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TOWARDS AN ARCHAEOLOGICAL PREDICTIVE MODEL FOR MANHATTAN:  
A PILOT STUDY

NEW YORK CITY LANDMARKS  
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## INTRODUCTION

This study was begun with the idea that history and archaeology are dependent upon one another. It has been proven that there is a potential for archaeological research in New York City, and now the question of how can archaeologists best utilize historic records and narratives to predict the location and nature of sites needs to be addressed. With this in mind, the N.Y.C. Landmarks Preservation Commission applied to the N.Y.S. Department of Parks and Recreation-Historic Preservation Division and was awarded an 8,000 dollar grant to develop an archaeological predictive model for Manhattan. The goal of the model was to delineate areas of high archaeological potential based on both prehistoric and historical land use and the amount of modern ground disturbance. With the limited amount of available money and time, we viewed this project as a pilot study. We examined predictive models designed for other parts of the country and then evaluated what was the best way to develop a model for New York City. We see this as a beginning of a detailed planning study and in the last section of the report we have outlined our recommendations for further research.

A legal base for the recovery of archaeological materials on Federal lands or Federally funded projects has emerged since the 1960's. As a result of the Historic Preservation Act of 1966; sections of the National Policy Act of 1969; Executive Order 11593 of 1971 on the Protection and enhancement of the Cultural Environment; the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act (1979), archaeological impact is considered in the planning of federally funded projects. In the early 1970's this consideration often resulted in archaeologists arriving at the eleventh hour to try to save a portion of the site. Clearly, there was a need to develop a strategy for evaluating the archaeological potential of construction sites. States started to fund research for state-wide planning models. State plans for Illinois (Downer n.d.) and Michigan (Aten and Knoerl, 1980) are examples of these models and the focus was on prehistoric sites. The researchers studied the geographic and environmental factors (in their states) which would have influenced prehistoric settlement patterns. From this state-wide overview, other projects were funded that addressed the archaeological potential of a specific area within a state. Dincauze's (1974 study of the Greater Boston area is an

example of this type of project, and, again, the emphasis is on prehistoric sites. New York Archaeological Council's quadrant study for the state included prehistoric and historic data and viewed, in a broad way, the location of major historic industries and settlement patterns. However, archaeologists have just started to develop predictive models for use in Urban Archaeology. Large contract projects were undertaken in cities, such as the Atlanta rail line (the MARTA Project), with minimal time allowed for documentary research (Dickens and Bowen, 1980). At the other end of the spectrum, Wendy Harris (1980a) developed a predictive model for a part of Danville, Virginia based on extensive documentary research. Harris divided the area into zones, such as industrial, residential and commercial, which could be traced through time. She tested the area to see if archaeological material reflected what was known from the documentary research. If Atlanta had had a predictive model on the lines of the Danville Report, a more coherent sampling strategy could have been developed. As more public archaeology is done in urban areas, the need for models of urban growth and development on which to base research and sampling strategies will become more acute.

A city consists of an intricate network where geography and social relations are reflected in its physical development. On a small scale, a city is comprised of what appear to be bounded units and neighborhoods. "Neighborhood" is defined by the Oxford Dictionary as "vicinity, district, nearness." We approached the research into land use with an attempt to locate neighborhoods in 17th, 18th and 19th century Manhattan, with the goal of determining if investigations into the characteristics and locations of neighborhoods (or nearness) can predict the archaeological potential of a city. Do neighborhoods exist? How are they defined? How do they change? Are neighborhoods recognizable archaeologically? These are all questions that we examined.

Urban historians have studied the division of land in New York City based on occupation, class and wealth. Carl Abbot (1970:35-36) postulates that in the period 1760-1775:

There appears to have been a pattern of concentric zones focused on the urban center. Merchants and successful professional men lived in the core of the city; surrounded by a belt of prosperous artisans and then by the laboring poor...In addition to zoning of residences by wealth and occupation, scholars have found the beginnings of the subdivision of these cities

in areas devoted to specific economic functions.

Wilkenfeld (1976:181) writing about an earlier period (1790) states that:

Presumably, a variety of factors operated to mold the geographic patterns in the city. Economic necessities played a role, perhaps the crucial role, in terms of the need for proximity to the docks or to specified suppliers. In an era in which residence and shop were virtually identical, the occupational factor could have critical significance. One might suggest though that more was at work. Ties of friendship, a sense of unity within a trade, social constraints, and a sense of ethnic and religious identification all led New Yorkers to seek out neighborhoods with similar economic and cultural habits. Whatever the cause, the crucial point is that these searches seem to have been the norm.

These two quotations would seem to imply that zones of activities could be defined.

Blackmar (1979:135), in a more diachronic study, essentially agrees with the mid-18th century picture of New York City and adds that large tracts north of the city were owned by the "colonial elite" as country estates and summer retreats. But after the Revolution, changes in the organization of production and population increases created "the widespread social needs for residential space apart from centers of production and commerce...Master craftsmen, reorganizing and expanding production for the market, ceased to provide living accommodations for their workers and moved away from their shops" (Blackmar, 1979:136). During the first part of the 19th century, the cities mercantile elite created living spaces for themselves in the "the uniformly developed residential enclaves of Hudson Square, Washington Square, Union Square and Gramercy Park" (Blackmar, 1979:144).

The ideas put forth above seem to suggest that areas delineated intentionally or unintentionally did exist in New York City. The problem for archaeologists is how to locate such areas. Research, our own and the archaeological and documentary work from the excavations of the Stadt Huys Block, 7 Hanover Square and the Telco Block (Harris, Rockman, Rothschild and Pickman, personal communication) has shown that structures and areas were multi-purpose and were not single component behavioral areas. For example, in the early 1700's, the tannery and pottery areas of lower

Manhattan also contained residential structures and the shops that served the residences. Thus the tannery/pottery area could be considered an industrial, commercial, residential zone. This multi-component land use was the norm during the city's development. If areas were designated by their principal use--industrial in the above example--the actual settlement patterns would be oversimplified and information would be lost. There are certain areas in Manhattan which were probably almost exclusively residential, for example the Upper Westside, but these areas were developed in the late 19th and early 20th centuries. Land use patterns changed during the 19th century (see Blackmar 1979, Ernst 1949, and Wilson 1893, Volumes 3 and 4) and residential zones seem to have become more sharply defined.

It was not possible for us to develop a predictive model of land use through time because single component activity areas did not exist for most of this time period. Our major problem was one of scale. If we had plotted out areas by their primary activity (industrial, commercial, public, residential) we would have produced maps that gave a sweeping view of Manhattan's land use through time. These maps would have provided an activity-zone chronology typical of predictive models. However, they would not have presented an accurate assessment of a block's archaeological potential. Since construction projects in Manhattan are evaluated on a block-by-block basis, such a generalized overview would be misleading. Ideally, the kind of intensive, small area research on neighborhoods and land use that is being done for Telco Block should be done for all of Manhattan. Hopefully as more intensive block by block research is done on public archaeology projects more of the intricate patterns and relationships in multi-component neighborhoods will be clarified.

We developed two approaches for our model. The first was to map out the growth of Manhattan's multi-functional urban core through time. We divided the time covered into seven periods, based on political, economic, social and technological changes. The second was to examine changing land use patterns within a small area of Manhattan during each time period.

Within this area, we focused on specific industries, commercial and public areas that would be archaeologically visible.

As stated above, we divided the time covered into seven periods. The first spans the entire prehistoric phase (paleo-Indian to contact), while the other six cover the historic periods. The year 1900 was used as an end date since the New York City Landmarks Preservation Commission's Urban Cultural Resources Survey has undertaken the task of recording the architectural development. In addition, the New York City Planning Commission has issued plans which show the changing economic and land use patterns in Manhattan during the twentieth century. Therefore, this archaeological model focuses on the pre-1900 development of Manhattan.

New York City was inhabited by Indians from the Paleo-Indian period up through the 17th century. Contemporary archaeologists have excavated sites on Staten Island and have developed a chronology for aboriginal occupation of the island (Jacobsen 1980). However, such a sequence does not exist for Manhattan. Professional and amateur archaeologists were excavating on Manhattan from the late 19th century to the 1930's, but their field techniques and recording procedures are not comparable to the more scientific procedures that are used today. While there are records of these excavations, the data are generally ambiguous so that findings cannot be assigned to a particular period. Given these limitations to the data, and after discussing these problems with archaeologists whose research interest is in prehistoric coastal archaeology, it was decided to combine all the prehistoric phases (Paleo-Indian, Archaic, Woodland, and contact) into one period. There is one map for the prehistoric period which shows the locations of excavated prehistoric sites, known contact period sites and areas that, because of their geographic characteristics, have high archaeological potential. This map also shows where original water courses - streams, ponds, marshes - were located, because these are often areas of aboriginal sites.

For the historic period, it was decided to divide the time covered into six phases. Schuyler's 1977 article on New York City archaeology was used as a starting point to develop these periods. Schuyler describes the urban development of New York City as: Settlement and Formation, 1609-1720; Urban Evolution, 1720-1815; and Urban Flourishing, 1815-1920. Schuyler's first stage is based upon New York as a trading outpost and farming village. The second one dealt with the transition of the settlement into an urban center. The third stage focused on New York's preeminence as the leading

seaport in North America. For our Model, these stages were further divided into six time periods using political, economic and technological criteria. These criteria will be explained within each section.

The major map for the historic period shows the growth of the core of Manhattan from a small hamlet to an urban center. The shaded areas for each time period indicates the major settlement cluster. These maps do not indicate the scattered farms, taverns and small workshops that were outside of this central area but these features should be investigated on a future grant. This map, though, is a useful aid for determining the areas that were occupied during the city's various periods of growth. An additional set of maps was designed to give more detailed information on a small portion of Manhattan. The area below Chambers Street was chosen for several reasons: it includes all six time periods; it is an area where major construction is either taking place or being contemplated; and it is the scene of the recent excavations on Manhattan and consequentially archaeological as well as historic data is available.

In making these maps, we used information on structures or areas of activities that would be archaeologically distinct and visible and that would provide information about urban development. For example, both a bank and a tavern would leave archaeological traces in their foundation walls. The tavern site, however, would be much more likely to yield artifacts that would contain information on life in New York. Many more kinds of activities took place in taverns than in banks and, in addition, a bank would probably have been stripped of all its banking-related artifacts before reuse or abandonment. Archaeology, ideally, should provide data beyond what is known from documents. Therefore, we chose structures and areas which would provide archaeological data on the patterns and processes of Manhattan's growth. A major omission from these maps are residences. Domestic sites contain valuable archaeological data, however, the maps would have been very cluttered if all the residential units were plotted. In viewing the land use maps, one should bear in mind that residences were located throughout these areas. The appendices contain the names, locations and dates of all the structures plotted on these maps for lower Manhattan.

The final section of the report deals with our conclusions and recommendations. First, we summarize what we have accomplished on this grant

and the problems that we encountered. Second, we recommend how the maps and report should be used. Finally, we suggest questions and topics that require further investigation.

## SECTION 1: THE TIME PERIODS

The development of Manhattan has been divided, for this report, into seven time periods. The periods are based on political, economic, social and technological changes. These periods are: 1) prehistoric; 2) 1609-1664; 3) 1664-1720; 4) 1720-1783; 4) 1783-1815; 5) 1815-1865, and 6) 1865-1900. For each period there is an explanation of why the specific dates were chosen and what were the fundamental changes within that time frame.

There are three maps that accompany this section. The first map (Figure 1) shows Manhattan's outline at the point of European contact. The original shoreline, streams, rivers, ponds and marshes are plotted on an overlay map that is joined to a contemporary City Planning map of Manhattan. In studying this map, one can see the tremendous amount of both internal and external landfilling that has taken place over the last three hundred years.

The second map (Figure 2) shows the locations of prehistoric sites on Manhattan. All of the excavated sites and the documented (but no excavated) contact period sites are plotted on the map. In addition there are shaded areas that have high archaeological potential because of their geographic characteristics. For example, the land near a pond would be a desirable location for a site because the Indians would have access to both the fresh water and the pond's flora and fauna.

The third map delineates the growth of the urban core during the six historic periods. Maintaining a close relationship to the "city" were several satellite communities, four of which are located on this map (see Appendix 20). They are shaded only for the period in which they were settled, but it may be assumed that their existence continues on into the 20th century although the names and the boundaries may have changed. The exact dimensions of these communities requires further research. Approximate boundaries have been drawn in on this map, calling attention to such areas which otherwise would be considered unpopulated and undeveloped.

Change in ceramic technologies and ware types were considered in formulating the six historic time periods because they are important ubiquitous artifacts. Ceramics, rather than glass or metal, were chosen as prime signifiers

in the analytical and chronological interpretation of a site. Ceramics in addition to form and design, can suggest social status, ethnicity and networks of trade. Deetz (1973:15) states that "ceramics are a functional component of a cultural system...change in one system brings about change in others". This is not to imply that ceramics alone alter society but rather reflect changes that occur in a network of social/political/economic events.

## PREHISTORIC

Manhattan is an environmental crossroad at the junction of the Atlantic Coastal Plain and the North East Upland physiographic provinces and the Carolina and Canadian biotic zones (Rutsch 1970, Ritchie 1971). Such boundary areas are often rich in resources for hunters and gatherers and were heavily exploited by them. Paleo-Indian remains have been found along the Hudson Valley and on Staten Island (Kraft 1977). Ritchie (1969:7) characterizes Paleo-Indian sites as usually being found in 1) well elevated areas that were formerly accessible by water or 2) along the margins of low swampy ground that was formerly occupied by lakes or rivers. Several areas in Manhattan, such as the Collect Pond (City Hall) area and Washington Heights, fit Ritchie's profile although the effect of the substantially lower sea level during Paleo-Indian times must be considered.

Early Archaic sites have been found on Staten Island (Ritchie and Funk 1971). It is likely that sites from this period will be scattered small camps of foragers which would not have great archaeological visibility (Dincauze 1974:44). The environment was changing and the megafauna of Paleo-Indian times was no longer present and the game animals typical of the later deciduous forest had not yet become established.

During the Mid-Archaic, climatic conditions improved but there is, so far, very little knowledge of this period from the Metropolitan region. However, in Boston, the greater number of sites and higher artifact density at these sites indicate a large increase in population compared with the Early Archaic (Dincauze 1974:45).

The Late Archaic is a time of continued population expansion and increased cultural diversity. Specialized tool kits, settlements of various sizes--including base camps--and more varied food remains, indicate adaption to local environments, decreased mobility and established seasonal rounds. Large Late Archaic sites have been found on Staten Island and Long Island (Jacobsen 1980; Gramly 1976). It is probable that such large littoral-oriented sites existed on Manhattan also.

During the Woodland period, agriculture became established in the Northeast. Smith (1950:117) describes the Clason's Point Focus as having many village sites located near tidal inlets on the second rise of ground

above the water. Manhattan had many such areas. There is currently some debate as to the importance of agriculture and the existence of large, permanent villages along the New York coast, in particular on Long Island, before the contact period. Ceci (1982) suggests that such settlements did not occur until after European colonization; the pressures caused by Europeans' use of wampum as currency resulted in a shift in the Indians' settlement patterns from temporary villages to increased sedentism. Large, permanent, fortified settlements developed in areas where the shells needed for wampum could be obtained and where European access to the finished product was fairly easy (Ceci 1977:12-20). To further support her position, Ceci (1979:61-62) notes that Juet in 1609, Block in 1614, Hendricks in 1616, Van Wassanaer in 1624 and De Laet in 1625 record the existence of villages in the interior areas but no mention is made of settlements on coastal areas.

In the pre-contact periods, even if there were no permanent villages, sites could still be quite large and visible if shellfish collecting was involved. Shell heaps are among the most visible of sites and have been found all around New York Harbor in undeveloped areas (Kaeser 1964, Lopez and Wisniewski 1971, Rothschild and Lavin 1977).

Van der Donck (1968:80-81) has given an account of Indian settlements during the mid-years of the 17th century. Indian "castles" (this word seems to be used by Van der Donck to denote a fortified village) were located on steep, high hills, near a stream or river. The areas were surrounded with strong stockades and frequently enclosed 20-30 houses. Besides these strongholds, there were smaller, usually also enclosed, settlements nearer to the fields and unenclosed villages at fishing places.

"Their castles and large towns they seldom leave altogether. From other situations they remove frequently, and they seldom remain long at the other places. In the summer, and in the fishing seasons, many come to the watersides and rivers. In the fall and winter, when venison is best, they retire to the woods and hunting grounds. Sometimes, towards the spring of the year, they come in multitudes to the sea shores and bays, to take oysters, clams and every kind of shellfish, which they know how to dry, and preserve good a long time" (Van der Donck 1968:82).

Van der Donck is describing the Indians of the New Netherlands rather than New Amsterdam in particular, but this pattern would be an expected seasonal round for a people with simple agricultural practices.

In the early 20th century, in undeveloped parts of Washington Heights, intact sites were found. In 1980, during the excavation of Stone Street as part of the Stadt Huys block, aboriginal pottery and lithics were found in the lowest levels of the excavations. Manhattan has many areas that could have been, given their geographic conditions, areas of Indian settlement. The map shows high potential as well as known and excavated sites, but other areas should not be eliminated as possible sources of artifacts and settlement data (see Recommendation section).

1609-1664

In 1609 Henry Hudson sailed into New York harbor. Between 1609 and 1626 there were temporary settlements on Manhattan. These first settlers were traders interested in obtaining furs. The year 1626 marked the time when the first permanent settlers arrived and when Peter Minuit bought the island from the Indians (Stokes 1915:9-10). New Amsterdam remained essentially a trading outpost and small town throughout the period of Dutch control.

It was decided to divide Schuyler's first stage into "Dutch" and "English" colonial periods in the belief that such a division would emphasize rather than minimize differences between these two periods. There is some controversy among scholars as to the effects on New York City of the British takeover; it is thought that even though there was a change in national allegiance, the everyday life of the people was not significantly altered. The English took some care to make the transition smooth (Peterson 1917; Prisson 1889; Still 1956:Chapter I) and in spite of the views expressed by Washington Irving and Deitrich Knickerbocker, there is some question as to the "Dutchness" of the New Netherlands. New Amsterdam always had a high percentage of non-Dutch inhabitants (half of the population according to Cohen 1981). These non-Dutch residents were tolerated in the colony because the New Netherlands had a chronic problem with under-population. In the 17th century the Netherlands were financially prosperous with an expanding economy. Religious freedom and civil liberties were recognized in the Netherlands and the country was a place of immigration rather than emigration. (Wabeke 1944:14-16 and Jan Baart, 1981, personal communication) In addition, the policies of the patrons and the Dutch West India Company did not always encourage colonization (Van der Donck 1656; Goodfriend 1978; Riink 1978).

The Dutch approach to colonization differed markedly from the British. Nash (1974:92) states that the principal goal of the Dutch "was not farming and large scale settlements but simply the profitably bartering of European trade goods for the skins of beaver, otter and deer." Land and tenant rights for farmers in the Netherlands encouraged them to remain at home, rather than to try to develop a homestead in the wilderness (Wabeke 1944:19).

Perhaps of greatest importance to archaeologists is the question of how the flow of goods (material culture) into New York was affected by British colonial policies. It is a possibility that the trading patterns remained almost unchanged after the British take-over of New Amsterdam. However, this question can be examined more clearly with a division between the periods of Dutch and British political control of New York. From the mid-17th century, a series of regulatory laws (the Navigation Acts of 1651 and, the Staple Act 1663, the Molasses Act of 1733 etc.) were enacted by the British Parliament in attempt to control European and Colonial sea trading. Goods imported from and exported to the British Americas had to be in British or British Colonial ships, and foreign carriers were totally excluded from the colonies.

However, enforcement of the law was difficult. Stokes (1909: I 303) states that domestic and European problems had prevented England from enforcing these laws and the colonists had engaged in profitable trading with the French, Spanish and Dutch. "This trade was, in the eyes of the law, simply smuggling, but the fact that it had been permitted for many years, served to justify the colonists in thinking that they had a right to enjoy its benefits" (Stokes 1915: I 303). Noel Hume (1970:139-140), however, states that most non-British items were prevented from reaching the American colonies. If the Navigation Acts did indeed prevent many European products from reaching America there would be a significant difference in material culture after 1664. If, however, New Yorkers continued, unofficially, to trade with the Netherlands, France and Spain the archaeological picture might remain almost the same. More excavations of early sites are needed to attempt to answer this question.

1609-1664 - Ceramics

In the first years of the 17th century, ceramic technology in Northern Europe was still basically medieval. Coarse red and white earthenwares were produced for use as cooking, serving, storage and dairying vessels. The technique of tin-glazing had been introduced into the Netherlands and England in the 16th century (Noel Hume 1970:105) and was the major technological break with the medieval period. Tin-glazed vessels with their gaily and beautifully decorated surfaces were used both as tablewares and as purely ornamental pieces.

In England, ceramics were still produced mainly as a cottage industry, while in the Netherlands particular towns had begun to specialize in particular wares (Jan Baart, 1981, personal communication). For instance, some towns (Delft, Harlem, Rotterdam) specialized in tin-glazed earthenware and the town of Bergen-op-zoom was the source of a sandy-textured redware used for large utilitarian vessels (Warren 1979:35, Jan Baart, 1981, personal communication).

The coarse red and white earthenwares remain essentially the same throughout the 17th century (at least as far as our present knowledge can tell). In tin-glazed wares, there are significant changes in style and decoration that can be chronological indicators. There was also, in the Netherlands, a transition from the production of a ware which was tin-glazed on the face and lead-glazed on the back to an entirely tin-glazed ware. This transition began to be apparent in the 1640's and by the end of this time period the latter ware was almost universal (Charlotte Wilcox, 1981, personal communication).

German and Flemish stonewares were imported to New York, or were brought here by the settlers, and have been found on Manhattan sites. The Dutch, and to a lesser extent the English, had begun to trade with the Orient in the 1600's and oriental procelains have been found in Manhattan.

1664-1720

During this period, New York experienced a fairly steady growth in population from approximately 1500 in 1664 to 7,248 in the census of 1723. (Rosenwaike 1972: 3&8) Commerce was still the chief occupation of New Yorkers. The fur trade and exportation of raw materials continued to be important but, "the flour barrel began to replace the beaver skin as the port's most valuable offering to the world of commerce, and would remain so for more than a century." (Albion 1970:2).<sup>1</sup> In addition, the city expanded its function as a market place for the surrounding areas and as a receiving port for imported goods which were passed on to other colonial areas or were sold immediately to residents.

England at this time was experiencing political and religious problems which resulted in the ousting of James II in 1688 and the succession of William and Mary. These troubles in England were reflected in the Leislerian "Rebellion" of the late 1680's and 1690's which divided New Yorkers into factions, Leislerian and anti-Leislerians, whose rivalries continued into the eighteenth century.<sup>2</sup> The latter party was composed mainly of prosperous merchants and were characterized as "courtiers" while the former was more a party of small shopkeepers and businessmen (Bayles 1915:53). There is also a suggestion that people of Dutch descent were more likely to be Leislerians (Bayles 1915:55).

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1. Albion (1970:3) notes that New York wanted more English goods than it could possibly pay for with its own products, therefore, "the solution lay in the West Indies and Southern Europe, which would buy enough...New York flour...to enable the colonists to pay for their English wares."

2. When William and Mary came to the throne, Governor Edmund Andros, who was at that time based in Boston, tried to suppress the news of this change in monarchs; the people of Boston seized Andros and put him in prison. The people of New York reacted with fears of a French Catholic invasion from Canada (James II was deposed because he was said to favor the Papists and Catholic rule in England. William and Mary were, without doubt, Protestants.) Jacob Leisler, a retired soldier of the Dutch West India Company led a group of citizens who seized the Fort in lower Manhattan on May 31, 1689. Leisler assumed all the powers of the governor, ostensibly until William should send a legal representative. A letter arrived from William in December which gave

Some of the goods which came into the port of New York were the plunder of pirates and privateers which were taken from vessels of many nationalities. Many respectable and wealthy merchants engaged in this trade in spite of the efforts of most of the English governors to eliminate this type of commerce. It has been stated that, due to English laws, goods reaching the colonies would be almost entirely English goods, (Noel Hume 1970:139-140) but more research and excavation is needed to assess the effects of this cosmopolitan plundering on the material culture of New Yorkers.

At the end of this period, as Schuyler states (1977:3), the town was "on the verge of future economic, social and demographic changes that would transform it into a true city."

#### Ceramics

This time period encompasses a maturation in both English and Dutch ceramic production. The earlier patterns continue but greater quantities and varieties of ware are produced. Tin glazed earthenwares and coarse red and white wares are produced by both countries, as in the earlier period, and German stonewares and Oriental procelains continue to be imported, new types of wares were developed: slipwares, which become ubiquitous in the 18th century, began to be manufactured in Staffordshire (Noel Hume 1970:134-35) and John Dwight's 1670's development of a process to produce salt-glazed stoneware ended the German monopoly on this ware (Noel Hume 1970:111-112).

England tried to encourage domestic ceramic production by an importation ban in 1672 which prevented "any kind of Painted Earthen Wares whatsoever (except those of China, and stone Bottles and Juggs" from entering England (Noel Hume 1970:140). Since the Navigation Act of 1651 had forbidden any but British or British colonial ships from trading with the colonies,

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governing authority to any "such other person as for the time being may be in authority, to care for preserving the peace" (Bonner 1925:25). Leisler took this as a command to continue in power. Under his administration, the first popular election for the office of mayor was held and a force was sent against the French and Indians. However, he made many political enemies and was very reluctant to surrender his power when called upon to do so in January 1691 by Richard Ingoldsby, a representative of the new governor, Henry Sloughter. When Sloughter arrived in the spring of 1691, Leisler and his son-in-law were executed as traitors. The factionalism generated by this series of events evolved into a Leislerian and Anti-Leislerian division.

this should have prevented Dutch, and other Continental, majolicas and delf-wares from reaching Manhattan. However, as mentioned above, there was a great deal of unofficial importation of goods by New Yorkers. Archaeologists in Manhattan have recovered these "painted earthenwares" in late 17th century (at the Stadt Huys Block and Hanover Square sites). There are three possible reasons for this: 1) these wares were in New York City prior to 1672; 2) smuggling or privateering brought in forbidden ceramics; or 3) the "painted earthenwares" were made in England. This latter point is rather difficult to determine. The extraordinary amount of exchange in materials, ideas and craftsmen themselves between England and the Netherlands confuses matters in this time period (Paul Huey lecture at SHA conference 1982 and 1982, personal communication). Dutch craftsmen imported large amounts of English white clay for their ceramics (Jan Baart, 1981 personal communication) and it was not unusual for craftsmen to move from one country to another. The delft industry in England was begun in the 1560's by immigrants from Antwerp (Noel Hume 1970:105) and the enterprising Dutch Elers Brothers established a successful business in Staffordshire (Noel Hume 1970:120).

It should be noted as well that there was a similar movement of craftsmen in clay tobacco pipe industry. Edward Bird, whose pipes are common on both Stadt Huys Block and Hanover Square sites, was an Englishman who lived and worked in Amsterdam. This flow of craftsmen, materials and ideas across national boundaries poses complex problems for archaeologists. It is possible to find "English" clay in a vessel with "Dutch" glaze and form or a "Dutch" craftsman using his skills in an "English" shop. In addition, Manhattan had a significant number of potters making wares out of local clay and glazes, but working in a Northern European tradition. This period is characterized by the coarse red and white earthenwares, tin-glazed wares and some stonewares.

1720-1783

In this period there was a "Re-Anglicization" (Deetz 1977:38) of American culture: England paid close attention to the Colonies and contact between the two was more frequent. The growth of New York as an urban center and port city continued and her trade continued to increase. By placing a heavy duty on goods from Boston, New York was able to eliminate the disadvantageous triangular trade between itself, Boston and England; while at the same time the trade between New York, the West Indies and England increased. "Commercial prosperity in those years was creating great family fortunes. The growing movement for wider democracy met with enthusiastic response...Nor was progress in culture wanting. King's College was chartered in 1754...Lectures on scientific subjects...entertained the public (Edwards 1917:15)."

New York City, during the Revolution, was in an unique position as a Tory occupied city. "It was the center of British authority in America and there was much official business as well as lively Tory privateering (Albion 1970:6)." Population fluctuated drastically: in 1775 there were approximately 25,000 people, but in 1776 most of the patriots had fled and population was down to about 5,000.<sup>3</sup> However, many Tories fled to the city so that by 1777-1778 population exceeded the pre-war number with close to 33,000 inhabitants (Still 1956:37). This replacement or reshuffling of residents resulted in many abandoned homes and in the use of many structures for other than their normal purposes. Other physical changes occurred during the war. The British built fortifications in many places on Manhattan.<sup>4</sup> In 1776 and 1778 there were major fires which, together with the absence of owners from their properties, left more than one-quarter of the city in ruins by the time that the British evacuated in 1783 (Pomerantz 1938:19-20).

This period was divided for our model because even though there was continuous urban development from 1720-1815 (Schuyler 1977:3-4) there were many physical changes during and after the Revolution. Also, the Revolution was a major political/governmental change which affected New York's economy

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3. Population in 1731 was 8,622; in 1749, 13,294; and in 1771, 21,863 (Edwards 1917:16).

4. For more information see the map "British Headquarters Ms. Map of New York and Environs" in Stokes, Volume I, plate 50.

and social structure. By dividing this period at the time of the British evacuation, it is hoped that post-Revolutionary changes will be emphasized rather than minimized.

### Ceramics

This time period is one of rapid development in the ceramics industry. The 1720's saw the creation of white salt-glazed stoneware, a ware that became "the typical English tableware of the mid-eighteenth century (Noel Hume 1970:115)." Plaster of paris molds were used to cast white salt-glazed vessels into shapes and designs that were both ornamental and functional (Noel Hume 1969a:17).

A great variety of refined stonewares and earthenwares were produced in England in this period: Jackfield, Astbury ware, Nottingham, scratch-blue creamware and others. The most important technological change was the gradual development of creamware in the 1750's and 60's (Noel Hume 1970:123-125). Creamware was a relatively cheap, durable earthenware which quickly cornered the ceramics market (Oackham 1978). It was less brittle than white salt-glaze and much less liable to chip than tin-glazed earthenware. Because of these advances in ceramic technology and stricter enforcement of the importation laws, England became almost the only source of earthenware and stonewares for the American colonies.

Combed slipwares were somewhat coarser earthenwares which were also very popular throughout the 18th century. The buff bodied wares were made in a variety of forms (everything from candlesticks to tablewares to chamber pots) in Staffordshire and Bristol. Red bodied slipwares of Northern European tradition were made locally in the colonies. In New York City, Crolius/Remmy clan and others (see Appendix) became well established in this time as makers of utilitarian stonewares and redwares.

During this period, porcelain continued to be imported from the Orient and was of good quality, yet reasonably priced (Miller and Stone 1970:81). This time period ends with the appearance of pearlware in the newly independent nation. Noel Hume (1978:46) has proposed that 1785 was a likely date for the introduction of pearlware in the United States, but the British occupation of New York City might mean that pearlwares could be found in late Revolutionary contexts on Manhattan.

1783-1815

This is predominantly a period of reconstruction and recovery. For several years after the Revolution, the port suffered from the loss of much of the West Indian and English trade. The businesses of the patriotic merchants and manufacturers who had fled the city had been greatly interrupted during the seven years of British occupation. New Yorkers set about rebuilding their commerce in spite of the impediments caused by the confused condition of interstate currencies, poor communications and transportation and occasional federal legislation.<sup>5</sup> In 1784, the first voyage from New York to Canton was made by the "Empress of China", but it was not until the English and the French went to war, again, in 1793 that America was able to exploit her neutral status and once more trade with the West Indies (Albion 1970:7-8).

