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Mark Smith

James Boyle

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Analyzing Farm Layout and Farmstead Architecture

Mark Smith and James Boyle

The preceding article outlined how the Finger Lakes National Forest Archaeology Project used archival data to interpret spatial changes at the level of the individual farm, concentrating specifically on land holding patterns and aggregate farm size. In this article we refine this analysis somewhat through a discussion of how archaeological data recovered from individual farmstead sites were incorporated into the GIS database. Utilizing digitized data derived from the mapping of sites located in the Burnt Hill Study Area, we have performed some preliminary analyses of the architectural remains and correlated them with historical information discussed in the previous article. A consideration of the artifacts recovered from our archaeological investigation follows in Six et al.'s discussion of artifact assemblages.

The majority of farms in the Finger Lakes National Forest were built in the 19th century. This period witnessed a rise in notions of efficiency, order, and productivity that contrasted greatly with traditional farming methods. New York State was among the major centers of this "progressive" reform movement, which advocated the reorganization of nearly every aspect of farm life, from the layouts of farms to notions of ideal spatial relationships within the farmhouse. Farm architecture, previously built according to long standing regional traditions, was a primary focus of this so-called "progressive farming movement." Agricultural periodicals of the time urged the adoption of new architectural designs for houses, barns, and outbuildings. Despite the widespread application of some of these ideas, the program advocated through the progressive farming movement was not universally adopted. Traditional folk farming methods persisted in some areas of the Northeast until quite recently. Our analysis of the farms in this region is placed within the context of the interplay between traditional and progressive architecture in 19th-century New York State.

Analyzing Farmsteads

Rural architecture in New York State during the 19th century was heavily influenced by two opposing forces—traditional agrarian practice and the progressive farming movement. These forces influenced farm architecture and affected many aspects of rural life, including the landscape and the economic basis of farm life. Placing the farmsteads of the Hector Backbone in this framework enables an understanding of the social and historical processes that shaped the space in which these 19th-century farm families lived and worked.

Archaeologists, traditionally concerned with the artifactual and structural remains of past human occupation, have tended to ignore those spaces on the landscape that do not demonstrate intensive human alteration. This has led to the assumption that landscapes are static and are solely the product of the natural environment (Rubertone 1989: 50). Yet landscapes are frequently altered by human hands and reflect the same social values that can be seen in the construction of the built environment. Rubertone (1989) argues that to fully understand settlement patterns and architectural design, one must include the landscape environment in which all these actions take place. Adams (1990) has urged that the study of rural sites should focus on the "landscape history" of the farm system. This argument states that the traditional view that the built environment contrasts with the natural environment should be discarded in favor of a perspective that incorporates both (Adams 1990: 93). From this perspective, one can consider the complex interactions that members of agrarian communities have with the landscape they occupy and alter. The structural remains of buildings make up but a portion of the total modified landscape. Even a relatively small historical farm site will include spaces that served as pathways, gardens, plowed fields and pastures; as well as farmhouses, barns, and other outbuildings. On larger 19th-century farms, it is possible to find numerous differentiated field systems, multiple pastures, separate grain storage barns and milk barns, silos, and wagon houses or garages. On these

larger farms, multiple dwellings for the farm owners and the hired help are also not uncommon, along with numerous highly specialized outbuildings.

The relationships that exist between these elements of the landscape are complex and governed by highly socialized perceptions of how farms should be laid out. These perceptions were heavily influenced during the 19th century by the increasingly complex interactions between traditional architectural and farming styles and the academic, progressive, styles that grew out of an increasingly capitalistic world system. The slow transformation of worldview and the ramifications it had for material culture has been discussed by numerous historical archaeologists, most of whom have concentrated on the early colonial period in North America (e.g. Deetz 1977; Leone 1984). This process was still going on in the 19th century, and in fact continues today in many parts of the US, especially in isolated rural settlements far from the increasingly dominant urban centers.

The structure of rural American life changed dramatically over the course of the 19th century as the United States shifted from a primarily agricultural and rural nation to an industrialized and urban one. New York State was a major locus of agricultural change in the latter half of the 19th century. Although cultural geographers and folklorists have intensively studied the house and barn forms of New York State (e.g. Glassie 1974; Noble 1984a, 1984b), these studies are limited to surviving structures which may not be wholly representative of the 19th-century landscape. Only archaeology has the ability to investigate the patterns of those buildings and farms that did not survive, to determine whether they too reflected the social and material forms recognized by historians and cultural geographers. Historical archaeologists have only now begun to contribute to the understanding of the rural agricultural way of life of the late-19th century in the Northeast (Klein and Baugher, 2002). Through archaeology we can explain the differences between progressive agriculture and traditional farming on the most basic and fundamental of levels – the level of the people tilling the fields, herding the cattle, and struggling with new ideas of specialization, the

need for expansion, and the increasingly appealing option of migration.

