

# Origins and Survival of Netherlandic Building Traditions in North America

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## INTRODUCTION

Utilizing surviving seventeenth-century Dutch colonial building contracts from North America this paper examines construction as an index to national identity in a changing colonial environment.

In 1621, the Dutch West India Company (WIC) received its charter from the States General for parts of West Africa, South America, the Caribbean, and a section of North America, to interfere with Spanish interests. It followed in the footsteps of the highly successful Dutch East India Company (VOC), which had received its charter in 1602. Colonization remained a byproduct of this charter but in 1624, the WIC did make its first serious attempts to settle its North American territory, known as New Netherland, to establish the permanent fur trade with the American Indians of the region (**fig.1**).

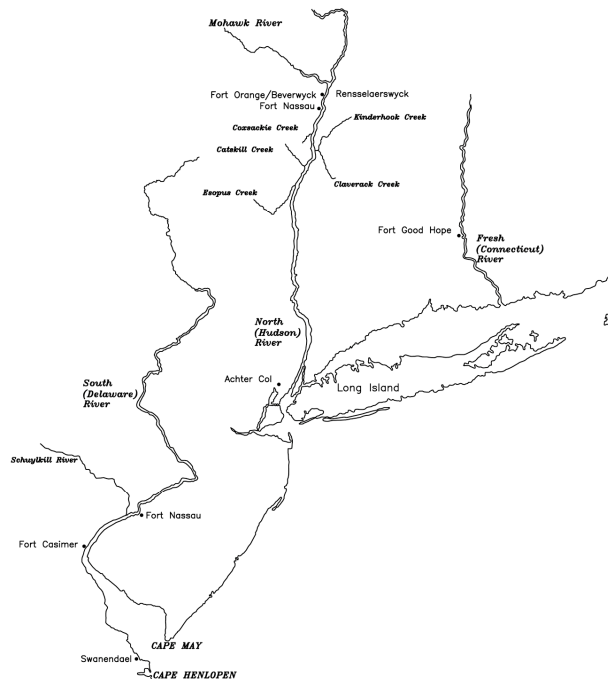


Figure 1. Map of New Netherland, 1609-1664

The forty years of Dutch rule of New Netherland ended with the surrender of the colony to the English on September 8, 1664. Regardless of the fact that the English took control of the territory, signs of Netherlandic culture lasted well into the eighteenth century. Its most visible manifestation is the so-called Dutch Colonial architecture.



Figure 2 Four examples of Dutch Colonial Architecture. Top left to bottom right: Zabriskie, Van Alen, Van Schaick, and Wyckoff houses (Image in lower left corner courtesy Historic American Building Survey)

Figure 2 shows just four examples of buildings associated with the Dutch Colonial style. The variety of building types labeled Dutch Colonial in North America is extensive. Builders utilized, brick, stone, and frame as building materials, and both gable and gambrel roofs as roof types—both roof types come with or without so-called flared eaves. Most of these buildings date from the eighteenth century and survive in rural areas along the Hudson and Mohawk Valleys, from upstate New York to northern New Jersey. Few of these buildings appear to have a clear connection with either the architecture of New Netherland, or with that of the Netherlands.

## THE ARCHITECTURE OF NEW NETHERLAND

Unfortunately, there are no known surviving buildings from the initial period of settlement (circa 1624-1664), but we can learn a great deal about the architecture from the surviving colonial manuscripts. As the Dutch handed over control to the English in 1664, they also handed over 12 000 legal documents pertaining to the administration of the colony. Miraculously, most of these

documents have survived almost three and a half centuries, enduring wars, and fire and water damage (Gehring 1988). Written in seventeenth-century Dutch these documents long remained inaccessible to English-speaking scholars. The first efforts to translate these documents started in the middle of the nineteenth century. Dr. Charles Gehring, director of the New Netherland Project, in Albany, New York, has continued this task since 1974. Among these records are various documents that refer to the built environment in the colony including a substantial number of building contracts (fig.3).

