. On it stood a masonry, two story, three-bay structure. An 1894 inventory for Black Rocks values the 'household and kitchen furniture' at \$30.<sup>31</sup> By the standards of the time this suggests a small, unassuming abode. It was Hamilton Egberts's reprieve from business; it was his 'gentleman farm.'

#### HAMILTON EGBERT: GENTLEMAN FARMER

Hamilton Egbert, like his father, juggled many roles. He appropriated his father's merchant business with his brother, Norman, in 1846. Bean in his History of Montgomery County relates that the their General Store was very successful. The 1851 Levering map indicates that Hamilton was also connected to a factory. Local histories also relate that he was the Merion Square postmaster for twenty years and was elected to a variety of public positions.

All of these various responsibilities eventually took their toll on Hamilton Egbert. It is reported that his health became "so completely prostrated" that he was compelled to relinquish all business responsibilities. It was at this time, in 1866, that he bought Black Rocks and became a gentleman farmer.<sup>32</sup> Hamilton's biography states this change "entirely restored his health;"<sup>33</sup> thus implying the pristine rural environment revitalized Hamilton and provided the 'necessary escape' from capitalism and the



trappings of industrialization.

His occupation, as indicated by the 1870 census, was a farmer. On the farm he resided with his wife, Elizabeth, son Joseph, daughter Kate, and one laborer. His real estate was valued at \$2600 and his personal estate at \$5000.<sup>34</sup> An 1871 map indicates one building on the property; in 1896 there are four.<sup>35</sup> (Figures 6 & 7) This is just one indication that, although in retirement, his time at Black Rocks was not idle.

Once retired, Hamilton refused additional public offices, but he remained active. He was the president of Bryn Mawr Loan and Building Association (Bryn Mawr National Bank) and director of the First National Bank of Conshohocken. Bean states that he also adopted the role of conveyancer during his gentleman farmer days.<sup>36</sup>

Furthermore, in recollections published in the Bulletin of the Historical Society of Montgomery County, PA it is learned that Hamilton Egbert quarried 'black rock'. This publication reports that a house built by Mrs. Baker in 1868 was known as 'The Black Rocks House'. It was "the first in the neighborhood" built of stone from the Black Rock Quarry operated by Hamilton Egbert.<sup>37</sup> The 1896 Atlas of Lower Merion indicates a quarry site existed several hundred yards southeast of Hamilton's estate.<sup>38</sup> (Figure 7) It is not labelled specifically as the Black Rock Quarry, although presently there are remains of a 'black rock' formation.



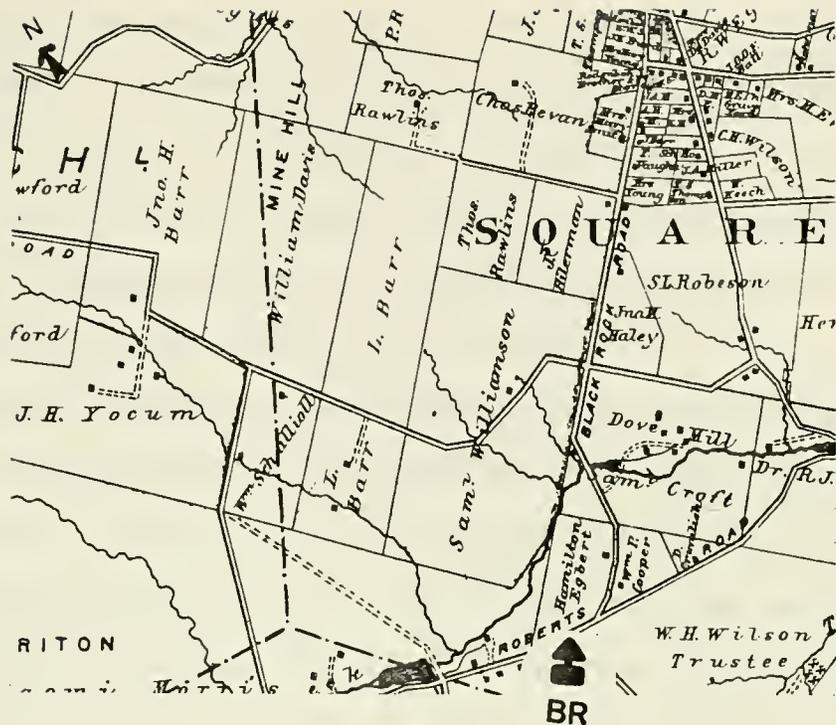


Figure 6: 1871--Estate of Hamilton Egbert in the Atlas of Lower Merion (Philadelphia: A.H. Mueller, 1871)



Figure 7: 1896--Estate of Hamilton Egbert in the Atlas of Lower Merion, (Philadelphia: A.H. Mueller, 1896)  
 Note: Quarry site east of the property.



Margaret B. Harvey, a botanist, was quoted in an 1927 book as stating: "In 1895-6 the owner of the land (Black Rocks)...destroyed the stone...by quarrying."<sup>39</sup> The 1894 inventory of Hamilton Egbert's estate does not refer to the quarry. Perhaps Harvey is referring to another portion of the vein or a post-Egbert quarry owner.<sup>40</sup>

Hamilton Egbert died in 1894 and the inventory of his estate (dated July 10, 1894) values his estate at \$24,513.37. In addition to the above enterprises, the inventory indicates that he received rent from an "Edgemont farm" and a "Shannonville farm." Hamilton also received rents from 'Homestead.'<sup>41</sup> It is not clear if this is a reference to the Black Rocks farm. The 1896 Atlas of Lower Merion indicates that there were several structures on the property.<sup>42</sup> The placement of structure C of Figure 7 appears to correspond with the extant tenant house. Therefore, the possibility of the rent from the Homestead--Black Rocks is feasible. In addition there is a citation indicating ground rent income for land at Seventh and Master Streets in Philadelphia. Thus 'Black Rocks' was not Hamilton Egbert's only source of income.

Histories mention Hamilton Egbert's role as a gentleman farmer but neglect to elaborate on the nature or form of the farm. Mabel Tuke Priestman in Artistic Homes stated that at the turn of the twentieth century the site was a defunct chicken farm.<sup>43</sup> However Hamilton's inventory does not



support this statement.<sup>44</sup> There is no mention of chickens or related equipment. The inventory mentions a cow (\$12), wheat, corn and potato crops (in ground \$40). The barn contained hay, straw and corn (\$25) and farming utensils, wagons and harness (\$75).<sup>45</sup> As will be established later, it is improbable that Black Rocks became a chicken farm after Hamilton's death.

The heirs of Hamilton's estate were his wife Elizabeth and children Joseph and Kate. Joseph C. Egbert, M.D., purchased a prominent Wayne estate "on the east side of Wayne Avenue, just north of Lancaster Avenue"<sup>46</sup> in 1893. According to Hotchkin's Rural Pennsylvania, in 1897 Dr. Egbert had been in practice in Wayne for about sixteen years.<sup>47</sup> Thus intimating that Joseph was well-established in Wayne and not inclined to relocate to Black Rocks. In December of 1898 Joseph sold several portions of his inheritance to his sister Kate. Inclusive was 3.637 acres of the Black Rocks estate at the price of \$1.00.<sup>48</sup> Priestman implies that the property was abandoned during these years:

When purchased (1899), the briars were so high that it was difficult even to see the rocks, and it presented so forlorn and spooky an appearance that the house gained the name of being haunted; and those that drove past it used to whip up their horses to get quickly by so weird and dismal an abode.<sup>49</sup>

On March 2, 1899, Kate and Elizabeth sold the 3.637 acres to Charles J. McIlvain, Jr.<sup>50</sup>



## CHARLES JACKSON MCILVAIN, JR.: ARCHITECT AND DEVELOPER

Charles J. McIlvain, Jr., was a noted architect and developer of the Lower Merion area. He attended The University of Pennsylvania in 1889 and in 1890 is listed in the Philadelphia City Directories as an architect.<sup>51</sup> In addition, McIlvain inherited a real estate development firm from his father which he combined with his architectural practice. He established a partnership with architect Charles H. Roberts at the turn of the century. The Philadelphia Real Estate Record and Builders Guide often records projects designed by McIlvain & Roberts for McIlvain & Co.; thus he combined both enterprises. The majority of their numerous commissions were in the Lower Merion area. Some of their projects received public recognition.<sup>52</sup>

McIlvain's intentions in purchasing Black Rocks in 1899 are not known. If the property was abandoned and overgrown, as suggested by Priestman, he may have planned to rehabilitate the property. However, five months later he sold the property to the prominent lawyer, Edward S. Sayres. McIlvain netted only \$39 on the Black Rocks transaction.<sup>53</sup> This implies that McIlvain did not improve the property. The 1890 University of Pennsylvania Alumni Directory provides a connection between McIlvain and Sayres. The directory related McIlvain retained memberships with the Racquet Club of Philadelphia, and the Yale and Merion Cricket Club.<sup>54</sup> As will be established in the next chapter,



Edward S. Sayres was a very active member and officer of the Merion Cricket Club. While the reasons underlying the transaction cannot be established it can be concluded that McIlvain and Sayres consorted socially. Regardless of transpiration, the rehabilitation of Black Rocks was abdicated to Edward Sayres.



### ENDNOTES: CHAPTER THREE

<sup>1</sup> United States Bureau of Census, 1800, "Lower Merion" (Washington D.C.: Governmental Printing Office, 1800).

<sup>2</sup> For further reference: Robert Wilson, Philadelphia Quakers 1681-1981 (Philadelphia: Philadelphia Yearly Meeting of the Religious Society of Friends, 1981), p.68.

<sup>3</sup> Glenn, p.256.

<sup>4</sup> United States Bureau of Census, 1800, 1830, 1860, 1870.

<sup>5</sup> The technological advances of the Industrial Revolution were not readily accepted by society--including Lower Merion. Technology was viewed with trepidation as "an incalculable source". "Later it became an article of faith. The image implied a popular social theory: the machine as a 'human benefactor', a 'great emancipator of man from the bondage of labor'...the element of civilization." Alan Trachtenberg, The Incorporation of America (New York: Hill & Wang, 1982), p.42, 44.

<sup>6</sup> Jean Barth Toll and Michael J. Schwager, eds, Montgomery County: The Second Hundred Years. vol. 2 (Norristown, PA: Montgomery County Federation of Historical Societies, 1983), p.306.

<sup>7</sup> Trachtenberg, p.39 states: "...serious writers before the Civil War had fastened on the image of a mechanical intrusion on a pastoral setting as a characteristic expression of a deeply troubled society. In the language of literature, a machine (railroad or steamship) bursting on a peaceful natural setting represented a symbolic version of the trauma inflicted on American society by unexpectedly rapid mechanization." The writings expressing this sentiment during the pre-Civil War period are numerous and obviously reflected and impacted societal views of the machine.

Another excellent is Leo Marx's Machine in the Garden (London: Oxford University Press, 1964).

<sup>8</sup> Elfreth Watkins, History of the Pennsylvania Railroad Company (Philadelphia: Pennsylvania Railroad Company, 1896) p. 100.

For further reference consult: Edwin P. Alexander. The Pennsylvania Railroad Company (New York: W. W. Norton, 1947)

In addition to local businessmen's pressures, there were many pamphlets and other propaganda distributed championing the cause of the railroad versus other methods of



transportation. Watkins cites several examples. Other sources for examples of this propaganda include: Frederick A. Cleveland and Fred Wilbur Powell, Railroad Promotion and Capitalization in the U.S. (New York: Longmans, Green and Company, 1909) and Facts and Arguments in Adopting Railroads in Preference to Canals in the State of Pennsylvania (Philadelphia: William Fry, Printer, 1825) Organizational efforts for the railroad cause were supported by such agencies as the "Pennsylvania Society for the Promotion of Internal Improvements in the Commonwealth".

<sup>7</sup> Brief of Title to Bryn Mawr in Lower Merion Township

(Philadelphia: A.C. Bryson & Company, 1869)

As indicated in this publication, the Bryn Mawr Tract was thus entitled by virtue of Bryn Mawr having contributed the majority of land. 279 of the 424 acres were located in Bryn Mawr. The residual land was located in adjacent towns along the proposed 'straightened' route.

Also J.W. Townsend, The Old Main Line, 1922, Luddington Library, Bryn Mawr, PA.

It should be noted that the reasons for the larger than necessary land acquisition is not recorded in the railroad records. Townsend appears to be the first to state this rationale.

<sup>10</sup> John Stilgoe, Metropolitan Corridor, (New Haven: Yale University Press, 1983), p.241.

<sup>11</sup> Townsend, p.51.

In addition to other restrictions, a minimal cost for new residential buildings was imposed along with set-back specifications.

<sup>12</sup> Alison Reed, in her University of Pennsylvania thesis on The Bryn Mawr Hotel, provides an analysis of the correlation between the railroad and the development of country resorts.

<sup>13</sup> Bryn Mawr News, Bryn Mawr, PA. June 10, 1887, Quoting a Philadelphia Press article.

Another major source of enticing descriptions is the railroad publication Summer Excursion Routes (Philadelphia: Allen, Lane & Scott, 1884)

<sup>14</sup> Buck, pp.30-2. Also cited in Bean, p.924.

<sup>15</sup> William Hasell Wilson, 1897, in Joseph Tripician's "Role Played by the Pennsylvania Railroad in the Main Line Area of Philadelphia," August 2, 1960, Lower Merion Historical Society, Rosemont, PA.

William H. Wilson was the general overseer of the management of the Bryn Mawr Tract until 1866 when it became the responsibility of the township.



<sup>16</sup> Advertisement, Classified Section, Philadelphia Inquirer March 15, 1887.

<sup>17</sup> Deed Book 83, Montgomery County Recorder of Deeds. Norristown, PA, pp.603-4.

<sup>18</sup> Deed Book 83, pp.605-7.

<sup>19</sup> John Levering Map of Lower Merion, 1851. Original in the Manuscripts Department, Historical Society of Pennsylvania, Philadelphia, PA.

<sup>20</sup> Deed Book 83, p.606.

<sup>21</sup> Deed Book 101, Montgomery County Recorder of Deeds, Norristown, PA. pp.57-8.

<sup>22</sup> Charles Major, comp., Egbert File, Montgomery County Historical Society, Norristown, PA, p.151.

<sup>23</sup> Bean, p.939.

<sup>24</sup> Levering Map, 1851.

<sup>25</sup> Deed Book 83, p.605.

<sup>26</sup> Deed Book 101, p.58.

<sup>27</sup> Deed Book 116, Montgomery County Recorder of Deeds. Norristown, PA, pp.58-60.

<sup>28</sup> Furness and Evans, architects, "House 176: Furness and Evans Drawings for E.S. Sayres, 1901," Walter Durham Collection, Athenaeum of Philadelphia.

The author discovered these previously uncataloged drawings in the Durham Collection. Obviously, when Walter Durham was hired to build an addition to Black Rocks, in 1939, he obtained the 1901 Furness and Evans drawings. The drawings appeared to be used as working drawings by Durham as evidenced by pencil lines indicating the location of Durham's addition and proposed alterations. These blueprints are now filed separately from the Durham drawings of Black Rocks but are still accessed through the Durham Collection.

<sup>29</sup> Deed Book 141, Montgomery County Recorder of Deeds. Norristown, PA, pp.224-6.

<sup>30</sup> Lower Merion Historical Society, Rosemont, PA. Local House card file. Lower Merion Historical Inventory. Item No. 137.



<sup>31</sup> RW 19032, July 10, 1894, Montgomery County Registrar of Wills, Montgomery County Courthouse, Norristown, PA.

<sup>32</sup> Bean, pp.939-40. Also Major, p.178.

<sup>33</sup> Bean, p.940.

<sup>34</sup> United States Bureau of Census, 1870.

<sup>35</sup> Ellis Kiser and C.A. Potts, Atlas of Lower Merion (Philadelphia: A.H. Mueller, 1896).

<sup>36</sup> Bean. p.940.

<sup>37</sup> Josiah S. Pearce, "Early Recollections of Ardmore", Bulletin of the Historical Society of Montgomery County, PA, vol.4 (Norristown, PA: Montgomery County Historical Society, 1943-45), p.203.

The house was demolished in the 1940's to make way for the Mahon Block.

<sup>38</sup> Kiser, 1896.

<sup>39</sup> Develin, p.31.

<sup>40</sup> It should be noted that although "Black Rocks" presently designates a specific site, it previously connotated the entire region containing this unusual outcropping. Therefore, while Pearce relates that Hamilton Egbert operated a quarry, assuming that it was on his property is not a valid conclusion.

Using the railroad atlases and The Social Register of Philadelphia as sources, it is concluded the site under consideration here was first named "Black Rocks" in 1903. Priestman, in her 1910 Artistic Homes, speaks of the house as "in the region known as Black Rocks. (p.65) In scrapbook A-7 p.210 at the Montgomery County Historical Society, a 1938 newspaper article relates discoveries at the residence of Judge Hunsicker at Black Rock. No connection between Judge Hunsicker and the present day Black Rock site has been determined; although future research may reveal that this residence was in its vicinity--perhaps along Black Rock Road. Also as previously mentioned, there was the Mrs. Baker's "Black Rock House". Furthermore, there is a neighboring tract on Old Gulph Road that to this day bears the name of Black Rock Farm (Black Rock Poultry Farm). An interesting side note: contemporary maps of Wales indicate a region designates as Black Rocks. In any case citings concerning Black Rocks need to be evaluated with discernment.

<sup>41</sup> RW 19032.



<sup>42</sup> Kiser, 1896.

<sup>43</sup> Mabel Tuke Priestman, Artistic Homes. (Chicago: A.C. McClurg & Co., 1910), p.65.  
Chapter IX: An Ideal Country House, is a reprint of a magazine article expounding the virtues of Black Rocks.

<sup>44</sup> RW 19032.

<sup>45</sup> One plausible explanation is provided by referring to E.V. Smith and J.L. Smith, Atlas of Property Along the Pennsylvania Railroad: Overbrook to Malvern. (Philadelphia: E.V. Smith and J.L. Smith publishers, 1900) (see Figure 9). In the vicinity of Black Rocks (labelled 'The Boulders' in this figure) is a site designated as the title 'Black Rock Poultry Farm' owned by D. Crumlich. No relationship between the sites has been determined.  
Priestman was not a native of the area and her book was a compilation of compulsory articles evaluating various country homes throughout the U.S.

<sup>46</sup> Hotchkin, p.262.

<sup>47</sup> Ibid.

<sup>48</sup> Deed Book 444, Montgomery County Recorder of Deeds. Norristown, PA, pp.166-9.

<sup>49</sup> Priestman, p.66.

<sup>50</sup> Deed Book 448, Montgomery County Recorder of Deeds. Norristown, PA, pp.92-5.  
This transaction was rewritten and recorded due to an "erroneous description" of the property. Deed Book 667, pp.69-73.

<sup>51</sup> City Directories

<sup>52</sup> Sandra L. Tatman and Roger W. Moss. Biographical Dictionary of Philadelphia Architects 1700-1930. (Mass, Boston: G.K. Hall & Co., 1985), pp.518-20. Contains a list of commissions.  
McIlvain & Roberts' commissions were often the subject of magazine articles. The following citations regarding Lower Merions subjects appeared in American House and Garden i.e. February 1906--House of James S. Rogers Esq., Haverford, PA; February 1907--House of Norman Ellison, Merion, PA; June 1907--House for William J. Serrill, Haverford, PA; November 1908--House for P.M. Tasker, Wynnewood, PA.

<sup>53</sup> Deed Book 449, Montgomery County Recorder of Deeds. Norristown, PA, pp.384.



<sup>54</sup> University of Pennsylvania, 1890 University of Pennsylvania Alumni Directory, (Philadelphia: University Press, 1890), p.123.



## CHAPTER FOUR: THE EMERGENCE OF THE MAIN LINE

### Section A

During the first quarter of the nineteenth century The Main Line of Public Works was the encompassing title for the various parties responsible for the construction and maintenance of the Pennsylvanian east-west railroad corridor. By 1863, under new ownership, the direct Philadelphia-Pittsburgh route had received The Main Line appellation. This designation, however, was not indigenous to Pennsylvania. Other railroads throughout the country utilized the same terminology for their major route.

As the century progressed, the term The Main Line developed a more regionalist connotation. The stations in the direct vicinity of Philadelphia became the primary bearer of the title The Main Line. This was principally attributed to railroad commercialization. These localities, i.e. Bryn Mawr, Haverford, became the fundamental focus of the Pennsylvania Railroad's advertisement campaigns. As a result the Lower Merion area in general was denoted as The Main Line.

The Lower Merion area continued to evolve and prosper as a direct result of the railroad's influence. By the close of the nineteenth century this title no longer connoted a mere local but enveloped an aura. A whisper of the phrase 'The Main Line' conjured visions of elaborate



country estates owned by industrial tycoons, exclusive resorts and country clubs, and quaint summer retreats for prominent Philadelphians. This chapter will discuss the forces that attributed to the emergence of this elite enclave.

### INCORPORATING AMERICA

The second half of the nineteenth century witnessed the a new agglomeration of capital. Emerging during this period was the modern system of corporate ownership. This form of ownership first appeared on a modest scale in the 1850's. Initially notable within railroad industry, by the 1870's it was commonplace. The 'incorporation' was based on minority ownership. A board of directors, comprised of a small group of individuals, now acted legally on behalf of the larger, amorphous body of stockholders.

According to Alan Trachtenberg in The Incorporation of America: "the corporation provided capitalists with a more flexible and far-reaching instrument than earlier forms of ownership, such as simple partnerships and family businesses."<sup>1</sup> Thus it afforded a capacity for expansion and mass diffusion of products. As the early corporations such as the railroad, oil, shipping, banking, and mining industries thrived, individuals accumulated unprecedented personal wealth. The number of millionaires exemplified this trend: in 1865 there were three American millionaires;



by 1900 the number exceeded four thousand.<sup>2</sup> The astounding economic growth stimulated by the Industrial Revolution, and realized as a direct result of incorporation, immeasurably changed the face of society.

#### ESTABLISHMENT OF AN ELITE ENCLAVE

The polarization between the rich and poor became especially distinct during this era of capitalist consolidation. Initially exclusive sectors within the cities developed purposely explicating, visually, the distinct class division. By the late 1800's, however, the affluent began to flee the city. This was primarily initiated by the massive influx of European immigrants and southern Blacks to the northern urban centers. Although these 'captains of industry' desired to divorce themselves from the urban atmosphere, they were still tied to the city by their businesses. The result in the Philadelphia area was the development of The Main Line suburb.

The relative ease of commuting via railroad enabled the genteel society to maintain simultaneously their urban businesses and their exclusive country estates. The first of the grandiose Main Line estates were amassed in the 1870's. Among the earliest structures was "Cheswold" designed by Frank Furness for A.J. Cassatt, the president of the Pennsylvania Railroad.<sup>3</sup> Cheswold set the stage for the numerous Main Line estates built over the next few decades.



They were usually large and elaborately furnished accomplishments positioned upon vast and meticulously landscaped acres.<sup>4</sup>

Consequently, 'the country' and its estates cultivated a romantic and almost magical aura. These grandiose architectural creations perpetuated a romantic escapism feverishly pursued by both affluent clients and architects of the Main Line. Lewis Mumford in "The Architecture of Escape" attributes this 'storybook pastoral school' to both a desire and a need to disassociate one's self "from an environment in which the day is announced by the alarm clock, instead of birds and finished by the blare of the radio instead of the crickets and the katydids."<sup>5</sup> The country estates of the Main Line reflected various responses to this vision from the Victorian gothic creations of Frank Furness, and the English country house manner of Mellor, Meigs and Howe to the French Gothic baronial endeavor of brothers Frank and William C. Price.

A large number of the country estates were generated to function in some capacity as a farm. In fact quite a few of the stately Main Line houses were actually 'converted' farmhouses; i.e. Frank Furness's 'Hedgely' for William Windsor. Obviously the farms were not intended to be major income producers but rather a nostalgic nod towards country living.

The primary business center was the city. Thus the



seat for these plutocratic country estates was contingent on the location of 'the right kind of society.' Central to the exclusive rural locals was the country club. These functioned first and foremost as social centers. "Indeed country clubs and the institutions surrounding them--the country day school, summer resort, elite university, exclusive suburban enclave--were the most important barometer of power and prestige in the elite circle during this era."<sup>6</sup> The Main Line enclave contained all the essential ingredients. The Merion Cricket Club, Radnor Hunt and the Bryn Mawr Polo Club were the primary country clubs; the Bryn Mawr Hotel was the summer resort; and the prestigious Bryn Mawr College completed the circle.

The grandiose estates, built amid the country club environment and populated with 'all the right people,' promoted the elite country notion. Thus promulgating the sentiment that the fortunate resided in the tranquil and revitalizing country setting while the less fortunate inhabited the bustling, frenetic and crowded cities. Railroad advertisements capitalized on this image. They entreated city residents to vacation in the healthy country:

summer is the most enticing season in the country, and the most unendurable in the city. Business is dull then, and there is little excuse for remaining in town...The whole family is gasping for fresh air and the country. The demon malaria threatens if you tarry, and the risk of delay is dangerous to assume. Thus it is, and wisely, that people...buy tickets ... then, after a month or two of real country life, they return (to the city) with renewed courage and vigor.<sup>7</sup>



## THE BACK TO NATURE MOVEMENT

The affluent continued to create large country estates well into the twentieth century. Simultaneously, however, a sister movement was gaining momentum amongst the burgeoning middle class. It has often been referred to as the 'back to nature' movement.<sup>9</sup> The foundation of this trend was laid in the 1850's by horticulturist and architect, A.J. Downing and Samuel Sloan, among others. They expounded the value of rural living as a moralizing campaign. For Downing and his peers the chief symbol of democracy was the ability of a man to erect a tasteful house upon his own land.<sup>7</sup> The movement however came to an abrupt halt with the advent of the Civil War. The ideals of the American Republic were severely tested during this period. Therefore to suggest a mode of living on the basis of these ideals was no longer publicly acceptable.

However, Downing's suggestions and philosophies were revitalized and revamped at the end of the nineteenth century. As the status of country living heightened, and the living conditions of the crowded, industrialized cities declined, a house in the country became a strongly desired entity.<sup>10</sup> The emergence of white-collar jobs offered rising prosperity to the middle class. Naturally this ascending group aspired to own their piece of 'the country'. Furthermore not only was this 'product' accessible via the railroad, the invention of the automobile at the end of the



century solidified the link between the urban center and suburbia in the following decades.

Simultaneous to the rise of the middle class, society was condemning displays of extravagant expenditures.

Conspicuous and frivolous displays of wealth amid the severe economic hardships and social turmoil of the urban environment was no longer acceptable social behavior. The worship of storybook images was replaced with Downing's philosophy; large estates were appropriate to a monarchy not a republic. The fusing of these various influences commenced the era of the country place.

The time period between 1890-1930, when a proliferation of country seats and gardens were designed, is referred to by landscape historian Norman Newton as the era of the "country place".<sup>11</sup> These 'country places' were most often smaller estates of five to fifteen acres of subdivided farmland; versus the hundred acres of the previous Main Line Estates. Once again, many country places depicted farmsteads despite only a recreational interest in raising crops and livestock. Affecting the trappings of agriculture had become a profession of gentility. The 'garden' played a dominant role in the design of country seats. Initially country places were built as retreats from the city and not as permanent residences.<sup>12</sup> They were mainly places of pastoral leisure.

The influences of this 'back to Nature' movement, were



most intense in the years around 1900. Hewitt, in his work "The Architect and the American Country House", states that it is no mere coincidence that the most important house and garden periodicals were founded at this time and that the first professional association for landscape architects was established in 1899.

The movement toward simplification, ease and informality in domestic architecture could be readily seen in the country houses published in journals after 1900. New attitudes toward a genteel life amidst nature manifested themselves in the architecture of houses, gardens and the estate environment, causing many wealthy Americans to forsake the ideal of the stately home for that of a bucolic country place.<sup>13</sup>

The new attitudes of country living, fused with the inspirations of Downing, and the utilization of new transportational systems created a new Lower Merion suburban environment. In 1918 "the suburban towns of the Main Line" are described as "one continuous settlement with a general effect of charming homes set in charming environments."<sup>14</sup> Thus in the twentieth century the aristocratic country estate movement had been consumed by, and intertwined with, the back to nature crusade. While this movement tended to progressively encompass a broader range of people, the Main Line area continued to lean towards the upper end of the income scale; thus although the aura of the Main Line changed, the area remained comparatively exclusive.



## MAINTAINING AN ELITE SOCIETY

The blossoming of the bucolic country place movement dislodged the primary visual distinction of affluence--the grandiose estates. The members of the upper class however desired to maintain their exclusivity. As a result new distinguishing standards were implemented redefining 'high society.'

One obvious attempt to assimilate the established genteel society was the publication of a Social Register. First published in 1887, it was a listing of the most prominent American families. The Register contained various tidbits of information such as university degrees, country clubs memberships, organizational activities, as well as the locations of various residences. Thus perpetuating a new standard. The ability to display numerous citings of seasonal houses in the city, country, at resort locations, and in Europe became one vehicle for establishing one's elevated classification.

Another pervasive movement was the public displays of philanthropy. Veblen's notion of 'esteem by evidence' was still in effect.<sup>15</sup> Only conspicuous consumption had been replaced by 'noblesse oblige.' Public benefactor opportunities were abundant. City institutions such as hospitals, schools, and orphanages were often bestowed custodianship. These institutions served a twofold purpose. They were the most obviously needy and they emphasized the



polarization between the classes. Thus one was deemed elite on the basis of how much one could afford to give away.

These standards were attainable by both new and old money society. The old-stock wealthy desired further distinction from the new monied elite. Establishing ancestral associations became a new criteria. Historian E. Digby Baltzell estimates at least thirty-five 'ancestral-linked' associations were formed in the 1890-1900 decade.<sup>16</sup> One example of these associations is the infamous Daughters of the American Revolution formed in 1890. The desired architectural style also shifted accordingly. The medieval castle references of such Main Line estates as Maybrook were replaced by country places exuding colonial references, i.e. Appleford. Okie, McGoodwin and Gilchirst, the architects responsible for the restoration of Appleford, particularly prospered in the Main Line area with their colonial recreations. Historical references demonstrated good taste and breeding. It also achieved the desired association with the proven past. While many fortunes were quickly acquired many were just as quickly lost. Therefore pursuing any method of dissociating oneself from the tenable present was in high demand.



## Section B

One architect whose career spanned the turbulent era of the post Civil War through the turn of the century was Frank Furness. As mentioned previously, Furness designed one of the first of the Main Line estates--Cheswold. In the late nineteenth century he converted old Welsh tract farmhouses into gentleman farm estates such as Dolobran and Hedgely. In addition when the tide shifted to more traditional architectural references his firm responded accordingly. Black Rocks is one example. Furness's firm converted Hamilton Egberts's small gentleman farmhouse to country place for Edward Sayres. It should not be concluded however that Frank Furness's career or style was of the typical societal mold. "Furness was the dominant force in the innovation and eccentric architectural development of Philadelphia in the late nineteenth century and received frequent national attention for the singularity of his projects."<sup>17</sup>

### FRANK FURNESS (1839-1912)

He (Frank Furness) affected the English in fashion ...wore loud plaids, and a scowl, and from his face depended fan-like a marvelous red beard...his face was snarled and homey as an English Bulldog's.<sup>18</sup>

As much as anyone Furness gave shape to Victorian Philadelphia. His were the most boisterous and challenging buildings in an age and city noted for aggressive architecture.<sup>19</sup>

Philadelphia-born Frank Furness began his architectural



training in 1859. Already a skilled draftsman, he joined the atelier of Richard Morris Hunt in New York. By the second half of the nineteenth century Hunt was considered one of the leading, if not the leading architect in America. His French-inspired residences for nouveau rich clients were infamous. Biltmore, designed for the Vanderbilts is probably his best known commission. Furness was accompanied by Charles Gambrill, Henry Van Brunt, George Post and William Robert Ware at Hunt's West 10th Street studio. "All five of these men were to become leading architects in the years following the Civil War."<sup>20</sup> The training they received from Hunt ascribed to the Ecole des Beaux-Arts. Hunt was the first American to attend the Ecole and his studio reflected its basic premise. Hunt's workshop imparted a firm foundation of basic design principles.

Sketching was one means to an end; the study of precedent was another...Hunt: 'No matter if you never practice classical architecture, you acquire a certain idea or instinct of proportion that will never leave you...'<sup>21</sup>

The two years of fundamental architectural training Furness received under the influence of Richard Morris Hunt cannot be over-emphasized.

Furness's own fundamental philosophy stemmed from Ruskin prototypes attesting "embellishment of structure produces beauty".<sup>22</sup> However as was typical of Furness his studies contained a unique twist.



In several preserved drawings flowers are rendered in 'plan' and 'elevation', showing their geometric symmetry like the working drawings for a building; on others he seemed to probe beyond external appearance to discover the underlying geometric pattern, the axes of growth, that gives them their unique form.<sup>23</sup>

Furness's in-depth conceptual probing, modifications and proportional studies laid the foundation of his unique style.

In 1866 Furness returned to Philadelphia to begin his architectural career. He formed his first partnership with John Fraser (c1825-1903?) and George W. Hewitt (1841-1916) in 1867. By 1871 the firm had become Furness and Hewitt. In 1878 Hewitt formed a new partnership with his brother William and in 1881 Furness joined ranks with Allen Evans.

Prior to joining Furness, Allen Evans was a draftsman for the country place advocate, Samuel Sloan. Although Evans was initially hired by Furness as a draftsman in 1871 he quickly became the businessman of the firm. His prominent social position and family background gave the firm an aura of respectability and attracted corporate commissions.

In the interim Furness's career was launched with the commission for the extant Pennsylvania Academy of Fine Arts in Philadelphia at the corner of Cherry at North Broad. This was Furness's first major display of his highly personalized style. Furness's style integrated the major contemporary architectural influences with his own strong personality.



They often portrayed a playful caricature that mixed and modified sources. His talent of artfully distorting elements and styles produced buildings that were genuinely unforgettable in their creativity and power. While Furness's genius was hailed for several years the shift in societal tastes towards the a desire for 'proper historical references' had a sobering effect on his career.

By the turn of the century, with the expansion of Furness, Evans & Company, it was no longer feasible for Furness to be involved in every design. Furthermore he demonstrated no desire to participate in the new architectural trend. Although classically trained by Hunt, he did not embrace this movement and often commissions were handled totally by another member of the firm. However by virtue of Furness's strong personality and style his influences were often reflected in completed projects. When the firm collaborated with the architectural firm of McKim, Mead and White on the Girard Bank commission (1905-7) Allen Evans was the credited architect. Furthermore the client stipulated that he did not desire Furness's influence.<sup>24</sup>

For several decades after his death in 1912, the work of Frank Furness was considered aberrant and disreputable. There was not room for his mannerism in the discipline of the American Renaissance, no room for his wit in the sobriety of the Modern. Only recently have those very few of his buildings that survive been accorded the respect that they deserve. The University of Pennsylvania Library, renamed the Furness Building, stands as his monument.<sup>25</sup>



## BLACK ROCKS: A FURNESS, EVANS AND COMPANY COMMISSION

As mentioned previously, one prominent client of Frank Furness's firm was Edward Stalker Sayres. He hired Furness, Evans and Company in 1900 to renovate the abandoned farmhouse he purchased from Charles McIlvain. Thus Black Rocks was converted from Hamilton Egberts' gentleman farm to a summer country place for Edward Sayres.

### EDWARD STALKER SAYRES (1850-1923)

Edward Stalker Sayres was the fourth of six children born to Jane Humes and Edward Smith Sayres. (please refer to Appendix E: Sayres Family)<sup>26</sup> His father, Edward Smith Sayres, a merchant, was the Honorary Consul for Brazil and vice-consul for Norway and Sweden, and Denmark and Portugal.<sup>27</sup> Young Edward Stalker Sayres was raised in the atmosphere of the prominent Lower Merion estate, Olinda.<sup>28</sup> He was educated in an old private Quaker school located on Pine Street, above Front. Later Edward was sent to the private classical academy of Eliphalet Roberts. His pre-collegiate schooling was completed at Philadelphia Friends' Central School at 15th and Race. Edward's education then continued into the realm of law. He read with John Hill Martin Esquire, noted lawyer and author of his day.<sup>29</sup>

Edward Stalker Sayres was admitted to the Bar of Philadelphia on December 27, 1873, and was later admitted to the Supreme Court of Pennsylvania and the Court of Claims in



Washington, D.C. After a six year service interim he resigned his First Lieutenant rank in the National Guard of Pennsylvania to practice law. In 1880 he re-established his association with Martin and entered his pedagogue's office at 217 South 3rd Street, Philadelphia. After Martin's death Sayres acquired the practice. The Philadelphia City Directories reveal Edward Sayres remained at this work address for the majority of his career. Edward's practice consisted mainly of Orphan's Court, real estate, conveyancing, mercantile and marine law.

On December 15, 1881, in the St. James' Protestant Episcopal Church, Philadelphia, Edward married Caroline Linda Jennings Lewis. Their marriage lasted less than a year. Caroline died on October 9, 1882, due to complications in the birth of their daughter Linda Lewis Sayres. Eight years later Edward married Caroline's first cousin, Mary Victoria Lewis. They had no children.

Edward and Mary V.L. Sayres were socially prominent. They were first cited in the Social Register: Philadelphia in 1892.<sup>30</sup> Also listed at their 1825 Spruce Street address was Edward's sister Jennie Humes Sayres. Their neighbors included the pre-eminent Pepper and Townsend families. The Sayres were also recorded annually in the Philadelphia Blue Book: "Being a Fashionable Private Address Directory containing 25,000 Prominent householders addresses of the "Elite" within a 25 mile radius".<sup>31</sup> Their first citation



during the 1895-6 season included their summer residence in the 'resort area of Bay Head, New Jersey.' Occasionally this publication contained a separate 'elite listing' on which the Sayres appeared regularly.

As was indicative of his social standing, Edward Sayres was very active in community affairs and juggled many philanthropic roles. They included positions such as Secretary of the board of managers for The Children's Hospital of Pennsylvania and the vice-presidency of the Board of Trustees for the Northern Home for Friendless Children and Associated Institute for Soldiers' and Sailors' Orphans. He founded the Civil Service Reform Association of Pennsylvania and participated in several patriotic organizations, i.e. the "Old Guard" of Company D.

As previously cited, this was the era of establishing ancestral relations. Edward Sayres not only verified his impressive lineage he helped found The Genealogical Society of Pennsylvania. His obituary related he came from Revolutionary stock and his extant genealogy verifies his English ancestors emigrated in 1635.<sup>32</sup> A similar genealogy for Mary exists at the society proudly hailing officers of several wars.<sup>33</sup> Other historical organizations that benefitted from the Sayres's memberships are the Historical Society of Pennsylvania, the Pennsylvania Society of the Sons of the Revolution, Pennsylvania Society of the War of 1812 among others.<sup>34</sup>



Ever the well-rounded 'courtly gentleman,' Edward Sayres graced the Law Association of Philadelphia, Radnor Hunt, Bryn Mawr Polo Club, Rittenhouse Club with his presence. One memorandum published in the Magazine of History and Biography lauds:

The outstanding characteristic of the man was a genius for friendship and sociability, a love of his kind, a broad interest in the amenities which make life worth living. The long list of institutions, companies, societies, associations in which he took an active part is a fine illustration of this charming characteristic.<sup>35</sup>

The compiled list of his memberships and offices are too numerous to list herein. Please refer to Appendix F: Memberships of Edward Stalker Sayres.<sup>36</sup>

Overall, the organization central to Edward Sayres social activities was the Merion Cricket Club. The Merion Cricket Club was founded in 1865. The original constitution reads: "We, the undersigned agree to unite together in a Cricket Club to meet for play next spring at least once a week."<sup>37</sup> There were fifteen accompanying names; one of which was Edward Stalker Sayres, another was Allen Evans.<sup>38</sup> Edward held the position of secretary for the club for over thirty years. In 1874 with the incorporation of the club he was bestowed a charter membership. In 1913 he was elected President, a position he held until his death in 1923. Mrs. E.S. Sayres was also actively involved with the Merion Cricket Club as well as many other of her husband's interests.<sup>39</sup> In 1892 the Merion Cricket Ladies Committee



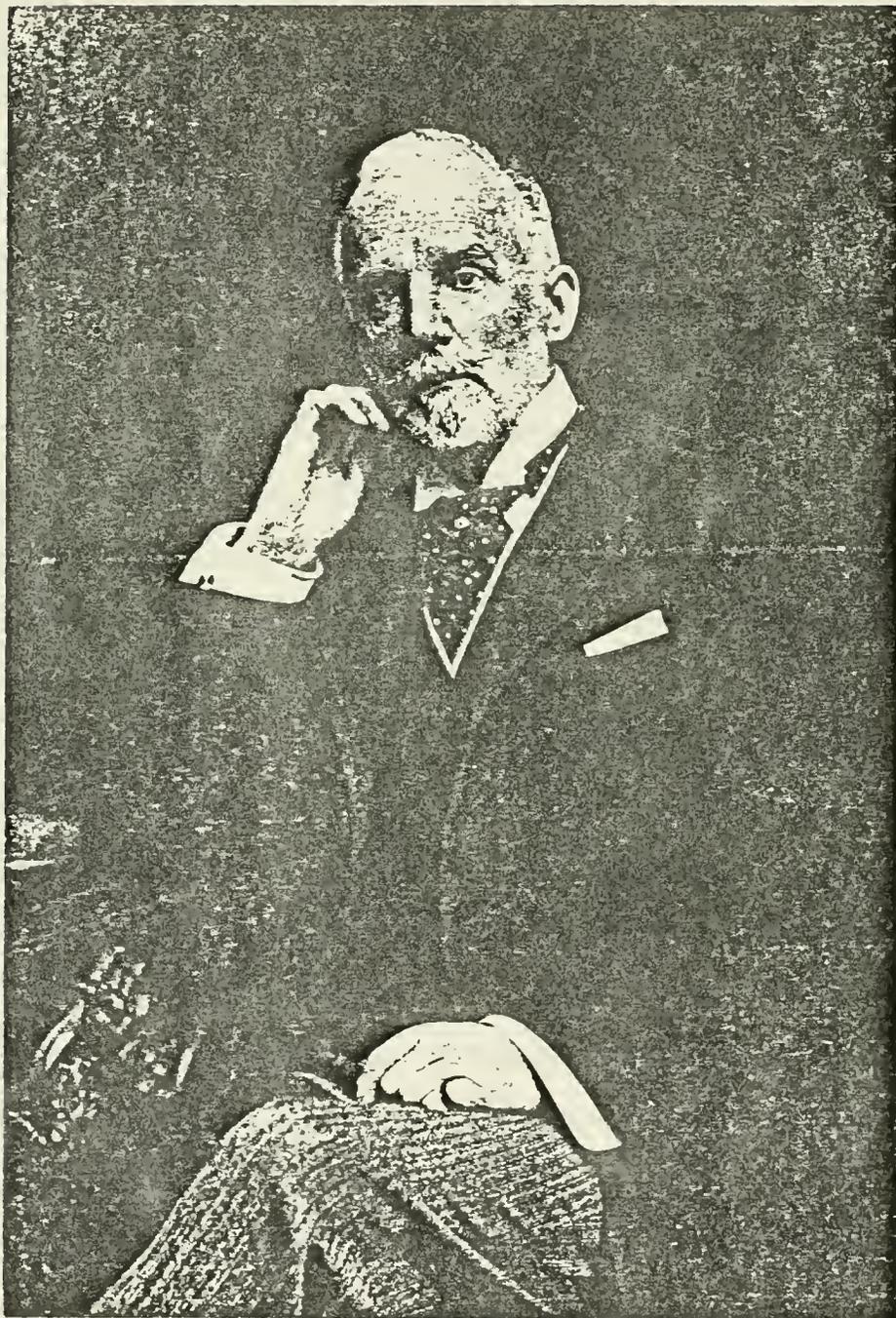


Figure 8: "Edward Stalker Sayres" Portrait in the Society Collection, Manuscript Department, The Historical Society of Pennsylvania, Philadelphia



was formed and Mrs. E.S. Sayres was elected secretary and treasurer. She maintained this honor for well over ten years.

Country seats were often centered around a country club. The Merion Cricket Club's function first and foremost as a social center is evident by reviewing newspaper social columns of the period. The actual cricket game was usually cited in a small article. The primary coverage was directed towards reporting who was in attendance and commentary regarding the various fashion statements. The Sayres were often mentioned in the columns. Thereby attesting to their prominent position and regular attendance. An October 3, 1903 issue of The Philadelphia Inquirer carried a picture of Mrs. Sayres's viewing box. A distinction bestowed to only pre-eminent members. The social column also reported various area functions. Edward and Mary Sayres are often cited in attendance with various cricket club members.<sup>43</sup> In addition to socializing, Edward Sayres provided counsel for many cricket club members. Likewise it appears fellow member Allen Evans, and his firm Furness & Evans, designed many of the members' homes.

For example, viewing the officers of the Club in 1896 one finds: President--Alexander J. Cassatt whose Lower Merion country seat, Cheswold, was designed by Furness & Evans in 1878<sup>41</sup>; First Vice-President--Allen Evans, a partner in the firm Furness & Evans and whose own firm



designed home was located in Lower Merion; Second Vice-President--Clement A. Griscom hired Furness & Evans in 1891 to convert a farmhouse to his country seat, Dolobran; Third Vice-President--William P. Henzey's home, Redleaf, 1881, was another Furness & Evans design; Secretary--Edward S. Sayres; Treasurer--William R. Philler. It should also be noted that in this year Furness & Evans were hired to build a new Cricket Club building to replace the previous fire-damaged structure.<sup>42</sup>

Many of Edward's associates not only resided in the area of the Merion Cricket Club but also owned homes designed by the firm of their comrade, Allen Evans. Contextually, by 1900 the tide had changed from stately homes such as Dolobran and Redleaf to bucolic country places. "Black Rocks" was a defunct gentleman's farm with all the raw material for a picturesque 'country place.' Therefore, when Edward Sayres decided to appropriate a country summer home in the club's vicinity, it was logical that he hired Furness, Evans and Company to rehabilitate the property.



## BLACK ROCKS: GENTLEMAN FARM TO COUNTRY PLACE

Edward S. Sayres purchased Black Rocks in March 1899. Furness, Evans and Company drawings, dated February and November 1900,<sup>43</sup> indicate that Sayres hired the firm within the year to convert the abandoned Egbert farm to a summer country place. Contemporaneously Sayres acquired many parcels of land in the Lower Merion area. These transactions included two small pieces purchased from his eastern neighbor, Charles Sims<sup>44</sup>. Thus rounding out the Black Rocks property to the 4.661 acres recorded by Yerkes in his 1911 survey. (Figure 10) Preistman reports in her 1910 article "the architects carried out many of the owner's suggestions, resulting in a charming Colonial house which only vaguely resembled the old farmhouse."<sup>45</sup> The commission included the renovation of the existing house and the addition of an eastern wing. This was, reportedly, accomplished for the fee of \$8200.<sup>46</sup>

A total of \$12,000 was spent renovating the property, beyond the purchase price. Other improvements included restoring the barn,<sup>47</sup> building new roads, rebuilding old stone walls, implementing a vegetable garden and extensive landscaping in the vicinity of the house and the black rocks. Special care was taken to create a picturesque environment during the utilized summer season. Interwoven with the 'fine' old trees and masses of moss-covered black rocks, were blazes of continually blooming flowers. The



season commenced with yellow lilies and roses in June and climaxed with a brilliant array of chrysanthemums in October.<sup>48</sup> To the north, the grassy meadow sloped gently to meet the bubbling Mill Creek. These picturesque elements, however, were upstaged by the charming country house created by Furness, Evans & Company.