The Finger Lakes Region was predominantly settled by farm families from New England who took advantage of the cheap and fertile land made available after the Revolution. Their farming style reflected folkways originating in Northwestern Europe and differed little from traditional methods of earlier times. Discussions of rural folk architecture and lifeways have been numerous, many focusing on the diffusion of people and ideas from “cultural source areas” along the Eastern Seaboard and spreading westward (Kniffen 1965; Glassie 1968). As this folk architecture spread with the migration of people, it frequently changed to reflect the different social relations and environments found in these newly settled areas. Most scholars agree, however, that until the late 1820s, the farmers of New York State as a whole reflected the folk patterns of the English residents of New England—they retained the vernacular style of house and barn construction originally derived from the medieval English pattern (Glassie 1968: 129; Noble 1984a: 26).

This situation was to change by the middle of the century. By the 1830s, a significant number of farmers were now tilling fields owned by their families for two generations; they were established farmers on fertile land in a period of tremendous economic and agricultural growth. New York State became the most productive region in the country by mid-century and it was the conscious desires of the farmers to make it that way (Parkerson 1995: 7-8). Glassie notes that, “in many areas, particularly west of the Hudson and out into the upper Middle West, the northern farmer was not only influenced by popular culture, he was popular culture’s agrarian exponent” (1968: 192). The farmers of central New York were no exception, and many of the most progressive periodicals of the mid-19th-century progressive farming movement were published in the market and university towns of upstate New York. In her study of the progressive farming movement, McMurry (1988) presents a detailed analysis of the changes in farm life during this period and sees a distinct shift in the structure of farmhouses as the century progressed. Using articles, house improvement

plans and letters from such journals as *Genesee Farmer*, *Country Gentleman*, and *Albany Cultivator*, she examined the way progressive farmers structured the rural experience and how this changed dramatically in the last 50 years of the 19th century. The emphasis on progressive agriculture grew steadily through the years, with a scientific and heavily economic viewpoint becoming predominant and all but supplanting the folk farming methods of the early-19th century.

The progressive farming movement went through a number of changes during its period of influence in New York State as its focus shifted from the rationalization of small farm production to advocating more narrowly defined farm specialization and an urban style of consumption (McMurry 1988: 209). Throughout its course the movement can be characterized as an attempt to structure farm production to the emerging industrial capitalist order that was transforming the country. There was an emphasis on specialization, mechanization, and growth that contrasted sharply with the folkways of previous generations (Parkerson 1995: 80–81). Despite this new emphasis on modern farming methods, older traditions did survive in the more conservative elements of material culture. It has been assumed that some structures, such as barns, are far less likely to change form, whereas houses are much more likely to be affected by popular culture (Kniffen 1965: 49; Noble 1984b). The picture may be quite a bit more complex if one could view the entire range of farms operating at a particular time, instead of focusing solely on the farms that are visible today.

The issue of survival is key to our analysis of farms in the Finger Lakes National Forest. Because historians and cultural geographers limit themselves to the structures found on farms today, their samples are biased in favor of farm structures that have survived a hundred years or more. Since 1870, rural New York State has seen a tremendous amount of emigration and abandoned farmsteads probably outnumber the farms still operating. We cannot assume that abandoned farmsteads represent the same agricultural strategy found in the surviving examples of 19th-century farms. The fact that the farms along this part of the Hector Backbone all failed in the begin-

ning of the 20th century stands as the most unifying factor among them. In the preceding article Heaton recognized that the farmers in this region were pursuing a strategy of survival that involved capital accumulation in the form of land aggregation. As archaeologists, we must ask if the material remains of these farms on the landscape can illustrate this process.

Analyzing Farm Structures on Burnt Hill

As discussed in Delle et al.'s introduction, field surveys were performed by the research team in the course of locating and mapping the visible structural remains of the archaeological sites in the national forest. The analysis of the sites took place after the maps had been transferred into the GIS database. The surface remains of these sites vary greatly in size, preservation, and clarity, although most are easily visible and few sites have been heavily disturbed since they were initially razed. The process of abandonment is not entirely clear, but it appears that the government agency that initially purchased the land cleared the sites of all salvageable material soon after purchase. What are commonly found today are the remains of house cellar holes, usually with dry laid fieldstone foundation walls intact, and fieldstone foundations of the farm's barns and outbuildings. While test excavations were conducted at only one site (discussed more thoroughly in Six et al.'s article, this volume), the general shapes and structures of those architectural features that are observable from the surface allowed us to draw a number of conclusions.

Historically, the residents of Burnt Hill practiced mixed agriculture, owning tracts of land that ranged greatly in size and productivity. The form of these sites varied in a similar fashion, though an overall pattern is apparent. Of the 25 sites located and mapped within the Burnt Hill Study Area, 21 possess a combination of cellar holes and outbuilding remains; the other four sites feature cellar holes but lack traces of outbuilding foundations. It is entirely possible that the outbuilding foundations have been destroyed in the years since abandonment, and we surmise that this is the case. Where archaeological evidence for barn size could not be retrieved, we

examined the property improvement inventories recorded by the Soil Conservation Service to determine the dimensions of farm buildings.