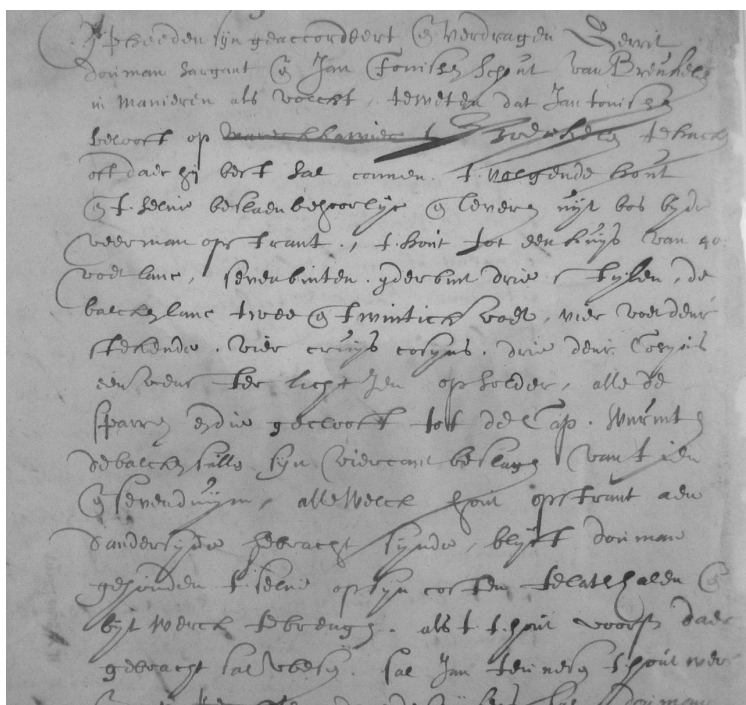


Figure 3. Section of the building contract between Jan Teunissen and Gerrit Douman, November 22, 1646 (New York State Library)

Both in format and in language the surviving colonial contracts resemble those from the seventeenth-century Netherlands. These contracts form the preconditions for the architecture of New Netherland, and are its most direct link with the architecture of the Netherlands. The contracts specified the construction of both dwelling houses and housebarns. The housebarn was a common multipurpose agricultural building in the Netherlands, providing shelter for the farmer and his family, his farmhands, and his livestock, and storage room for his crops. Among the register of the provincial secretary and that of a public notary in New Amsterdam are eighteen building contracts that give detailed descriptions of several dwelling houses and a few housebarns. Combined with other occasional entries, and various laws and ordinances referring to building practices and

regulations, this information forms an invaluable starting point for reconstructing the built environment of New Netherland.

The tripartite structure of the contracts identified the parties involved, the particulars of the building, and the payment. The second section not only provides us with crucial information about dimensions and framing, but also about exterior and interior finishes. It is here that we find clear references to the intended buildings. The terminology used can give an indication of the architecture, which was lost over the following centuries. It is, furthermore, this terminology, which provides the most unambiguous link between the architecture of New Netherland and that of the Netherlands. One of the contracts can serve as an example for the reconstruction of a dwelling that no longer survives and give an impression of the architecture of the early settlers.

### **A building contract from 1661**

On January 31, 1661, Thomas Jansen Mingael, a house carpenter in New Amsterdam, agreed to build a dwelling measuring thirty feet long and eighteen feet wide for Jonas Bartelsen (O'Callaghan 1978, pp. 4-5). The structural framework of the house had to consist of seven bents. The bent system played a pivotal role in Netherlandic framing. Each bent consists of two principal posts connected by a girder, or tie beam. A brace, or *korbeel*, as the Dutch know them, reinforces the joint between each of the principal posts and the girder, to prevent raking. The Dutch utilized two different types of bents (Berends 1996). One created a  $\Pi$ -shape and the other an H-shape. To create the a  $\Pi$ -shape bent the carpenter would either simply place a girder on top of the posts—called a *dekbalkgebint*—or trench the girder into the top of the posts—called a *kopbalkgebint* (**fig.4**).

To create the second type, the so-called H-bent, the carpenter would place a girder in between the posts, several feet down from the top. The quicker solution was to mortise and tenon the girder into the principal posts—called a *tussenbalkgebint*. The second and more labor-intensive type is the so-called anchor-beam bent—or *ankerbalkgebint*. Here the carpenter would tenon the girder through the principal posts creating protruding tongues at either side (**fig.5**).

Carpenters used the  $\Pi$  – shaped bents for multi-story buildings, whereas they used the H-bents for single story buildings. From the technical information in the contracts, and other information about the architecture, we can deduce that the carpenters in New Netherland used both types of bents.