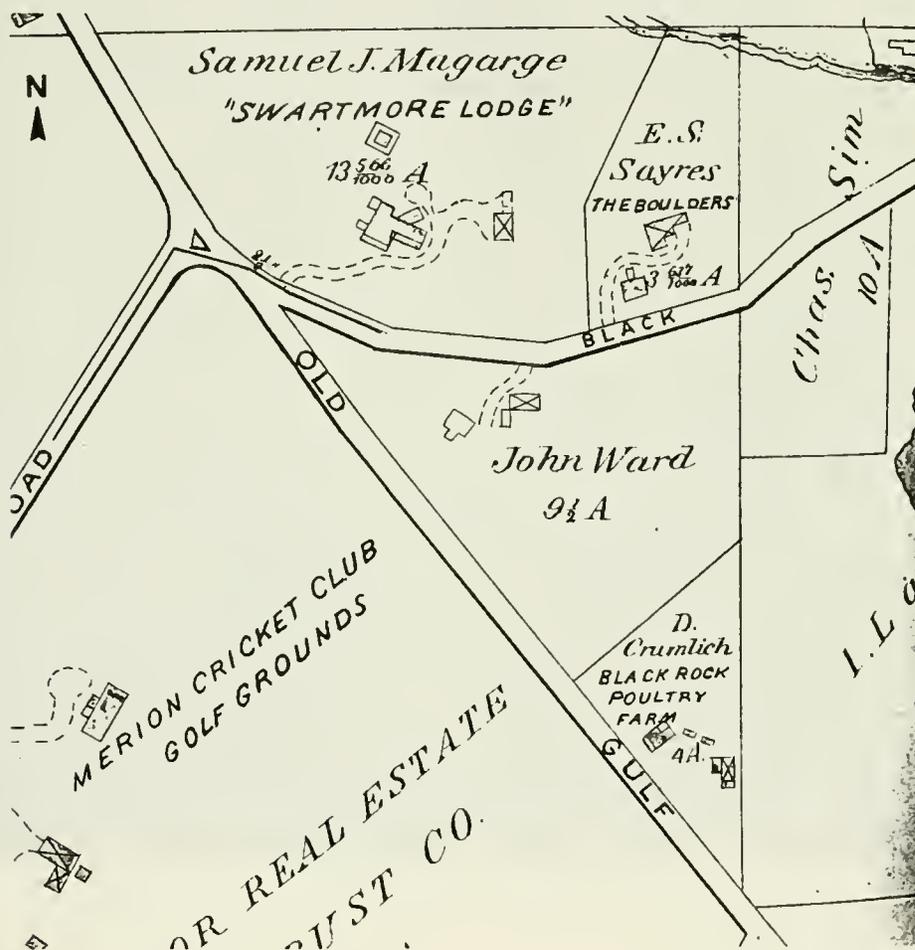


Figure 9: Property as purchased by Edward S. Sayres in 1900. Map from Atlas of Properties along the PA Railroad: Overbrook to Malvern (Philadelphia: E.V. Smith Publisher, 1900).

Note: Proximity to Merion Cricket Club Golf Grounds. Also note "Black Rocks Poultry Farm" along Old Gulph Road.



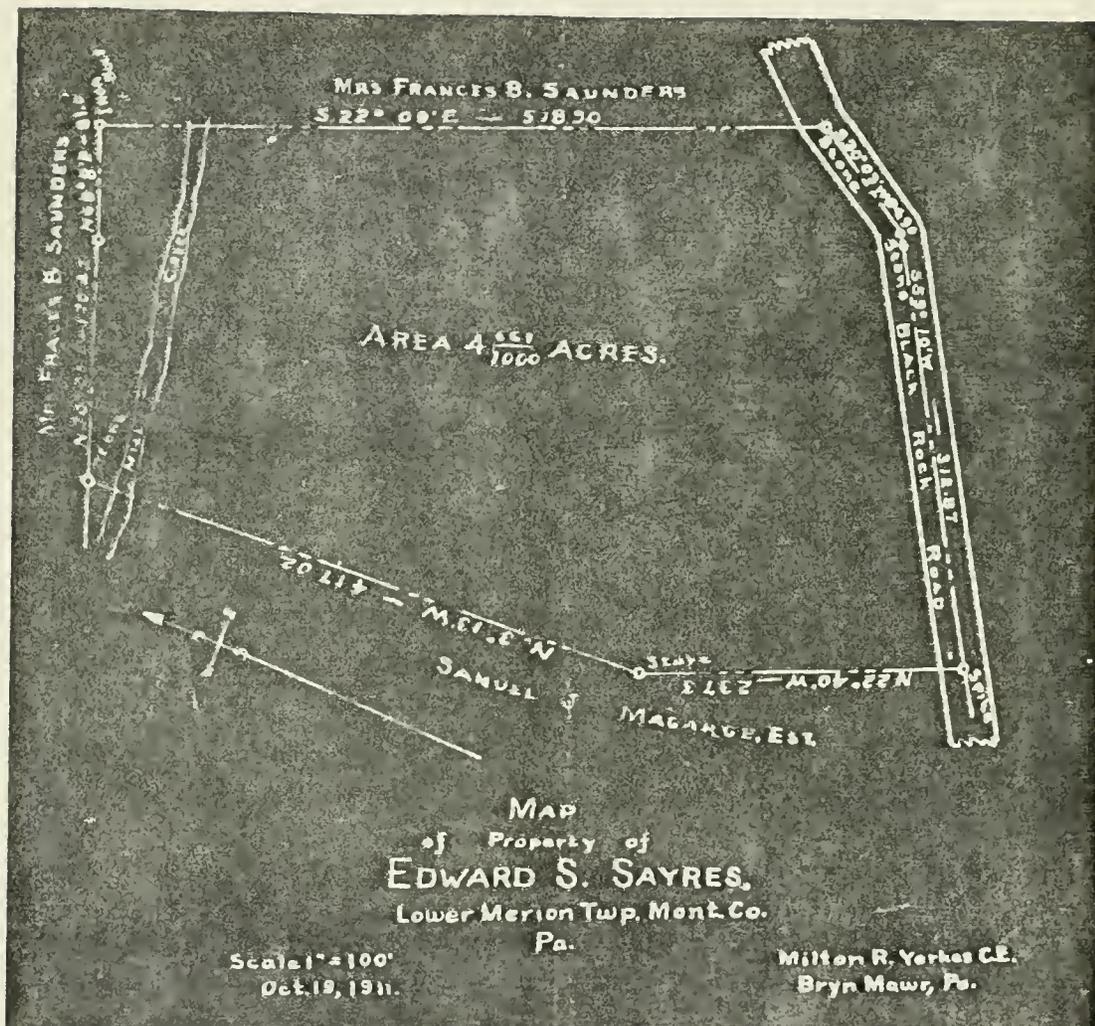


Figure 10: Map of Property of Edward Sayres in 1911 at Montgomery County Planning Department, Norristown, PA.

Note: Also contemporary site boundaries.



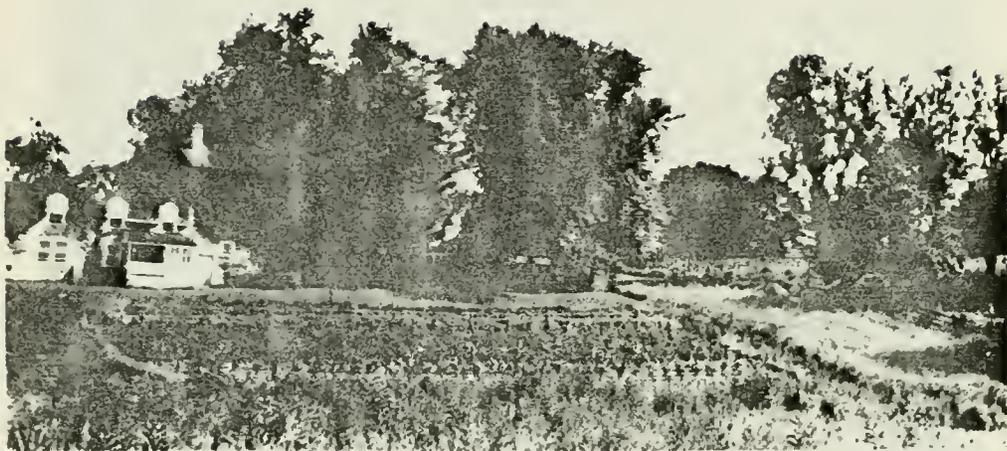


Figure 11: View of Gentleman Garden and Barn c. 1937, Photograph taken along the banks of Mill Creek looking south. Papers of James & Nancy Malling, Bryn Mawr, PA.



Figure 12: View of Sloping Meadow down to Mill Creek, 1990, Photograph taken from black rock formation looking north, Papers of James & Nancy Malling.



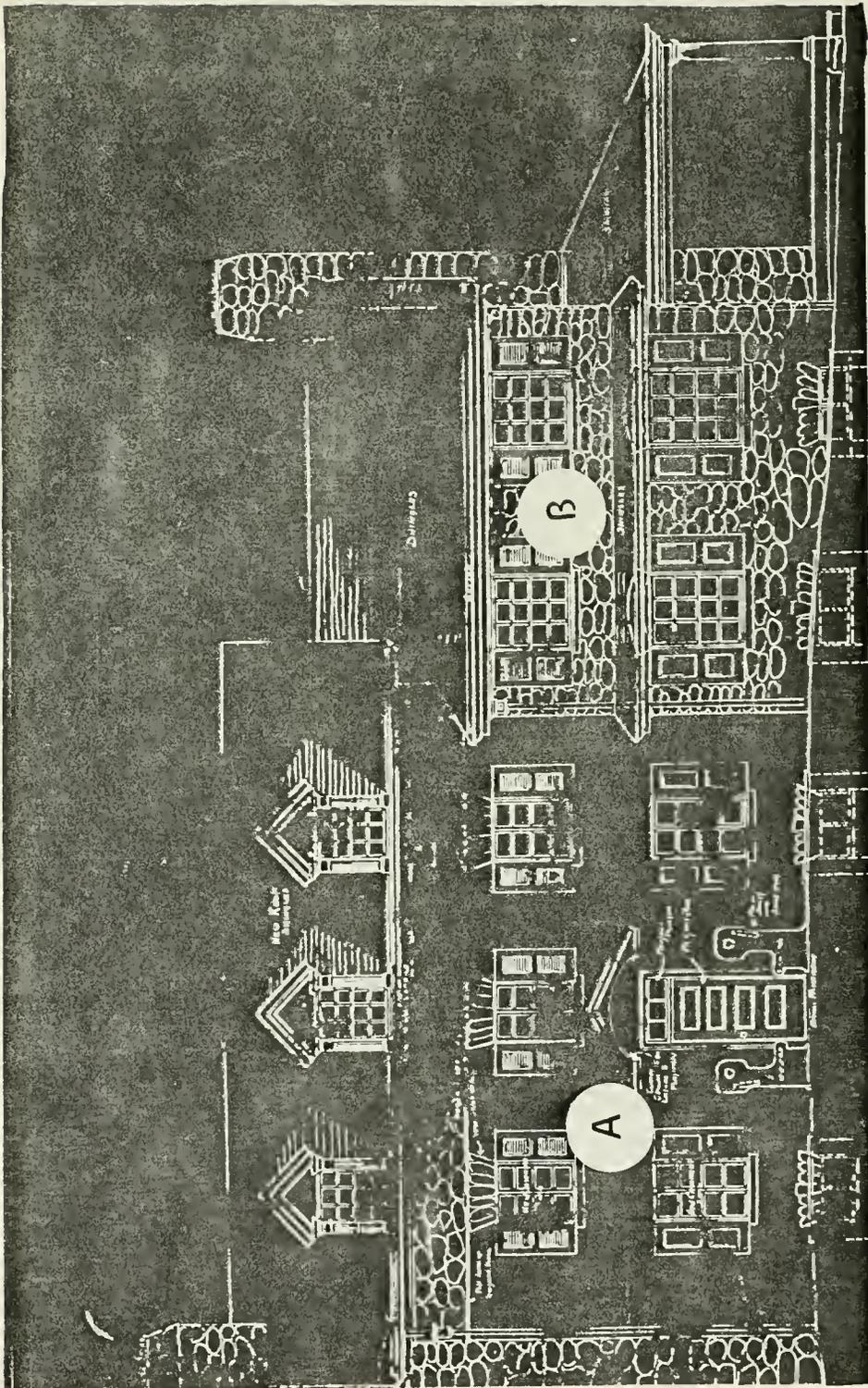


Figure 13: South Elevation, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.  
 Note: A = original section; B = 1900 addition



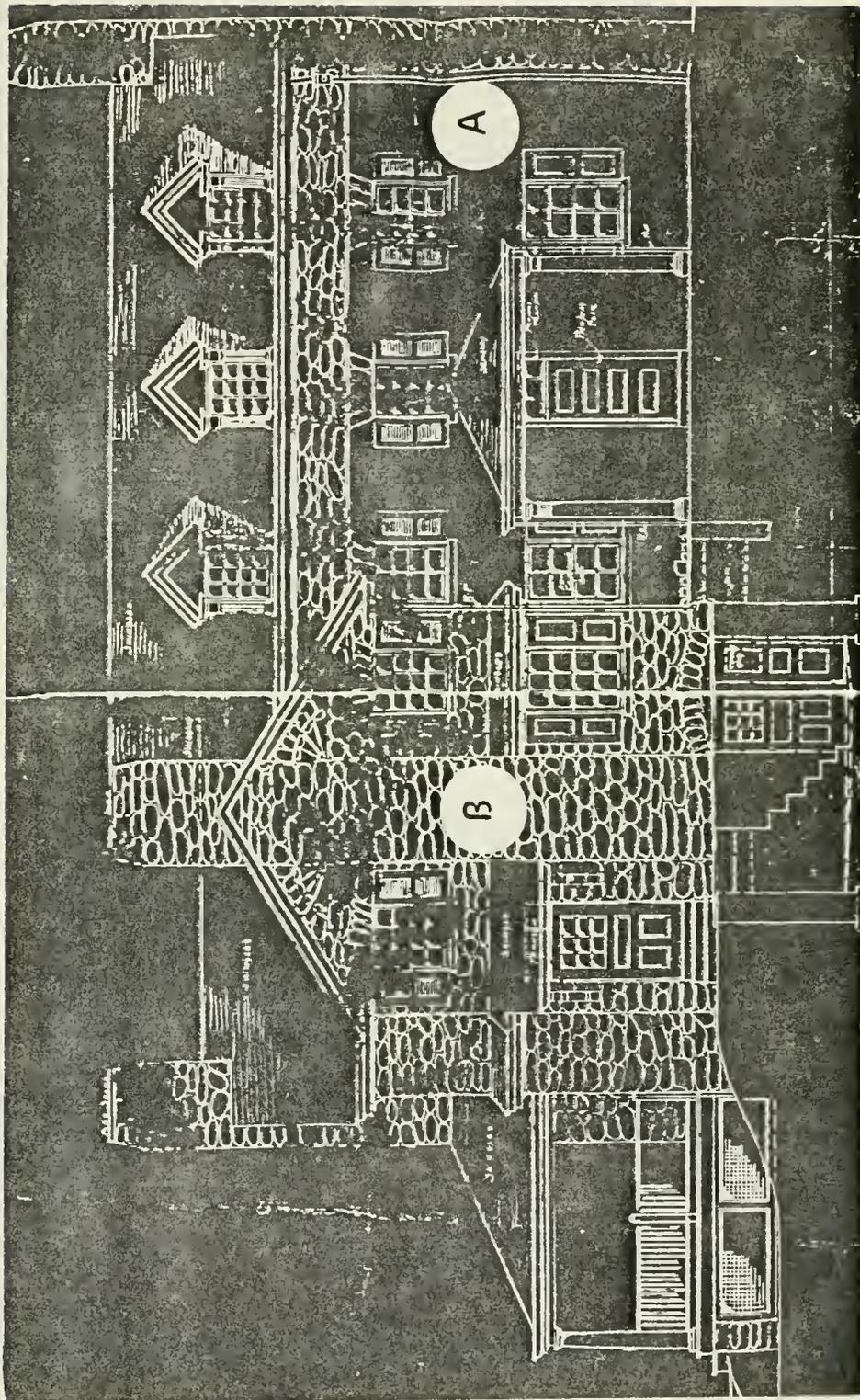


Figure 14: North Elevation, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.  
Note: A = original section; B = 1900 addition



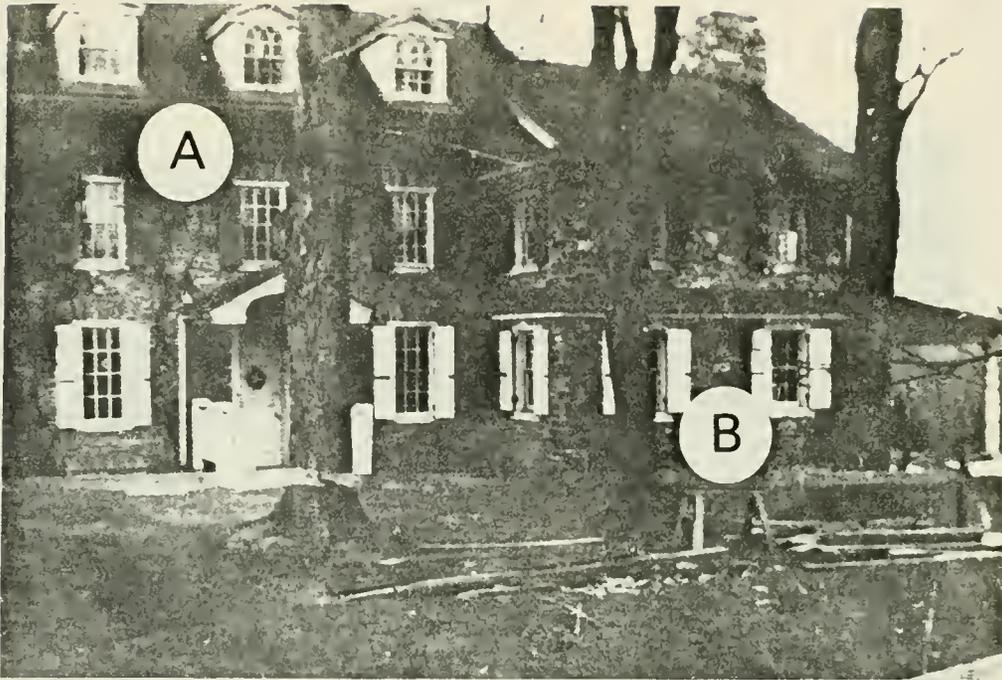


Figure 15: South Elevation, photograph c.1937, Papers of James & Nancy Malling, Bryn Mawr, PA.

Note: A = original section; B = 1900 addition

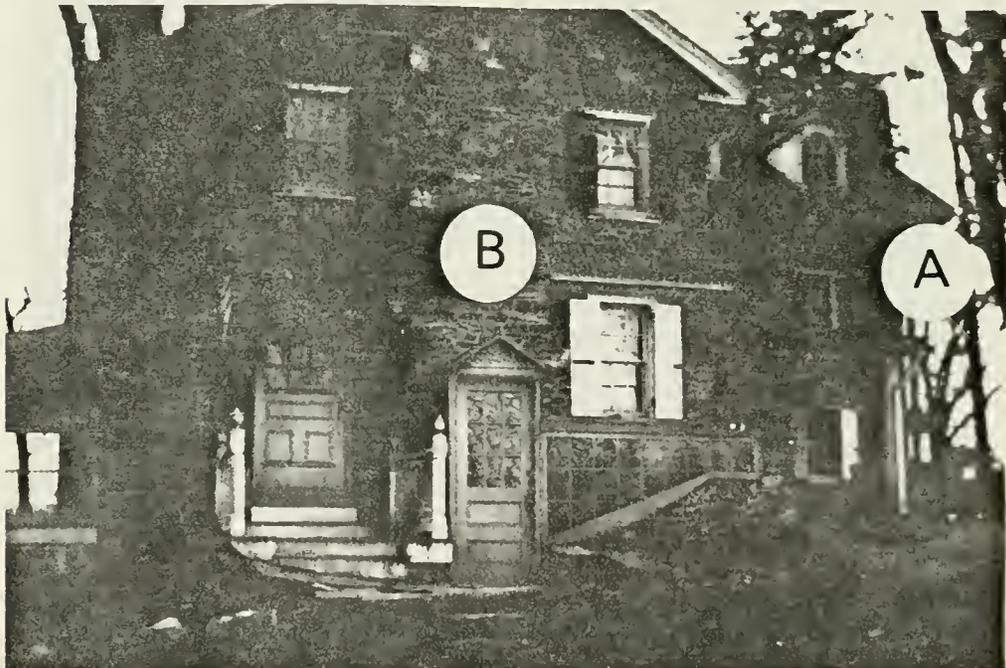


Figure 16: North Elevation, photograph c.1937, Papers of James & Nancy Malling, Bryn Mawr, PA

Note: A = original section; B = 1900 addition



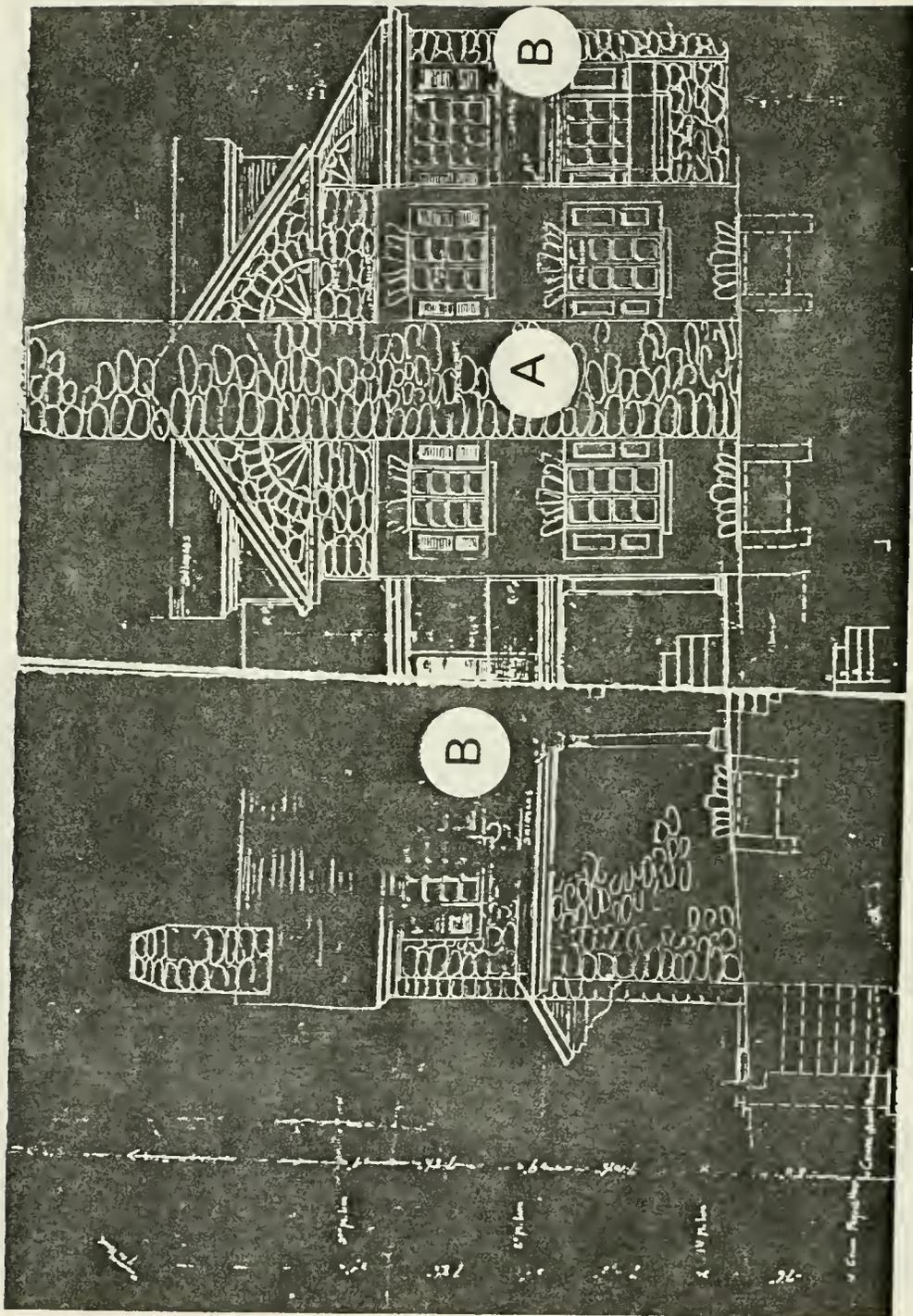


Figure 17: West Elevation, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.  
 Note: A = original section; B = 1900 addition



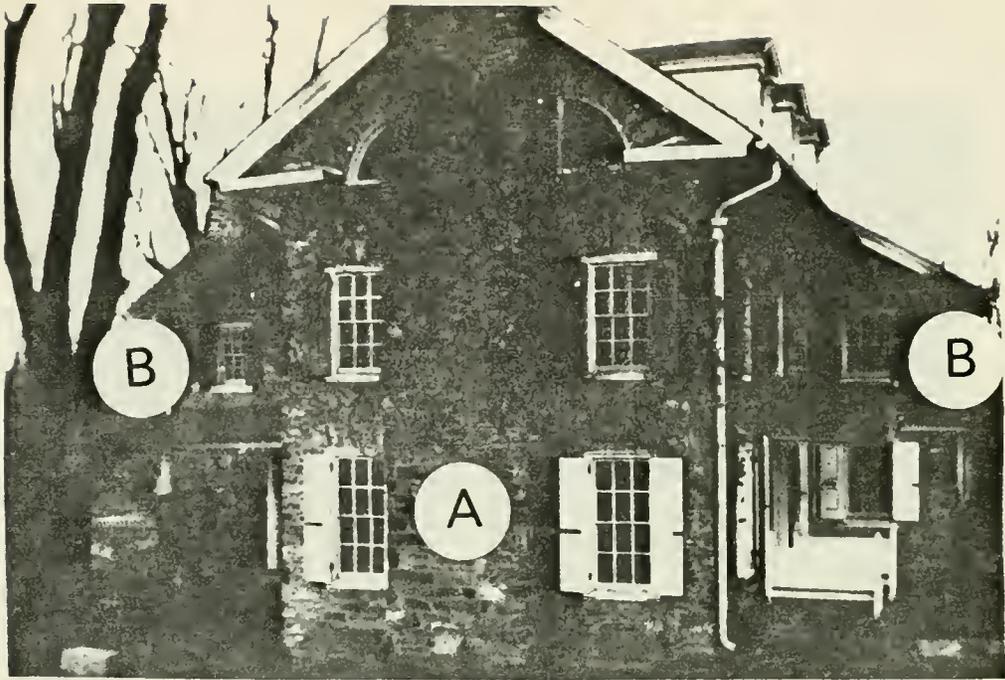


Figure 18: West Elevation, photograph c.1937, Papers of James & Nancy Malling, Bryn Mawr, PA.

Note: A = original section; B = 1900 addition



Figure 19: North portico of western section. photograph c.1937, Papers of James & Nancy Malling, Bryn Mawr, PA.

Note: A = original section; B = 1900 addition



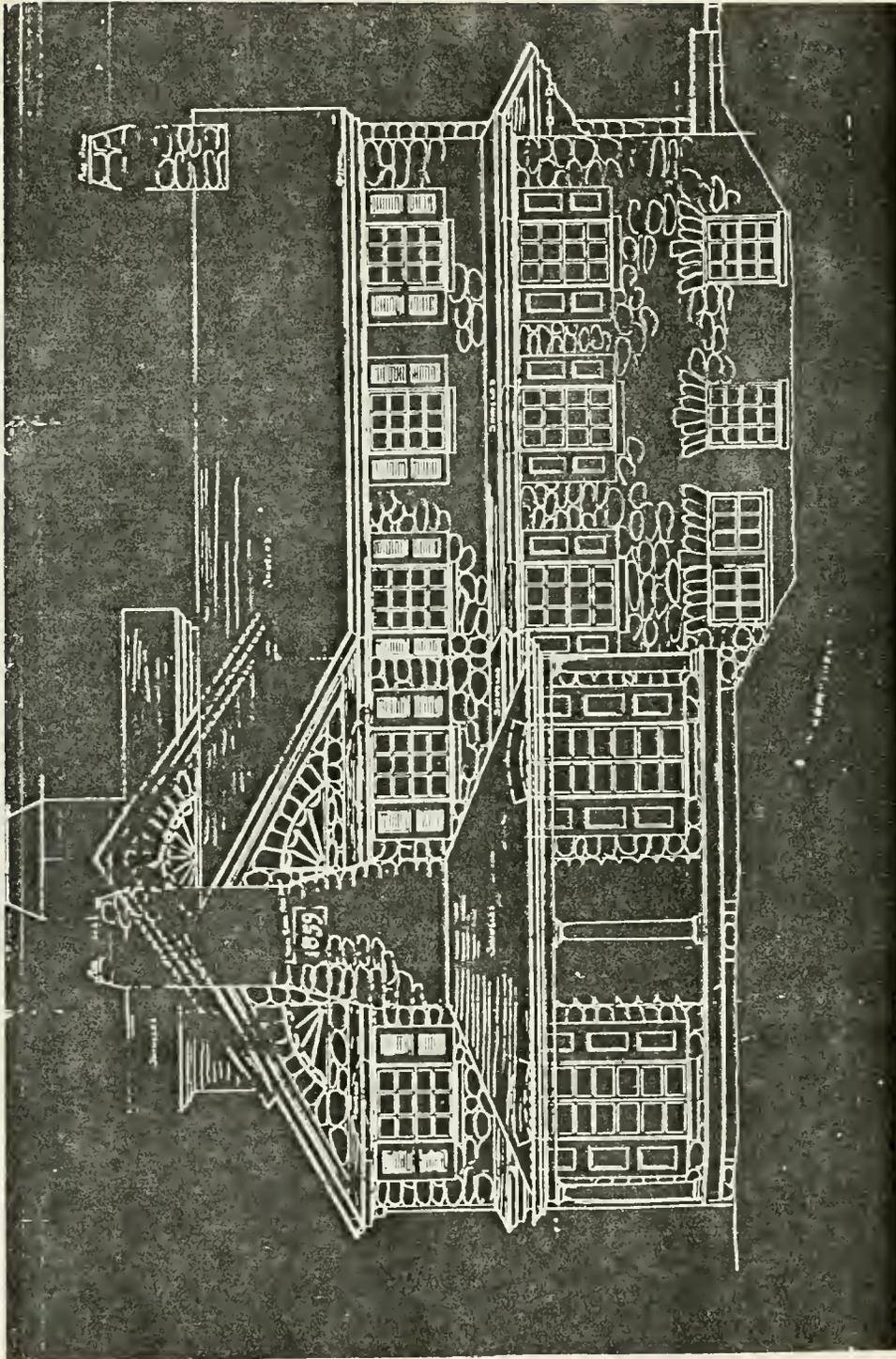


Figure 20: East Elevation, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.



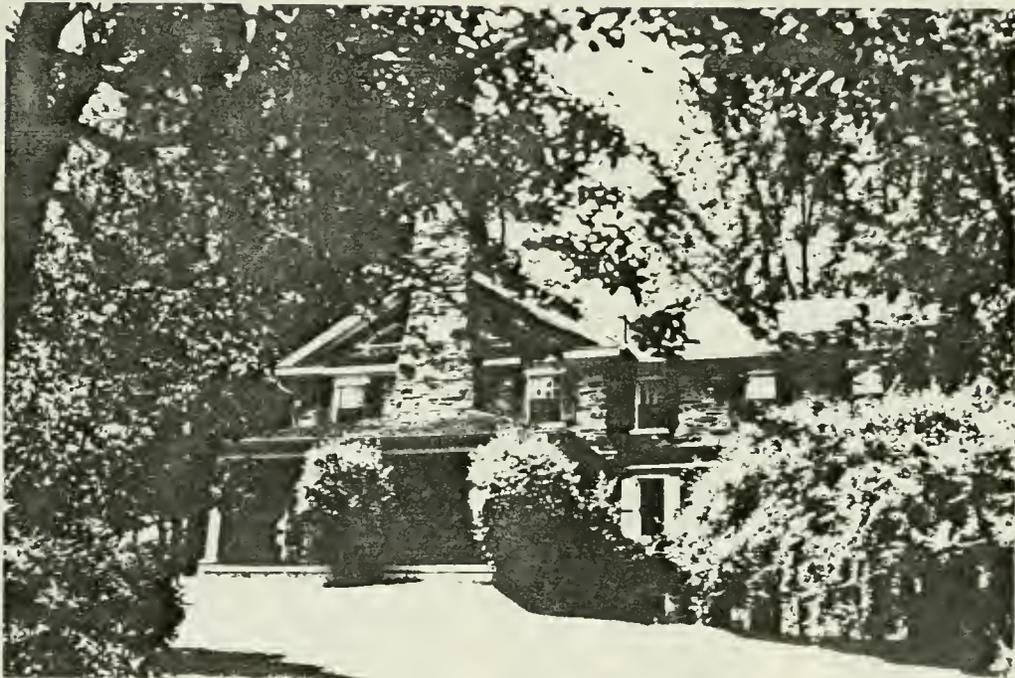


Figure 21: East Elevation, photograph c.1937, Papers of James & Nancy Malling, Bryn Mawr, PA.

Note: Location of 1856/1900 datestone on chimney.



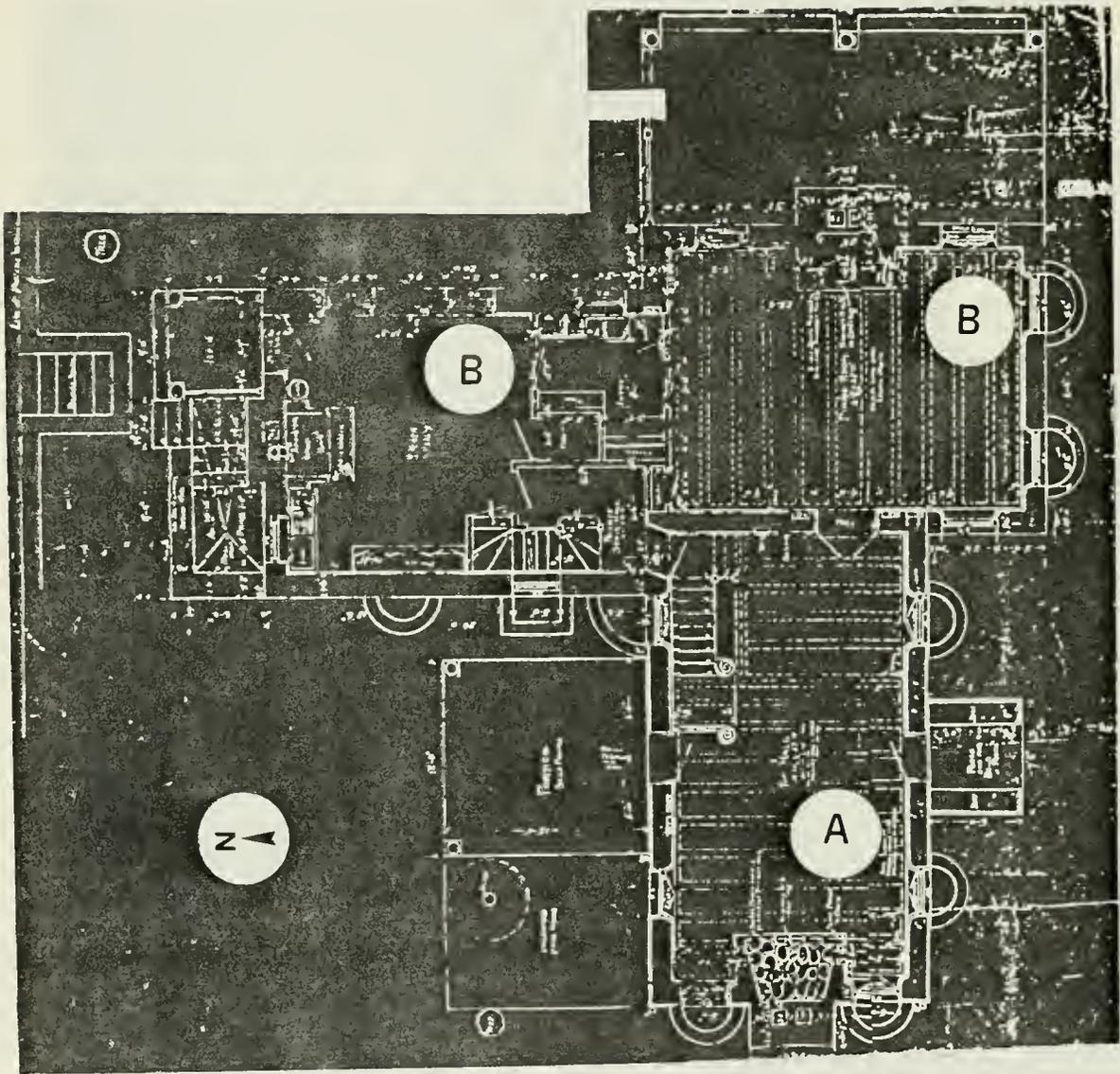


Figure 22: First Floor Plan, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.  
 Note: A (Hall) = original Egbert Section altered by Furness, Evans & Co.  
 B (Dining Room & Kitchen) = new addition



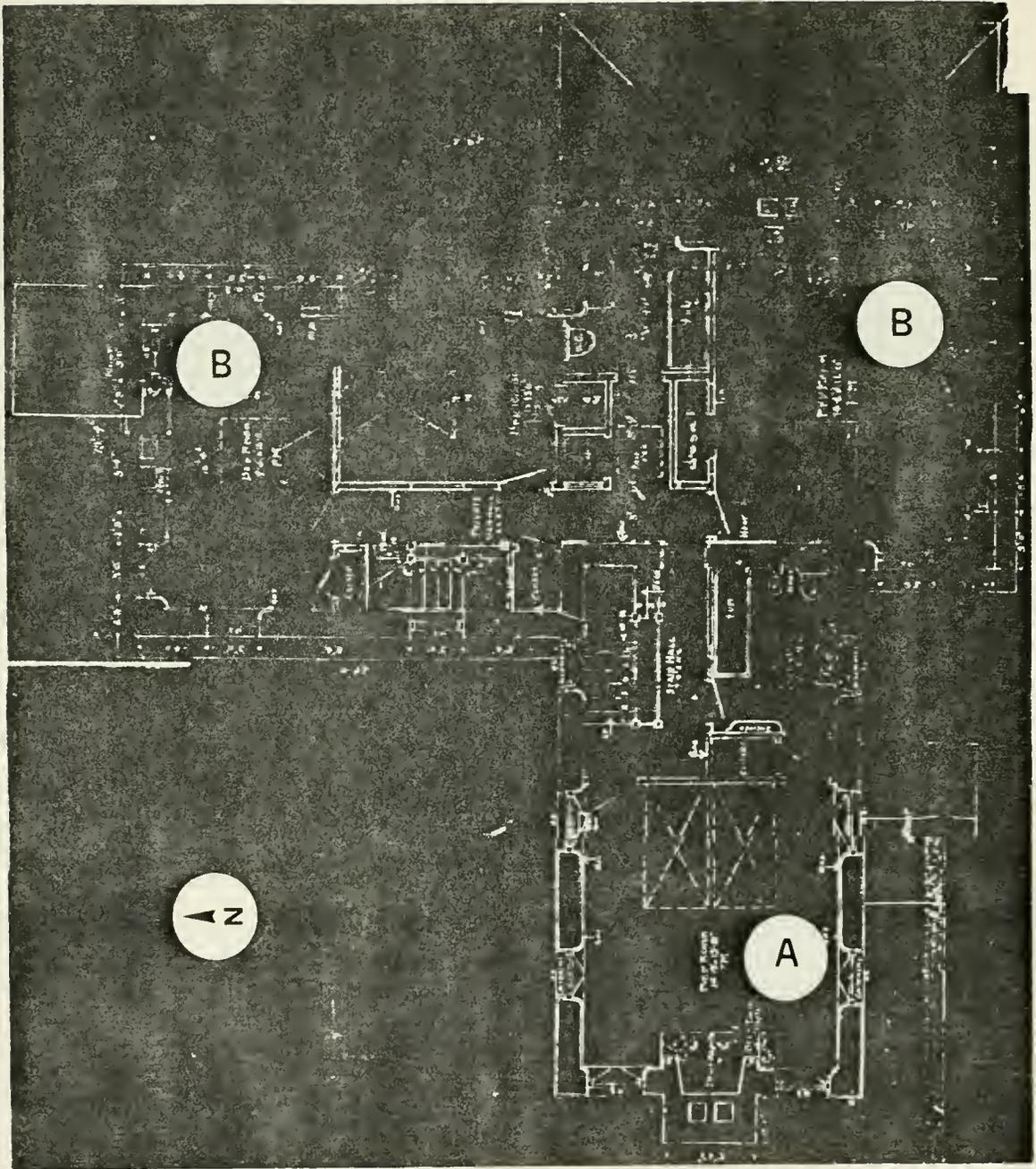


Figure 23: Second Floor Plan, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.  
 Note: A = original section; B = 1900 addition



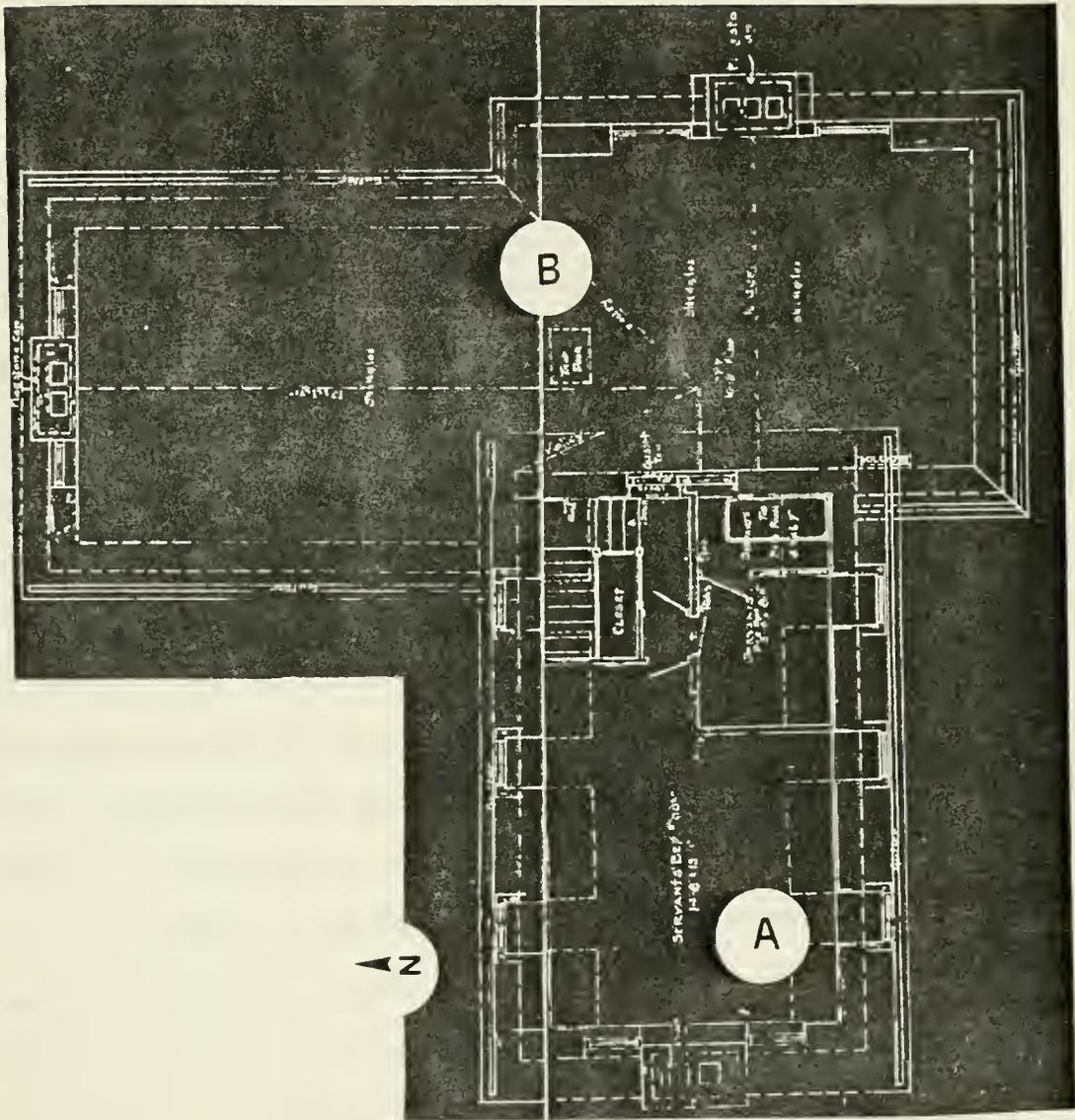


Figure 24: Loft/Third Floor Plan, House for Edward Sayres, Furness, Evans & Co., 1900, Drawings at The Athenaeum of Philadelphia, Philadelphia, PA.

Note: A = original section; B = 1900 addition



## A QUAIN T COLONIAL REVIVAL COUNTRY HOUSE

The Egbert farmhouse bore little resemblance to the completed Sayres summer place. The size of the original house was more than doubled with an eastern addition. On the exterior grey plaster was removed and the randomly laid stone pointed with wide sections of mortar. New stone arches were implemented above the windows.<sup>49</sup> Preistman relates that the side walls (east and west) were torn down. "Those of the front and back were left standing for the sake of the deep-curved window sills".<sup>50</sup> Regardless of the reason for removing only the east and west walls, this statement is supported by mortar analysis. Samples taken on the north and south facades at the first floor level match. (Please refer to Appendix J: Mortar Analysis--Sample Grouping Section Group C) A sample extracted from the west end chimney corresponds with other samples from the Furness, Evans & Company wing. (middle section; Group A)

In addition the basement was reportedly dug deeper<sup>51</sup> and the two story stone walls were heightened to encompass a full attic.<sup>52</sup> Once again the mortar analysis supports this conclusion. Samples taken above the second floor windows do not coordinate with first story samples. The attic level samples correspond with Furness, Evans & Company wing samples. (Group A) Gabled dormers were added to the new shingled roof. The dormers indicated on the drawings, however, differ from the extant dormers. Photographs,



c.1937, before the next major renovation of the property, depict the present dormers. (Figures 15 & 29) It is therefore assumed, Furness, Evans & Company implemented the higher styled dormer after the production of these drawings.

A large stone chimney dominated the reconstructed west facade. The drawings record two new windows were constructed south of the chimney. Mortar analysis verifies the northern windows were original (sample BM-3-H); thus demonstrating that the entire west wall was not demolished although the majority of this wall was rebuilt. (Group B) The new attic level contained eyebrow windows on either side of the chimney. Both the extant attic fireplace and the eyebrow windows are presently enclosed by an interior wall.

Although the new Furness, Evans & Company's design bore little resemblance to the original farmhouse, several original exterior features were integrated with new fabric. The Furness, Evans & Company drawings specify the doors and transoms of both the north and south elevations were the 'present doors' and were not to be replaced. The knocker on the front (south) door reportedly served a dual purpose--"it also rings an electric bell".<sup>53</sup> The pointed hood roof of the south facade entry was replastered but not altered. Colonial Revival high backed entry benches flanked the doorway.<sup>54</sup> A portico supported by tuscan columns was a new appendage of the original north facade entry. The brick paving of the portico floor was inspired by the uncovering



of brick paving in the area immediately adjacent.<sup>56</sup> This original feature encompassed the "most picturesque well, which supplies the drinking water for the family."<sup>56</sup>

(Figure 19)

Excepting the north and south stone walls, the interior renovations appear to have left no traces of the Egbert home. The size of the hall, 14'10"x 27'10", suggests a two room division during the Egbert era. There remains no visual evidence to support this supposition. The Furness plans state "the present floor joists to be reinforced". Visual inspection of the exposed floor and ceiling timbers comprising the first story indicate this decisions may have been revamped during construction. The joists appear to be uniform and contemporary, not only to each other, but also with the joists of the new wing. Therefore, it has been concluded that it was deemed necessary or preferable to replace the farmhouse joists.

The combination of the replacement joists and new "heart-rift yellow pine"<sup>57</sup> floor erased all evidence of the original floor plan of the Egbert homestead. Openings indicating the location of staircases or fireplaces are no longer discernable. It might be assumed that the absence of a structural foundation in the basement indicates the placement of the original fireplace in the same west wall position. Since the basement was, reportedly, deepened, this evidence may have been removed with this alteration.