This period is also characterized by the processes and problems of urbanization and industrialization. Local industries were established or expanded; for example, one of the first textile factories was founded in 1789 at 21 Liberty Street (Pomerantz 1938:197), and the ship building industry expanded and moved north to the Corlears Hook section (Pomerantz 1938:198).<sup>6</sup> Crowding and sanitation became a matter of concern and the city was affected by increasingly common epidemics (see Sanitation section). Land values in Manhattan spiralled; improved lands close to settled areas sold for \$50 an acre in 1785, \$60 in 1790, \$120 in 1795, and \$200 by 1800 (Pomerantz 1938:180).

The municipal government expanded and assumed more functions. For example, in 1805, an act was passed to establish a free public school for children from poor families (Wilson 1893:167); in 1806, the city established an orphan asylum (Todd 1893:21). Prior to this time, religious institutions and private individuals had provided for the educational and charitable needs of the community, and these acts were indicative of changes in the role of government.

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5. In particular, Jefferson's 1807 Embargo Act, which barred American vessels from foreign trade (Albion 1970:8).

6. Pomerantz (1938:198) notes that this industrial expansion was "quantitative rather than qualitative innovation...numerical progress was being made but the old methods of manufacture were still relied on."

### Ceramics

This period is marked by the emergence and dominance of pearlware. "Pearlware represented one of the landmarks in the evolution of English earthenwares, providing a bridge between creamware and the bone china, ironstone, granite and porcelain wares of the nineteenth century (Noel Hume 1978:43)." Pearlware became the most common ware of this period and is found in a variety of table and toilet forms with many styles of decoration. Creamware continued to be made but by the end of this period it was largely confined to serving and toilet vessels. This period also saw the end of delftware (tin-glazed earthenware) as a major type.

After the Revolution, public agitation was high for the abandonment of lead glazed pottery, because of its toxic qualities, especially in storage vessels. This public reaction led to increased domestic production of stonewares which were salt-glazed and contained no lead (Watkins 1966:11). In areas where stoneware was available, it was the preferred utilitarian ware. New York City was near stoneware manufacturers on Long Island and New Jersey, and there were potters on Manhattan who were possibly making stoneware (See Pottery section).

A major change in American ceramic production after the Revolutionary War was the demise of the apprentice system. Guillard (1971:51) writes that "the spirit of democracy and independence that had won the Revolution had also eroded the willingness of the youth to accept the apprentice system." The death knell for the apprentice system came with the development of factory made pottery. Cheaper wares could be produced by factories than by individual potters.

1815-1865

With the end of the War of 1812, there was a surge of growth in New York. Transportation networks improved with the building of the Erie, Delaware and Hudson, Morris, Champlain, and other canals which opened up inland areas as markets and producers for goods which passed through New York. Albion (1970:10) states that New York City's success as a port during this and later times was due more to control of the passage of goods (as an entrepot similar to London and Amsterdam) rather than to production of articles of trade, and to the establishment of the city as a financial center using the profits from this control of trade.

The British themselves contributed to New York's rise in the early part of this period. New York, and other American ports, had been almost totally blockaded during the war and demand for European goods was high. The British supplied the demand chiefly throughout the port of New York. This port was chosen because of its strategic central location and because the New England ports had not been so severely isolated by the blockade (Albion 1970:12). When the port was glutted with goods, New York assured itself of continued European trade by enacting, in 1817, an innovative and favorable auction law "which was designed to secure final sales of all goods put up for auction" (Albion 1970:13)<sup>7</sup> and by inaugurating, in late 1817, a regular packet service to Liverpool. The growth of the port also brought a shift in the shipping industry from the East River to the Hudson River.<sup>8</sup>

Population grew rapidly: in 1814, population numbered 95,519; by 1845, the figure was 371,223; and by 1860, there were 813,669 inhabitants. (Rosenwaike, 1972:18 & 36). Also, more immigrants arrived during this time than during the preceding 200 years: in 1845, the foreign born numbered 134,656 or 36% of the total, and by 1860, non-native inhabitants numbered 383,717 or 47%. The overwhelming majority of the immigrants were Irish (203,740 in 1860) with Germans second (118,292) and England, Scotland, and Wales sending 37,185 (Rosenwaike 1972:42).

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7. Auctions were commonly used by New York merchants to purchase goods. Products came into the city by ship and were auctioned off either directly on the wharves or in nearby coffee houses and taverns.

8. See the section of landfilling for a detailed discussion about the growth of shipping on the west side of Manhattan.

Sanitation and health problems became catastrophic. The city tried to control and alleviate its unhealthy conditions, but the provisions made were not at all adequate. (See section on Sanitation) Fires continued to rage and garbage continued to be dumped into the streets and the rivers. The problem of a satisfactory water supply was solved by the building of the Croton water system although it took a number of years before all the structures in the city were connected to this water system.

For this project, this period was ended at the close of the Civil War for several reasons: the railroads came to the forefront after the war and opened up even greater hinterland market areas, and American industry developed rapidly. The Civil War, as had other wars to a lesser extent, acted as a catalyst to industrial growth, but the war also caused a strain on the city. Between 1860 and 1865, there was a drop in population of over 87,000 people. This decline is partially accounted for by the following: (1) the drop in the birth rate due to the absence of so many men during the war; (2) the loss of lives in the war; (3) the decline in immigration from Europe during the war years. (Rosenwaike, 1972:55). The next period would mark New York and the country's recovery from the War and the growth of American industrialization.

#### Ceramics

This period marks the beginning of white earthenware. The C. J. Mason Company of Lane Delph, England developed and patented 'ironstone china' in 1813 (Fontana and Greenleaf 1962:92). Josiah Spode had been producing a similar ware called stone china since 1805 (Lewis 1969:159). The 1820's are usually given as the period for the beginning of mass-produced whiteware. The late 1820's- early 1830's saw an array of colors for the transfer printed wares. They were produced primarily in monochrome designs although occasionally polychrome designs appear in the dishes. After the War of 1812, there was a change in the way British potters viewed the American market. In the 18th century it was a dumping area for excess goods, but by the 19th century it became an important market. After the war the English potters start up designing American scenes for the transfer printed plates. Potters were catering to American taste with many patriotic designs, including scenes of Americans defeating the British; appearing on tablewares. Some potteries, such as Adams and Enoch Wood even use the American eagle as their trademark.

Many utilitarian wares in this period were made of stoneware. In addition to American stoneware, England was producing enormous quantities of

cylindrical, brown slipped stoneware bottles (Noel Hume 1970:79). These vessels were generally used for ink, mineral water, ginger beer and blacking.

America also produced, in addition to stoneware, another utilitarian ware known as Rockingham or Bennington. The ware was a hard bodied earthenware with a mottled brown glaze. This ware, produced by immigrant English potters, was an American version of a late 18th -early 19th century inexpensive yellow earthenware used for teapots (Spargo 1972:86).

By the 18th century soft paste porcelain (bone china) was being made in Europe. This early porcelain was not as hard or as attractive as the Oriental porcelain and, therefore, eastern imports still sold well (Miller and Stone 1970:90). European potters kept improving on their product and in the 19th century, England was producing "the greatest part of the soft porcelain made in the world, as well as the best" (Spargo 1972:195).

## 1865-1900

After the Civil War, America went through an "economic revolution." Degler (1967:4) notes that by 1890 the United States had made the transition from an underdeveloped nation into a mature industrial economy. As the railroads expanded and linked the east and west coasts, new markets for the goods offered in New York were opened up.

With the growth of industry and the augmentation of trade, urbanization increased. New York was the largest city in the country and was at the forefront of urban development. Immigrants flooded into New York from Eastern and Southern Europe as well as from Germany and Ireland. Throughout this period almost half of New York's population was foreign born. In 1865, 313,477 were foreign born out of the 726,386 city residents, and in 1890, 639,943 out of 1,515,301 were foreign born (Rosenwaike 1972:63).

The outward appearance of the city was considerably changed during this time. The use of the elevator enabled architects to build 10 and 11 story buildings where they formerly would have constructed a 4 or 5 story building (Still 1956:206). Bostwick (1893:522-523) notes that after the Civil War, New Yorkers started adopting the "continental custom" of living in apartments, and by 1873 the Buildings Department was issuing (on the average) fifteen permits a month for either the building of new apartment houses or the conversion of older single occupancy homes into apartment units. The development of the elevated rail line made public transportation easier and faster, and made it possible for people to live in midtown and uptown and commute daily to work in the downtown area (Still 1956:219). As a result of this increased population and efficient transportation, the urban area expanded and all of Manhattan Island became part of the city.

## Ceramics

In America the whiteware industry in Ohio and New Jersey blossomed after the Civil War. The government passed tariffs that helped protect local markets; these tariffs helped both large manufacturers and small traditional potteries (Guilland 1971:72). After the war there was a major boom in industrial development in America. Glasshouses developed full size molds for the Mason jars. These cheaply made glass storage jars competed with the earthenware and

stoneware vessels. In addition, enamel cooking pots replaced ceramic wares. With the development of a nation-wide railroad system, more cheaply made glass and metal products were brought to small towns and supplanted the locally made utilitarian wares. This period saw the decline of the American stoneware and earthenware traditions. The large whiteware manufacturers, however, developed more sophisticated technology and mass production methods which helped increase their outputs (Gates and Omerod 1982:5). Archaeologically one would find large quantities of American-made whiteware, but proportionately less ceramics to glass than in other periods.

## Section 2: The Archaeological Visibility of Land Use

The overall map of Manhattan (Figure 3) shows the areas of urban growth during the six historic periods. To understand the variation in land use more detailed maps were designed for a small area of Manhattan. These six maps (Figures 4-9) show structures that are archaeologically visible within each period. When looking at the composite map for the six periods (Figure 10) some of the changing land use patterns can be seen.

This section of the report provides narratives to accompany these land use maps. The material is divided into three segments: activity areas, miscellaneous structures and methods of land alteration. In the first group--activity areas--potteries, tanneries, markets and taverns are described in detail. Explanations are given for: 1) the kinds of artifacts one would find at these sites, 2) the features that would be visible archaeologically such as foundations of pottery kilns, and 3) the kinds of data that can be obtained from these sites. The material presented here can be applied to similar structures in other areas of the city. The research that went into these narratives should serve as a model for investigations of other archaeologically visible structures.

All structures or activity areas having little or no accompanying narrative have been plotted on the land maps but fall under the category of miscellaneous structures. They are almshouses, arsenals, breweries, cemeteries, churches, fortifications, hospitals, mills, parks, prisons, public buildings, ropewalks, slaughterhouses, warehouses and waterworks. It was felt that with further research these buildings or areas would also prove to be of archaeological potential and thus deserve attention.

The last group, like the activity areas required intensive research. Methods of sanitation did not always coincide with the proper disposal of garbage. Landfilling techniques radically altered the shape of Manhattan. And fires changed the face of the city. All three procedures are methods of land use that dramatically effect the material culture found in the archaeological record. The research for this last topic was not confined to lower Manhattan and the data from these studies can be applied to other areas of Manhattan.

### Potteries

William Ketchum (1970:3), in his book, *Early Potters of New York*, speaks of a "ubiquitous clay" that the 17th century potters used for bricks and cream pots. The earliest known potter was Dirck Claesen who had a pottery between 1657 and 1686 at what would now be the intersection of Cherry and James Streets, or Corlears Hook (Clement 1947:809). A little stream ran west from Claesen's pottery into the Collect Pond. At its southern shore was the Little Collect. A peninsula separated these two bodies of water on which the Municipal Power House and the Gallows was located. All around the Collect rose "highlands" culminating in the Southwest to what was called "Pottbakers Hill". In the 17th and 18th centuries, this Hill, the banks of the Collect Pond and for a short time the King's Common (now City Hall Park area) were all available earthenware sources (Ketchum 1970:21-23).

For Stoneware manufacture, a "thick bank of fine white clay" (Ketchum 1970:4) could be found at Bayonne-Perth Amboy, New Jersey, along the North shore of Staten Island and Huntington, Long Island. Nearness to the source enabled New York potters to make stoneware as early as 1730 whereas New England had no local stoneware clay deposits. From this time, however, there is considerable confusion existing between two pottery clusters around the Collect pond. Close business ties and intermarriages makes ownership and identification difficult. We can say that from 1730 to 1830, there were at least two families spanning several generations of the Crolius/Remmey clan (see Appendix for location of Crolius/Remmey potteries, and other potteries).<sup>9</sup>

Generally, clay was mined in the springtime. It was deposited into a pit lined with stone or wood; water was added and left exposed to the weather making the clay more plastic. Utilitarian wares and fine vessels were turned on a small kick wheel in a shed with benches and shelving.

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9. There is considerable confusion as to the names and dates of the occupants. Intermarriage and close business ties make identification difficult. There were two pottery areas around the Collect Pond and later two-pottery/residences on Bayard and Hester Streets. The span of all these pottery areas would be from 1730--circa 1830. These were stoneware potters.

When the wares were dry they were taken to a nearby kiln to be fired (Ketchum 1970: Chapter 1). The brick or masonry kiln was round or rectangular and was characterized by a fire box, a main chamber, and a chimney. This kiln type was used most often for redware at a temperature of 1700°F. The early stoneware kilns were small but later the bee-hive oven was used quite successfully. Based on the updraft design, the curved chamber stood 8 feet high and 16 feet wide, with a chimney at one end and fireboxes around its circumference (Ketchum 1970:11-15).

Both earthenware and stoneware manufacturers depended on the apprentice system where each worker was bound to his master for seven years learning every branch of the trade from preparing clay to throwing, to glazing, and firing. As the technology matured and factories developed, the apprenticeship network died out (Watkins 1966:2; Guillard 1971:31-34). The multiskilled artisan gave way to the specialized functions of factory-worker. By the early 19th century, the division between maker and seller also occurred. This final separation between production and distribution caused a change in the neighborhood. The pottery industries left the area and migrated "uptown" or "out of the city". What remained was the shop, retailing the wares to a residential clientele.

#### Tanneries

Tanneries occupied four different areas in New York City through time. In the 1650's, tanners lived and worked near Broad and Beaver Streets. By 1664, the new English government ordered the tanners to locate outside the "wall" where they settled in what was called "Shoemakers Pasture" bounded by Maiden Lane, Broadway, Ann Street and Gold Street (Valentine 1853:378 and Norcross 1901a:2). Growth of new residences and real estate forced them to move again to the Collect Pond in 1696. The Pond, at Centre Street, was a popular area for manufacturing of all kinds because its "fresh" water was easily accessible. The fourth and last location was a swampy area to the east of the Collect, where tanners remained throughout the 18th century. "The Swamp", as it was called, occupied a 10 square block area bounded by Beekman, Frankfort, Spruce, Ferry, Gold and Cliff Streets (immediately south of the Brooklyn Bridge roadways).

Prior to 1800, hides and skins were collected from all over the city--deer, calf, and 'slaughter'hides' from butchers. Skins were trimmed and salted in merchants' cellars. The first tan mill (see Appendix for exact location) ground oak bark (post-1810 hemlock wood) to use in the tanning process; it was put in a circular trough made of hewn wood and ground by stone rollers run by horse power. In a day, the mill produced one half a cord or "two floorings". Hides were treated at "Beam Houses" which were roofed sheds open at the sides. Tan vats (oblong boxes) with alternating layers of hide and bark stood inside while lime vats to remove hair from hides were placed in front of these sheds. Shoemakers' leather was removed half tanned and skivved (rubbed) down with a beam (stick). The skivvings were thrown away into a creek which emptied into the East River (Norcross 1901a:1-6). Prior to the Revolution, upper shoeleather was made in the colonies but sole leather had to be imported from England. After the Revolution, manufacturing restrictions ceased.

By 1800, the division between tanner and leather merchant was well defined. Norcross (1901a:8) notes that the prominent leather dealers became leaders in the political parties and officers of the organization had their headquarters at the celebrated Washington and Tammany Halls.

#### Archaeology: Potteries and Tanneries

By referring to the land maps for lower Manhattan, "clusters" can be easily identified as selected areas of like manufacturers. Reasons for this are perhaps obvious--the potter needs to be near his clay source and the tanner needs to be near good roadways for milling and wood carting. The potters kiln emits heat, smoke and ash; the tanner works daily with toxic lime fumes, rotting flesh and tanning hides. Any industry that requires considerable space and produces unpleasant by-products will tend to be grouped together in the peripheries of the city.

Archaeologically, tanneries and potteries would be visible by virtue of what they made. Leather and ceramics have a long life in damp, salty, clayey earth as seen from the Stadt Huys, 7 Hanover Square and 64 Pearl Street excavations in New York. Excavating the "factories" would

reveal structural features associated with leather and pottery making. Potteries in particular would leave the durable by-products of the firing process: broken sherds, kiln wasters, kiln furniture, saggars, vitreous brick, ash piles, salts. Dump deposits may be the best way to study the question of what types of wares were made locally. Trace analysis can pinpoint chemical features linking clay vessel to clay sources.

## Taverns

Before any newspapers appeared the tavern was a very important institution in the community. It was the medium of all news both political and social, the one place where people of all kinds met to exchange views on every subject of interest to the general public. In this way it exercised an influence second only to the church (Bayles 1915:3).

Throughout the British tenure in New York, the tavern served an important function in the community. Offering lodging and refreshment to the weary traveller, the colonial hostelry acted as one of the main focal points of an expanding community. Within its meeting rooms many colonial measures and transactions were conducted over a cool ale.

From its inception, the tavern proved to be significant as a center of the business community. Real estate transactions, auctions, slave sales and disposition of vessel inventories frequently transpired within the doors of certain inns...(McParland 1970:121).

These two quotes serve to illustrate the multiple functions of taverns in 17th and 18th century Manhattan. The tavern was a place of congregation where people met to conduct business, exchange news, or seek refreshment.

During the time when New York was New Amsterdam, there were many houses where liquor was sold. However, how many of these were actually "taverns" (places where liquor and food were sold and where guests were lodged) as opposed to "tippling houses" (places where liquor and/or food were sold only casually) is problematical. When Peter Stuyvesant arrived in 1647, he was distressed at the number of such places. In March of 1648, he declared that one quarter of the houses in the city sold brandy, tobacco, and beer, but when he called for all tavern keepers to present themselves to the director for licensing, only twelve men appeared (Cutting 1898:246).

The most important of the Dutch taverns was the Stadt Herberg. Built in 1642,<sup>10</sup> it was the official guest house of the settlement as well as the place where the court sat for minor cases, public and private business

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<sup>10</sup>. According to David De Vries (1909:197-198), the Stadt Herberg was built because of Director Kiefts inhospitality. The Director was tired of putting up visitors at his own house, and De Vries notes that the change was greatly to the benefit of the visitors.

was transacted and where disturbers of the peace were detained (Bayles 1915:8-9). All public notices were posted at the Fort, the Company's Barn and the Stadt Herberg (Bayles 1915:8-9).

Keeping a tavern seems to have been an alternative or additional career for both men and women. Peter Cocks, Martin Crieger and Philip Geraerdy were soldiers who became tavern keepers and traders. Wives frequently maintained tavern businesses after the death of their husbands, for example, Annetje Cocks, after the death of her husband, kept a tavern "for many years" (Bayles 1915:26); or widows would open a tavern as a means of supporting themselves. One such widow was Metje Wessels who in 1656 petitioned for a tavern and eating house at the house on the water (i.e. Pearl Street), which became famous for burgomaster's dinners and festivities (Bayles 1915:30). Another woman tavern keeper was the wife of Solomon La Clair, lawyer. In 1655, he petitioned to keep a tavern, to be run by his wife. This lady continued to manage the tavern even after her husband became Notary for the city.

Besides the taverns in the town, there were several houses on the road which lead to the Long Island Ferry and to other outlying districts. Wolfert Webber's tavern was in almost a frontier location near the Collect, and his daughter was captured by the Indians and returned to him in 1655 (Bayles 1915:39).

Court records from this time show that there were many fights and disturbances in the taverns (Cutting 1898:249), but this is possibly less a reflection of the boisterous nature of the taverns than it is an indication of the ubiquity of houses which dispensed liquor. From the quantity of ordinances passed, it would appear that there was a great deal of illegal tippling occurring (Cutting 1898:247). Many people brewed their own beer and imported their own stocks of hard liquor, but there is so far, no evidence of a distillery in New Amsterdam.

When the English came into power in 1664, the functions of the taverns changed:

Although previous to this time and [for] some years subsequent, the records of public business transacted at taverns are numerous, for a long time after the

English came into control, there is no indication that the taverns were thus much used by the English officials (Bayles 1915:40).

In other words, the Dutch government conducted many of its affairs in the public, officially licensed, taverns, but the English, at least at first, did not. This change might have been due to English reluctance to make common use of a Dutch tavern (Bayles 1915:40), or it might have been due to 17th century English customs, or there might be omissions in the records.

At any rate, by the close of the century, the taverns had resumed their political functions. Meetings of the committees of the council and of the assembly were held at taverns and other public business was transacted here. Bayles, or any other author, does not talk about the process of selection that must have occurred when the council, mayor, assembly etc., decided on a meeting place. There were many taverns and relatively few committees, but several tavern keepers were also office holders (for example, John Hutchins, alderman and keeper of the "Coffee House" or "King's Arms" where meetings were held for several years). The taverns were also places where rival political factions congregated and, therefore, the choice of meeting place(s) was probably influenced by political loyalties and power.

During the 18th century, the political importance of the taverns continued to increase. Eugene McParland, in his thesis on New York colonial taverns, examines the political events that centered around the taverns which culminated in the Revolution, and Bayles concludes that "...the Black Horse tavern...if it was not the cradle of liberty, was certainly the nursery of those sentiments which ripened into the Declaration of Independence (Bayless 1915:104)."

Taverns also had important business functions. Merchants met here to buy and sell real estate and goods, or to form associations for various purposes. Auctions, a common method of selling the cargoes of vessels were often conducted within taverns or coffee houses. Sales of vessels and their contents taken by privateers were also held here, and recruiters for both the privateers and the regular army and navy worked out of the tavern.

Ordinances from 1676 suggest that, during the late 17th century at least, there might have been two classes of taverns: wine houses and beer houses (Bayles 1915:42). Wine houses sold food and lodging at a somewhat higher price than the beer houses, and it was proposed that the city appoint 6 houses to sell wine, brandy and rum, and 8 houses to sell beer, cider and rum. Two of the wine houses and 4 of the beer houses were to be ordinaries (where a meal was regularly provided). More research is needed to determine if these ordinances were enacted and, if so, how successful they were in regulating the members and activities of taverns.

The changes that occurred in New York and the United States in the first half of the 19th century gradually changed the functions of the taverns. Hotels proper proliferated and clubs for men of similar interests or professions were organized. Business dealings were conducted in offices rather than in public houses and the tavern became simply a place to drink and eat.

Taverns are important historically as multi-functional places of communication, but they are also important for pragmatic archaeological reasons. Because of their public nature and continuous use, the turnover rate of artifacts is much greater in a tavern than in a private residence; the normal amount of use, breakage and replacement is intensified. The result of this intensification, archaeologically, should not only be a large number of artifacts,<sup>11</sup> but also, quite possibly, a greater sensitivity to changes in trading patterns and economic fluctuations (i.e., a faster turnover of material culture could more accurately reflect economic changes).<sup>12</sup> It is also probable that misleading evidence in the form of unique artifacts such as heirlooms, or rare ornamental ceramics, would not be present in the archaeological record at a tavern site. This would help the excavator focus on the usual rather than the unique. Artifacts that would point to the use of a site as a tavern would be large amounts of bottle glass, wine glasses and tumblers, gaming pieces like marbles or dominoes, and numerous pipe fragments. The large number of artifacts found also facilitates cross-site

11. As has been seen at various tavern sites (Deetz 1977:33-36; Noel Hume 1969a:29-31; Rothschild and Rockman, 1982, personal communication);

12. The nature of the artifacts is also important. Clay pipes in particular can often be tightly dated; they were inexpensive and fragile and the bores and bowls can be dated by maker's marks, shapes and bore diameters. Such dating aids are invaluable in site interpretation.

comparisons. Tavern excavations also provide data for the analysis of public versus private (residential) food consumption patterns. The bones and artifacts from the Lovelace Tavern, for instance, could be compared with residential areas of the same period from other Manhattan sites to help in the study of the development of society in colonial New York.

### MARKETS

In the 17th century, the women of New Amsterdam petitioned the councilors of the colony to arrange for markets to be held "after the manner of patria" (Van Rennsalaer 1899:25) and on September 12, 1656, it was proclaimed that Saturday be market day "in the burgh, on the Strand, near Master Hans Kierstede's House" (De Voe 1866:50). By 1676, a weekly market for produce was established on the corner of Moore and Pearl Streets, Customs House Bridge Market, and by 1683, market days were extended to Tuesday, Thursday and Saturday (De Voe 1862:75) which served the needs of a growing township. Sold at market were breads, liquors and foodstuffs, i.e., meats, fish, eggs, butter, cheese, vegetables and fruits supplied by country people from Harlem, Westchester, Long Island and New Jersey. A "steady stream" of farmers' carts began at dawn and a fleet of small boats came daily down the Hudson from the North and Jersey (Edwards 1917:70).

After 1691, there were three new major markets established: 1) the Exchange in Broad Street, a produce market built to complement the Cattle Meat market near the Fort, 2) Old Slip Market, for meat and 3) Coenties Slip Market for fish. This was a time of expansion (Peterson 1917:60) after which a fairly steady growth of markets occurred every 10 to 20 years (see Appendix 8).

#### Markets, Politics and Docks (Eighteenth Century)

The market was an essential part of New York City life, not only as a source of provisions, but also because "the economic interests of the city...lay mainly in commerce, so that trade, not land or manufactures formed the basis of its wealth." (Peterson 1917:88). The placement, construct and lifespan of the market was influenced by political pressures in favor of a commercial elite. The government supported the merchant by the establishment and perpetuation of markets, and Markets and docks were closely linked. "Meat and produce which was unloaded at the docks always passed directly to markets nearby. It was therefore quite profitable for the lessee of the dock to secure control of the markets also and we find them usually seizing this opportunity." (Peterson 1917:77). The common council regulated exchange between Producer (farmer/butcher) and Purchaser (city dweller, merchant). Produce had to be bought within the market and

not "on the way" to market.<sup>13</sup> The quality of food was controlled:

"No unwholesome or stale victualls, no blown meat or leproous swine" could be sold; and weights and measure required stamps of inspection (Peterson 1917:78).

It was also a function of this market committee to approve and disapprove certain requests made for new markets proposed by private groups or individuals. Favoring particular areas of the city, the common council: "in interest of older markets continually blocked attempts to establish new ones (markets) in the northern part of the city. Thus, the increase in their number did not keep pace with the growing population" (Peterson 1917:82). These older markets prospered along the East River in Lower Manhattan which Carl Abbott suggests was "the most clearly delimited neighborhood in pre-revolutionary New York...the section where most of its merchants had their establishments and where the bulk of its wholesale and retail business in imported commodities was transacted." (Abbott 1971:41).<sup>14</sup> While the study particularly of the period from 1720-1783 points to the success and proclivity of these older markets (that appear on the map as a dotted band going along the East River side<sup>15</sup>) it should be noted that also in this period there was a cluster of five markets on the West Side.<sup>16</sup>

The explanation of East versus West market-development is complex and can be found in the tapestry of political, commercial and environmental events. What may have begun as a preference for topography, i.e. the East Side's sloping shores as opposed to the West Side's steep pallsades (Diana Rockman 1980, personal communication) soon became the advantageous proximity of trade routes controlled by a commercial elite. However, after 1771, three of the five above mentioned markets were erected West of Broadway, away from this "commercial" core. And, by the turn of the 18th century,

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13. It was common for people to disobey this rule; they would meet incoming foodstuffs at dockside getting first pick and bargaining advantages.

14. David Valentine in his manual on New York also points this out, p.288, in 1853.

15. There are 10 markets in this time period, that stretch from Whitehall Street north to Catharine Slip.

16. These five markets were bounded by Broadway, Washington Street, Liberty and Vesey Streets.

markets were located East, West and North of the "old" city. Was it merely the increasing numbers of clientele whose demands for specialized food and wares grew? Was it the frequent flow of smuggled goods coming down the Hudson (pers. comm. Diana Rockman) so that access of dock to market on the West Side also became a profitable enterprise? Did the inflationary economy of the mid-18th century which caused dissatisfaction with older established markets, generate a desire for new markets?<sup>17</sup> There are no firm answers as yet. However, a significant number of questions have arisen that suggest further promising research viz. close spatial and temporal analysis of market sites in accordance with a deeper look into historical literature.

From about 1800 to 1835, markets are being built every year or so, serving particular areas or neighborhoods. After 1850, very large multiple-use, multiple-storied market terminals relied on roadway, waterway and railway for transport. Finally, as the smaller commercial unit, the retailer, began serving the living/working areas of the city, the wholesale distributor (the market's market, so to speak) moved up and out of town.

#### Conclusions

The success or failure of a market seems to be in barometric response to the economy, the events and the environs of the city. An individual market expands with good trade relations and a substantial number of customers. It contracts in event of war, fires, disease and sanitation problems. If the economy is stable, so is the market. If the economy is depressed then it is difficult for a market to survive. Further study may show that a markets location "shaped" its contents. In other words its products were contingent on the needs of specific neighborhoods. The following comments seek to point out the "nature" of the market place. Dispersed throughout the city it represents an orb of intense activity that may be highly visible archaeologically.

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17. By 1763, bitter complaints about the uncontrolled costs of meat and produce forced the common council to make formal regulations of price (Peterson, 1917:79).

### Market Ingredients and Archaeology

It is very plausible that the remains of the marketplace would be distinctive. The following outline of characteristics gleaned from historical records, narratives and pictures may aid in identification of such a site.

#### A) External Structural Features

1) The outdoor marketplace would be located in a field with some public, functional importance (i.e. and area agreed on by inhabitants for market-day) or an open area designated at street intersections for public vendue (H.W. Lanier, 1922:40).<sup>18</sup> Structural visibility would depend upon the survival of fence-work and post-holes. Small sheds or impermanent lean-to's would probably not be visible.

2) A market house on the other hand would be highly visible. Its foundation and structure were most often located in the street or in the Slip, right over the water. Traffic and passageways were through the middle and/or sides of the building for the purpose of easy access to boxes, crates, and barrels, by coaches, carriages, sanitation carts and fish cars. By the early 19th century, however, the market-in-the-street became a point of contention when the building obstructed growing urban traffic. As the city grew, markets were not torn down, but were enlarged, a result of widening streets and filling in slips. Landfill technology was rapidly changing the City's surface (morphology) and so the market-house had to adjust.