We begin with a consideration of barns. Barns possess a number of characteristics that make them especially interesting to researchers and cultural geographers have paid special attention to their form and diffusion across the continental U.S. As mentioned above, barns possess a very conservative architectural style compared to almost any other type of farm building. The English barn, although modified during the 19th century, retains much of its original form even today in central New York State (Noble 1984b: 39). Outbuildings such as corncribs and smokehouses stubbornly retain folk patterns also, but no one structure is as common or dominant on the landscape today as the barn. This is, of course, due to the survival of barns which were large capital investments and therefore more likely to be modified over time than replaced entirely. These modifications reflect each farmer's perceived needs as they became more specialized and reliant on capital investment. These alterations can also be correlated with changing patterns in rural agricul-

ture. Yet, as mentioned above, barns viewed without reference to other parts of the farm system may obscure the totality of the change or the causes behind it. For this reason, it is valuable to view the barn in the context of the farm.

One of the most variable factors recognized in our sample was the range of barn sizes, some appearing quite small, on both the ground and in the documentary evidence. To better visualize this pattern, a histogram of total barn square footage was created for the barns located in the Burnt Hill Study Area (FIG. 1). These numbers are derived mainly from the measurements recorded during the archaeological surveys. However, in a few cases where the barn ruins could not be located, the dimensions recorded at the time of government purchase were utilized. In only one case were these figures and the dimensions recorded by the research teams conflicting. In that case the historical figures were utilized, because the archaeological remains were heavily overgrown and disturbed, leaving the barn dimensions somewhat ambiguous.

The histogram shows that the majority of barn footprints (20 of 25) fall under 2,400

Distribution of Barn Size

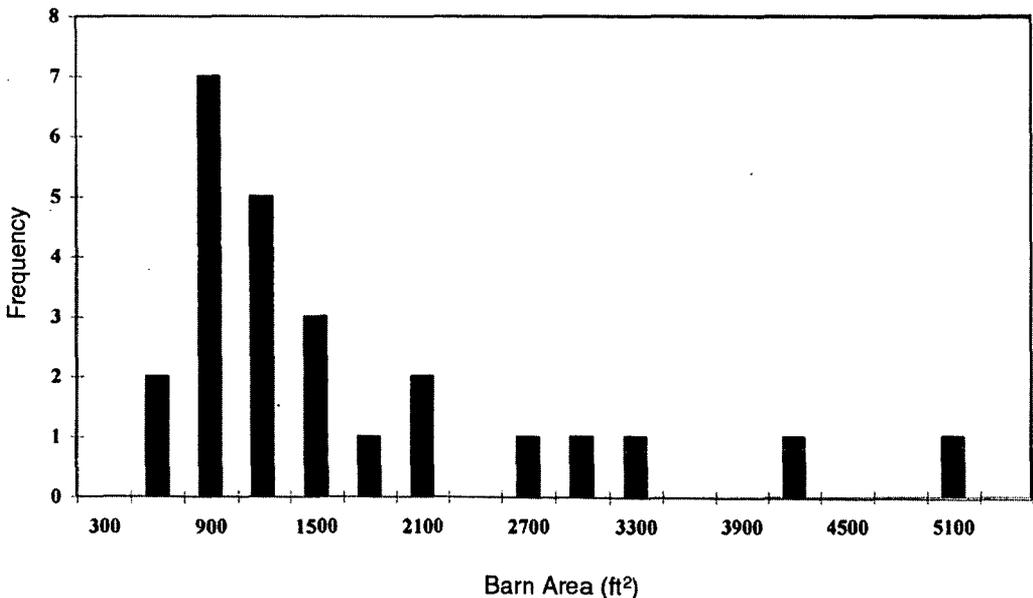


Figure 1. The distribution of barn size from sites in the Burnt Hill Study Area.

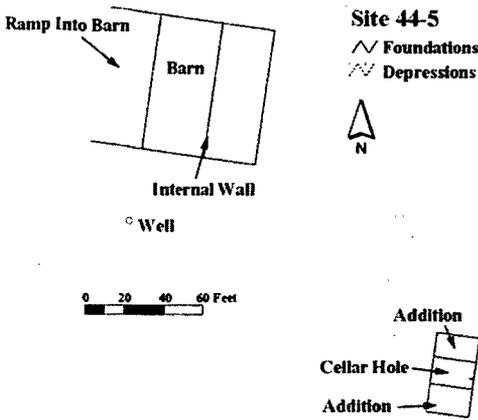


Figure 2. The plan for Site 44-5 from the GIS database. The barn from this farmstead exhibits a distinctive fieldstone ramp typical of raised three-bay barns.

square feet (223 m²), while there is a distinct group of barns with footprints over 2,700 square feet (251 m²). What is intriguing about the larger barns is not necessarily their size but the form that they take. Their most visible feature is a distinct embankment on one of the long sides, forming a ramp, and a well-built fieldstone retaining wall (FIG. 2). Only one

barn under 2400 square feet (223 m²) possesses this feature, a 34 x 23 foot (10 x 19 m) barn that nevertheless shows a similar form. All but one of these barns are rectangular. This form is consistent with a specific variety of the English barn known in central New York as the "raised three-gable," "raised three-bay," or "basement" barn (Noble 1984b: 39). This barn, derived from the English barn sometime in the early-19th century, is similar in shape to its predecessor but possesses two levels, the top of which is entered via the large earthen ramp constructed on one of the sides. This form allowed for two easily accessible stories—the top for grain and hay storage and the lower for sheltering animals. It has been suggested that the popularity of this barn in central New York is related to the switch to a diversified form of agriculture early in the 1830s which relied on both grain and milk production (Noble 1984b: 57). Its existence on these farms, however, may point to a less traditional form of agriculture with a greater emphasis on capital accumulation and progressive farming patterns.