The new flooring and roof obliterated the original fireplace openings.

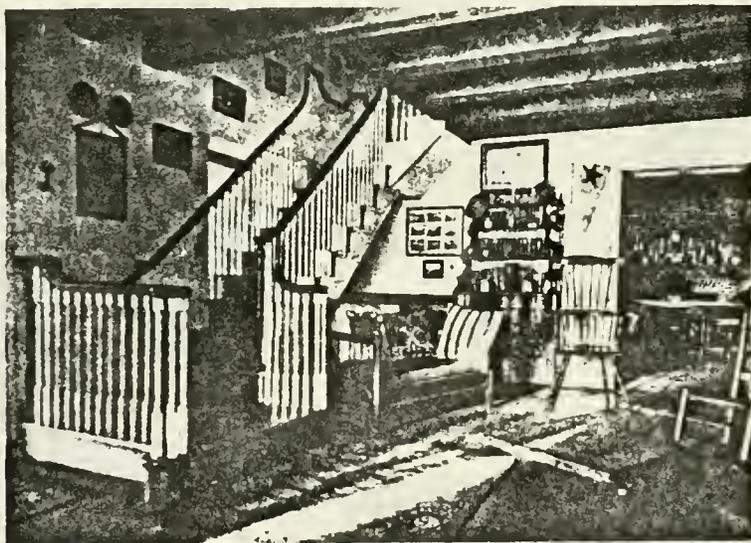
The original farmhouse section was totally renovated by Furness, Evans & Company. The rehabilitated version of this western portion of the new country place contained three distinct functions. The large first story room was designated as the hall. It was the primary entertaining space. The second story consisted of the Sayres' master bedroom and bath. The newly created attic space housed the servant's quarters.<sup>58</sup>

Although the functional and spatial qualities of the hall were altered, the fenestration pattern of the original farmhouse was maintained. New fenestration construction consisted of replacing one casement sash.<sup>59</sup> The aura of the hall, despite maintaining the fenestration openings, was vastly altered with the implementation of two visually striking elements. Centered on the west wall was a large stone fireplace. (Figure 26) Visually balancing this massive sculptural edifice was a dog-legged staircase in the northeastern corner. (Figure 25) It was the main staircase in the house; a stair for the servants was constructed in the new wing. The open string stair, with stair end brackets, was designed with various Colonial Revival elements. The hand rail reflected in the north wall was ramped. The corresponding balustrades stepped up past the northeastern window; a direct reference to high styled



houses such as Mount Pleasant. Both railings commence from newel posts on the platform landing. The platform landing evidently posed a design challenge. As related by Preistman an unstipulated party desired the staircase "have a return instead of ending abruptly behind the rear door, although such an arrangement at first was thought impracticable, as the door opened against the bottom of the staircase."<sup>60</sup>

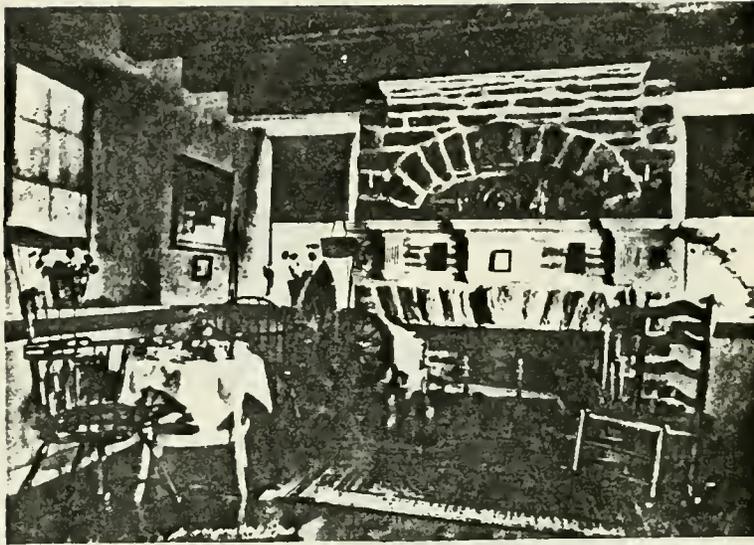
Completing the hall were the historical details of mahogany chair rails and white trim.<sup>61</sup> The "Colonial style" furniture depicted in figure was reportedly also mahogany; as were the other pieces throughout the house. Portions of the hardwood floors were covered by colorful throw rugs.<sup>62</sup> A door at the east wall opened into the new Furness wing.



THE MAIN PART OF THE HOUSE IS ONLY ONE ROOM WIDE, SO THE HALL HAS WINDOWS ON THREE SIDES

Figure 25: Hall Staircase as designed by Furness, Evans & Co., as illustrated in Artistic Homes, p.70.  
Note: View of Dining Room brick fireplace through double doors,





THE HALL FIREPLACE. ON THE HEARTH MAY BE SEEN RELICS OF  
BYGONE DAYS

Figure 26: Hall Fireplace as designed by Furness, Evans & Co., as illustrated, 1910, in Artistic Homes, p.70.



Figure 27: Curved Window surrounds of Hall, photograph 1990.



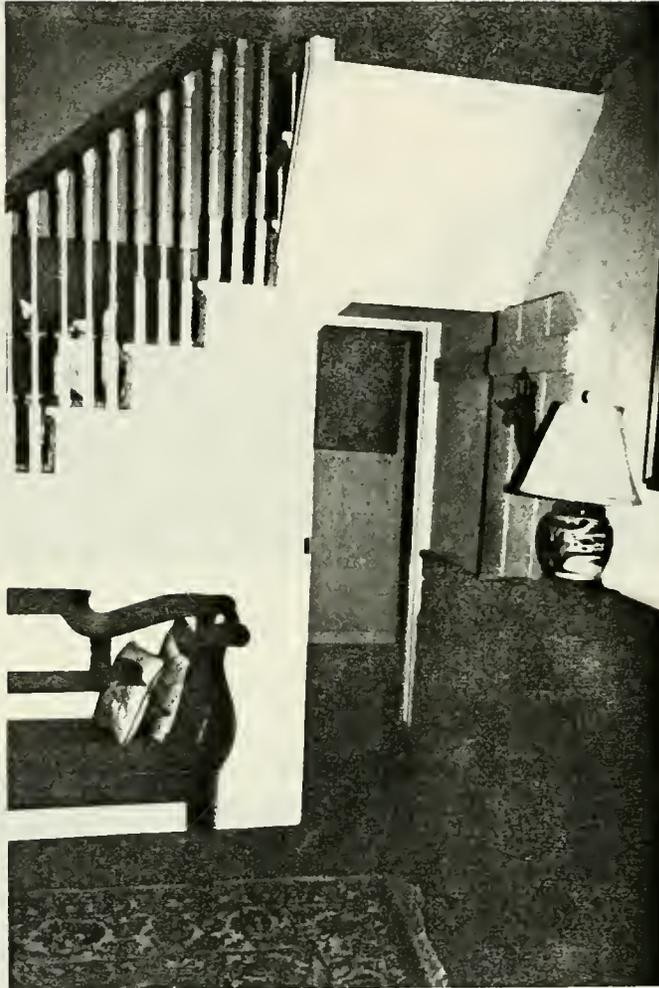


Figure 28: Servant's Passageway between Hall and Kitchen, photograph 1990.



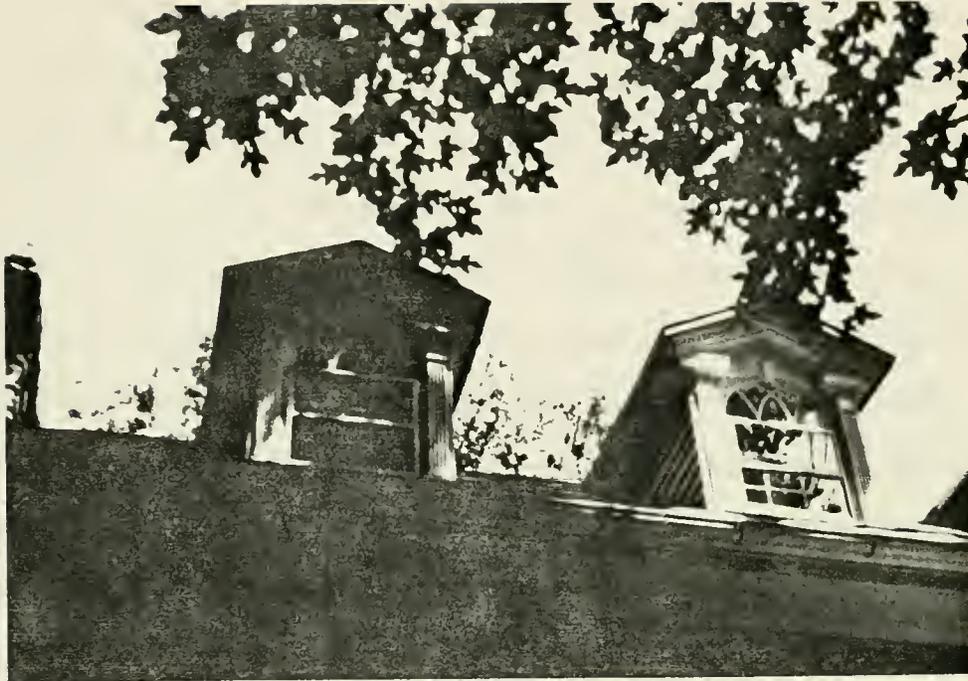


Figure 29: Extant Dormers, photograph 1990

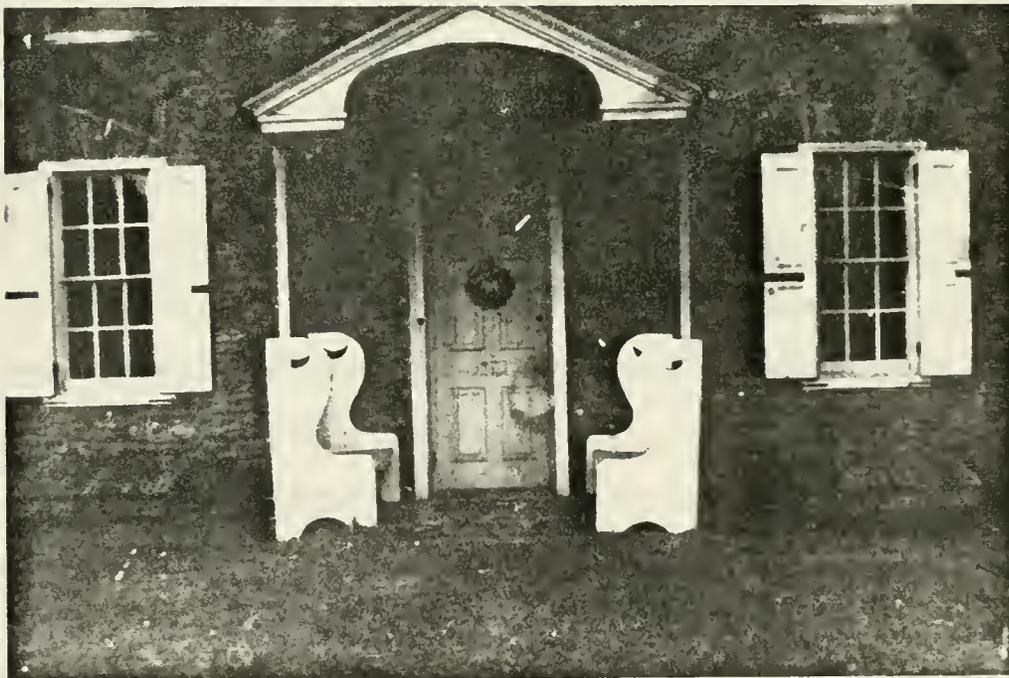


Figure 30: Main entry--South Facade, photograph c.1937,  
Papers of James & Nancy Malling, Bryn Mawr, PA.



The new wing transformed the regularity of the rectangular farmhouse to an irregular plan perceived as a squat T. (Figure 22) The first story of the eastern addition consisted primarily of a south facing dining room and a kitchen to the north. Under the kitchen was a full height basement utilized for cooking.<sup>63</sup> The cooking fireplace is presently enclosed although reportedly intact. The sloping site allowed the summer kitchen to be primarily above ground level; thus allowing the heat to escape rather than become trapped under the house. The second story comprised three guest bedrooms, a bathroom and a linen-room. The attic, unlike the full-height space over the original section, was a half story storage area.

The new stone two and a half story wing repeated many features of the converted farmhouse. Panelled and louvered shutters framed the 6/6 windows. Additional Colonial Revival elements that were repeated~~ed~~ included large eaves with cornice end returns and massive stone chimneys flanked by eyebrow windows. Some new colonial features were the pent eaves, a gabled end cornice and a hooded roof over the north facade kitchen door.

Interior features were a combination of modern and historically referring elements. The 13'3"x 16' kitchen was "fitted up with all the latest improvements."<sup>64</sup> Dominating the central position of the north wall was the range and brick hearth. To the west of the range was the sink. Above



the sink a window offered a view of the barn and meadow. The southern closeted portion of the kitchen space functioned as a pantry. The overall perception of the kitchen differed dramatically from the main living spaces. There were no heavy joists; no large hearth and fireplace; no historical colonial references such as chair rails. The simplicity of the space reflected the differing function of the servants domain.

From the kitchen's northwest corner ascended the previously mentioned servants' staircase. This winder staircase was much simpler than its hall counterpart. By clever manipulation a passageway parallel to this staircase and passing underneath the main staircase allowed the servants to answer the bell of the front hall door without crossing the dining hall domain. The unobtrusive passage penetrated the southeast corner of the hall. The formal servant entrance to the dining room was located at the southeast corner of the kitchen via double swing doors.

The kitchen double swing doors entered the 16'x 22' dining room at the center of the north wall. Heavy dark joists similar to those in the hall ran east-west. The dominant visual feature of the dining room was the fireplace. Situated at the center of the east wall it was of "old red brick" construction. (Figure 25) The dark red brick column rose against the rough grey plastered wall. Once again the chair rails were mahogany and the trim was



painted white. Reportedly, this room was sparsely furnished with appropriate mahogany pieces.<sup>45</sup>

The culminating feature of this country place was accessed through two french doors flanking the dining room fireplace. This was a roof protected exterior room. (Figure 21) The eastern porch/room was considered functionally essential to every country place. It symbolized the function of these homes--the enjoyment of Nature. The 25'4"x 12' porch was capped by a hipped roof supported by tuscan columns. The tri-panelled shutters of the french doors, the datestone bearing chimney, the eyebrow windows of the attic, the gable end cornice and the porch columns imparted a 'high style' aura to this facade. Functionally capturing the summer breeze, set atop the sloped meadow rising from Mill Creek, the porch overlooked the carefully landscaped property. Preistman relates:

a beautiful porch overlooks the crags and rocks, which give the place its name. Here, charming views can be obtained of the beautiful little garden, surrounded by an old stone wall. Its grassy paths lead past the old sundial through a white lattice gateway to the woods and down to Mill Creek, a stony and picturesque stream that runs through the lower part of the meadow.<sup>46</sup>



## A QUAIN T COLONIAL REVIVAL COUNTRY HOUSE?

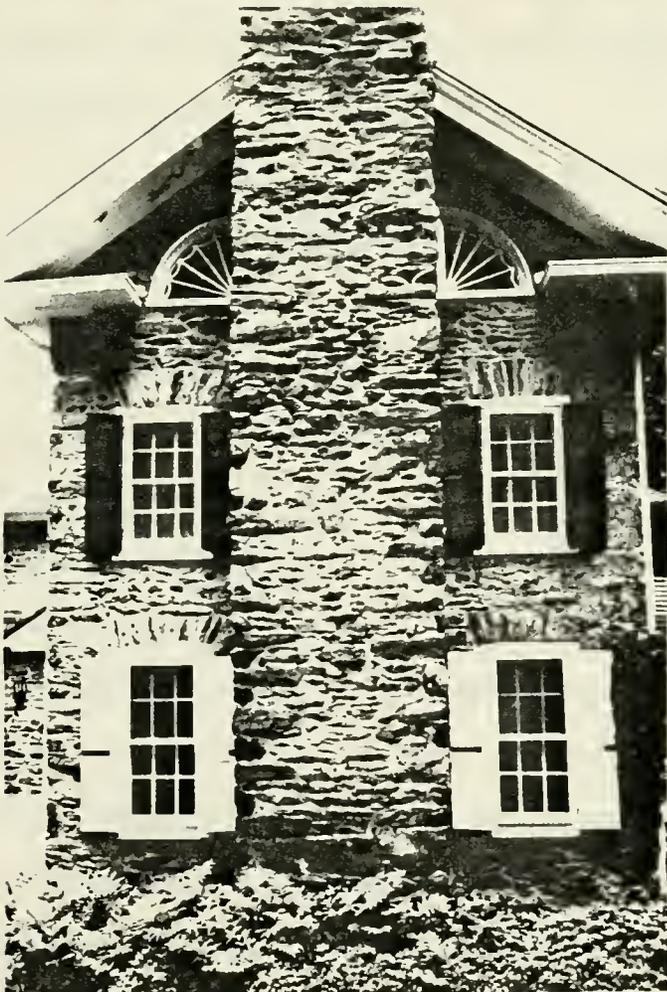
Overall Black Rocks exuded the aura of a quaint Colonial Revival country house. A closer examination of the building's individual elements and their proportions reveal the design was, in actuality, a parody of the Colonial Style. The individual elements were historically correct but their juxtaposing proportions were artfully distorted. Whether these elements are a direct result of Furness's association with this commission or whether these elements are a result of Furness's influence on the architects of his firm has not been determined. However, they are indicative of his personal style.

The exterior offered many illustrations of Furness's satirical wit. The gabled end eaves were considerably deeper and cornice end returns larger than ascribed by Colonial precedent. On the north facade the barge board completed the gable despite the exterior chimney; thus emphasizing the excessive depth of the eave. This depth juxtaposed with the miniaturized pent eave below was an example of Furness's artful distortion of style. The west facade portrayed another caricaturing of elements. The proportionally correct tiny mullions and delicate eyebrow windows emphasized the over-scaled stone chimney, eaves and end returns. Even the stonework itself, while peripherally referring to the early Welsh tract farmhouses, was actually an exaggerated mimicry of early stone construction.





Figure 31: North Facade  
Photograph 1990



Note: stonework  
 deep eaves  
 large end returns  
 completed barge  
 board  
 miniaturized pent  
 eave  
 shed roof with  
 exaggerated  
 brackets  
 proportions of the  
 eyebrow windows  
 flanking massive  
 chimney

Figure 32: West Facade,  
Photograph 1990



The interior also afforded numerous examples of Furness's witticism. The hall itself was a complex intertwining of puns. A typical colonial home of three bays with a center entrance usually was built with a center hall plan. The northern facade of the western section of Black Rocks portrays this three bay colonial home. The three high styled dormers and the revival doorway between the high backed seats further implies this colonial archetype. However upon entrance the plan encountered was not the one suggested by the exterior. While one does indeed enter a 'hall' instead of being flanked by two rooms the entrance is caught between the two visually dominating elements of the staircase and the fireplace.

In addition the delicacy of the white window trim, dormers and entrance seats contradicts the "heavy and dark" space of the hall. The large, dark, double joists have the effect of perceptively 'squashing' the space while simultaneously referring to historical building traditions. The heavy, dark north-south joists are actually pine timbers stained to the deep brown. The grey walls added to the overall effect.

George Thomas, a noted Furness scholar, stated Furness often employed the element of surprise. Setting the stage for a particular element or space and then delivering the unexpected was common in his designs. A small unassuming entrance opening into the middle of a large space was often



the foundation of this twist.<sup>67</sup>

As was often the case with Furness the same element frequently simultaneously supported several caricatures. While the timbers of the hall contributed to the unexpected aura they also contained contradictions within themselves. The double joists were divided by a bead running down the middle. An obvious caricature of the beading historically carved at the corners. In addition, the joist themselves were larger than structurally necessary. Their dark and heavy appearance accentuated their function as structural supports. Over the south door two timbers disrupted the transom trim. These timbers literally appear to be supported by the glass panes; thus raising the question of the structural capacity and necessity of the large timbers.

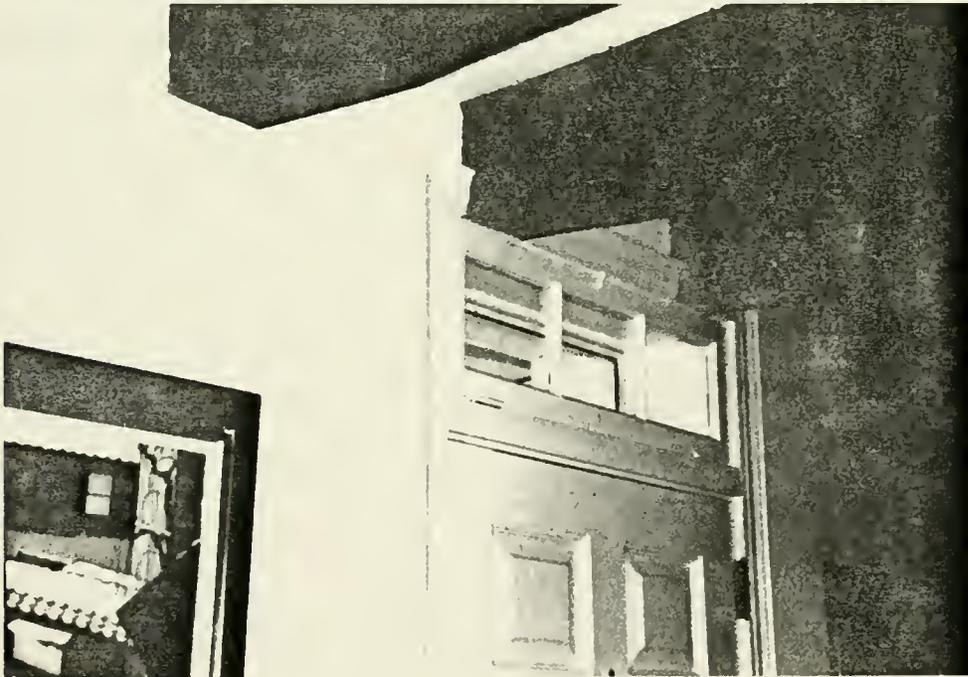


Figure 33: Hall Joists over south door.  
Photograph 1990



The west end fireplace also contained a play on its structural element. The distinctive feature of the stone arch was the target. A flat arch above the hearth supported the mantle and was all that was structurally necessary. However an exaggerated round arch was constructed above the mantle.

Examples of Frank Furness's satirical genius abounded throughout Black Rocks. The various levels of his caricatures whether spatial, structural, or historical were so skillfully interwoven with the overall design the house portrayed a harmonious whole. It was only upon closer examination and discernment that a viewer would realize this picturesque country place was actually a tongue-in-cheek Colonial Revival creation.



Thus Edward S. Sayres purchased an abandoned farmhouse in 1899. By the summer of 1901 he and his family were enjoying their picturesque 'Colonial Revival' summer house courtesy of Furness, Evans & Company. The Sayres, insuring protection for their beloved "Black Rocks," purchased three separate fire insurance policies between the years 1901 and 1923. Safeguarding the property were the Insurance Company of North America (Policy No.29169), Philadelphia Contributionship (Policy No.24840) and Mutual Assurance Company (Policy No.10069) with policies for \$4,000, \$6,000 and \$8,000 respectively. The surveys for the cited policies are reportedly no longer extant.<sup>68</sup>

Newspaper and other accounts attest to frequent entertaining by the socially prominent Sayres at their arresting country place. The sense of place created by Edward Sayres and Furness, Evans & Company was obviously quite memorable. This is reflected in a memorial to Edward written by Hampton L. Carson in The History of the Historical Society of Pennsylvania. In spite of Edward's numerous and impressive philanthropic efforts and social activities Carson concluded his brief memorial with a recollection of a visit to Black Rocks:

He lived in a summer in a quaint house on a hill with an outcropping of rock between its apple trees, and leading visitors to the stone parapet of an ancient well, would draw up water in an oaken iron-bound bucket, but, before passing glasses, would raise on to the memory of 'His Excellency George Washington'<sup>69</sup>



## END NOTES: CHAPTER FOUR

<sup>1</sup> Trachtenberg, p.4.

<sup>2</sup> Mary Cable, Top Drawer: American High Society from the Gilded Age to the Roaring Twenties, (New York: Athenaeum, 1984). The three millionaires were William Vanderbilt, William Astor and A.T. Stewart.

<sup>3</sup> General knowledge of Lower Merion estates is based on township survey conducted by the author and Pam Fox in June-October 1988. More detailed information concerning the estates mentioned throughout this work can be obtained from various Pennsylvania Resource Survey forms completed by the aforesaid consultants and various National Register Nomination Forms on file at the Lower Merion Planning Commission. Also, several of the mentioned estates are discussed by Stephanie Cocke in her 1987 Master of Science thesis for The University of Pennsylvania entitled "The Gilded Age Estates of Lower Merion Township, PA".

<sup>4</sup> Woodmont, the Alan Wood estate, is one example of an elaborately decorated interior. It contains wood panelling, railings, and other items hand-carved in Europe especially for this commission. In addition a stone cutter was brought from Italy to oversee and handle all the stonework.

Maybrook, the Henry C. Gibson estate, is one example of the extensive landscaping schemes that dominated these estates. Maybrook was landscaped in the English garden manner with open vistas, controlled views, large trees and flowering gardens. Gibson ordered two of every species tree adaptable to the Lower Merion climate. He created an artificial waterfall, used springs not only for water via waterwheel for the house, but also for fountains and small pools.

<sup>5</sup> Lewis Mumford, "The Architecture of Escape", The New Republic, 43, (August 12, 1925), pp.321-2.

<sup>6</sup> Mark Hewitt, The Architect and the American Country House, to be published, (Conn: Yale University, 1990), draft page 201.

<sup>7</sup> Alf Evers, et. al., Resorts of the Catskills, (New York: St. Martin's Press, 1977).

<sup>8</sup> Sources discussing this movement include: Peter J. Schmitt, Back to Nature: The Arcadian Myth in Urban America, 1900-30, (New York: Oxford University Press, 1969); Kenneth T. Jackson, Crabgrass Frontier: The Suburbanization of the United States.



<sup>7</sup> A selective list of relevant publications is: A.J. Downing, Cottage Residences, (NY: 1842); A.J. Downing, The Architecture of Country Houses, (NY: 1850); Samuel Sloan, The Model Architect, 2 vols., (Philadelphia: 1852); A.J. Davis, Rural Residences, (NY: 1837).

<sup>10</sup> In addition, tireless advocates, such as Frank Doubleday and Neltje de Graat (Neltje Blanchan, pen name), proselytized the conversion to a pastoral lifestyle. Page's publication Country Life in America was their main vehicle. Other serial publications dedicated to this movement included: House Beautiful, Ladies Home Journal, Country Life, and American House and Garden to name a few. They often published examples of country houses, such as the previously cited McIlvain projects.

<sup>11</sup> Norman Newton, Design on the Land, (Cambridge: Harvard University, 1971).

<sup>12</sup> Another type of country retreat burgeoning during this period is discussed by Nancy Strathern in her 1989 Master of Science Thesis for The University of Pennsylvania entitled "Lakeside Communities in Morris County, New Jersey".

<sup>13</sup> Hewitt, draft page 219.

<sup>14</sup> Robert Shackleton, The Book of Philadelphia, (Philadelphia: Pennsylvania Publishing co., 1918), p.109.

<sup>15</sup> Thorstein Veblen, Theory of the Leisure Class, 1899, (reprint New York: Viking, 1967).

<sup>16</sup> E. Digby Baltzell, The Protestant Establishment, (New York: Random House, 1964), pp.114-5. Another related source by the same author is Philadelphia Gentlemen: the making of a national upper class, (New York: 1958) (reprinted under the title An American Business Aristocracy).

<sup>17</sup> Adolf K. Placzek, ed., MacMillan Encyclopedia of Architects, vol. 2, (New York: The Free Press, 1982), p.127.

<sup>18</sup> James F. O'Gorman, The Architecture of Frank Furness, (Philadelphia Museum of Art: University of Pennsylvania Press, 1973), p.15. As quoted from Louis Sullivan's Autobiography.

<sup>19</sup> O'Gorman, p.15.

<sup>20</sup> O'Gorman, p.24.

<sup>21</sup> O'Gorman, P.25.



<sup>22</sup> O'Gorman, p.35.

<sup>23</sup> O'Gorman, p.35.

<sup>24</sup> James Massey, "Frank Furness: The Declining Years, 1890-1912", Charette 46, February 1966, p.13.

<sup>25</sup> Placzek, p.130.

<sup>26</sup> As indicated in the Appendix E: Sayres Family, two children, Emma Stalker and Caroline Augusta, died in childhood. The remaining four children appeared to remain close throughout their lifetimes. City directories indicate they often shared residences.

<sup>27</sup> Edward Smith Sayres (1797-1877) began his international career with his own vessel 'the Clio' which sailed to Brazil. After building a capable reputation, he was appointed to various international governmental positions beginning in the 1840's. In 1872, for long and faithful service to Brazil he was appointed, by the Princess Regent of the Empire, Honorary-Consul, with the rank of Captain in the Brazilian Navy. Although he officially retired by the 1870's, scrapbooks, now in the possession of the Historical Society of Pennsylvania (donated by the Estate of Edward Stalker Sayres), are filled with newspaper clippings of international trade quotes and estimations. He obviously kept abreast of the international trade scene even after his retirement. At his decease he was the Dean of the Consular Corps at Philadelphia.

<sup>28</sup> Edward Smith Sayres purchased the Olinda property in 1859. It should be noted that he was one of the first to establish a prominent country estate in the Lower Merion area.

<sup>29</sup> John Hill Martin's works include the widely recognized "Bench and Bar of Philadelphia", "History of Chester County" among others. His papers were donated to the Historical Society of Pennsylvania by the estate of Edward S. Sayres.

<sup>30</sup> The Social Register of Philadelphia, (New York City: Social Register Association).

<sup>31</sup> Philadelphia Blue Book, (Philadelphia: C.E. Howe Company).

The Sayres appear continuously from 1892-1933.

Other directories in which the Sayres appear include:

Pennsylvania Railroad Main Line Directory: Overbrook to Paoli, (Philadelphia: D.C. Humphrey's Company); Moore's Suburban Directory, (Philadelphia: George W.H. Moore, publ.); Polks Blue Book, (Philadelphia: R.C. Polk & Co.).



<sup>32</sup> Samuel P. May, copied by Mary V.L. Sayres, "Sayres Family Genealogy", Genealogy Collection, Historical Society of Pennsylvania, Philadelphia, pp.47-49/2.  
Sayres Family Bible Records, Genealogy Collection, Historical Society of Pennsylvania, Philadelphia, p.245-9.

<sup>33</sup> Hulme and Carvill family genealogies, Genealogy Collection, Historical Society of Pennsylvania, Philadelphia.

<sup>34</sup> Upon Edward's death, Mary donated in the name of his estate many scrap-book source-material arranged primarily by Edward or herself. These included: Chronicles of the Merion Cricket Club, ten manuscript volumes which include many newspaper clippings, minutes of meetings and match invitations; Fifty-two volumes of the American Cricketer; Personal Recollections of Company D, First Regiment of Infantry National Guard of Pennsylvania, six volumes; with sword and insignia of Lieutenant Sayres, 1879; Volume pertaining to the Dancing Assemblies of Philadelphia, 1879-1929 containing invitations, letters, press notices and other items of social life in Philadelphia; Record of World War Activities, newspaper clippings relating to Belgium, 1914-1929; Collection of Henry Carvill Lewis of Science and Art Club of Germantown, two volumes; as well as the before mentioned scrapbooks of his father. She also donated to the Genealogical Society various items pertaining to the Hulme, Carvill and Sayres families.

<sup>35</sup> "Edward Stalker Sayres", Pennsylvania Magazine of History and Biography, vol.48, (Philadelphia: Historical Society of Pennsylvania, 1925), p.285.

<sup>36</sup> In addition to the above cited source, this list was compiled primarily from the following sources: "A Memoir of Edward Stalker Sayres, Esq., A Vice-President of the Genealogical Society of Pennsylvania", The Genealogical Society of Pennsylvania, vol.IX, no.2, (Philadelphia: Historical Society of Pennsylvania, March 1925), p.107-9; "Sayres Family", notes, Genealogical collection, Historical Society of Pennsylvania, Philadelphia; "Edward Stalker Sayres Dies at Seashore", Bulletin, April 27, 1923; John Jordan ed., Colonial Families of Pennsylvania, vol.II, (New York: Lewis Publishing Co., 1911); "Edward Stalker Sayres, a biographical sketch", Society Collection, Historical Society of Pennsylvania, Philadelphia.

<sup>37</sup> Edward S. Sayres, comp., "Merion Cricket Club Papers 1865-1878", vol.1, Manuscript Collection, Historical Society of Pennsylvania, Philadelphia. A ten volume scrapbook collection donated by Mary V.L. Sayres in Edward's memory.



<sup>38</sup> It is interesting to note, upon Edward Sayres death in 1923 Allen Evans penned a tribute to Sayres published in The American Cricketer, June 1925, p.99.

<sup>39</sup> "In Memory" of Mrs Stalker Sayres, Publication of the Genealogical Society, vol.IX, p.107. Reports Mrs. Sayres was also very socially active. In addition to serving on the Women's Committees of various societies, such as the Genealogical and Historical, she carried on many of her husbands philanthropic efforts after his death. She established memorial funds in her husbands name; such as the one at The Children's Hospital of Philadelphia. Mary V. L. Sayres was also a noted philanthropist in her own right. As a member of the Belgian Relief Committee of Emergency Aid, she was awarded the medal of Queen Elizabeth by the King for her efforts. She also founded many organizations such as the Haverford Flower, Fruit and Ice Mission with branches along the Main Line. She was eulogized as "...one of those quiet, forceful and rare people who(se)...life was a beautiful adventure in human service."

<sup>40</sup> The Philadelphia Inquirer, The Bulletin, Bryn Mawr News, and The Main Line Chronicle, social sections 1880-1923. In addition, the ten volume Merion Cricket Club Papers contains invitations to numerous dinners, parties, and other functions, from various club members.

<sup>41</sup> Alterations to Cheswold were done for Mrs. A.J. Cassatt by Furness, Evans and Company in 1910. In addition, Cassatt owned a stock farm in Chester County known as "Berwyn". In 1898, the barn burned and he hired Furness and Evans to rebuild it. Ann H. Cook, et. al., "On the Trail of Frank Furness", Pennsylvania Heritage, vol.VII, no.1, (Harrisburg: Pennsylvania History and Museum Commission, Winter 1981), p.25.

<sup>42</sup> Sayres, Merion Cricket Club Papers, vol.4, p.79.

<sup>43</sup> "Alterations and Additions to House at Haverford, Pa for Edward S. Sayres, Esq., Walter Durham Collection House 176 Athenaeum of Philadelphia. Hereinafter cited as Furness plans.

<sup>44</sup> DB 466, Montgomery County Recorder of Deeds, Norristown, PA, p.82-4, 0.944 acres.  
DB 454, pp.391-21, 8/100 acres.

<sup>45</sup> Priestman, p.67.

<sup>46</sup> Priestman, p.71.



<sup>47</sup> The barn and tenant house is not included in this discussion. Substantial documentation regarding the date of construction, function, building campaign evolution, and other concerns, for these supportive structures was not found. As vital portions of the site and its history, the author hopes that further investigation of these structures will occur in the future.

<sup>48</sup> Priestman, p.71.

<sup>49</sup> Furness plans, south elevation.

<sup>50</sup> Priestman, p.66.

<sup>51</sup> Priestman, p.66.

<sup>52</sup> Furness plans, south, west and north elevations of western section. Note attic level stones depicted indicating new construction.

<sup>53</sup> Priestman, p.68.

<sup>54</sup> Furness plans, south elevation

<sup>55</sup> Furness plans, north elevation

<sup>56</sup> Priestman, p.67.

<sup>57</sup> Priestman, p.69.

<sup>58</sup> Priestman, p.70.

<sup>59</sup> Furness plans, north elevation.

<sup>60</sup> Priestman, p.69.

<sup>61</sup> Paint analysis of the trim, shutters, and other elements, was initially considered to determine color scheme of various periods and attempt to verify building campaigns by paint layer numbers. However, the present owner related several wooden elements were sanded and repainted at various times. Therefore, the validity or necessity of performing this analysis was not deemed sufficient and therefore abandoned.

<sup>62</sup> Priestman, p.69.

<sup>63</sup> Figure 16 c.1937 portrays a glass enclosure to the basement. This was a post-Furness addition and has since been removed.

<sup>64</sup> Priestman, p.70.



65 Priestman, p.70.

66 Priestman, p.68.

67 George Thomas, Interviews with author, July 1989.

68 RW 50056, Montgomery County Register of Wills, Norristown, PA. Accompanying inventory of Mary V.L. Sayres estate cites the cancellation of these policies in 1934. Carol Smith, archivist for The Philadelphia Contributionship and Mutual Assurance as well as Lesile Simon, archivist for Insurance Company of North America (Cigna) both related they do not have any documentation concerning these policies. Both archivists stated that often when policies were cancelled, between the 1920's-1940's, it was common practice to return the surveys to the owner.

69 Hampton L. Carson, A History of the Historical Society of Pennsylvania, vol. 2, (Philadelphia: Historical Society of Pennsylvania, 1940), p.323.



## CHAPTER FIVE: THE COMMUTING SUBURB

### Section A

The country living movement initiated by Downing continued to evolve throughout the twentieth century. Picturesque summer places were converted to permanent residences as transportational and technological advances figuratively reduced the size of the world. In addition, the rising prosperity of the middle class attributed to the spread of suburbia. The country was not only accessible, but also economically feasible; thus finally realizing Downing's dream of resettling the working man to open spaces.

### TRANSPORTATION: THE SOLIDIFYING LINK

Throughout history settlement patterns have directly reflected the accessibility provided by transportational methods. While the railroad provided public access to non-urban and other urban environments, a new invention eventually affected every member of society. The automobile was invented by Charles Edgar Duryea in 1892 and the genius of Henry Ford brought it to the masses by 1897. In its initial stages of parturition the expense of the automobile was affordable only to the upper class. In 1898, only one automobile was available for every 18,000 citizens.<sup>1</sup>

Up to the 1920's the majority of the travelling public



relied on the railroad. Furthermore, the quality and frequency of major roadways was not conducive to frequent travel excursions. For the quickest mode of transportation, even automobile owners often relied on the railroad. The inspiration of the assembly line suddenly provided automobiles to the general public. By the time the Model T ceased production in 1927 automobile ownership was an essential component to middle-class living.<sup>2</sup>

This new privilege stimulated many societal changes. The concept of private modes traversing public spaces was small scale with the horse and buggy. The relatively great distances covered by the automobile, stimulated exhaustive efforts to obtain new and improved public spaces for transportational access. Eventually the government accepted responsibility; commencing the ever growing network of roadways. In 1923, Lower Merion Township implemented its own program for highway construction; thus solidifying its link to the city.

The affordability of the automobile and the increasing highway growth stimulated the Rediscover America movement of the 1920's and 1930's. Pleasure auto tours of the pristine countryside were widely advertised and a highly desired commodity of the period. Experiencing the sublimity of nature and escaping the urban atmosphere became a commercialized entity. These tours climaxed in the 1930's when the majority of the working class still did not own



their own car.<sup>3</sup> The mill ruins and grand estates against the backdrop of the wooded Mill Creek attributed to the popularity of the Lower Merion tours. To further insure picturesque environs, the township formed a Shade Tree Commission in 1931 to regulate and maintain the trees along the public highways.<sup>4</sup> By the 1950's, the public tours had passed their heyday. Owning a car was commonplace and family Sunday drives had replaced the rediscover tours.

The individual ownership of cars directly contributed to the rise of contemporary suburbia. As the population density increased, agricultural communities became residential suburbs. Suburbs had become a third local classification denoting a middle ground between urban and rural. As a result, the American culture quickly evolved to a drive-in culture. The automobile, previously considered a luxury, evolved into a necessity. As the dependability and comfort of the auto increased, the security and convenience it provided became an inherent commodity. Relatively quickly it became commonplace to commute via car, to work; to the store; to the movies, to anywhere and everywhere.

The ability to live outside the urban setting and commute into the business district became a firm reality. Land, previously considered literally inaccessible in the pre-automobile era, was suddenly available. Coupled with the rising prosperity of the middle class, new construction increased drastically and suburbia spread. The statistics



of Lower Merion reflect this trend. The population in 1884 had been 266 people per square mile.<sup>5</sup> Correspondingly the population density of this suburb in 1980 had escalated to 2,556 people per square mile. Traditional styles, such as Colonial Revival, continued to dominated the Lower Merion housing boom up to World War II.<sup>6</sup>

The spread of the suburbs initiated and later promoted the contemporary concept of the American dream. Every American dreamed of owning their own home; preferably in the aura of the 'pristine and peaceful' country. The internalized back to nature movement took root and continues into the present. The desire to escape the frenetic and crowded city to the tranquil and revitalizing environment of the country presently remains a capitalized commodity.

#### THE FAR-REACHING IMPACT OF THE BACK TO NATURE MOVEMENT

A 'homesickness for nature' was the term used by Mumford to categorize the overwhelming and continual desire to escape the city.<sup>7</sup> Society associated nature with the uncomplicated life of the of the past. At least uncomplicated from the elaborate complexities introduced by the made-made environment. The late nineteenth century was termed the 'era of trauma.'<sup>8</sup> The changes introduced were so swift and thorough their integration was not immediate. Society had not yet assimilated the machine or its implications. Mumford states that this assimilation was



necessary for society to "gain the capacity to move beyond it."<sup>7</sup> Initially, the incomprehension and the awe of the magnificent machine stifled its assimilation or 'domestication'. Its devastating utilization during World War I fractured the unquestioning faith of technology that had been instilled in society since the commencement of the Industrial Revolution. Once the barrier was broken, the attitude towards the machine changed drastically. It was no longer revered and eventually became accepted as a portion of everyday occurrences. The veneration of technology was soon replaced by a devotion to nature.

As discussed by Kenneth Jackson in Crabgrass Frontiers the stability of nature was particularly attractive to society during this period of healing. According to Hewitt the period between 1907-14 designated the emergence of a new house and garden concept.<sup>10</sup> The houses designed reflected the garden's role as a dominant force in both the architecture and the lifestyle of the owner. The fervent pursuit for harmony in all aspects of life during this post World War I period, in addition to the conscious effort to domesticate the machine, aided the maturation of the new house and garden movement. Ideas were reoriented, from conquering nature, towards the manipulation of nature. A new consciousness of the land developed, fortifying the garden's role as the liaison between the house and nature. The new arrangement of one's grounds, cultivated and



developed by the owner, reflected more than the languid or sentimental interest in the soil previously exhibited by the gentleman farmer. The garden had become the sublime artifice of humankind in accord with nature. A personal interest in its unique creation was highly desired in an era where mass production had standardized commodities.

Thus the field culture of the Lower Merion area was replaced by the garden. The elite enclave was replaced by the vogue country house of the 1910's, and finally by the upper middle class detached housing of the 1950's. While the Main Line area retained its above average income median, \$38,129 in 1980,<sup>11</sup> it still paralleled the movements of the country.

Presently, the American Dream is still fervently pursued--particularly by the middle class. Reflectively, the 1980 Federal census stated that over forty percent of America lived in the suburbs. The resulting real estate boom in condominium construction has had a large impact on the high land valued Lower Merion area. A unprecedented number of large estate and open area subdivisions has occurred as developers attempt to capitalize on the increasing population and desirability of this residential area. From the eighteenth century persecuted Welsh, to the industrial tycoons of the nineteenth century, to the upwardly mobile white collar professionals of the twentieth century Lower Merion has remained an exclusive haven.



## Section B

After the death of Edward (1923) and Mary (1932) Sayres "Black Rocks" continued to parallel the societal trends of the Lower Merion area. In 1937, the property was purchased by the prominent physician Dr. Everett Barnard and his wife, Eliza Bosler. They immediately commenced renovations and additions to the property to suit their tastes and needs. Everett hired Walter Durham's firm, Durham & Irvine, to conduct the necessary renovations for converting the Sayres' summer place to a year round abode. Their commission also included the construction of another eastern wing. In addition, in sync with the house and garden movement, the Barnards enlisted the services of landscape architect Thomas Sears to fashion "Black Rocks" into their sublime artifice.

### THE BARNARDS

Dr. Everett P. Barnard was a prominent Rittenhouse Square physician. A 1900 University of Pennsylvania graduate, his first appearance as a physician in Boyd's Philadelphia City Directory was in 1903. The citation indicated Dr. Barnard's practice was sited in his home at 2146 South Broad. While he continued to practice from his residence throughout his career the location changed relative to his social standing. After two previous moves,



in 1927 he relocated to the elite 1820 East Rittenhouse Square address; thus reflecting his prominent status. His initial listing in the Philadelphia Social Register had occurred five years earlier in 1922. The register indicated he maintained memberships with the University Club at 1510 Walnut; the Sedgeley Club in Fairmount Park; and the Philadelphia Country Club located in the Main Line area of Bala.

Dr. Everett Barnard's family consisted of his wife Eliza H. Bosler and their three children James T., Martha Jane and George B. The Barnards resided in Philadelphia throughout the children's youth. After their youngest son, George, enrolled in William's class of 1938<sup>12</sup> they began to search for a new home. It is no surprise the Barnards turned to the still relatively prominent Main Line area.

In fact, Dr. Barnard, reportedly, conducted house calls to various patients in the Main Line area. Evidently one patient resided in the vicinity of Black Rocks. Passing by, Dr. Barnard often admired the picturesque property. Furthermore, it is related, he eventually knocked on the door and expressed his desire to purchase Black Rocks if the owners intended to sell in the near future. Despite his overtures, when the property was finally listed another bid was accepted before Dr. Barnard's initial offer. Perseverance prevailed and complications with the initially accepted offer enabled Dr. Barnard to finally obtain the



property in November 1937.<sup>13</sup> Thus, Dr. Barnard received his 'dream' retirement house.<sup>14</sup> Plans dated December 6, 1937 indicate Dr. Barnard immediately hired Durham & Irvine to design a new addition and renovate the existing Furness creation.<sup>15</sup>

#### WALTER DURHAM

Walter Kremer Durham was born on Christmas day 1896. His early years were spent in the Riverton, New Jersey and Germantown, Philadelphia neighborhoods. Tatman and Moss's Biographical Dictionary of Philadelphia Architects relates Durham graduated from Girard College in 1914. In the years after graduation he continued his education at Drexel; attending classes for approximately eight years. While pursuing further study he was employed by Harrison Chemical Company located at South 35th and Greys Ferry Road in Philadelphia. According to Tatman, by 1919 Durham was working as a draftsman. In 1920, Walter Durham opened his own practice. His office was located at 323 Walnut Street. In 1923, he joined forces with and engineer Ira D. Smedley - -forming Smedley Durham Company. This partnership lasted for only a year. In 1924 Durham established a new firm entitled Durham & Irvine, builders. His new partner was James Irvine. Their head draftsman position was occupied by Aaron Hostetter Spence, a 1923 architecture graduate. In 1937, their office was located at 1713 Rittenhouse Street,



Philadelphia; one block from Dr. Barnard's residence.