3) The WOOD, BRICK or STONE Market building is represented by several markets on the Key and occurs in all three centuries. The materials are not significantly datable but they are representative of expense (i.e. cost of wood vs. brick vs. stone; imported stone? imported wood?) and

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18. The availability of produce was dependent on the seasonal influx of country people and the market was usually once a week. The manufacture and sale of Indian wares and goods were also held in Mrs. Kierstedes back garden (Van Rennselaer 1898:25). Animal meats were available seasonally but also were dependent on maturation cycles of cattle brought in from the country. Thus, the "cattle market" was customarily open in the fall months for about 40 days. In the 18th and 19th centuries demarcated space is represented by informal but 'agreed on' areas for public auction and areas between markets for the sale of wares, linens and trinkets which occurred between the Old Slip Market and Coenties Fish market. Throughout all centuries, there was the persistent presence of the Huckster or Forestaller

permanence (life span of wood vs. brick vs. stone). Wooden buildings were supported by posts or brick columns but did not necessarily have walls; they were often just rough sheds or lean-to's (as in the case of Broadway shambles). (De Voe 1862:44). The Customs House Bridge Market was a substantial wooden building repaired in 1683 with "1500 feet oak plank, 16 feet in length" (De Voe 1862:74). Some or all wooden buildings may have had stone foundations as was mentioned of the Old Slip Market as being "in ruinous state is now being repaired, having a good stone foundation already placed and a strong boarded floor". (De Voe 1862:102). Brick buildings seem to be the popular material by the first to second quarter of the 18th century. In 1776, the new building added to the Fly market complex in Maiden Lane over the sewer/slip was "supported with brick pillars and ceiled with lathe and plaster" (De Voe 1862:200). The Exchange Market in Broad Street had two market buildings in 1778 with "five arches on each side instead of six, and two at each end" (De Voe 1862:270). There were two floors, the lower reserved for merchants while the upper floors were for other uses (De Voe 1862:270). Other markets had wood and brick buildings. The length and width of these buildings varied greatly and exact measures are difficult to ascertain. Some consideration of the number of stalls within the market building may give some idea of dimension (see discussion of stalls on following page.) Also, consideration of the width of the streets in 18th and 19th century New York would be helpful--the market would only be so wide as to allow for passage of traffic on both sides.

4) The IRON market building occurred in the 19th century and can often be associated with railroads (the Centre Street market was a depot stop for the Hudson Line) and the use of multiple floors for military events, barracks, storage, and municipal services, such as the police department or the fire department.

#### B. Internal Structural Features and Stalls

1) Stairways and passageways into and between two or more market buildings were common. Also common were stairs to small foot bridges over sewers or small drawbridges over creeks and streams near or beneath the market buildings.

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who was permitted by the municipalities to peddle foodstuffs after noon from without the bounds of the market building or area. Other regular, informal uses of the market area were dancing at Catherine Market; a meeting place for merchants at the Custom's House Bridge Market (later the Customs House); and sale of slaves at the Meat Market in Hanover Square.

2) An important internal structure is the stall used by butcher and country farmer alike. Their placement and access to the public determined their cost. "At first each stall was leased separately, and no person was allowed to secure more than two in any one market. In 1741, a decided change in the method of leasing took place. After that year the common council resolved to lease annually all its market properties to that individual who bid the highest at the public auction." (Peterson 1917:77).

De Voe, himself a butcher in the Jerferson Market, mentions the outside corner stalls as being the most advantageous for business. They were also the most expensive. In 1807, a description of the butchers' stalls is given as:

"Rough hewn benches with a coarse tow or linen cloth laid on them--an early bench...Others who were longer in business and who felt themselves above a bench or a table had a standing which consisted of a narrow (wooden) box, with bottom, setting down on the floor, with two upright posts, hewed or axed out square pinned or nailed to the back, on which were nailed two or three bars across, filled with wrought nails as meat hooks...They began to saw and plaine the timber, and the blacksmiths to beat their hot iron into proper hooks" (De Voe 1862: 324-5). A description of the arrangement of stalls for the Upper House at the Fly market is given in 1788. Each stall was at a maximum of 3 feet, 6 inches wide and no longer than 8 feet, with approximately an 11 foot passage-way in between two rows of 18 stalls, with a head stall. It may be possible to roughly predict the size of the market structure if the number of stalls is known. (De Voe 1862:183).

3) Cellars below markets would be highly visible archaeologically. Based on a similar leasing system as the above ground stalls, cellars were used for the long term storage and preservation of meats, grains, and dry goods. The butcher or merchant who could afford both stall and cellar space had considerable advantage over the seller who had to rely on day to day influx of provisions. It is possible that butchers did some of their butchery down in these cellars, as leather merchants worked on their skins in the cellars. (Norcross 1901:35).

#### Butchers and Markets

Historically, we know the most about butchers and their activities because their work seems to be the most tightly regulated. Thus, their

activities are chronicled in the language and the law. In January, 1656, just three years after New Amsterdam was proclaimed a city, the law stated that "No animal is to be permitted to be slaughtered not even by the owner himself unless he obtains a certificate". (Minutes to the Common Council) Prior to 1658, meat was cut up and sold at the West India Company Store. The first move towards specialized exchange separate from "the company" occurred after this date every fall for forty days (Oct. 20-Nov. 20) when the sale of cattle took place. The problem with too many languages being spoken was solved in 1659 when all bartering<sup>19</sup> was to be held in English. "These cattle fairs first introduced the New England (English) breed of cattle into our city, which were soon preferred to the Dutch breed." (De Voe, 1862:38). In front of Fort Amsterdam, in Bowling Green, a Shambles<sup>20</sup> was erected expressly for the sale of large animal meat. Fish oysters and other shell fish were sold from boats, skiffs and canoes. (De Voe 182:40) Unmarked horses and cattle that wandered in the "common wood" (now City Hall park area) were ordered to be branded in 1671. The ferry across the Harlem River added to the already established flow of livestock coming in from Brooklyn and Long Island. (De Voe:1862:55) In 1660, butchers were required to be "sworn" in by the market committee. Taxes on slaughtered animals went to maintain the public market. Everyone paid fees: the cattle farmer to the city and to the ferries; the slaughterer to the city and to the farmer; the butcher to the city and to the slaughterer.

By the 19th century, meats, fish, fruits, and vegetables were sold at the market, which was open daily except Sunday. At set times during the day certain foodstuffs were sold, but milk was not sold in markets until after the Revolution and then, Bear Market took the lead. Citizens were usually served by country milk-men and women who rowed into the city and carried milk from house to house in two kettles suspended from a neck-yoke. This could be seen in the city as late as 1835 (De Voe 1862:150) In 1827, according to Hardie, there were eight types of wild mammals, five

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19. Moneys were not thoroughly introduced until 1700 (De Voe 1862:4)

20. De Voe describes it as a rough shed that leaked until April 1658 when there were petitions to cover it with "Tiles" (pan tiles) (1862:44)

consumption marks: such as, axe-cuts or saw marks (by the late 18th century), scratches and gouges from table utensils, polish from handling and teeth marks from small mammals and rodents. Usually the species can be identified, including the analysis of fish scales which record in their structure the age of the fish and the season it was caught (Casteel 1973, David Singer 1980). De Voe makes the interesting point that:

"with the rapid increase of our population... prices have increased to double what they were in the 'olden time'; the consequence of which is, we find, a gradual increased demand for such portions of the animal as were once altogether refused, or considered unfit to be eaten..." (De Voe 1866:85).

It is possible that this dietary change in people's growing tolerance for different kinds of meat is reflected in the 19th century market, namely bone remains of varied species. Analysis of kinds of meats and cuts in coordination with 18th and 19th century pricelists helps reconstruct the habits of the consumer (who was buying what, taste, affordability, availability, etc.) Analysis also shows that gradual change over from corporate to individual servings of food (Deetz 1977:125).

Historical sources help suggest the following as to places of bone deposition relating to markets:

1) "Butchers immediately after killing had to destroy the offals or put them in the river." (Address of the Board of Health, 1818)  
The question arises as to where these offals were put if not in the River.

2) In 1783, a notice in the New York Weekly Mercury comments on taphonomic practices on the Fly market:

"Butchers in public markets make common practice of throwing the feet and other offals of their meat either under their stalls or on the streets...inhabitants living near are greatly incommended and distressed... butchers are forbidden from committing such practices" (De Voe 1862:171).

An interesting solution to this problem is cited by the "board" in 1807 that:

"every butcher who occupies a stall in any of the public markets shall...cause the said stall to be raised 8" from floor of market so that a broom may be admitted to remove such dirt, filth or rubbish." (De Voe 1862: 325)

Species type and marks of use record the life of the bone from butcher to refuse dump. What would remain at the market would be the unsold or inedible

types of amphibians, 14 types of shellfish, 51 types of birds, and 62 types of fish sold at one time or another at market. (Hardie 1827:183).

Fees were collected daily from butcher, country farmer and huckster alike and all weights and measures were "sealed" by inspectors. The treatment and sale of meat was regulated by strict precautions that were ruled by market-code. In addition to the demand for flesh and organs, other parts of the animal were utilized. For example, suet (fat) was used for mince pies, puddings and candles; gut fat (fibrous fat) was used by Jews instead of lard; animal heads were used for soups and puddings and pies; tails for soup; eyes for sauces; animal teeth for dentistry. Bones, particularly visible in the archaeological record, were sold in 3-5 inch pieces to be boiled in a floured cloth for the marrow which was then spread on toast instead of butter. Ox feet and cow heels were used in making fricassees, stews, jellies, etc. And cattle feet (steer) were sold at \$6 per hundred (in 1858) and used for glue, buttons and for making prussian blue coloring (De Voe 1966:85-91).

Bones were "daily collected by being taken from various parts of different animals when cut up, and from 'cracking' or taking off shanks. Blade, socket, chine and other bones are collected together and sold to bone-gatherers at about 40¢ per bushel. Some of them are used by the turner for handles, buttons--some for bone black, etc., after they have been well boiled, that the marrow and fat may all be extracted." (De Voe 1866:91).

Packaging for export of meats required hard wood barrels labelled as one of the four grades: superfine, fine, fine midlings and midlings (Mitchell 1887: 88-91). Salted meats were treated in cool weather or in warm weather only if immediately after the animal was killed (De Voe 1866:97). Tainted meat was restored by wrapping it in a linen cloth, and then seared in a pail of live coals and cooled in water. Meats that had the green fly "blow" or lay eggs in the flesh were considered rotten and thrown away (De Voe 1866:108). By the 1860's, meats and vegetables were kept frozen in ice houses but De Voe does not recommend it (De Voe 1866:109).

Bones are very durable ecofacts and would be present at a market site as refuse from butchery practices. Bones bear tell-tale butchery and

parts of the animal, bird, and fish anatomy. This establishes a negative picture of people's food habits in 17th, 18th, and 19th century New York.

Artifacts at the market place would result from day to day breakage, refuse and loss: they would not represent residential use patterns, but would tend towards a broad spectrum of manufactured and dietary products: meat bones, seeds, fiber products, cloth, leather, broken wares, bottles, personal items lost such as pins, buttons, coins, broken pipes, possibly broken liquor bottles; structural features and building materials.

Finally, the heterogeneity of the market place is its most implicit feature--it was the place where everyone had to be at one time or another: merchant, farmer, huckster, man woman, child, animals, and all kinds of produce. Truly public, the market houses:

"wholesale merchants, traders, and retail shopkeepers dependent upon this (the market) pursuit for their livelihood but also it gave occupation to many other inhabitants: the inspector of commodities, cartmen who handled merchandise, distillers of liquors, millers, bakers supplying flour and bread for export trade and coopers making casks for meat packing--all were more or less concerned with the welfare of the city's commerce."  
(Peterson 1917:93)

Multinational at its core, the market represents New York, as Grant Thornbourn describes the Royal Exchange Market in his letter of 1780: "a dozen or more of Bergen squatters were trying to dispose of their stock of crabs, clams and mussels, and all were talking together and creating a compound jargon of High Dutch, Mohawk and Africa accompanied with laughter loud and long." (De Voe 1862:297)

MISCELLANEOUS STRUCTURESSchools

In the period when the Dutch governed New York, people had to petition for a license as schoolmaster (Fernow 1893:577). The classes were usually held in whatever premises were available and many of the schools were church affiliated (Richmond 1871:170). The community or congregation often provided free housing for the teacher; his home was usually in the schoolhouse. In the 1700's a Dutch congregation in Manhattan was searching for a schoolmaster; they advertised the job as having a salary of 80 pounds a year plus a "free dwelling-house with a large school room, a small chamber, a kitchen and a cellar, and a fine kitchen-garden" (Fernow 1893:582). This site description is similar to the Voorlezer House on Staten Island which is the only extant 17th century schoolhouse in the city.

Under British rule schools were largely an appendix of the churches and "churchless" families, for the most part, did not have access to schools (Wilson 1893:165). In 1732 the city government agreed to provide a salary for a public schoolteacher but the teacher would have to find his own school building; this first attempt at free education failed after two years (Fernow 1893:587). The poor in colonial New York were uneducated. After the Revolutionary War social reformers started to become concerned with the problems of the high rate of illiteracy. In 1802 the Quakers set up a free school for girls and this school was open to poor children of any denomination (Wilson 1893:166). In 1805 the city government passed an act to establish a school which would provide a free education to "poor children who do not belong to, or are not provided for by any religious society" (Wilson 1893:167). This was the beginning of New York's public school system and by 1825 the city government was supporting six schools (Todd 1893:210).

School sites may provide a range of information about children and child care that is not evident from domestic sites. It is not clear if the food consumed at school was different from what was eaten at home. Perhaps by studying faunal remains from a school one can determine if there was differential treatment of children in colonial society. For example, were they fed the cheapest cuts of meat or given high starch diets?

It is possible to see a difference in foodways from the school to the home? Is there a difference in parochial and public schools, and does it show up archaeologically? Are children's toys found buried in the schoolyards? Is there a change during the three centuries (17-19th) in children's free-time activities and is this reflected archaeologically?

#### Parks and Squares

In these areas, there may have been relatively little disturbance to the ground surface over the years, thus preserving a prehistoric site. Parks, such as Inwood Hill, maintained their original terrain with little modification. The park paths and fences may be the major intrusion into Inwood Hill. This park has been the source of numerous prehistoric surface finds and in the early 20th century, there were a few small excavations in Inwood Hill (Bolton 1909; Finch and Church 1909; Skinner 1919). Olmsted Parks, such as Central, Riverside, and Morningside, did have major surface alteration. There are places in Central Park where lakes now exist, but previously there were only fresh water streams. (see map of the terrain of New York-prior to European settlement) Olmsted and Vaux in designing the landscape of Central Park to create a multi-use public space had to do some extensive leveling in some parts, and major landfilling in other areas (Olmsted, Jr. & Kimball, 1970). To evaluate the archaeological potential of a city park, one must first know who designed it, and if blueprints still exist in order to determine the extent of ground disturbance. In addition, parks may be archaeological resources in their own right. Research should be done on the development of parks. Washington Square Park was built on a Potter's field but it is not clear if these bodies were ever removed to another location. Central Park was an area where squatters lived in the mid-1800's. There was a transformation in these two areas with the development of the parks. Is any of this history visible archaeologically?

#### Almshouses, Hospitals and Orphanages

During the period of British control of New York, city funds were appropriated to support people (without families) who could not care for themselves. In 1736 an almshouse was built to serve three functions: 1) as a workhouse for beggars, 2) an almshouse for paupers and 3) a house of correction for unruly servants and disobedient slaves (Edwards 1917:98-99).

The city handled the problem of orphans by making them become apprentices, thus relieving the city of the responsibility of supporting them (Peterson 1917:190). In the 1700's the city paid fees to local doctors whenever they treated paupers but it was not until 1771 that any sort of formal hospital was established (Edwards 1917:100-101). The 19th century was the period of social reform and public institutions such as almshouses, insane asylums and orphanages were built and supported by the city.

These institutions were special purpose residences. By excavating them data pertaining to dietary patterns and the standard of living in these facilities can be obtained. Ivor Noel Hume excavated a 19th century hospital in Williamsburg and found many indications of how the institution was organized. One can ask if there were numerous rooms for solitary confinement and were patients living on a sub-standard or barely subsistent level? These sites should yield a large volume of artifacts and faunal material.

SANITATION CONDITIONS: GARBAGE DISPOSAL  
WATER PROCUREMENT AND STREET CLEANING

Garbage Disposal

Garbage disposal is one of the most important taphonomic problems for archaeologists. Where and how people put their refuse greatly influences what will be found at a site. Garbage disposal is also a valuable cultural indicator: James Deetz (1977:125) says, "the disposal of refuse is one of our most unconscious acts...in the changing nature of trash disposal since the seventeenth century, our ancestors have once again informed us of the way in which their view of the world was changing."

Garbage at historic sites is frequently found in a sheet scattered over surrounding yard areas. At Saint Mary's City for example, ceramics were found scattered unevenly over the side, front and back yards, with concentrations along paths between buildings and outside of doorways (Henry Miller lecture at CNEHA Conference, October 1979).

Refuse is also dropped, either deliberately or accidentally, in streets where it is trampled and broken into smaller pieces. At the Stone Street location of the Stadt Huys Block, for instance, a complete stratigraphic record comprised of earlier ground surfaces from the time of the Indian occupation to the time of the modern paving of the street was found (Diana Rockman, 1982 personal communication). Therefore, streets must never be overlooked as potential archaeological sites in New York City.

Another convenient method for disposing of unwanted or obnoxious material is to dump it into no longer functioning wells or cisterns or to simply put refuse, especially organic wastes, into operational or abandoned privies. Noel Hume at Williamsburg excavated several well shafts which were filled with ceramics, bone, glass, craft wastes, etc. (Noel Hume 1969c). Wells, cisterns and privies at the Stadt Huys Block, Telco Block, 7 Hanover Square and 175 Water Street sites have also yielded many artifacts (Rothschild, Rockman, Pickman and Geismar, 1982 personal communication). Such features are compact "time capsules" which can contain information on specific residences and businesses.

Domestic animals, especially pigs, consume organic refuse and scavenging animals (rats, cats, dogs, etc.) gnaw on and sometimes consume

bones. New York had problems with pigs from the 17th to the 19th centuries. In Peter Stuyvesant's time, free roaming pigs and goats climbed all over the walls of the Fort, eating the grass and breaking down the ramparts (Singleton 1909:23). In 1829, it was estimated that there were 20,000 free roaming pigs in Manhattan (Lanier 1922:13-14). Free roaming pigs did indeed eat the garbage in the streets but they more than replaced this by their own excrement. It was not until laws passed permitting confiscation of loose pigs and goats that the problem was controlled (Pomerantz 1938:66). And it was not until 1978 that the "pooper scooper" law was passed for dogs.

After the 1680's, when landfill became organized on Manhattan, New Yorkers could put their garbage to a useful purpose in landfill deposits. Landfill areas are very rich archaeological areas as has been proved by the archaeological excavations at 7 Hanover Square, 175 Water Street and the Telco Site (Rothschild, Pickman, Rockman, Geismar, 1982 personal communication).

The first law dealing with garbage disposal in New Amsterdam was an ordinance passed in February of 1657. This ordinance stated that no rubbish, filth, oyster shells, ashes, etc. should be thrown into the streets or the graft (the canal that became Broad Street). Such materials were to be brought to one of the designated places by householders. The designated places were "the Strand, near the City Hall, near the gallows, near Hendrick the baker, near Donald Litsco<sup>21</sup> (Fernow 1897:31). The ordinance does not state what happened after this garbage was collected at these places, but, as they were all near the River, it is possible that it was thrown into the nearby water. Cartmen also collected refuse and garbage but it is not clear if they also were required to bring their collections to the dumping areas. In addition, it is probable that compliance with the ordinance was not universal.

Fiorello La Guardia remarked in the 1930's that garbage disposal in 20th century New York City was essentially the same as in the 17th century: get it to the river and dump it. Besides this river disposal, all of the above methods were used in Manhattan and archaeological materials can be found in landfill, privy, cistern and well filling and yard and street scatter.

Water

A pressing problem for New Yorkers was obtaining an adequate supply of fresh water. Throughout the colonial period, travelers commented upon the city's good appearance but lack of an adequate water supply (Duffy 1968:48). The island had fresh water streams and the Collect Pond but wells were more convenient and were necessary in the built up areas. These wells, however, were not satisfactory: they were shallow, brackish groundwater wells, which, due to the underlying rock formations, could easily be polluted by surface runoff (Smith 1911:18). This surface pollution also seeped into streams and springs.

The first public well was located in front of the Fort and was in existence by 1658. In 1677, six public wells were dug in the streets and by 1695 there were public wells in Broad Street, Broadway and Wall Street. Later wells were dug at street corners, but these were in the middle of the streets (Wegmann 1896:2-3).

The Tea Water Pump was located near the junction of Chatham and Roosevelt Streets<sup>22</sup>...and was considered the best water in the city. This spring was first mentioned in 1748 and, during the early 1770's, a pump was placed here (Wegmann 1896:3). The Tea Water Pump was located near the Collect and by the 1780's and 90's, both the Collect and the adjacent underground waters were polluted and unpleasant (see Landfill section of this report and Stokes 1926:552).

The first attempts to procure water on a wide spread basis was in 1774-76. Christopher Colles sunk wells and built a reservoir on the east side of Broadway between Pearl and White Streets and started to lay pipes, but the Revolution put an end to the project.

In 1790, partly in response to the 1789 yellow fever epidemic, the Manhattan Water Company was organized by Aaron Burr and other businessman, but most of their directors' energies went into the banking activities which were permitted by the Company's charter. The Manhattan Company had a reservoir on the north side of Chambers Street between Broadway and Centre Street and on the northwest corner of Reade and Centre Streets were the Company's Tank and Pump (Stokes 1918:975). Both structures

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<sup>22</sup>Wegmann places the pump at this location. Stokes(1926:976) places it in Park Row, east of Baxter Stree.

were in use by 1800 and were demolished in 1914. The source of the water for this company's reservoir was at least partially the Collect, and the water was described as muddy and uninviting (Greene 1837:182).

By 1799, those who could afford it brought water in by cask from uptowns' less inhabited areas (Lanier 1922:16). Knapp's Spring at the west end of Greenwich Lane was an especially popular source (Greene 1837:180).

Washing water, and occasionally drinking water, came from cisterns. Cistern water was collected from the roof run-off water.<sup>23</sup> Therefore, especially after coal came into general use, in the early 19th century, this water was contaminated with various substances. Cisterns also were easily depleted during droughts: thus, people were left without washing water when it was the most necessary. Greene (1837:186) comments on the dark color and foul smell of the cistern water which could sometimes leave a person dirtier after washing than before.

Privies were common in New York until the mid or late 19th century. Privies were located not only in backyards but also inside houses in cellars or in other below ground areas beneath houses or under passageways into buildings (Smith 1911:71-76). These privies had to be emptied periodically by pumping out the contents, which were then dumped into the rivers.

At the Telco Block, each yard had an adjacent privy and cistern (Rockman, 1982, personal communication). This proximity of privies and cisterns allow seepage of wastes, even though the structures were made of brick and/or stone and the cisterns were plastered on the interiors. The problem of a supply of clean, plentiful water was not solved until the Croton Water Systems was created in the mid 19th century. The system began to be constructed in 1837 and water was let into the main reservoir at 42nd Street (present site of the New York Public Library) in 1842. However, many houses, particularly those of poorer people, were not connected to the Croton water until late in the century.

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<sup>23</sup>The use of molded terra cotta roofing tiles (probably locally made, see Pottery Key) or roofing slates, would aid in the collection of this water.

STREET CLEANING

As mentioned above; during the 17th century cartmen were employed to gather rubbish and garbage from the streets. In 1670, in exchange for a monopoly in their trade, cartmen were required to remove, every Saturday, the piled up refuse from the streets (Duffy 1968:24). Residents were to pile this material in front of their properties, but, from the number of times that the Common Council rebuked the residents in general, it is possible that there was much neglect of this duty (Duffy 1968: 30ff). There were no significant changes in street cleaning laws throughout the colonial period, but, according to Duffy (1968:46), New York City was comparatively a clean and neat 18th century metropolis.

When New York City started its rapid growth after the Revolution, the municipal government had to deal with the problems of a larger and denser population. Epidemics became more frequent and in 1798 the city suffered its worst yellow fever outbreak in which one-tenth of the population (2,086 people) died (Lanier 1922:5). As a result, laws were passed in 1799 that called for the city to be divided into three districts, each of which would be swept twice a week. On non-sweeping days, cartmen with bells drove through the districts to pick up garbage and offal<sup>24</sup> (Duffy 1968:181). The 1818 and 1828 "Address of the Board of Health of the City of New York To Their Fellow Citizens" essentially reiterates this arrangement. Dirt and filth were to be brought out into the streets on sweeping days but "garbage, shells and offals shall not be cast into the street" (1818 Address etc.:7). Kitchen offal was to be burned. The garbage, shells, etc. were to be kept on the premises until the call of the bell carts, or were to be cast into the rivers.

<sup>24</sup> Offal, as defined by Webster's Third New International Dictionary is "the parts of a butchered animal that are removed in dressing, that consist largely of the viscera (as brain, heart, sweetbreads, liver) and the trimmings (as tail, hooves, blood, skin, head meat)."

The dumping of garbage into the rivers was complicated by the presence of the numerous slips. Garbage was usually dumped off the land into or near the slips, and the river currents, because of obstructions of the piers and docks, could not get close enough to shore to carry the debris out to the bay. The drains which ran down some of the major streets also emptied into the slips (Duffy 1968:80). The slips were dredged periodically, especially after a dredging machine was obtained in 1791 (Duffy 1968:81), but silting up of the slips remained a problem until they were turned into land.

In theory, the provisions for garbage collection and street cleaning were well organized and should have sufficed to keep the city relatively clean. In practice, the city grew too fast for its available services and effective street cleaning was not established until the 1890's (Waring 1898:1-10). Smith (1911:66) describes the streets of 1864 as "dunghills rather than thoroughfares in a civilized city." Up until 1881, street cleaning was under the jurisdiction of the Police Department. After 1881, the Department of Street Cleaning was formed and separate records began to be kept. However, corruption and/or incompetence prevailed and an 1892 Mayor's Committee reported that New York was one of the dirtiest cities of the world (Waring 1898:3). As a result, in this same year, new laws were passed and the Department was reorganized. By late 1893, the new corps of street sweepers had hit the pavements and a well organized system of street cleaning was under way.

#### HEALTH CONDITIONS

Between 1775 and 1814, population almost quadrupled and epidemics and contagious illnesses became distressingly common. The city had had widespread illnesses at various times in the 18th century (mainly smallpox), but after the Revolution conditions deteriorated. As mentioned above, there was a disastrous yellow fever epidemic in 1798, and there were other severe epidemics

in 1789, 1799, 1803, 1805 and thereafter almost annually until mid-century. These epidemics were generally contagious fevers (yellow fever, typhus, cholera, etc.) and were spread by the impure water and untreated sewage.<sup>25</sup> Sicknesses generally occurred during the summer and autumn and were often so fearsome that those who could afford to do so migrated to Greenwich Village or farther north into the countryside. Also, during the yellow fever attack of 1819, the Board of Health had been given authority to evacuate affected areas of the city and this authority was occasionally used during the 19th century (Duffy 1968:116ff). In 1822, the yellow fever epidemic was so severe that lower Manhattan was almost deserted. Businesses, government offices, professional men, etc. all moved their places of business and residences temporarily to Greenwich and only the very poor remained below Chambers Street. The newspapers in August published lists of relocations going to Greenwich, and in November published lists of these same businesses and people moving back from Greenwich. There were no major changes in the health conditions of the city until after the Civil War when the reforming spirit of the times caught up with the city's uncleanliness. In 1864, the Citizen's Association sponsored a ward by ward survey of the city and found conditions to be appalling.<sup>26</sup> As the city had

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After the 1731 small pox epidemic, attempts were made to prevent diseases from entering the port on ships by establishing quarantine procedures. The first quarantine station was established on Bedlow's Island in 1738 and was later (1788) moved to Red Hook and Governor's Island (1794) and by 1800 was permanently established on Staten Island (Duffy 1968).

<sup>26</sup> These reports, found at the New York Historical Society in bounded manuscript form and summarized in Stephen Smith's The City That Was, can be very useful for archaeologists. Each ward was surveyed separately, generally by a local doctor, and, therefore, the reports vary to some extent in context and in amount of details included; but they often give street conditions and locations of privies, basements, etc., and diagrams of structures and their uses for residential, commercial or industrial purposes. From reading these reports, the mixed-use nature of most tenement neighborhoods is apparent: slaughter houses were located next to schools, soap factories and hide workshops were in the same block as packed tenements and "offensive trades were located among the dwellings" (Smith 1911:18). The reports are extremely valuable as primary documentation of 19th century land use.

expanded in area and population, the well-to-do had been able to expand with the city and move their residences to desirable areas, but the poor and the laboring classes were packed evermore tightly: half the city's population of approximately one million were crowded into a quarter of its settled area (2 square miles out of 8 square miles of dwellings, Smith 1911:58). The majority of the people in these areas, in spite of the existence of Croton Water, were still obtaining their water from shallow, contaminated wells; there were sewers and privies frequently overflowed into basements, yards and streets (Smith 1911: 71-72). As a result of these Citizen's Association Reports, reform laws were passed and enforced and the health of the city improved.

The remains of New York's Sanitation and Water Systems are incorporated in the urban landscape. Visible archaeologically would be artifacts resulting from street refuse and landfill technology and features, such as wells, privies, cisterns, reservoirs, piping, and their related artifacts. Such data helps the archaeologist study the development of garbage disposal and water procurement from a fairly opportunistic process to a controlled, organized system as part of the growth of Manhattan from a village to an urban center.

Land Fill

The settlement of New Amsterdam by Dutch colonist forever changed the natural environment of Manhattan. They cleared the vegetation and reshaped the land to build their homes and businesses. This desire of the Dutch and English settlers to change the environment to better serve their needs helped justify the creation of new land by landfill.

Two types of landfilling can be distinguished. The first was an expansion of the periphery of Manhattan. This new land was an appendage to the original and when it had settled, the construction of residential and commercial buildings were permitted on it. The second type of landfill involved the filling in of swamps, streams, ponds, et cetera. This destroyed the habitat of waterfowl (Nan Rothschild 1982, personal communication) and the breeding areas for fish; additionally, it eliminated the habitats of deer, elk and the plant species on which they and other fauna depend.

The creation of external land was dependent upon charters and laws from the English Crown and the State of New York. The precedent for granting land underwater to governments or individuals was established in English law where ownership of lands below the high water line on a navigable river was assigned to the public domain, although it could be sold and become private property (State of New York 1867:49). The Dongan Charter (1686) took advantage of this concept. It gave the Corporation of the City of New York "all the waste, vacant and unappropriated lands on Manhattan Island to low water mark together with all the rivulets, coves and ponds that had not theretofore been granted to individuals (State of New York 1856:30-35)." The city now had the authority to grant water lots to individuals by selling off public lands that were under water. Governor Montgomerie (1730) allowed further grants:

of land underwater in the Hudson beginning near the junction of Charlton and Washington Streets running 400 feet into the river and extending south to Marketfield Street. Also a tract of the same width of land underwater in the East River from Whitehall Street to a point near the foot of Houston Street. In 1807 the Commissioners of the Land Office granted patents to the City for all lands covered with water in the Hudson from the junction of Charlton and Washington Street running 400 feet into the river and extending 4 miles to the north also of the land covered with water along the westerly shore of the East River from the terminus of the grant of 1830 (sic 1730?) at the foot of Houston Street extending 400 feet into the river for a distance of two miles to the north. By 1821 the Common Council was authorized to extend the Battery into the Bay and North and

East Rivers such a distance not to exceed 600 feet as they might deem proper. The State's title in the Battery and land underwater was vested in the mayor, alderman and commonality of the City, but they could not dispose of the title except for a public walk or for erecting public buildings or works of defense. The Legislature (1826) made a further grant to the City of land underwater for 400 feet from the shores of the North and East Rivers from the boundaries of the previous sessions to the junction of these rivers with Spuyten Duyvil Creek and Harlem River, land underwater (1852) in the Harlem River from the exterior line as defined by the Corporation inward to the shore were ceded to the City. From 1807 the State reserved the right to layout the city streets and establish the legal limit of the exterior streets. An exception to this procedure was an act (1813) that allowed the Corporation to fill up lots or slips when in their opinion they were deleterious to the public health and thus convert them into solid land. Although the State had the power to layout the City's streets, the City had the right to determine the extent and character of piers, slips and basins (State of New York 1856:30-35).

