RESEARCH DESIGN

Theoretical orientaton

The most striking characteristics of the farmyard prior to excavation were the location of the extant barn and the orientation of the house mound. Casual observation supports the assertion that farmyard layouts are highly predictable in terms of [a] the orientation of the entire farmyard to its surrounding neighborhood , especially the nearest main transportation route; and [b] the relationship in space of each component facility to the others within the farmyard. In the traditional farmyard, the outbuildings and other facilities which serve the farm range behind the house in various more-or-less predictable patterns. The details of these patterns may be peculiar to localities (Keeler 1978).

In most cases in Delaware, the house faces the most important artery of transportation (land or water) which was adjacent to the property at the time of building. The house seldom stands more than 300 feet from the transportation route, but it may be closer (Wise 1979).

The traditional Delaware farm house is usually L-shaped or T-shaped in plan. A gallery porch attached to the rear wing is the focus of the household service area (Heite 1976, 45). Although it is seldom clearly visible from the public road, it usually faces a traffic way which is the main internal service road for the farmyard. Some facilities which serve domestic functions such as summer kitchens and laundry lines are usually adjacent to if not attached to the back porch.

Buildings such as machinery sheds which serve the farm's production facilities are located a short walk from the rear of the house. Facilities which house noxious functions or those which might attract pests often are found farthest from the house but they are still seldom more than 50 - 100 feet away.

For all practical purposes, the formal forecourt is absent among Delaware farmyards. In the traditional Delaware farmyard, the front of the house seems to be a highly ceremonial space which seldom is used for anything but show. The area immediately in front of the house, which is visible from the transportation route, may be landscaped. However, that landscaping usually is limited to a small clipped lawn and a few symmetrically arranged deciduous trees. The house itself usually shields the utilitarian facilities from the direct gaze of the passing public, at least psychologically if not visually.

The diagram (figure 6) shows the typical Delaware farmyard layout. The illustration on the cover of this report shows the farmyard which is under study as it existed in 1908. In that year

the estate of William McKee, the builder and first resident owner, was divided. The house and farmyard were part of the dower lot. The plat is an artistic rendering, not a measured map, but it clearly shows the arrangement of the farmyard and its relationship to its surroundings. The house faced Denny's Road, which was the main local road in the third quarter of the nineteenth century when the house was built. By the time this drawing was executed, the farmstead already had shifted in orientation toward McKee Road. A drying shed stood north of the house and an outbuilding that could be the existing garage stood to the northeast. Compare this drawing with figure 40, below. The building shown between the house and the branch apparently represents an earlier layout with buildings to the rear of the house.

Houses seldom move, but roads can. The relocation of a road or its migration up or down the hierarchy of local transportation routes will change the relationship of the farmyard to its surrounding environment. That in turn will change the relationship of the components within the farmyard to one another.

At the time this investigation began, McKee Road was (and is) a far more important road than Denny's Road. No trace remained of the barns which had stood to the south of the house, or of the drying shed to the north, but a storey-and-a-half barn (which a former resident of the house called a garage) still stood slightly to the northeast of the house mound. There were other indications that the service area of the farmyard had moved around to the east as Denny's and McKee roads exchanged places in the local transportation system heirarchy. Particularly, a local informant remembered other outbuildings and a kitchen garden (besides the extant garage/barn) to the east of the house. A photograph taken by the Division of Highways in 1967 showed the clothesline attached to the southeast corner of the house's rear wing. Finally, the cut of McKee Road had been extensively landscaped with decorative plants of species which were popular in the first half of the present century.

Predictive model for historic component

The site suggested the following historical questions:

A) Did the inhabitants of the site reorient their daily lives to accommodate the changes in the relative local importance of McKee and Denny's roads?

B) If they did, was the change made quickly or slowly?

C) Did some functions move more quickly than others?

D) What effect did the comparatively immoveable orientation of the house have on the locations of farmyard functions?

E) Conversely, did the reorientation of farmyard functions bring about alterations in the house itself?