The one non-rectangular barn is also one of the largest barns in the sample, its footprint measuring 3181 square feet (296 m²). It is a late

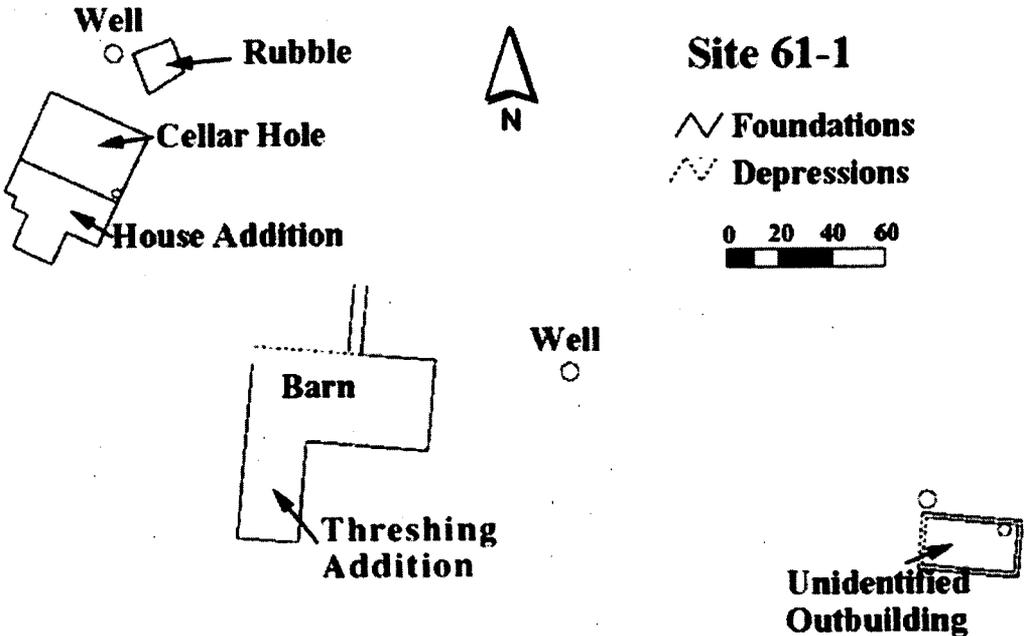


Figure 3. The plan for Site 61-1 from the GIS database. This farmstead's barn foundation is typical of a three gable barn, and is the only barn in the study area which exhibits a mechanical threshing addition.

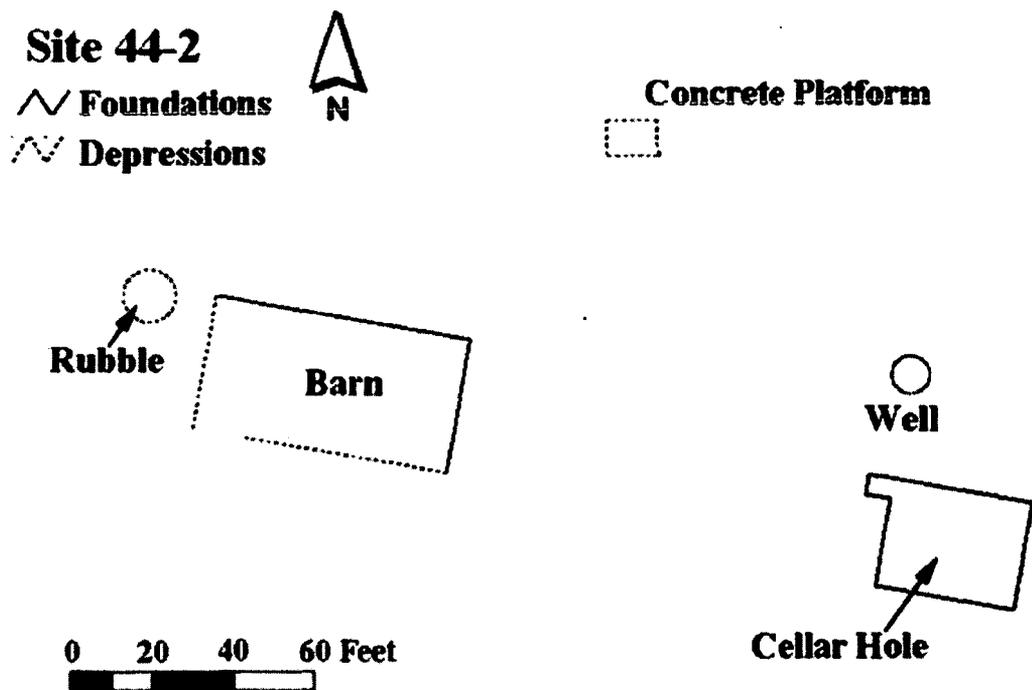


Figure 4. The plan for Site 44-2 from the GIS database. This farmstead has a typical English-style barn, which was relatively common in the study area.