The City had to petition the State when it wanted to expand beyond the exterior limits as defined by the Commissioners Map of 1811. The City only had the authority to layout streets below Houston Street, Astor Place, Greenwich Avenue and Ganesevoort Street (Gerard 1872:99-104).

During the 1850's and 1860's, the State appointed several commissions to review the encroachment of some of the piers in the City onto land underwater that was still State property. Their recommendations resulted in the 1871 conveyance (Letters Patent 1871, Liber 1194:651) that gave the City the disputed "land" and which is still the legal limit of piers into the waterways surrounding Manhattan. With the creation of the City of New York in 1898, the State passed its authority to regulate the construction of exterior streets in Manhattan (and other counties) to the City (Ash 1897: 40-42).<sup>27</sup>

The above legislative actions served as the legal basis that allowed (and still permits) the City to expand outward and in a sense acquire underdeveloped land. These laws (except that of 1807) did not affect the process of internal landfilling since these areas were always City sovereignty.

<sup>27</sup> These sections (83-86, Chapter 3 Title 2) of the City Charter were repealed January 1, 1938. The substance of these sections were transferred to the City's Administrative Code under Section 703.

The City then, could control its internal growth without having to obtain the approval of the State.

The creation of new land adjoining existing property took place in several separate stages through time.<sup>28</sup> The pace was dependent on the City's granting of water lots and the grantee's desire to fill in the lot they owned. Small portions or entire blocks were created depending on the owner(s) and the City's demands for more building space.

The processes involved and actual mechanics for external landfilling are not well known. However even less is known, through either documentary or archaeological evidence of how internal landfilling took place. External methods (cribbing<sup>29</sup> and cofferdams<sup>30</sup>) were used to expand the landbase along the Hudson and East River, as were abandoned ships.<sup>31</sup>

<sup>28</sup>For examples of the landfilling from Pearl Street to South Street beginning in the late 17th and early 18th centuries in the Schermerhorn Row block vicinity, see Kardas and Larabee (1978:21-28), Friedlander (1982), and Harris (1980b).

<sup>29</sup>The construction of both cribbing and cofferdams to hold the newly created land is not well understood. Cribbing in the Schermerhorn Row block consisted of logs a foot or less in diameter laid in several layers "in alternating directions" (Kardas and Larabee, 1980:18).

<sup>30</sup>Cofferdams (box-like structures) may have been built in the water and pumped out. Other landfill techniques may have been employed, but limited archaeological investigation has prevented them from being identified.

<sup>31</sup>There have been several ships discovered in landfilled areas in Manhattan: The Tijer (Solecki 1974:109-116), 55 Water Street (Brouwer, 1982 personal communication), 175 Water Street (Reiss et al 1982), 207/209 Water Street (Brouwer 1980:20-23, Henn n.d.). In the block bounded by Vessey, West Washington and Barclay Streets, a hull 30-40 feet long by 12-14 feet wide was found in 1923 during excavations for the Telephone Building (American Scenic and Historic Preservation Society 1824:195-196). Above the hull were coins dating to 1780 and 1793. At 257 Washington Street, an old barge was unearthed during modifications of the cellar of a building in 1924 (American Scenic

Several archaeological reports on external landfill sites have been written summarizing work in the Seaport area (Geismar 1982; Harris 1980b; Henn n.d. and Kardas and Larabee 1978). On inland <sup>sites</sup> cribbing, wharfing and cofferdams were needed because there was little or no tidal action as compared to the shore front. Debris was thrown in and dispersed by the changing water levels caused by the tidal flow, but these forces would not have been strong enough to carry away the deposited material.

External landfilling has primarily been concentrated in lower Manhattan. The upper portions of the island were considered rural areas during the Dutch, English and early American administrations and the pressure for new undeveloped land was not as intense as in lower Manhattan. In the 19th century, most of the uptown landfill was a combination of external/internal processes to fill in marshes and even out the shoreline.

The most dramatic construction activity affecting the shoreline occurred in the 1890's when the U.S. Army Corps of Engineers dredged the upper end of the island for the Harlem Ship Canal. Because of this, the northeastern-most tip of Manhattan is now in the Bronx, and a peninsula in the South Bronx near Spuyten Duyvil Creek is now geographically part of Manhattan.

The whole process of landfilling reenforced the utilization of lower Manhattan on the East Side which had developed for the following reasons: 1) ready access to the waters of Long Island Sound and New England (Albion 1970:19-20) and 2) a safer anchorage than on the Hudson (Rutsch, 1982 personal communication). In the 19th century, after the War of 1812, the west side of Manhattan began to develop as the city's growth coincided with that of the entire <sup>country</sup> (Leo Hershkowitz, 1982 personal communication; Stokes 1915:plates 31 and 44). New York was becoming the focus of trade from Europe, New England, and the western and southern United States (Albion 1970:13-14). The technological shift in harbor maintenance (including ice breaking and dredging

by steam powered ships). wharf, pier and street construction (due to new steam powered machinery), the development of ships with deeper drafts and an increase in shipping itself, enhanced commercial activities on the West Side.

There have been several archaeological investigations in areas of external landfill: Old Slip; Schermerhorn Row Block; 7 Hanover Square; Telco Block; 175 Water Street and 207/209 Water Street, but none in areas of internal landfill. A description of the land use and alteration at the Collect Pond will be given to illustrate how and why an inland area was filled.<sup>33</sup> This is an example of what types of materials were used in landfill that make it a valuable archaeological resource.

The Collect Pond or Fresh Water was enjoyed by Native Americans and later Dutch and English for its food resources, pure water, serenity and beauty. It was formed as a result of "deep glacial deposits found overlying bedrock" (Rutsch et al 1981:12) that prevented the easy runoff of water. The exact boundaries are not clear, but have been described as : bounded by "Baxter, Elm, Canal and Pearl Streets...with the Corporation Railroad Yards occupying the blocks of Elm, Centre, Leonard

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<sup>32</sup>Before the war, geological (the presence of a series of bluffs that prevented easy access to the shore), technological and socio-political constraints (including Jefferson's trade embargos) may have prevented its development (Leo Hershkowitz, 1982: personal communication)

<sup>33</sup>Other areas of internal landfill include: Sunfish Pond at Park Avenue between 91 and 92 Streets; Harlem Mill Pond at third Avenue to Central Park between 106 and 107 Streets, and many marshy areas on both the East and West Side (Stokes 1918: plates 174-180).

and Franklin, and the ground which had filled the pond" (Hemstreet 1899:41-42), and "bounded by White, Bayard, Elm, Canal and Pearl Street" (Haswell 1896:14) or between...Canal and Pearl Streets on the north and south and Mulberry and Elm Street on the east and west" (Harlow 1931:45). As with the description of the location of the boundaries, no two descriptions of the Collect are alike.

The Collect was thought to be 40-70 feet deep (Harlow 1931:6). It was surrounded by wooded hills and blackberry patches (Valentine 1858:497; 1860:562). These hills were up to 100 feet high (Stokes 1915:431). Marshes surrounded the pond on both the east and west. Through the marsh to the east flowed a brook which emptied into the East River (Van Rensselear 1909:75). This marshy area was later known as Five Points. To the west was a much larger swamp of 70 acres which was known as Lispernard's Meadow (Van Rensselear 1909:75). This meadow was fed by an unnamed stream that ran from the Collect and eventually emptied into the Hudson. When the tides were high and a good wind was blowing, these two marshes would flood and it would be impossible to pass through to the north without a boat (Harlow 1931:6). In order to travel and approach New Amsterdam, the Indians used the many streams that flowed through both marshes (Harlow 1931:6; Van Rensselear 1909:76).

An Indian village (Werpoes) was located on one of the hills west of the pond. Supposedly, the villagers would bring oyster and clams harvested in the Hudson or East Rivers up the the two streams that led out of the Collect (Harlow 1931:6). The shells that were discarded created a large midden and because of the debris, the area was known as Shell Point.<sup>34</sup> The name for the pond was

<sup>34</sup>The point has had several names; Kalch or Kolck Hoek (Harlow 1931:7), Kolch(Ulmann 1969:36), Kalch Hook (Valentine 1860:563), Kalck Hoek (Van Renselear 1909:75). The translations are just as varied: Shell Point (Harlow 1931;7; Ulmann 1969:36) Lime Shell Point (Valentine 1860:563) and Chalk Point (VAn Rensselear 1909:75).

derived from that of the point.

Food resources were abundant in and around the Collect. Roach and sunfish were present in great numbers (Booth 1860:323), and ducks were common on its waters (Harlow 1931:6). Snipe and other waterfowl were hunted on the surrounding marshes (Harlow 1931:6).

The first European (Jean Allefonsce) supposedly spent the winter of 1540 near the Collect (Stokes 1918:540). This, however, is unsubstantiated. By the late 17th century, manufacturers were using the water of the Collect Pond. "Sometime around 1696, the tanners began to settle near the Collect" (Norcross 1901b:2-3), but by 1740, they were occupying the "Swamp" (Guillard 1971:40). "In 1728 a new magazine was built upon a secluded little island on the Commons was considered unsafe" (Stone 1872:91). It was a "small stone building"<sup>36</sup> (Harlow 1931:45) with a road (Magazine Street, now Pearl Street) leading to it from Broadway (Harlow 1931:45).

By 1733, Anthony Rutgers had obtained permission to drain the swamp to the west of the Collect because it was considered a health hazard. He also began to drain the Collect<sup>37</sup>. The drain extended to the Hudson River. This

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<sup>35</sup> There are many variations for the spelling the point and the pond. Harlow (1931:7) suggested "The English showed a tendency to lengthen Kolck into Kollick...whence we find the little lake's presently senseless name of Collect". It was also known as the Fresh Water Pond or Lake.

<sup>36</sup> Because not enough stone was available, brick was used to supplement the stone. The building was 40 x 20 feet and nine feet high (Stokes 1922:509).

<sup>37</sup> Rutgers thought he had been granted both the swamp and the Collect. This was in conflict with the Dongan Charter (1686) which reserved all the ponds for the City. This conflict in ownership was not settled until 1791 when the City bought the Collect from the heirs of Anthony Rutgers for 150 pounds. The land underwater was given to the City the same year (Stokes 1922:517).

lowered the water level and caused the eastern outlet, (the Old Wreck Brook) to stop flowing. The uproar that followed by the people who depended on the water for their businesses eventually forced Rutgers to fill in the part of the drain that led to the Collect, although he did continue to drain the swamp.

The pond was tranquil and serene, and people went there to relax, either as "fishermen, pleasure-seekers, sportsmen or skaters" (Van Rensselaer 1909:75). Skating was popular activity on the pond. A midshipman, then the Duke of Clarence, first learned to skate (around 1782) by being "pushed around in a chair mounted on skates by an attendant" (Harlow 1931:75). He eventually learned to skate on his own, although he once fell through the ice, but was rescued from drowning (Stone 1872:271-272). The midshipman would one day become William IV of England (Harlow 1931:75).

A Plan was proposed in 1789 that would have created a park that incorporated the pond within its boundaries, but this plan was rejected because the park would have been too far out of town for people to get to easily and enjoy (Harlow 1931:125). In 1796,<sup>38</sup> a canal was proposed that would have connected the East and Hudson Rivers by way of the Collect. A boat dock was to have been constructed in the pond because of its depth. It was never built (Stokes 1915:431). This same year, the most unusual event associated with the Collect occurred: John Fitch began conducting experiments with his steamboat. On one outing, he had several notable passengers aboard: "Chancellor Livingston (later associated with Robert Fulton), John Stevens

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<sup>38</sup>Harlow (1931:125) and Valentine (1860:564) suggest that the proposed canal was first proposed in 1766. Stokes (1926:1328) presents the petition for the construction of the canal. It is dated February 16, 1796 and is the date used here.

(an early railroad builder and founder of Stevens Institute) and Nicholas Roosevelt" (Harlow 1931:124).<sup>39</sup> Sometime later the boat was abandoned because of lack of interest and financial support; it was left "on the shore of the Collect where poor people of the neighborhood broke it up and used it for fuel"(Harlow 1931:124).

The Collect had many sources of water both above and below the ground. The Tea Water Pump, located on Park Row between Baxter and Mulberry, tapped one of these underground sources (Harlow 1931:120). It is mentioned as early as 1763 and subsequently provided water for drinking, tea-making, washing clothes and bathing. "In 1783, the southern and eastern banks of the Collect were lined with furnaces, potteries, breweries, tanneries, rope (manufacturers) and other manufactories;; all drawing their supplies of water from the pond" (Stokes 1915:431). According to a newspaper letter in 1785, the Collect was becoming a "very sink and common sewer. It's like a fair every day with whites and blacks washing their clothes and blankets and things too nauseous to mention. All the suds and filth are emptied into the Pond, besides dead dogs, cats, etc., thrown in daily and no doubt many buckets from that quarter of town" (Harlow 1931:122).

In 1798, conditions in the Collect were even worse than they were in 1785:

The Collect...is a shocking hole, where all impure things center together and engender the most unwholesome productions; from this pond, foul with excrement, frog spawn and reptiles...the Water has grown worse manifest within a few years. It is time to look out some other supply... Some affect to say the water is very cool and refreshing. Everybody knows the contrary of this. Who does not know from experience, the Water gets warm in a few hours, and sometimes almost before it is drawn from the carter's hogshead? Can you bear to drink it on Sundays in the summer time? It is so bad before Monday morning as to be very sickly and nauseating. (Harlow 1931:123)

A year later (1799) Aaron Burr and several associates formed the Manhattan Company ostensibly to supply water to the City. They appear to have used either the Collect (Bonner 1925:229) or one of its underground streams (Harlow 1931:124) as their water source. But this was just a means to another end because their real purpose was to establish a bank that would cater to those people opposed to Alexander Hamilton and the Federalists. Public opinion was not very favorable to the banking business in general at the time. To get around this, Burr took advantage of the recent yellow fever epidemics and proposed that a company that provided clean, uncontaminated water be established to overcome the poor quality of the existing water supply. He inserted a clause that permitted the establishment of a bank (his real interest) into the company's charter (Lamb 1880:454-455). The company supplied water to its customers from its Chambers Street reservoir until 1885 when the last customer left them (Harlow 1931:127). However, it was not until 1900 the State Legislature finally amended the bank's charter "to do away with this pretense of water service (Harlow 1931:127). This company is currently known as the Chase Manhattan Bank.

By 1806, Joseph Corre, who was the first to distribute ice widely "notes that of latter years the water in Collect is so putrid as to make the ice unfit to be made...use of in liquors" (Gilder 1936:125-126). In 1807, part of the area already filled was offered to the United States for the construction of artillery buildings (Stokes 1922:1433), although they were never built.

In early 1800's (from 1800 to 1803) the filling of the Collect began because of the expansion of the City and the pond's unhealthy conditions. This project was financed by the City as a public works project<sup>40</sup> (Valentine 1859:513-515).

<sup>40</sup>This public works project cost the City \$51,652.81 (Stokes 1926:1415), which was spent on the cart loads of soil and labor. It is estimated that, from 1803-1817, 516,528 cart loads were required, based on the fact that labor costs were half that of the cart loads which never exceeded .05 per load.

"The general plan adopted...was to pay up to five cents per load for earth delivered and dumped into the pond" (Valentine 1860:564). Most of this earth was supplied by the surrounding hills. One of these was Bunker Hill, a steep hill located near Centre, Grand and Mulberry Streets (Harlow 1931:150).

The filling of the Collect continued through 1808 when it formed "a very offensive and irregular mound of several acres...from 12 to 15 feet in height above the level of the tide and of the remaining water in the Pond" (Valentine 1864:849). Also in 1808, it was suggested by Abraham Alstin (Stokes 1922:1494) that since the bottom sediments were composed of organic matter and could be sold for fuel they should be dredged up. This was discontinued after several months (Valentine 1860:564).

The Collect was completely filled in by 1817. The ground that was created was soft and marsh-like. Stokes (1918:561) notes that because the springs which fed the pond continued to flow that flooding in the surrounding buildings increased as more of the Collect was filled. To try to alleviate this, a ditch was built down Collect Street(now Centre Street) to drain off some of the water. Even in 1838 "this street was the throughfare of so much water as to make it necessary to incline it to the middle as a deep gutterway.. There were planks laid across the stream at intervals for pedestrians"(Harlow 1931:126). By 1838, Centre Street was filled in as the New York and Harlem Railroad was extended south(Green, 1926:118)<sup>41</sup>. The western outlet of the Collect was eventually converted into an underground sewer by 1819 (Stokes 1918:559-562)and it ran along Canal Street. The Collect Pond had gone from an enjoyable lake, to an open sewer, and finally to undeveloped land.

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<sup>41</sup>Our research did not uncover any data pertaining to the resolution of the drainage problems on Centre Street.

The similarities and differences between internal and external landfilling have not been addressed and leave a gap in the archaeological record. For instance, were there differences in commercial and residential use of this land? What were the differences in landfill and debris that were used? When, where and why did internal landfilling begin? Are there superstructures in internal landfill to hold the dirt? Did the process and procedures of landfilling change through time? The effort so far to obtain information from external sites should be balanced against inland sites. Information will be destroyed and lost if only external landfill sites are excavated. By working on both types of sites, we will better understand the social conditions and interactions in the City's past.

## Fires

Fires leave unmistakable traces of past events on artifacts and structures. Therefore, it may be helpful to the archaeologist and historian alike to visualize the effect of fire on the city landscape.

The history of fires in Manhattan before 1776 is not well known and should be researched further. Those after 1776 are known but more research is also needed to identify what structures had burned and what areas of the city had been affected. The fire of 1776 destroyed 197 buildings; the fire of 1778 destroyed 64 buildings; the fire of 1796 destroyed 48 buildings; 1811 fire, 100 buildings and the i famous fire of 1835, destroyed 674 buildings (Calhoun 1973:Appendix B1 and B2). All of these fires scarred large portions of colonial New York.

Richard Boyd Calhoun makes the important point that fires were not that common in the late 18th century and early 19th century. The city relied on a volunteer fire department which grew out of the ideal of community cooperation: "Citizens bucket brigades and volunteer fire departments, rotating citizens, night watches and locally appointed or elected officials, constables, wardens, reeves, performed jobs that could only be dealt with upon a collective basis (Calhoun 1973:1)." It wasn't until after 1865 with the establishment of municipally-run public services did an organized fire department of professionals come into being.

The importance of fire to archaeologists is two-fold: 1) it leaves its mark on the earth, on building foundations and on objects and 2) a fire in the 17th and 18th centuries, rarely burnt just one building, but rather devastated whole areas of residences and shops. In other words, the damage a fire caused created a zone which can be trace historically and recovered archaeologically.

### Summary and Recommendations

This research was the beginning of a detailed planning study of the archaeological resources of Manhattan. The time periods were created as a chronological framework for this report and for any further studies. The maps of Manhattan during the prehistoric and historic periods (Figures 2 and 3) will serve as a planning aid for public archaeologists during the environmental review process. Both maps and the accompanying narratives illustrate the growth through time of New York's multi-functional urban core.

Archaeologists can use the model to make planning decisions. If for example a developer wanted to erect a building on Canal Street, reference to this study through the six historic periods would reveal that a Bowerie (farm) existed there circa 1660 and that it was part of the city as early as 1720. With this information the archaeologist can require the developer to do a Stage 1A report. Our study is not to be considered a replacement for the Stage 1A reports, it is merely a tool to assess whether documentary research should be done on a particular block. This research should then be conducted on a lot by lot basis to obtain as much information as possible about the area in question.

Consultation of the following sources are necessary: Title search (deeds, mortgages and wills); Tax records; City Directories; Maps and Atlases; New York City guidebooks; Prints and drawings; New York City histories and narratives; Maps of Public Utilities, Ports and Terminals, Topographical maps. Of paramount importance in this background research is to: obtain 1) the exact location of backyards and alleys within the block area and 2) the exact basement depths of the last extant buildings on the block.

Originally it was felt that buildings under a certain height could be classed as having such shallow basements and foundations that they would not have destroyed extant archaeological material. We planned to design a third map of Manhattan showing those areas that still might contain resources based on a building's depth. However, a problem developed when we tried to determine what the cut-off height was for these buildings. Investigations into the relationship between building height, and the presence or absence of a basement, and if building height was correlated with foundation depth were

conducted. In both instances, no relationship could be established. It wasn't possible to generalize about building height (as related to basement presence or foundation depth) and exempt certain structures from archaeological investigation. The statistical techniques used in this paper were applied to small samples. A complete discussion of our statistical study (with tables) is given in Appendix 20. There are many variables that affect building height, building material, ground surface (e.g. landfill or bedrock), architectural style or function. These must be considered when any overall generalizations are made about structures and their affect on archaeology.

The second portion of this study conducted an investigation and description of structure types that are both archaeologically visible and reflect the development of the city. While some structures were solely plotted on the maps for quick reference, other structures had accompanying narratives. Archaeologists who are doing public archaeology will now be able to refer to this study and conduct investigations that in the past, may have been overlooked.

The maps for this study focused on the area south of Chambers Street (with a few important structures located just above Chambers Street on Appendix #13). These maps show the city's growth and shifting land use patterns through time and the east-west expansion of the island by means of landfilling.

### Recommendations

In conclusion, we have developed a model that is a starting point for handling archaeological planning issues. It has become apparent that areas facing development require more intensive investigation. The following recommendations for research are offered here. During the course of this study many questions arose that were not readily answerable. Discussed below are problems and topics that require further research and testing.

### Prehistory

The prehistoric period needs more research than it has currently received. There has been no field research to show if there is any continuity between precontact and postcontact sites. Changes (from Paleoindian Period through to the Contact Period) in land use, subsistence, trade networks, social organization, and climate are not well documented and the earliest sites are unknown. It may appear that Manhattan is a poor place to be searching for prehistoric sites because of its heavy urbanization but there are locations in the city that might have undisturbed materials. These areas include: landfill sites which may have prehistoric remains "capped" underneath; and prehistoric sites found in city parks and streets. For example, Bolton and Calver found numerous stone tools during excavations and surface surveys at Inwood Park. And in Stone Street, in lower Manhattan, archaeologists found stratified material from prehistoric times to the present (Rothschild and Rockman, 1981, personal communication). Utility lines in the center of the street showed intact stratigraphy and an abundance of artifacts. Taking advantage of the rare opportunity to study early remains will add to what is now a limited understanding of prehistoric lifeways in Manhattan.

### Landfill

The subject of landfill is complex and also requires further investigation. Not only does it hold a high yield of artifacts but

also is the evidence of land alteration technology. Landfill has been the subject of several large excavations in lower Manhattan. Questions arise: can these findings be compared to other parts of the Island that were filled in? What, if any, is the difference between internal (landbound) versus external (waterside) landfill? What, if any, are the differences in landfill methods between the lower East Side and the lower West Side? Have materials in the fill changed through time, whereby representing different landfill episodes? What and how did the methods of landfill change? Answers to these questions are needed.

#### Farms and Villages

The Dutch and British viewed colonization differently. It is not clear how these differences in land settlement actually effected the physical environment/layout of the farms. Research needs to be done on farming practices and how they reflect differences between ethnic groups. Were they growing the same crops and raising the same animals? Was there a difference in the landuse patterns? Were the family farm houses clustered together in a small village area with surrounding fields or were the houses spaced widely apart but in close proximity to fields? Lastly, are there any remnants of the Dutch and English farms that can still be unearthed or were these features so close to the surface that they were easily destroyed by the construction of 19th and 20th century buildings?

On Figure 3 we plotted four outlying villages in Manhattan. All of the colonial villages should be studied and their exact locations should be added to our map. What was the nature of these early communities? Were there differences between the concentrated settlement at the Southern end of Manhattan and such early villages as Bloomingdale and Harlem at the Northern end of the island? What were the political, economic and social ties between the urban core and the villages?

#### Residences/Shops and Backyards/Alleys

It should be assumed that in all areas of the city is the

ubiquitous presence of residences and backyards. It was discovered that the majority of the blocks in New York City have these above features. In addition, there were numerous small shops throughout the city. Residences and shops are often not discernable by references and records. Many times, in the case of backyards, they are not even recorded and are only locatable by archaeology/ For example, it is possible to have underneath the recorded 19th century cement extension of an alleyway, the unrecorded existence of 17th and 18th century backyard areas. (Rockman, 1981, personal communication). Ideally, each and every block in New York City should be documented for reference to such common but informative features. Until then, there must be unconditional acknowledgment of the high frequency of residence/shop and backyard/alley, even though they were not plotted on our land maps.

#### Wards and Neighborhoods

Bruce M. Wilkenfeld in his article on the residential patterns of New York City in 1730 (New York History, 1976) gave a historical-demographic perspective of the wards in pre-20th century New York. Wards are the covert boundary lines set by the municipality in response to the political/social/economic conditions in the city. Certainly by the beginning of the 18th century these wards represent the "naming" of areas by the city's inhabitants and thus for archaeologists provides historical attitudes towards geographic region, ethnic concentration, industrial concentration and other like groupings. But how were these divisions decided upon and how effective were they? After the Revolution, the city underwent great changes. As the process of urbanization increased--public schools, banks, libraries, hotels and public service departments were established. Do these so-called wards become more clearly defined? Does the expanding urban core become less multi-purpose and more specific? For example, when do the financial, theatre or garment districts really come into being

and how exclusive are they? With the tremendous flood of immigrants into the city in the 19th century is it possible to locate true ethnic clustering? This harks back to the proverbial question of neighborhood--does it exist? Is one are really different from the next? Rather than identifying wards and neighborhoods at face value from the historical records, it may be more significant to test archaeological data against such "limits" and see if there is a relationship between the two. Can archaeology answer what history assumes to be true? That is the large question which desperately requires further research.

Finally, this study focuses on the areas of both prehistoric and historic activity through time. The project shows the formal recognition of the abundant information that can be gotten from historical/archaeological investigations. What would take this study beyond a pilot stage would be the constant addition of new material into the present body of work--material added by field testing and by documentary research. Because this is a planning model that can be updated and revised as more information comes to light, it should be thought of as a receptacle holding the continuous influx of discovery and sequence about the past.

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Appendix 1: Location of Almshouses and Hospitals

1. Deacon's House for the Poor (first site)  
1652-1686  
Site: Part of 21-23 Beaver Street
2. Deacon's House for the Poor (second site)  
1658-1701  
Site: 34 Broad Street
3. Kine-Pock Institution  
1802-1810  
Site: Park Row, near Beekman Street
4. New York Dispensary (first site)  
1807-1828  
Site: Northeast corner of City Hall Park
5. Poor House of the Reformed Dutch Church (third site)  
1701-(?)  
37 Wall Street

Appendix 2: Location of Armories and Arsenals

1. First English Barracks  
1665-(?)  
Site: 46 Broadway  
Comment: In house of Isaac Grevenraet, 1665.
2. First State Arsenal  
1798-1808  
Site: Park Row and Tryon Row
3. Guard House at the Land Gate  
1664-(?)  
Site: Southeast corner of Wall Street and Broadway
4. Lower Barracks  
1776-1792  
Site: Battery Park
5. Magazine or Powder House near the Almshouse  
1747-1789  
Site: In City Hall Park
6. United States Arsenal  
1808-(?)  
Site: Bounded by Pearl, Bridge and State Streets  
and by Gracie's land.
7. Upper Barracks  
1757-1790  
Site: City Hall Park

Appendix 3: Location of Cemeteries

1. St. Paul's Church Yard, 1766 - present  
Site: In block bounded by Vesey, Fulton, Church Streets and Broadway
2. Trinity Church Yard, New Burial Place Without the Gate of the City, 1763-present  
Site: Trinity Church Yard; granted to Trinity Church 1703
3. Old Church-Yard on the Heere Straat, 1649-1687 (not located on modern map)  
Site: Covered by 27 to 37 Broadway, extending westward to the West line of Church Street, or high-water mark. First place of sepulture on Manhattan Island; referred to in 1649 as "the Old Church Yard".

Appendix 4: Location of Churches

1. Anabaptist Meeting  
1724-1760  
Site: 9-11 Cliff Street
2. Associate (Seceders') Presbyterian Church  
1787-1824  
Site: East side Nassau, between John and Fulton Streets
3. "Brick Church" (first site)  
1766-1858  
Site: Block bounded by Nassau and Beekman Streets and Park Row
4. Cedar Street Presbyterian Church  
1808-1834  
Site: north side Cedar Street between William and Nassau Streets
5. Chambers Street Presbyterian Church  
1801-1835  
Site: north side Chambers Street between Broadway and Centre Street
6. Christ's Church (first site)  
1794-1825  
Site: 49 Ann Street  
1825-1834, edifice sold to Roman Catholic Congregation
7. Christ's Lutheran Church, the "Swamp" Church  
1767-1831  
Site: northeast corner Frankfort and William Streets
8. Earliest Church (Reformed Dutch)  
1633-1642  
Site: Pearl Street
9. Earliest Lutheran Congregation  
1671-1673  
Site: west side Broadway, now in Trinity churchyard
10. Eglise Du St. Esprit (first site)  
1704-1832  
Site: 18-22 Pine Street
11. Eglise Du St. Esprit (second site)  
1834-1863  
Site: southwest corner Church and Franklin Streets
12. First Baptist Church (first site)  
1759-1840  
Site: 35-43 Gold Street
13. First German Reformed Church (first site)  
1758-1822  
Site: 64-66 Nassau Street

Appendix 4: Location of Churches Continued

14. First Moravian Church (first site)  
1752-1843  
Site: 106-108 Fulton Street
15. First Presbyterian Church (first site)  
1719-1834  
Site: 10-14 Wall Street
16. Friends' Meeting (first)  
1698-1755  
Site: Liberty Place near Liberty Street
17. Friends' Meeting (second)  
1755-1802  
Site: Liberty Street, 40 feet west of Liberty Place
18. Friends' Meeting (third)  
1802-1835  
Site: Liberty Street, 60 feet west of Liberty Place
19. Grace Church (first site)  
1809-1845, stores and museum 1845  
Site: southwest corner Broadway and Rector Street
20. Hebrew Congregational Shearith-Israel  
1700-1729  
Site: 16 South William Street
21. Hebrew Congregational Shearith-Israel (second site)  
1739-1834  
Site: 22 and part of 20 and 24 South William Street
22. King's Chapel in the Fort  
1693-1741  
Site: southeast corner of Fort Amsterdam
23. North Reformed Dutch (Collegiate) Church  
1769-1875  
Site: northwest corner William and Fulton Streets
24. Rissins Loft, First Methodist Episcopal Place of Worship  
1766-1768  
Site: 120 William Street
25. St. George's Chapel (first site)  
1752-1848  
Site: northwest corner Beekman and Cliff Streets
26. St. Paul's Chapel  
1766-present  
Site: Broadway, between Fulton and Vesey Streets.

Appendix 4: Location of Churches Continued

27. St. Peter's Church  
1786-1900  
Site: southeast corner Barclay and Church Streets
28. Scotch Presbyterian Church, "Sceders' Meeting" (first site)  
1756-1836  
Site: 33 Cedar Street
29. Second Lutheran Church  
1675-1776  
Site: southwest corner Broadway and Rector Street
30. South Reformed Dutch Church (Garden Street, first site)  
1692-1835  
Site: 41-51 Exchange Place
31. South Reformed Dutch Church (second site)  
1837-1849  
Site: northeast corner Murray and Church Streets
32. Third Association Reformed Presbyterian Church  
1812-1841  
Site: 37 Murray Street
33. Trinity Church  
1698-present  
Site: west side Broadway, head of Wall Street
34. Unitarian Church of the Divine Unity (first site)  
1821-1843  
Site: north side of Chambers, west of Church Street
35. Wesley's Chapel, "John Street Meeting"  
1768-1900  
Site: 44 John Street

The following entries require further documentation and information before their exact map location can be defined.