The braces had both a structural and an aesthetic function in Netherlandic architecture. The aesthetic function was similar to that of the summer beam in Anglo-American colonial architecture with its variety of decorative chamfers and chamfer stops. The braces remained visible within the living spaces of the house and in the Netherlands carpenters often shaped them in an S-curve (*zwanenhals korbeel*) or added a carved corbel piece (*sleutelstuk*) to ornament them (**fig.6**).



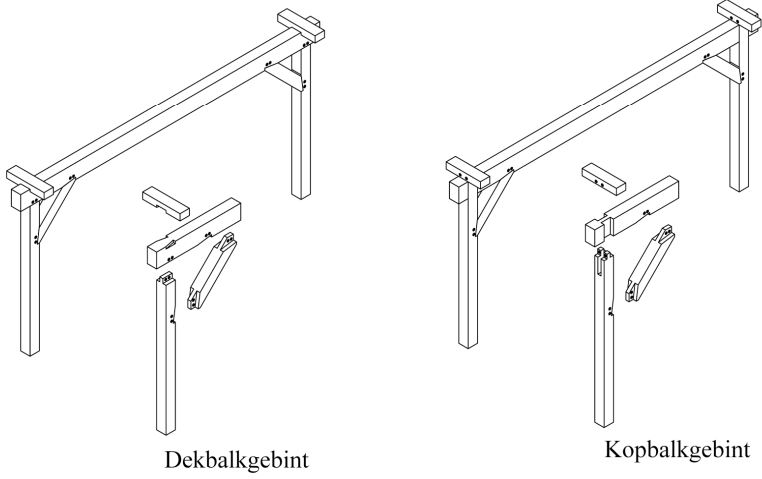


Figure 4. *Dekbalkgebint* and *Kopbalkgebint* ([]-shaped bents)

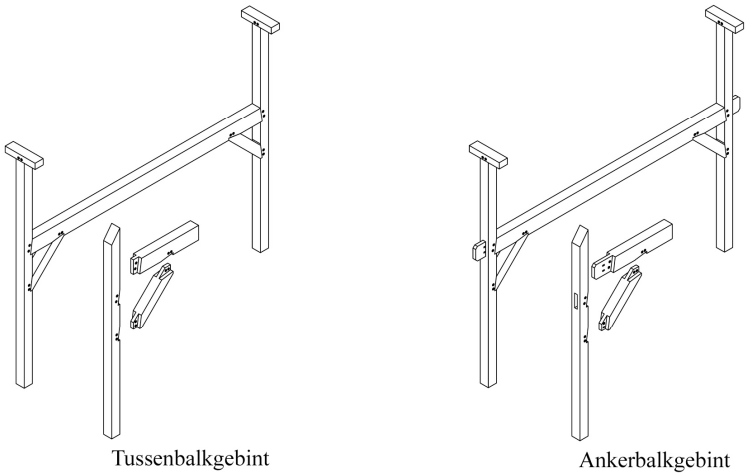


Figure 5. *Tussenbalkgebint* and *Ankerbalkgebint* (H-shaped bents)



Figure 6. Left a brace with a carved corbel piece (*sleutelstuk*), right an S-curved brace (*zwanenhals korbeel*)

In the case of Jonas Bartelsen’s house the principal posts were to be thirteen feet long with the girder placed two feet down from the top creating an H-bent. The contract called for seven bents, only three of which required braces (**fig.7**).

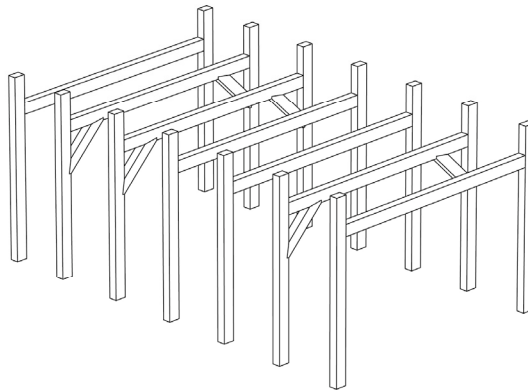


Figure 7. Isometric drawing of the “skeleton” of Jonas Bartelsen’s dwelling

The contract also called for several typical Netherlandic window types in the front and back gables. Mingael had to copy the façade of Gerrit Hendrix’s house, the weigh-house master of New Amsterdam. He had to make a three-light with a crossbar frame (*een drie light met een*

*kruijskosijn*), a doorframe, and a crossbar frame in the upper gable end. For the rear, the contract specified a crossbar frame and a doorframe in the lower elevation and a shuttered frame (*venster*) in the upper gable end (**fig.8**).