derivative of the basement barn in which an extension has been added to create a distinct L-shape in plan (FIG. 3). These barns are known as three-gable barns in this section of New York State. The modification is a result of the introduction of mechanical threshing in the late-19th century and is quite common in the surviving barns in New York (Noble 1984b: 42; Noble and Cleek 1995: 116). Before the introduction of threshing machinery, grain was processed only when needed and straw was thrown to the animals below. Once available, mechanical threshers encouraged farmers to thresh their whole crop at one time, resulting in large amounts of straw that required storage until used. The solution to this problem was to enlarge the barn by constructing a straw shed at a right angle to the existing barn. This not only provided additional space for straw, it enabled the farmer to expand his herd of dairy cattle below the addition and his hayloft space above. It is worth noting that in new barns constructed with straw sheds the shed emerges from the center of the barn, unlike the barn at this site. It

appears then that the remains are of an older English banked barn with a straw shed addition, not an entirely new building.

The remaining barns, those that measure less than 2400 square feet (223 m²), are a more diverse group than the larger ones. A number of the barns in this study seem to possess the basic dimensions of English barns (FIG. 4). The English barn retains its dimensions within the range of roughly 30 feet (9 m) deep and 40 to 50 feet (12–15 m) wide (Noble 1984b: 16). Of the 20 barn foundations under 2400 square feet (223 m²), nine fall within the English barn size range and appear to be the remnants of traditional English barns. The small English barn is widespread in areas of poor agricultural potential and it is often found in the English settled areas of the Appalachians (Noble 1984b: 57). The English barn rarely survived in more prosperous areas, as its small size greatly limited the number of animals and the amount of grain that one could retain. It was unsuitable to the progressive farmer of the mid- to late-19th century, as it reflected a medieval style of subsistence farming, one in which spe-

Site 33-3

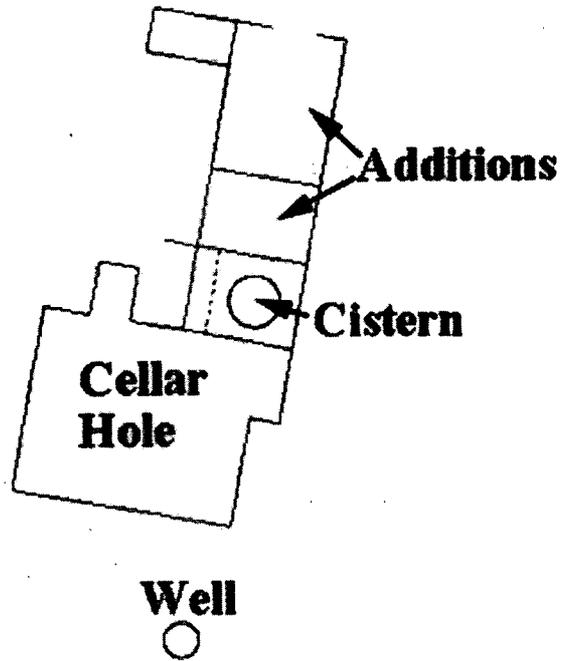


Figure 5. The plan for Site 33-3 from the GIS database. This house foundation has a series of additions extending off the back of the cellar hole.

cialization and surplus production were unknown and unachievable. It appears that on Burnt Hill a number of farmers retained the English barn up through the beginning of the 20th century.

Aside from these English barns, there remain a number of less definable structures referred to as barns in the purchase records of these farmsteads. These barns share the English barn's rectangular shape, yet vary greatly in their dimensions. Some are quite small, no more than 600 square feet (56 m²), and surely have a very different function than the larger grain storage barns. Without excavation, there is little hope in identifying the exact nature of these barns, yet they are rarely found on sites that do not possess a larger, more identifiable barn. In all likelihood they are the remains of small outbuildings such as hop-houses, granaries, or corncribs that are common to all farms yet rarely leave much of an archaeological signature.

With only one exception, the barns recorded in the Burnt Hill Study Area reflect the general pattern cultural geographers and folklorists have attributed to central New York. The existence of a large number of English barns with no apparent modification, and the fact that only one barn in the entire region reflects improvements common by the late-19th century, demonstrates that the social and economic situation here was quite different than that found in other regions of New York.

Cellar holes represent another common archaeological feature found in the Finger Lakes National Forest, and they often possess visible fieldstone extensions delineating the limits of the house (FIG. 5). Vernacular house architecture in New York State has been poorly documented compared to barn architecture. It is a commonly held belief that houses are much more dynamic forms of architecture than farm buildings and thus are more likely

to conform to the tenets of popular architecture (Kniffen 1965: 52; Noble 1984a: 127). The issues of survival and preservation complicate this conclusion and the actual patterns of house forms in the past were probably very complex. As McMurry (1988) demonstrates, farmhouse architecture among progressive farmers in the 19th century was influenced greatly by popular style and academic trends. Since the types of barns found in the National Forest reflect a pattern that differs from the accepted model of barn diffusion, we must examine the houses found in association with them to see how they reflect the cultural patterns of the 19th century.