1. First French Protestant Church  
1688-1704  
Site: Now covered by Produce Exchange: "butting northward on the Petticoat Lane"
2. German Lutheran Church  
1750-1767  
Site: Cliff Street at Hague Street
3. Mariners' M.E. Church  
1820-1854  
Site: 76 Roosevelt Street

Appendix 4: Location of Churches Continued

4. St. Mary's Church  
1826-1900  
Site: St. Lawrence Street
5. Middle Reformed Dutch Church  
1731-1844  
Site: Nassau Street, Cedar to Liberty Street
6. Second Association Reformed Church, Presbyterian  
1797-(?)  
Site: 530 Pearl Street
7. Vandewater Street Presbyterian Church  
1821-1829  
Site: Vandewater Street between Frankfort and Pearl

Appendix 5: Location of Fortifications

1. Bastions (Two Stone) at the Wall  
1660-1699  
Site: (1) Projecting north from the north line of Wall Street west of William Street; (2) from north of Wall Street, east of Broadway
2. Block House at the Battery  
1755-(?)  
Site: In Battery Park
3. Fly Block House  
1689-(?)  
Site: Wall, near Pearl Street
4. Fort Amsterdam  
1626-1790  
Site: Block bounded by Whitehall, State and Bridge Streets, and Bowling Green
5. Guard House near the Water Gate  
1653 only  
Site: Intersection of Pearl and Wall Streets
6. Half-Moon at the Battery  
1689-(?)  
Site: In Battery Park
7. Half-Moon at Burger's Path (first site)  
1679-1695  
Site: Pearl Street, west of Old Slip
8. Half-Moon at Burger's Path (second site)  
1695-(?)  
Site: Hanover Square, east of Old Slip
9. Half-Moon before the Stadt Huys  
1661-(?)  
Site: South side of Pearl Street, east of Coenties Alley
10. Half-Moon at the Water Gate  
1660-1717  
Site: Wall, west of Water Street
11. Land Gate  
1658-(?)  
Site: Broadway at Wall Street
12. Northwest Blockhouse  
c. 1664-(?)  
Site: West of Church Street, south of Wall Street

Fortifications

13. Oyster Pasty Mount  
1660-(?)  
Site: Greenwich St near Edgar Street
14. Palisades of 1746  
1746-(?)  
Site: Palisades ran across the island partly parallel to, and north and south of, the line of Chambers Street, with blockhouses and gates at intervals, from Peck's Slip to near the east side of Greenwich Street.
15. Rondeel at Widow Loocquermans  
1674-(?)  
Site: In front of 117 Pearl Street
16. The Wall  
1653-1699  
Site: Along the north line of the present Wall Street, extending from the Hudson to the East Rivers.
17. The Water Gate  
1656-1688  
Site: Wall Street, at Pearl Street
18. Whitehall - George Augustus's Royal Battery (Copsey Battery)  
1694-(?)  
Site: The Battery, Whitehall Street

Appendix 6: Location of Markets

1. Bear Market also called Oswego, not to be mistake with Oswego I and II.  
1771-1812  
Site: West of Greenwich Street between Fulton and Vesey Streets  
Produce: Meat, fish, dairy and country produce
2. Broadway Market or Oswego I  
1738-1771  
Site: In Broadway, opposite Liberty Street  
Produce: Meat and product
3. Burlings Slip Market (Burlin's)  
1746-1760's(?)  
Site: In Lyon's Slip later Rodman's Slip  
Comment: Never popular
4. Catherine Market  
1786-1897  
Site: West end facing Cherry Street, east end not quite down to Water St.
5. Cattle Market, Marketfield, Bulls Head, or Broadway Shambles  
1658-1675/77  
Site: Along West side of Market field against fort..posts erected by side  
of church  
1684-1702  
Site: Bowling Green area
6. Coenties Slip Market  
1691-1781  
Site: Coenties Slip at Pearl Street  
Produce: Fish Market
7. Collect Market, also called "Arsenal" or "Mosquito."  
1809-1817(?)  
Site: Not far from Broadway near Cortlandt Alley on South Side of  
Walker Street (above Chambers)  
Comment: Butchers and Vegetables(?)
8. Crown Market  
1771-1776  
Site: North of Liberty Street, West of Washington  
Comment: No regular butcher; fire
9. Custom House Bridge Market  
1676-1720  
Site: "Waterside, near bridge and weigh horse";,corner of Pearl and  
Moore Streets  
Produce: Country produce and limited meat days, until late 17th century
10. Exchange Market  
1788-1814  
Site: Same site as lod 1730's market and extending across Front Street  
and ending near the Slip  
Comment: Fourth and last public market established in Broad Street,  
butchers, produce, fish(?)

Appendix 6: Location of Markets Continued

11. Exchange Market I, Broad Street Market (First market house built in Broad Street at end of Heern Gracht.)  
1691-1746  
Produce: "for all but butchers meat"
12. Exchange Market II  
1752-1797  
Site: Broad Street between Front and Water Streets  
Comments: I believe the first market to sell "home-manufactured goods".
13. Flattenbarrack, also Verletten Burg  
1711-1738-1740  
Site: At north end of Broad Street between City Hall and Cross Street which leads from Broadway to Dutch Church(?) old or new(?)  
Produce: Country produce in Wagons
14. Fly Market also called Countess Key Market  
1706-1821  
Site: Maiden Lane at Pearl Street  
Produce: Meat and fish
15. Franklin Market  
1821-1853(1861, Stokes(?))  
Site: Old Slip between Water and Front Streets  
Comment: Erected on old market (1780's)
16. Fulton Fish Market  
1835-1819  
Site: East side of South Street, bounded by Fulton Street going north to Peck Slip by the 20th Century  
Comment: Fish
17. Fulton Market  
Begun 1816, completed 1821-1914  
Site: Fulton and Front Streets and Cranes Wharf, bounded by South, Front Fulton and Beeckman Streets  
Comment: Produce, butchers(very large numbers of). Re-used as 20th century market and lunch food place in 1960's, 1970's, and 1980's
18. Market Place at the Strend, near Rierstede's House  
1656-1677  
Site: Moore and Whitehall Streets, east side of Pearl Street  
Produce: cattle meats, some slaughter (until 1658(?)), mostly a place for country produce
19. Meal Market  
1709-1762  
Site: Near Clarks Slip at foot of Wall Street  
Produce: (?)grain, slaves
20. Old Slip Market  
1691-1780  
Site: "under the trees by the Slipp"; in Old Slip and Pearl Street.  
Produce: Meat and produce

Appendix 6: Location of Markets Continued

21. Oswego II  
1772-1810/11  
Site: Corner of Broadway running down Maiden Lane to about little Green St.(?)  
Produce: Butcher products, fish, produce
22. Peck Slip Market  
1763-1786  
Site: Facing Water Street on westerly side at head of Peck Slip
23. Thurman's Slip  
1733-1738  
Site: Liberty and Cortlandt Streets on line of Greenwich Street  
Comment: Never built, important because of beginning of west side market expansion
24. Washington Market  
1812-1859  
Site: Fulton to Vesey Streets, Washington to West Streets  
Comment: Large, fish, meat, produce; there was a 20th century residual market in this area until the World Trade Towers
25. West India Company Market  
1638-prior to 1680  
Site: 19-21 Bridge Street and 2-4 Stone Street
26. West Washington  
1858-1887  
Site: West of West Street, between Dey and Vesey Streets
27. White Hall Slip  
1746-1750  
Site: Near old market place at the Strand, corner of Whitehall Street and Pearl Street

Postscript

Quotes are taken from DeVoe from City Records; locations are DeVoe's descriptions. Dates are a composite of DeVoe and Stokes.

## Appendix 7

STRUCTURAL MATERIALS OF MARKETS

<u>MARKET NAME</u>	<u>AREA PLACE</u>	<u>WOOD</u>	<u>BRICK</u>	<u>STONE</u>	<u>IRON</u>	<u>COMMENTS</u>
1 West India Company Houses				X		Five buildings
2 Market Place at the Strand	X					Front of Kierstedes House
3 Cattle Market	X					
4 Broadway Shambles		X				Shed (DeVoe 1862:44, footnote)
5 Customs Bridge Market		X				Oak Plank (DeVoe 1862:74) 16 feet long
6 Broad Street Market		X(?)				
7 Old Slip Market		X				First temporary sheds and tents enlarged 1736 (DeVoe 1862:67)
8 Coenties Slip Market		X				No formal structure (DeVoe 1862:113) until 1720's
9 Fly Market		X	X			Three buildings by the 1780's
10 Meal Market		X(?)				Building over sewer in Clarks slip when it was removed a "platform was built over it" (DeVoe 1862:252)
11 Flattenbarrack	X					No market house (DeVoe 1862:252)
12 Thurmans Slip	X					Never granted (DeVoe 1862: 240)
13 Broadway Market		X(?)	X(?)			Market Building (DeVoe 1862:263)
14 Whitehall Slip Market		X(?)	X(?)			Market House (DeVoe 1862:277)
15 Burlings Slip Market		X(?)	X(?)			Market House (DeVoe 1862:278)
16 Exchange Market (Broad Street)			X(?)			Two Buildings, two floors - first floor for merchants, (DeVoe 1862: 279), Five arches each side, two arches each end

STRUCTURAL MATERIALS OF MARKETS (Continued)

<u>MARKET NAME</u>	<u>AREA PLACE</u>	<u>WOOD</u>	<u>BRICK</u>	<u>STONE</u>	<u>IRON</u>	<u>COMMENTS</u>
17 Peck Slip			X			(DeVoe 1862:302)
18 Bear and Butter- milk Market		X	X			Two market houses, one brick, one wood, Hay machine 1792; cellars, building raised (DeVoe 1892:308, 320,321,322)
19 Crown Market			X			Two stories (DeVoe 1862:328)
20 Oswego Market			X(?)			(DeVoe 1862:330)
21 Catherine Market			X			First building enlarged 1816
1816			X			Second building built 1828
1828			X			Wood building for fishermen, 1820's
1820's		X				below brick building o' East River (Hardie 1827:185)
1854					X	Iron building 1854
22 Exchange Market		X				Market house, 1804, was sawed into three pieces and carted away (DeVoe 1862:374)
23 Spring Street Market			X			Two market houses 21 ft. X 50 ft.; 1805, building raised; cellars (DeVoe 1862:375-6; Hardie 1827:185)
24 State Prison Market		X				Shed (DeVoe 1862:383)
25 Corlears Hook Market			X(?)			Two market houses. Meat. Fish. Cellars (DeVoe 1862:389-90)
26 Duane Street Market		X				Cellars (Hardie 1827:185; DeVoe 1862:392)
27 Grand Street Market		X				No Cellar (DeVoe 1862; Hardie 1827:185)
28 Collect market		X				Two buildings. Market house 75 ft. long; Vegetable market 108 ft. long. (DeVoe 1862:398) Grounds 183 ft. long, 110 ft. deep, 25 ft. for market, 25 ft. for passageway
29 Greenwich Market			X			Enlarged in 1819, cellar enlarged 1828, 50 ft. wide on Christopher St. South Side (DeVoe 1862:399; Hardie 1827:185)

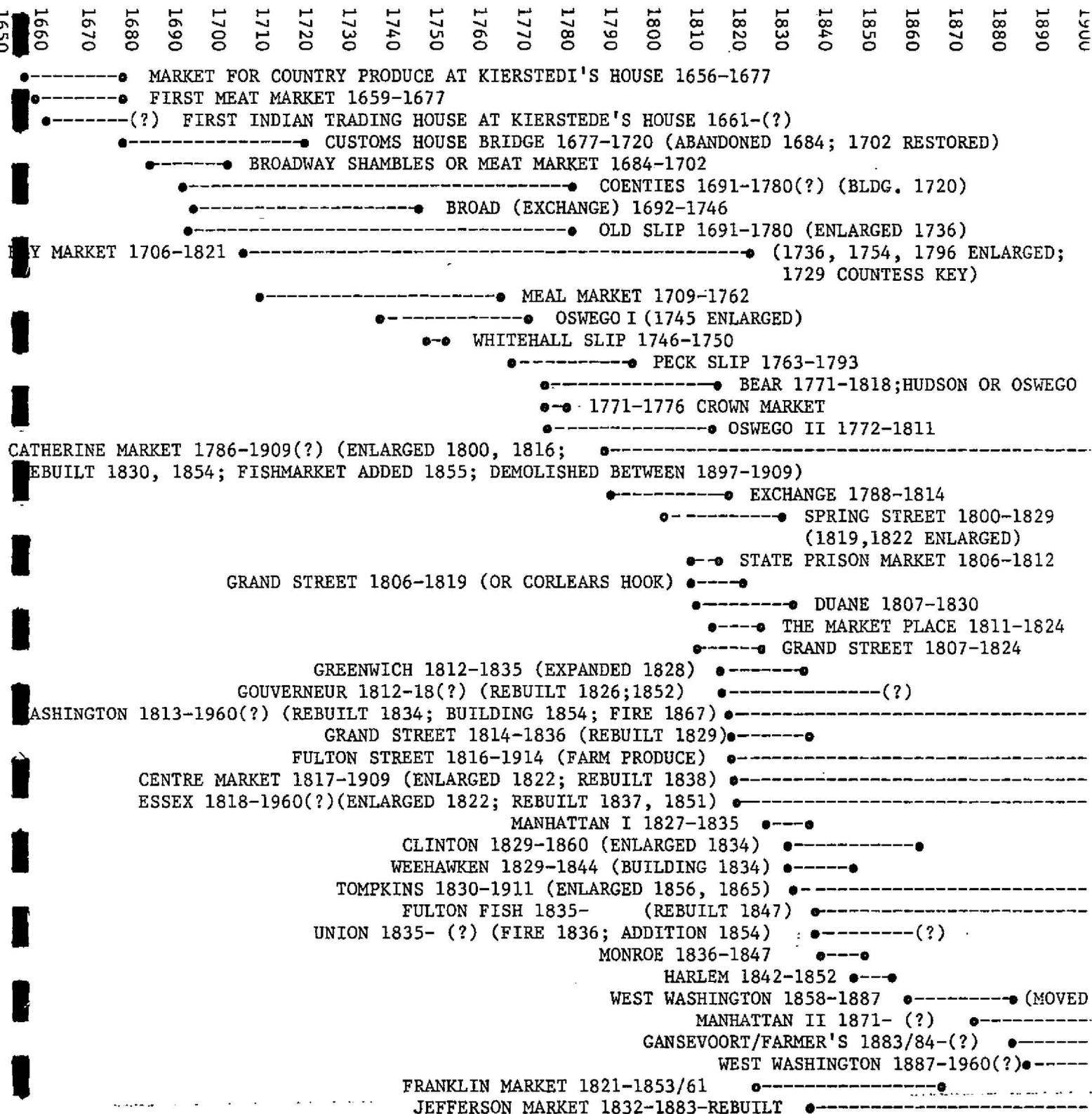
STRUCTURAL MATERIALS OF MARKETS (Continued)

<u>MARKET NAME</u>	<u>AREA PLACE</u>	<u>WOOD</u>	<u>BRICK</u>	<u>STONE</u>	<u>IRON</u>	<u>COMMENTS</u>
30 Gouverneur Market		X				Smallest market
31 Washington Market		X	X	X		Main building for meat, made of brick (Hardie 1827:185) Wooden buildings for fish and country people (Hardie 1827:185-7) 1824 Rebuilt buildings approximately 30 ft. X 40 ft. (DeVoe 1862:446)
32 Centre Market			X			Possibly wood until 1838, then brick, (DeVoe 1862) 88 ft. 6 in. on Centre Street, 35 ft. 7 in. on
33 Essex Market			X			20 ft. X 40 ft. (Hardie 1827:185-7)
34 Fulton Market			X			Brick market houses and a market for fish, possibly wood (?) across the street by the river. Cellars. (DeVoe 1862:515)
35 Franklin Market		X				Market house brick (?) burnt down. Temporary shed (1835 fire). Reburnt 1838 (DeVoe 1862:520)
36 Manhattan Market						(?) material
37 Clinton Market						(?) material.
38 Tompkins Market		X	X	X		After 1856, brick (?) building torn down and wooden sheds around it. 1860 Iron building complete. 181 ft. 8in. X 100 ft. On 3rd Ave. (DeVoe 1862)
39 Jefferson Market		X	X	X		First buildings wood. Two market houses separated by an unpaved space less than 20 ft. wide. 1839, two buildings were enclosed as one (DeVoe 1862:559). Second building brick and stone, 1887.
40 Weehawken						(?) material, 30 ft. on Christopher Street; 197 ft. 10 in. on West St.; 197 ft. 10 in. on Weehawken (DeVoe 1862)

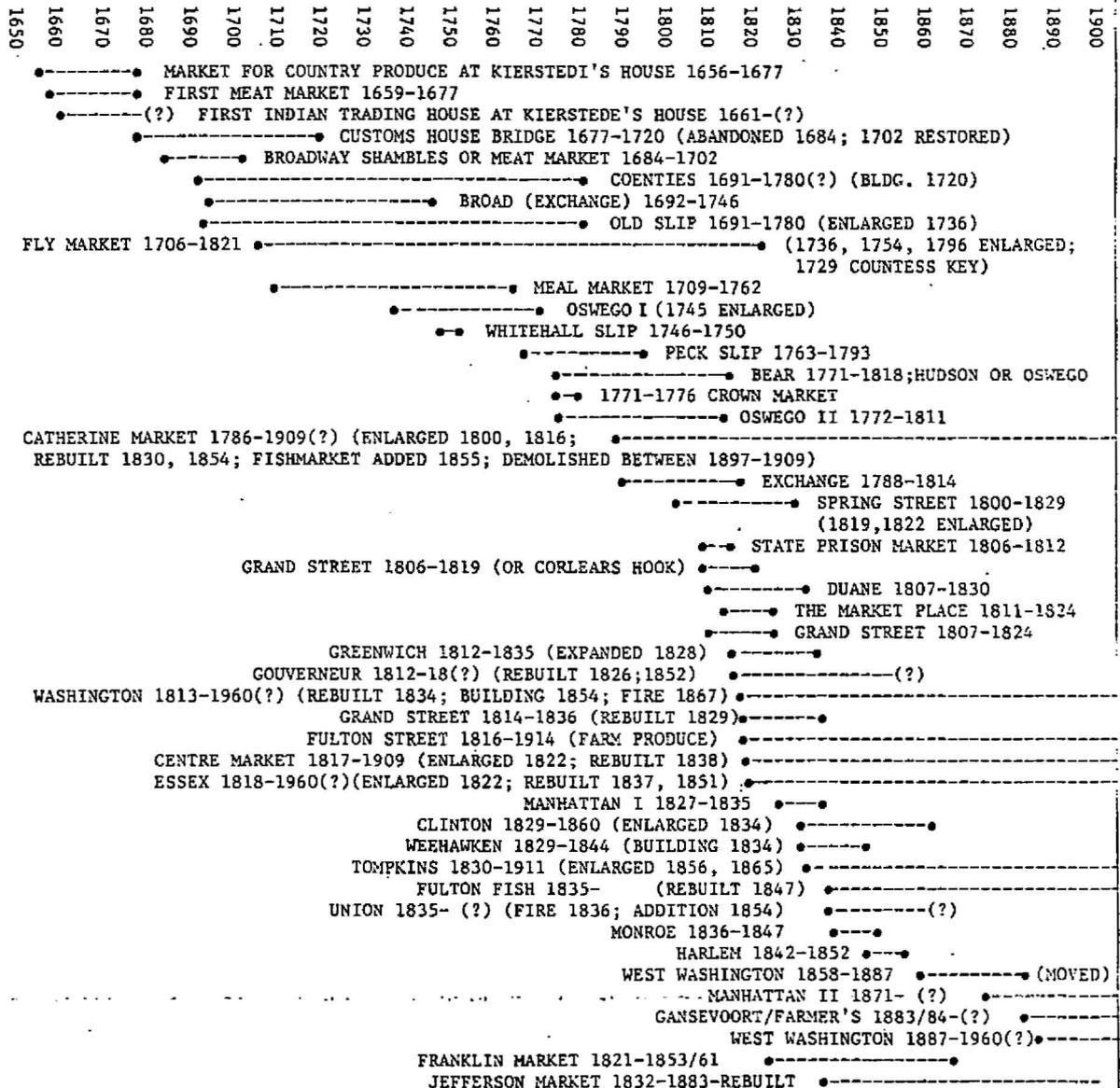
STRUCTURAL MATERIALS OF MARKETS (Continued)

<u>MARKET NAME</u>	<u>AREA</u>				<u>COMMENTS</u>
	<u>PLACE</u>	<u>WOOD</u>	<u>BRICK</u>	<u>STONE</u>	
41 Union Market					(?) material, 1853 New Building, 1856 Police Precinct on above floors. 198 ft. 6 in. on North Street; 202 ft. 10 in. on 2nd; 46 ft. 6 in. on West end; 21 ft. 3 in. East end of Avenue D.
42 Monroe Market					(?) material, 140 ft. Grand Street; 119 ft. Corlears; 125 ft. on Monroe Street; 225 ft. on a line running through block (DeVoe 1862)
43 Harlem Market					Length is 200 ft. west of 3rd

## Appendix 8: Market Time Line



Appendix 8: Market Time Line



Appendix 9: Location of Mills

1. Cowenhouven's Horsemill  
1656-1660  
Site: In rear of 41 Stone Street
2. Nicholas de Meyer's Windmill  
1677-1742  
Site: Northwest corner of Park Row and Duane Street
3. Gristmill  
1628-1662  
Site: At the fort in Battery Park at Greenwich Street
4. Horsemill on Slyck Steegh  
1667-"here in 1677" (Stokes)  
Site: South William Street on site of the "Company's Negroes' House."
5. Jasper's Windmill  
1664-1723; 1689, lightning; 1695, rebuilt  
Site: City Hall Park
6. Mesier's Windmill  
1682-1686-1788  
Site: West of Church Street between Liberty and Cortlandt Streets
7. Pietersen's Watermill  
1658-1693  
Site: At Water Street near James Slip (?)
8. Adrian Van Laer's Tanmill  
1668-(?)  
Site: Northwest corner of Exchange Place and Broad Street
9. West India Company Sawmill  
1628-1647  
Site: At State Street, south of Bridge Street

Appendix 10: Location of Miscellaneous Structures

1. Issac Allerton's Warehouse  
c. 1647-(?)  
Site: 10-12 Peck Slip
2. Bayard Sugar House  
1729-(?)  
Site: North side of Wall Street, between Nassau and William Streets
3. Beekman's Slaughter House  
c. 1697-demolished 1721  
Site: Intersection of Beekman Street and Water Street
4. Bradford's Printing Press  
1693(?)  
Site: On Pearl Street, between Exchange Place and William Street
5. Canvas or Topsail Town  
After 1776 fire to c. 1797(?).  
Site: On Exchange Place, between Broadway and Broad Street
6. Dugdale and Searles Ropewalk  
c. 1719  
Site: On Broadway from Fulton to Chambers Streets
7. Hayrick  
1650-1653  
Site: On Broadway at the intersection of Broadway and Wall Street
8. Herman's Warehouse  
c. 1651  
Site: 33-35 Pearl Street
9. J. Kelly's Three Slaughter House  
1721-(?)  
Site: Roosevelt and Water Streets
10. Kerstine's Ropewalk  
c. 1717-(?)  
Site: On Fulton Street from Church Street to Pearl Street
11. A. Levy and Gerrit J. Roos's Slaughter House  
1677-1721  
Site: On Pearl Street, between Wall Street and Pine Streets
12. Livingston's Sugar House  
1754-1840  
Site: 28-36 Liberty Street
13. New York Gazette  
c. 1725 on Jorissens (1657) second site  
Site: 81 Pearl Street

Miscellaneous Structures

14. Red Lion Brewery  
(?) prior to 1720  
Site: 47-51 Beaver Street
15. Olaf S. Van Cortlandt Brewerie  
1656-1684(?)  
Site: 11-13 Stone Street
16. Van Cortlandt's Sugar House  
1755-1852  
Site: Northwest corner of Trinity Churchyard
17. Van der Grift's Warehouse  
1650  
Site: 31 Pearl Street
18. Van Pelt's Ropewalk  
c. 1742  
Site: On Broadway from Fulton to Chambers Street
19. West Battery  
1807-1815  
Castle Clinton  
1815-1824  
Castle Garden  
1824-1909+  
Site: Battery Park

Appendix 11: Location of Parks and Gardens

1. Battery Park - The Battery  
1686-present  
Site: Southern end of Manhattan Island; includes the  
" Schreyers Hoek" of Dutch times.
2. Bowling Green  
1730-present  
Site: South end of Broadway
3. City Hall Park  
1817-present  
Site: Broadway to Park Row, Chambers to Mail Street
4. Fort Garden  
c. 1735-(?)  
Site: South of Bridge Street, between Whitehall and State Streets
5. Garden and Orchard of the West India Company  
c. 1638-(?)  
Site: West side of Broadway, about 150 feet south and 50 feet  
north of Rector Street
6. Jeannette Park  
1884-present  
Site: Coenties Slip, Front to South Streets
7. The Vineyard - The Governor's Garden  
1646-1766  
Site: Between Beekman Street, a line south of Ann Street,  
Nassau Street and Park Row

Appendix 12: Location of Potteries

Incomplete records make it impossible to give exact dates of some potters in the 17th century. Therefore, dates listed here represent either known times of a working pottery or the times that the potter himself was known to have been flourishing, i.e., "fl." in Manhattan (Ian Walker, 1977.) Death, if it is the only indicator of a pottery's end is indicated by "d". All potteries are located on the land use maps.

1. Dirck Benson  
fl. 1698-d. 1725  
Site: Unknown
2. Thomas Oakes, new owner of Wilson's pottery, also called "Vauxhall."  
Advertised 1794-1798. after 1801 Oakes became a glass and china merchant.  
Site: 90 Warren Street
3. John Smith  
1873-1878  
Site: 12 Chambers Street  
Pipes, tiles, etc.
4. Abraham Wilson  
1789  
Abraham Wilson, Jr.  
1792-1796  
Site: Western end of Warren Street, near Hudson River  
Earthenware; 1791 Queensware (?)  
Thomas Eldrige ran Wilson's pottery in 1796 for less than 12 months.  
After 1796, Thomas Oakes became the new owner.

The following entries require further documentation and information before their exact map location can be defined.

1. John Dewilde (Burlington New Jersey, but became a freeman in Manhattan in 1697.)  
fl. 1690  
Manhattan (?)  
Earthenware
2. John Euwatse  
1695 property purchased; 1697 he became a freeman  
Site: Wall Street (?)
3. Bill Howard  
1798-1809  
Site: Unknown  
Stoneware. May have had his own stamp or his own pottery.

Due to confusion of the Crolius/Remmey clan, a composite map (Appendix 13) has been made specifically for them. This composite map represents potteries located just above Chambers Street and beyond the territory of our land use maps.

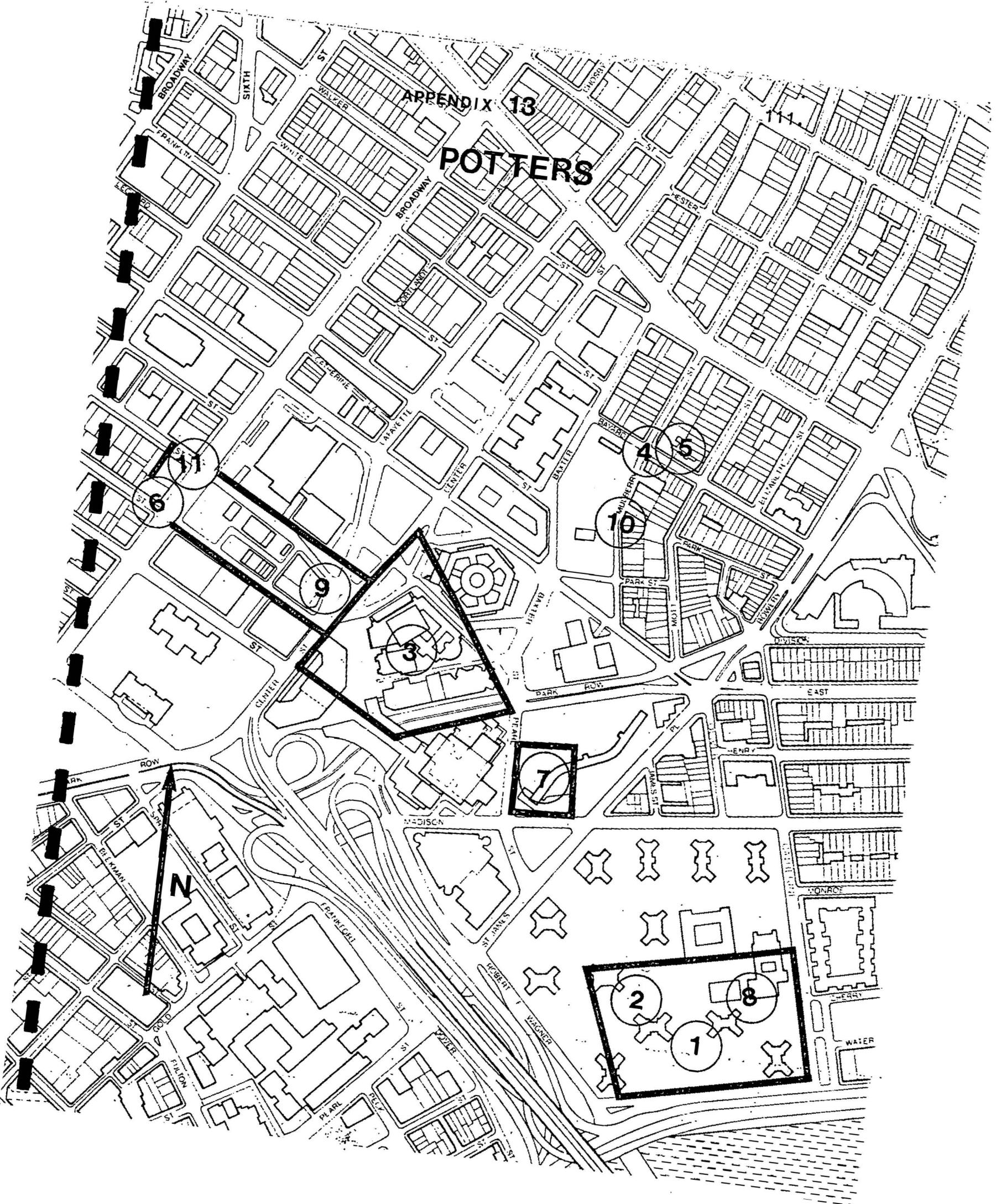
Potteries

1. Dirck Claesen, "Pottbaker's Corner"  
fl. 1657-d. 1686  
Site: Cherry and James Streets  
Earthenware
2. Thomas Commereau  
1797-1799  
Site: Cherry Street near Corlears Hook, northeast of all the potters.  
Possibly old Claesen site, Pottery #1.
3. Corselius Family, Crolieus (William Sr., William Jr., John Sr.)  
1728-c. 1800(?)  
Site: South of Little Collect Pond, east of Centre Street and 78 Chatham  
Stoneware
4. Crolieus Family  
1812 residence  
Site: 67 Bayard Street  
Clarkson Crolieus 1817-1837
5. Clarkson Crolieus  
1814-1816
6. John Campbell  
1774, advertisement for Pantiles  
Site: 1798 lists pottery on west side of Broadway  
1799 John Campbell died
7. Johnathan Durell  
Residences or potteries at Chatham Street, date (?); Roosevelt Street,  
1789, 12 Roosevelt Street, 1803; 106 Maiden Lane, 1804-1806.  
Freeman, 1753  
Died 1807  
Earthenware
8. David Morgan  
Took over pottery of Commereau in 1799; Morgan and Commereau worked  
together in 1799; 1803, Morgan left, his son worked the pottery 1803-  
1812; Commereau listed as potter sporadically until 1819.  
Site: Cherry Street near Corlear's Hook, northeast of all potters.  
Stoneware
9. Remmey Family (John I, II, III)  
Crolieus Family (John Sr., Clarkson)  
1706-1830's  
Site: Northwest of Little Collect Pond, west of Centre Street between  
Reade and Duane Streets
10. Jacob Stantian  
37 Mulberry Street  
1814-16  
Stoneware (?)