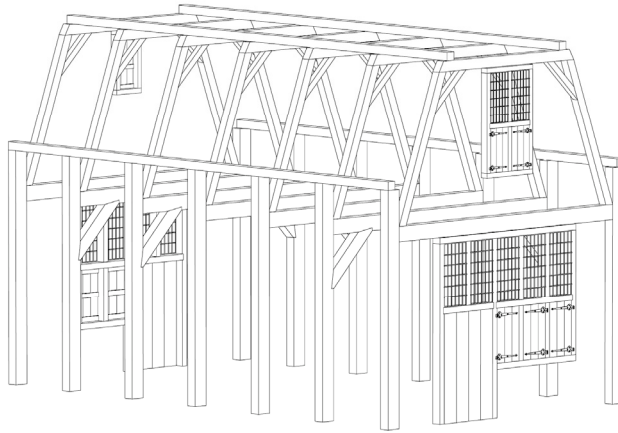


Figure 8. Isometric reconstruction of Jonas Bartelsen’s dwelling showing location of windows, and possible roof truss (*fliergebint*)

Other contracts consistently mention one of three Netherlandic window types; the *kruiskozijn*, *bolkozijn*, and *kloosterkozijn* (**fig.9**).

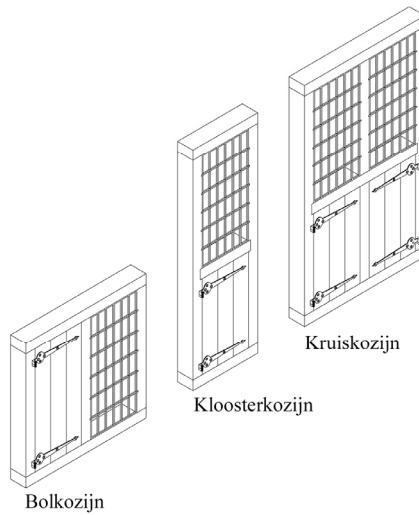


Figure 9. *Bolkozijn*, *Kloosterkozijn*, *Kruiskozijn*

The modular nature of these of windows allowed carpenters to increase or decrease them in size and number to fit any required location.

Mingael was also required to cover the exterior walls and the roof with planks and clapboards. The combination of clapboard siding, lath and plaster chimneys, and thatched roofs, raised serious concerns with Director General Petrus Stuyvesant and Council of New Netherland about conflagrations. The Council tried to ban all wooden chimneys from New Amsterdam, starting as early as 1648. Penalties were introduced of up to 100 guilders, to phase them out of the city (O'Callaghan 1868, pp. 82-83). By the seventeenth century most Dutch towns already had strict fire ordinances in place, prohibiting the use of wooden chimneys, clapboard siding, and thatched roofs (Meischke 1975). Therefore, the use of these materials in the Netherlands had become rare, being replaced by brick and pantiles. An exception is the *Zaan* region north of Amsterdam where numerous frame dwelling houses survive from the seventeenth and eighteenth centuries that still use clapboard as siding material (**fig.10**).



Figure 10. Interior view (left) and exterior view (right) of clapboard siding on buildings in the *Zaan* region

The contracts do not spell out all the detail of every building, but often only list the minimum requirements. Scholars have studied the use of these so-called restricted and elaborate codes in building contracts in other Colonial American settings (Bishir 1991). Both parties involved would be well aware of the essentials based on shared traditions, and the contract would only list the essentials of the building with words such as, “sufficient,” “necessary,” “good,” and “neat,” ensuring the proper workmanship (Bishir 1991, p. 49). The principle works in any cultural setting,

in this case both in the Netherlands and in New Netherland. The fact that a patron requested certain elements ensured that the building would meet his requirements. This did not necessarily mean that elements that the contract did not specifically mention were not required. In certain cases, specific features and techniques were part of a shared “vocabulary” and did not need to be spelled out, and in other cases, they may have been part of general public ordinances, such as the ones stipulating the use of specific materials to prevent fires. The written contract was not only beneficial to the client, who would be guaranteed that his requests were fulfilled, but also for the contractor(s) taking on the work since it gave the certainty that the client could no longer change his mind while the work was in progress (Meischke 1993, p. 33).