Together Durham & Irvine were responsible for over 410 buildings between the years 1926-68. The majority of their commissions were in the Main Line area. In fact, their logo was "Durham & Irvine: Homes along the Main Line". In particular, the firm specialized in land development. The main concentration of commissions were in Bryn Mawr, Haverford and Gladwyne. They tended to capitalize on the subdivision of large estates. A few of their most successful development projects included the tract housing on the Crosby Brown estate, in the mid-1930's to early 1950's, Gladwyne; the Wheeler estate in Bryn Mawr and the previously mentioned A.J. Cassatt estate, Cheswold, Haverford. The latter projects spanned the 1940's through the early 1950's. In most cases, Durham & Irvine maintained the original estate and the property immediately surrounding the edifice. The remaining land was subdivided into individual lots.<sup>16</sup>

The houses designed on the individual tracts were designed in a sympathetic or similar style to the original estate; i.e. Crosby Brown state. Regardless of the style, Durham strongly desired an affirmation of memory. He professed a strong declaration of pride in the past and his structures were an acknowledgement of traditions. Unlike Furness's satirical creations, Durham's elements and proportions tended towards faithful reproductions. Colonial

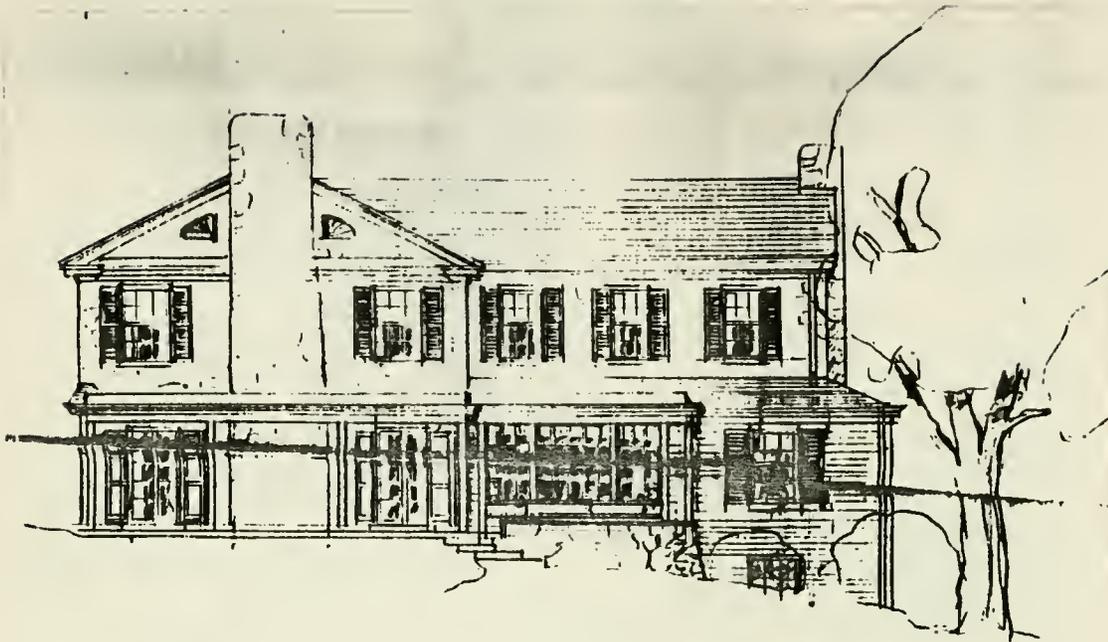


Revival was the preferred style of the period and embodied the majority of the firms' commissions. The "Black Rocks" addition was one project designed in this vein.

#### DURHAM'S COLONIAL REVIVAL ADDITION

Durham & Irvine presented several design options to Dr. Everett Barnard and his wife Eliza for the new wing.<sup>17</sup> (for one example see Figure 34) The scheme chosen (Figures 35, 40, 41) necessitated the removal of Furness's eastern porch. The new addition was not constructed in the exact location of this dismantled feature. The single room over single room wing was shifted slightly to the north; overlapping the kitchen and retaining the southern exterior french door previously leading to the porch. (Figure 39) The resulting plan resembled a slightly skewed cross.<sup>18</sup> (Figure 40)

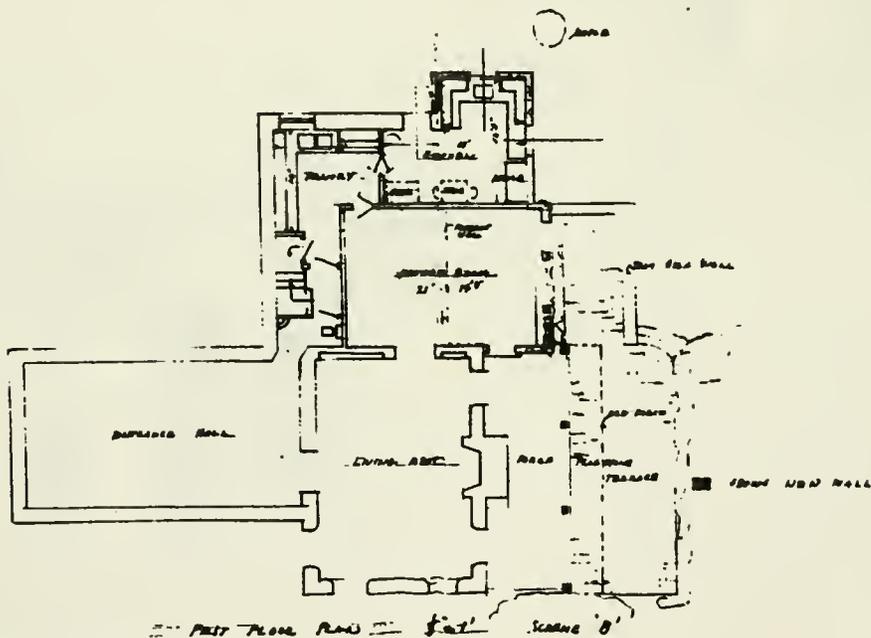




ELEVATION FROM GARDEN

SCHEME 'B'

DURHAM & IRVINE.



FIRST FLOOR PLAN 1/2" = 1'-0" SCHEME 'B'

Figure 34: One scheme developed by Durham & Irvine but not implemented. Drawings from The Durham Collection, House 176, The Athenaeum of Philadelphia, Philadelphia, PA.



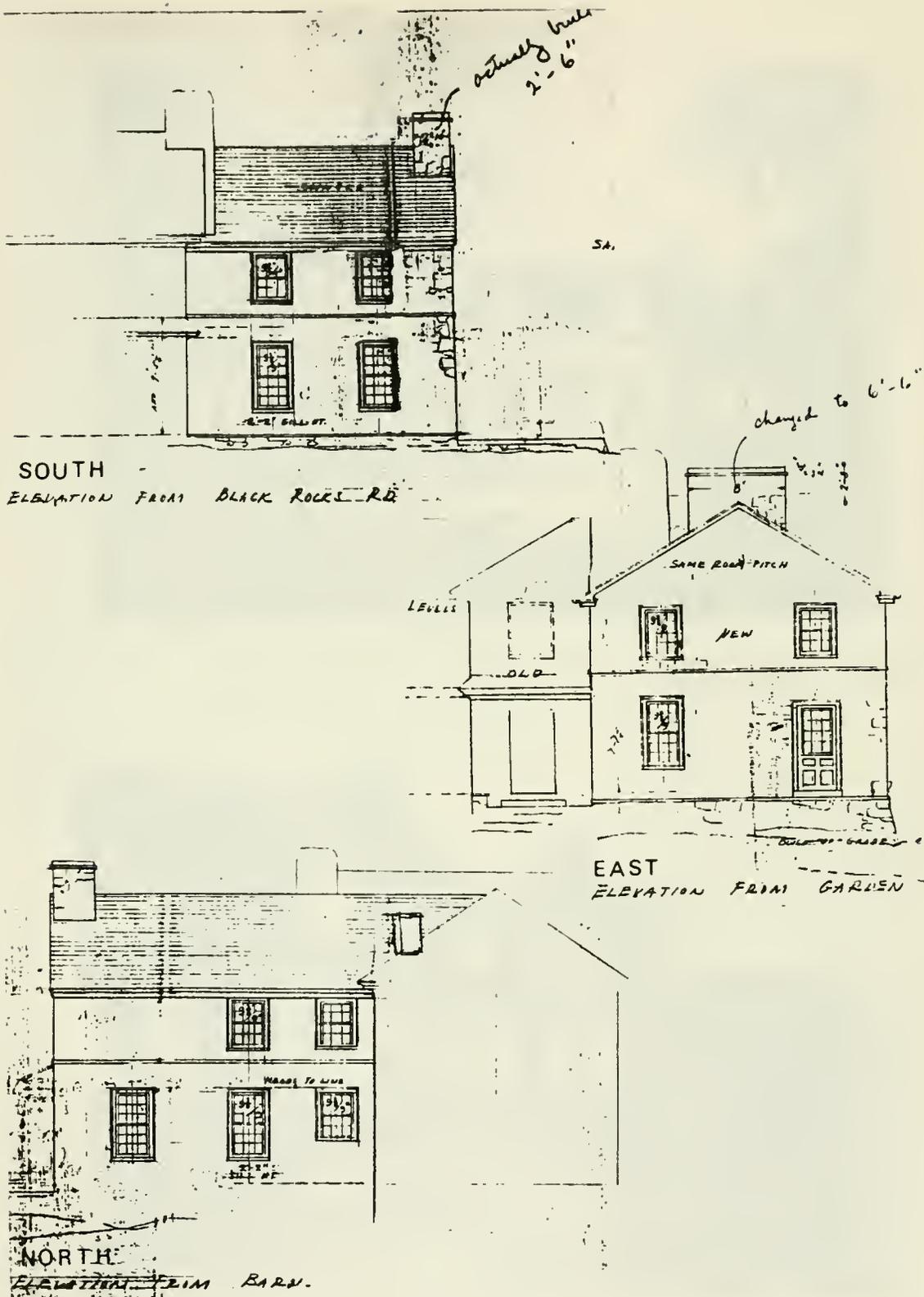


Figure 35: Implemented Design, South, East and North facades, Drawings dated 12-29-37 from The Durham Collection, House 176, at The Athenaeum of Philadelphia, Philadelphia, PA.



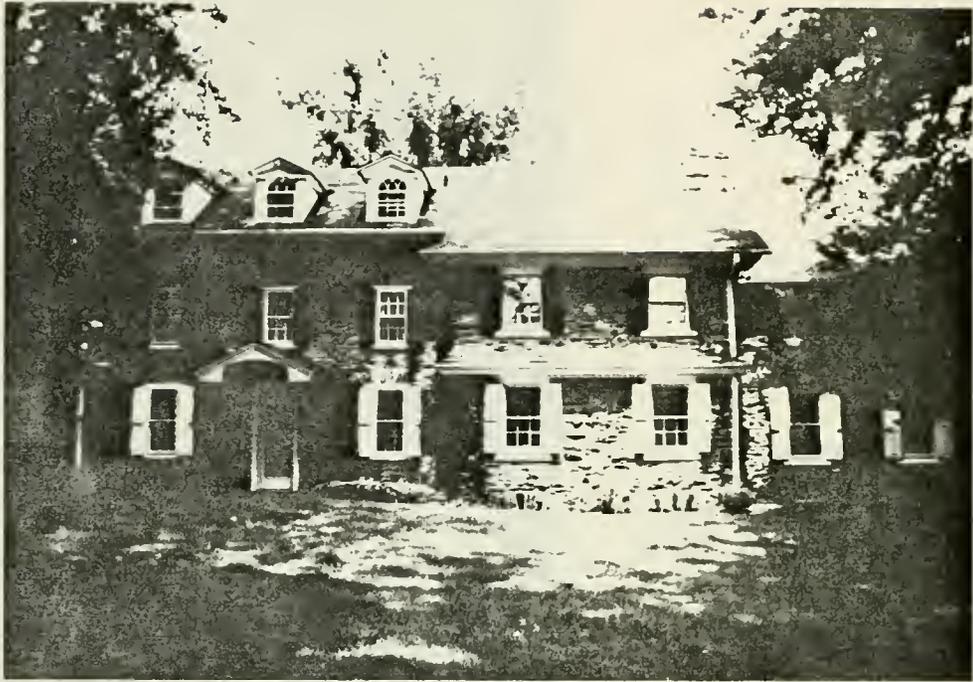


Figure 36: South Facade of Black Rocks. Eastern section is the Durham & Irvine addition. Photograph, 1990.



Figure 37: Durham & Irvine eastern addition, South Facade, Photograph, 1990.



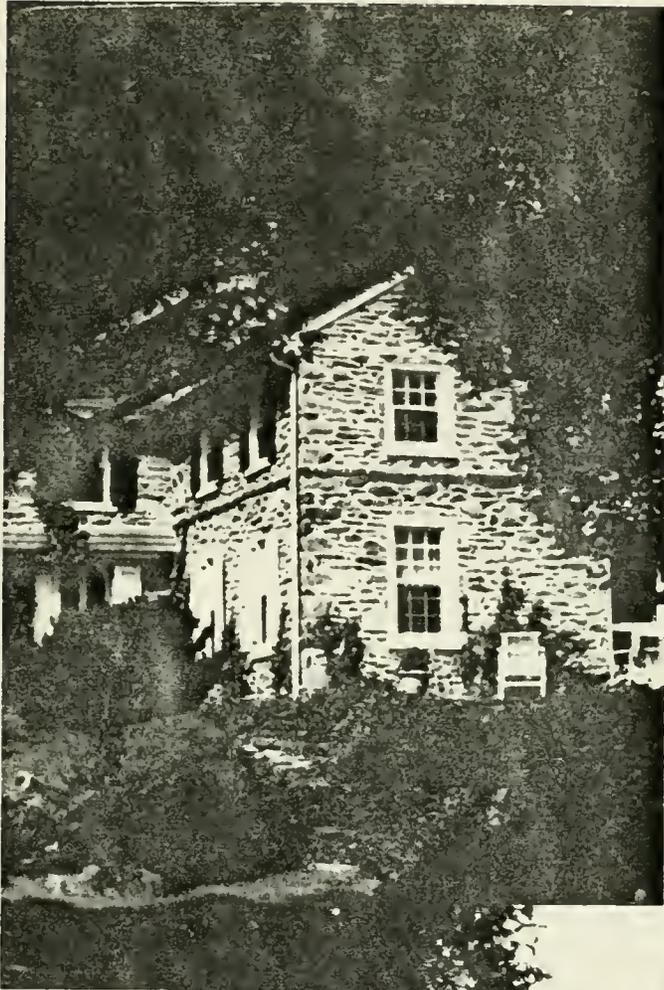


Figure 38: Southeast corner of Durham & Irvine addition, Photograph c.1960.



Figure 39: Brick Terrace and French door previously opening onto the Furness, Evans & Co. eastern porch. (Figure 21) The porch was replaced by the Durham & Irvine addition, Photograph, 1990.



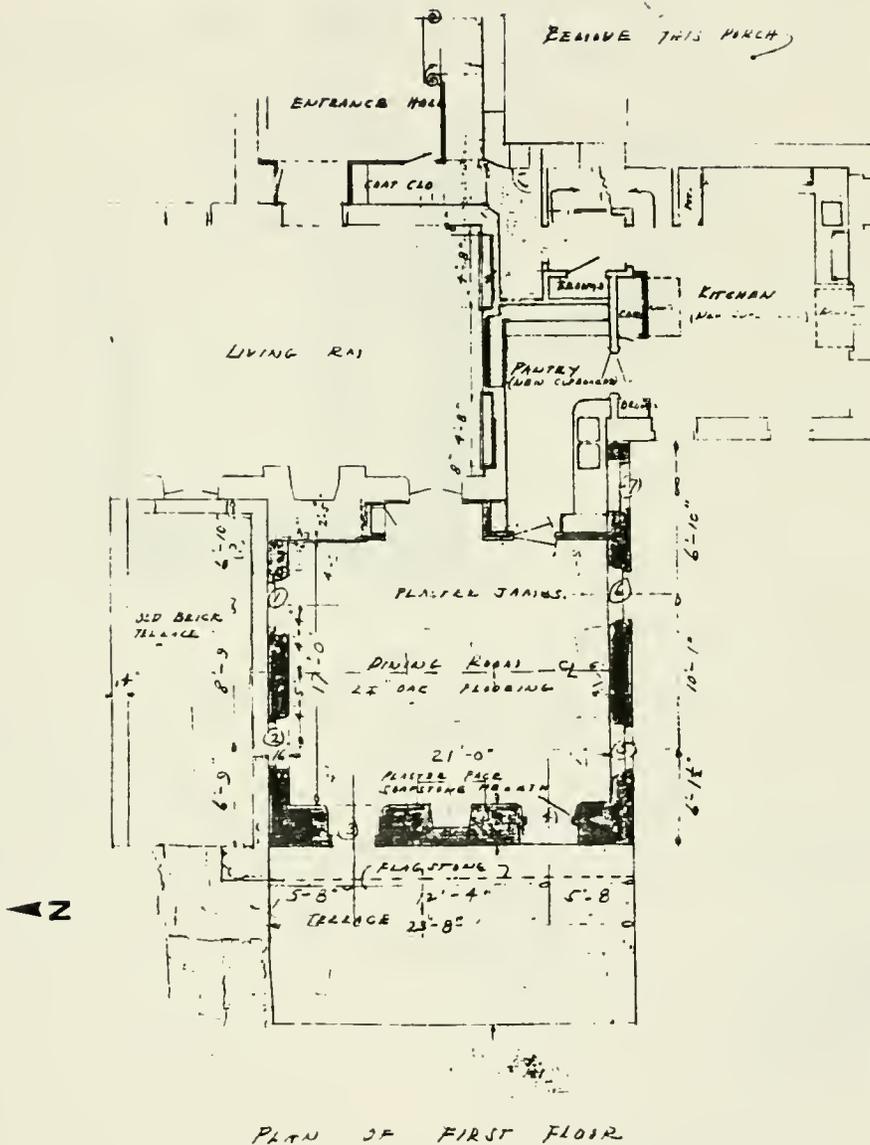


Figure 40: First Floor Plan, Durham & Irvine drawing dated December 26, 1937, from The Durham Collection, House 176, at The Athenaeum of Philadelphia.  
 Note: Shaded areas indicate new construction.



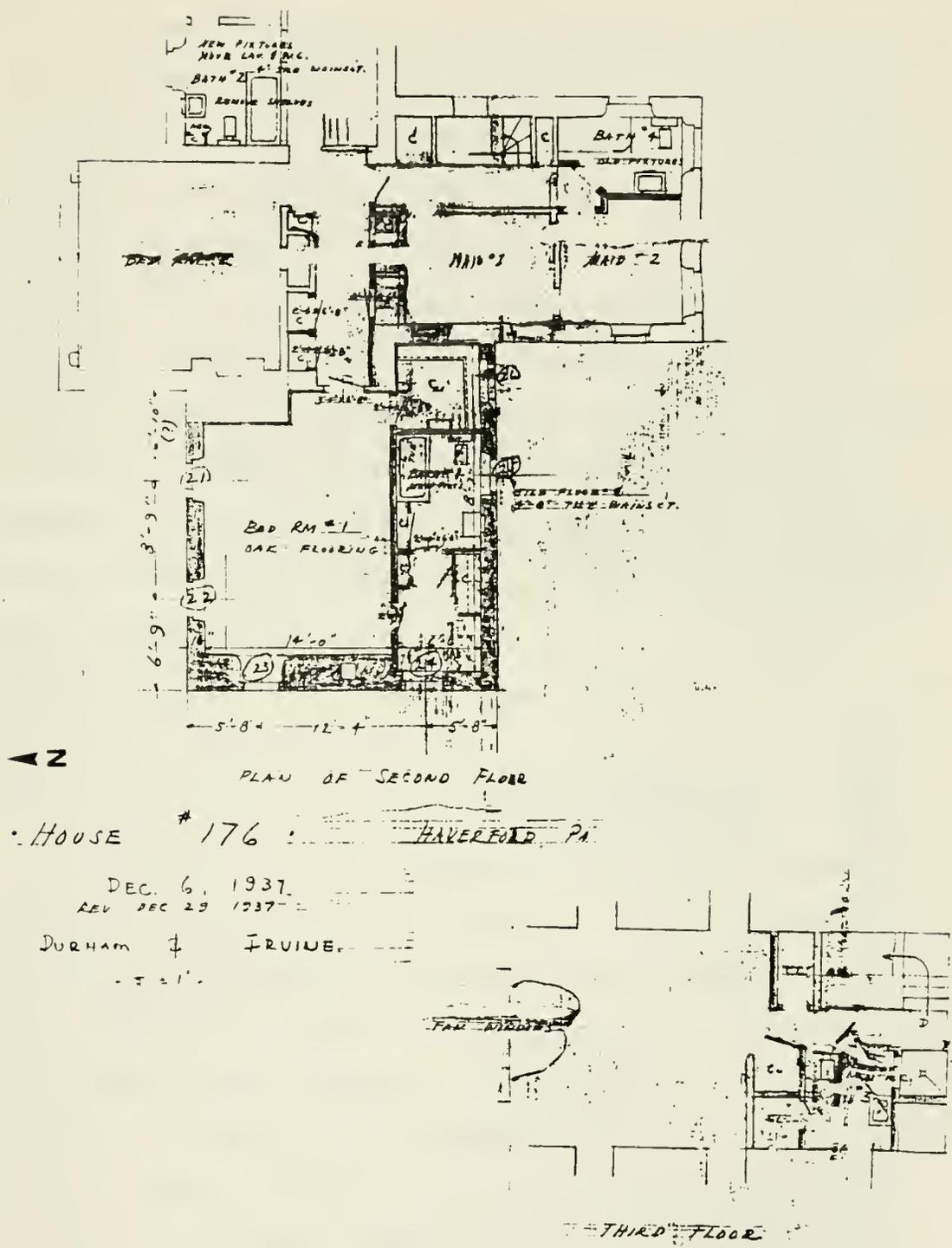


Figure 41: Second and Third/Loft Floor Plan, Drawing of Durham & Irvine dated December 26, 1937, from The Durham Collection, House 176, at The Athenaeum of Philadelphia.  
 Note: Shaded areas indicate new construction.



The eastern addition was randomly laid two story construction. Durham's stonework resembled historical traditions;<sup>17</sup> versus the playful method of Furness, Evans & Company's stone construction. Wrapping around the three exposed facades was a projecting stone belt course. The shingled roof pitch matched eastern gabled roof pitch of Furness's wing. Centered on the eastern facade was an interior gable end chimney. The south/front facade first story 9/9 windows and second story 6/6 windows were shuttered with paneled and louvered shutters respectively. The fenestration pattern was repeated on the eastern and north facade windows without shutters. Their eastern addition housed a new dining room on the first story and a new master bedroom on the second. A half story storage attic space completed the new wing.<sup>20</sup> (Figures 36-39)

The 21'0"x 17'0" dining room contained two windows on each of the exposed walls. Durham's acknowledgement of history is reflected in the repetition of the 1856 feature of the deep-curved window sill; as well as the chair rails and cornices that matched the existing house. The carved mantle of the east wall fireplace further reflected the Colonial Revival style of the house. Durham reportedly maintained a salvage warehouse of various architectural elements which he utilized in his commissions. The mantle was evidently chosen from his collection. Verification has not been obtained establishing its colonial origin.



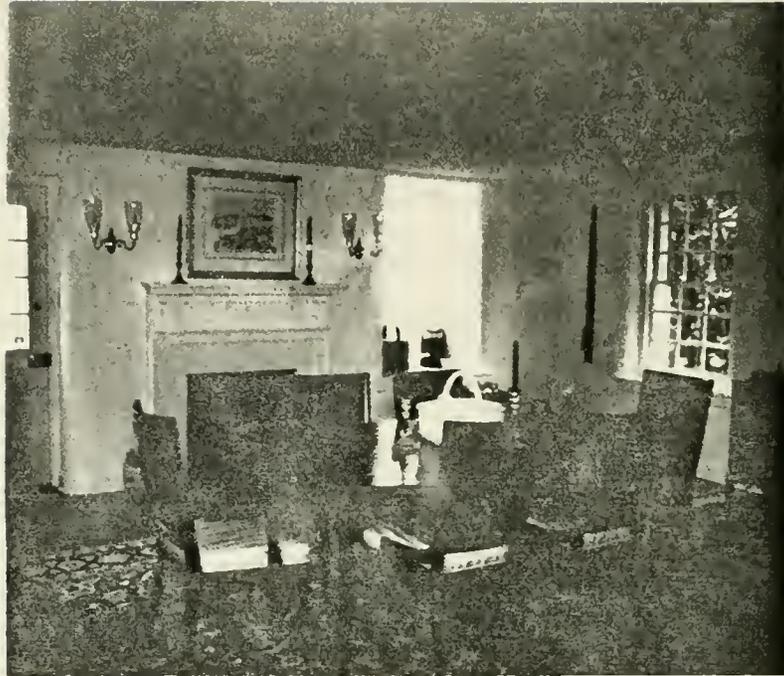


Figure 42: View of the new Dining Room from the northwest corner. Photograph, 1990.

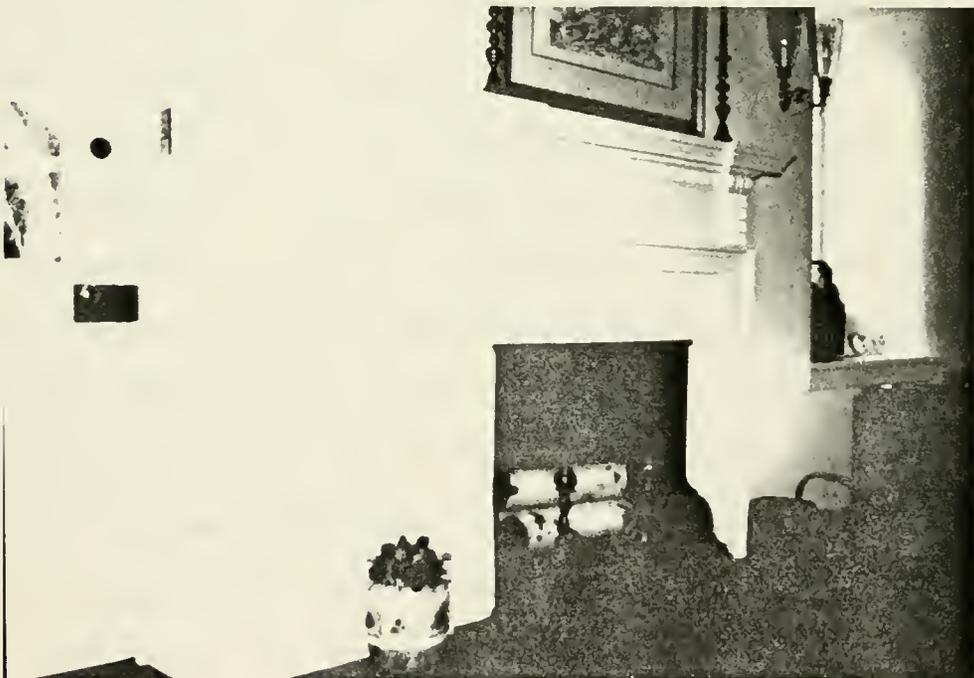


Figure 43: Durham & Irvine's Dining Room Fireplace, along the east wall, Photograph 1990.



To the north of the fireplace was an exterior door opening onto the terrace overlooking the landscaped "Black Rocks". Directly opposite this doorway, on the west wall, was another egress opening containing a double swing door. The doorway led to a pantry adjacent to the kitchen. This pantry space was an extended version of the Furness designed pantry. A window opening, constructed by Furness, was expanded to extend the pantry into the new wing. The final exit option from the dining room was also accessed through the west wall. A double swing double door opened into the living room. (The dining room during the Sayres era) This doorway was the previous location of the southern exterior french door leading from the dining room to the porch in Furness's design. Thus, Durham utilized two existing openings in providing egress into his addition.

Above the dining room was the new location of the master bedroom. To the north of the 14'0"x 17'0" space was a dressing area, a bath and a walk-in closet. The west wall of the walk-in closet is actually a filled-in window of the previous Furness east facade. A new north facing window was implemented in the closet. The windows of all these various spaces, once again, portray the deep curved window sills. The flooring in the bedroom as well as the dining room was oak. The northwest corner of the main bedroom space opens westwardly into a newly created hallway that replaced the previous guest bath. Once again, an existing opening was



expanded to create new egress. The design and construction of the eastern addition was only one aspect of the total contract between Durham & Irvine and Dr. Everett Barnard.



## DURHAM & IRVINE'S RENOVATIONS OF THE SUMMER HOME

Aesthetic and practical considerations dictated the necessity for renovations of the Sayres summer home to suit the needs of the future permanent residents--the Barnard family. Exterior changes included the removal of the north porch and the construction of a new pent eave. (Figure 44) Sketches indicate Durham & Irvine carefully measured the Furness, Evans & Co. pent eaves and replicated the proportions. The stone well was retained and repaired at a cost of \$26.75.<sup>21</sup> New paths to the front and back doors were laid; and the open space outside the remaining exposed Furness french door was converted to a brick terrace.<sup>22</sup>



Figure 44: New Pent Eave on the north facade original/western section (note removal of portico shown in Figure 19) Photograph 1990.



The changes on the interior were much more involved than the exterior changes. The most expensive undertaking was converting the heating system from gas to oil. A 1000 gallon tank was buried in the corner created by Durham's eastern addition and the northern kitchen wing.<sup>23</sup> The complete arrangement included a "split air and cast iron radiation system using air in the main sections and steam in baths and service sections. To include summer and winter hot water." Obviously, the heat demands of year round residents greatly exceeded those of a summer home. The total cost for this new system was \$2,225.00.<sup>24</sup>

Another major renovation involved the rebuilding of the fireplaces designed by Furness to accept new mantles. The massive stone arched creation in the western section was totally removed and rebuilt. The plans indicate the opening was to be narrowed to three feet. However the fireplace was not narrowed but it was reconstructed to resemble an eighteenth century cooking fireplace.<sup>25</sup> (Figures 46,47) Once again exemplifying Durham's desire to cultivate a continuity of historical traditions. In addition local histories of the era proclaimed an original eighteenth century construction date for "Black Rocks". Also removed, was the Furness wing brick fireplace mantle. It was replaced with a mantle from Dr. Barnard's Rittenhouse Square home. (Figure 45) Reportedly, Dr. Barnard was sentimentally attached to the mantle and stipulated it be moved to his new



home.<sup>26</sup> In addition, new mantles were implemented in bedrooms two and three (Sayres master bedroom over western section). These mantles may have also have been chosen from his warehouse. The plans do not contain a citation concerning alterations to the presently enclosed third story fireplace. Therefore, the original Furness, Evans & Company fireplace may still survive in this space. Since this space was designed by Furness' firm as servants quarters, its construction was probably simple.

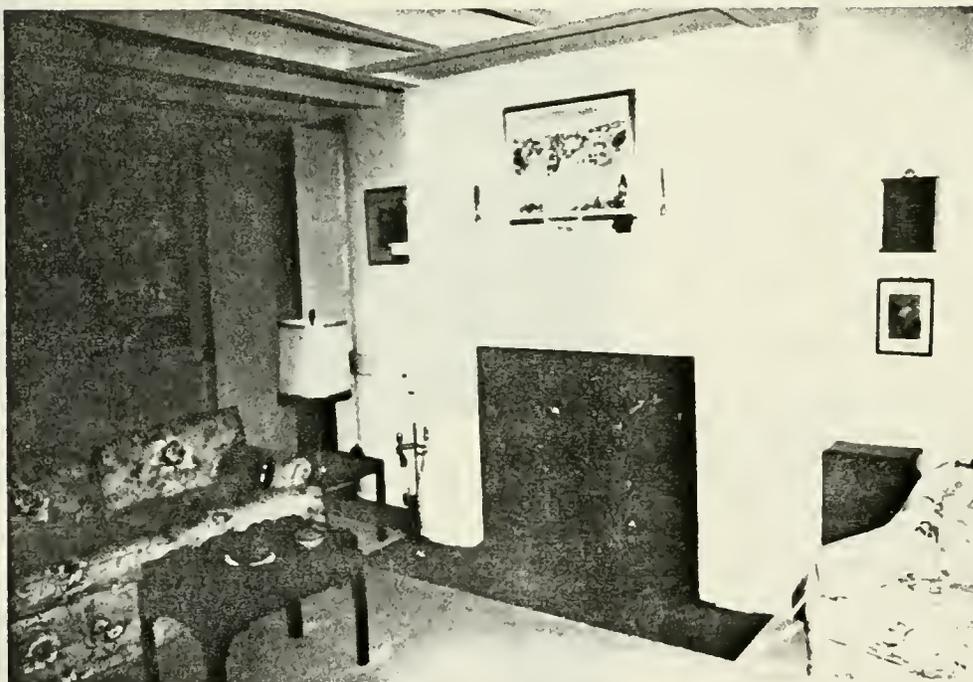
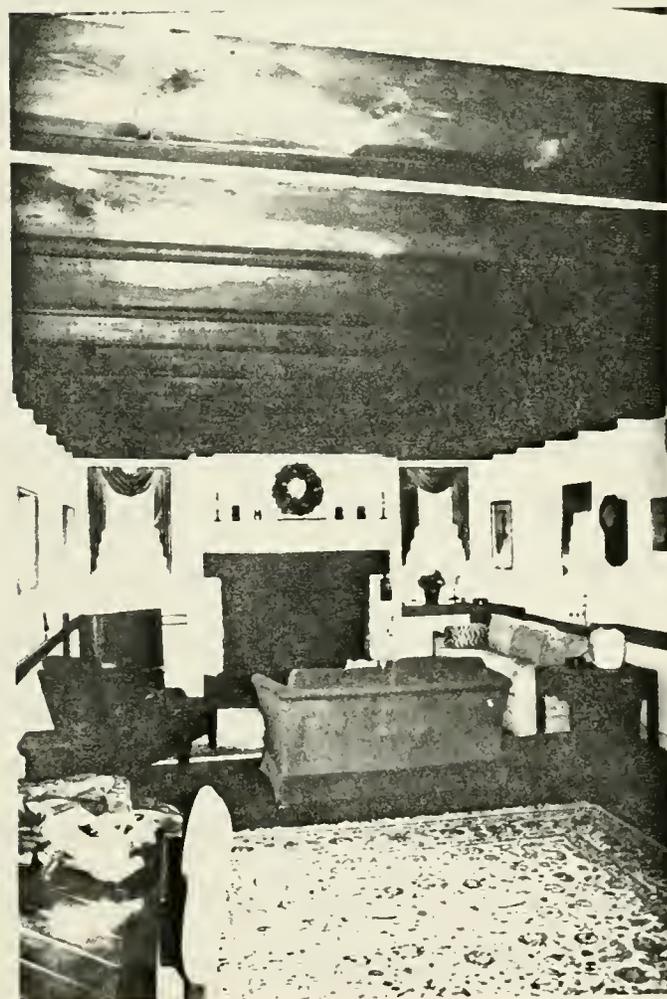
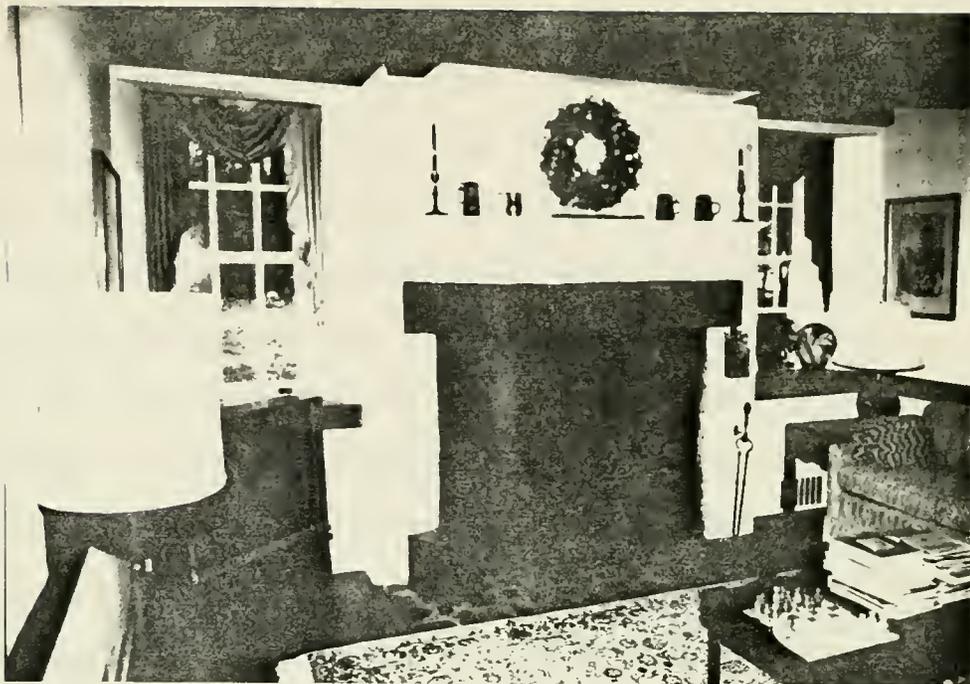


Figure 45: New Living Room Fireplace, Photograph 1990.





Figures 46&47: Views  
of Durham & Irvine  
Hall Fireplace  
(Replaced fireplace  
in Figure 6)  
Photographs, 1990.



In addition to restructuring the fireplaces, Durham also reconstructed or created new spaces by adding or deleting walls. As previously mentioned the pantry was enlarged and the doorway between it and the prior dining room was blocked up and new cabinets inserted in this space.<sup>27</sup> On the second floor level maids quarters were created from the previous guest rooms. A new wall sectioned off approximately one-third of the northern guest room to create a new bath (bath #4).<sup>28</sup> The Sayres master bath (bath #2) received new fixtures and the ones removed were reused in this newly created bath. New walls redesigned the third floor bath also (bath #3). The total plumbing bill for the bathrooms and other renovations before implementation was estimated by Durham at \$1,140.00.<sup>29</sup> All cited changes appear to have been completed and the actual cost was probably quite close to the estimate.

The majority of new spaces created in the existing house was closet space. Naturally the closet space necessary for a summer home would be grossly insufficient in meeting the demands of a permanent residence. New walls were built to create additional closet space in the kitchen along the south wall and in the southeast corner.<sup>30</sup> The Sayres' second story guest bathroom was converted to a closeted hallway. The third floor bathroom and along the stair banister were sites of other new closets.<sup>31</sup> In addition, new shelving was devised for all existing



closets.<sup>32</sup> The first floor Durham & Irvine plans also indicate a new coat closet along the east hall wall. This closet would have blocked the servants passage between the kitchen and hall. It was not implemented; nor was the small closet to be nestled in the southeast hall corner.<sup>33</sup>

Closets were not the only means of creating sufficient storage area. Wooden cupboards were constructed for the kitchen and pantry. A dresser was built for the main closet in the master bedroom (bedroom #1).<sup>34</sup> Upon the north living room wall was built bookshelves with cupboards below the chair rail level. The Durham House 176 file contains many sketches of this feature. (one example Figure 48)<sup>35</sup> It was obviously a much reworked and focused feature; in fact the final 1938 bill from Durham & Irvine includes a \$6.00 charge to change the shelves on the bookcase.<sup>36</sup>

There were many other small changes that transpired before the renovations reached completion. The controversial platform landing of the main Hall staircase was removed and the newel post redesigned as indicated in Figure 51.<sup>37</sup> A small bathroom was added in the hallway between the kitchen and the hall.<sup>38</sup> A few other small but important details included the implementation of additional telephone lines, electrical outlets and lamps.<sup>39</sup> For an extant account of Durham & Irvine's expenditures please refer to Appendix H: Itemized Estimate for Materials and Labor dated December 18, 1937 and the Final Itemized Bill



dated April 30, 1938.<sup>40</sup> The total cost for all alterations and additions performed by Durham & Irvine was \$13,452.65.<sup>41</sup>

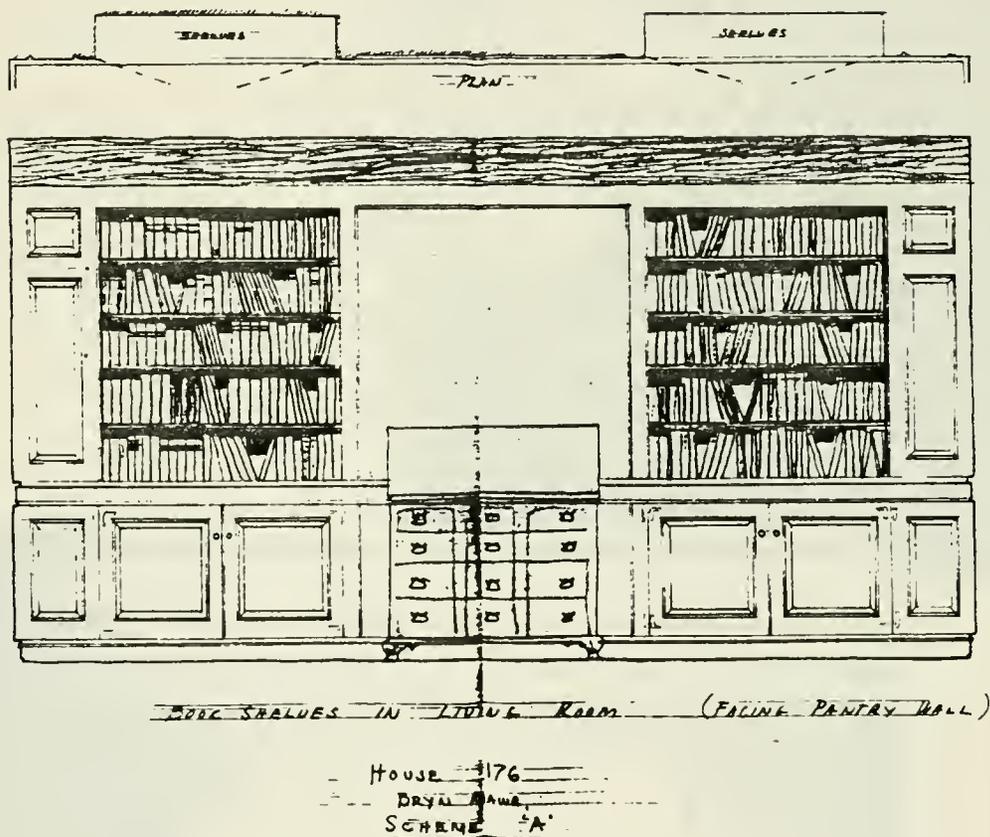
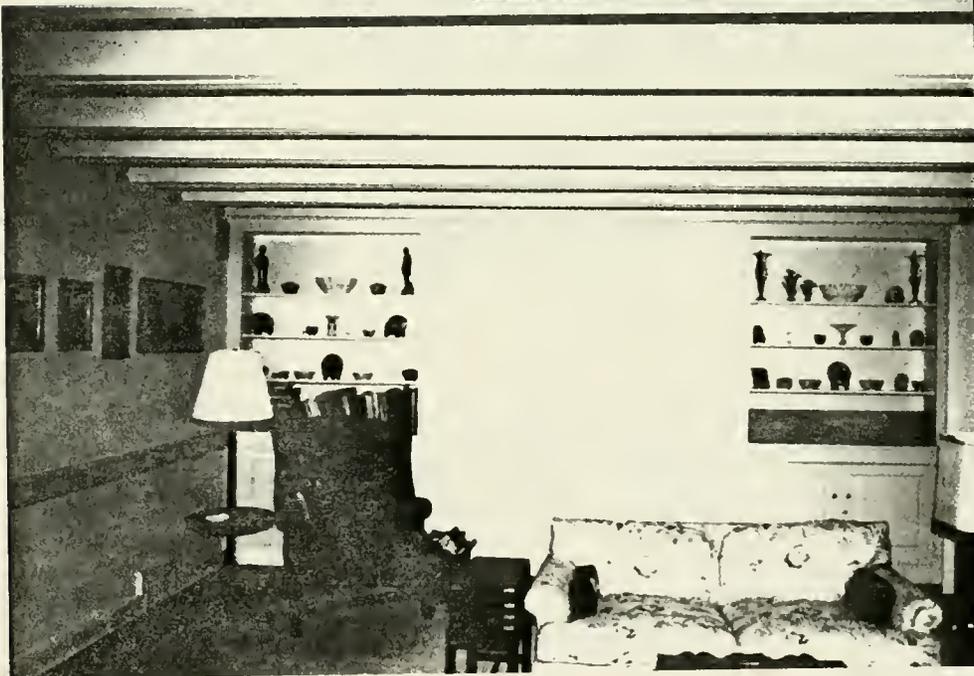
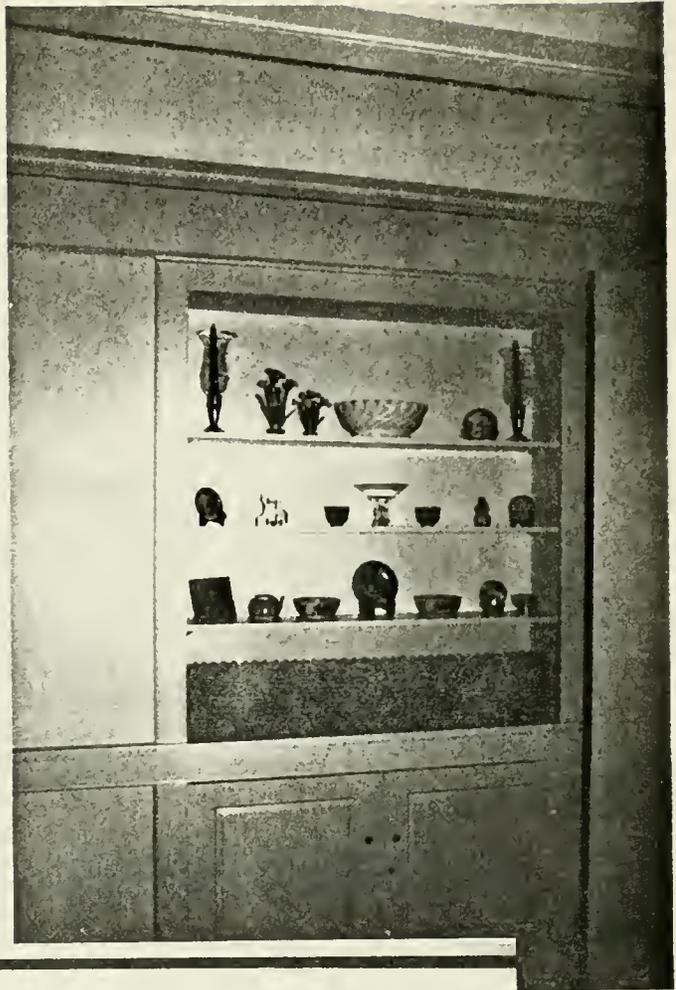


Figure 48: One example of Living Room Cupboard schemes, Drawing from Durham Collection, House 175 at The Athenaeum of Philadelphia.





Figures 49 & 50: Implemented Living Room Cupboard and Bookshelves, Photograph 1990.