These questions may be restated as hypotheses:

A) That the change in the relative importance of McKee and Denny's roads forced a reorientation of the farmyard from its original location toward the south of the house, to a new location to the east of the house;

B) That the change took place over a comparatively short period of time but was nonetheless an organic and not a deliberate change;

C) That the locations of some functions changed more readily than the locations of others;

D) That the location and orientation of the farmhouse did influence in the location of farmyard functions but the relocation of farmyard functions prompted alterations in the fabric of the house.

After discussion with Kevin Cunningham and Alice Guerrant, the investigators decided that the most effective way to meet all the objectives of the project would be a stratified random sample of the farmyard, coupled with a small deliberate test of areas which seemed to be particularly sensitive. There were two reasons why the investigators chose a stratified random sample over an excavation strategy based upon the location and identifying of features. First, a strategy centered on locating and identifying historic features should not yield satisfactory data concerning the site's suspected prehistoric component. Second, the location and identification of specific structures was not deemed necessary to test the hypotheses at the present level of investigation because identifying specific features would not provide activity distribution data.

Farmyard space can be considered to fall into one of three categories: ceremonial space, domestic space, and productive space. Each was presumed to have its own pattern of incidental refuse disposal determined by the nature of the activities which took place upon that space.

Ceremonial space includes the front lawn which lies between the house and the main transportation route in the area. It also includes the front porch and often a front room commonly known as the parlor.

In a contemporary Delaware farmyard, the ceremonial front door and adjacent yard space seldom are used for anything but ingress, egress, and the most formal kinds of social interaction such as funerals and visits from ministers. Casual visiting, even by comparative strangers, is done through the back door and the adjacent domestic yard space. This seems to be a folkway of some duration. Thus, because of its low intensity of use, the ceremonial space should yield sparse evidence of incidental refuse disposal.

Domestic and productive space comprise the part of the farmyard which is shielded from public view by the house and encompassed by the outbuildings. In these spaces the daily work of maintaining the household and the farm's productive plant takes place. Both the domestic and the productive areas of the farmyard should contain a fairly heavy scatter of incidental refuse. They would differ in the nature of that refuse. The domestic space would contain mostly domestic refuse: broken dishes and glassware, storage and personal items, and some architectural debris. In contrast, although the agricultural productive space should contain some domestic type debris, it also should yield evidence of machinery maintenance, animal care, and crop handling, along with rudimentary or unembellished architectural debris.

A stratified random sample would insure an even but unbiased test of the entire farmyard. The relative proportions of the kinds of material found should indicate whether the unit and its vicinity were more probably productive or domestic in nature, and a scarcity of any kind of material could be taken as indication that the space was ceremonial.

If the farmyard did in fact rotate approximately ninety degrees around the house to accommodate McKee Road's increasingly heavy use, then the investigators would find strong evidence of late nineteenth century activity to the south and west of the house, and an absence or near absence of later scatter in that area as it acquired a more formal and ceremonial function after 1908. The investigators hypothesized that the opposite would hold true for the east and perhaps the north sides of the house. The east side would yield little in the way of nineteenth century scatter, but heavily of twentieth-century material. The north side was the original front of the house, facing Denny's Road. It would not yield any significant quantity of nineteenth century material, and the presence or absence of twentieth century trash could be taken as a gauge of how well the original ceremonial space held on to its function in a changing environment.

Methods of determining test loci

The investigators chose excavation units which were 30"x60", one- eighth of a standard ten-foot square. Measurements were taken in the English system because the known historic component had been originally built in that system. Fifteen of the twenty units were assigned to the stratified random sample, and the remainder were reserved for deliberate location.

The random sample was established by first laying a fifty-foot grid over the entire knoll, producing twenty fifty-foot squares. Each five-foot square unit within the larger fifty-foot units was assigned a number from zero to ninety-nine. A computer generated random number table was used to choose which five-foot unit was to

be excavated. Five of the randomly chosen units could easily be eliminated from this sample, as one lay within the house foundation and would not have yielded information relevant to the research design, and four lay outside the bounds of the farmyard.