### Comparative analysis between contracts from New Netherland and the Netherlands

A close comparative analysis of the 18 building contracts from New Netherland, and 24 contracts from the Netherlands for the period 1611 to 1697, bring to light some interesting similarities and differences. Out of 45 variables examined, dealing with both structural and spatial information, 39 were present on both continents (**table 1**).

Table 1. Sample of 11 out of 45 variables contained in 17th-century building contracts from New Netherland and the Netherlands

	New Netherland (18=100%)	Netherlands (24=100%)	Total (42=100%)
Number of bents	50% (9)	54.2% (13)	52.4% (22)
Number of braces	38.9% (7)	50% (12)	45.2% (19)
Treatment of timbers	72.2% (13)	12.5% (3)	38.1% (16)
Type of joints	0% (0)	37.5% (9)	21.4% (9)
Height of the floors	55.6% (10)	50% (12)	52.4% (22)
Window types	83.3% (15)	95.8% (23)	90.5% (38)
<i>Voorhuis</i>	22.2% (4)	50% (12)	38.1% (16)
<i>Middelhuis</i>	0% (0)	12.5% (3)	7.1% (3)
<i>Achterhuis</i>	0% (0)	37.5% (9)	21.4% (9)
Reference	16.7% (3)	29.2% (7)	23.8% (10)
Drawing	0% (0)	50% (12)	28.6% (12)

Of the six variables that they do not have in common four relate to the specific nomenclature of spaces within the house. Two are more important as far as determining possible structural differences between the architecture of New Netherland and the Netherlands. None of the contracts from New Netherland referred to a specific type of joint the carpenter needed to make (e.g. dovetail, mortise tenon and peg, scarf joint, or lap joint), whereas 37.5% from the Netherlands did. Perhaps the patrons in New Netherland assumed that the type of joint itself was less important as long as the building was built properly. A second variable that does not occur in the contracts from New

Netherland is the reference to a construction drawing. The additions of measured drawings to the written contract had an enormous impact on the building trade in the Netherlands during the seventeenth century. It allowed architectural trends to travel across much larger regions than previously and influence local building traditions. Builders would use these drawings at the construction site and this would expose everybody involved with the construction to current trends. (Meischke 1993, p. 65).

The reference to the dimensions of the timbers and their treatment perhaps also sheds light on two important differences between New Netherland and the Netherlands. Namely, the availability of certain building materials and the existence of a supply system for prefabricated timber. New Netherland had an abundance of virgin forests, probably not seen in the Netherlands for centuries. The chances therefore of patron receiving an undersized piece of timber were probably slim. In the Netherlands, however, the building trade had to import all its timber from abroad at an added cost. The patron would therefore want to be assured that he would get his money's worth and not only specifically stated the dimensions of the timber and the type of wood, but also often their country of origins. Less than 28%, then, of the contracts from New Netherland mention the dimension of the timber, whereas 79% of the contracts from the Netherlands did. The reverse side of this coin was that the availability of prefabricated timber was much larger in the Netherlands than in New Netherland. Contractors could go to wholesalers to buy their materials, or a patron could purchase it for them. In New Netherland on the other hand, this organized system did not exist. The WIC and the patroon of Rensselaerswyck had several sawmills built to deal with the supply of boards, but they do not seem to have dealt with larger construction timbers. The chances then of a patron getting a "rough" piece of timber were therefore perhaps much larger in New Netherland than in the Netherlands. Thus, we see that 72% of the contracts from New Netherland specify the treatment of the timbers, for instance hewn, squared, or planed, whereas only 12.5% from the Netherlands do.

Taking into account regional differences and features specifically related to certain building types (i.e. differences between dwelling houses and housebarns) the contracts from New Netherland and the Netherlands have three key features in common. First, the reference to a bent system with braces. Second, specifying high ceilings (commonly between 8 and 12 feet). Third, the typical Netherlandic window types.

Putting all the information together from the contract between Mingael and Bartelsen, combined with other typical features mentioned in the other surviving contracts, gives us a one-and-half story frame dwelling, with a two-room plan, a central chimney, and a steeply pitched roof (**fig.11**).

