Townhouses, Netherlands by Avi Friedman.

The Evolution of Façades and Interior Layouts of Narrow-Front Townhouses

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ABSTRACT

What made the narrow townhouse, narrower than 20 ft (6 m), a suitable structure for public markets in medieval times, a dwelling for the nobility in the Renaissance, and a type of affordable housing in the modern era? Massey & Maxwell regard the townhouse as a type of building, rather than a building style (Massey, 1993). This observation lay the foundation that explains how the townhouse adapted to fit particular time periods and geographical locations, and their respective aesthetics values. While the building has remained structurally identical, it has undergone manipulations of interior room layout and exterior expression. Despite the differences in style, material, ornamentation, and detail over their history, townhouses all share one common property: the continuous façade of several joint units. By examining variations of narrow-front townhouses this paper establishes what factors or elements were responsible for its evolution. The author concludes that the design survived changes in economic conditions and social values, and political upheaval due to the inherent adaptability of its basic form, remaining part of the architectural context in every era.

KEYWORDS

1.   LAYING THE GRIDWORK

One can argue that the Romans' contribution to the development of the townhouse can be traced to both their homes and urban design. As the Roman Empire expanded across Europe, their urban planning principles spread as well. Settlements were modelled after military camps, and the gridiron pattern that was originally introduced in the Greek city of Miletus in the seventh century B.C. (Kostoff, 1991). The defining geometrical features of Roman cities were the cardus and decumanus, two main perpendicular axes that oriented and subdivided the city. Secondary streets branched off of these main axes to form an orthogonal grid, shown in Figure 1. The gridiron system's simple geometry was highly adaptable and could be applied to virtually any site. It facilitated the division of property and collection of local taxes, and, as a result, proliferated.

 The interior of the Roman townhouse was planned orthogonally off a central axis, echoing the linearity of the city in which they were built. From the street, one entered into a central vestibule, which led to an inner courtyard. Commonly two storeys high, the atrium let light and fresh air into the dwelling's core. At the far end of the atrium was the entrance to the tablinium, the most important room in the house that often contained a depository of family records (Gorlin, 1999). The highly controlled movement through the house can also be regarded as reflection of the strict organization and hierarchy of Roman society. Despite the empire's decline in the fifth century, its urban planning strategies and house designs continued to influence European townhouses in the centuries that followed. Most European towns established at the end of the twelfth century and in the thirteenth century were organized in this manner (Büttner, 1982).
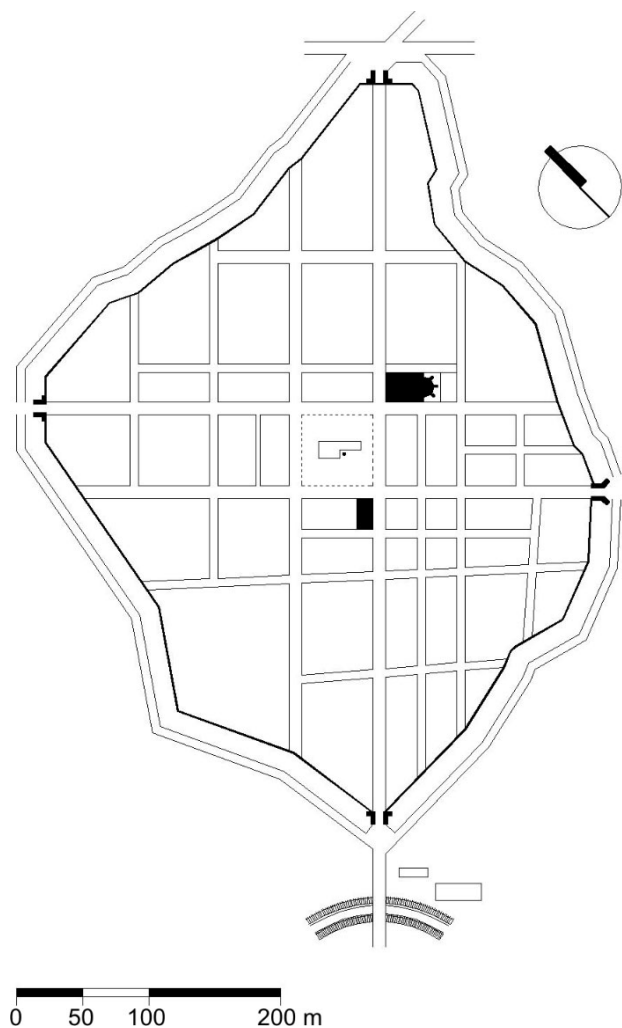

0   50   100   200 m

Figure 1.
The Cardus and Decumanus, two main perpendicular streets and a relic from Roman times, are present in many European cities including the French town of Sauveterre-de-Guyenne.