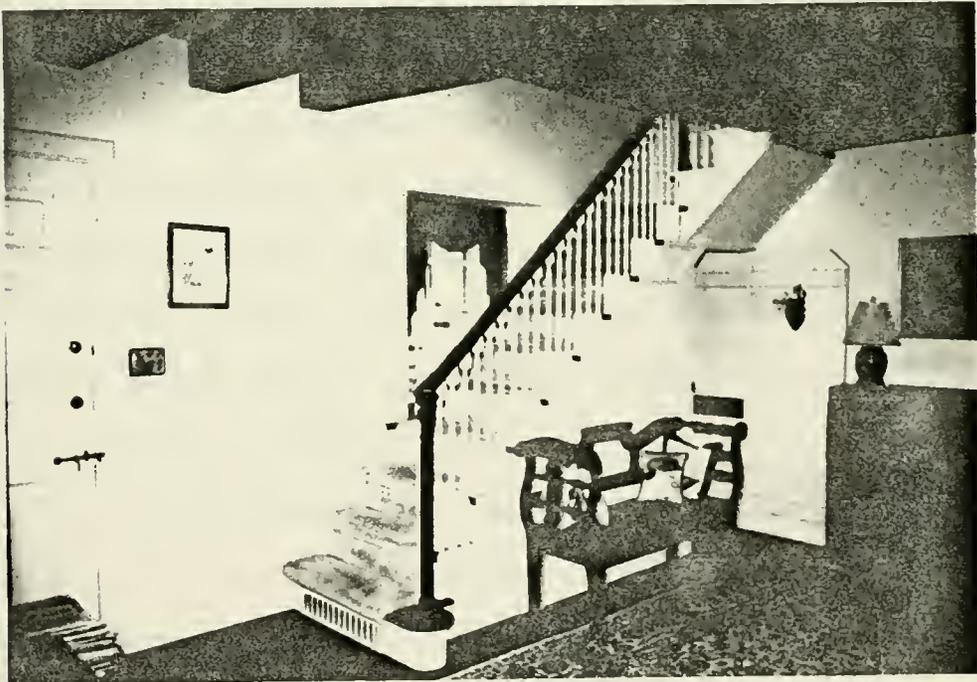
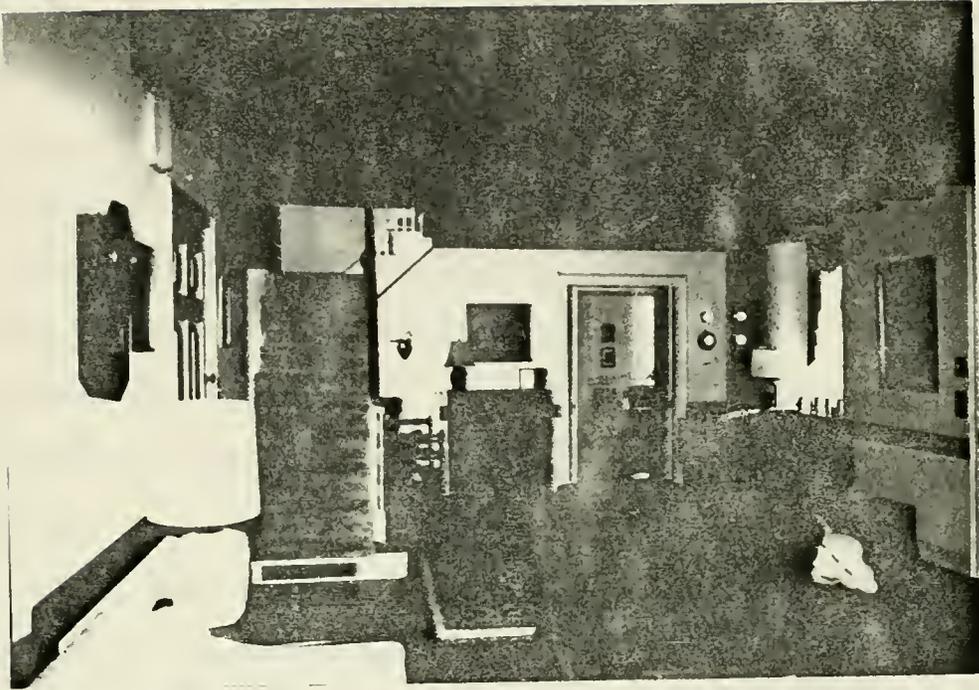


Figure 52 & 53: Views of Hall Staircase after renovation, Photographs 1990.



## THE GARDEN: A ROOM CREATED FROM NATURE IN NATURE

The final bill from Durham & Irvine was dated April 30, 1938. Evidently upon completion of the houses's additions and alterations the Barnards launched into another renovation. The renovation of the garden. Appendix I contains a letter from Philadelphian landscape architect, Thomas W. Sears. The letter dated November 30, 1938,<sup>42</sup> indicates the redesigning of the garden was initiated immediately after the conclusion of Durham & Irvine's services.

The letter states he designed two schemes. (Figures 54 & 55) The area under consideration was the area east of the house in the vicinity of the largest outcropping of black rocks. Both proposals designed an elliptical grassy floored room. The means of creating this room was one example of manipulating nature rather than conquering it. The walls were created by rows of flowers, shrubs and trees in ascending succession. Augmenting the ellipse were the existing black rocks. The garden area was enclosed and visually terminated on the north, south and east by the existing low stone walls.

The favored, and later implemented Scheme A, was the less formal of the two proposals. The approach from the house consisted of several curved grassy pathways leading to few stone steps and into the outdoor room. The ellipse itself was loosely defined by the plantings and rocks and



was terminated to the east with an arbor. Sears suggested an architectural element, such as a summer-house, tool house, or an arch, mark the denouement.<sup>43</sup>

The second scheme exuded a more formal aura. Four entrances divided the ellipse into quarters. A gravel path encircled the elliptical space but did not extend into the entrance openings. Thus, not encouraging entering, but rather walking around the room and observing and appreciating the landscaped creation from the outside. There was no termination to the east. The entire scheme seemed to climax at the paved main west entrance designated for chairs. This further suggests the landscaped room was to be observed from outside its clearly delineated boundaries.<sup>44</sup>

This formalized proposal was the antithesis of Scheme A. Scheme A encouraged one to happen upon and enter the room created by nature. It in a sense was recreating nature with nature. As one walks in a forest it is a rather meandering route around trees and other natural elements. The beauty of the scene is enhanced by the surprise and delight in discovering its various elements. Scheme A invited this active experiential movement within its space. As was previously suggested, the gardens often reflected the lifestyles of their owners. While it would be inappropriate and suppositional to deduce the Barnards lifestyle from their landscaping choice it can be concluded that they



preferred to partake actively in their created landscape.

Figure 56 is a reproduction of a plan dated February 3, 1939. It indicates the exact location and type of plantings utilized in the actualization of Scheme A. It also indicates the presence of existing plantings<sup>45</sup> either previously planted by the Barnards, from the Sayres era or occurring naturally due to the nature of the environment as discussed in the Introduction. Appendix I contains extant bills concerning the implementation of the landscape renovations. They equal \$517.14.<sup>46</sup> This amount is probably not indicative of the total amount disbursed for this project.



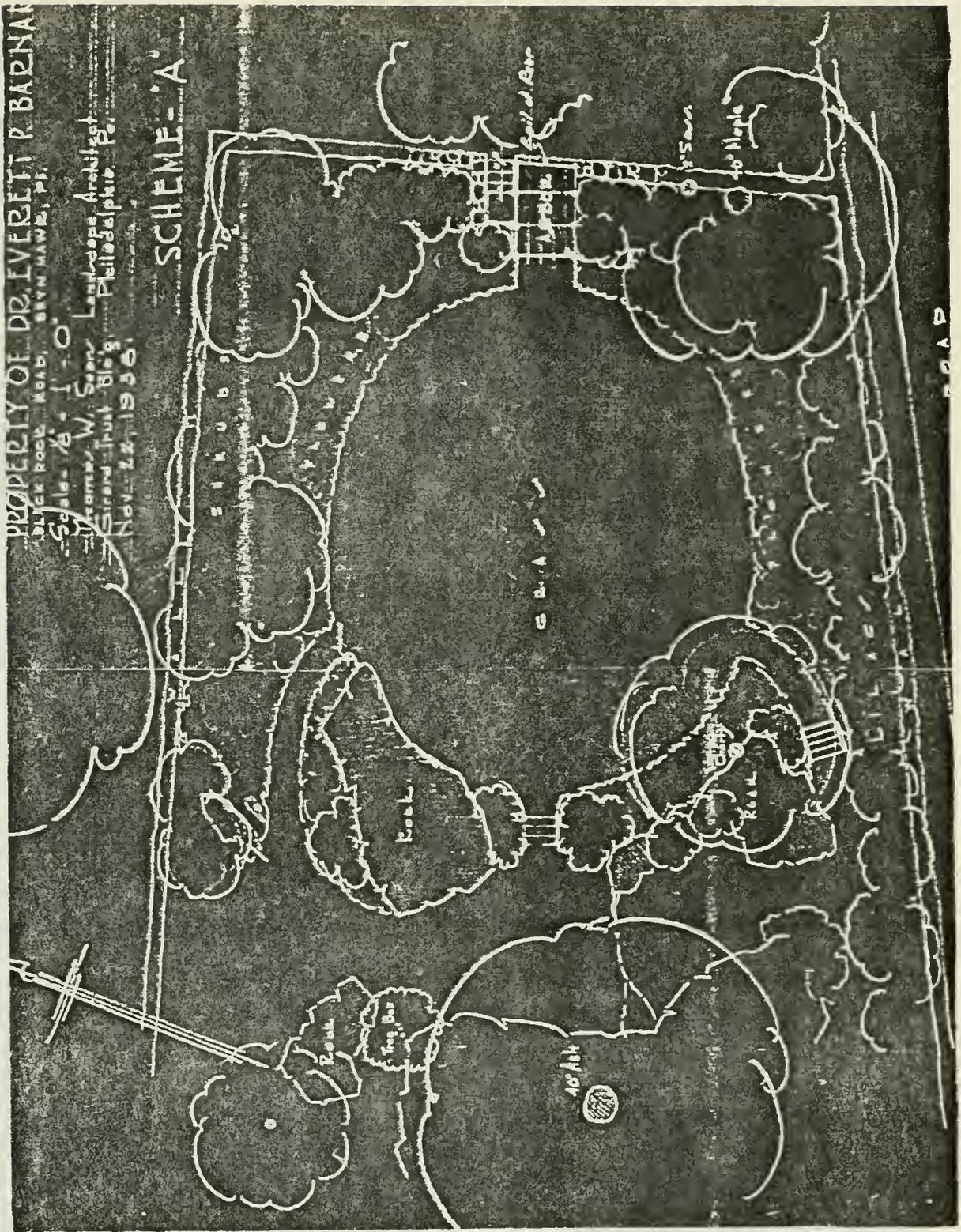


Figure 54: Scheme A: Study for Garden, Drawing of Thomas Sears, 1938, Papers of James and Nancy Malling, Bryn Mawr, PA.

Note: Garden located east of house.



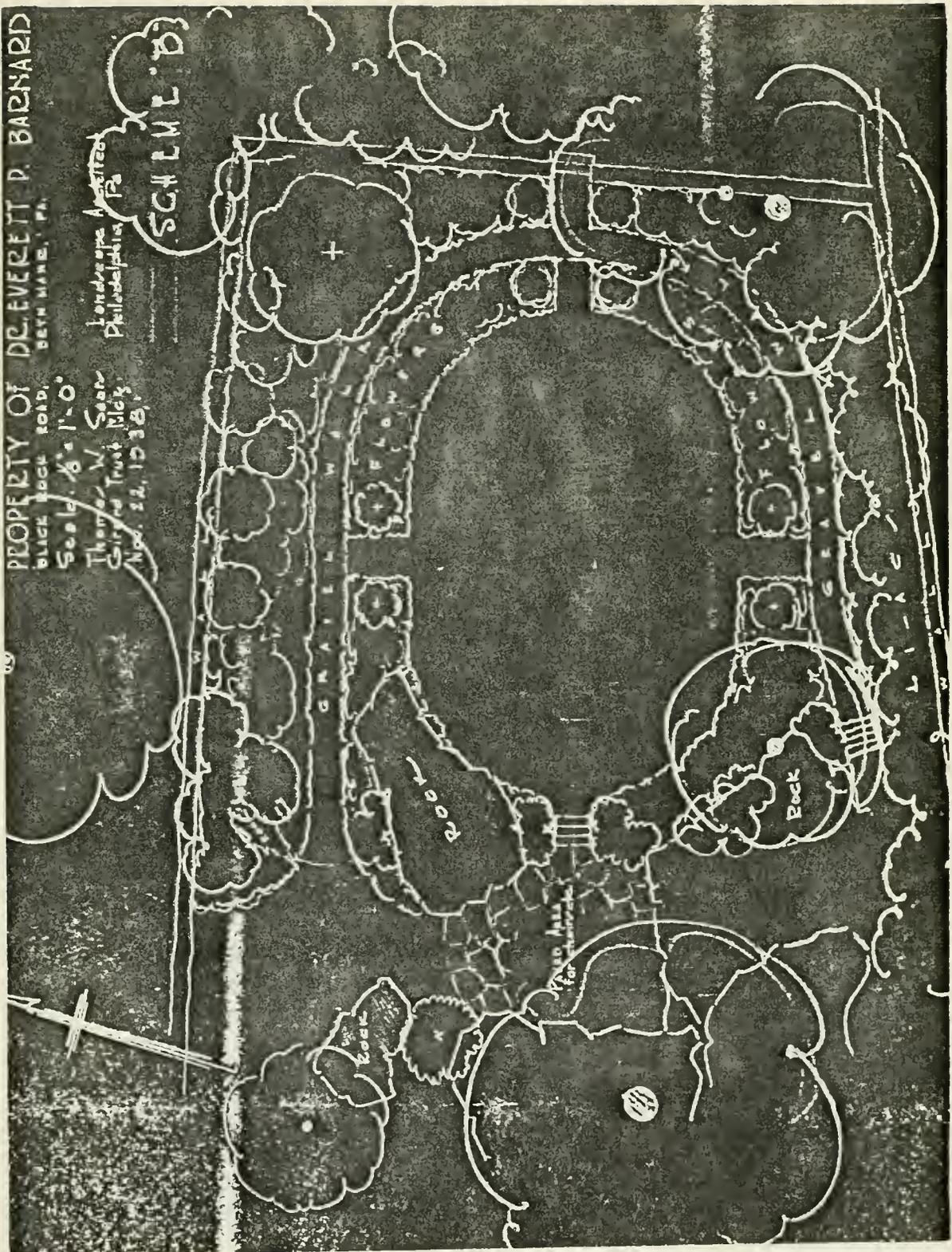


Figure 55: Scheme B: Study for Garden, Drawing by Thomas Sears, 1938, Papers of James and Nancy Malling, Bryn Mawr, PA.



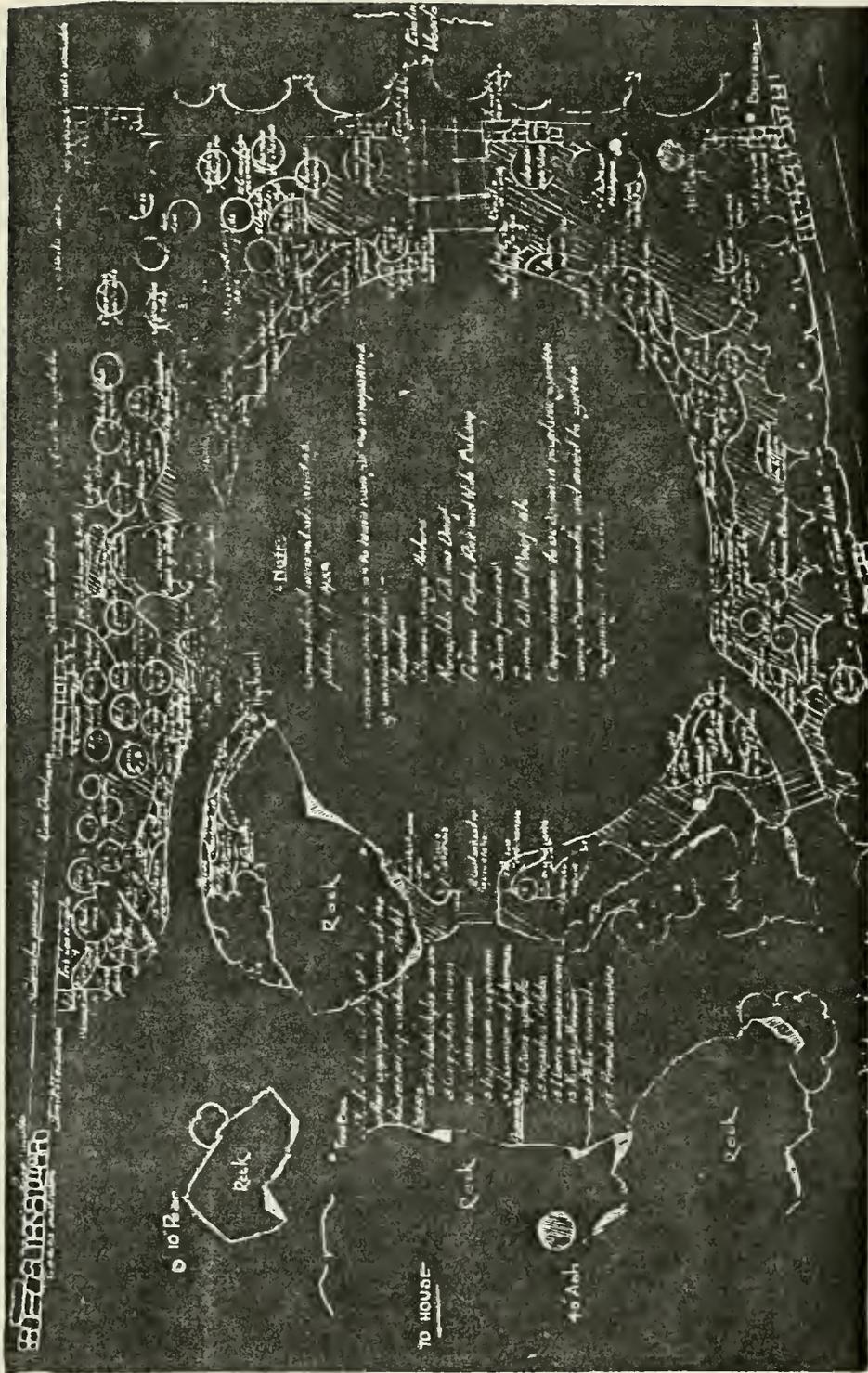


Figure 56: Black Rocks Garden Plan 1939, Drawing of Thomas Sears, Shaded areas indicate existing plantings. Papers of James and Nancy Malling, Bryn Mawr, PA.







## GEORGE BARNARD: SECOND GENERATION OWNER

Dr. Everett P. and Eliza B. Barnard resided at Black Rocks for the remainder of their lives. Their youngest son George resided nearby in the Main Line area. Their daughter Martha Jane (known as Jane) married Lieutenant Henry C. Whittlesey in 1941. In 1947, after the death of her husband, Jane moved into the Black Rocks tenant house situated several hundred yards north of her parents house.<sup>47</sup>

When Everett died, in 1957, Eliza became the sole owner of the property.<sup>48</sup> Several years later, in 1965, Eliza was joined by George and his family.<sup>49</sup> Upon Eliza's death, in 1964, the property was inherited by her three children. The elder children James and Jane waived their rights to Black Rocks.<sup>50</sup> George became the second generational owner of the property. A stipulation of Eliza's will cited if Jane waived her right to ownership she could still retain her tenant house residency rent-free.<sup>51</sup> Jane chose this option. The tenant house was her home until 1985 when she remarried and moved to Vermont.<sup>52</sup> (Please refer to Appendix G: Barnard Family)

Black Rocks officially remained in the possession of the Barnard family until 1981. During these years George and his wife Fanny implemented a few minor changes on the property. The large dark joists of the living room were painted white as well as all the grey plaster walls. The only other significant alteration of the property was the



construction of approximately two foot high stone wall enclosing the eastern terrace.<sup>53</sup> This wall has since been blanketed with ivy as well as three-quarters of the east facade; thus visually linking the house with the surrounding landscape.



Figure 58: Extant Tenant House, Photograph 1990.





Figure 59: View of Present Living Room, Photograph from northeast corner, 1990.

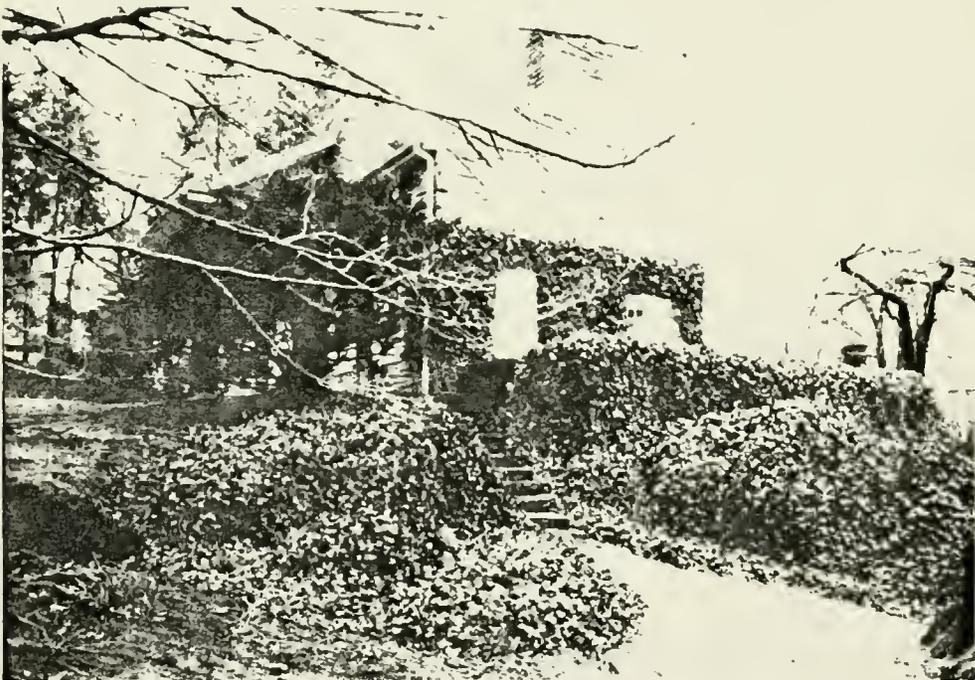


Figure 60: View of Durham & Irvine addition with George Barnard's terrace walls, Photograph from black rocks, 1990.



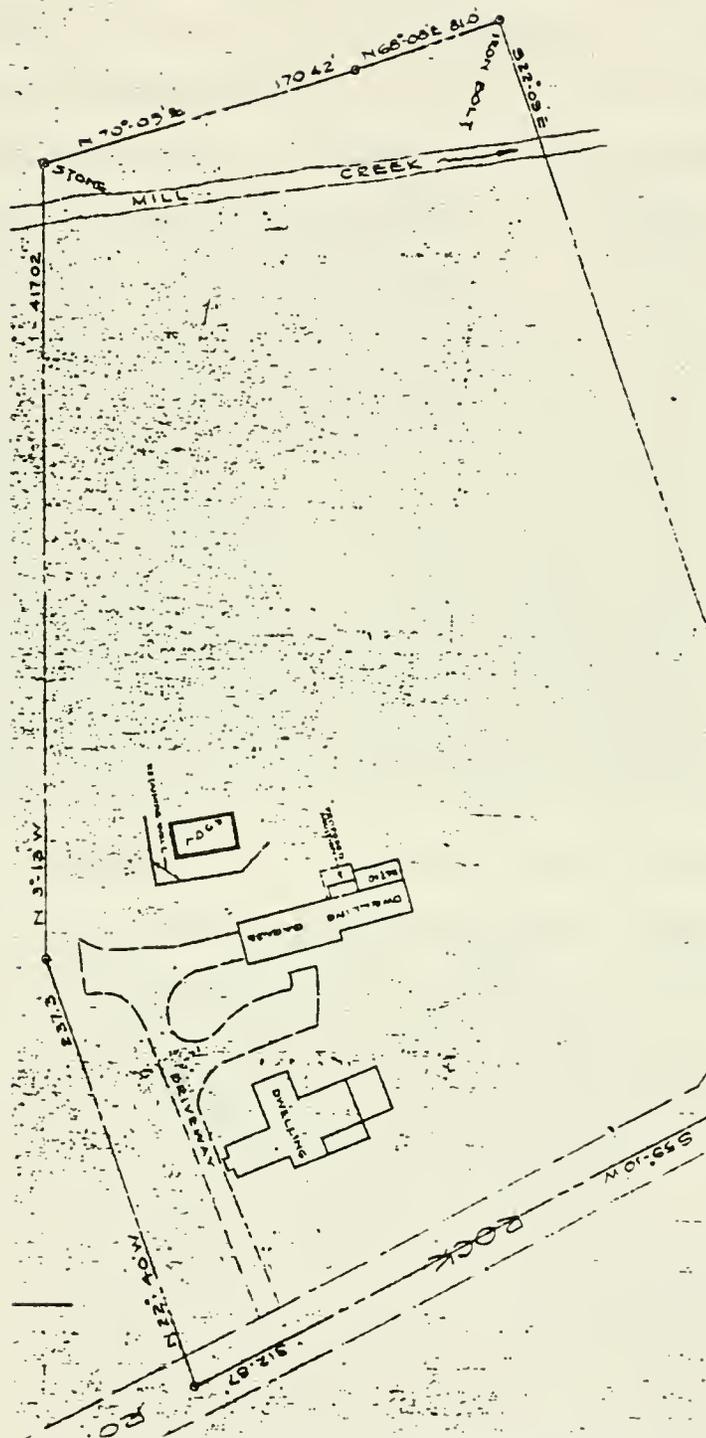


Figure 61: Map of Property of George Barnard, 1967, Yerkes Engineering Co., Bryn Mawr, PA. Papers of James and Nancy Malling.

Note: Tenant house addition proposed was not built. The map also illustrates the present property.



## THE MALLINGS: THE PRESENT PROUD OWNERS

James and Nancy Malling purchased Black Rocks from George and Frances Barnard in 1981.<sup>24</sup> The commuting Malling family embodies James, a global investment manager, his wife, Nancy, presently a Villanova law student, and their three children, twins Chris and Claire, and Peter. The Mallings, aware of the historical fabric of their property, have sympathetically retained the Furness, Evans & Company and Durham & Irvine creations with only minor alterations.

These alterations include reconverting the heating system back to gas and as a result removed the kitchen radiators implemented by Durham. Once again the second and third floor bathrooms were remodelled with plumbing renovations inclusive. A small water closet Durham addition, situated in the Furness servant passage between the kitchen and hall, was shifted several feet. The new location of the guest bath was previously a pantry closet. The implementation of a wet bar in the remodelled pantry completed interior renovations. In addition to general landscaping, exterior maintenance consisted sanding and repainting the shutters and minor repointing. Concurrent with Jane Barnard's 1985 departure, remodelling of the tenant house was undertaken.<sup>25</sup>

Thereby, the Durham & Irvine addition and alterations have remained virtually intact to the present day. Thus, since the Barnard's 1937 purchase, Black Rocks has been a year



round residence in the exclusive Main Line commuting suburb of Bryn Mawr. The picturesque property remains an exemplification of Lower Merion's societal trends.

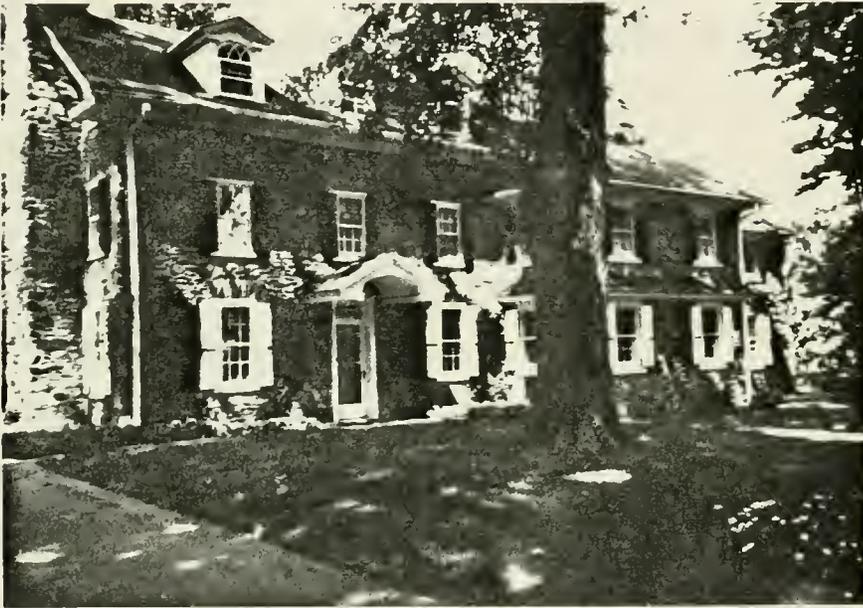


Figure 62: "Black Rocks" 1990. Photographs.



## ENDNOTES: CHAPTER FIVE

- <sup>1</sup> Lewis Mumford, Technics and Civilization (New York: Harcourt, Brace and Company, 1934), p.157.
- <sup>2</sup> Mumford, Technics and Civilization, p.158.
- <sup>3</sup> Mumford, Technics and Civilization, p.182.
- <sup>4</sup> Toll, vol.1, p.307.
- <sup>5</sup> Toll, vol.2, p.308.
- <sup>6</sup> Doebley, p.10.
- <sup>7</sup> Mumford, "The Architecture of Escape", p.321.
- <sup>8</sup> Trachtenberg, p.5.
- <sup>9</sup> Mumford, Technics and Civilization, p.363.
- <sup>10</sup> Hewitt, draft, p.312.
- <sup>11</sup> Toll, vol.2, p.306.
- <sup>12</sup> The Social Register of Philadelphia, 1903-1936.
- <sup>13</sup> Montgomery County Recorder of Deeds, DB 1249, Norristown, PA, p.145-7.
- <sup>14</sup> Nancy Malling (recollecting conversations with Jane Barnard Bratten), interview with author, September 1989.
- <sup>15</sup> Durham & Irvine, "House 176: 1937 Drawings", Durham Collection, The Athenaeum of Philadelphia, Philadelphia, PA Includes various sketches as well as blueprints of floor plans and elevations. It should also be noted these plans were revised several times. The Athenaeum of Philadelphia houses the final revised plans dated December 29, 1937.
- <sup>16</sup> Tatman & Moss, p.237-9; Toll, vol.1, p.1446.
- <sup>17</sup> Durham & Irvine, "House 176: 1937 Drawings".
- <sup>18</sup> Durham & Irvine, First Floor Plan.
- <sup>19</sup> The stone construction specified on the plans was to be similar to the stonework of Durham & Irvine's House 160--the Joseph Holt Residence at 650 Caisbrook Road, Bryn Mawr, PA, 1936. Durham Collection, The Athenaeum of Philadelphia.



- <sup>20</sup> Durham & Irvine, First and Second Floor Plans, South, East and North Elevations.
- <sup>21</sup> Durham & Irvine, "Statement--House 176", April 30, 1938, Papers of James and Nancy Malling, Bryn Mawr, PA, p.2.
- <sup>22</sup> Durham & Irvine, "Statement--House 176", p.2.
- <sup>23</sup> Location verified by present owner Nancy Malling.
- <sup>24</sup> Durham & Irvine, "Statement--House 176", p.1.
- <sup>25</sup> Durham & Irvine, First Floor Plans.  
Visual inspection indicates the hearth was not narrowed.  
Measurements match Furness plans.
- <sup>26</sup> Durham & Irvine, "House 176: 1937 Drawings", a sketch indicates alterations necessary to accept new mantle from "Rittenhouse home."
- <sup>27</sup> Durham & Irvine, First Floor Plans.
- <sup>28</sup> Durham & Irvine, Second Floor Plans.
- <sup>29</sup> Durham & Irvine, "Estimate for Black Rocks", December 18, 1937, Papers of James and Nancy Malling, p.1.
- <sup>30</sup> Durham & Irvine, First Floor Plans.
- <sup>31</sup> Durham & Irvine, Second and Third Floor Plans.
- <sup>32</sup> Durham & Irvine, "Statement--House 176", p.1.
- <sup>33</sup> Durham & Irvine, First Floor Plans.  
Visual inspection by author of existing conditions.
- <sup>34</sup> Durham & Irvine, "Statement--House 176", p.1.
- <sup>35</sup> Durham & Irvine, "House 176: 1937 Drawings", sketch.
- <sup>36</sup> Durham & Irvine, "Statement--House 176", p.2.
- <sup>37</sup> Durham & Irvine, "House 176: 1937 Drawings", sketch.  
Also note the platform is indicated on the First Floor Plans. Therefore this sketch for alterations of the staircase must have occurred after the plans were drawn.
- <sup>38</sup> The Durham & Irvine First Floor Plans very lightly indicate the presence of this bathroom. Probably a late addition. The Mallings verified the location of this bathroom which they moved in 1981.



<sup>39</sup> Durham & Irvine, "Statement--House 178", p.2.

<sup>40</sup> This bill dated April 30, 1938 is addressed to the Barnards at 1820 Rittenhouse Square, Philadelphia. A letter dated November 30, 1938, from Thomas Sears is addressed to their Black Rock Road address. This suggests that the Barnards moved between May and November of 1938.

<sup>41</sup> Durham & Irvine, "Statement--House 176", p.1.

<sup>42</sup> Thomas W. Sears, "Property of Dr. Everett Barnard", Letter, November 30, 1938, Papers of James and Nancy Malling, Bryn Mawr, PA.  
The Athenaeum of Philadelphia houses drawings of two other of Thomas W. Sears (1880- ) commissions: Church Farm School in Glen Loch, PA, 1954; and Arthur I. Meigs Residence in Radnor, PA, 1938.

<sup>43</sup> Thomas W. Sears, "Property of Dr. Everett Barnard", Drawing of Scheme A.

<sup>44</sup> Thomas W. Sears, "Property of Dr. Everett Barnard", Drawing of Scheme B.

<sup>45</sup> Thomas W. Sears, "Property of Dr. Everett Barnard", Planting Plan of Garden, February 3, 1939.

<sup>46</sup> Thomas W. Sears, "Property of Dr. Everett Barnard", bills dated November and December 1939.

<sup>47</sup> The Social Register of Philadelphia, 1940-1950.

<sup>48</sup> Montgomery County Register of Wills, RW 84464. 1957. Norristown, PA.

<sup>49</sup> The Social Register of Philadelphia, 1940-1981.

<sup>50</sup> Montgomery County Register of Wills, "Certificate of Award of Real Estate", No. 65057, March 3, 1975, Norristown, PA.  
Montgomery County Recorder of Deeds, DB 4013, p.180.

<sup>51</sup> Montgomery County Register of Wills, RW 97616, 1964.

<sup>52</sup> The Social Register of Philadelphia, 1964-1981.  
Nancy Malling.

<sup>53</sup> Nancy Malling.

<sup>54</sup> Montgomery County Recorder of Deeds, DB 4669, pp.545-46.



<sup>20</sup> James Malling, interview with author, March 1990.



## CONCLUSION

What finally decides the form of a dwelling, and molds the spaces and their relationships, is the vision that people have of the ideal life.

Amos Rapoport<sup>1</sup>

The development of Black Rocks exemplifies Rapoport's statement. The form and function of Black Rocks evolved from Hamilton Egbert's gentleman farm, to Edward Sayres 'Colonial Revival' summer home, to Dr. Barnard's year-round residence. Each gentleman was pursuing his concept of the ideal life.

Furthermore, Black Rocks, by virtue of embodying an ideal, functioned as more than just a shelter to these gentlemen. The picturesque house, the rare black rocks, the sloping meadow and the bubbling Mill Creek were all utilized in creating a sense of place--its own genius loci. While the nature of Black Rocks's genius loci has changed over time, dependent on the society's vision of the ideal, it has retained a comprehensive extension to its past. Each new phase built upon the existing fabric of the site. Black Rocks provides a historical continuum attesting to the individual's and society's desires of the period.



## A PRESERVATION STATEMENT

A common misconception of Historic Preservation is that it is singularly interested in buildings which represent events or persons of national importance. However, this is only a subset of the field. Historic Preservation is concerned with preserving the built environment--structures, objects and landscape inclusive. This aim is achieved by the documentation and maintenance of the fabric comprising the built environment.

In the case of residences, such as Black Rocks, it is acknowledged that they are reflections of societal trends and therefore are not static. Structures evolve as society evolves. It is not the objective of preservationists to freeze structures and arrest time. It is, however, the aim of historic preservationists to promote an awareness of the validity and necessity of maintaining a historical continuum. Cultures are not devoid of their past. They are a result of their past.

Just as scientific knowledge builds from a foundation of theories hypothesized and proven in the past, culture also builds from the experiences and lessons of the past. Historic Preservationists strive to provide this foundation. The foundation is not built from one structure, one object, or one landscape, but rather from a series and interrelation of all these facets.



The purpose of this thesis is not to suggest Black Rocks is a distillate case study of historic preservation. However what the author would like the reader to reflect upon is twofold: first, how Black Rocks recorded the culture in which it was built; and secondly, how Black Rocks evolved while simultaneously maintaining cultural fabric and acknowledging the site's history.

Black Rocks portrays a segment of Lower Merion history. It does not exemplify every trend or aspect of the area's history. It is only one piece. Examinations of other Lower Merion sites will yield other information. Furthermore Black Rocks will continue to evolve. The author hopes future owners will acknowledge the link Black Rocks provides in Lower Merion's historical continuum and will respect it.



The women sat among the doomed things, turning them over and looking past them and back. "This book, my father had it. He liked a book. Pilgrim's Progress. Used to read it. Got his name in it right here. Why, here's his pipe--it still smells rank. And this picture--an angel. I looked at it before the first three children came--didn't seem to do much good. Think we could get this china dog in? Aunt Sadie brought it from the St. Louis fair. See--it says right on it. No, I guess we can't take that. Here's a letter my brother wrote the day before he died. Here's an old-time hat. These feathers--I never got to use them. No, there isn't room.... How can we live without our lives? How will we know it's us without our past?"

John Steinbeck<sup>2</sup>



ENDNOTES: CONCLUSION

<sup>1</sup> Amos Rapoport, House Form and Culture, Foundation of Cultural Geography Series (Englewood Cliffs, NJ: Prentice-Hall, 1969), p.47.

<sup>2</sup> John Steinbeck, The Grapes of Wrath (New York: Penguin Books, 1976), p.28.



## APPENDIX A: CHAIN OF TITLE

Parcel Number: 40-00-05772-00-2

Note: All deeds are recorded in the Montgomery County Court House, Norristown unless followed by (PC). PC indicates that the deed is recorded at the Philadelphia County City Hall Annex, Philadelphia. Likewise the location of the registration of the cited wills is indicated by MC or PC.

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Grantee: Malling, James F. & Nancy K.                      Date: 11-20-1981

Grantor: Barnard, George B. & Frances F.                  Price: \$370,000

Recorded: DB 4669 pp.545-46                                  Survey: 4.661 a  
Description A

Description A: Beginning at a stone set in the middle of Black Rock Road, being a corner of land of Frances B. Saunders, extending along the middle of the said Black Rock Road South Thirty degrees Three minutes West Ninety-four and Ninety one-hundredths of feet to another stone set in the middle of the said Black Rock Road; thence still along the middle of same South Fifty-nine degrees Ten minutes west Three hundred twelve and eighty seven one-hundredths feet to a spike, a corner of land now or late of the Estate of Samuel J. Magarge; thence extending along said land the two following courses, viz: North Twenty-two degrees Forty minutes West Two Hundred Thirty-seven and Three-tenths feet to a stake, and North Three degrees Thirteen minutes West, crossing Mill Creek, Four Hundred Seventeen and Two one-hundredths feet to a stone in other land now or late of Frances B. Saunders; thence along the said land the two following courses, viz: North Seventy degrees Five minutes, East One Hundred Seventy and Forty-two one-hundredths feet to a point, and North Sixty-eight degrees Eight minutes East Eighty-one feet to an iron bolt in land now or late of Frances B. Saunders; and thence along the said land South Twenty-two degrees Nine minutes East, recrossing the said Mill Creek, Five Hundred Eighteen and Ninety one-hundredths feet, to the first mentioned stone and place of beginning.

---



Grantee: Barnard, George B. & Frances F. Date: 12-27-1978

Grantor: Barnard, George B & (\*Frances F) Price: \$1.00

Recorded: DB 4378 PP.280-283 Survey: 4.661 a  
Description A

\*Note: Deed cites both George & Frances; Real Estate  
Registration cites only George

---

Grantee: Barnard, George B. Date: 11-29-1965  
(son of Everett & Eliza)

Grantor: Barnard, Eliza B. Price: na  
(died May-3-1964)

Recorded: DB 4013 p.180 (Orphans Court) Survey: 4.661 a  
RW 97616 (MC 09-16-1959) Description A

"I give and devise my residence at 636 Black Rock  
Road...to such child of mine as may elect to recieve  
(it)...based on seniority..."

Jane B. Whittlesey and James T. Barnard waived rights  
to the residence.

Awarded to George B. Barnard 3-3-1975 Certificate of  
Award of Real Estate No 65057.

---

Grantee: Barnard, Eliza B. Date: 11-2-1957

Grantor: Barnard, Everett P. & Eliza B. Price: na  
(Everett died November-2-1957)

Recorded: RW 84464 (MC) Survey: 4.661 a  
by survivorship Description A

---

Grantee: Barnard, Everett P. & Eliza B. Date: 10-20-1937  
(Physician)

Grantor: Fidelity-Phila Trust Co, trustee Price: \$36,000  
(for Mary V. Lewis Sayres)

Recorded: DB 1249 pp.145-7 Survey: 4.661 a  
Description A

---



**Grantee:** Fidelity-Phila Trust Co, trustee **Date:** 03-10-1932

**Grantor:** Sayres, Mary V. Lewis **Price:** \$1.00  
(died March-19-1934)

**Recorded:** DB 1145 pp.184-6 **Survey:** 4.661 a  
RW 50056 (MC) **Description A**

Condition of will: property can only be sold with the  
consent of daughter, Linda Sayres Phillips

---

**Grantee:** Sayres, Mary V. Lewis **Date:** 12-7-1911

**Grantor:** Sayres, Jennie H. **Price:** \$1.00  
(sister-in-law of Mary)

**Recorded:** DB 667 pp.49-51 **Survey:** 4.661 a  
**Description A**

---

**Grantee:** Sayres, Jennie H. **Date:** 12-7-1911

**Grantor:** Sayres, Edward S. & Mary V Lewis **Price:** \$1.00

**Recorded:** DB 667 pp.66-69 **Survey:** 3.637 a  
0.080 a  
0.944 a  
**Description B,C,E**

**Description B:** Beginning at a Spike in the middle of Black Rock Road, being a corner of land late of Charles Sim and being the premises next herein after described thence extending along the middle of said Black Rock Road, South Fifty-nine degrees, Ten minutes West, Three hundred and Six and Eight tenths feet past to another Spike in land now or lat of Samuel J. Magarge, late part of the tract of which this is also a part; thence extending along said Magarge's land North Twenty-two degrees, Forty minutes West, Two hundred and Thirty-seven and three tenths feet to a Stake in said Magarge's land, thence still along the said Magarge's land North Three degrees Thirteen minutes West crossing Mill Creek Four hundred and Seventeen and two-one hundredths feet to a stone set in line of land of Mrs. Saunders, thence extending along said Saunders' land, North Seventy degrees, Five minutes East, One hundred and Seventy and forty-two one hundredths feet to a Stone set in said Sim's land and thence extending along same South Twenty-two degrees, Nine minutes East,



re-crossing said Mill Creek, Five hundred and Seventy-eight and thirty-eight hundredths feet to the first mentioned Spike and place of beginning.

**Description C:** Beginning at a spike set in the middle of the Black Rock Road, a corner of the premise above described, thence by the said land North Twenty-two degrees, Nine minutes West, Five hundred and Seventy-eight and thirty-eight hundredths feet to a point in line of land of Mrs. Frances B. Saunders, where a stone formerly stood, thence by said Saunders' land North Sixty-eight degrees, Eight minutes East, Six feet to a Stake, thence by the other land of Charles Sim, South Twenty-two degrees Nine minutes East, Five hundred and Seventy-seven and forty-four hundredths feet to a Stake in the middle of said Black Rock Road and thence along the middle of said road South Fifty-nine degrees ten minutes West, Six and Seven hundredths feet to the place of beginning.

**Description E:** Beginning at a Stone set in the middle of the said Black Rock Road, a corner of the premise last above described, thence by said land North Twenty-Two degrees, Nine minutes West, Five hundred and Seventy-seven and forty-four hundredths feet to a stone in line of Mrs. Frances B. Saunders land; thence by said Saunders' land, North Sixty eight degrees, Eight minutes East, Seventy-five feet to a stake, a corner of land (now or) late of Charles Sim, now of Said Frances B. Saunders, thence by said Saunders' land South Twenty-two degrees Nine minutes East, five hundred and Eighteen and Ninety hundredths feet to a Stake in the middle of the said Black Rock Road, and thence along the middle of said road, by other land of said Edward S. Sayres South Thirty degrees, Three minutes West, Ninety-four and Ninety hundredths feet to the place of beginning.

---

* Grantee: Sayres, Edward S.	Date: 09-26-1900
Grantor: Sims, Charles & Fanny T.	Price: \$591.72
Recorded: DB 466 pp.82-4	Survey: 0.944 a Description B

---



\* **Grantee:** Sayres, Edward S. **Date:** 11-25-1899  
**Grantor:** Sims, Charles & Fanny T. **Price:** \$250  
**Recorded:** DB 454 pp.319-21 **Survey:** 8/100 a  
Description C

---

**Grantee:** Sayres, Edward S. **Date:** 08-10-1899  
(Attorney at Law)  
**Grantor:** McIlvain, Charles J. & Mabel D. **Price:** \$1700  
(architect) **Mortgage:** \$2800  
**Recorded:** DB 449 pp.384-6 **Survey:** 3.637 a  
MB 326 p. 238 Description D

**Description D:** Beginning at a spike in the middle of Black Rock Road being also a corner of land of Charles Sim thence along the middle of said road south fifty nine degrees ten minutes west three hundred and six and eight tenths feet to another spike thence by land of Samuel J. Megargee (sic) late part of the tract of which this is also part North twenty two degrees forty minutes east two hundred and thirty seven and three tenths feet to a stake thence still by the same North three degrees thirteen minutes west four hundred and seventeen and two one hundredths feet to a stone in line of land of Mrs. Saunders thence by said Saunders land North seventy degrees five minutes east one hundred and seventy and forty two hundredths feet to a stone thence by land of said Charles Sim south twenty two degrees nine minutes east five hundred and seventy three and thirty three hundredths feet to place of beginning.

---

**Grantee:** McIlvain, Charles J. Jr. **Date:** 03-20-1899  
**Grantor:** Egbert, Kate & Elizabeth **Price:** \$4060-Kate  
\$1.00 Eliz  
**Recorded:** DB 448 pp.92-5 **Survey:** 3.637 a  
Description D

---



Grantor: First Part: Elizabeth Egbert, widow of Hamilton  
Egbert  
Kate Egbert, daughter of Elizabeth &  
Hamilton  
Joseph Egbert M.D., son of Elizabeth  
& Hamilton  
& his wife Katherine  
Grantee: Second Part: Charles J. McIlvain, Jr. & wife  
Mabel D.  
Third Part: Edward S. Sayres

Date: December-4-1911

Survey: Description E: "premises erroneously described"  
proper conveyance of 3.637 acres

Recorded: DB 667 pp.69-73

---

Grantee: Egbert, Kate Date: 12-16-1898  
(of Lower Merion)  
Grantor: Egbert, Joseph C. & Katherine M. Price: \$1.00  
(both of Wayne)  
Recorded: DB 444 pp.166-9 Survey: 3.637 a  
Description D

---

Grantee: Egbert, Elizabeth, Joseph & Kate Date: 03-13-1894  
(wife, son & daughter)  
Grantor: Egbert, Hamilton Price: na  
(died intestate)  
Recorded: RW 19032 (MC) Survey: 3.637 a  
Inventory of July-10-1894 Description D  
by survivorship

---

Grantee: Egbert, Hamilton Date: 03-2-1866  
(farmer)  
Grantor: Thompson, Thomas S. & Sarah Ann Price: \$2500  
Recorded: DB 141 pp.224-6 Survey: 16 a 127 p  
Description F























**Description J:** Land in America...bounded on the East by the Delaware River from twelve miles Distance Northward of Newcastle Towne to the Three and fortieth Degree of Northerne Latitude and Extended Westward five Degrees in Longitude and is bounded on the South by a circle drawn att (sic) Twelve Miles distance from Newcastle aforesaid Northwards and Westwards to the beginning of the forthieth Degree of Northern Latitude and then by a strait Line Westward to the Limit of Longitude above mentioned.

\* Note: The price also included a Quit rent of one shilling to be paid every first day of March.

---



APPENDIX B: DEEDS--LAND CONVEYANCES

Grantee: Malling, James & Nancy                      Date: 11-20-1981  
Conveyance: 4.661 acres                              Price: \$370,000  
A: "...all that certain tract or piece land  
with buildings and improvements erected"

---

Grantee: Barnard, George & Frances                  Date: 12-27-1978  
Conveyance: 4.661 acres -- A                      Price: \$1.00

---

Grantee: Barnard, George                              Date: 11-29-1965  
Conveyance: 4.661 acres -- A                      Price: na

---

Grantee: Barnard, Eliza                                Date: 11-2-1957  
Conveyance: 4.661 acres -- A                      Price: na

---

Grantee: Barnard, Everett & Eliza                  Date: 10-20-1937  
Conveyance: 4.661 acres -- A                      Price: \$36,000

---

Grantee: Fidelity-Phila Trust Co                    Date: 03-10-1932  
Conveyance: 4.661 acres -- A                      Price: \$1.00

---

Grantee: Sayres, Mary V. Lewis                    Date: 12-07-1911  
Conveyance: 4.661 acres -- A                      Price: \$1.00

---

Grantee: Sayres, Jennie                              Date: 12-7-1911  
Conveyance: 4.661 acres -- A                      Price: \$1.00

---







**Grantee:** Egbert, Hamilton & Norman    **Date:** 04-4-1856

**Conveyance:** 16 acres 127 perches--E    **Price:** \$1500

---

**Grantee:** Sheldon, Francis    **Date:** 03-29-1852

**Conveyance:** 30 acres -- E    **Price:** \$1600

---

**Grantee:** Walker, Richard    **Date:** 11-23-1850

**Conveyance:** 30 acres    **Price:** \$1500

F: "all that certain tract or piece or parcel  
of land"

---

**Grantee:** Walker, Richard Jr.    **Date:** 03-26-1850

**Conveyance:** 209 acres    **Price:** \$3500

G: "all that certain messuage or tenement and  
plantation"

---

**Grantee:** Jones, Rebecca    **Date:** 08-2-1822

**Conveyance:** 209 acres -- G    **Price:** \$1.00

---

Conveyances between 1732 to 1812 were cited in the wills of the Roberts family. Citations either stated "all my real estate" or cited "my plantation" and acreage. Specific land surveys were not recorded in these wills.