This type of dwelling is not only very similar to the frame architecture of the *Zaan* region, but to that depicted on early seventeenth-century views of the skyline of New Amsterdam (Cohen 1997, frontispiece). However, there needs to be a word of caution in interpreting these images as completely factual and one needs to be aware of who created them and for which purpose. One also

needs to be cautious in assuming that these contracts would have produced Netherlandic buildings in the same way a contract in the Netherlands would have produced a Netherlandic building, that is consistent with the terms of the contract. The assumption that these colonial contracts would produce a type of architecture identical to that of the *Zaan* region not only ignores the effects of regional traditions present among the Dutch population of New Netherland, but more important the impact of a diverse ethnic population, the availability of different building materials, and a smaller number of skilled artisans. Scholars have determined that little more than fifty percent of the population of New Netherland actually originated from the Dutch Republic (Cohen 1992, pp.16-18).

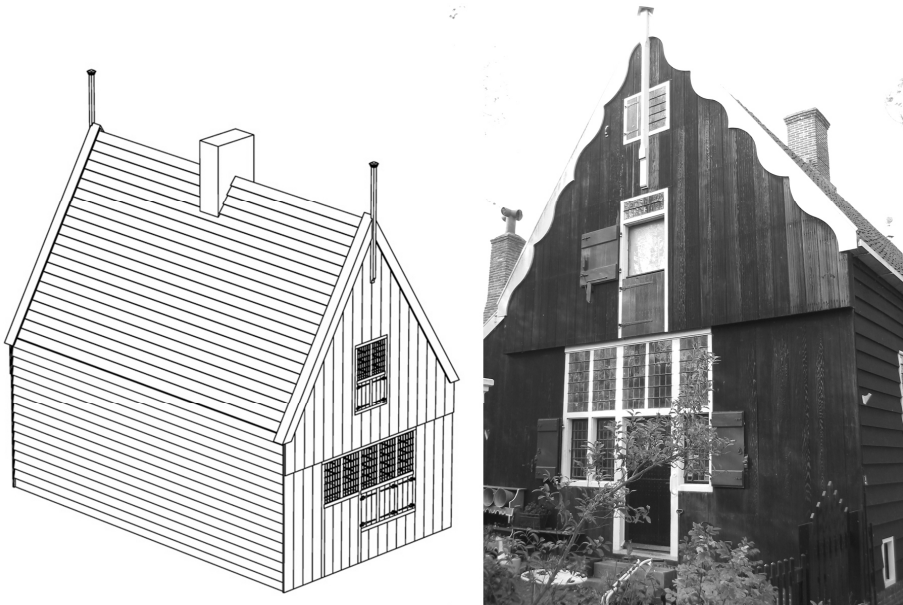


Figure 11. Reconstruction of the 1661 contract (left). Frame dwelling at the *Zaanse Schans*, c.1625 (right)

### **Towards an ‘Americanization’ of the architecture of New Netherland**

Different building materials, the need for simplification, and a culturally heterogeneous society undoubtedly effected the built environment of New Netherland. The availability of different building materials affected certain features of the architecture. Due to the early shortage of brick and pantiles, clapboards became the initial material of choice for both the siding of walls and roof cover. Some settlers had sufficient funds to import these from the Netherlands, in the early stages of the colony, to protect their property against fire. The initial shortage of skilled artisans would also have had an impact upon the architecture. Having fewer skilled carpenters, for instance, may have necessitated a simplification of traditional framing techniques (Upton 1981). Carpenters could stylize certain features of a building in effort to save on labor and expedite construction. Based upon his research in New England, Abbott Lowell Cummings determined that the early settlers of

Massachusetts Bay Colony created an architectural style closely related to the one they were accustomed to back in old England (1979, p.3). However, the mix of settlers from various geographic regions within England and the availability of different natural resources did leave an imprint upon the early architecture, but in essence the architecture remained English. Cummings concluded that these factors led to a process of architectural Americanization, but the exact speed of this process and the full extent of its force are unknown (1979, p. 202). The presence of settlers from not only different provinces with the Netherlands, but also of different nationalities, may then have had the greatest impact upon the early development of the architecture in New Netherland. The surviving documents from New Netherland list several carpenters of non-Dutch origins. The contracts mention at least three English carpenters (Laer 1974b, 15 and Laer 1974a, pp.338-339), and one German (Laer 1974a, pp. 217-218). Having an English or a German carpenter execute a Netherlandic building contract may have led to an early cultural blending of the architecture, or creolization (Buisseret 2000). Even carpenters from different regions within the Netherlands would have introduced their own traditional approaches, similar to what Cummings encountered in New England. Carpenters with non-Dutch backgrounds could have introduced features that were not directly Dutch, but which were acceptable to their clients. However, we must also recognize that cultural patterns often extend beyond political or linguistic borders. Parts of what are now the Netherlands, Belgium, and Germany share similar architectural traditions. In addition, during the sixteenth and seventeenth-centuries a lively cultural and economic interaction was taking place between these regions at times. In some cases, therefore, being a German carpenter did not necessarily mean having a completely different architectural vocabulary. The carpenter could have been familiar with the wishes and desires of his clients. In the case of “architectural illiteracy” on the part of a non-Dutch carpenter the contract could also refer to an existing example to follow to achieve the desired results. Even before 1664, then, the architecture could have diverted from the traditional paths seen in the Netherlands as far as the execution of the written contract was concerned. Therefore, to assume that the architecture of New Netherland implicitly mirrored the seventeenth-century architecture of the Netherlands is oversimplifying the issue. Two questions, however, remain, how Netherlandic was the architecture of New Netherland, and did any of it survive?