Using a method similar to the one employed in our barn analysis, we initially examined the size and shape of the house foundations to determine if any patterning could be recognized. The relationship between cellar size and total foundation size is an important one if we are to ask questions about the changing form these houses took over time. It can be assumed that the cellar was

excavated at the time of the initial house construction and represents the size of the main dwelling area. Foundations that are not part of the cellar walls could have been built concurrently or been later additions. While temporal relationships between cellar holes and extensions could be best determined through excavation, this was beyond the scope of our project. Despite these limitations, we created histograms of both cellar area and total house area and attempted to detect patterns within each (FIGS. 6 and 7).

Comparing these two figures, one can immediately see differences between the distribution of cellar size and total foundation area. In only two cases does it appear that cellar size correlates directly with the total area of the house foundation. The two sites that possess the largest total foundation area also possess the two largest cellar holes. Beyond these two cases, there is little correlation between the size of the cellar holes and the size of the foundation area. Many sites with very small cellar area possess a number of

Distribution of Cellar Hole Size

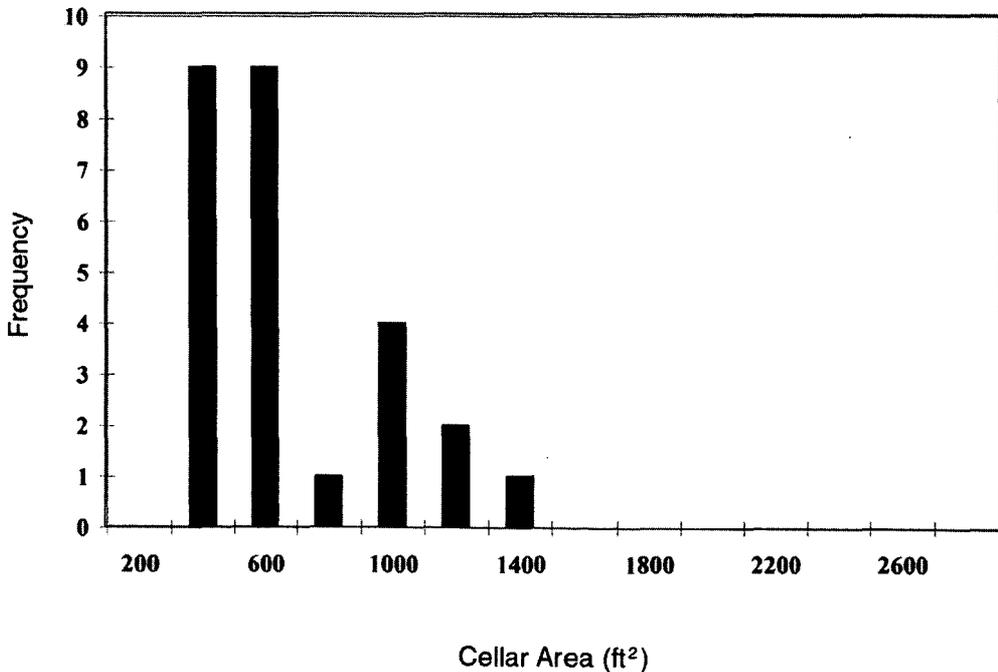


Figure 6. The distribution of cellar hole size from sites in the Burnt Hill Study Area.