2.   THE PUBLIC AND THE PRIVATE

During the Middle Ages, extensive fortifications were erected around cities to guard against looters and foreign armies (Write, 2007). Due to the limited buildable land in these walled cities, the construction of high-density housing was a necessity. A result of strict regulation coupled with landlords' desire to maximize the number of rentable units along a street, frontal widths was restricted to between 13 and 25 ft. (4 and 8 m). Area could only be gained by increasing depth and storey height. As a result, townhouses ranging from two to five floors were built on long and narrow plots (Quiney, 2003). According to Barnow, local laws regulated the interactions between public and private property, allowing the two to overlap (Barnow, 2005). Residences could extend their upper floor space by constructing bays that jutted out over the street. Similarly, colonnades and external staircases invited public activities to occur near a dwelling.

This is exemplified in the medieval town of Ragusa, better known today as Dubrovnik, located at the southern tip of Croatia on the coast of the Adriatic Sea. Towards the end of the thirteenth century, the settlement prospered and grew as trade increased. Streets were laid according to the gridiron system in the north-south and east-west directions.

In 1292, a fire destroyed Ragusa and resulted in a reconstruction that led to paved and widened streets. The gridlike pattern of the streets ensured an equitable distribution of land among those who wanted to purchase it. It was easy to suggest an appropriate price according to variation in lot size – which was also an important contributor to equitable rent. The plots, therefore, became narrow to maximize income from sale or rent of land, divided into whatever size and degree of uniformity, and leased annually. It was at that era that planning necessity defined the width and appearance of townhouses.

The undercroft, another Middle Age design innovation, was a room excavated underneath a building which was primarily used as storage. They measured approximately 50 by 20 ft (15 by 6 m), and were dug 6.6 ft (2 m) below ground, providing sufficient storage space and leaving the street façade

unchanged. The entrance to the undercrofts was decorated as a symbol of social status. The space was commonly used by merchants as an adjunct to their house, but the usual lack of direct access from one to another did not require this arrangement for residential dwellings (Quiney, 2003).

Multilevel townhouses with shops and covered galleries at ground level were one of the characteristics of the medieval city (Slocombe, 2001). Undercrofts provided the means for the ground level to be reserved for commercial activities. The street was always regarded as the public face of the town. Even smaller towns had thriving markets along the streets lined with townhouses, which extended from their gates. Commercial activity blurred the distinction between public and private domains along the façades of townhouse rows. Facades also defined and shaped the street, while inner courtyards and gardens provided families with semi-private space.

According to Büttner and Meissner, in the townhouses of the medieval patriarchs, the master's living area was normally placed on the first floor, or bel étage (Büttner, 1982). A higher class status was mirrored through grand saloons and parlours that spanned the width of the house, guest quarters, and distinguished oriel windows. The servants, however, were situated in any leftover room: "in closets on the ground floor, under stairways, in the attic or else in the courtyard."

Büttner goes on to contrast the much more reserved artisan's house. The lower middle class townhouses were significantly smaller than those of the nobles in both height – one or two storeys – and width – three to six meters. Predominantly wood-framed, they displayed modest façades that led into a front room, and further into a courtyard.

According to Quiney, the Rows of Chester in England exemplify how site conditions were utilized to create a dynamic relationship between the private townhouse and the public domain (Quiney, 2003). Shallow bedrock and the presence of Roman ruins prevented builders from excavating deep cellars. Instead, undercrofts and open galleries were built slightly below street level, while shops and living spaces were constructed on the levels above (Binney, 1998). These once hidden spaces now emerged onto
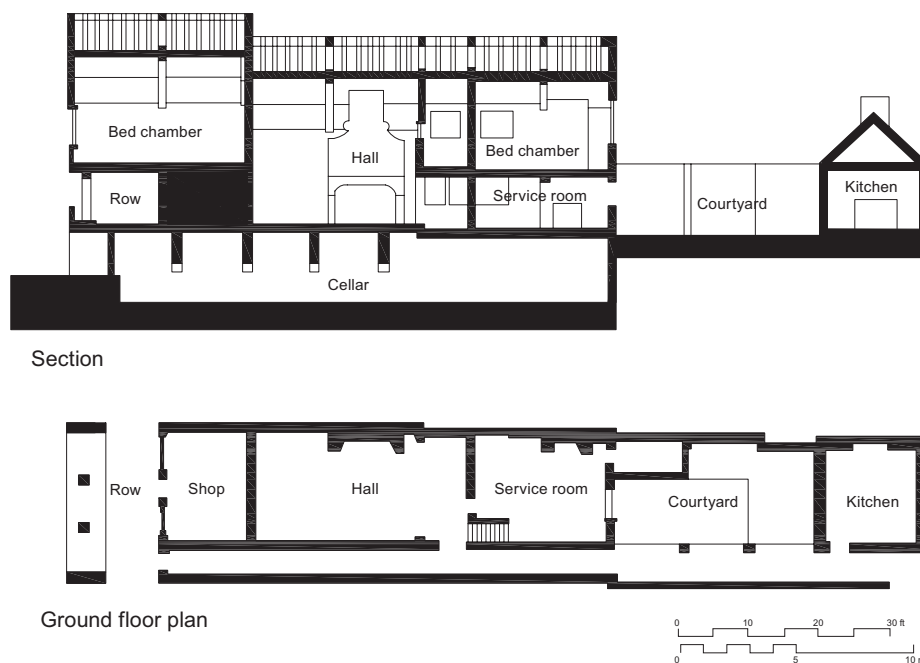
Section

Ground floor plan

the façade and lifted the private levels above. Stairs were built in the covered galleries to connect the first level of the townhouse with the ground. The Rows of Chester had a convenient streetscape for pedestrians that promoted local economic activity as illustrated in Figure 2.