## APPENDIX C: ROBERTS FAMILY

- Edward (d.1705) wife Anne Humphrey 3rd mo.-22-1699  
+ John (inherits land from father; father died intestate;  
mother named executor)  
    Hugh  
+ Robert  
    Ann  
+ **Owen**, blacksmith, unmarried, (d.March 26, 1733)  
    wills BR to brother Edward  
+ Joseph, cooper, marries first cousin Rebecca (d.1764)  
    wills his land to sons Joseph & Owen  
    # Elizabeth (b.3-9-1711) m.Samuel Wells  
        Joseph  
        Henry m.Alice Stevens  
        Rebecca m.William Ward  
        Mary m. John Cotton  
    # Joseph (b.7-23-1719 d.2-18-1800) unmarried;  
        inherits father land with brother Owen;  
        wills land to brother John  
    # Ann (b.8-8-1721 d.12-1756) m.first cousin  
        William (m.2-21-1751)  
        \* Rebecca  
        \* **Tacy Ann** m.Benjamin Jones  
            inherits BR and grandfather's land from  
            Uncle John & Aunt Rebecca  
            \* **Rebecca** m.**Richard Walker**  
                purchases BR from mother Tacy; wills  
                to son Richard through father  
                \* **Richard jr** sells BR Francis Sheldon  
    # **Rebecca** (d.1812) unmarried  
        inherits 1/3 BR from Uncle Edward (2/3 Owen &  
        John); sells portion; wills rest to niece Tacy  
    # **Owen** (d.11-18-1800) unmarried  
        inherits 1/3 BR from Uncle Edward; inherits 1/2  
        father's estate; wills all land to brother John  
    # **Levi** (d.1767) unmarried  
    # **John** (d.6-30-1804), cooper, unmarried  
        inherits 1/3 BR from Uncle Edward; inherits from  
        brother Owen 1/3 BR & 1/2 father's land;  
        inherits from brother Joseph 1/2 father's land;  
        wills all this land to niece Tacy as stipulated  
        in the wills of Joseph & Owen  
+ William, wife Ann-first cousin  
+ **Edward the elder** (buried 12-29-1778) unmarried  
    inherits BR from brother Owen; wills BR to nephews  
    Owen & John & niece Rebecca

Note: BR=Black Rock land. Names in bold indicate owners of "Black Rocks". It is Edward the elder's land that is "Black Rocks". Joseph's land inherited indirectly by Tacy is sold to William Hagy. (MCDB 27 p.814-6)



## APPENDIX D: EGBERT FAMILY

\* David N. Egbert m. Maria Yocum

- \* John (b.12-15-1817, d.1817)
- \* Emily (.11-9-1818, d.1818)
- \* Martha (11-26-1819, d.12-29-1820)

\* **Hamilton** (b.9-18-1821, d.4-30-1894) m. **Elizabeth R. Rohrman** (Eliza) (b.12-14-1827, d.2-19-1912)

Purchases BR with brother Norman from Francis Sheldon in 1856; The brothers and wives sell BR to Thomas Thompson in 1859

Hamilton re-purchases BR from Thomas Thompson in 1866; Wills BR to wife, Eliza, and children, Joseph and Kate;

Eliza sells her inherited portion, with daughter Kate, to Charles McIlvain in 1899

\* **Joseph** (5-30-1853, d.1-17-1923) m. **Katherine Miller**

Inherits BR from father in 1894 with mother, Eliza and sister, Kate; Joseph and his wife sell their portion to sister Kate in 1898

\* **Kate R.** (b.12-30-1856, d.2-19-1932)

Inherits BR from father with brother and mother; Purchases brother Joseph's portion; Sells her portion with her mother, Eliza, to Charles McIlvain

\* **Norman** (b.5-17-1826, d.1-17-1910) m. (2-28-1856) **Susanna Egbert** (b.12-3-1833, d.2-19-1926)

Purchases BR with brother, Hamilton, from Francis Sheldon; Sells with Susanna, and Hamilton and Eliza to Thomas Thompson

\* **Emily** (b.5-17-1826, d.2-17-1910) m. **William Davis Jr.**

- \* **Adeline** (b.4-25-1828, d.1829)
- \* **Jerome** (b.5-28-1830, d.1830)
- \* **Adalida** (b.4-12-1833, d.1833)

Note: BR denotes Black Rocks. Names in bold indicate owners of Black Rocks.



## APPENDIX E: SAYRES FAMILY

- \* Edward Smith Sayres (b.1797 d.March 29,1877)  
m.July 25,1839 Jane Humes (d.1858)
  - \* Emma Stalker Sayres (b.Nov.22,1840; d.Oct.6,1850)
  - \* Caroline Augusta Sayres (b.June 9,1843; d.Jan.30,1847)
  - \* Harry Sayres (b.June 2,1845)
  - \* Edward Stalker Sayres (b.July 30,1850)  
(d.April 27, 1923)  
married Dec.15,1881 (Caroline) Linda Jennings Lewis  
(b.Sept.29,1853; d.Oct.9,1882)
  - \* Linda Lewis Sayres (b.Sept.28,1882)  
m.Jan.3,1906 Morris Shallcross Phillips
- married June 20,1887 **Mary Victoria Lewis**  
(b.June 20,1857; d.March 19,1934)

Edward Stalker and Mary V.L. Sayres purchased BR  
from Charles McIlvain in March 1899.  
Edward and Mary sold BR to Edward's sister Jennie  
December 7, 1911 for \$1.00.  
Later in the day on December 7, 1911 Mary purchased  
BR back from Jennie for \$1.00. Mary V.L. Sayres  
owned BR until her death in 1934

- \* Horace Sayres (b.Oct.3,1853) m.April 19,1881  
Isabel Eustis (d.May 2,1895)  
\* (six children)
- \* Jennie Humes Sayres (b.June 19,1855)

Jennie purchased BR from brother Edward and his  
wife Mary on December 7,1911 for \$1.00.  
Later that same day she sold it back to Mary for  
\$1.00  
Jennie was consistently cited as a member of  
Edward's household. Her summer residence was  
listed as BR.

Note: BR stands for "Black Rocks". Names in bold  
indicate owners of "Black Rocks".



## APPENDIX F: MEMBERSHIPS OF EDWARD STALKER SAYRES

- Law Association of Philadelphia
- Law Academy of Philadelphia --recorder 1872-73
- Delaware Insurance Company of Philadelphia --director & counsel
- Merchants' Trust Company of Philadelphia --director later vice-president
- Land Title & Trust Company --aided in formation -secretary
- Civil Service Reform Association of Pennsylvania --original member -secretary -treasurer several years -member of executive and finance committees
- Northern Home for Friendless Children and Associate Institute for Soldiers' and Sailors' Orphans --vice-president of Board of Trustees
- Christ Church Hospital --treasurer
- Children's Hospital of Philadelphia --secretary of board of managers
- Mercantile Beneficial Association --life member councillor -Board of Managers
- Historical Society of Pennsylvania --council member 1908-1923 -Trustee of Building Fund 1916-23 -Trustee of Gratz Fund 1917-23 -Committee member Library & Collections 1909-1923 -Councillor 1920-23
- Genealogical Society of Pennsylvania --founder (1 of 5) - First recording secretary 1892 -Vice-president 1917
- Christ Church Historical Association --Board of Managers
- Apprentices' Library --manager
- Geographical Society of Pennsylvania
- National Geographical Society of Washington
- Society of Colonial Wars in the Commonwealth of Pennsylvania --secretary 21 years -Lieutenant-Governor - Council member
- Pennsylvania Society of the Sons of the Revolution --Vice-President -Historian -Board of Managers -several time delegate to General Society -various committees
- Colonial Society of Pennsylvania --founder -Councillor
- Council of the Pennsylvania Commandery of the Military Order of Foreign Wars of the United States --treasurer - general of the National Commandery
- Society of War of 1812 --treasurer
- Swedish Colonial Society
- Merion Cricket Club --founding member 1865 -President 1913-1923 -secretary 42 years (1868-70, 1873-1913) -member of Board of Governors -various committees
- Radnor Hunt
- Bryn Mawr Polo Club
- Rittenhouse Club of Philadelphia
- Veteran Corps--First Regiment Infantry --First Lieutenant
- Company D-Civil organization --Quartermaster of Old Guard -Captain -Paymaster -Major -Junior Vice-Commander
- National Guard of Pennsylvania



## APPENDIX G: BARNARD FAMILY

- \* **Dr. Everett P.**(d.11-2-1957), wife **Eliza H. Bosler**  
(d.5-3-1964)  
Everett purchases BR from the estate of Mary V.L. Sayres in 1923.  
Everett wills BR to wife, Eliza.  
Eliza inherits BR 1957.  
Eliza dies in 1964 leaves BR to her children based on seniority--George inherits BR.

- \* James T. (b.1926)  
waived rights to BR

- \* Martha Jane (known primarily as Jane) (b.1927)  
m. Lt. Henry C. Whittlesey (m.1941)  
  
waived rights to BR  
However retains rights to reside in the BR tenant house at BR as stipulated in Eliza's will  
Resides in BR tenant house until remarriage to Arthur Bratten in 1985

- \* Julia R. Whittlesey m. William L. Fulley
- \* Ruth B. Whittlesey

- \* **George B.**(b.1931) m.**Frances Fleming** (m.1-17-43)

- Inherits BR from mother after brother James and sister waive their rights.  
Officially awarded BR in 1975  
George and Frances tenants by entireties 1978  
George and Frances sell BR in 1981 to James and Nancy Malling

- \* George B. Jr. (b.1960)
- \* Henry W. (b.1961)
- \* Samuel F. (1964)

Note: BR stands for Black Rocks. Names in bold indicate owners of Black Rocks.

The majority of the dates listed above were obtained from the Philadelphia Social Register.



APPENDIX H: DURHAM & IRVINE CORRESPONDANCE



DURHAM & IRVINE

1719 RITTENHOUSE STREET  
PHILADELPHIA

December 18, 1937

Dr. Everett Barnard  
1820 Rittenhouse Square  
Philadelphia, Pennsylvania

Dear Mr. Barnard:

Following is an itemized estimate of all labor and materials necessary to make the alterations and additions to Black Rocks:

Permits-----	\$35.00
Excavation - to prepare for walls and terrace-----	100.00
Masonry - includes all new stone work as indicated on plans. Also, rebuilding living room and entrance hall fireplaces to receive other mantles-----	1,505.00
Steel-----	50.00
Carpenter labor - (includes removal of west porch)-----	1,230.00
Lumber-----	615.00
Common labor-----	195.00
Millwork--includes in addition to new work for addition, new kitchen and pantry dressers, new panelled woodwork for closets in entrance hall, new bookcases in living room, wood cupboard for bath #2, new mantel in entrance hall. Millwork for new wing to include a cornice and chairrail in dining room only. Closets as shown on plan will be equipped with shelves and poles, and two sets of shoe shelves. (An allowance of \$315. has been made for kitchen and pantry closets and dressers)-----	1,085.00
Hardware - rough and finishing-----	250.00
Plumbing - includes new kitchen and pantry sinks, new bath fixtures in baths #1 and #2 using old fixtures in bath #4. New toilet and shower in bath #3. New copper tubing throughout. New drain con- nections for laundry trays in basement, resetting old toilet from bath #2 to basement-----	1,140.00
(Present piping in basement is satisfactory but not recommended for any length of time. If allowed to remain untouched deduct sum of \$154.)	
Electrical work - includes wiring in new building, rechecking present wiring system and replacing where necessary, new switches in basement, new annunciator in kitchen-----	243.00
Plastering-----	450.00





**DURHAM & IRVINE**

1713 RITTENHOUSE STREET  
PHILADELPHIA

Heating -	
(a) - Chrysler - Straight direct air conditioning using a hot water coil to heat storage hot water in addition to the present gas hot water heater system-----	\$1,585.00
(b) - Complete Chrysler system-----	2,015.00
(c) - Complete Gar Wood system-----	\$2,101.00
(d) - Complete Carrier system-----	\$2,581.00
(e) - Complete General Electric system----	\$2,680.00
(b, c, d and e are the Split Air and Cast Iron Radiation system using air in main sections and steam in baths and service sections. To include a domestic summer and winter hot water hook-up and doing away with the gas water heater.)	
(Add to these prices if a 1000 gallon oil storage tank is wanted instead of a 275 gallon one--\$125.)	
Roofing - Shingles for new wing and new underground drains for new wing only. Copper half round gutters----	190.00
Painting - painting and glazing new section-----	375.00
To paint outside of present house (2 coats)-----	261.00 -
Tilework - Bath #1 - tile wainscoting and floor, medicine cabinet and accessories.	
Bath #2 - tile wainscoting, rubber tile floor, medicine cabinet and accessories.	
Bath #3 - stall shower of tile, medicine cabinet and accessories.	
Bath #4 - medicine cabinet and accessories.	
Linoleum floor.	
First floor lavatory - Accessories-----	503.00
(If wainscotings are not used in bath #1 and bath #2 and rubber tile instead of tile is used in bath #1, deduct \$114.)	
Hardwood flooring - Includes new white oak flooring 13/16"x 2-1/4" in new section, and refinishing old pine floors and main stairs-----	275.00
Linoleum-----	115.00
Weatherstripping and screens - on new section only to match present screens-----	105.00
Insulation - 4" insulation on 2nd floor ceiling of new wing-----	52.00
over 3rd floor bedroom and bath-----	172.00
Water - new service pipe to basement (present pipe is 3/4" galvanized iron - new would be 3/4" copper tubing)-	87.00
Grading - where present grading will be disturbed-----	100.00
Miscellaneous - cleaning up, survey, fuel, etc.-----	125.00









HOMES ALONG THE MAIN LINE

DURHAM & IRVINE

1713 RITTENHOUSE STREET  
PHILADELPHIA

Repairing well - carpenter	19.00	
masonry	7.75	\$26.75
Path to front <del>path and back entrance door</del>		38.60
Extra for electric fixtures		10.00 ✓
Changing casing on dining room and cellar doors		10.50
shelf - living room bookcase		6.00
soil lines - laundry		30.00
Cleaning and setting Franklin stove		10.00 ✓
Dirt <del>at the front and back</del>		38.00
Electric heater in bathroom		25.00 ✓
New Mantel <del>in living room</del>		52.00
{ Closets in attic, laundry trays in basement,		-
shoe shelf in bedroom #3		11.00
Batteries for caretakers house		4.00
Weatherstripping living room door to terrace		18.00
Add. telephone outlet to bedroom #3		7.50
Soil line and drain to well		6.50
Two pair of shutters		31.00 ✓
Extra lamps and installation (2)		9.50
Building up basement wall (masonry)		6.00
Old lantern		6.00
Cleaning paint spots floors (servants quarters)	6.00	<u>\$722.15</u>
Balance due Durham & Irvine		\$3,199.92

11  
12.50

3,212.42

April 30, 1938

Received payment May 3, 1938

Durham & Irvine  
by: A. G. Eversou

*Garbage container*

*not incl.*

8  
5  
1





**DURHAM & IRVINE**

1713 RITTENHOUSE STREET  
PHILADELPHIA

May 3, 1938

Mrs. Everett Barnard  
1820 Rittenhouse Square  
Philadelphia, Pennsylvania

Dear Mrs. Barnard:

We wish to acknowledge receipt and thank you for your check to our order in the amount of \$3,212.42, representing the final payment on the alterations and additions to Black Rocks, and enclosed herewith is the receipted bill.

Within a few days we shall send you a release of liens, signed by the sub-contractors who worked on this job.

Very truly yours,

*Durham & Irvine*  
Durham & Irvine

E





PIONEER ALONG THE MAIN LINE

DURHAM & IRVINE

1713 RITTENHOUSE STREET  
PHILADELPHIA

Allowances - Range-----	150.00
Electric fixtures-----	100.00
Plans-----	250.00
Supervision and overhead-----	300.00
Contingency-----	200.00
(not including painting or papering interiors of present house; or any alterations to entrance) (there is also no planting allowance)	
	\$12,273.00
Durham & Irvine - 5%-----	613.65
	\$12,886.65

The above has been figured on using first class materials and workmanship for this work. We should be glad to go into this in detail at your convenience.

Thanking you for this opportunity, we are

Very truly yours,

Durham & Irvine



APPENDIX I: THOMAS SEARS CORRESPONDANCE

Fellow of the American  
Society of Landscape Architects

THOMAS W. SEARS  
LANDSCAPE ARCHITECT

Telephone  
Rittenhouse 8315

GIRARD TRUST BUILDING  
TOP FLOOR

SOUTH PENN SQUARE  
PHILADELPHIA

November 30, 1938

Mrs. Everett P. Barnard,  
Black Rock Road,  
Bryn Mawr, Pa.

Dear Mrs. Barnard;-

I am enclosing herewith blue-prints of two schemes for treating the lower part of your garden. While I think either scheme would work out in a satisfactory manner, I rather prefer the one labelled "A".

-It might be nice to have some form of architectural termination for your garden, such as a summer-house, tool-house, or arch. If you should decide to have an arch, it should be something rather rustic and quite different from the small white arch which was previously in the garden.

I am also enclosing a list of bulbs which are being sold off quite reasonably on account of the lateness of the season. If you should think favorably of using these bulbs, I should be very glad to order them for you.

I should be very glad indeed to have your frank criticisms of the plans and to discuss them with you at your convenience.

With kindest regards,

Sincerely yours,

*Thomas W. Sears*

TWS/H

enc. - List - \$70.80

2 prints



BULB LIST FOR GARDEN  
PROPERTY OF DR. EVERETT P. BARNARD  
BLACK ROCK ROAD, BRYN MAWR, PA.

<u>QUANT.</u>	<u>NAME</u>	<u>WHERE FROM</u>	<u>COST</u>
<u>FOR USE NEAR &amp; AMONG ROCKS</u>		(entire list from	
		Artnur Lee,	
		Bridgeport, Pa.)	
<u>TULIPS</u>			
100	Tulip clusiana		\$3.50
	Species Tulip -white and Red		
100	Tulip kaufmanniana		3.50
	The Water Lily Tulip -Yellow & Red		
<u>NARCISSUS</u>			
100	KingAlfred		4.50
	Golden Yellow		
100	Sir Watkin		3.00
	Yellow		
100	Elvira		3.00
	White and Gold Edged Orange		
100	Spring Glory		3.25
	Clear-white with Chrome-Yellow		
<u>MISCELLANEOUS BULBS</u>			
250	Onionodoxa lucilae		3.50
	Glory-of-the Snow (Blue)		
250	Galanthus nivalis		3.50
	Snow Drop		
400	Muscari armeniacum		8.00
	Grape Hyacinth		
250	Scilla nutens		3.50
	Blue Bells		
<u>BULBS FOR FLOWER BEDS</u>			
<u>TULIPS</u>			
	<u>Cottage</u>		
50	Rosabella		1.40
	Soft-pink-Center Creamy White		
50	Dido		1.20
	Cherry-red-Orange Salmon		
200	John Ruskin		4.80
	Light Orange-yellow and Salmon		
	<u>DARWIN</u>		
50	Afterglow		1.20
	Salmon-colored with Orange		
100	Blue Aimable		2.30
	Lilac Blue		
150	Clara Butt		3.30
	Salmon Pink		
100	Dream		2.30
	Lilac-flushed Heliotrope		
50	Faust		1.40
	Dark Purple with Blue		







THOMAS W. SEARS  
LANDSCAPE ARCHITECT

HIRARD TRUST BUILDING  
TOP FLOOR

SOUTH PENN SQUARE  
PHILADELPHIA

January 13, 1939

Mrs. Everett P. Barnard,  
Black Rock Road,  
Bryn Mawr, Pa.

Dear Mrs. Barnard;-

Enclosed please find bills for  
bulbs, labor, mushroom soil, etc. These have all  
been checked over and found to be correct, so that  
I should recommend payment of them directly to the  
various concerns.

I am also enclosing my own bill for  
services to date.

I thought you might like to have  
all these bills rounded up before determining whether  
you wish the shrubs for your garden put in at this time.

With kindest personal regards,

Sincerely yours,

*Thomas W. Sears*

TWS/H

enc. - bills -		
12-31-38	- John DiFelice	\$35.00
12-9-38	Arthur Lee	25.00
1-12-39	R. Schwoebel	138.00

---

\$ 198.00

1-13-39 T.W.S.



SHRUBS FOR GARDEN  
PROPERTY OF DR. E. P. BARNARD  
BLACK ROCK ROAD, BRYN MAWR, PA.

QUANT.	NAME	SIZE	WHERE FROM	Cost
3	Calycenthus floridus Sweet Snrub	sel. sp. B&B	Andorra	6.00
2	Cornus Mas Cornelian Cherry	" " "	"	6.00
2	Cydonia japonica pink Pink Japanese Quince	spec. B&B	Doyle	5.00
1	Ilex verticillata Common Winterberry	sel. spec. B&B	Andorra	2.00
4	Philadelphus virginial Virgin Mockorange	4-5'	Kohankie	3.00
2	" Avalanche Hybrid Mockorange	3-4'	"	1.00
2	Rhododendron maximum Rosebay Rhododendron	sel. spec. B&B	Andorra	10.00
2	Symplocos paniculata Turquoise Berry	" " "	"	5.00
7	Syringe hybrida Hybrid Lilace	6 - sel. spec. B&B 1 - spec.	Schwoebel Sears	30.00
1	" vulgaris Common Lilac	"	Thomas	4.50
4	Viburnum Carlesi Fragrant Viburnum	spec.	Sears	
1	" dentatum Arrow-wood	sel. spec. B&B	Andorra	2.50
8	" dilatatum Linden Viburnum	" " "	"	12.00
2	" prunifolium Black Haw	" " "	"	15.00
6	" taeiferum Chinese Viburnum	spec. B&B	Cottage Gardens	21.00
4	Vitex macrophylla Chaste Snrub	3-4'	Kohankie	3.00

SUMMARY

	Amount	% Disc.	Disc.	Cost
Andorra Nurseries	58.50			58.50
Wm. H. Doyle	5.00	net		5.00
Kohankie & Son -Henry	7.00	20%	1.40	5.60
R. Schwoebel	30.00	net		30.00
Cottage Gardens	21.00	"		21.00
Joe. W. Thomas & Sons	4.50	"		4.50
	<b>\$ 126.00</b>		<b>\$1.40</b>	<b>\$124.60</b>



THOMAS W. SEARS  
LANDSCAPE ARCHITECT

DIRARD TRUST BUILDING  
TOP FLOOR

SOUTH PENN SQUARE  
PHILADELPHIA

In Account with - Mrs. Everett P. Barnard,  
Black Rock Road,  
Bryn Mawr, Pa.

January 13, 1939

For services to date;-		
14 hours of Mr. Sears' time spent on visits to property and work in office	e \$5.00	70 00
Cost of survey		24 00
Surveyors' expenses		3 00
Cost of planting superintendent		45 00
Planting superintendent's expenses		4 00
Cost of inside assistants' time spent in draughting, expenses, etc.		40 00
	Total.....	\$186 00
RECEIVED PAYMENT March 21, 1939 THOMAS W. SEARS per X. "THANK YOU"		



THOMAS W. SEARS  
LANDSCAPE ARCHITECT

GIRARD TRUST BUILDING  
TOP FLOOR

SOUTH PENN SQUARE  
PHILADELPHIA

In Account with - Mrs. E. P. Barnard,  
Black Rock Road,  
Bryn Mawr, Pa.

May 26th, 19 39

For services from January 15th to May 20th, 1939;-		
9 hours of Mr. Sears' time spent on visits to property and nurseries, and work in office @ \$5.00	45	00
Mr. Sears' automobile expense		75
Cost of inside assistants' time spent on draughting, details, etc.	32	00
Cost of planting superintendent	26	70
Planting superintendent's automobile expense	1	55
Total.....	\$ 106	00
RECEIVED PAYMENT July 31, 1939 THOMAS W. SEARS per <i>KS</i> . "THANK YOU"		



DESCRIPTION	QUANTITY	AMOUNT	TOTAL
Northern France Liliun Candidum, selected bulbs	6	\$ 3.60	
Postage & Insurance		.14	\$ 3.74
<i>12</i> <i>11/22/1939</i>			
Shipped: 11/8/39			

JOHN SCHEEPERS, INC. → FLOWERSBULB SPECIALISTS → 522 FIFTH AVENUE, NEW YORK CITY

SHIPPING ADDRESS	ORDER NO	SOLD BY
	4492	LAYL

TERMS NET. WE CANNOT ENTERTAIN CLAIMS UNLESS MADE UPON RECEIPT OF GOODS

DESCRIPTION	QUANTITY	AMOUNT	TOTAL
Liliun x Princeps George C. Creelman, 2 yr. old bulbs	5	\$ 6.25	
Postage & Insurance		.14	\$ 6.39
<i>Pd.</i> <i>Dec 11/1939</i>			
Shipped: 11/24/39			

JOHN SCHEEPERS, INC. → FLOWERSBULB SPECIALISTS → 522 FIFTH AVENUE, NEW YORK CITY



DESCRIPTION	QUANTITY	AMOUNT	TOTAL
Lilium Speciosum Melpomene, high-quality bulbs	3	\$ 1.43	
Postage & Insurance		.13	\$ 1.56
<i>Dec 20<sup>th</sup> 1939</i>			
Shipped: 12/5/39			

JOHN SCHEEPERS, INC. → FLOWERBULB SPECIALISTS → 822 FIFTH AVENUE, NEW YORK CITY

SHIPPING ADDRESS	ORDER NO. 4809	SOLD BY MAIL
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TERMS NET. WE CANNOT ENTERTAIN CLAIMS UNLESS MADE UPON RECEIPT OF GOODS.

DESCRIPTION	QUANTITY	AMOUNT	TOTAL
Lilium x Princeps "George C. Creelman", selected, strong-flowering bulbs	5	\$ 15.00	
Postage & Insurance		.15	\$ 15.15
<i>PA Dec 20<sup>th</sup> 1939</i>			
Shipped: 11/28/39			

JOHN SCHEEPERS, INC. → FLOWERBULB SPECIALISTS → 822 FIFTH AVENUE, NEW YORK CITY



## APPENDIX J: MORTAR ANALYSIS

### AIM:

To determine the proportions of the three principal components of an historic mortar:

1. the binder (basically calcium carbonate ( $\text{CaCO}_3$ ), soluble in acid)
2. the fines (finely textured impurities such as clay and aluminates)
3. the sand or aggregate (which act as fillers)

Note: this analysis yields only approximate information

To record the proportions and visual observations in order establish similarities and differences between various samples. Compare samples to develop a portrait of the structure indicating various building campaigns.

### PROCEDURE:

#### Equipment

- oven
- balance
- mortar and pestle
- beakers
- filter paper
- Buchner funnel
- vacuum
- rubber hose for vacuum set-up
- filter flask
- rubber stopper for filter flask
- sieve set and shaker: Mesh 2.36 mm to 75 um
- 14% solution of hydrochloric acid
- distilled water
- magnet and magnetizer

#### Steps

- collect a sample of adequate size (approximately 40-50 grams)
- label sample by type (BM=bedding mortar, P=pointing)-order taken-site (H=house, B=barn)
- record sample location on picture
- examine the sample and record the following characteristics: color, texture, visual inclusions, hardness and location
- powder half of the sample (20-25 grams) with a mortar and pestle



- dry the powdered sample in the oven at 110 C for 24 hours and then weigh it with a balance-- record as  $W_1$
- place the sample in 600mL beaker and moisten it with distilled water
- immerse the moistened sample in a 14% solution of HCL in order to dissolve the binders (Note: the HCL reacts with the lime and other calcium carbonate based binders and produces carbon dioxide and therefore bubbles)--observe and record the reaction
- (place magnet in beaker)
- (place beaker on magnet stirrer to keep solution in constant motion until filtration)
- (add HCL until reaction ceases)
- label filter paper and weigh it--record as  $W_2$
- place filter paper in Buchner funnel and wet thoroughly with distilled water
- (place rubber stopper in filter flask)
- (place Buchner funnel so it drains into the filter flask)
- (hook up filter flask to vacuum with rubber hose)
- add a few drops of HCL to the sample to verify complete acid digestion of the binder (Note: the remaining solution consists of water containing the byproducts of the reaction (CaCl) and the insoluble portion of the binder (sand and fine impurities))
- (keep magnet circulating to suspend the fines)
- (turn on vacuum)
- slowly pour the liquid with the suspended material (Note: very small silt particles) through the filter, being careful to keep the solid particles ( Note: sand) at the bottom of the beaker and decant off only the liquid and fines
- slowly add water to the beaker and continue to pour the liquid through the Buchner funnel set-up until the water added to the beaker remains clear (Note: sand clean of acid)
- (unhook from vacuum when all the liquid has passed through the Buchner funnel)
- dry the fines collected on the filter paper and the sand remaining in the beaker in the oven



- weigh the filter paper with the dry fines-- record as  $W_3$
- subtract the weight of the paper,  $W_2$ , to determine the weight of the fines,  $W_3 - W_2$ , --record
- weigh the dry sand and record as  $W_4$
- express the amount of sand as a w/w percentage of the whole sample--express the amount of fines in the same manner (the amount of dissolved binder is calculated by summing up the percentage of sand and fines and subtracting from 100%)
- examine the sand with a binocular microscope-- record the physical characteristics: color, particle shape and size, etc.
- combine the sand and fines, weigh--record as  $W_5$
- to obtain Particle Size Distribution sieve the sand and fines in a standard sieve set, mesh = 2.36 mm to 75  $\mu$ m, for ten minutes
- express the size as a percentage of the whole and record

#### Deviations from Procedure

The lab analysis procedure based on the National Park Service, North Atlantic Preservation Center, "Mortar Analysis Methodology", is a filtration by gravity method. The method used for this procedure was done with the assistance of a vacuum. In addition the suspension was aided by the use of magnets rather than stirring by hand. In the above procedure the steps that have been changed or inserted to allow for these aids are denoted by the use of (). Clarifying commentaries have been inserted as 'Note'.

Other deviations from procedure:

- the powdered sample was not dried in the oven at 110 C for 24 hours before it was weighed and recorded as  $W_1$
- the HCL solution used was 3M
- as noted in the procedure both the sand and fines were dried in the oven rather than by a heat lamp or by evaporation
- both the sand and fines were sieved together rather than just the sand as implied by the experiment



## MORTAR ANALYSIS

**Sample locations:** Exterior samples of bedding mortar and pointing were taken from the main house and the barn. The present owner indicated recent patches of new pointing on the main house and these sites were avoided. It should be noted however that these recent patches appeared to be stronger than the surrounding stone. The stone surrounding these patches was crumbling at touch most likely indicating that a Portland cement mix was used for these recent patches. This should be avoided in the future. The following data sheets indicate the types of mortars previously used and should be utilized as a reference for future repairs. Please refer to the photographs and floor plan following the text for further clarification of sample sites. Samples were attempted at the tenant house adjacent the barn but were not successful due to the high strength of the pointing (Portland Cement?). Attempts resulted in the destruction of the surrounding stone and therefore were abandoned.

**Data Sheets:** Each page of the following data sheets represents one sample. The various measurements and calculations are recorded in sections to allow for comparisons of individual sections between various samples to be accomplished easily. They are arranged in the order the samples were taken. A section following the data sheets organizes the samples into distinctive groups representing differing building campaigns.



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-1-H

Date: November 1988

Origin of Sample: Bedding Mortar of Western facade of West section--taken south of the chimney behind the first story shutter

Visual Description of Sample: Overall Color--brown with many shiny specks and large white powdery chunks  
Large pieces of aggregate visible, these are mainly black pieces as well as pieces of wood

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.29g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	2.47g
$W_3 - W_2$ (weight of dry fines)	1.64g
$W_4$ (weight of dry sand)	18.56g
$W_5$ (total weight of dry material)	20.20g
% of sand ( $(W_4/W_5) \times 100$ )	73.41%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	6.50%
% of dissolved binder	20.09%

Observations of reaction: many small bubbles, many metal particles clung to the magnet. Reaction time was longer than most other samples--approximately half hr

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey aggregate particles and dark shiny particles--all edges are sharp and crisp  
visual--overall color--grey, large range of aggregate sizes that include wood pieces

Characterization of Fines: appears uniform, color--tan with a shiny goldish tinge with pieces of wood

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	6.59g	26.06	73.94 *
1.18 mm	1.85g	7.31	66.62
600 um	2.37g	9.37	57.25
300 um	4.01g	15.86	41.39
150 um	3.71g	14.67	26.72
75 um	0.65g	2.57	24.15
PAN	<u>0.82g</u>	3.23	20.92
	20.00g = total sieved		
	0.99% lost during sieving		

\* Black Rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-2-H

Date: November 1988

Origin of Sample: Bedding Mortar of West facade of Western section--chimney at first floor level

Visual Description of Sample: Overall color--brown, with shiny specks and large white powdery chunks (lime?) Large pieces of aggregate (esp. black pieces) visible as well as bits of wood

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.00g
$W_2$ (weight of filter paper)	0.86g
$W_3$ (weight of filter paper & dry fines)	2.31g
$W_3 - W_2$ (weight of dry fines)	1.45g
$W_4$ (weight of dry sand)	19.05g
$W_5$ (total weight of dry material)	20.50g
% of sand ( $(W_4/W_5) \times 100$ )	76.20%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	5.80%
% of dissolved binder	18.00%

Observations of reaction: many small bubbles, many metal particles clung to magnet. Reaction time was very long compared to other samples--35 minutes

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey aggregate particles as well as shiny black particles--all edges are sharp and crisp visual--overall color--grey, large range of aggregate sizes with wood and straw pieces

Characterization of Fines: uniform, color--shiny and goldish/tan with pieces of straw or wood (?)

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	5.36g	21.44	78.56 *
1.18 mm	1.59g	6.36	72.20
600 um	2.15g	8.60	63.60
300 um	3.95g	15.80	47.80
150 um	3.53g	14.12	33.68
75 um	2.34g	9.36	24.32
PAN	<u>1.26g</u>	5.04	19.28

20.18g = total sieved  
1.56% lost during sieving

\* Contains several wood pieces, 2 large stones and many smaller black rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-3-H

Date: November 1988

Origin of Sample: Bedding Mortar of West facade of Western section--taken behind shutter of first story window North of the chimney

Visual Description of Sample: Overall Color--tan with large white powdery chunks throughout (lime chunks?) as well as dark shiny particles

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.14g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	8.47g
$W_3 - W_2$ (weight of dry fines)	7.64g
$W_4$ (weight of dry sand)	16.52g
$W_5$ (total weight of dry material)	24.36g
% of sand ( $(W_4/W_5) \times 100$ )	65.72%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	30.39%
% of dissolved binder	3.89%

Observations of reaction: many small green bubbles, many metal particles clung to magnet

Color of resulting liquid: light green

Characterization of Sand: microscopic--white, tan, grey and dark shiny particles with rounded edges  
visual--overall color--light brown/tan with a large aggregate range

Characterization of Fines: appears uniform, color--orangery and very shiny

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	2.35g	9.35	90.65
1.18 mm	1.92g	7.64	83.01
600 um	1.63g	6.48	76.53
300 um	3.86g	15.35	61.18
150 um	4.67g	18.56	42.62
75 um	5.02g	19.97	22.65
PAN	<u>4.28g</u>	17.02	5.63
	23.73g = total sieved		
	2.59% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-4-H

Date: November 1988

Origin of Sample: Bedding Mortar of North facade of  
Western section behind first floor shutter of window  
west of the door

Visual Description of Sample: Overall Color--whitish  
brown/tannish. Large white powdery chunks (lime?)  
Some large pebbles and small shiny flat particles  
Sample was semi-hard in comparison to others

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.04g
$W_2$ (weight of filter paper)	0.86g
$W_3$ (weight of filter paper & dry fines)	8.11g
$W_3 - W_2$ (weight of dry fines)	7.25g
$W_4$ (weight of dry sand)	15.92g
$W_5$ (total weight of dry material)	23.13g
% of sand ( $(W_4/W_5) \times 100$ )	66.22%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	30.16%
% of dissolved binder	3.62%

Observations of reaction: many small green bubbles, many  
metal particles clung to magnet, long filtration time

Color of resulting liquid: light green

Characterization of Sand: microscopic--brown, white and  
shiny black particles all with rounded edges  
visual--overall color--tannish/brown with  
large aggregate size range

Characterization of Fines: appears uniform, color--  
brown/orange layer closest to filter paper very  
shiny

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	1.96g	8.15	91.85
1.18 mm	2.30g	9.57	82.28
600 um	2.27g	9.44	72.84
300 um	3.97g	16.51	56.32
150 um	4.90g	20.38	35.94
75 um	4.72g	19.63	16.31
PAN	<u>2.91g</u>	12.10	4.20

23.03g = total sieved

4.20% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-5-H

Date: November 1988

Origin of Sample: Bedding Mortar of West facade of the Northern extension of the Middle section--middle of facade few feet from ground level

Visual Description of Sample: Overall Color--brown, with dark black shiny specks as well as large white powdery chunks (lime?). Large aggregate range with sticks and other wood pieces visible.

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.14g
$W_2$ (weight of filter paper)	0.63g
$W_3$ (weight of filter paper & dry fines)	1.67g
$W_3 - W_2$ (weight of dry fines)	1.04g
$W_4$ (weight of dry sand)	19.26g
$W_5$ (total weight of dry material)	20.30g
% of sand ( $(W_4/W_5) \times 100$ )	76.63%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	4.14%
% of dissolved binder	19.23%

Observations of reaction: many small green bubbles, many metal particles clung to magnet. Reaction time was long--30 minutes

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey aggregate particles also shiny black particles and brown particles--all edges are sharp and crisp. visual--overall color--grey, large range of aggregate sizes, includes twigs, wood pieces and straw

Characterization of Fines: uniform, color--brown with many gold shiny specks

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	6.20g	24.66	75.34 *
1.18 mm	1.75g	6.96	68.38
600 um	1.25g	4.97	63.41
300 um	4.41g	17.54	45.87
150 um	3.21g	12.77	33.10
75 um	2.04g	8.11	24.98
PAN	<u>1.05g</u>	4.18	20.80

19.91g = total sieved

1.92% lost during sieving

\* Black Rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-6-H

Date: November 1988

Origin of Sample: Bedding Mortar of Northern facade of the Middle section--from behind the first story shutter

Visual Description of Sample: Overall Color-- brown with many shiny specks that cause the sample to glisten; it also contains large white powdery chunks (lime?) The aggregate range is large and contains twigs and other wood pieces

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.83g
$W_2$ ( weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	2.34g
$W_3 - W_2$ (weight of dry fines)	1.51g
$W_4$ (weight of dry sand)	18.50g
$W_5$ (total weight of dry material)	20.01g
% of sand ( $(W_4/W_5) \times 100$ )	74.52%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	6.10%
% of dissolved binder	19.38%

Observations of reaction: many small bubbles, many metal particles clung to magnet, reaction was approx. 30 min.

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey aggregate particles as well as dark shiny particles that cause the sample to glisten, edges are sharp and crisp visual--overall color--grey with a large aggregate size range which consist mainly of black rocks with some twigs and wood pieces

Characterization of Fines: uniform, color--brown with many goldish shiny specks that glisten

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	5.72g	23.05	76.96 *
1.18 mm	1.62g	6.52	70.44
600 um	1.37g	5.52	64.92
300 um	3.67g	14.78	50.14
150 um	4.02g	16.19	33.95
75 um	2.13g	8.58	25.37
PAN	<u>1.43g</u>	5.76	19.61
	19.96g = total sieved		
	0.25% lost during sieving		

\* Black Rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-7-H

Date: November 1988

Origin of Sample: Bedding Mortar of Eastern facade of the Middle section as it protrudes north toward the barn --taken a few feet from ground level between the windows

Visual Description of Sample: Overall Color--brown with an overall glisten from dark shiny specks, also contains large white powdery chunks (lime?) Large aggregate range with black pieces especially visible

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.79g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	2.08g
$W_3 - W_2$ (weight of dry fines)	1.25g
$W_4$ (weight of dry sand)	18.49g
$W_5$ (total weight of dry material)	19.74g
% of sand ( $(W_4/W_5) \times 100$ )	74.58%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	5.05%
% of dissolved binder	20.37%

Observations of reaction: many small bubbles, many metal particles clung to the magnet. Long reaction time: approximately a half an hour

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey particles and dark shiny particles--all edges are sharp and crisp visual--overall color--grey, a large aggregate range

Characterization of Fines: uniform, color--golden with a shiny sheen

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	4.82g	19.44	80.56 *
1.18 mm	2.40g	9.68	70.88
600 um	2.11g	8.51	62.37
300 um	2.30g	9.28	53.09
150 um	3.51g	14.16	38.93
75 um	2.98g	12.02	26.91
PAN	<u>1.29g</u>	5.20	21.71
	19.41g = total sieved		
	1.67% lost during sieving		

\* Black Rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-8-H

Date: November 1988

Origin of Sample: Bedding mortar of Northern facade of Eastern section--taken a few feet above the ground a few inches from the corner where the middle and eastern section meet

Visual Description of Sample: Overall Color--whitish with a tan tinge/peach with shiny dark colored shiny particles and a few large white, powdery chunks

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered material)	25.15g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	7.59g
$W_3 - W_2$ (weight of dry fines)	8.42g
$W_4$ (weight of dry sand)	3.47g
$W_5$ (total weight of dry material)	11.89g
% of sand ( $(W_4/W_5) \times 100$ )	13.81%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	33.46%
% of dissolved binder	52.73%

Observations of reaction: many, many small white bubbles, very few metal particles clung to magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--particles are white and white/grey, particles are very uniform and edges are crisp and sharp visual--overall color--whitish, large aggregate range but the particles are uniform in color, texture, shape, etc., vs. other samples where particles are diversified within the sample

Characterization of Fines: appears uniform, color--whitish with grey tinge

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.67g	3.68	96.32
1.18 mm	1.49g	5.92	90.40
600 um	1.94g	7.71	82.69
300 um	2.64g	10.49	72.20
150 um	2.11g	8.39	63.81
75 um	1.72g	6.83	56.98
PAN	<u>1.01g</u>	4.01	52.97

11.58g = total sieved

2.61 % lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-9-H

Date: November 1988

Origin of Sample: Bedding mortar of North facade of Eastern section--taken a few feet from ground level between the windows

Visual Description of Sample: Overall Color-- whitish/peach/tan with shiny black/brown particles, large white and powdery chunks (lime?)

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered material)	24.76g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	8.29g
$W_3 - W_2$ (weight of dry fines)	7.46g
$W_4$ (weight of dry sand)	3.46g
$W_5$ (total weight of dry material)	10.93g
% of sand ( $(W_4/W_5) \times 100$ )	13.97%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	30.13%
% of dissolved binder	55.90%

Observations of reaction: many, many small white bubbles, very few metal particles clung to magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--white and whitish grey particles, particles are very uniform and edges are crisp and sharp visual--overall color--white, aggregate range is large but particles are uniform in color, texture, shape etc. Other samples have very diversified aggregate particles

Characterization of Fines: appears extremely uniform, color--white with a grayish tinge

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.84g	3.39	96.61
1.18 mm	1.24g	5.01	91.60
600 um	1.68g	6.78	84.81
300 um	2.15g	8.68	76.13
150 um	1.89g	7.63	68.50
75 um	1.70g	6.87	61.63
PAN	<u>1.10g</u>	4.44	57.19
	10.60g = total sieved		
	3.02% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-10-H

Date: November 1988

Origin of Sample: Bedding Mortar of Eastern facade of the Eastern section--taken at first floor level near the northeastern corner

Visual Description of Sample: Overall Color--white/peach, with shiny dark particles and large white, powdery chunks (lime?)

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered material)	24.45g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	8.78g
$W_3 - W_2$ (weight of dry fines)	7.95g
$W_4$ (weight of dry fines)	2.50g
$W_5$ (total weight of dry fines)	10.45g
% of sand ( $(W_4/W_1) \times 100$ )	10.24%
% of fines ( $(W_3 - W_2)/W_1 \times 100$ )	32.53%
% of dissolved binder	57.23%

Observations of reaction: many, many small white bubbles, very few metal particles clung to magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--white and white with a grey tinge particles, edges crisp and sharp and the particles are very uniform in character visual--overall color--whitish, although the aggregate range is large the particles are overall very uniform in color, texture, shape, etc.--a very different character than other samples whose particles vary in these characteristics

Characteristics of Fines: appears very uniform, color--white/grey

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.62g	2.54	97.46
1.18 mm	1.17g	4.78	92.67
600 um	1.66g	6.79	85.88
300 um	2.33g	9.53	76.35
150 um	2.06g	8.42	67.92
75 um	1.82g	7.44	60.48
PAN	<u>0.66g</u>	2.70	57.78

10.32g = total sieved

1.24% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-11-H

Date: November 1988

Origin of Sample: Bedding Mortar of Southern facade of the Eastern section--from behind the first story shutter of the western window

Visual Description of Sample: white with a very light tan tinge also contains many dark shiny specks and large white powdery chunks (lime)

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered material)	24.69g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	8.34g
$W_3 - W_2$ (weight of dry fines)	7.51g
$W_4$ (weight of dry sand)	3.90g
$W_5$ (total weight of dry material)	11.41g
% of sand ( $(W_4/W_5) \times 100$ )	15.81%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	30.42%
% of dissolved binder	53.77%

Observations of reaction: many, many small white bubbles, only a few metal particles clung to the magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--particles are white and white with a grey tinge, the particles exhibit a uniformity not displayed by other samples, all edges are crisp and sharp visual--overall color--white, the aggregate range is large but the overall character of the particles is uniform in color, texture, shape, etc.

Characterization of Fines: appears extremely uniform, color--white with a grey tinge

### Aggregate Particle Size Distribution:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.91g	3.68	96.31
1.18 mm	1.37g	5.55	90.76
600 um	1.59g	6.44	84.32
300 um	2.28g	9.23	75.09
150 um	1.73g	7.01	68.08
75 um	1.85g	7.49	60.59
PAN	1.53g	6.16	54.43

11.25g = total sieved

1.40% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-12-H

Date: November 1988

Origin of Sample: Bedding Mortar of Southern facade of the Middle section--from behind the shutter of the western first story window

Visual Description of Sample: Overall Color--brown with glistening specks and large white powdery chunks (lime?) Large black aggregate pieces especially visible also contains some twigs

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.35g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	2.40g
$W_3 - W_2$ (weight of dry fines)	1.57g
$W_4$ (weight of dry sand)	17.57g
$W_5$ (total weight of dry material)	19.14g
% of sand ( $(W_4/W_5) \times 100$ )	72.15%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	6.47%
% of dissolved binder	21.38%

Observations of reaction: many small bubbles, many metal pieces clung to the magnet. Reaction time = 25 min.

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black particles, many dark shiny particles--all edges are crisp and sharp visual--overall color--grey, large aggregate size range which includes several twigs

Characterization of Fines: uniform, color--gold and shiny with some wood fibers

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	5.02g	20.62	79.38 *
1.18 mm	1.74g	7.15	72.23
600 um	2.53g	10.39	61.84
300 um	2.86g	11.74	50.09
150 um	3.11g	12.77	37.32
75 um	2.47g	10.14	27.18
PAN	1.19g	4.89	22.29
	19.92g = total sieved		
	1.15% lost during sieving		

\* contains black rocks and twigs



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-13-H

Date: November 1988

Origin of Sample: Bedding Mortar of South facade of Western section behind first floor shutter of window east of front door

Visual Description of Sample: Overall Color--light brown, tannish. Large white powdery chunks (lime?), small shiny, flat particles (mica?)--both distributed generously throughout sample. Many pores visible throughout sample.