Because there are four possible 30"x60" units within a five-foot square, each unit was randomly assigned a digit from one to four. Those receiving a one or a two were laid out with the long axis running north and south; while those receiving a three or a four were laid out with the long axis running east and west. The "ones" were placed to the western side of the five-foot square; the "twos" to the eastern side; the "threes" to the northern side; and the "fours" to the southern side.

Field techniques

All units were excavated with a trowel. Shovel work was limited to the testing of apparently sterile soil, the moving of already trowelled overburden, and the occasional careful shaving of densely compacted soils.

The excavator did not use a screen. There were several reasons for this. The soil on the knoll is quite sandy, and features such as ruts, filled areas, post holes, and worn areas which indicate frequent use were expected to be hard to distinguish by color, but easier to locate by texture, compactness, and by the ring of the soil on the trowel as it was scraped away. Also, in this investigator's opinion, the use of a screen tends to divert attention from the ground and the subsurface soil conditions to the screen itself and the artifacts it produces. Careful trowelling, with the emphasis on careful observation, will produce quite as exhaustive an inventory of "finds" as sifting will, with the added advantage that the excavator has seen exactly where each item has come from. (Noel Hume 1969:104).

The small actual area of excavation encouraged the use of the most sensitive excavation methods. Twenty units of 30"x60" is the equivalent of only two and a half standard ten-foot squares.

Cataloguing techniques

The artifacts from the site were catalogued using a Commodore 64 microcomputer equipped with the FlexFile database program package by Michael Riley (1983). The following data fields were created:

Unit number
Excavation register number
X location [southwest corner of unit on east-west axis]
Y location [southwest corner of unit on north-south axis]
Material [ceramic, glass, wood, etc.]
Count [number of distinct items or vessel count]
South pattern number
South ceramic number
Common name
Date or date range, or an approximation thereof
Marks, labels, distinguishing characteristics

These data were entered by making several passes through the database. In the first pass, locational data and obvious characteristics of each artifact were entered. In subsequent passes, these data were refined, identifications were verified and refined, and manufacturing date ranges were established.

The database was designed to use South's (1972) mean ceramic date formula for dating at least the earliest historic components of the site. This was not possible, however, as the site's earliest occupation began after the period for which the South dating formula is most applicable. Therefore, no South type numbers were actually entered.

South's pattern analysis proved somewhat problematical also. This procedure seemed at first to be a sufficient tool for determining which parts of the site were domestic space and which were agricultural or productive space. However, the South pattern analysis numerical categories are not hierarchical in structure, and they were specifically designed to accommodate eighteenth-century sites of a single region, the Carolinas (South 1977). However, it is a widely-used standard technique, and was used in the interest of uniformity. Wise (1978,148) encountered similar difficulties using this system at the State House.

Therefore we modified some categories in such a way as to accommodate a nineteenth-century Mid-Atlantic site more efficiently without wreaking undue havoc upon the original South categories. It was necessary to add six new categories. A full listing of the modified categorical breakdown is included as appendix 3 to this report. Major changes were:

2 Wine bottle, was extended to include vessels which were clearly bottles for drinkable liquids: Coca-Cola, milk, medicine, beer. Beverage cans were also included in this category.

6 Glassware, was used for indistinguishable glass vessels.

7 Table ware, was redefined to include all personal food-handling tools including soda straws.

8 Kitchenware was redefined to include kitchen appliance parts.

9 Bone was redefined to mean food animal waste, including shellfish remains.

13 Construction hardware was expanded to include linoleum, tar paper, shingles, plumbing, and brick.

17 Gunflints was expanded to include shells from rifles and shotguns.

36 Colono-Indian pottery was expanded to include all prehistoric remains.

37 Storage items was expanded to include canning jars and lids, tin cans, and other domestic food containers not covered by 2, bottles.

New categories added were:

43 Lighting, including oil and gas lamp parts and light bulbs.

44 Fuels, particularly coal

50 Automotive, including car, truck, and tractor parts.

60 Electrical service equipment: wires, switches, fuses, fixtures, and non-automotive batteries.

70 Heating equipment

80 Pavement, including macadam, concrete, oiled sand, and others where use can be distinguished.

In making these modifications to the South pattern analysis categories we paid more attention to function and use than to material.