#### **THE ARCHITECTURE AFTER 1664**

The geographer Fred Kniffen suggested that with the arrival of the English the Dutch contributions to the material culture in the region were “lost in a sea of alien culture” (1965, pp. 557-558). Based on the surviving buildings this appears to be a valid statement. However, closer examinations of seventeenth- and eighteenth-century references to the built environment and eighteenth-century buildings from the region paint a different picture.

That New York City was still very Netherlandic by the end of the seventeenth century becomes evident from a contemporary travel account. In 1697, Dr. Benjamin Bullivant traveled from Boston



to New York City (Andrews 1956). According to Bullivant, the “ancient buildings were very meane” but the newer building stock had much going for itself:

[...] most of theyr new buildings are magnificent enough, y<sup>e</sup> fronts of red and yallow (or flanders) brick Lookeing very prettily, some of them are 6 stories high & built with a Gable end to y<sup>e</sup> front & so by Consequence make Very narrow garratts. the 3<sup>d</sup> story is usually a warehouse, and over it a Crane for hawleing up goods. the Lower part is comonly Very substantiall & neate. The Sealeing usually of well smoothed boards, betwixt Joyces as large as our Brest sumers & kept so cleane by frequent washing with soape & sand, that indeed makes the Roome very pleasant. The windows are high & large, as are the stories, ten or 12 foot y<sup>e</sup> first the casements of wood at bottom windows, and without, strong and thick shutters. The chimneys without Jawmes, hanging like the Topp of a pulpit, but usually a good rich fringed callico, or other stuffe halfe a yard deep at y<sup>e</sup> edges, with Dutch tyles on each side of the fire place, carried very High They also tyle theyr sides of ye staircase, and bottom of windows ... most bricked houses have y<sup>e</sup> date of the yeare on them, contrived of Iron cramps to hold in y<sup>e</sup> timber to the walls.

(Andrews 1956, p. 65)

What Bullivant described was a traditional type of Netherlandic architecture; tall and narrow buildings with brick façades and the gable end facing the street, with living quarters on the lower floors and storage capacity above. Ten to twelve feet high ceilings on the first floor were the norm, and combined with tall windows, this created light and airy living spaces and not the type of dark and low-ceilinged homes so often implied for the dwellings of the early settlers. The type of window Bullivant described with its shutters at the bottom half and leaded-glass at the top is most likely the *kruiskozijn*. He also commented on the jambless fireplaces and the use of tiles, again features associated with a Netherlandic heritage. Finally, Bullivant described the wall anchors that had both a functional and decorative purpose, securing the façade to framework of the house and in some cases dating the building. Bullivant not only gave us a perfect description of a seventeenth-century Netherlandic dwelling house in New York City, but also provided us with proof that the cultural patterns established by the initial settlers remained vibrant long after the English conquest. Wilbur Zelinsky’s ‘Doctrine of First Effective Settlement’ supports this assertion (1973). According to Zelinsky “the first group able to effect a viable, self-perpetuating society” in an empty territory “are of crucial significance for the later social and cultural geography of the area, no matter how tiny the initial band of settlers may have been.” Furthermore, “in terms of lasting impact, the activities of a few hundred, or even a few score, initial colonizers can mean much more for the cultural geography of a place than the contributions of tens of thousands of new immigrants a few generations later” (Zelinsky 1973, pp.13-14). Despite its short existence under WIC rule, New Netherland had become a viable society. The travel accounts of Alexander Hamilton (Hamilton 1907) and Peter Kalm (Kalm 1966) from the 1740s and 1750s further affirm the presence of the lasting cultural impact these initial European settlers had on the region.