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.22g
$W_2$ (weight of filter paper)	0.64g
$W_3$ (weight of filter paper & dry fines)	8.55g
$W_3 - W_2$ (weight of dry fines)	7.91g
$W_4$ (weight of dry sand)	15.30g
$W_5$ (total weight of dry material)	23.27g
% of sand ( $(W_4/W_5) \times 100$ )	63.17%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	32.66%
% of dissolved binder	4.17%

Observations of reaction: many small green bubbles, many metal particles clung to magnet

Color of resulting liquid: light green

Characterization of Sand: microscopic--many clear and white particles with orange stripes, some grey and some shiny particles; all particles have rounded edges visual--overall color-tannish, large range of aggregate sizes

Characterization of Fines: appears uniform, color--brown/orange with shiny specks; sample glistens

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	2.57g	10.61	89.39
1.18 mm	1.66g	6.85	82.39
600 um	1.84g	7.60	74.94
300 um	2.72g	11.23	63.71
150 um	4.36g	18.00	45.71
75 um	5.67g	23.41	22.30
PAN	<u>3.66g</u>	15.11	7.19

22.48g = total sieved

3.39% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-14-H

Date: November 1988

Origin of Sample: Bedding Mortar of Southern facade of Western section--taken Above middle second story window

Visual Description of Sample: Overall Color-- brown with shiny specks and large white powdery chunks (lime?) Large aggregate range that include many black pieces

### Weights and Percentages of Sample:

W <sub>1</sub> (original weight of powdered sample)	24.61g
W <sub>2</sub> (weight of filter paper)	0.83g
W <sub>3</sub> (weight of filter paper & dry fines)	1.87g
W <sub>3</sub> -W <sub>2</sub> (weight of dry fines)	1.04g
W <sub>4</sub> (weight of dry sand)	18.94g
W <sub>5</sub> (total weight of dry material)	19.98g
% of sand $((W_4/W_5) \times 100)$	76.95%
% of fines $((W_3-W_2)/W_5 \times 100)$	4.23%
% of dissolved binder	18.82%

Observations of reaction: many small bubbles, many metal particles clung to the magnet. Reaction time = approx. 30 minutes

Color of resulting liquid: dark green

Characterization of Sand: microscopic--distinctive black and grey particles and dark shiny particles--all edges are crisp and sharp visual--overall color-- grey, large aggregate range

Characterization of Fines: uniform, color--tan/gold with many shiny specks that gives the sample a glisten

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	6.12g	24.87	75.13 *
1.18 mm	1.37g	5.57	69.56
600 um	3.23g	13.12	56.43
300 um	3.58g	14.55	41.88
150 um	3.72g	15.12	26.76
75 um	0.88g	3.54	23.22
PAN	<u>0.74g</u>	3.01	20.21

19.64g = total sieved

1.70% lost during sieving

\* Black Rocks



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-15-H

Date: November 1988

Origin of Sample: Bedding Mortar of Southern facade of Western section--taken behind second story shutter of western window

Visual Description of Sample: Overall Color--light brown with large white powdery chunks and many small shiny particles distributed throughout

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.63g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	9.01g
$W_3 - W_2$ (weight of dry fines)	8.18g
$W_4$ (weight of dry sand)	15.72g
$W_5$ (total weight of dry material)	23.90g
% of sand ( $(W_4/W_5) \times 100$ )	63.81%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	33.21%
% of dissolved binder	2.98%

Observations of reaction: many small green bubbles, many metal particles clung to the magnet

Color of resulting liquid: light green

Characterization of Sand: microscopic--brown, clear, tan and many shiny, dark particles; all with rounded edges visual--overall color--light brown; large aggregate range

Characterization of Fines: appears uniform, color--brown with an orange tinge; sample glistens

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	2.23g	9.05	90.95
1.18 mm	1.91g	7.75	83.20
600 um	2.02g	8.20	75.00
300 um	4.62g	18.76	56.24
150 um	4.76g	19.32	36.91
75 um	5.59g	18.64	18.27
PAN	<u>3.32g</u>	13.48	4.79
	23.45g = total sieved		
	1.88% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-16-B

Date: November 1988

Origin of Sample: Bedding Mortar of South facade of barn--  
East of double doors

Visual Description of Sample: Overall color--tan/yellow  
(most yellow of all samples). Large white, soft  
chunks (lime?). Sample very soft in texture and  
crumbly (very sandy).

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.37g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	6.07g
$W_3 - W_2$ (weight of dry fines)	6.90g
$W_4$ (weight of dry sand)	16.85g
$W_5$ (total weight of dry material)	23.85g
% of sand ( $(W_4/W_5) \times 100$ )	69.14%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	28.31%
% of dissolved binder	2.55%

Observations of reaction: many, many small bubbles which  
lasted approximately 15 minutes. many metal  
particles which clung to the magnet

Color of resulting liquid: light green

Characterization of Sand: microscopic--particles colors:  
peach, grey, white, shiny black; all particles have  
rounded edges visual--overall color--tannish,  
aggregate range--various sizes (of medium size in  
comparison to other samples)

Characterization of Fines: appears uniform, color--orange/  
brown with many black shiny specks

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	4.49g	18.42	81.57
1.18 mm	2.57g	10.54	71.02
600 um	2.34g	9.60	61.42
300 um	3.18g	13.05	48.37
150 um	4.54g	18.26	30.11
75 um	4.14g	16.99	13.12
PAN	<u>2.15g</u>	8.82	4.30
	23.41g = total sieved		
	1.84% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-17-B

Date: November 1988

Origin of Sample: Bedding Mortar of West facade of barn--  
North of door from between corner stones

Visual Description of Sample: Overall color--mixture  
between whitish/brown and pale grey. Large powdery  
white chunks (lime?) as well as small shiny particles  
Large aggregate range, fairly soft texture compared  
to other samples

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.72g
$W_2$ (weight of filter paper)	0.86g
$W_3$ (weight of filter paper & dry fines)	6.34g
$W_3 - W_2$ (weight of dry fines)	7.20g
$W_4$ (weight of dry sand)	17.14g
$W_5$ (total weight of dry material)	24.32g
% of sand ( $(W_4/W_5) \times 100$ )	69.34%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	29.13%
% of dissolved binder	1.53%

Observations of reaction: many, many, many bubbles--most  
reactive of all samples, long reaction time--30 min.

Color of resulting liquid: light green

Characterization of Sand: microscopic--white and brown  
and shiny particles all with crisp edges  
visual--overall color white and brown and very  
shiny, large aggregate size range

Characterization of Fines: color--light brown, very shiny

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	7.97g	32.24	67.76 *
1.18 mm	2.16g	8.74	59.02
600 um	2.04g	8.25	50.77
300 um	2.62g	10.60	40.17 **
150 um	3.72g	15.05	25.12 ***
75 um	3.57g	14.44	10.68 ****
PAN	<u>2.03g</u>	8.21	2.47
	24.11g = total sieved		
	2.46% lost during sieving		

\* large aggregate range

\*\* all black

\*\*\* all shiny

\*\*\*\* black and shiny



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-18-B

Date: November 1988

Origin of Sample: Bedding Mortar of the North facade of the barn--West end

Visual Description of Sample: Overall color--light grey with streaks of white/brown. Large white, powdery chunks (lime?) and small shiny and dark particles. Aggregate sizes vary widely and sample is very soft in texture

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.18g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	10.23g
$W_3 - W_2$ (weight of dry fines)	9.40g
$W_4$ (weight of dry sand)	15.30g
$W_5$ (total weight of dry material)	24.70g
% of sand ( $(W_4/W_5) \times 100$ )	60.77%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	37.34%
% of dissolved binder	1.89%

Observations of reaction: very reactive, many, many, many, bubbles, long reaction time--approx. half hour

Color of resulting liquid: light green

Characterization of Sand: microscopic--white, brown/tan, and shiny particles with sharp, crisp edges  
visual--overall color--white and brown and very shiny  
large aggregate range

Characterization of Fines: color--tan/light brown and very shiny

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	7.13g	28.32	71.68
1.18 mm	2.48g	9.85	61.83
600 um	2.41g	9.57	52.26
300 um	2.76g	10.96	41.30 *
150 um	4.11g	16.32	24.98 **
75 um	3.36g	13.34	11.64
PAN	<u>2.01g</u>	7.98	3.66

24.26g = total sieved

1.78% lost during sieving

\* all black

\*\* all shiny



## MORTAR SAMPLE: DATA SHEET

Sample No: BM-19-B

Date: November 1988

Origin of Sample: Bedding Mortar of Barn from North facade  
at the East end--taken a few feet from ground level

Visual Description of Sample: Overall Color--tan but very  
yellowy with large white powdery chunks. Sample very  
soft in texture and crumbles at touch

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.73g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	9.17g
$W_3 - W_2$ (weight of dry fines)	8.34g
$W_4$ (weight of dry sand)	15.94g
$W_5$ (total weight of dry material)	24.28g
% of sand ( $(W_4/W_5) \times 100$ )	64.45%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	33.73%
% of dissolved binder	1.82%

Observations of reaction: many, many small bubbles,  
many metal particles clung to magnet, reaction time =  
17 minutes

Color of resulting liquid: light green

Characterization of Sand: microscopic--white, tan, grey,  
shiny black particles--all have rounded edges  
visual--overall color--tan, medium aggregate size  
range (in comparison to other samples)

Characterization of Fines: uniform, color--brown with an  
orange tinge and many black shiny specks

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	6.72g	27.17	72.83
1.18 mm	1.91g	7.72	65.11
600 um	3.49g	14.11	51.00
300 um	3.91g	15.81	35.19
150 um	3.27g	13.22	21.97
75 um	3.21g	12.98	8.21
PAN	<u>1.45g</u>	5.86	2.35
	23.96g = total sieved		
	1.32% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: BM-20-B

Date: November 1988

Origin of Sample: Bedding Mortar of the South facade of the barn--West of the double doors

Visual Description of Sample: Overall color--light brown with a yellow tinge with large white, powdery chunks (lime?) Texture is very soft and the sample crumbles upon touch--sandy

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.83g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	7.35g
$W_3 - W_2$ (weight of dry fines)	6.42g
$W_4$ (weight of dry sand)	17.74g
$W_5$ (total weight of dry material)	24.16g
% of sand ( $(W_4/W_5) \times 100$ )	71.46%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	25.87%
% of dissolved binder	2.67%

Observations of reaction: small green bubbles, many metal particles clung to magnet

Color of resulting liquid: light green

Characterization of Sand: microscopic--dark and shiny, white, tan/peach, and grey particles all with rounded edges visual--overall color--tan/light brown, aggregate range diverse with particles of medium size compared to other samples

Characterization of Fines: appears uniform, color--brown with a very orangery tinge with many dark shiny specks throughout

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	5.04g	20.29	79.70
1.18 mm	2.15g	8.66	71.04
600 um	1.64g	6.60	64.44
300 um	4.04g	16.27	48.17
150 um	5.11g	20.58	27.59
75 um	4.59g	18.49	9.10
PAN	<u>1.47g</u>	5.92	3.18
	24.04g = total sieved		
	0.50% lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-1-H

Date: November 1988

Origin of Sample: Pointing of Western facade of Western section-- pointing taken from chimney at first floor level

Visual Description of Sample: Overall Color--grey/white, powdery--looks like hardened sand with some small silver and black shiny particles and small sticks

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.35g
$W_2$ (weight of filter paper)	0.82g
$W_3$ (weight of filter paper & dry fines)	3.24g
$W_3 - W_2$ (weight of dry fines)	2.42g
$W_4$ (weight of dry sand)	18.14g
$W_5$ (total weight of dry material)	20.56g
% of sand ( $(W_4/W_5) \times 100$ )	74.50%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	9.94%
% of dissolved binder	15.56%

Observations of reaction: small bubbles, not as much as other samples, many metal particles clung to magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--distinctive black, shiny and light grey particles, edges are crisp and sharp visual--overall color--grey/brown, small range of aggregate, medium size compared to other samples

Characterization of Fines: appears uniform, color grey except for dead bee, various colored hair and twigs

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.04g	0.16	99.83 *
1.18 mm	0.23g	0.94	98.88
600 um	1.00g	4.11	94.77
300 um	12.70g	52.16	42.61
150 um	5.05g	20.74	21.87
75 um	1.09g	4.48	17.39
PAN	0.33g	1.35	16.03
20.44g = total sieved			
0.58% lost during sieving			

\* consists of dead bee and one stone



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-2-H

Date: November 1988

Origin of Sample: Pointing from Northern facade of  
Western section--behind shutter of first floor  
window west of door

Visual Description of Sample: Overall Color--grey/white,  
looks like hardened sand with small silver and black  
shiny particles as well as wooden sticks

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.99g
$W_2$ (weight of filter paper)	0.82g
$W_3$ (weight of filter paper & dry fines)	3.99g
$W_3 - W_2$ (weight of dry fines)	3.17g
$W_4$ (weight of dry sand)	17.27g
$W_5$ (total weight of dry material)	20.44g
% of sand ( $(W_4/W_5) \times 100$ )	69.11%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	12.68%
% of dissolved binder	18.21%

Observations of reaction: small bubbles, minimal compared  
with other reactions, many metal pieces clung to  
magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--distinctive black  
and shiny particles, edges are crisp and sharp  
visual--overall color--grey/brown, small aggregate  
range--medium size compared to other samples

Characterization of Fines: appears uniform, color--light  
grey with shiny silver specks and twigs

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.56g	2.24	97.76 *
1.18 mm	0.21g	0.84	96.92
600 um	0.96g	3.84	93.08
300 um	11.97g	47.90	45.18
150 um	4.99g	19.97	25.21
75 um	0.96g	3.84	21.37 **
PAN	<u>0.29g</u>	1.16	20.21
	19.94g = total sieved		
	2.45% lost during sieving		

\* four rocks

\*\* contains fine white hair clumps--like cotton fibers



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-3-H

Date: November 1988

Origin of Sample: Pointing of the Northern facade of the Middle section--taken behind the shutter of first story window

Visual Description of Sample: Overall Color--light grey with shiny specks and some wood pieces

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.61g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	3.34g
$W_3 - W_2$ (weight of dry fines)	2.51g
$W_4$ (weight of dry sand)	18.58g
$W_5$ (total weight of dry material)	21.09g
% of sand ( $(W_4/W_5) \times 100$ )	75.51%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	10.22%
% of dissolved binder	14.27%

Observations of reaction: some small white bubbles, this sample not very reactive, many metal pieces clung to the magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--distinctive dark shiny particles with sharp and crisp edges  
visual--overall color--grey with a brownish tinge, aggregate size somewhat uniform of medium size

Characterization of Fines: appears uniform, color--grey with a white tinge and shiny specks; also wood pieces

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.09g	0.37	99.63
1.18 mm	0.31g	1.26	98.37
600 um	1.74g	7.07	91.30
300 um	11.76g	47.78	43.51
150 um	4.98g	20.24	23.27
75 um	1.47g	5.97	17.30
PAN	0.54g	2.19	15.11

20.89g = total sieved

0.95% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-4-H

Date: November 1988

Origin of Sample: Pointing of the Northern facade of the Eastern section--taken a few feet from the ground between the windows

Visual Description of Sample: Overall color--light grey with shiny particles throughout

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.82g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	7.04g
$W_3 - W_2$ (weight of dry fines)	6.21g
$W_4$ (weight of dry sand)	7.35g
$W_5$ (total weight of dry material)	13.56g
% of sand ( $(W_4/W_5) \times 100$ )	29.62%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	25.01%
% of dissolved binder	45.37%

Observations of reaction: tiny bubbles, short reaction time with very little bubbling, many metal particles clung to magnet

Color of resulting liquid: brownish-green (muddy-green)

Characterization of Sand: microscopic--dark, shiny and white particles with sharp and crisp edges  
visual--overall color--grey with brown streaks, aggregate is of medium size and rather uniform

Characterization of Fines: appears uniform, color--light grey with shiny specks throughout

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.29g	1.17	98.83
1.18 mm	0.46g	1.85	96.98
600 um	1.70g	6.85	90.13
300 um	4.59g	18.49	71.64
150 um	4.78g	19.26	52.38
75 um	1.13g	4.55	47.83
PAN	0.53g	2.13	45.70
	13.48g = total sieved		
	0.59g lost during sieving		



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-5-H

Date: November 1988

Origin of Sample: Pointing of the Eastern facade of the East section--taken from the first floor level near the northeastern corner

Visual Description of Sample: Overall Color--light grey, looks like hardened sand with shiny particles, wood pieces and clumps of hair

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.73g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	7.39g
$W_3 - W_2$ (weight of dry fines)	6.56g
$W_4$ (weight of dry sand)	8.12g
$W_5$ (total weight of dry material)	14.68g
% of sand ( $(W_4/W_5) \times 100$ )	32.84%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	26.53%
% of dissolved binder	40.63%

Observations of reaction: very little reaction, some small bubbles, many metal particles clung to magnet

Color of resulting liquid: brownish-green

Characterization of Sand: microscopic--black, shiny and clear particles with sharp and crisp edges  
visual--overall color--grey with a brownish tinge  
aggregate range is small and all particles fall in a medium sized range (in comparison to other samples)

Characterization of Fines: appears uniform, color--grey with shiny specks, wood pieces a clump of white hair

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.35g	1.41	98.59 *
1.18 mm	1.06g	4.29	94.30 **
600 um	1.29g	5.22	89.08
300 um	4.21g	17.02	72.06
150 um	5.22g	21.11	50.95
75 um	1.06g	4.29	46.66
PAN	<u>1.17g</u>	4.73	41.93
	14.36g = total sieved		
	2.18% lost during sieving		

\* wood pieces

\*\* white hairs



# MORTAR ANALYSIS: DATA SHEET

Sample No: P-8-H

Date: November 1988

Origin of Sample: Pointing of the Southern facade of the Eastern section--from behind first story shutter of the western window

Visual Description of Sample: Overall Color--light grey with shiny particles

## Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.13g
$W_2$ (weight of filter paper)	0.83g
$W_3$ (weight of filter paper & dry fines)	7.26g
$W_3 - W_2$ (weight of dry fines)	6.43g
$W_4$ (weight of dry sand)	8.41g
$W_5$ (total weight of dry material)	14.84g
% of sand ( $(W_4/W_5) \times 100$ )	34.84%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	26.64%
% of dissolved binder	38.52%

Observations of reaction: very few small white bubbles, many metal particles clung to magnet

Color of resulting liquid: brownish-green

Characterization of Sand: microscopic--black, brown and white particles whose edges are crisp and sharp visual--overall color--grey with a brownish tinge, small range of medium sized aggregate particles

Characterization of Fines: appears uniform, color--grey with many shiny specks

## Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.67g	2.78	97.22
1.18 mm	1.36g	5.64	91.58
600 um	1.45g	6.01	85.57
300 um	3.68g	15.25	70.32
150 um	5.48g	22.71	47.61
75 um	1.03g	4.27	43.34
PAN	<u>0.90g</u>	3.73	39.61

14.57g = total sieved

1.82% lost during sieving



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-7-H

Date: November 1988

Origin of Sample: Pointing from South facade of Middle section--behind shutter of western first story window

Visual Description of Sample: Overall Color--grey/white, powdery--looks like dry, hardened sand with small shiny specks

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	25.25g
$W_2$ (weight of filter paper)	0.62g
$W_3$ (weight of filter paper & dry fines)	4.72g
$W_3 - W_2$ (weight of dry fines)	4.10g
$W_4$ (weight of dry sand)	18.60g
$W_5$ (total weight of dry material)	22.71g
% of sand ( $(W_4/W_5) \times 100$ )	73.66%
% of fines ( $(W_3 - W_2)/W_5 \times 100$ )	16.24%
% of dissolved binder	10.10%

Observations of reaction: small bubbles-minimal compared to other reactions, many metal particles on magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--distinctive black and shiny particles, edges are crisp and sharp  
visual--overall color--grey, small range of aggregate all of medium size range (compared to other samples)

Characterization of Fines: appears uniform, color--grey and shiny with fine white hairs throughout

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.11g	0.43	99.56
1.18 mm	0.19g	0.75	98.81
600 um	1.05g	4.16	94.65
300 um	11.68g	46.26	48.39
150 um	6.88g	27.23	21.14
75 um	2.01g	7.96	13.18 *
PAN	<u>0.40g</u>	1.58	11.60

22.32g = total sieved  
1.72% lost during sieving

\* contains a clump of fine white hairs



## MORTAR ANALYSIS: DATA SHEET

Sample No: P-8-H

Date: November 1988

Origin of Sample: Pointing from South facade of Western section--from behind shutter of first floor level window east of front door

Visual Description of Sample: Overall Color--grey/white--looks like hardened sand with shiny particles throughout and some twigs

### Weights and Percentages of Sample:

$W_1$ (original weight of powdered sample)	24.76g
$W_2$ (weight of filter paper)	0.80g
$W_3$ (weight of filter paper & dry fines)	2.34g
$W_3 - W_2$ (weight of dry fines)	1.54g
$W_4$ (weight of dry sand)	18.63g
$W_5$ (total weight of dry material)	20.17g
% of sand ( $(W_4/W_1) \times 100$ )	75.24%
% of fines ( $(W_3 - W_2)/W_1 \times 100$ )	6.22%
% of dissolved binder	18.54%

Observations of reaction: small bubbles, not as much as other samples, many metal particles clung to magnet

Color of resulting liquid: orangery-green

Characterization of Sand: microscopic--distinctive black and shiny particles, edges are crisp and sharp visual--overall color--grey/brown, small range of aggregate, medium sized

Characterization of Fines: appears uniform, color--grey with shiny specks and several twigs

### Aggregate Particle Size Profile:

Sieve Size	Weight	% Retained	% Passing
2.36 mm	0.04g	0.16	99.84 *
1.18 mm	0.22g	0.89	98.95 **
600 um	1.15g	4.64	94.30
300 um	10.84g	43.78	50.52
150 um	5.56g	22.45	28.06
75 um	1.57g	6.34	21.72
PAN	<u>0.46g</u>	1.86	19.86
	19.84g = total sieved		
	1.64% lost during sieving		

\* twig, three stones

\*\* twig, white hair



## MORTAR ANALYSIS

### NOTES:

In dealing with any mortar restoration John Ashurst states that there are two important points to be remembered. First, that the materials of today are not the same as the materials referred to in historical accounts. "Lime", "gypsum", and "portland cement" produced today are significantly different from those in the eighteenth and nineteenth centuries. New materials must be able to coexist with the old in sympathetic and supportive capacities. Secondly, the use, application, and knowledge of materials has changed. Traditional building craftsmanship is a specialty of many firms and the use of these specialists helps to insure high quality standards in restoration work.

Mortars, plasters and renders are combinations of binder pastes and fillers with or without reinforcement, and are applied to masonry. There are essentially three types of mortars to be considered: the high calcium limes (non-hydraulic); the hydraulic limes; and the artificial cements including the Portlands. Objections to the use of hydraulic limes, natural cements and especially Portland cements are based on their high strength, their rather impermeable character and the risk of transferring soluble salts. A light green color to the liquid resulting from the above described filtration process indicates a high concentration of pure lime; an orangery-green denotes a hydraulic compound; while an extremely dark liquid is associated with Portland cements. Limes and cements are used with fillers, in the form of aggregates, to make mortars and plasters.

Again according to Ashurst, the proportion of binder to filler in mortars is normally about 1:3, with the binder paste occupying the 30% void likely to be present in the volume of aggregate. Sand is the most common aggregate and may be rounded from natural elements, such as sand from a river bed, or angular and crushed, as sand supplied by a quarry. The performance of mortars and plaster is affected by the size and condition of the aggregate. Additionally, poor workability due to the use of a uniform coarse sand will sometimes lead to the use of increased amounts of water to try and counter the harsh working conditions. In summary, the four points necessary for the selection of aggregates include: (1) selection of a well graded sand ranging from fine to coarse; (2) avoid high percentages of clays and limestones; (3) completely clean all aggregates; and (4) keep the water to binder ratio low.



Restorative mortar specifications should not be based on the simple breakdown analysis of a sample. It is cautioned that the lab procedure performed here does not take into consideration other critical factors that may effect the overall results, such as the water/binder ratios, drying conditions and rates, or application technique (mixing, placing cleanliness and quality control). Similarly, the mortar analysis procedure itself, may result in the dissolving of calcareous aggregates which would alter the binder/aggregate proportion. Also clay minerals present as impurities may not be readily distinguishable from the silicates present in hydraulic cement. It should also be noted that the percentages given in the analysis are by weight and to prepare a mortar based on these ratios they will need to be converted to ratios by volume. Furthermore, the nature of the proportions of the binder, the fines, and the aggregate are approximate since there are many places where material can be lost throughout this procedure and since the calculations are rounded. These proportions are useful, however, in reconstructing a mortar.

Perhaps the most useful aspects of the results of this procedure is the comparison of the similarities and differences of each recorded section of the data sheets of each sample. The similarities and differences for the twenty-eight samples taken at "Black Rocks" are quite pronounced and therefore suggest various construction/repair dates, different contractors and aid in developing a sequence of events for these structures. These comparisons are not conclusive in themselves. However when used as supportive evidence along with other historical documentation and research a definitive portrait of the development of a site may be obtained.

The samples taken from "Black Rocks" lend themselves easily to groupings due to their distinct similarities and differences. The following pages portray the seven sample groupings, A-G, determined by examining and comparing each recorded section of the data sheet for each of the twenty-eight samples analyzed.



## MORTAR ANALYSIS: SAMPLE GROUP A

Samples: BM-1-H, BM-2-H, BM-5-H, BM-6-H, BM-7-H, BM-12-H,  
BM-14-H

Visual Description of Samples: Overall color--brown  
with many shiny specks and large white powdery  
chunks

### Percentage Range of Samples:

% of sand	64.63% - 76.95%
% of fines	4.14% - 6.50%
% of dissolved binder	18.00% - 21.38%

Observations of reaction: many small bubbles, many  
metal particles clung to the magnet. Reaction time  
was longer than other samples--approximately 30 min.

Color of resulting liquids: dark green

Characterization of Sands: microscopic--distinctive  
black and grey particles; most samples also  
contained dark shiny and brown particles--all  
edges of the particles sharp and crisp  
visual--overall color--grey, large range of  
aggregate sizes; various samples contained wood  
pieces, twigs, straw and black rocks

Characterization of Fines: appears uniform, color--  
tan/brown/goldish with many shiny specks that  
give the sample a glisten

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	19.44g - 26.06g	73.94g - 80.56g *
1.18 mm	5.57g - 9.68g	66.62g - 72.23g
600 um	4.97g - 13.12g	56.43g - 64.92g
300 um	9.28g - 17.54g	41.39g - 53.09g
150 um	12.77g - 16.19g	26.72g - 38.93g
75 um	2.57g - 12.02g	23.22g - 27.71g
PAN	3.01g - 5.76g	19.28g - 22.29g

\* Note: this large aggregate range consisted mainly  
of black rocks

Side Notes: appears to be a basic lime-clay-sand mortar;  
sharp edges indicate a quarry aggregate.



## MORTAR ANALYSIS: SAMPLE GROUP B

**Samples:** BM-8-H, BM-9-H, BM-10-H, BM-11-H

**Visual Description of Samples:** Overall Color--whitish/peach/tan with shiny black/brown particles, large white and powdery chunks

### Percentage Range of Samples:

% of sand	10.24% - 15.81%
% of fines	30.13% - 33.46%
% of dissolved binder	52.73% - 57.23%

**Observations of reaction:** many, many small white bubbles, very few metal particles clung to the magnet

**Color of resulting liquids:** orangery-green

**Characterization of Sands:** microscopic--white and white/grey particles, particles exhibit a uniformity not found in other sample groups; particle edges are crisp and sharp visual--overall color--white/whitish (with a grey tinge), while the aggregate range is large, the particles are uniform in color, texture, shape etc. In other sample groups the aggregate particles are very diversified

**Characterization of Fines:** appears extremely uniform, color--white/whitish/white with grey tinge

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	2.54% - 3.68%	96.31% - 97.46%
1.18 mm	4.78% - 5.92%	90.40% - 92.67%
600 um	6.44% - 7.71%	82.69% - 85.88%
300 um	8.68% - 10.49%	72.20% - 76.35%
150 um	7.01% - 8.42%	63.81% - 68.50%
75 um	6.83% - 7.49%	56.98% - 61.63%
PAN	2.70% - 6.16%	52.97% - 57.78%

**Side Notes:** appears to be a basic hydraulic mortar with very little sand (perhaps a dirty aggregate); sharp edges indicate a quarry aggregate



## MORTAR ANALYSIS: SAMPLE GROUP C

Samples: BM-3-H, BM-4-H, BM-13-H, BM-15-H

Visual Description of Samples: Overall Color-- whitish/brown/tan with large white powdery chunks throughout; also contains small/flat/shiny particles

### Percentage Range of Samples:

% of sand	63.17% - 66.22%
% of fines	30.16% - 33.21%
% of dissolved binder	2.98% - 4.17%

Observations of reaction: many small green bubbles, many metal particles clung to the magnet

Color of resulting liquid: light green

Characterization of Sands: microscopic--samples contained white, tan, grey, clear, white with orange striped and dark shiny particles--all with rounded edges  
visual--overall color--light brown/tan, large range of aggregate particle sizes

Characterization of Fines: appears uniform, color--brown/orange, layer closest to the filter paper very shiny; overall sample glistens

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	8.15% - 10.61%	89.39% - 91.85%
1.18 mm	6.85% - 9.57%	82.28% - 83.20%
600 um	6.48% - 9.44%	72.84% - 76.53%
300 um	11.23% - 18.76%	56.24% - 63.71%
150 um	18.00% - 20.38%	35.94% - 45.71%
75 um	18.64% - 23.41%	16.31% - 22.65%
PAN	12.10% - 17.02%	4.20% - 7.19%

Side Notes: appears to be a basic lime-clay-sand mortar; perhaps old mortars were crushed to make the new bedding mortar and would account for the large white chunks and the relatively high binder ratio; rounded edges indicate a natural/creek aggregate; sand from the Mill Creek appears to microscopically match.



## MORTAR ANALYSIS: SAMPLE GROUP D

Samples: BM-16-B, BM-19-B, BM-20-B

Visual Description of Samples: Overall Color--  
tan/yellow with large white powdery chunks; all  
samples very soft (sandy) in texture and crumbles  
upon touch

### Percentage Range of Samples:

% of sand	64.45% - 71.46%
% of fines	25.87% - 33.73%
% of dissolved binder	1.82% - 2.67%

Observations of reaction: many, many small bubbles  
which lasted approximately 15 minutes (compares to  
other sample groups of only a few minutes), many  
metal particles clung to the magnet

Color of resulting liquid: light green

Characterization of Sands: microscopic--samples  
contained peach, grey, white, shiny black, tan  
particles all with rounded edges  
visual--diverse aggregate range--of medium size  
in comparison to other sample groups

Characterization of Fines: appears uniform, color--  
orange/brown with many shiny specks

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	18.42% - 27.17%	72.83% - 81.57%
1.18 mm	7.72% - 10.54%	65.11% - 71.04%
600 um	6.60% - 14.11%	51.00% - 64.44%
300 um	13.05% - 16.27%	35.19% - 48.37%
150 um	13.22% - 20.58%	21.97% - 30.11%
75 um	12.98% - 18.49%	8.21% - 13.12%
PAN	5.86% - 8.82%	2.35% - 4.30%



## MORTAR ANALYSIS: SAMPLE GROUP E

Samples: BM-17-B, BM-18-B

**Visual Description of Samples:** Overall color--mixture between whitish/brown and pale grey--streaked, large white powdery chunks as well as small shiny particles, large aggregate range, very soft in texture

### Percentage Range of Samples:

% of sand	60.77% - 69.34%
% of fines	29.13% - 37.34%
% of dissolved binder	1.53% - 1.89%

**Observations of reaction:** most reactive of all sample groups, many, many, many bubbles, reaction time was approximately a half hour (longer than most other sample groups whose reaction lasted only a few minutes)

**Color of resulting liquid:** light green

**Characterization of Sands:** microscopic--white, brown/tan and shiny particles all with crisp and sharp edges  
visual--overall color--white and brown and very shiny, large aggregate range

**Characterization of Fines:** color--light brown/tan and very shiny

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	28.32% - 32.24%	67.76% - 71.68%
1.18 mm	8.74% - 9.85%	59.02% - 61.83%
600 um	8.25% - 9.57%	50.77% - 52.26%
300 um	10.60% - 10.96%	40.17% - 41.30% *
150 um	15.05% - 16.32%	24.98% - 25.12% **
75 um	13.34% - 14.44%	10.68% - 11.64%
PAN	7.98% - 8.21%	2.47% - 3.66%

Note: distinctive layers not found in other sample groups:

\* all black  
\*\* all shiny



## MORTAR ANALYSIS: SAMPLE GROUP F

Samples: P-1-H, P-2-H, P-3-H, P-7-H, P-8-H

**Visual Description of Samples:** - Overall Color--grey/white with shiny specks throughout (looks like hardened sand), most samples contained wood pieces or twigs

**Percentage Range of Samples:**

<b>% of sand</b>	69.11% - 75.51%
<b>% of fines</b>	6.22% - 16.24%
<b>% of dissolved binder</b>	10.10% - 18.54%

**Observations of reaction:** small bubbles--minimal in comparison to other sample groups, many metal pieces clung to magnet

**Color of resulting liquids:** orangery-green

**Characterization of Sands:** microscopic--contain distinctive black, grey and shiny particles, all edges are crisp and sharp  
visual--overall color--grey/brown with a small aggregate range of medium size in comparison with other sample groups

**Characterization of Fines:** appears uniform, color--grey/shiny/whitish, some samples contain white hairs, twigs

**Aggregate Particle Size Profiles Range:**

<b>Sieve Size</b>	<b>% Retained</b>	<b>% Passing</b>
2.36 mm	0.16% - 2.24%	97.76% - 99.84%
1.18 mm	0.75% - 1.26%	96.92% - 98.95%
600 um	3.84% - 7.07%	91.30% - 94.77%
300 um	43.78% - 52.16%	42.61% - 50.52%
150 um	19.97% - 27.73%	21.14% - 28.06%
75 um	3.84% - 7.96%	13.18% - 21.72%
PAN	1.16% - 2.19%	11.60% - 20.21%



## MORTAR ANALYSIS: SAMPLE GROUP G

Samples: P-4-H, P-5-H, P-6-H

Visual Description of Samples: Overall Color--light grey with shiny particles distributed throughout

### Percentage Range of Samples:

% of sand	29.62% - 34.84%
% of fines	25.01% - 26.64%
% of dissolved binder	38.52% - 45.37%

Observations of reaction: a few tiny bubbles, short reaction time, many metal particles clung to magnet

Color of resulting liquids: brownish-green (muddy green)

Characterization of Sands: microscopic--dark, black, brown, white, clear and shiny particles whose edges are all sharp and crisp  
visual--overall color--grey with a brownish tinge, small range of uniform and medium sized aggregate (in comparison to other sample groups)

Characterization of Fines: appears uniform, color--light grey/grey with many shiny specks

### Aggregate Particle Size Profiles Range:

Sieve Size	% Retained	% Passing
2.36 mm	1.17% - 2.78%	97.22% - 98.83%
1.18 mm	1.85% - 5.64%	91.58% - 96.98%
600 um	5.22% - 6.85%	85.57% - 90.13%
300 um	15.25% - 18.49%	70.32% - 72.06%
150 um	19.26% - 22.71%	47.61% - 50.95%
75 um	4.27% - 4.55%	43.34% - 47.83%
PAN	2.13% - 4.73%	39.61% - 45.70%



## MORTAR ANALYSIS: SAMPLE GROUPINGS

### Analysis

The seven sample groups break down as follows:

#### Bedding Mortars:

House--3 groups--A,B,C

Barn--2 groups--D,E

#### Pointing:

House--2 groups--F,G

#### Bedding Mortars:

##### House Sample Sites:

###### Group A:

Middle Section--5,6,7,12

Western Section--West Facade--1,2

Note: sample 3 also from this area but  
falls into Group C

Western Section--South Facade--14

Note: samples 13,15 also from this area but  
fall into Group B

###### Group B:

Eastern Section--8,9,10,11

###### Group C:

Western Section--West Facade--3

Western Section--North & South Facade--4,13,15

Note: also see Group A for other samples in  
these two areas

##### Barn Sample Sites:

###### Group D:

North Facade--eastern half--19

South Facade--western & eastern half--16,20

###### Group E:

West Facade--17

North Facade--western half--18

#### Pointing:

##### House Sample Sites:

###### Group F:

Western Section--1,2,8

Middle Section--3,7

###### Group G:

Eastern Section--4,5,6



## MORTAR ANALYSIS: SAMPLE GROUPINGS

### Conclusions:

#### House:

**Bedding Mortar:** The mortar analysis reveals three different building campaigns. (Note: the evidence indicates three building campaigns--this however does not rule out the possibilities of other campaigns. It indicates that either evidence of other campaigns were not present at the sample sights or that evidence other campaigns were destroyed by subsequent campaigns.) Although a definite sequence of events cannot be determined from this analysis a hypothetical sequence is strongly suggested by the results.

The Eastern Section stands autonomous. In other words the construction of the other sections did not contribute or alter this section. Also its construction did not appear to contribute or alter the other sections.

The Middle Section and the Western Section, however, are intertwined. All samples from the Middle Section fall into the same sample grouping (A). However three samples from the Western Section also fall into this group--two samples on the west facade, and a sample above the second story windows of the south facade. (Please refer to the previous page and to the floor plan and photographs following the text for clarification) Samples from Group B include only samples taken from the Western Section (Note: the two samples on the south facade in this group were taken below the sample from south facade in Group A).

It would therefore appear that some reworking of the Western Section was done at the time of the building of the Middle Section. This can be concluded since the sample of the Western Section--south facade in Group A (and therefore in the same grouping as all the samples taken from the Middle Section) was taken above the second floor level on the south facade and therefore from between stones laid after those below. It may be concluded that the sample sites BM-15-H and BM-13-H precede the sample site BM-14-H of Group A chronologically--perhaps a section of this wall was patched--or perhaps the roof was raised? More samples taken above the second story window may determine the extent of this alteration to the south facade. Also samples taken above the second story windows of the North facade may help determine if indeed the roof was raised. Historical documentation may also provide further clues needed to answer these questions.

The west facade of the Western Section is not as clear. Obviously portions of the wall were built at different times. It appears that portions of the wall were rebuilt at the time of the building of the Middle Section--assuming the premise that the Middle Section was built after the Western Section and that alterations to the Western Section were also done at this time. More samples taken from the western wall may determine how much of the wall was rebuilt.



If the above premise is correct and the Middle Section was built after the Western Section then it stands to reason that the Eastern Section of the building followed the construction of both sections. This however cannot be readily determined and it may be that the Middle section joined together two buildings built at separate times. Historical documentation should also be consulted for further chronological evidence.

**Pointing:** Analysis of the pointing reveals that the house was pointed in two sections: the Western and Middle Sections at one time and the Eastern Section at another time. There was only one level of pointing at each section. If the above stated chronology is correct then it may be suggested that: A) the Western section may not have been originally pointed but perhaps stuccoed or in some other manner covered, or B) that it was originally pointed but when it was repointed the first layer was raked out beforehand. No visible evidence to support either supposition was discovered. It does appear, however, that when the Middle Section was built and the Western section reworked the house may have been pointed/repointed for uniformity. The Eastern Section once again appears to be autonomous.

#### **Barn:**

**Bedding Mortar:** The analysis of the barn samples suggests that either the barn was built in two stages or a section of the barn was reworked at some time. A large seam in the stone work of the north facade and the differing of the roof structure at this seam supports that the barn was perhaps built in two stages. However since there is no corresponding seam on the south facade and since the sample on both the eastern and western half of the south facade fall into the same group questions arise. A plausible explanation is that the entire south facade was rebuilt at the time of expanding the barn eastward. The change in roof structure strongly suggest this was the case rather than a reconstruction of a section of the barn; namely the west facade and the west section of the north facade. Once again historical documentation may provide further clues as to the chronology of the barn's construction.



## MORTAR ANALYSIS: OTHER METHODS

The above method, **Mortar Analysis Methodology**--National Park Service (also outlined in Teutonico, ICCROM, p113-5), was chosen due to its reliability in establishing similarities and differences of mortar properties. These can be analyzed comparatively to reveal differences in construction. The above analysis was used only to establish different sections of construction of the house and barn at Black Rocks.

Another methodology resulting in similar analysis is the Jedrzejewska Method:

**" Analysis of Calcium Carbonate Content in Mortars:  
Calcineter Method**

Aim: ...this method defines the 3 principal components of a mortar as 'carbonates', 'solubles' (those substances soluble in acid without producing carbon dioxide) and 'sand'. The proportions of each are determined with the use of a special instrument called a calcimeter." (Teutonico p117)

The information, regardless of methodology, resulting from both of these methods is similar and is useful only in the comparative sense of determining differing building campaigns and obtaining general proportions of components. They do not reveal definitive information regarding the nature or constituents of the mortars. There is, however, a methodology in the formative stages that appears to be a series of tests for mortars that hopes to establish a procedure to obtain information regarding the actual mortar composition. This methodology, "A Simplified Chemical Analysis System for the Characterization of Mortars", is being developed by M.Dupas, Institut du Patrimoine Artistique, and A.E.Charola, ICCROM.