Potteries

11. Van Vlack/Vleck Family  
c. 1760's-1780's (Taken over by the Crolius family in 1780's).  
Site: Just west or east of Broadway, "contiguous and adjacent to  
the Negroes burial ground."

# POTTERS



Appendix 14: Location of Prisons

1. The Bridewell  
1776-1834  
Site: West side of City Hall Park
2. Cage, Pillory, Stocks and Whipping-Post  
1703-1710  
Site: Wall Street, east of Nassau Street, "before the City Hall"
3. Cage, Pillory, Stocks and Whipping-Post  
1710-c.1731(?)  
Site: upper end of Broad Street near Wall Street
4. Gallows, Whipping-Post and Stocks  
1784-(?)  
Site: "Between and on a range with the Almshouse and Goal." (City Hall Park)
5. Gevangen Huys (in the Fort)  
c.1653-c.1695  
Site: North side Bridge Street, west of Whitehall Street
6. New Goal ("Goal")  
1759-1830  
Site: In City Hall Park  
1830, reconstructed and fitted to receive public record and henceforth known as "Register's Office" or "Hall of Records"
7. Pillory, Cage and Ducking-Pool  
1692-1710  
Site: Before City Hall, Pearl Street at Coenties Alley
8. Public Stocks  
1808-(?)  
Site: In the Bridewell Yard, City Hall Park
9. Watch-House  
1731-(?)  
Site: "In Broad Street, before the City Hall"
10. Watch-House  
1794-1816  
Site: 1 Broad Street
11. Whipping-Post  
1809-(?)  
Site: In the Bridewell Yard, City Hall Park

Appendix 15: Public Buildings

1. Almshouse in the Park (first)  
1736-1797  
Site: in City Hall Park
2. Almshouse in the Park (second)  
1797-1816  
Site: north side of City Hall Park
3. The Barge Office (U.S. Revenue Office - The Surveyor's Office)  
1830-1900  
Site: southeast corner Battery Park
4. City Hall (first)  
1653-1700  
Site: 71-73 Pearl Street
5. City Hall (second)  
1703-1812  
U.S. Government for Custom House  
1842-1863  
Subtreasury Building  
1863-1900  
Site: corner Wall and Nassau Streets
6. City Hall (third)  
1811-1900  
Site: City Hall Park
7. County Court House  
1867-1900  
Site: City Hall Park, facing Chambers Street
8. Custom House  
1664-1740  
Site: Dock Street, facing Whitehall
9. Custom House  
1740-1790  
Site: 3 Broadway
10. Custom House  
1790-1799  
Site: South William Street, opposite Mill Lane
11. Government House  
1791-1815  
Site: Lower end of Broadway, partly covering site of Fort Amsterdam; now covered by the U.S. Custom House
12. Governor's House in the Fort  
1643-1773  
Site: west side of Whitehall Street, in block covered by U.S. Custom House

Appendix 15: Public Buildings Continued

13. Post Office  
1804-1825  
Site: southwest corner Exchange Place and William Street
14. Post Office (City Hall Branch)  
1878-1900  
Site: Park Row-Broadway-Mail Street
15. Rotunda  
1818-1870  
Site: City Hall Park
16. Secretary's Office, The (first)  
1658-1741  
Site: covered by U.S. Customs House
17. Secretary's Office, The (second)  
1741-1790  
Site: Whitehall Street at Bowling Green
18. U.S. Assay Office  
1822-1900  
Site: 30-32 Wall Street
19. U.S. Sub-Treasury (first)  
1846-1863  
Site: 30-32 Wall Street (jointly occupied building with U.S. Assay Office)
20. U.S. Sub-Treasury  
1863-1900  
Site: northeast corner Wall and Nassau Streets

Appendix 16: Schools and Colleges

1. City School, of Evert Pietersen Keteltas  
1661-1686  
Site: 10 Stone Street
2. College of Physicians and Surgeons (first site)  
1813-1836  
Site: North side of Barclay Street, west of Broadway
3. David Provoost's School  
1653-1654  
Site: 32 Broadway
4. English (Trinity) Free School, "The City School"  
1749-1776  
Site: South side of Rector Street, between Broadway and Church Street
5. Free School of the Reformed Dutch Church  
1730-1824  
Site: 48-50 Exchange Place
6. King's College  
1756-1857  
Site: In block bounded by Church Street, College Place, West Broadway,  
Barclay and Murray Streets
7. The Latin School  
1659-1662  
Site: 26 Broad Street
8. Presbyterian School  
1790-1808  
Site: 33 Nassau Street
9. School of Harmanus Van Hoboken  
1660-1661  
Site: 39 Broad Street
10. Trinity School  
1871-present  
Site: 90 Trinity Place, southwest corner of Thomas Street
11. Free School Number 1\*  
1809-1839  
Site: Tryon Row at Park Row

(\* ) Further information needed before site can be located on map.

Appendix 17: Location of Tanners

1. Conrent TenEycke, first tanner known  
1653 fl.  
Site: near Beaver and Broad Streets
2. Adrian and Christopher Van Laer, Tan mill  
1668 fl.  
Site: northwest corner of Exchange Place and Broad Street
3. Tannery Area - Shoemaker's Pasture  
1664-1696  
Site: Area along Maiden Lane, on the southeast side of William Street  
between John and Fulton Streets
4. Tannery Area - Collect Pond  
1696-ca.1700
5. Tannery Area - "The Swamp"  
ca.1700-1800  
Site: A 10 block area surrounding Beekman, Cliff, Gold, Spruce, Ferry  
and Jacob Streets

Appendix 18: List of Taverns and Coffee Houses

1. Bank Coffee House  
1814-post 1832  
Site: 43 William Street
2. Black Horse Tavern  
pre 1727-1764  
Site: West side of William Street, south of Exchange Place
3. Blue Dove  
1661-(?)  
Site: 10-12 Pearl Street
4. Peter Cock's Tavern  
c. 1635-1640  
Site: 1 Broadway
5. Martin Cregier's House and Tavern  
1659-1685  
Site: 3 Broadway
6. Hans Dreper's Tavern  
1656-1667  
Site: Intersection of Pearl, Bridge and Broad Streets
7. Exchange Coffee House  
1729-1749  
Site: Northeast corner of Broad and Water Streets. In 1749, it  
"moved next door."
8. The Fighting Cocks  
1714-1776  
Site: 28 Water Street
9. Fraunces Tavern  
1762-present  
Site: Southeast corner of Broad and Pearl Streets. It has had many  
names and owners.
10. Gerritt Fullewerer's Tavern  
c. 1647  
Site: 26 Broadway
11. David Grim's Tavern or Hessian Coffee House  
c. 1778  
Site: 138 William Street
12. Hampden Hall  
1770-(?)  
Site: Southwest corner of Broadway and Warren Street (established by  
the Liberty Boys).
13. Horse and Cart Tavern  
pre 1732-post 1774  
Site: 122 William Street

Taverns and Coffee Houses

14. The Horse and Manger  
pre-1748  
The Coach House  
by 1786  
Martling's Tavern  
by 1796-post 1817  
Site: Southeast corner of Nassau and Spruce Streets
15. House of Augustus Jay  
c. 1730  
Atlantic Garden  
after 1836-1860  
Site: 9-11 Broadway
16. Obadiah Hunt's Tavern  
pre 1716-post 1742  
Site: 35 Pearl Street
17. Hendrick Jansen Smith's Tavern  
c. 1647  
Site: 32 Bridge Street
18. Michael Jansen's (Vreeland's) Tavern  
1656-1661(?)  
Site: 12 State Street
19. King's Arms Tavern  
pre 1763-1768  
Site: Southeast corner of Whitehall and Bridge Streets
20. King's Head  
1694-1702  
Site: Southeast corner of Pearl Street and Maiden Lane
21. Daniel Litschoe's Tavern  
1647-post 1677  
Site: 71 Wall Street, corner of Pearl Street
22. Lovelace Tavern  
1670-c. 1700  
Site: 65-67 Pearl Street
23. Merchant's Coffee House  
pre 1738-1772  
Tontine Coffee House  
1792-1855  
Site: Northwest corner of Wall and Water Streets
24. Merchant's Coffee House  
1772-1804  
Phoenix Coffee House  
1804/5-1821  
Site: Southeast corner of Wall and Water Streets

Taverns and Coffee Houses

25. Pierce Pia's Tavern  
1660-1677  
The Sign of the Swan  
1677  
Site: Northeast corner of Market Field and New Street
26. Abraham Pieteren's Tavern  
c. 1648  
Site: 14-16 Broadway
27. Province Arms  
pre-1754  
New York Arms, Bunch of Grapes, State Arms  
until 1786  
City Tavern  
1786-1793  
Site: 115 Broadway
28. The Royal Oak  
c. 1680  
Site: 26 Broadway
29. Jan Rutgersen's Tavern  
1655-1663(?)  
Site: 69 Broad Street
30. Shakespeare Tavern  
pre 1776-1836  
Site: 136 Fulton Street
31. Sign of the Fort Orange  
c. 1666  
Site: 16 Stone Street
32. Sign of the General Wolfe  
c. 1767  
Site: Northeast corner of Spruce Street and Park Row
33. Sign of George and the Dragon  
pre 1664-1735(?)  
Site: 211 Pearl Street. "On the road leading to the ferry to Long Island."
34. John Simmon's Tavern  
c. 1774-post 1796  
Site: Northwest corner of Wall and Nassau Streets
35. Spring Garden House  
✓ pre-1712-c. 1759  
Sign of the King of Prussia  
c. 1759-post 1763  
Site: Southeast corner of Broadway and Ann Street

Taverns and Coffee Houses

36. Stadt Herberg  
c. 1642  
Site: Northwest corner of Pearl Street and Coenties Alley
37. Michael Taden's Tavern  
c. 1652  
Site: 11 Pearl Street
38. Three Cornish Daws  
c. 1699  
Site: 47 Wall Street
39. Van Den Berg's Meadhouse  
1735-1757  
Astor House  
1834-1913  
Site: Broadway-Barclay to Vesey Streets
40. Vauxhall Gardens (first site)  
1797-1798  
Union Garden  
1807-pre-1825  
Site: 112 Broadway
41. Vauxhall Tavern and Garden  
1730-1774  
Cupola Iron Furnace  
1802  
Site: West part of block Greenwich Street, Chambers Street, West Broadway
42. Vincent's (Adriaen) Tavern  
c. 1655-"here later than 1673"  
Site: Northeast corner of Broad and South William Streets
43. Admiral Warren  
1758-1774  
Site: Wall Street near Broadway, opposite the "Presbyterian Church"
44. Metje Wessel's Tavern  
1656-(?)  
Site: North side of Pearl Street, between Whitehall and Pearl Streets
45. White Lion  
pre-1700-pre-1720  
Site: Northwest corner William and Wall Streets
46. Wooden Horse  
1640-1655/7  
Site: Corner of Whitehall and Stone Streets  
1657-1668  
Site: 8 Stone Street (one house east of the above)

Taverns and Coffee Houses - Exact Locations Unknown

The following entries require further documentation and information before their exact map location can be defined.

1. Columbian Garden  
no date  
Site: State and Pearl Streets
2. Jamaica Arms  
c. 1740  
Site: Cruger's Wharf
3. Andries Jochemsen's Taverns  
post 1651-post 1662  
Site: Inside the Wall, between the Wall and the Litschoe House
4. Taverns of Soloman La Chair
  - a. c. 1655  
Site: At Teunis Kray's house on the Graft
  - b. c. 1661  
Site: A house on Hough Street
5. John Parmytier  
pre-1717-post 1727  
Site: On or near the corner of Beaver and New Streets
6. The Pineapple  
c. 1740  
Site: On the New Dock
7. Taverns near the Meal Market
  - c. 1740-1750
    - a. House of the widow Susannah Lawrence
    - b. House of Mr. De JancourtSite: At the lower end of Wall Street
8. Robert Todd's House  
no date  
Site: 101 Broad Street
9. Dirck Van Der Cliff's Orchard  
c. 1682  
Site: John Street led to the site

Appendix 19: Location of Water Works

1. Manhattan Company Reservoir  
1800-1914  
Site: North side of Chambers Street between Broadway and Centre Street
  
2. Well before Hendrick Van Dyck's House  
1677-(?)  
Site: Broadway, south of Exchange Alley

Appendix 20: Villages in Manhattan

These villages were outside the urban core, but were satellites of the city. They are plotted on Figure 3.

1. Bloomingdale Village - West 95th Street to 110th Street, from the Hudson River to Central Park (Bonner 1924:73; Mott 1908:7; Stokes 1918: plates 177, 178). The area of the west side of Manhattan known as Bloomingdale began on west 14th Street to west 135th Street, from the Hudson River to Central Park (Ellis 1966:52). The village was founded c. 1701 (Stokes 1918:986).
2. Bowery - Broadway and 4th Avenue to the East River, east 23rd Street to Stuyvesant Street, Astor Place and east 14th Street at Avenue C. (Ellis 1966:52-53; Harlow 1931:14-15; Stokes 1918: plate 175). The village was founded in 1660 (Bonner 1924:72).
3. Greenwich Village - Houston to east 21st Street, Bowery and 4th Avenue and Broadway to the Hudson River (Stokes 1918: plate 175:987). Originally called Bossen Bouwerie (farm in the woods) by Wouter Van Twiller in 1637, but changed to Greenwich Village when the English arrived in 1664 (Bonner 1924:72).
4. Harlem Village - Third Avenue to First Avenue, between east 119th Street to east 125th Street. The area of Harlem extends from east 105th Street to west 193rd Street along the Harlem River. The village was first settled in 1637, abandoned, then resettled in 1658 (Bonner 1924:72; Ellis 1966:52; Stokes 1918: plates 178-180).

Appendix 21: From the Top to the Bottom - Building Height and the Presence or Absence of a Basement - A Statistical Journey

Deep basements or foundations destroy archaeological material while shallow basements serve as a lid covering archaeological remains. It would save public archaeologists time if they could eliminate potential sites simply by looking at the current buildings, i.e., by deciding that all buildings over a certain height have deep basements and foundations which would have destroyed the archaeological resources. Archaeologists need to assess the relationship between building height and basement and foundation depth; measurements are, therefore, needed to determine how one affects the other. Because information about basement depth (as measured in feet) was not readily available, we investigated a corollary relationship, that is, the presence or absence of a basement and its affect on building height (as measured by stories). Clarifying this relationship should augment any investigation of the correlation between the depth of a basement and building height.

The data for the following analysis was obtained from two plates (1 and 35) chosen from the 1899 Bromley Atlas of Manhattan, Volume I. They cover part of lower Manhattan (plate 1) and the western part of Greenwich Village (Plate 35). The two areas were chosen because of their differences in topography and commercial/residential use. Although the area covered by the Bromley plate is small, the results should be applicable to all of Manhattan but this can only be confirmed when a broad based sampling design is conducted over all of Manhattan.

The Bromley atlas was chosen because it is an accurate representation of those existing structures in Manhattan in 1899 and building height and presence or absence of a basement were recorded. Buildings with variable heights, with basements on one side and not on the other, or with symbols that were illegible or unexplained were not counted. The total number of such buildings was however, very small (between 190 and 1,590 of the total sample).

A summary of the data is presented in Tables 1 and 2 where  $x$  = buildings without basements and  $y$  = buildings with basements and  $n_1$  = the total number in the sample for  $x$  and  $n_2$  = the total number in the sample for  $y$ . The Kolmogorow-Smirnów two sample test was used to determine if  $x$  and  $y$  affected one another. To confirm or refute this, two alternative hypotheses were formulated:

- 1)  $H_0$  - there is no relationship between the height of a building and the presence or absence of a basement
- 2)  $H_1$  - there is a relationship between the height of a building and the presence or absence of a basement

The data from the Bromley atlas was then tested.

The data in Tables 1 and 2 was first converted in cumulative percentages to determine the critical value. This value was then compared to the differences between  $x$  and  $y$  for each story. If the value is equal to or greater than  $D$ , this will allow  $H_0$  to be rejected. Two different levels of significance were chose: 1) .05 because it has an acceptable level of error in relation to falsely accepting or rejecting  $H_0$  and 2) .001 because it is an extreme value that has a very low level of error in falsely accepting or rejecting  $H_0$ . Since the sampling distribution of the K-S test is known, it is possible to determine the critical values( $D$ ) for a particular level of significance. After this critical value is determined, any differences in the cumulative proportions of the samples in  $x$  and  $y$  that exceed or equal it are significant and as before,  $H_0$  can be rejected.

In Table 1,  $H_0$  cannot be rejected at either the .05 or .001 level of significance. In Table 2,  $H_0$  cannot be rejected except for buildings with 3 and  $3\frac{1}{2}$  stories. For these two heights,  $H_0$  is rejected in favor of  $H_1$ ; this suggests that there is a relationship between building height and the presence or absence of a basement. However, this relationship may be dependent on variables that were not measured in the sample. These variables may affect the relationship in unknown and unmeasured ways. The variables include: building function (commercial and/or residential); architect; building material; the geologic terrain, and the date of construction.

The proposal that building height is sensitive to the presence or absence of a basement then cannot be supported by the data presented either for lower Manhattan or the western part of Greenwich Village. The variables mentioned above may be better indicators of the relationship between height and basement. A well defined probability sample should: 1) encompass all of Manhattan, 2) be sensitive to the above variables or potential variables, and 3) test data from Buildings built in 1900, 1910, 1920, 1930, 1940 and 1950.

This sampling strategy might define a series of strata based on the locations of different industries; such as pottery, tanning and printing.

Table 1: The Kolmogorov-Smirnov Two Sample Test on a Sample of Buildings in Lower Manhattan (from Plate 1 in the 1899 Bromley Atlas)

Stages	X = n <sub>1</sub> Buildings without basements			Y = n <sub>2</sub> Buildings with basements		
	Y	Σ <sub>1</sub>	Σ <sub>2</sub>	Y	Σ <sub>2</sub>	Σ
1	3	3	.0057	0	0	0
1.5	0	3	.0057	0	0	0
2	5	8	.0153	1	1	.0140
2.5	0	8	.0153	0	1	.0140
3	21	29	.0555	7	8	.1126
3.5	0	29	.0555	0	8	.1126
4	136	165	.3160	22	30	.4225
4.5	25	190	.3639	0	30	.4225
5	265	455	.8716	29	59	.8300
5.5	6	461	.8831	0	59	.8300
6	20	481	.9214	3	62	.8732
7	11	492	.9425	1	63	.8873
8	8	500	.9578	2	65	.9154
9	4	504	.9655	2	67	.9436
10	1	505	.9674	0	67	.9436
11	2	507	.9712	3	70	.9659
12	5	512	.9808	0	70	.9659
13	1	513	.9827	0	70	.9659
14	1	514	.9846	0	70	.9659
15	2	516	.9885	0	70	.9659
16	1	517	.9904	0	70	.9659
17	0	517	.9904	0	70	.9659
18	2	519	.9942	0	70	.9659
19	0	519	.9942	0	70	.9659
20	2	521	.9980	1	71	1.0000
21	0	521	.9980	0	0	
22	0	521	.9980	0	0	
23	0	521	.9980	0	0	
24	0	521	.9980	0	0	
25	0	521	.9980	0	0	
26	1	522	1.0000	0	0	

Level of Significance

.05

D =

$$1.36 \sqrt{\frac{n_1 + n_2}{n_1 n_2}} = 1.36 \sqrt{\frac{522 + 71}{522(71)}} = .1720$$

.001

D =

$$1.65 \sqrt{\frac{n_1 + n_2}{n_1 n_2}} = 1.65 \sqrt{\frac{522 + 71}{522(71)}} = .2466$$

Table 2: The Kolomogorov-Smirnov Two Sample Test on a Sample of Buildings from Greenwich Village (from Plate 35 in the 1899 Bromley Atlas)

Stories	X=Buildings without basements X= n <sub>1</sub>			Y=Buildings with basements Y= n <sub>2</sub>		
	X	ΣX	Σ%	Y	ΣY	Σ%
1	5	5	.01250	0	0	0
1.5	0	5	.01250	0	0	0
2	19	24	.0600	5	5	.00986
2.5	4	28	.0700	26	31	.0611
*3	116	144	.0360	285	316	.62327
*3.5	7	151	.3775	5	321	.6331
4	116	267	.6675	84	405	.7988
4.5	0	267	.6675	0	405	.7988
5	84	351	.8775	84	489	.96449
5.5	0	351	.8775	0	489	.96449
6	40	391	.9775	15	504	.99408
7	6	397	.9925	3	507	1.000
8	3	400	1.000	0	507	1.000

Level of Significance

$$.05 \quad D = 1.36 \sqrt{\frac{n_1 + n_2}{n_1 n_2}} = 1.36 \sqrt{\frac{400+507}{(400)(507)}} = .09095$$

$$.001 \quad D = 1.95 \sqrt{\frac{n_1 + n_2}{n_1 n_2}} = 1.95 \sqrt{\frac{400+507}{(400)(507)}} = .1304$$

\* Differences greater than D

The boundaries, however, may be difficult or impossible to determine if they are not concentrated in one area. Inside these strata, clusters might be defined to differentiate between buildings on main streets and those on side streets. Smaller units within these clusters may also be needed if it became necessary to further differentiate buildings within a block. Both the strata and clusters would have to be weighted if they are different sizes. Before any sampling strategy is attempted a thorough records search is needed to determine strataboundaries and block specifics. This design would be useful for concentrations of industries and nothing else. It would have to be expanded if information about building material, geology, and architects was included.

After the analysis was completed on the relationship between building height and the presence or absence of a basement, a second proposal was tested; is building height correlated with foundation depth? Because basements do not contribute to the structural stability of a building it is possible that a more sensitive indicator of building height is the foundation depth. The foundations themselves are the load bearing walls of the building.

Originally a total of 300 cases were to be chosen to illustrate if there was any correlation between height and foundation depth as measured in feet. One hundred cases were selected from 1866, 1881, and 1899<sup>1</sup> to see if there were differences through time. The final sample sizes are smaller than 100 (74 for 1866, 80 for 1881 and 86 for 1899) because non-brick buildings such as wood, stone or iron were eliminated. The number of non-brick buildings in each year was considered too small to test this correlation. The samples were spread out over the entire year.<sup>2</sup> The entries for the entire year were entered not by their geographical area, but the date the building

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<sup>1</sup> Records before May 1866 on building height and foundation depth were supposedly not kept according to the Municipal Archives. After 1899 the records changed format and building height and foundation depth are not included as before.

<sup>2</sup> Except 1866 where the sample could only be selected from June to December because the records for January to May are missing.

Table 3: A Summary of the Results of Pearson's Product Moment Coefficient (r) on a Sample of Buildings throughout Manhattan for the years 1866, 1881, 1899

$$\text{Pearson's } r = \frac{\sum XY - n\bar{X}\bar{Y}}{\sqrt{[\sum X^2 - n\bar{X}^2] [\sum Y^2 - n\bar{Y}^2]}} \quad (\text{Thomas 1976:387})$$

Where:

- X = the height of a building given in feet  
 Y = the depth of the foundation given in feet  
 $\bar{X}$  = the mean or average height of all the buildings in a particular year  
 $\bar{Y}$  = the mean or average depth of the foundation  
 n = the number of cases in the sample

$$\begin{array}{l} 1866 \\ \hline \frac{33,821.5 - 74(45.195946)(8.9527027)}{\sqrt{[174.670.13 - 74(45.195946)^2] [7095.75 - 74(8.9527027)^2]}} \\ r = .00142 \end{array}$$

$$\begin{array}{l} 1881 \\ \hline \frac{36,515 - 80(49.3375)(9.1)}{\sqrt{[210,563 - 80(49.3375)^2] [7190 - 80(9.1)^2]}} \\ r = .00006677 \end{array}$$

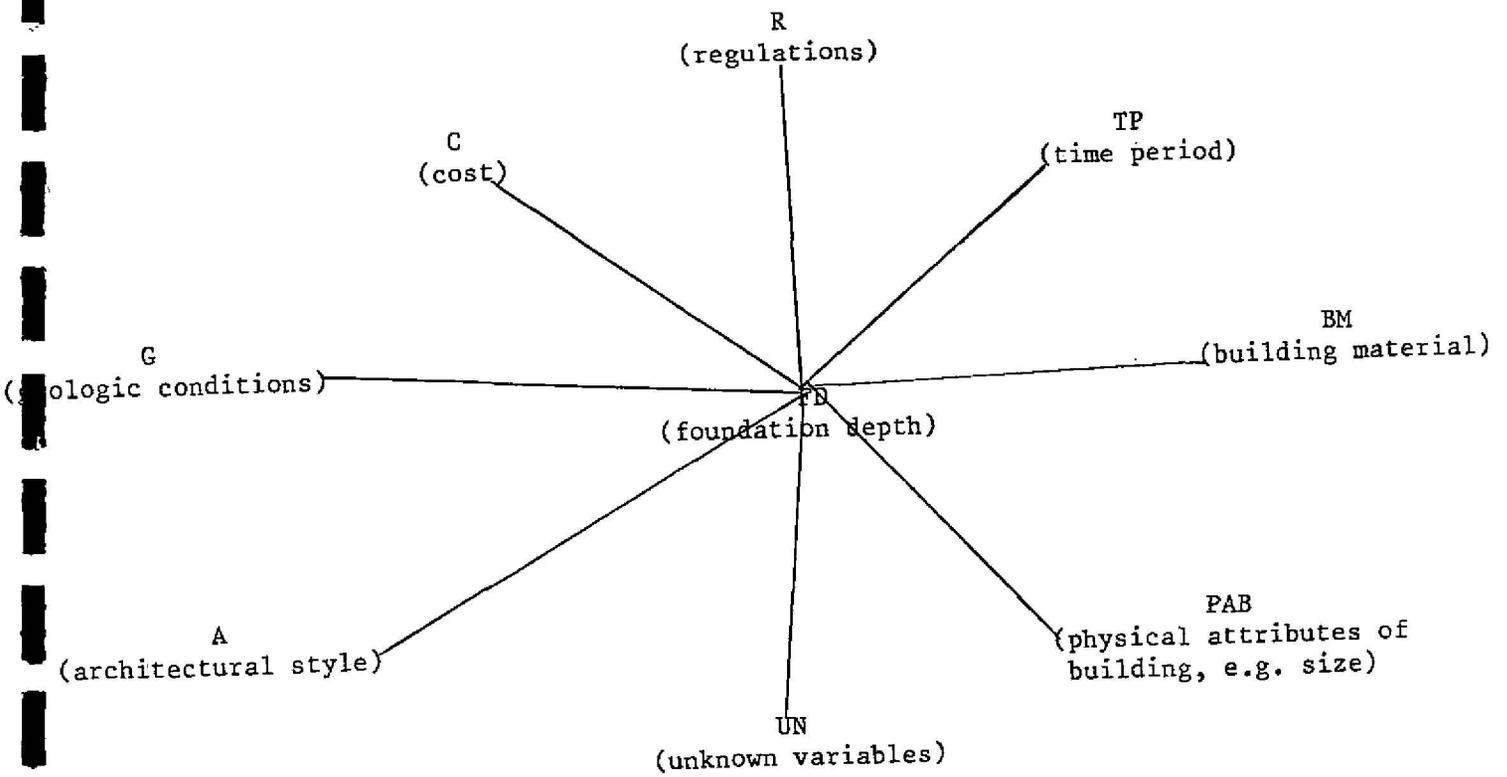
$$\begin{array}{l} 1899 \\ \hline \frac{62,710.207 - 86(68.051356)(9.8616763)}{\sqrt{[455,853.96 - 86(68.051356)^2] [9338.160 - 86(9.8616763)^2]}} \\ r = .00008902 \end{array}$$

permit was issued, therefore, the samples were not concentrated in one area, but spread out over Manhattan. Pearson's Product - Moment Coefficient ( $r$ ) was used to see if there was any correlation between building height and foundation depth (the data are summarized in Table 3). For all three years 1866, 1881 and 1899,  $r = 0.00$ , therefore no correlation exists between building height and foundation depth. Better predictors are needed that account for many variables. These predictors are necessary in order to make general statements about building characteristics such as building height. These samples should be seen as a trend to be strengthened by a much larger well defined sampling strategy that also covers buildings into the 20th century.

A fundamental mistake is made when people believe that one variable is the only predictor necessary to determine an attribute of a building (height, depth, size). It is not that one factor will influence a particular attribute but what factors, taken together, influence that attribute.

The following diagram is a rough example of how these variables would interact to determine foundation depth. Each factor affects building height but each variable is connected to the others. These relationships are like spokes on a wheel with foundation depth at the center and each spoke is a different variable. These variables are connected to each other and to the outside circle.

Will all these variables allow an archaeologist to assess whether archaeological remains are present underneath a building? If all these variables are able to explain 100% of the variance within a particular attribute, then predictions about archaeological remains are possible. Rarely, however, do variables predict 100% of the variance so statements about the archaeological potential of a building should take this into account when making generalized proposals.



## Annotated Bibliography - An Introduction

In compiling the annotated bibliography we had to define limits for ourselves. Clearly, we could not include all primary and secondary source material that would be used by an archaeologist doing in-depth research on one, single block. We have only included those works that were/are useful to us in developing a broad understanding of Manhattan's growth and in providing us with the specific data we need to describe the evolution and alteration to neighborhoods in lower Manhattan.

We would suggest that any archaeologist researching the history of a block consult the city records for: liber of deeds and mortgages; water lot grants; tax assessment records; wills; letters of administration; city directories; and state and federal census records. The New-York Historical Society contains a wealth of information on Manhattan including: old newspapers; the minutes of the common council (1784-1831); Dutch records from the city clerk's office (Orphan's Court, 1655-1665 and the Notary Public records 1554-1660), New-York Historical Society Collections, 1868-1965 which includes many family papers and the abstracts of wills (1665-1800); and the Historical Society's quarterly bulletin (1917-present) has many useful articles. In addition the Half Moon (de Halve Maen) series published by the Holland Society is a must for anyone studying the Dutch period.

The maps we included are only those ones we will use in developing our overlay maps for Manhattan. There are many more maps and drawings available.

There were problems with these other maps in that they were too general; too vague; did not correspond to any other drawings of that time period; were drawn from memory; or showed too much artistic license. If one were researching a particular block, these maps and drawings, even with their problems, might provide some useful data that is not available elsewhere. One should consult the map room in the New York Public Library at 42nd Street, when doing map research.