Returning then to the buildings associated with the Dutch Colonial style in North America, do any of these show signs of the architecture as referenced in the surviving building contracts from the WIC period? Architecture is not static and evolves regularly. During the seventeenth century, Dutch architecture in the Netherlands for instance was moving away from the traditional stepped gable ends in favor of more classically inspired façades. Windows changed from casement to sash and load-bearing walls replaced the structural bent system. The architecture in the former colony of New Netherland would not have remained static either. It would have followed its own evolutionary pattern after the separation from the Netherlands in 1664. Unlike the Netherlands, however, it not only had to deal with voluntary changes as introduced by new architectural trends, but also perhaps with more involuntary changes as the result of becoming a cultural minority. The latter may have inspired its builders to retain certain features in order to hold on to part of their cultural heritage.

What effect then did the English conquest have on the architectural traditions of the early settlers? Scholars of Pennsylvania German material culture have studied the effects of a dominant Anglo-American culture upon German settlers (Swank 1983 and Lanier 2005). Scholars refer to this process as acculturation and define it as a one-directional cultural influence of a dominant culture upon a weaker culture (Chappell 1986). Some scholars have suggested that one of the ways in which Pennsylvania Germans adapted to the cultural mainstream was through a controlled acculturation, which meant a gradual move towards assimilation (Swank 1983). Others have been critical of a linear approach, which does not take into account the “reciprocal nature of the interaction” between two or more cultures (Lanier 2005, p.35). Most scholars agree that for the architecture this process took place from the outside in. Whereas the exterior of a building would reflect mainstream English architectural sensibilities in, for instance, the design of the façade, the interior initially remained thoroughly German in its spatial arrangements and furnishings (Chappell 1986 and Lanier 2005). It is likely that the settlers of New Netherland would have faced similar issues of adapting to a new cultural mainstream after the English conquest.

Upon closer inspection then, it is possible to find elements among the eighteenth-century colonial buildings in the Hudson Valley and northern New Jersey that have connections with the architecture of New Netherland. Most of these buildings survive near Albany, New York, and date to the first half of the eighteenth century (**fig.12**).

This may not be directly apparent on the exterior, but on the interior, they retained a structural bent system (**fig.13**). As Henry Glassie put it in his study of folk building in the Delaware Valley, owners are more likely to change the skin of their houses than the spaces in which they exist (1986, p. 407).

In other aspects they may have opted for less obvious displays of their New Netherlandic heritage. One noticeable difference was the removal of the main entry from the gable end to the long elevation. This allowed for the adoption of a more classically balanced façade with either a central

doorway, flanked by windows, or a symmetrical pattern with two doors and multiple windows. Surviving drawings of seventeenth-century buildings also indicate that the initial settlers and their descendants had used stepped gable ends, but this feature also disappeared by the beginning of the eighteenth century. They replaced it with a plainer brick spout gable that retained a Netherlandic feature in the form of brick tumbling, called *vlechtingen* in Dutch (**fig.14**).



Figure 12. Surviving New Netherland Buildings. Top left to bottom right: Van Alen, Breese, Yates, and Bronck houses (Top right and bottom right courtesy Historic American Building Survey)

What this paper has shown is that the arrival of the English did not mean the immediate end of all Netherlandic culture in North America. The material culture of the early settlers was eventually absorbed into the Anglo-American cultural mainstream, but this did not occur until well into the eighteenth century. Before that happened the settlers had been able to establish themselves in the region long enough to create their own cultural patterns. The patterns they created were rooted in Netherlandic traditions but also shaped by the new environment. As time wore on and generations passed, they gradually assimilated into the new cultural mainstream introduced by the English and a steady influx of new settlers. This acculturation took place gradually from the outside in with at the core of the building the structural bent system surviving the longest (Prudon 1986, p. 204). On the exterior, these buildings became English, but at their heart, they remained Netherlandic, holding on to an architectural heritage handed down through several generations and signifying their shared cultural heritage.



Figure 13. Exposed brace (*korbeel*) at Jan van Hoesen house, c.1750, Hudson, New York



Figure 14. Brick Tumbling (*vlechtingen*) at the Jan van Hoesen house, c.1750, Hudson, New York

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