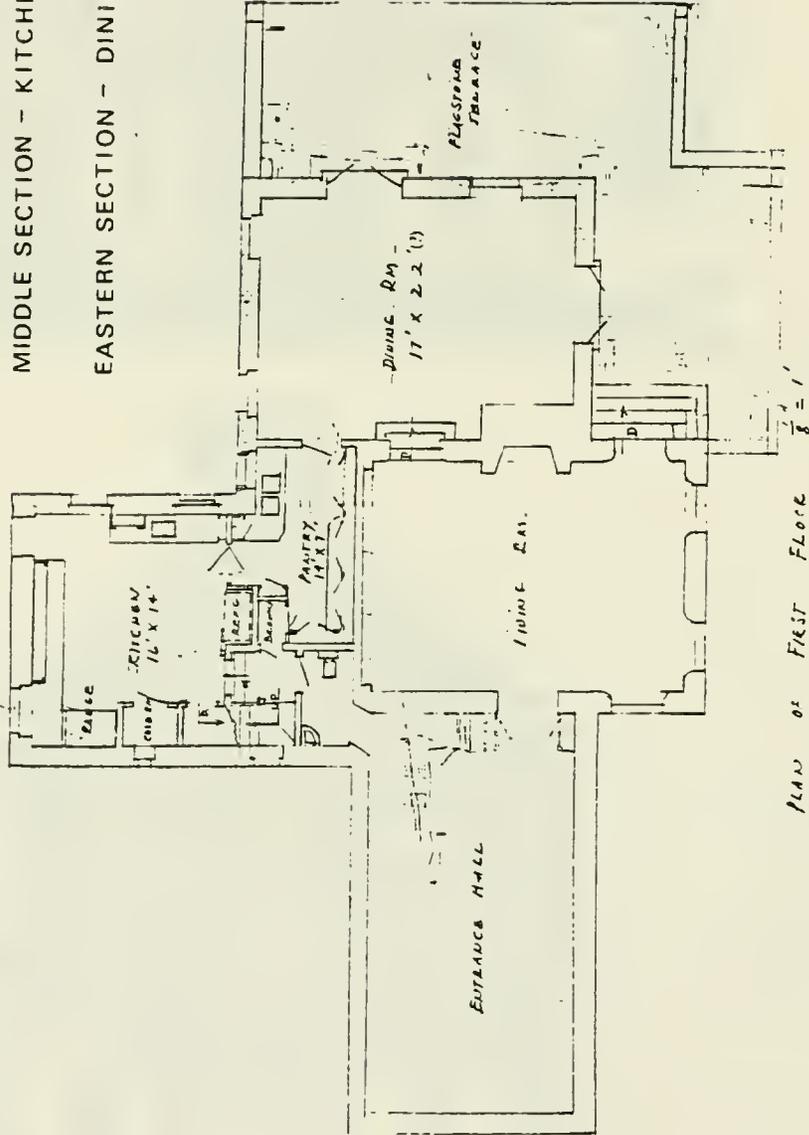
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# MORTAR ANALYSIS

WESTERN SECTION - ENTRANCE HALL  
MIDDLE SECTION - KITCHEN & LIVING ROOM  
EASTERN SECTION - DINING ROOM

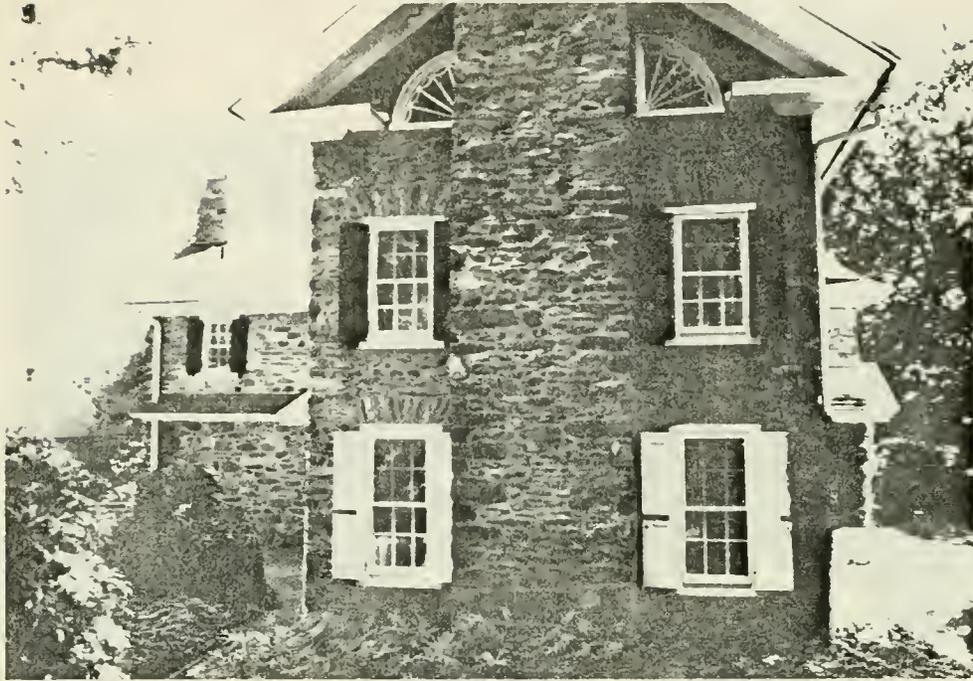


PLAN OF FIRST FLOOR

SCHEMATIC  
BUCHANAN & IRVINE



MORTAR ANALYSIS SAMPLE SITES



WEST FACADE



WESTERN SECTION



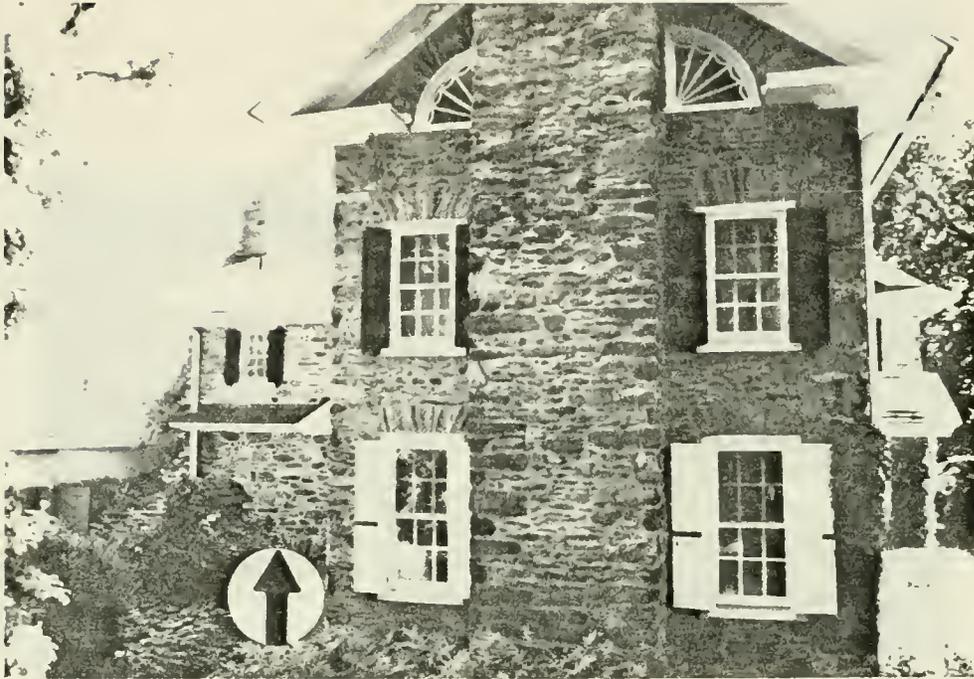


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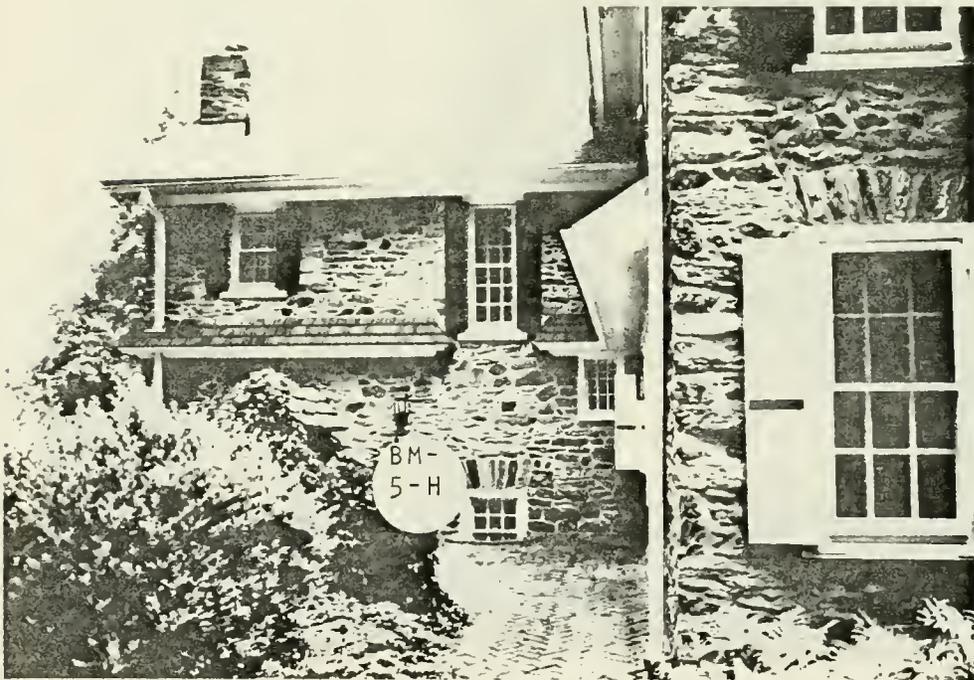


WESTERN SECTION





WEST FACADE

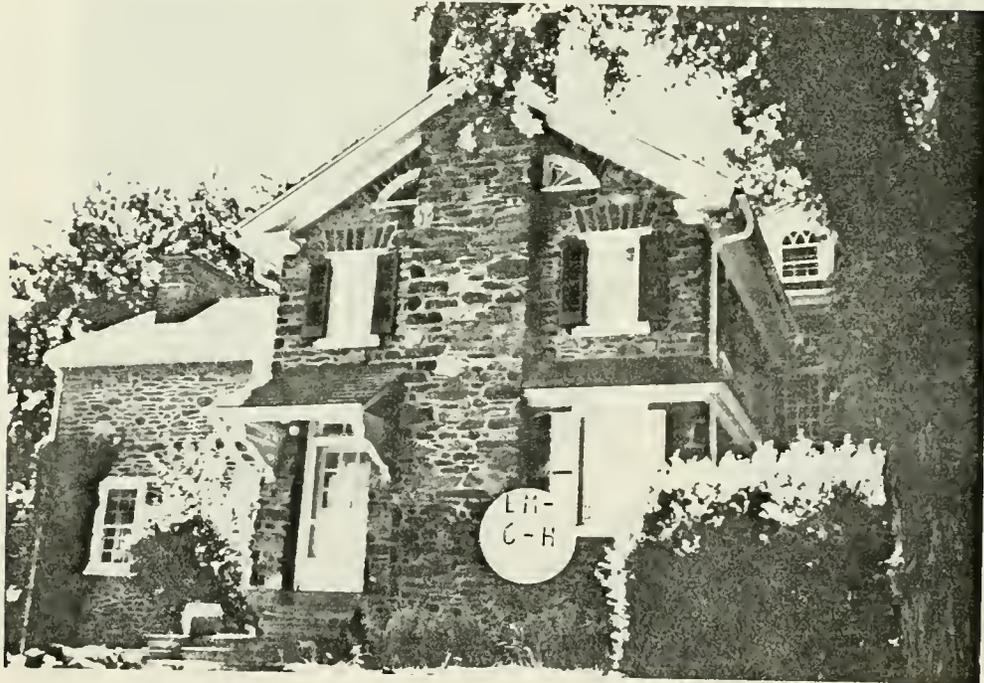


NORTHERN PROJECTION OF MIDDLE SECTION



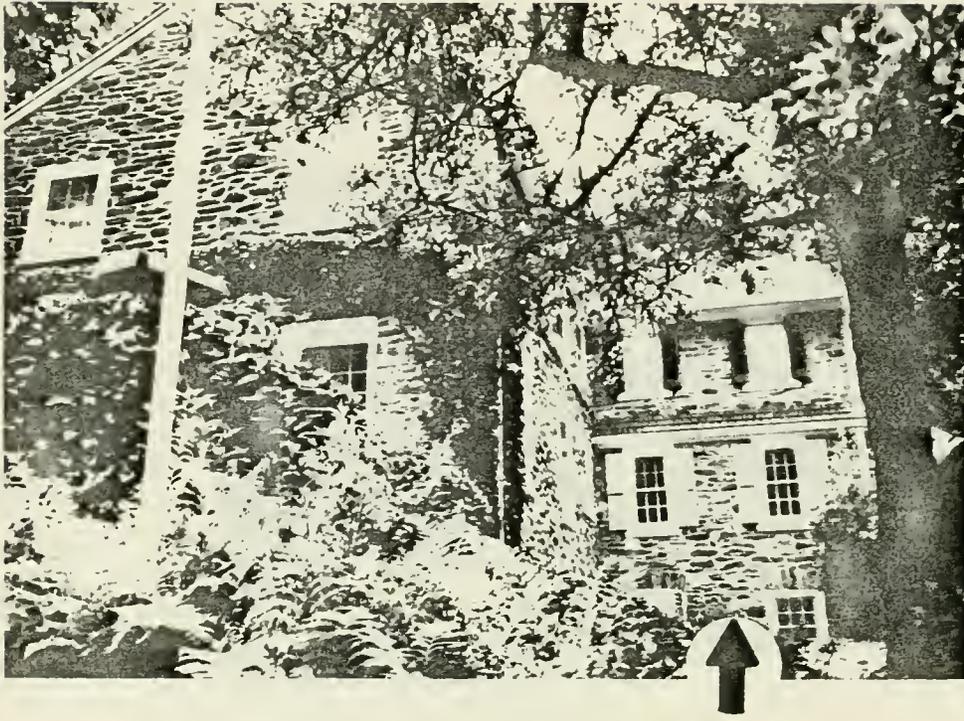


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MIDDLE SECTION





EAST FACADE

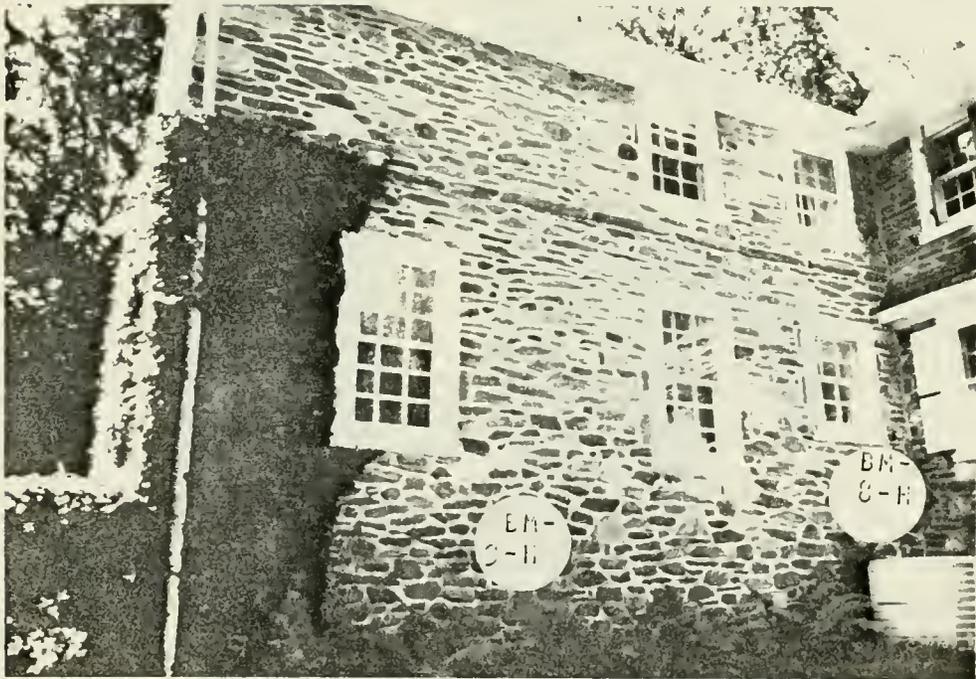


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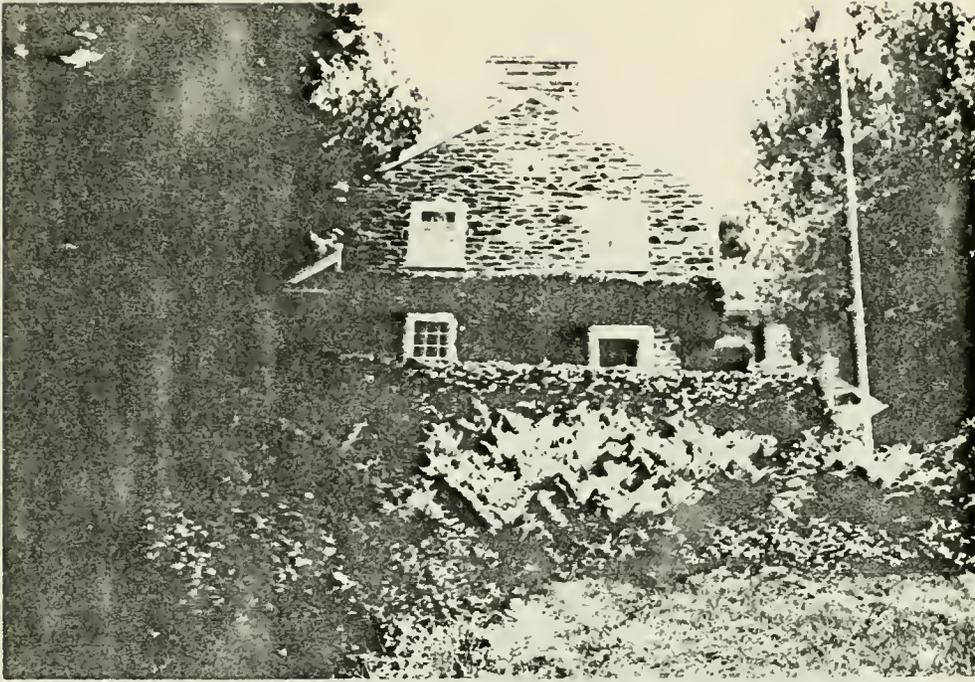


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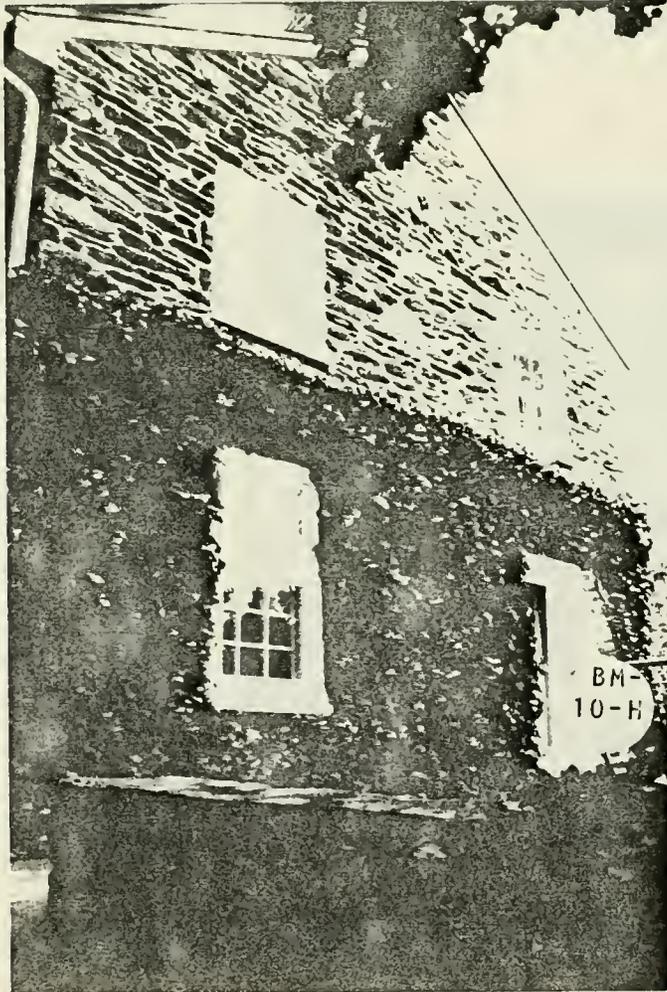


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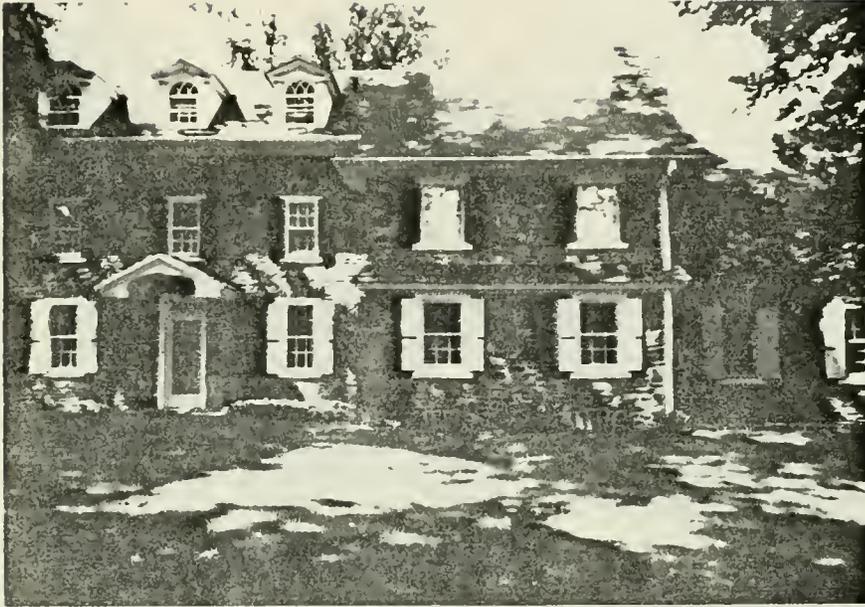


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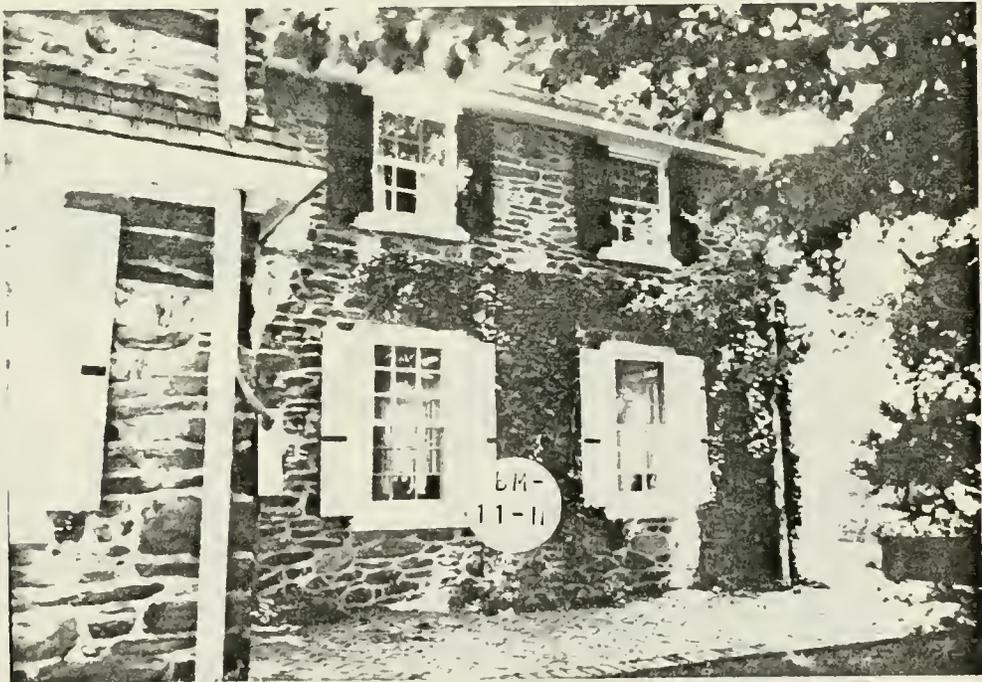


EASTERN SECTION





SOUTH FACADE

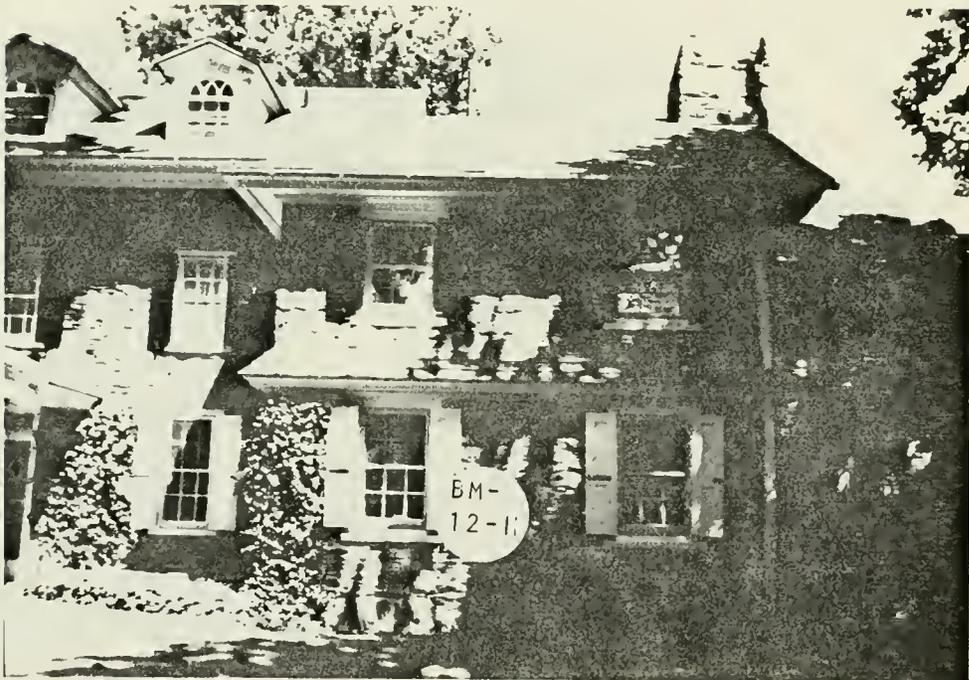


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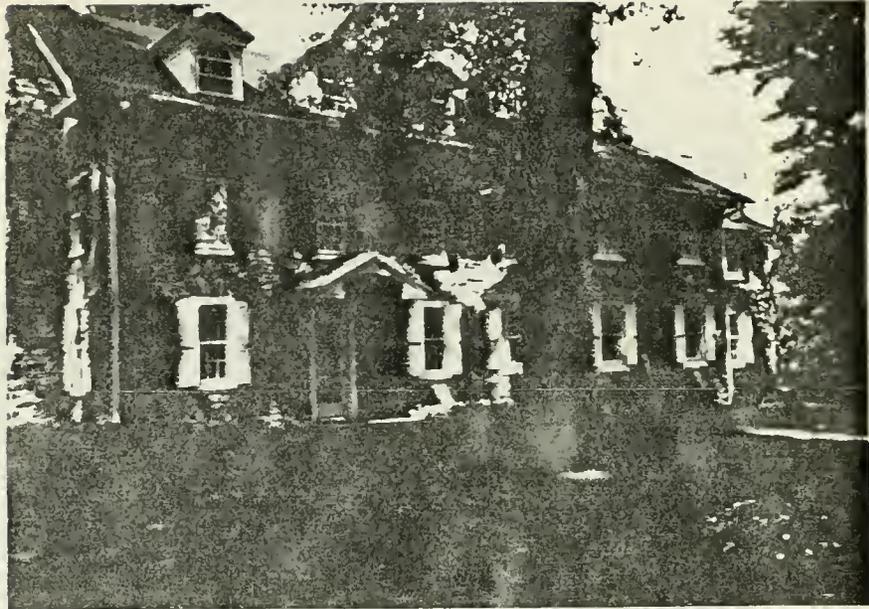


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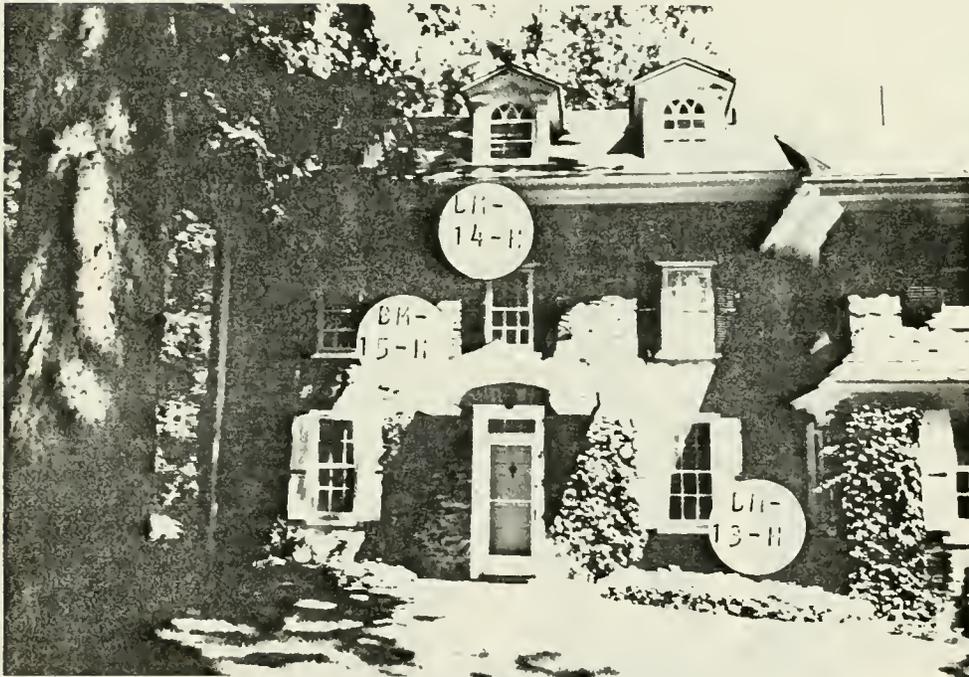


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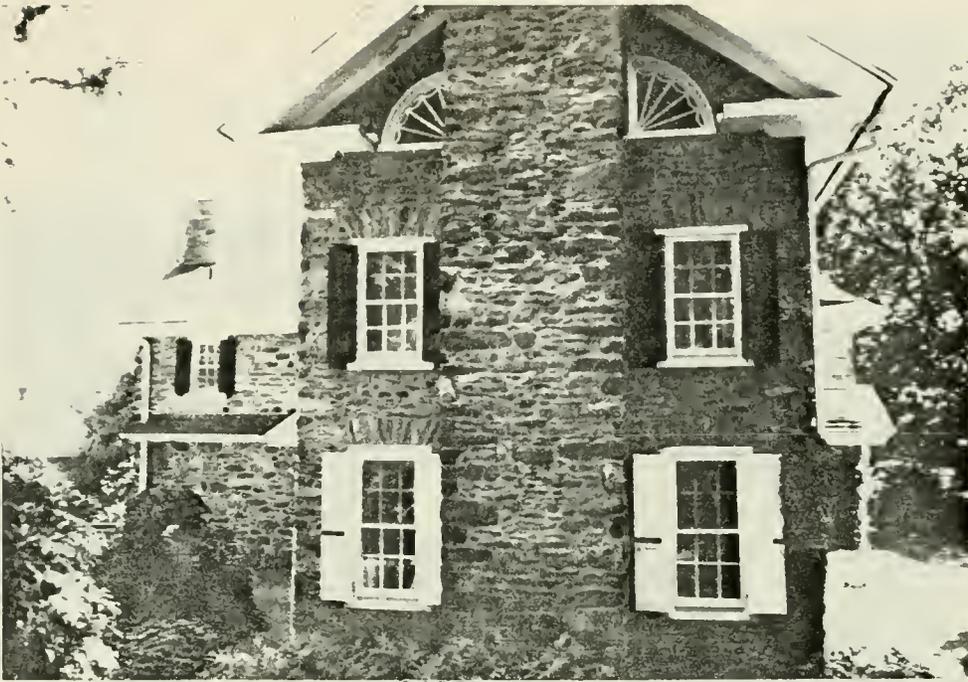
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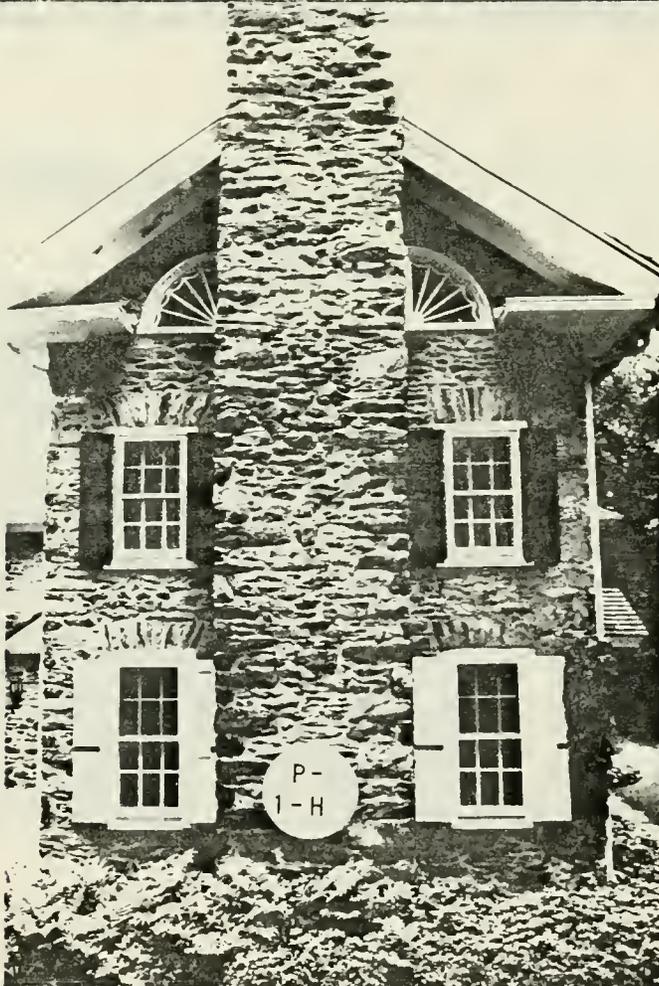
WESTERN SECTION



POINTING SAMPLES



WEST FACADE

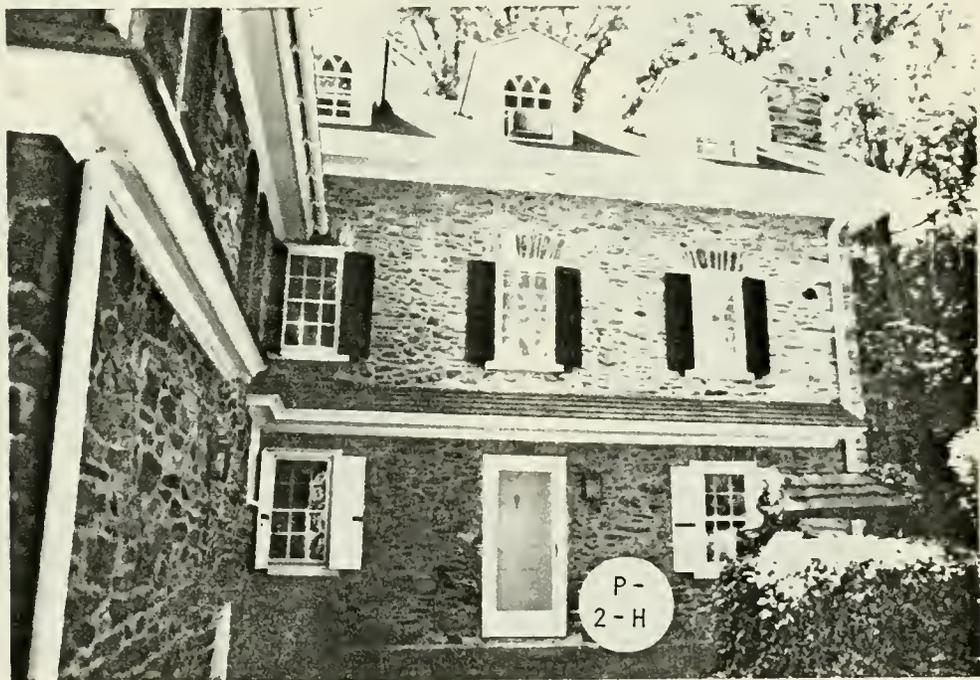


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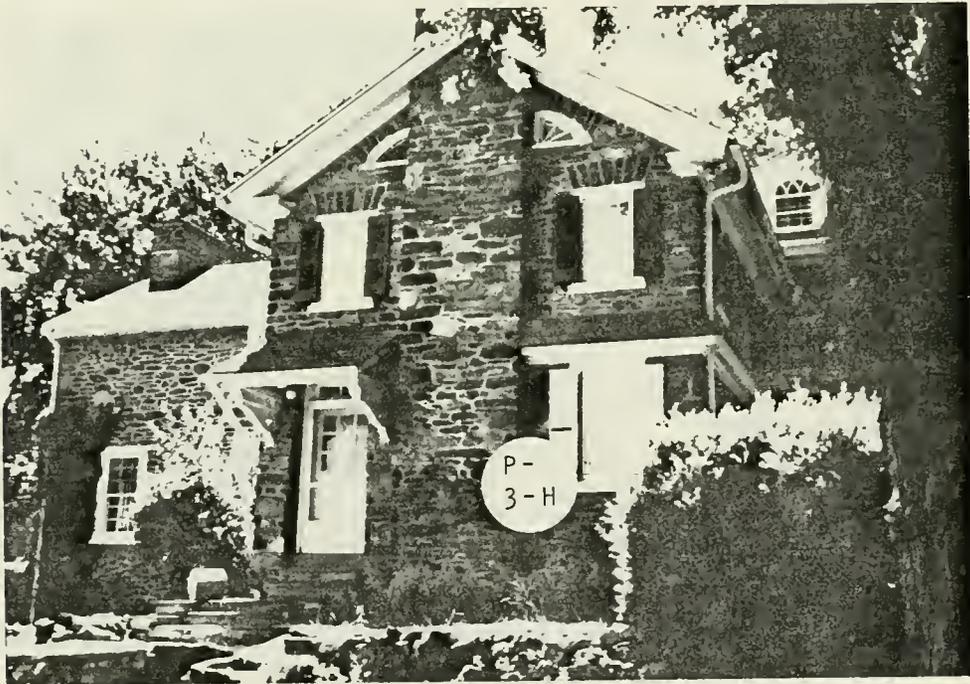


WESTERN SECTION





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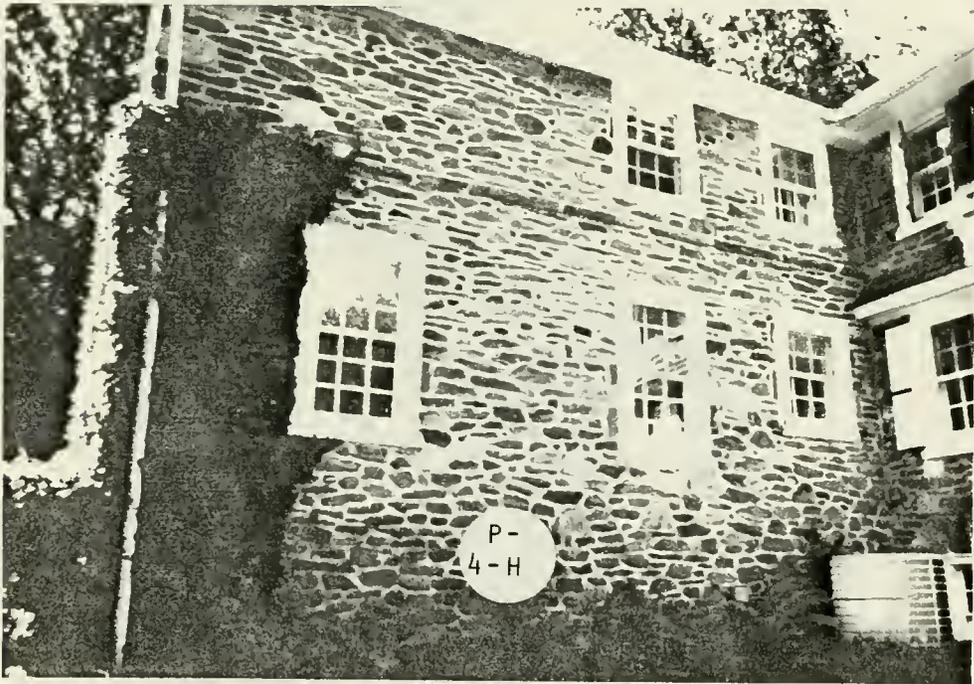


MIDDLE SECTION



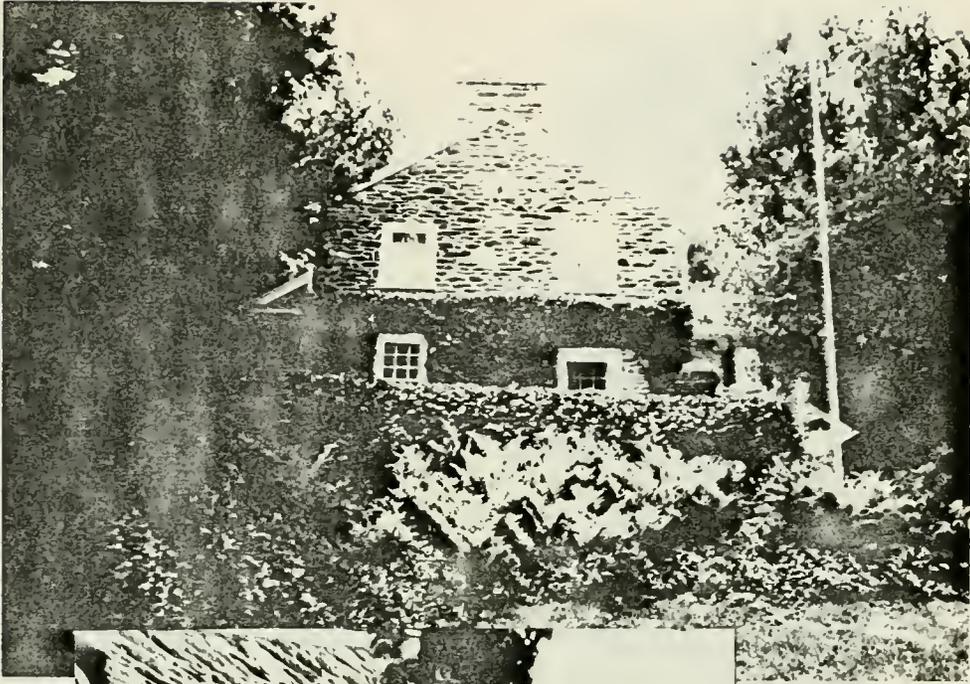


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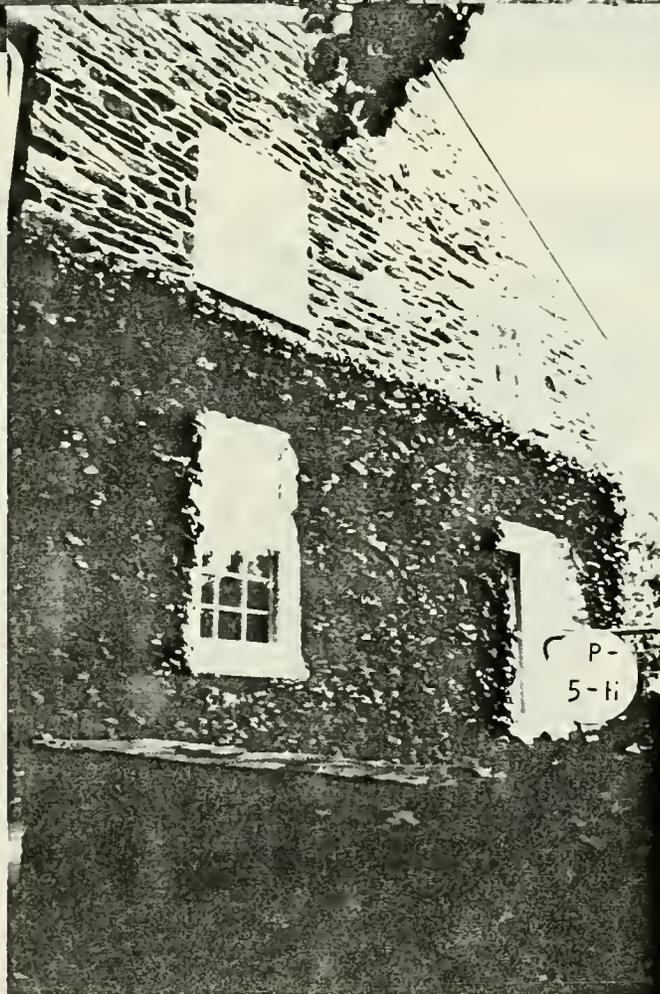


EASTERN SECTION





EAST FACADE



EASTERN SECTION





SOUTH FACADE



EASTERN SECTION



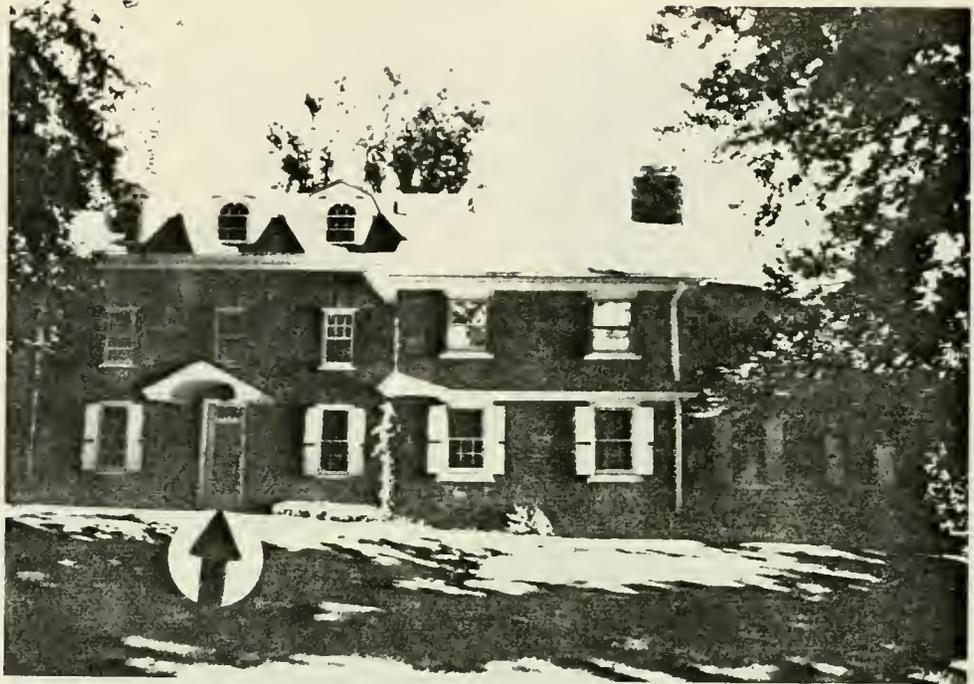


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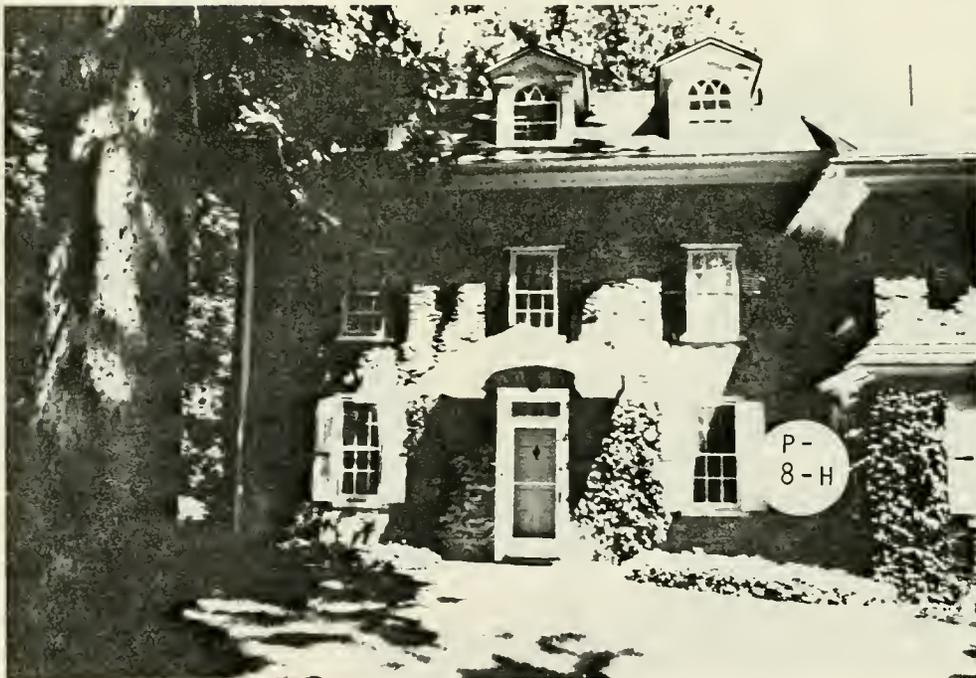


MIDDLE SECTION





SOUTH FACADE



WESTERN SECTION

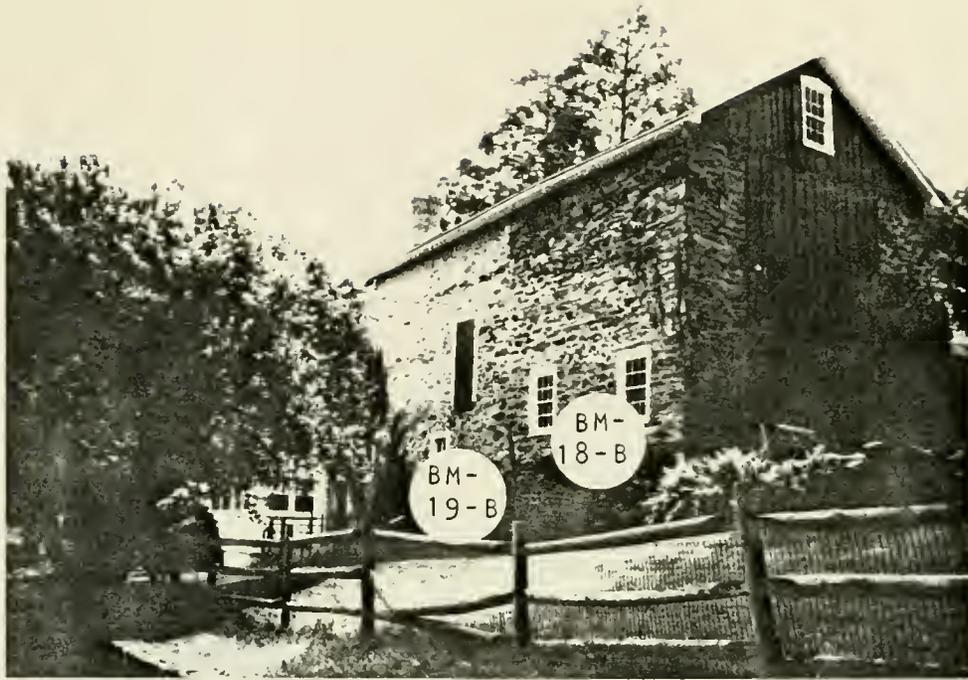


BARN SAMPLE SITES



NORTH & WEST FACADES



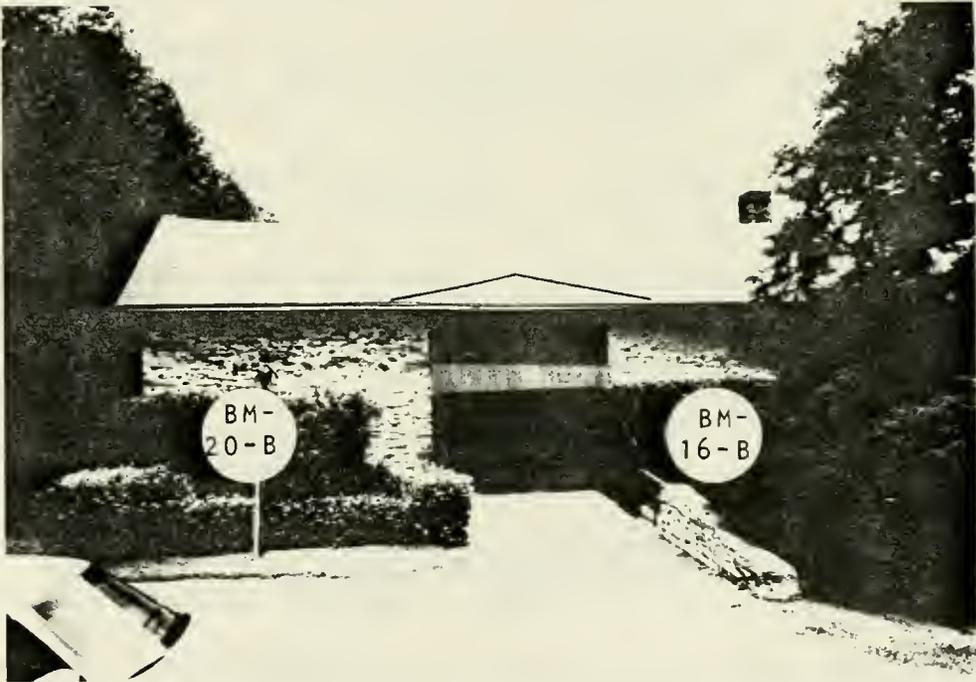


NORTH & WEST FACADES



WEST FACADE





SOUTH FACADE



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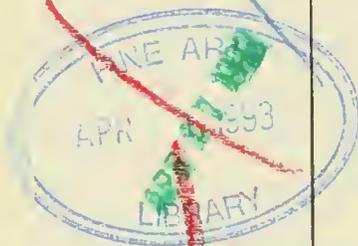






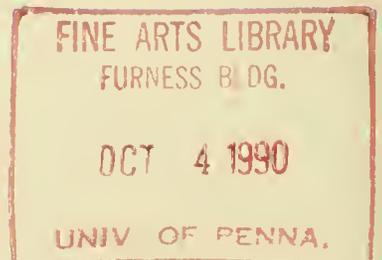
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