## PRIMARY SOURCES

### MAPS

#### Areas and Types of Impact, Middle Section, 1981

(Ed Rutsch, Cultural Resources Survey of the Westway Draft Report, fig. 21)  
Shows the shoreline (from below Canal to 21st St.) of Colonial, 1873 and modern times on the West Side. The proposed shoreline is also depicted.

#### Areas and Types of Impact, Northern Section, 1891

(Ed Rutsch, Cultural Resources Survey of the Westway Draft Report, fig. 21)  
Shows the shoreline (from below 14th to 46th St.) of Colonial, 1873 and modern times on the West Side. The proposed shoreline is also depicted.

#### Areas and Types of Impact, Southern Section, 1981

(Ed Rutsch, Cultural Resources Survey of the Westway Draft Report, fig. 20)  
Shows the shoreline from the Battery to slightly past the canal for Colonial, 1873 and modern times. It also shows the blocks and streets present today on the West Side. The proposed shoreline is also depicted.

#### Battles of Fort Washington by His Majesty's Forces under the Command of Gen. Sir William Howe, 1776

(Valentine's Manual, 1861, opposite p. 426)

This map is a good view of the shoreline of upper Manhattan.

#### Bellin Map of the City of Manhattan or New York, 1764

(Valentine's Manual, opposite p. 596)

This map may be a stylized version of the actual buildings and streets in 1764.

#### Bradford Plan of the City of New York 1730

(Stokes, Vol. I, plate 27, pp. 254-60, NYC Public Library Map Room)

Shows the streets, shoreline, blocks, Beekman's swamp, collect pond and its outlet into the swamp. Date depicted: probably 1730. Date issued: probably 1731.

#### Bridges Map of the City of New York and Island of Manhattan, 1811

(Stokes, Vol. III, plate 80b, pp. 542-49)

Depicts the shoreline and streets for the entire island and shows some of the former marshes and streams. Date depicted: 1811. Copyright: 11/16/1811.

#### Bridges Map of the City of New York and Island of Manhattan as laid out by the Commissioners appointed by the Legislature, 1811

(Valentine's Manual, 1853, opposite p. 242)

A good representation of the shoreline, streets and blocks of Manhattan. This map is identical to the one in Stokes, but the scale is slightly larger.

#### British Headquarters MS Map of New York and Environs, 1782

(Stokes, Vol. I, plate 50, pp. 363-4)

Shows the streets, blocks collect pond, its outlet and various marshes in Manhattan.

MAPS--cont'd.

Bromley's Atlas of the City of New York, Borough of Manhattan, 1898, 1899  
(Volumes 1-5, Philadelphia)

This atlas is good for the streets, blocks, lots, building construction, height and depth of Manhattan. Updated to 1908 or 1909.

Bromley's Atlas of the City of New York, Borough of Manhattan, 1928-1932  
(Volumes 1-5, Philadelphia)

This atlas is good for the shoreline, streets, blocks, lots, building construction materials, height and depth of Manhattan. Updated to 1961

Bromley's Atlas of the Entire City of New York Complete in One Volume, 1879

This atlas is good for the shoreline, streets, blocks, lots and buildings of Manhattan.

City of New York, 1833

(David H. Burr)

This map is good for the streets, blocks and shoreline of the lower third of Manhattan. Located at the NY Historical Society.

City of New York 1879

(Stokes, Vol. III, plate 154, pp. 776-777)

This map is good for the streets, lots, buildings and shoreline, although the area of above 59th St. on the West Side is shown as being undeveloped. The perspective also distorts the upper part of Manhattan.

Colton Topographical Map of the City and County of New York and the Adjacent Country, 1840

(Stokes, Vol. III plate 124, pp. 687-688)

The streets, shoreline and some marshes for all of Manhattan are shown. Depicts the development of the West Side from Hammond St. to a point beyond Harlem Cove. Issued in 1841.

Colton's New Map of the City and County of New York, 1878

(Stokes, Vol. III, plate 155, p. 837)

This map shows the streets, blocks and shoreline (in two sheets) of Manhattan. Issued in 1880.

Costello Plan, Afbeeldinge Van De Stadt Amsterdam in Nieuw Neederlandt, 1660

(Stokes, Vol. II plates 82, 82a-e, pp. 209-348)

This early view of New York shows streets, shoreline and the canal on Broad Street. Date of drawing: probably 1665-70.

Dripps' Map of that Part of the City and County of New York North of 50th St. 1850

(Stokes, Vol. III plate 138a, p. 707)

This map is good for the shoreline, streets and marshes on the East Side of Manhattan, although it omits the very tip of the island. Copyright: 1851.

Franquelin Plan de Manathes ou Nouvelle Yorc, 1693

(Stokes, Vol. I, plate 22b, pp. 233-234)

This map shows the streets and part of the shoreline of Lower Manhattan but it is not completely reliable.

MAPS--cont'd.

Goodrich Map of the City of New York, 1836

(Stokes, Vol. III, plate 99, p. 591)

Shows the streets and shoreline of lower Manhattan in great detail. Issued: April, 20, 1827. Updated to 1836.

Grim's General Plan of the City and Environs of New York, 1742-1744

(Stokes, Vol. I, plate 32a, pp. 270-271)

Shows the streets, blocks, shoreline, collect pond and outlet with a possible canal leading out of the collect pond to the West Side of Manhattan. Drawn August 1813.

The Landmark Map, composite dates

(Stokes, Vol. III, plates 174-180, p. 921)

Shows the original shoreline, the shoreline of 1660 (Costello Plan), 1730 (Bradford Plan), 1766-7 (Ratzer Map), 1811 (Bridges Map), as well as the landmarks, streets, blocks and the present shoreline of Manhattan.

Maerfchalckm Plan of the City of New York, Reduced from an actual survey, 1763

(Valentine's Manual, 1850, opposite p. 220)

This map is good for the streets, blocks, shoreline and collect pond, however it only shows lower Manhattan.

Maerschalck Plan of New York, 1754

(Stokes, Vol. I, plate 34, pp. 274-276)

Shows the streets, blocks, and shoreline of the East Side of Manhattan

Map of the Boundaries of the Fire Department of the City of New York, 1871

(Manual of the Corporation of the City of New York, opposite p. 166)

This map is good for the shoreline, streets and blocks of Manhattan.

Map of the City and County of New York, 1860

(Valentine's Manual, 1860, second blank white page in front of book)

This map is good for the shoreline, streets and blocks of Manhattan.

Map of the City of New York, 1847

(Valentine's Manual, 1847, opposite errata page)

This map shows the shoreline, streets and blocks of Manhattan in detail up to 52nd St. with lower Manhattan in detail.

Map of the City of New York, 1848

(Valentine's Manual, opposite blank page following frontspiece)

This map shows the shoreline, blocks and lots (up to 54th St) of Manhattan.

Map of the City of New York, 1849

(Valentine's Manual of the Corporation of the City of New York, 1849)

This map is good for the streets, blocks and shoreline (up to 53rd St.) of Manhattan with lower Manhattan in detail.

Map of the City of New York 1850

(Valentine's Manual, opposite frontspiece)

Shows the streets, blocks and shorelines of Manhattan (to 51st St.) with lower Manhattan in detail.

MAPS--cont'd.

Map of the City of New York, 1851

(Valentine's Manual, 1851, opposite blank page following frontspiece)  
This map is good for the shoreline, blocks and streets (up to 60th St.) of Manhattan.

Map of the City of New York, 1852

(Valentine's Manual, 1852, opposite p. 462)  
This map shows the shoreline, blocks and streets (up to 14th St.) of Manhattan. It is not clear what date the original shoreline was assigned.

A Map of the City of New York, 1853

(Valentine's Manual, 1853, opposite second blank white page)  
Shows the streets, blocks and shoreline (up to 57th St.) of Manhattan.

Map of the City of New York, 1854

(Valentine's Manual, 1854, opposite Ratzer Plan)  
Shows the shoreline, streets and blocks (up to 57th St.) of Manhattan

Map of the City of New York, 1856

(Valentine's Manual, 1856, opposite second blank white page)  
Shows the streets, blocks and shoreline (up to 52nd St.) of Manhattan.

Map of the Five Cities of New York, Brooklyn, Jersey City, Hoboken and Hudson City, 1860

(Valentine's Manual, 1860, p. 428)  
Shows the shoreline, streets and blocks of Manhattan from 63rd St. northward.

Map of New York and Vicinity, 1865

(Valentine's Manual, 1865, opposite second blank white page in front of book)  
This map is good for the streets, shoreline and blocks of Manhattan.

A Map Representing NYC, 1626

(located at the NYC City Planning Commission, 2 Lafayette)  
A general overview of the five boroughs showing Indian sites and trails.

A Map Representing NYC, 1780

(located at the NYC City Planning Commission, 2 Lafayette)  
A general overview of the five boroughs showing the populated areas.

A Map Representing NYC, 1810

(located at the NYC City Planning Commission, 2 Lafayette)  
A general overview of the five boroughs showing the populated areas.

A Map Representing NYC, 1850

(located at the NYC City Planning Commission, 2 Lafayette)  
A general overview of the five boroughs showing the populated areas.

A Map Representing NYC, 1890

(located at the NYC City Planning Commission, 2 Lafayette)  
A general overview of the five boroughs showing the populated areas.

MAPS--cont'd.

A Map Representing NYC, 1930

(located at the NYC City Planning Commission, 2 Lafayette)

A general overview of the five boroughs showing the populated areas.

A Map Representing NYC, 1970

(located at the NYC City Planning Commission, 2 Lafayette)

A general overview of the five boroughs showing the populated areas.

Map of the City of New York Showing its Political Divisions and Subdivisions  
1870

(Manual of the Corporation of the City of New York, opp. map following p. 904)  
This map is good for the shoreline, streets and blocks, up to 52nd St. on the East Side and 34th St. on the West Side of Manhattan.

Map of the Shore of Manhattan Island, Blackwell Island and the East Shore of  
Harlem River on which are laid down Bulkheads and Pierlines as established by  
the Act of the Legislature of 17 April 1856, 1857

(Vol. I, Manhattan Atlas of the New York Harbor, NYC Municipal Archives)

A good view of the shoreline with the proposed street extension.

Montresor Plan of the City of New York and its Environs to Greenwich on the  
North or Hudson River, 1766

(Stokes, Vol. V, plate 40, pp. 339-340)

This map shows the shoreline, streets, blocks, collect pond, the pond's canal,  
and Beekman's swamp in lower Manhattan.

New York (City) Maps--Map of New York City by Matthew Dripps, 1868

(NYC Public Library Map Room)

This map is good for the shoreline of Manhattan.

New York (City) Maps--Map of New York City by Matthew Dripps, 1875

(NYC Public Library Map Room)

This map is good for the shoreline of Manhattan.

New York City--City Surveyors--Map of Farms Commonly called the Blue Book by  
Otto Jackersdorf, 1815

(NYC Public Library Map Room)

A good view of the shoreline of Manhattan from 14th St. northward.

New York (City)--City Surveyors, Map of the Wharves and piers on the Hudson  
and East Rivers from the Battery to 13th St., 1855

(NYC Public Library Map Room)

A good view of the shoreline of Manhattan.

New York (City)--City Surveyors, Map of the wharves and piers from the Bat-  
tery to 61st St. on the Hudson River and from the Battery to 41st St. on the  
East River, 1860

(NYC Public Library Map Room)

A good view of the shoreline (with slight changes from 1855) of Manhattan.

New York (City) Department of Docks Map of the City of New York made under  
the direction of the Department of Docks, 1876

(NYC Public Library Map Room)

MAPS--cont'd.

Dept. of Docks (cont'd.)

A good view of the shoreline of Manhattan (up to 59th St. on the West Side, up to 51st St. on the East Side).

New York (City) Docks Department Map of the waterfront of the City of New York in sections showing existing and proposed piers and bulkheads, 1881  
(NYC Public Library Map Room)

A good view of the shoreline of Manhattan.

New York (City) Department of Docks Showing the High and Low Watermark and the Original City Grants of Land under Water made to Various Parties from 1686 to 1873

(NYC Public Library Map Room)

A good view of the shoreline, blocks and larger waterlot grants in Manhattan.

New York (City) Engineering Bureau, General Map of the City of New York showing the existing topographical and characteristic...1900

(NYC Public Library Map Room)

A little small as far as the scale is concerned, but good for the shoreline of Manhattan.

New York (City) Engineering Bureau, Sectional aerial maps of the City of New York...1924

(NYC Public Library Map Room)

An excellent view of the buildings, lots, shoreline and streets of New York City.

New York (City) Historical Maps, Early New York History, 1609

(NYC Public Library Map Room)

A Map that shows the original shoreline and native sites of Manhattan.

New York (City) Historical Maps, Early New York History, 1783

(NYC Public Library Map Room)

This map shows the original shoreline with the landfilled areas up to 1783 in Manhattan.

New York (City) Street Cleaning Department, City of New York, Boroughs of Manhattan and Bronx showing section stations, stables and dumps, 1906

(NYC Public Library Map Room)

The dumping stations were usually at the end of a street fronting either the Hudson or East Rivers. The location of these dumpsters is shown.

New York (City) Street Cleaning Department, City of New York, Boroughs of Manhattan and Bronx showing section stations, stables and dumps, 1917

The dumping stations were usually at the end of a street fronting either the Hudson or East Rivers. The location of these dumping sites is shown.

New York (City) Topographical Bureau, New York in 1800 (inset of NY), 1900

(NYC Public Library Map Room)

A good view of the shoreline of Manhattan.

MAPS--cont'd.

Nicoll's Map of the Island of Manhades (with inset of) the Towne of New York 1664-8

(Stokes, Vol. I, plate 10A-a, pp. 210-212)

This map shows the streets of lower Manhattan below Wall St. with the shoreline, collect pond and outlet also depicted.

Plan of the City of New York, by D. Longworth, 1817

(NY Historical Society)

Shows the shoreline, streets, blocks, collect pond (which appears to be filled in as it should have been by 1811), various outgoing canals and marshes, all located in Manhattan.

Plan de la Nouvelle York, 1692

(Stokes, Vol. I, plates 22-29, p. 233)

This plan shows the streets of early Manhattan and the shoreline of lower Manhattan. The collect pond is on the wrong side of Broadway, having been drawn on the site of Beekman's swamp.

A Plan of the City of New York, 1730

(Stokes, Vol. I, plate 27A, pp. 260-261)

Shows the streets, blocks and shoreline of lower Manhattan. Beekman's swamp and collect pond with its outlet into the swamp are also depicted. Issued in 1735.

A Plan of the City of New York, 1730

(Stokes, Vol. I, plate 26, pp. 251-253)

Shows the shoreline and streets of lower Manhattan. Beekman's swamp, collect pond and its outlet into the swamp are also depicted.

Plan of the City of New York about 1804

(Valentine's Manual, 1849, opposite p. 312)

This plan is good for the streets, shorelines, blocks and collect pond of Manhattan. Lower Manhattan is shown in detail.

Plan of the City of New York and its Environs, 1782

(Valentine's Manual, 1848, opposite p. 291)

This plan is good for the shoreline, streets and blocks of Manhattan. Issued in 1785.

Plan of the City of New York, 1789

(Valentine's Manual, 1850, opposite p. 372)

This plan is good for the streets, shoreline, collect pond (with canal) and marshes of lower Manhattan.

Plan of the City of New York in the Year 1735

(Stokes, Vol. I, plate 30, pp. 264-267)

Shows the streets, blocks, Beekman's swamp and collect pond (with outlet into the swamp), but the shoreline is not well-defined.

Plan of the City of New York showing the made and swampland, post 1660

MAPS--cont'd.

(Valentine's Manual, 1856, opposite p. 202)

This map shows the swamp, shoreline and collect pond (with canal) of low-Manhattan, however, it is too stylized.

Plan of the City of New York, 1791

(Valentine's Manual, 1851, opposite p. 320)

This plan shows the streets, shoreline, collect pond and swamps of lower manhattan.

Plan of the City of New York, 1808

(Valentine's Manual, 1852, opposite p. 452)

This plan is good for the shoreline, streets blocks and collect pond of Manhattan, with some lower Manhattan detail.

Plan of the City of New York, 1817

(Valentine's Manual, 1855, opposite p. 298)

This plan shows the shoreline, streets and blocks of lower Manhattan up to 30th St. on the East Side.

Plan of the City of New York, 1852

(Valentine's Manual, opposite frontspiece)

This plan is good for the street and shoreline (up to 57th St.) of Manhattan.

A Plan of the North East Environs of the City of New York, 1757

(Valentine's Manual, 1859, opposite p. 108)

This plan shows the area around the fresh water pond with canals leading out of it into the Hudson River.

Randel's MS Map of Farms, 1819-1820

(Stokes, Vol. III, plate 86, pp. 564-566)

Shows Manhattan above North St., with buildings, streets, marshes, blocks and shoreline. It is hard to read since its original size--50 x 11 feet--has been greatly reduced.

Randel Survey of the City of New York by the Commissioners Appointed by an Act of the Legislature Passed April 3, 1807, 1811

(Stokes, Vol. I, plate 79, pp. 470-473)

This map shows the shoreline, streets, swamp and streams of Manhattan.

Randel Plan of the City of New York as Laid out by the Commissioners with the Surrounding Country, 1814

(Stokes, Vol. III, plate A15, p. 874)

This map is small but it is good for the shoreline, streets and blocks of Manhattan.

Ratzer Map of the City of New York in North America, 1766-1767

(Stokes, Vol. I, plate 41, p. 341)

This map shows the shoreline, Streets, collect pond (with its canal into the Hudson) and swamps of Manhattan. Date drawn: January 12, 1776.

MAPS--cont'd.

Ratzer Plan of the City of New York, 1766-1767

(Stokes, Vol. I, plate 42, pp. 342-343)

This plan shows the streets, shoreline, marshes and collect pond (with its canals) in lower Manhattan.

Sanborn Map Company--Insurance Maps of the City of New York, Borough of Manhattan, 1977, 1978

(Volumes 1-8, 11-12)

These maps are good for the shoreline, streets, blocks, lots, building size and depth in Manhattan. Latest revisions: 1981, 1982.

Taylor-Roberts Plan--A New and Accurate Plan of the City of New York in the State of New York in North America, 1796

(Stokes, Vol. I, plate 64, p. 442)

The plan shows the Shoreline, streets, blocks, collect pond (with its drain to the Hudson River) and marshes of Manhattan.

Topographical Atlas of the City of New York including the anezed territory showing the original water courses and made land, 1874

(NY Historical Society)

This map is an update of the 1865 version. It also shows the landfill, streets, blocks, marshes and streams of Manhattan.

A Topographical Map of the North Part of New York Island, 1777

(Valentine's Manual, 1859, opposite p. 120)

This map is good for upper Manhattan with the shoreline above Harlem shown.

Viele Map--Sanitary and Topographical Map of the City and Island of New York, 1864

(Stokes, Vol. III, plate 155b, pp. 777-778)

This map shows the landfill of 1865 with the original shoreline marsh, streams, ditches and canals also drawn.

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- 1660 The Landmark Map (Costello Plan)
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- Post 1660 Plan of the City of New York showing the made and swampland
- 1664-68 Nicoll's Map or Survey, The Island of Manhades (with insert of) the Towne of New York
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- 1693 Franquelin Plan--Plan de Manathes ou Nouvelle Yorc
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- 1763 Maerfchalckm Plan--A Plan of the City of New York
- 1764 Bellin Map, City of Manhattan or New York
- 1766 Montresor Plan--A Plan of the City of New York and its Environs to Greenwich, on the North or Hudson River
- 1766-67 Ratzer Map--Plan of the City of New York in North America
- 1766-67 Ratzer Plan of the City of New York
- 1776 Battles of Fort Washington by His Majesty's Forces under the Command of Gen. Sir William Howe
- 1777 A Topographical Map of the North Part of New York Island...1777
- 1780 A Map Representing New York City
- 1782 British Headquarters MS. Map of New York and Environs

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- 1810 A Plan Representing N.Y.C.
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- 1811 The Landmark Map (Bridges Map)
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- 1814 Randel Plan--The City of New York as Laid out by the Commissioner with the Surrounding Country
- 1815 New York City--City Surveyors--Map of Farms--Commonly called the Blue Book
- 1817 Plan of the City of New York, 1817
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- 1836 Goodrich Plan, A Map of the City of New York
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- 1870 Map of the City of New York
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- 1873 New York (City) Department of Docks--Showing the High and Low Water Mark and the Original City Grants of Lands Under Water Made to Various Parties from 1686-1873
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- 1876 New York (City) Department of Docks--Map of the City of New York made under the direction of the Department of Docks
- 1878 Colton's New Map of the City and County of New York
- 1879 Bromley and Company--Atlas of the Entire City of New York Complete in one Volume
- 1879 City of New York
- 1881 New York (City) Docks Department--Map of the Waterfront of the City of New York in sections showing existing and proposed piers and bulkheads
- 1890 A Map Representing N.Y.C.
- 1900 New York (City) Engineering Bureau--General Map of the City of New York showing the existing topographical and characteristic...
- 1906 New York (City) Street Cleaning Department, City of New York, Boroughs of Manhattan and Bronx, showing sections, stables and dumps
- 1908, 1909 Bromley and Company--Atlas of the City of New York--Borough of Manhattan
- 1917 New York (City) Street Cleaning Department--City of New York, Boroughs of Manhattan and Bronx showing section stations, stables and dumps
- 1924 New York (City) Engineering Bureau--Sectional aerial maps of the City of New York
- 1930 A Map Representing N.Y.C.
- 1961 Bromley and Company--Atlas of the City of New York, Borough of Manhattan
- 1970 A Map Representing N.Y.C.
- 1981-82 Sanborn Map Company--Insurance Maps of the City of New York, Borough of Manhattan

ADDENDUM

- 1857 Maps of the Shore of Manhattan Island, Blackwell Island and the east shore of the Harlem River on which are laid down Bulkheads and Pier-lines as established by the act of the Legislature of 17 April 1856

## PRIMARY SOURCES

### DOCUMENTS

Anonymous

- 1866 Contracts For the Cleaning of the Streets and For the Removal of Offal and Night Soil From the Cities of New York and Brooklyn. (at the New York Historical Society).  
These contracts contain specifications for the collection and removal of street dirt, night soil, etc. post 1866.

Danckaerts, Jasper and Peter Sluyter

- c. 1660 Journal and Voyage to New Amsterdam, edited by Henry C. Murphy. New York: Long Island Historical Society.  
Born in 1639, Jasper Danckaerts' journal provides good primary source material for early settlement. His map shows one of the first views of the Stadt Huys block. However, his observations of the New World may be colored by his membership in the Labadist order.

Denton, Daniel

- 1973 A Brief Description of New York, Formerly Called New Netherlands. New York: Westvaco Corporation.  
Originally published in London in 1670 as the first printed description in English of "New York", i.e., the land between the older colonies of New England and Virginia, it is very short and not as complete a description as Van Der Donck. A curiosity, but not very informative except for, possibly, information on the usual methods of founding a town within the colony.

Fernow, Berthold

- 1976 Records of New Amsterdam, 1653-1674. Baltimore: Genealogical Publishing Co., Inc. (original publication date: 1897)  
Volumes 1-7 contain minutes of the common council. The council created laws, assisted the Director-General in implementing them and served as a judicial panel hearing cases in which capital punishment could be invoked, as well as reviewing appeals from the lower courts.  
The series is divided up as follows:  
Vol. 1 Ordinances, 1647-1661,  
Court Minutes, 1653-1655  
Vol. 2 Court Minutes, 1656-1658  
Vol. 3 Court Minutes, 1658-1661  
Vol. 4 Court Minutes, 1662-1663  
Vol. 5 Court Minutes, 1664-1666  
Vol. 6 Court Minutes, 1666-1673  
Vol. 7 Court Minutes, 1673-1674,  
Administrative Minutes,  
1657-1661 and Index

Vol. 7 contains a very useful index. Some scholars, though, feel that Fernow's translations are not very satisfactory. However,

DOCUMENTS--cont'd.

Fernow's work is the only English translation available for these records.

Jameson, J.F. (editor)

1909 Original Narratives of New Netherland 1609-1664. New York: Scribners.

It contains translated primary source narratives of New York and environs: Hudson, 1610; Juet, 1610; Laet, 1625-40; Wassen-aer, 1630; Rasieres, 1628; Michaelius, 1628; Megalopolensis, 1644; de Vries, 1643; Jogves, 1645; Tienhoven, 1650; Van der Donck, 1650; Bogaert, 1655; Van Ruyen, Van Cortlandt and Lawrence, 1663; Stuyvesant, 1665. There is no bibliography, but there is an index.

Knight, Sarah Kemble

1901 The Private Journal of Sarah Kemble Knight. Written in 1704. Norwich, Conn.: The Academy Press.

A journal of a trip in 1704 from Boston to New York. It gives a rare view of traveling and living conditions in Colonial America from a woman's perspective.

Nevins, Allan (editor)

1936 The Diary of Philip Hone. New York: Dodd, Mead & Co.

Hone, born in 1780, was a businessman from ages 17 to 40 and mayor from 1826-1827. He witnessed and chronicled events in New York City from 1828 to 1851.

O'Callaghan, E.B.

1846 History of New Netherland; or New York Under the Dutch, vol. 1 and 2. New York: B. Appleton and Company.

This is a well-researched and footnoted history of Dutch New York (including Albany). It provides a broad political history of New York, but it follows a strict chronology of events. He focuses on legal rulings and military events. It is indexed and the appendix contains important letters and charters.

O'Callaghan, E.B.

1850 The Documentary History of the State of New York. Albany: Weed, Parsons and Co.

There are four volumes of documents on New York State history. The documents range from census lists to Indian treaties, to statistics of revenue and imports, to reports on the condition of the state as given by the Colonial governors. All sources are pre-1800. There is no commentary, it is simply a reproduction of Colonial documents. These books are useful if you require a specific report.

O'Callaghan, E.B.

1856-1880 Documents Relative to the Colonial History of the State of New York, vol. 1-15. Albany: Weed Parsons and Co.

DOCUMENTS--cont'd.

This contains valuable primary sources including directives from various companies, company records and correspondences.

O'Callaghan, E.B.

1865 The Register of New Netherland, 1626-1674. Albany: Weed, Parson and Co.

A list of occupations with their descriptions. People's names are listed under their occupations. It is indexed and foot-noted.

Paltsits, V.H.

1910 Minutes of the Executive Council, (Lovelace Administration) 1668-1673 (vol. I and II). Albany: State published.

Contains the council minutes of Colonel Governor Francis Lovelace (September 2, 1668 to the Summer of 1673). Of particular interest is Paltsits' compilation of 98 "collateral and illustrative documents", i.e., Lovelace's public comments on the regulation of commerce, trade, roads, ferries, fences, new laws, new territories, estates, boweries, cases, controversies, shipping, customs, salaries, military affairs, Indians, Blacks, et cetera. There is no index.

Peterson, A. Everett (editor)

1653-Minutes to the Common Council, (75 volumes) New York published,  
1831 1897-1917 (other editors as well).

Compiled over several publishing episodes, this source covers the execution of municipal government function, i.e., court minutes, attestations, proofs and declarations made by individuals; contracts; ground briefs; land conveyances; mortgages; sales of vessels; et cetera.

Van der Donck, Adrian

1968 A Description of the New Netherlands, edited by Thomas F. O'Donnell. Ithaca, New York: Syracuse University Press.

The first book (1655) ever written by a New Yorker. Descriptions of the geography, natural resources, native inhabitants, crops grown by the Dutch, et cetera, are included along with an imaginary dialogue between a "Patriot" and a "New Netherlander" on the purpose of the colony, how it could benefit Amsterdam, and the ways the Colony could be made to prosper. A delightful and informative work.

Van Laer, Arnold J.F. (translator)

1974 New York Historical Manuscripts. Baltimore: Genealogical Publishing Co., Inc.

Volumes 1-4 are most relevant to our study. Van Laer, Dutch scholar and archivist, has compiled, according to various scholars, the most accurate translation of the New Amsterdam records. The volumes are as follows:

Vol. 1--Register of the Provincial Secretary, 1638-1642

DOCUMENTS--cont'd.

Vol. 2--Register for 1642-1647

Vol. 3--Register for 1648-1660

Vol. 4--Council Minutes, 1638-

1649

All volumes have an index with references to "persons, places and ships". The register contains court depositions, bonds, deeds, leases and other legal declarations. In addition, the volume on the Council Minutes contains the earliest surviving records of the Dutch Common Council. This material provides data for studying economic and social history.

## SECONDARY SOURCES

### CONTACT AND PREHISTORIC PERIOD

Bolton, Reginald Pelham

- 1909 "Indians of Washington Heights", in The Indians of Greater New York and the Lower Hudson, edited by Clark Wissler, pp. 77-109. New York: American Museum of Natural History.  
The article focuses on the sites along Seaman Ave. and in Inwood Hill. Dates of excavations, excavators' names and a general description of their finds are given.

Bolton, Reginald Pelham

- 1920 New York City in Indian Possession, Indian Notes and Monographs, vol. 2, no. 7. New York: Museum of the American Indian.  
It describes Indian land use during the contact period.

Bolton, Reginald Pelham

- 1922 Indian Paths in the Great Metropolis, Indian Notes and Monographs Misc. No. 23, edited by F.W. Hodge. New York: Museum of the American Indian.  
It is a text on Indian paths in the five boroughs and New Jersey, geared to the reader interested in Indian history. The most useful part of the book (in terms of archaeological sites) is the map section.

Bolton, Reginald Pelham

- 1924 Washington Heights, Manhattan: Its Eventful Past. New York: Schoen Printing Co.  
It is a book written for an audience interested in Washington Heights. There is general information on prehistory and protohistory.

Bolton, Reginald Pelham

- 1934 Indian Life of Long Ago in the City of New York. New York: Schoen Press.  
It is a narrative for the general public. He uses artifacts to describe an Indian way of life. His site maps for each borough provide only general (not specific) locations.

Calver, William and Bolton, Reginald

- 1950 History Written with a Pick and Shovel. New York: New York Historical Society.  
A collection of essays on specific New York sites (not Manhattan); also a discussion of specific artifacts such as toys, buttons, bale seals and Revolutionary War objects. Good for specifics only.

Ceci, Lynn

- 1977 The Effect of European Contact and Trade on the Settlement Pattern of Indians in Coastal New York, 1524-1665: the Archaeological and Documentary Evidence. Ann Arbor, Michigan: University Microfilm.

CONTACT...PERIOD--cont'd.

A volume that presents information about the changes caused by European contact with native subsistence and settlement activities. Most of the data is from Long Island, but there is some information on Manhattan, the Bronx and Staten Island.

Ceci, Lynn

1979 "Maize Cultivation in Coastal New York: the Archaeological, Agronomical and Documentary Evidence". North American Archaeologist, 1(1):45-74.

The author examines the question of the feasibility and productivity of maize in Long Island, and concludes that both intensive maize cultivation and settled village life did not exist before European contact.

Ceci, Lynn

1980 "The First Fiscal Crisis in New York". Economic Development and Cultural Change, 28(4):839-847.

An analysis of the effects of the use of wampum as currency on the economics of Colonial New Netherlands and New England.

Ceci, Lynn

1980 b "Locational Analysis of Historic Algonquian Sites in Coastal New York: A Preliminary Study". Proceedings of the Conference on Northeastern Archaeology, J. Moore, editor, University of Mass., Amherst Dept. of Anthropology Research Report 19:71-91. A condensation of the author's extensive work on the effect of European contact on native settlement patterns. She concludes that, during the contact and historic periods in Coastal New York, native settlement were located primarily with reference to the manufacture and transport of wampum.

Finch, James K.