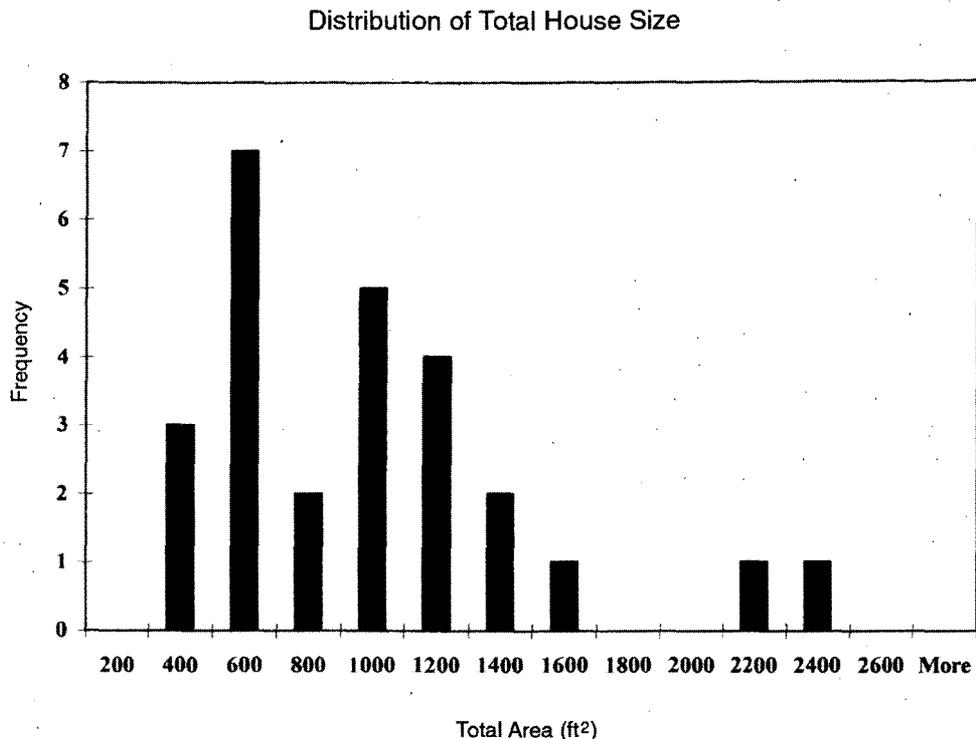


Figure 7. The distribution of total house size (cellar holes and additions) from sites in the Burnt Hill Study Area.

additions that greatly increase the size of the house. Conversely, some sites with large cellars do not appear to have been constructed with additions, and thus have a smaller total size than houses with small cellars. By itself, the area of the house seems to have little to add to the question of changing strategies of farming along the Hector Backbone. Yet, when viewed in a wider context it does begin to shed some light on these issues.

The form and method of house foundation construction in the study area is more revealing. Like many of the barns, the houses appear to have been a relatively homogenous group of structures, yet not falling into any easily recognizable style. Published plans of progressive farmhouses often followed the trends that were popular at the time, and there seem to have been an emphasis on keeping abreast of architectural style (McMurry 1988). This apparently is not the case in the houses in the study area, as the foundation remains do not appear to lend themselves to any particular style popular during the 19th century.

Cellar holes are square or rectangular in all cases. Additions commonly are built behind the house, on the opposite side of the entrance, and typically follow the general dimension of the existing cellar wall. A few examples have the long axis of the addition perpendicular to the long axis of the cellar, and a number of houses have two separate additions. Regardless of these variations, the cellars are entirely constructed of fieldstones, with very little use of cement or mortar, and little that would mark them as being improved upon since their initial construction. Reconstructing their built appearance is of course impossible, but judging from the general size and lack of contemporary popular elements, these houses probably did not reflect many of the trends in academic architecture that were gaining acceptance in some farming communities. Besides the two largest house foundations, the average size of these houses was quite small and probably, like the barns, demonstrated an older folk architecture more common in the early-19th century.

Farms and Their Buildings

In contextualizing the farm structures mapped in the Burnt Hill Study Area, a number of observations can be made on how these structures relate to the land parcels on which they are located. Specifically, there appear to be certain correlations between the size and form of certain types of structures with the size and histories of the parcels on which they stand.

In the preceding article it was suggested that the farmers in the region employed a strategy of land aggregation in an attempt to continue a viable means of living on increasingly marginal (both economically and ecologically) land. In an attempt to see how this strategy might manifest itself in the archaeological record, we looked to see if the structures found on parcels with a history of aggregation shared any common characteristics with, and/or differed from, those found on unaggregated land. Additionally, we attempted to find if there was any correlation between forms of the structures, their related properties' overall size, assessed value (at time of buy-out) and slope. Finally, we attempted to see if there was any indication, from the spatial layout of the properties, that the farmers of the Hector Backbone implemented any of the progressive farming ideals that became widespread in the latter half of the 19th century.

In the following observations we define "aggregated" properties as being those that increased in size by at least 10 acres during the period under our study. Our definition of "large" properties are those over 91 acres in size (the mean value for the properties we examined). Cellar sizes were relatively easy to calculate based on remains of the structure. Overall house sizes, however, were harder to verify archaeologically. While in most cases remnants of ells and extensions were visible on the surface, occasionally house sites were located in dense foliage. In these cases, our clearing efforts revealed the outlines of architectural features, though it is possible that some extensions were either too overgrown or damaged to be identified and measured. This being said, however, in most cases a good indication of the houses' extent was clearly evident.

All large barns, except the three-gable barn discussed earlier, are located on aggregated

land. One might imagine that this association is due to the fact that those properties tended to be large. Indeed, except for the properties with the two smallest houses, all aggregated farms are in the large category. Numerous other large properties that are not aggregated, however, have small barns. The key factor in the location of large barns, therefore, seems to be aggregation rather than property size. There is not, however, a one to one correlation between aggregated properties and large barns as half of such properties have small barns.

Without dating the barns it is impossible to say if they were built before, after, or at the time the properties were aggregated. Any proposed explanation for this correlation, therefore, is necessarily conjectural. If the barns date to the time of the aggregation, however, it may be that farmers were faced with the need to build a new larger barn than had previously been necessary. Desiring to consolidate their additional storage needs in one place, they may have opted to build a more "modern" banked barn. As previously noted, this type of structure was a 19th-century New York State adaptation of the traditional English-type barn.