Statistical analysis techniques

Because artifact classifications are categorical rather than in any way ranked, we are limited in statistical manipulation to those procedures most appropriate to nominal data. These include comparative bar graphs of the frequency across the site of certain telltale artifact categories; frequency mapping of

artifacts which fall into the diagnostic categories; and the chi-square test of these categories (and others) both horizontally across the site and vertically through the strata. The counting techniques provide a profile of site use as indicated by the artifacts, while the chi-square test provides a sense of how likely these distributions are.

Certain artifact categories lend themselves to the delineation of yard-use pattern more easily than do others. These include those which fall into the kitchen and food-handling groups and those which fall into the hardware, activity, stable and barn, and automotive groups. These groups are analysed first in terms of their locations in time and space. Items in other groups, notably nails and personal items, can be compared in terms of frequency through time and space to see if they are similarly sensitive. Relative densities of cut and wire nails, in particular, were postulated to be sensitive to the change of yard orientation, since the transition from cut to wire nails occurred during the period when McKee Road was first improved.

If the distribution patterns of various categories of artifacts are very different, new hypotheses must be constructed to account for the differences.

Physical constraints

The ground surface was obscured by dense overgrowth consisting mainly of honeysuckle, blackberry, poison ivy, and grasses on the house mound and adjacent land; and scrub hardwoods, honeysuckle, and poison ivy on the north, west, and south peripheries. In addition, large escaped domestic shrubs, particularly multiflora rose, obscured the ground on the slope between the house and Saulsbury Road. On the south and southeast edges of the site, a gravel pit and a road cut limited exploration.

The ground surface on top of the knoll was fairly level, but the west side sloped steeply into the road cut. The slope to the south likewise was quite steep. Recent trash heaps, too large to move, lay just south of the house mound and along the east wall of the barn.

The soil had suffered little erosion, but there was evidence of considerable disturbance by burrowing animals in the south and east portions of the site. Within the areas covered by scrub woods there was also considerable root disturbance. The only standing structure, a barn or garage, was declared off-limits for excavation because it had been badly damaged and seemed unsafe.

The east and north margins of the site lay in plowed field and were available for surface examination. It was suspected that stratigraphy there has been damaged by cultivation and sheet

erosion. This supposition was confirmed when units on the edge of the field were excavated.

Predictive model for prehistoric component

The Mudstone Branch site lies on the northern edge of the area studied by Custer and Galasso (1983) in their survey of the St. Jones and Murderkill drainages. They divided the drainages into four zones, beginning with the bayside marshes (I), the inland side of the marsh zone (II), the mid-drainage (III), and the drainage divide transition zone (IV). This site lies on the edge of the third and fourth zones. Paleo period sites were found exclusively in the third and fourth zones. For all prehistoric periods, "procurement" sites dominated the inventory in these zones.

Thomas, Griffith, Wise, and Artusy (1975), in their analysis of the Delaware coastal plain, postulated that prehistoric people of the Archaic and Woodland periods would have used similar interior woodland micro-environments most intensively during the fall nut-gathering season and during the winter deer-hunting season. To tap these resources, they could have built semi-permanent base camps on sites like this one. In his summary of early and middle Woodland settlement patterns, Gardner (1982) visualized small groups seasonally breaking away and moving to the interior from larger sedentary base camps in or near the tidal zone.

Thomas (1974, 355) identified this reach of Mudstone Branch as an area with high salvage priority because of its cultural importance and the level of development present.

DESCRIPTION OF WORK

Boundaries and physical features

The site is bounded on the west by Saulsbury Road, on the east and north by cultivated fields, and on the south by a former borrow pit that is now woods.

The largest manmade feature is a barn or garage built during the twentieth century. The cut of Saulsbury Road is reached by a deep driveway cut that leads directly to the garage. An older driveway, probably truncated by the 1940 road cut, is evident on the ground and in the topographic map.

The grid was laid out along a compass north axis which cut roughly through the diagonal of the house mound. It was staked at 25-foot intervals. The east-west base line was turned with a transit from a point in the yard and also staked at 25-foot