1909 "Aboriginal Remains on Manhattan Island" in The Indians of Greater New York and the Lower Hudson, edited by Clark Wissler, pp. 65-73. New York: American Museum of Natural History. He has combined data from a number of sources to give a listing of ten sites on Manhattan. Excavators, general site locations artifact descriptions and some collection locations are given.

Finch, James K. and Church, J.A., Jr.

1902 "An Indian Village Site on Manhattan Island". Popular Science News 36:202-203.

It contains a discussion of a rock shelter and three refuse pits in the Inwood Hill area. There is no detailed description of the excavation or the site location. Instead the article provides a description and history of the artifact.

Grumet, Robert Steven

1981 Native American Place Names in New York City. New York: Museum of the City of New York.

CONTACT...PERIOD--cont'd.

A small volume whose aim is to "assemble, organize and evaluate the ethno-historic documentary evidence for the Native American occupation of New York City...(through) the medium of place names." (p. iii). There is much information on the location of late prehistoric and contact period sites.

Jacobsen, Jerome

1980 Burial Ridge: Archaeology at New York City's Largest Prehistoric Cemetery. New York: The Staten Island Institute of Arts and Sciences.

A site report which includes much useful information on the New York metropolitan area in general. There are many comments, critiques and updatings of Carlyle Smith.

Rutsch, Edward S.

1970 "An Analysis of the Lithic Materials Used in the Manufacture of Projectile Points in Coastal New York." New York State Archaeological Bulletin 49:1-12

A county-by-county analysis which concludes that trade and/or travel involving lithics occurred throughout prehistoric times.

Skinner, Alanson

1909 "Archaeology of the Coastal Algonquin" in The Indians of Greater New York and the Lower Hudson, edited by Clark Wissler, pp. 213-242.

It is a general overview of coastal archaeology. He discusses the types of material remains found in an archaeological context. He mentions some sites, but does not go into any details.

Skinner, Alanson

1909 "The Archaeology of Manhattan Island," in The Indians of Greater New York and the Lower Hudson, edited by Clark Wissler. New York: Hudson-Fulton Publications pp. 113-121.

It is a book on Indians culture, but he does mention some of the prehistoric artifacts and features uncovered by archaeology.

Skinner, Alanson

1919-  
1920 Archaeological Remains on Manhattan Island, New York City. Indian Notes and Monographs, edited by F.W. Hodge, vol. 2, New York: Museum of the American Indian.

This is the best early 20th century account of excavations in Manhattan. He gives the location of sites and features within a site, dates of fieldwork, the excavators' names, and a description of the sites' artifacts and stratigraphy.

Skinner, Alanson

1915 The Indians of Greater New York. Cedar Rapids: The Torch Press. It is written for the general public and focuses on Indian culture rather than on Indian sites and archaeology.

CONTACT...PERIOD--cont'd.

Skinner, Alanson

1909 The Indians of Manhattan Island and Vicinity. The Guide Leaflet Series No. 29, edited by Edmund Otis Harvey. New York: American Museum of Natural History.

It is an exhibition guide on the types of artifacts found in New York. The eight page reprint of Finch's "Aboriginal Remains on Manhattan Island" contains the only references (in this book) to specific sites.

Smith, Carlyle S.

1950 "The Archaeology of Coastal New York," Anthropological Papers of the American Museum of Natural History, vol. 43, Part 2.

The classic work on the subject. Unfortunately, it was written before the use of carbon-14 dating, but should be read by anybody interested in the coastal archaeology of New York (See Jacobsen for an updated interpretation).

HISTORIC PERIOD

Albion, Robert G.

1939 The Rise of New York Port (1815-1860). New York: Charles Scribners Sons.

A very useful book for this period. It puts facts and figures within a framework of political and economic history. The appendices have lists of tonnages, port expenses, population census data, numbers of ships built, etc. and there is also a forty-five page annotated bibliography of primary and secondary sources which is arranged by subject.

Archdeacon, Thomas J.

1976 New York City, 1664-1710; Conquest and Change. Ithaca, New York: Cornell University Press.

He examines "the aftermath of the English capture of New York City from the Dutch," Archdeacon analyzes colonial urban society from a community perspective. Excellent footnotes and bibliography arranged by primary and secondary sources.

Bannister, Turpin

1943 "Early Town Planning in New York State." New York History 24:185-195.

An unusual and succinct history of in-state and out-of-state city plans. It contains a discussion of change in urban settlement through time from the compact, flexible, non-geometric plan to the more ordered grid-plan of the 19th century.

Bayles, W. Harrison

1915 Old Taverns of New York. New York: Frank Allaben Genealogical Company.

An anecdotal history of taverns in the seventeenth and early eighteenth centuries.

HISTORIC PERIOD--cont'd.

teenth centuries. No references, but a fairly comprehensive index is given.

Becker, Carl L.

- 1960 The History of Political Parties in the Province of New York 1760-1776. Madison: University of Wisconsin Press.  
It was first printed in 1909 and was based on extensive research with a large bibliography, index and footnotes slightly off the track for archaeological research, but it is useful for social and commercial history.

Becker, Paul W.

- 1945 "Colonial Documents of New York." New York History 28:302-321.  
A very useful article outlining the primary and secondary source translations of the Colonial History of New York. Also helpful is the commentary on the missing and/or fragmentary documents.

Bonner, William Thompson

- 1925 New York: The World's Metropolis 1623-4-1923-4. New York: R.L. Polk & Co.  
A very informative book, but it is occasionally misleading (especially on exact dates). It has a bibliography and index, but no footnotes or textual references.

Bonomi, Patricia U.

- 1971 A Factions People. New York: Columbia University Press.  
An excellent discussion of the kaleidoscopic history of New York politics which was "shrouded in an intricate web of factional divisions" (p. 1). The study takes a topical approach, with each chapter built around a conflicted area in New York's provincial growth. It is very informative but difficult to read because of the compactness of the information. Detailed bibliography of memoirs, monographs, publications and dissertation.

Booth, Mary L.

- 1860 History of the City of New York from its Earliest Settlement to the Present Time. New York: W.R.C. Clark and Co.  
It is a general survey of the City's history starting in 1609 with Henry Hudson. The information and history of the Collect Pond (now under the Tombs) is useful in developing an overview of that area.

Bridenbaugh, Carl

- 1938 Cities in the Wilderness: The First Century of Urban Life in America; 1625-1742. New York: The Ronald Press Co.  
Useful for comparisons of the early years of New York, Boston, Newport, Philadelphia and Charleston. A work of scholarship.

Bridenbaugh, Carl

- 1955 Cities in Revolt: Urban Life in America; 1743-1776. New York: Alfred A. Knopf.

HISTORIC PERIOD--cont'd.

A continuation of the author's earlier work which can also be used independently. The book should be read by all students interested in the questions of urbanization.

Brouwer, Norman

1980 "The Ship in Our Cellar." Seaport 14(3): 20-23.

An article written for the general public on the ship uncovered in the basement of one of the Seaport buildings. For detailed information on the archaeological excavation see Roselle Henn's report.

Cohen, David Steven

1981 "How Dutch Were the Dutch of New Netherland?" New York History 62:43-60.

The author (p. 44) concludes that the traditional picture of the settlers of New Netherland as "sturdy Dutch burghers" is incorrect. Instead, "the colonists, though sturdy, were not burghers, and half of them weren't Dutch." Read this book in conjunction with Rink.

De Jong, Gerald

1975 The Dutch in America, Boston: Twayne Publishers.

A general history of Dutch immigration and activities in the United States which has an extensive bibliography, index and chapter notes. A brief history of the Netherlands is included.

Dillard, Maud Esther

1963 An Album of New Netherland. New York: Twayne Publishers

A collection of photographs of household and personal goods and houses owned by 17th century New Netherlanders. Portraits of 17th and 18th century Dutch Americans are also reproduced.

Dincauze, Dena F.

1874 "An Introduction to Archaeology in the Greater Boston Area." Archaeology of Eastern North America 2(1):39-67.

A condensed revision of a report presented to the National Science Foundation. A survey of the prehistory and archaeological potential of metropolitan Boston. From documentary research, collection inventory and field survey, settlement patterns throughout the prehistoric and early historic periods are outlined and areas of remaining sites are located. Useful as an example of what can be accomplished in an urban setting.

Duermyer, Louis (editor)

1977 The Holland Society of New York, Index to Publications 1885-January 1977. New York: Holland Society.

Arranged first by subject (ex: "Colonial Structures", "Dutch Commerce", "Houston St.", etc.), then by peoples and families. This index lists only the starting pages of articles, so it is very difficult to judge if an entry refers to a one line allusion or to a complete article.

HISTORIC PERIOD--cont'd.

Dunshee, Kenneth H.

- 1952 As You Pass By. New York: Hastings House.  
An illustrated, anecdotal history of some locations in Manhattan. Emphasis is on the 'city "through the eyes of ...the volunteer firemen" (p. 15). Most useful for its 19th century photographs with most information on areas below Greenwich Village. An index of old street names with their modern counterparts is included, but this is not cross-referenced to go from new street names to old street names.

Ernst, Robert

- 1949 Immigrant Life in New York City 1825-1863. New York: Kings Crown Press.  
This is an excellent, well-researched book with descriptions of tenement living conditions and immigrant neighborhoods.

Flick, Alexander C. (editor)

- 1962 History of the State of New York (10 volumes). Port Washington, New York: I.J. Friedman.  
The contents are arranged in chronological order. The volume titles include: Wigwam and Bowerie to Duke and King; Whig and Tory; The New State; Conquering the Wilderness; Reform and Party Battles; Wealth and Commonwealth; Empire and State; Mind and Spirit. Illustrations of parts, maps and there is also a bibliography and index.

Friedlander, Amy

- 1982 175 Water Street History. Unpublished Ms. on file at the New York City Landmarks Preservation Commission.  
An over-all history of the land use on the block with detailed information given in the appendix concerning each lot's owners, occupants and use.

Gehring, Charles (editor)

- 1978 A Guide to Dutch Manuscripts Relating to New Netherland in United States Repositories. Albany, New York: University of the State of New York, The State Education Department, New York State Library.  
A survey which gives the locations of primary material, describes these documents and collections and notes when and where copies and translations are available.

Geismar, Joan H. and Nicklas, Steven

- 1982 Archaeological Investigation of the 175 Water Street Block, New York. Unpublished Ms. on file at the N.Y.C. Landmarks Preservation Commission.  
This progress report on the Water Street Site discusses field methodology and the material uncovered during the excavation.

Gilder, Rodman

- 1936 The Battery. Boston: Houghton Mifflin Co.  
An anecdotal work full of unusual accounts, for example, a descrip-

HISTORIC PERIOD--cont'd.

tion of the lavish funeral of a nephew of Gov. Lovelace. No footnotes or bibliography, but extensive research is implied by references to various source within the text.

Goldstone, Hermon H. and Dalrymple, Martha

1974 History Preserved: A Guide to New York City Landmarks and Historic Districts. New York: Simon and Schuster.

A good example of architecturally oriented material. It contains a glossary of architectural terms and lists buildings by functional types (residential, ecclesiastical, public, commercial and utilitarian). A chronological chart at the end lists landmarked buildings by period.

Goodfriend, Joyce D.

1978 "Burghers and Blacks: the Evolution of a Slave Society in New Amsterdam." New York History, 59:125-144.

Besides considering the development of slavery under the Dutch, there are also discussions of the problems of underpopulation and lack of man-power in New Netherlands.

Goodwin, Maud Wilder, Royce, Alice Carrington and Putnam, Ruth (editors)

1877- Half Moon Series--Papers on Historic New York

1898 A series of papers in two volumes which cover such topics as "Kings College" (vol. 1, #2), "Old Wells and Water Courses of the Island of Manhattan" (vol. 1, #'s 10 and 11), "Bowling Green" (vol. 2, #5), and "Old Taverns and Posting Inns", (vol. 2, #7). The authors, for the most part, are reputable 19th century historians. Some articles are referenced, but most are not.

Gottesman, Rita Susswein

1965 "The Arts and Crafts in New York 1800-1804." New York Historical Society Collections. 82:1-537.

A valuable source for locating standing buildings and inhabitants in a desired time period or area. Contents are arranged alphabetically by craft, i.e., Art, Clocks, Coaches, Fabrics, Furniture, Ships, Smiths, Misc. Trade. Of interest is the custom of putting on ad in the paper when a merchant died, locating his house and trade. There is an index but no bibliography. Gottesman has done two other compilations of advertisements for 1726-76 and 1777-1799,

Greene, Asa

1837 A Glance at New York. New York: A. Greene.

An amusing, somewhat informative picture of New York City in 1837. It is most useful for the sections on street cleaning and procurement of water.

Greene, Evarts B. and Harrington, Virginia D.

1932 American Population Before the Federal Census of 1790. New York: Columbia University Press.

It is a compilation from various sources (Brodhead, O'Callaghan,

HISTORIC PERIOD--cont'd.

Dutch and English records) with population estimates.

Greene, Evarts B. and Morris, Richard B.

1953 A Guide to the Principal Sources for Early American History (1600-1800) in the City of New York, (2nd edition). New York: Columbia University Press.

It is a guide to manuscripts and their locations.

Harlow, Alvin F.

1931 Old Bowery Days. New York: D. Appleton and Co.

This illustrated history of the Bowery has a bibliography of primary and secondary sources. Most of the book deals with post-Revolutionary New York.

Harrington, Virginia D.

1935 The New York Merchant on the Eve of the Revolution. New York: Columbia University Press.

The book covers the period 1750-1775. The emphasis is on business and commerce, not government or society, but there is some information on the latter subjects. It is a scholarly work with an annotated bibliography of primary and secondary sources.

Harris, Wendy

1980 Historic Background Study of Block 74W, Ms on file at the New York City Landmarks Preservation Commission.

A clear, concise, well-researched lot-by-lot history of block 74W in the South Street Seaport area.

Helmstreet, Charles

1899 Nooks and Corners of Old New York. New York: Charles Scribners Sons.

A very informative, pleasant 19th-century narrative of New York City characters, standing structures, street origins and neighborhoods. There is no way, however, to ascertain accuracy. There are no footnotes or bibliography.

Henn, Roselle

1980 "The Water Street Site: Final Report on 209 Water Street." Report on file at the South Street Seaport Museum and the New York State Parks and Recreation, Division of Historic Preservation.

A report of a salvage excavation undertaken in the basement at the above address within the South Street Seaport Historic District. The most significant feature at this site was a ship found within the landfill. Information on landfill and artifacts is included.

Hill, Frederick Trevor

1908 The Story of a Street. New York: Harper and Brothers.

This narrative history of Wall Street from 1644 to 1908, is illustrated with drawings. Interesting reading, but use with caution.

HISTORIC PERIOD---cont'd.

Hoffman, Edwin D.

1949 "Bookshops of New York City, 1743-1948." New York History, 30:53-60.

A general history of the nature of the bookstore, its useful role in commercial zones, and mention of specific owners and sellers. Attention is paid to the "clusters of bookstores" which could be located through time in a variety of neighborhoods.

Holbrook, Stewart H.

1962 The Old Post Road. New York: McGraw-Hill Book Co.

A description of the route of the Boston Post Road with a brief, anecdotal collection of histories describing events and people associated with this road. Chapters 25 ("Kingsbridge to the End of the Line") and 26 ("New York City in Post Road Times, 1789") deal specifically with New York City in the late 18th and early 19th centuries.

Innes, John H.

1902 New Amsterdam and Its People. New York: Charles Scribners Sons. The author has attempted to present the actual conditions existing in the Dutch town. There is no bibliography or footnotes, but there is an index as well as maps, plans and views.

Janvier, Thomas A.

1903 Dutch Founding of New York. New York: Harpers.

A typical early 20th century, chatty, yet informative, popular history. There is no index, but there are some good illustrations and plans. It is similar to Innes' book.

Jordan, Jean P.

1977 "Women Merchants in Colonial New York." New York History, 58:412-439.

It contains information on the location of merchants (as opposed to shopkeepers), and the methods of conducting trade.

Kammen, Michael

1975 Colonial New York. New York: Scribners.

An informative background discussion of New York colonization, commerce, with a discussion of Anglo-Dutch origins; "anglicization" versus intergroup relations; utilitarian culture and uses of leisure; urbanization, expansion and empire. It has a good bibliography and index.

Kardas, Susan and Larrabee, Edward

1978 18th Century Landfill in Manhattan: An Archaeological Analysis of Test in the Schermerhorn Row Block. Draft Ms. on file at the N.Y.C. Landmarks Preservation Commission.

A site report on some limited testing done on Schermerhorn Row.

The report contains a description of the field procedure; the artifacts and a discussion of the landfilling process.

HISTORIC PERIOD--cont'd.

Kessler, Henry H. and Rachlis, Eugene

- 1959 Peter Stuyvesant and His New York. New York: Random House.  
A work which concentrates on political history and which is based on research in primary sources in New York and Amsterdam. An annotated bibliography is included.

Keirau, John

- 1971 A Natural History of New York. New York: Natural History Press.  
A popular natural history of New York with a surprising amount of information. A brief history sets the backdrop for accessible descriptions of local geology, geography, climate, water bodies, insects, fish, reptiles, mammals, birds, flowers, plants and trees. There is only a brief bibliography for apparently Keirau houses much of his own information within himself.

Kilpatrick, William H.

- 1912 Dutch Schools of New Netherland and Colonial New York, U.S. Bureau of Education Bulletin No. 12. Whole Number 483. Washington: Government Printing Office.  
There is information about social history as well as locations of early schools, and the work is based on primary and secondary sources and contains a bibliography.

Kouwenhoven, John A.

- 1953 The Columbia Historical Portrait of New York. Garden City, New York: Doubleday and Co., Inc.  
A useful collection of maps, prints and lithographs of old New York.

Lamb, Martha J.

- 1877- History of the City of New York: Its Origin, Rise and Progress.  
1880 New York: A.S. Barnes and Company.  
A competent 19th century historical account of the City's development from the 1600's through the late 1800's

Leach, Richard H.

- 1950 "Impact of Immigration, New York, 1840-1860." New York History, 31:15-31.  
A socio-historic profile of mid-nineteenth century immigration. Of interest because the focus is not on the peak periods of 1840 and 1880.

Lockwood, Charles

- 1976 Manhattan Moves Uptown. Boston: Houghton Mifflin Co.  
A compilation from 19th century sources. There are many photographs, but no footnotes or bibliography. Interesting reading, but not to be used for serious research.

Luke, Myron

- 1953 "Some Characteristics of the New York Business Community." New York History, 34(4):393-405.

HISTORIC PERIOD--cont'd.

An analysis of the areas within Manhattan where merchants had their establishments and of the business practices of these merchants.

McKay, Richard C.

1969 South Street: A Maritime History of New York. Riverside: 7 C's Press.

Originally published in 1934 and withdrawn by the publishers because of plagiarism (from Albion and others), this is nevertheless an interesting and informative work.

McKee, Samuel D.

1935 Labor in Colonial New York, 1664-1776. New York: Columbia University Press.

He discusses in detail how and why we moved, during the Colonial period, from a society which used slaves, indentured servants and apprentices, to one using free labor. The work contains footnotes, a bibliography and index.

Main, Jackson Turner

1965 The Social Structure of Revolutionary America. Princeton, New Jersey: Princeton University Press.

Main is one of the first American historians to try to objectively address issues of class conflict in Colonial America. He discusses differences in class structure of the North and South. It has good general background information with index and footnotes.

Miller, J.

1866 The 1866 Guide to New York City. New York: Schocken Reprint 1975.

It lists historic localities and has some nice plates: buildings, churches, hotels, mansions, markets, public works, parks, amusements, store, travel-ways, cemeteries. In back of the book is a mercantile directory.

Mohl, Raymond A. and Betten, Neil (editors)

1970 Urban America in Historical Perspective. New York: Weybright and Talley.

A collection of essays on urban history. Two articles deal with New York City: an article by Mohl on colonial poverty, which is aimed at proving that poverty existed and was a civic and social problem in Colonial New York; and one by Robert Ernst which describes the consequences of urbanization on the living conditions of immigrants in the mid nineteenth century. This latter article contains some statistics on the transformation of lower Manhattan from a commercial district into slums and tenements.

Monaghan, Frank and Lowenthal, Marvin

1943 This Was New York--The Nation's Capital in 1789. Garden City, New Jersey: Doubleday, Doras and Co.

An anecdotal history which is based on research in primary (newspapers, court records, letters, etc.) as well as secondary sources. It includes an annotated bibliography for each chapter, but no footnotes and only a brief index.

HISTORIC PERIOD--cont'd.

Morgan, Kate

- 1980 Documentary Source Report for the Stadt Huys Excavation Site.  
Unpublished Ms. on file at the N.Y.C. Landmarks Preservation Commission.  
A very readable history of the Stadt Huys block in the 17th and 18th centuries. The focus includes the people and events connected with the block and not simply an architectural history.

Moscow, Henry

- 1978 The Street Book. Hagstrom.  
A popular account of the origin of street names in New York City. It may be wise to cross-check for accuracy, but on the whole the book is illustrative and informative. Some good graphics and maps.

Mott, Hopper Striker

- 1908 The New York of Yesterday: A Descriptive Narrative of Old Bloomingdale.  
A work of scholarship with emphasis on the members of the Church at Hansenville. The area covered is the West Side from the 20's to the low 100's.

Norcross, Frank W.

- 1901 A History of the New York Swamp. New York: The Chiswick Press.  
A very good source for history, politics and some technology of tanners in New York City. More than 100 names and addresses of firms are identified. A chronological outline follows the movement or relocation of tanning neighborhoods through time.

Pelletreau, William S.

- 1900 Early New York Homes. New York: Francis P. Harper.  
An album of photographs and engravings with short narratives accompanying each. Interesting, but its use is limited to the somewhat scattered locations it covers and there is neither a bibliography or footnotes.

Pelletreau, William S.

- 1907 Historic Homes and Family History of New York, Four volumes. New York: Lewis Publishing Co.  
Volumes 1 and 2 are concerned with the history of people and places while volumes 3 and 4 are geneologies. Unfortunately, there is no bibliography, so accuracy must be checked with Stokes or other sources.

Pessen, Edward

- 1977 "Who Has Power in the Democratic Capitalistic Community? Reflections on Antebellum New York City." New York History, 58:129-155.  
A useful, brief, social history contained within a study of the power to make and enforce decisions.

Petersen, Arthur Everett and Edward, George William

- 1917 New York as an Eighteenth Century Municipality. New York: Longmans, Green and Co.

HISTORIC PERIOD--cont'd.

There are two sections: prior to 1731 (Petersen) and 1731-1776 (Edwards). An excellent reference with much economic and political information. A chronology of developments in municipal government and laws from 1653-1774 is included.

Petersen, A. Everett

1923 Landmarks of New York: an Historical Guide to the Metropolis.  
New York: The City History Club.

An interesting small book which could be used as a general introduction to a particular neighborhood. No references, but Petersen was a historian. Dolton and several other avocational archaeologists contributed to this book.

Pirsson, John W.

1889 Dutch Grants, Harlem Patents and Tidal Creeks. New York: L.K. Strouse and Co.

This work is comprised of three main subjects: a legal discussion of the relative merits of Dutch and English claims to New York; a detailed history of land ownership in the Harlem area; and an examination of the ownership of land bordering upon small tidal streams. Includes copies of many deeds, town of Harlem Minutes, Nicholl's two Harlem patents, the Dongan Patent and some 19th century documents relating to the opening of streets in this area.

Pomerantz, Sidney I.

1938 New York: An American City, 1783-1803, A Study of Urban Life.  
New York: Columbia University Press.

A study of urban life and urbanization after the disruptions of the Revolution. Most emphasis is on the structures and functions of municipal government, politics and economics, but there is also some, mostly indirect, social history.

Richmond, J.F.

1871 New York and Its Institutions, 1609-1871. New York: E.B. Treat.  
The institutions referred to are asylums, hospitals, missions, etc. There are also historical sections, but the work is most useful for conditions in the mid 19th century.

Riess, Warren, Smith, Sheli et al.

1982 Archaeological Investigation of the 175 Water Street Block, New York, New York: the (Ronson) Ship 1982. From an unpublished manuscript on file at the N.Y.C. Landmarks Preservation Commission.  
This process report on the excavation of the ship on the Water Street Site discusses field methodology, problems and some preliminary findings about the ship.

Riker, James

1904 Revised History of Harlem, Its Origins and Early Annals. New York: New Harlem Publishing Co.

History from a 19th-century viewpoint, with much emphasis on families. There is also information on the original lots and farms.

HISTORIC PERIOD--cont'd.

Rink, Oliver A.

- 1978 "Company Management or Private Trade: The Two Patroonship Plans for New Netherland." New York History, 59:5-26.  
A reanalysis of the Dutch West India Company's policies and problems in the middle years of the Dutch occupation, which is based upon a recently discovered copy of the patroonship plan of 1628.

Rink, Oliver A.

- 1981 "The People of New Netherland: Notes on Non-English Immigration to New York in the Seventeenth Century." New York History, 62:5-42.  
A demographic study, using primary sources in the Netherlands and the United States, which concludes that, for most of the Dutch period, New Netherlands was underpopulated with a preponderance of single males. Read in conjunction with David Cohen.

Rock, Howard B.

- 1976 "The American Revolution and the Mechanics of New York City: One Generation Later." New York History, 57:367-  
The "mechanics" referred to are artisans and tradesmen. There is some information on the neighborhoods of workingmen.

Rockman, Dianna diZerega and Rothschild, Nan A.

- 1982 "Excavating New York: the Big Apple." printed in Archaeology 33(6): 56-58.  
A discussion for the layman of the Stadt Huys excavation. The article contains very useful historical information.

Shepherd, William R.

- 1926 The Story of New Amsterdam. New York: Alfred A. Knopf.  
Reprinted from the Year Book for 1917 of the Holland Society. A fairly general, narrative history of the colony. Impressionistic rather than documentary, with a total lack of footnotes, references or bibliography. Possibly most useful for its descriptions of the politics and organization of the Dutch West India Company.

Shumway, Floyd M.

- 1975 Seaport City--New York in 1775. New York: South Street Seaport Museum.  
A short, well-researched monograph which includes many maps from Stokes, the New York Public Library and the Long Island Historical Society. It endeavors to present a detailed picture of pre-Revolutionary New York City.

Singleton, Esther

- 1909 Dutch New York. New York: Dodd, Mead and Co.  
A good source of information for social history and customs of the Dutch in the seventeenth century. However, it is seriously weakened by the lack of bibliographic references, although the author seems to have used wills, probate inventories, court records, etc. Use with caution and verify facts with other sources.

HISTORIC PERIOD--cont'd.

Singleton, Esther

1969 Social New York Under the Georges, 1714-1776. Port Washington: Ira J. Friedman, Inc.

Originally published in 1902, this work is useful for an over view of the period. There is some specific information on residential neighborhoods and many pictures of the material culture of the elite.

Still, Bayard

1956 Mirror for Gotham: New York as Seen by Contemporaries from Dutch Days to the Present. New York: New York University Press.

A pleasant book, written by a historian, which concentrates more on the physical appearance of, and daily events in, the city rather than on its political history. Well-researched with extensive references.

Stokes, I.N. Phelps

1909 The Iconography of Manhattan Island. New York: Robert H. Dodd. The definitive history of New York embodying commentary, secondary and primary sources, illustrations, maps, reference guides, indexes and bibliography. A very important work. For site-specific projects, other sources should be compared against Stokes for accurate facts, dates and measures. On the whole, the scope and amount of information about Manhattan is unparalleled.

Strong, George Templeton

1952 The Diary of George Templeton Strong. New York: The MacMillan Co. A diary which covers the years 1835 to 1875. A man of intelligence and perception, Strong notes and comments upon political and social events of his days in New York City and the U.S. in general.

Valentine, D.T.

1847- Manual of the Corporation of the City of New York. New York.

1866 An almanac of information concerning the organization of the City and the more important positions of the many departments. Every year a new volume was issued. Historical information is occasionally included as well as miscellaneous statistics about various city institutions. The accuracy of some of Valentine's flowing interpretations is sometimes questioned.

Valentine, David T.

1853 History of the City of New York. New York: G.P. Putnam and Co. A good source for information on the physical development of the early city and its condition in 1664 in particular. There are maps of early grants, lists of streets with inhabitants in 1664, brief biographies, etc. However, later researchers have found him to be unreliable in his speculations. Therefore, use with caution and verify facts whenever possible.

HISTORIC PERIOD--cont'd.

Van Renselaer, Mrs John King

- 1898 The Goede Vrouwen of Mana-ha-ta, 1609-1706. New York: Scribners.  
"Written between the lines of contemporaneous history", this is an interesting popular history of the women in New Amsterdam and New Orange, and the active roles they played in the development of city and culture. It has an index and a table of family trees (mostly Dutch) and illustrations. There is no bibliography.

Van der Zee, Henri and Barbara

- 1978 A Sweet and Alien Land: The Story of Dutch New York. New York: The Viking Press.  
An entertaining and generally accurate popular account of New Netherlands.

Versteeg, Dingman (editor)

- 1911- "The New Netherland Register;" Numbers 1-8. New York: Dingman Versteeg.  
1913  
Eight volumes published over two years, containing a total of 136 pages. The articles are anecdotal with no references. The article "The Government of New Netherlands," is a simplified synopsis of the relationship of the Dutch government, the New Netherlands' government and the Dutch West India Company.

Wabeke, Bertus Harry

- 1944 Dutch Emigration to North America, No. 10--Booklets of the Netherlands Information Bureau. New York: The Netherlands Information Bureau.  
Most useful for a clear and readable account of the colonization policies of the Dutch West India Company and the patroons.

Waite, John G. and Huey, Paul R.

- 1972 A Compilation of Historical and Architectural Data on the New York State Maritime Museum Block in New York City. New York: New York State Historic Trust.  
A history of Beekman Slip from its creation to its filling in. A history of the Schermerhorn Row Block that outlines each building's background and its use through time.

Wakeman, Abram

- 1914 History and Reminiscences of Lower Wall Street and Vicinity. New York: The Spice Mill Publishing Company.  
A brief history of Lower Manhattan in the Colonial and Revolutionary periods, as well as a discussion of the 19th century Coffee Business: Roasting plants, trade, exchange and organizations. Unusual because of the perspective on coffee manufacture and trade.

Walton, Frank L.

- 1953 Tomahawks to Textiles. New York: Appleton-Century-Crofts, Inc.  
A biography of the textile industry in New York and its origin on Worth Street. Interesting maps and a list of firms. Walton's early history of New York is questionable particularly with regard to topography and the patronizing of the Indian inhabitants. There is no index or bibliography.

HISTORIC PERIOD--cont'd.

Weber, Adna Ferrin

- 1899 The Growth of Cities in the Nineteenth Century: A Study in Statistics. New York: The MacMillan Co.

Although the area covered is the whole world, there is some useful demographic information for New York City.

Wilson, James G.

- 1892 The Memorial History of the City of New York. New York Historical Company.

Encyclopedic work following growth and change in New York City. Each chapter is written by a different author and divided and arranged chronologically by political figures, eras, wars and major industrial developments. Each volume ends with a lengthy comment on constitutional and legal history in the 17th, 18th and 19th centuries by R.L. Fowler. There is an index but no bibliography.

Wilson, Rufus Rockwell

- 1909 New York: Old and New--Its Story, Streets and Landmarks, (two volumes). Philadelphia: J.B. Lippincott.

Interesting, but use with caution.

WPA

- 1941 Maritime History of New York. New York: Doubleday, Doran and Company, Inc.

Straight-forward and clear chronological history of New York's ports and ships. Good for locating general mercantile areas and market and tavern life. A good bibliography.