Additionally all the aggregated farms have houses with small cellar holes, despite the fact that these houses range in overall size from small to large. This range mirrors the total range of house size in the region. Interestingly, the eight largest cellar holes are found on non-aggregated properties. While, again, without proper dating of the houses any explanations must remain largely speculative, the correlation of small cellar holes with aggregated properties and large cellar holes with non-aggregated properties suggests several possibilities. Before the last wave of aggregation began in the 1890s, the owners of large properties may have been the only members of the community who had the resources necessary to build a larger house in one phase. The large cellar holes may be the result of such outlays. Some farmers with smaller properties (and smaller houses, i.e. cellar holes) who started to buy up their neighbors' land may have also decided at some point to increase the size of their own houses. The building of new larger houses from the "ground up" was probably a less attractive option than simply

adding additions onto an existing structure. This latter approach would be more appealing because of the excessive capital outlay involved in building a new large home with a new large cellar hole.

Aggregated properties did not have high land value. Of the eight aggregates only two were worth more than eight dollars an acre at the time of their buy-out. This may be due to the relatively poor land that was being bought up. The land being sold was doubtless among the less productive acreage in the region. While the farmers were attempting to expand their production by accumulating their neighbors' land, this additional land was probably mainly available due to its poor quality, which forced the original owners to abandon farming in the region.

Two sites stand out as particular anomalies: Site 60-1 on tract #61-260 and Site 61-1 on tract #61-102. These sites have both the largest cellar holes and total house sizes of any in the research area. In the category of total house size, in particular, they stand out vividly in comparison to the region's other sites. Site 60-1 is 46 percent, and Site 61-1 40 percent, bigger than the next largest house. Both are also on relatively large unaggregated properties. While Site 60-1 only possesses the remnants of a small barn, it is unusual in that the remains of a still were located on the property. So far no other site has been found with indications of liquor production. In part due to the anomalous discovery of the still, test excavations (treated in Six et al., this volume) were conducted at Site 60-1. Site 61-1 is unusual in that it possesses the remains of the only identified large three-gable barn in the area. As noted before, these barns suggest the use of a mechanical thresher. Its presence probably indicates that Site 61-1 was the location of a more prosperous farm than was the norm for the area.

If the farmers of the Hector Backbone applied progressive farming techniques, one would expect to see various characteristic spatial layouts as well as structure-specific modifications. Progressive farming placed an emphasis on the logical, efficient layout of a farmstead (McMurry 1988: 63-64). Perhaps the most obvious spatial manifestation of this organization is the central location of the farmstead's primary structures. A central placement of the structures would reduce the distance that the farmer would have to travel to

any part of the farm. On no farmstead in this study is this pattern visible. Houses, without exception, are located in proximity to roads and barns are generally located in proximity to the farmsteads' houses, but with no particular layout predominating. A second emphasis in progressive farming was on the application of efficient mechanical farm aids. Again, one would expect to find structural modifications to farm buildings if such equipment had been employed. Except for the three-gable barn of Site 61-1 we have not identified any such modifications in the study area, though it is possible that others existed and may not be visible archaeologically.

Based on our comparative analysis of house and barn sizes, it appears that the Hector Backbone was less affected by the ideas of progressive farming than some other regions. While the farmers were doubtless aware of such methods, a number of factors worked against their adoption. First, progressive techniques were formulated with more ideal farming areas in mind. Large, relatively flat pieces of land where mechanized equipment could easily and effectively be employed are uncharacteristic of the study area. Most of the farms were located on relatively small and hilly pieces of land. Moreover, a large amount of capital would be needed to implement progressive farming methods, both to reorganize the farmstead and to purchase or rent the equipment needed for the new procedures. All available information points to the Hector farmers being relatively impoverished and unable to afford such measures.

Conclusion

The structure of the GIS database greatly facilitated the comparison of architectural forms in the Burnt Hill Study Area with numerous social and historical variables. Geographic Information Systems provide the perfect platform for combining locational GPS data, site CAD plans, site attribute information, and historical data. This flexibility allows more than just an easy integration of information, but enables analyses of the correlations between diverse informational categories. This article presented just one of the possible ways in which geographic and archaeological data can be combined with historic records for a deeper understanding of the past.

Despite the emphasis on progressive farming in New York State during the mid- to late-19th century, the farms in this area do not exhibit a wholesale adoption of any of the methods promoted by the social movement. While a few farms possess characteristics of this new economic strategy, such as bank and three-gable barns, there is little to suggest that it ever became the dominant paradigm for farmers in this region. Even farms that do have such features do not demonstrate many other progressive farming techniques. For example, the one site in the study area with a three-gable barn does not exhibit a spatial organization or any other architectural features that suggest a progressive influence. Faced with small farms, marginal land, an agricultural system that may have already been outdated, the farmers entering the late-19th century in the Hector Backbone could probably do little to participate in this new system. The fact that many of these farms operated well into the 20th century with so few modern improvements attests to their lack of options in this new economy. While they were all abandoned by the late-1930s, these farmers had pursued an older system of farming in great contrast to the more successful farms in much of the rest of New York State.

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- Mark Smith
Department of Anthropology
New York University
25 Waverly Place
New York, NY 10003
mas216@nyu.edu
- James Boyle
Department of Anthropology
New York University
25 Waverly Place
New York, NY 10003
jwb217@nyu.edu