3. SUPERIORITY AND GRANDEUR

As far-reaching exploration and trade developed, cities and their rulers amassed significant wealth during the Renaissance. Despots and monarchs acquired significant political power through economic and military strength to control the development and expansion of their cities. With the invention of military artillery, the demolition and reconstruction of fortification walls was deemed

unfeasible or unnecessary. Yet, densification of the city through the construction of tall, attached buildings continued (Schoenauer, 2000). Taller and dense towns did not imply chaos, however. Unlike the haphazard developments that characterized medieval towns, urban planning in the Renaissance was often delegated to intellectuals who sought clarity and order in their designs. This was guided by a set of planning principles that were implemented in a growing city. Tangled streets were widened and made straight to offer vistas that facilitated trade routes and military displacement. Public squares were created to promote commerce and to counterbalance the crowdedness. Townhouses framed these squares, and their façades provided a backdrop for the everyday activities that took place in these spaces. This reorganization of cities brought about a grander atmosphere that contrasted markedly with the smaller, human-scaled medieval city (Schoenauer, 2000).

While economic and cultural circumstances led the nobles to reside in townhouses, they were designed to imply a social stratification. The high-class sought to simulate the appearance and grandeur of a palace through height and rich decoration. Narrow-front townhouses evolved to become perceived only as a domestic dwelling, as well as completely detached from mixed-use connotations carried in their medieval forms, which facilitated standardization of their façades.

Two bay windows and an entry door composed the front façade. The ground floor was connected to the street by a couple of steps followed by an interior vestibule. The parlour was located in the front part of the ground floor, and was the first room one would enter. Unlike the medieval townhouse, the integration of these vestibules and parlours separated the private interior from the public street. The façade acted as a threshold between the public and private realms. Behind the parlour, the dining room had a view onto the backyard. This was a convenient place for dining, since the kitchen, cellar and service rooms were typically placed on the ground level underneath. The second floor was called the piano nobile or the "noble floor" and contained formal reception rooms with high ceilings. The front parlour was reserved for men while the rear one was designated for women. The third floor was occupied by the bedrooms of the nobility, while the basement or uppermost floor was designated as servants quarters (Schoenauer, 2000). Stairs were given additional width to create the impression of a more luxurious setting. Interior private courtyards were also introduced to ensure sufficient lighting.

The exterior appearance of upper-class townhouses varied considerably as façades evolved to become an important status symbol. The classical orders of architecture were rediscovered during the Renaissance and greatly influenced the composition of European façades, as it was an important tool to attract occupants. Carefully proportioned openings, cornices, and ornaments recalled the sublime architecture of antiquity. Façades also celebrated the rise of Renaissance art. Certain Florentine houses had painted façades and bas reliefs which depicted family members and allegorical figures.

The use of a classical architectural language elevated the status of the dwelling and its occupants. Trends in façade design did, however, vary depending on the building's location. This is evident along Amsterdam's four major canals, which were lined with approximately 2,200 houses (Figure 3). A small set of steps called a stoop were added leading to the ground floor of these houses, which would later be inherited in New York City, first called New Amsterdam. According to Henry Adams, the high stoops in Harlem in the late nineteenth century were used as protection against flooding (Adams, 2002).

Figure 3.
Façades of early nineteenth century canal side townhouses in Amsterdam, Holland.

The flourishing economies of Italian Renaissance cities, for example, allowed the high-class townhouse façades to be built of quarried and carved stone, a fire-resistant and durable material. For many Italian townhouses that used brick instead of stone, stucco was often applied as a finishing surface to create a uniform texture that emphasized the purity of architectural lines. While brick became abundant as a cheap, pre-manufactured product, timber remained the most common building material for the masses, particularly in northern Europe (Quiney, 2003). Only after London's Great Fire in 1666 were traditional wood-frame houses in England replaced by fire resistant stone and brick construction.

Figure 4 illustrates three of the four housing types introduced after London's Great Fire of 1666. The Great London Building Act of 1774 also dictated window sizes, maximum setbacks and material selection. Consequently, same sort townhouses were built in proximity to each other, which led to a uniform appearance and continuous façade. In the Building Act, townhouses were classified into several categories based on the dwelling's width and height. Residents occupied different grades depending on their social class. For example, the wealthy commonly lived in four-storey tall houses with raised basements while those of the artisans and working-class families were three storeys high over a sunken basement (Binney, 1998). The differences in height were visible from the exterior and dictated the social status of the residents. In the late seventeenth century to early nineteenth century, narrow-front American homes were stylistically attached to their English and Dutch roots. Nevertheless, there was a much faster pace change in architectural design that continued into the next era to bring further evolution of the townhouse floor plans and façades.
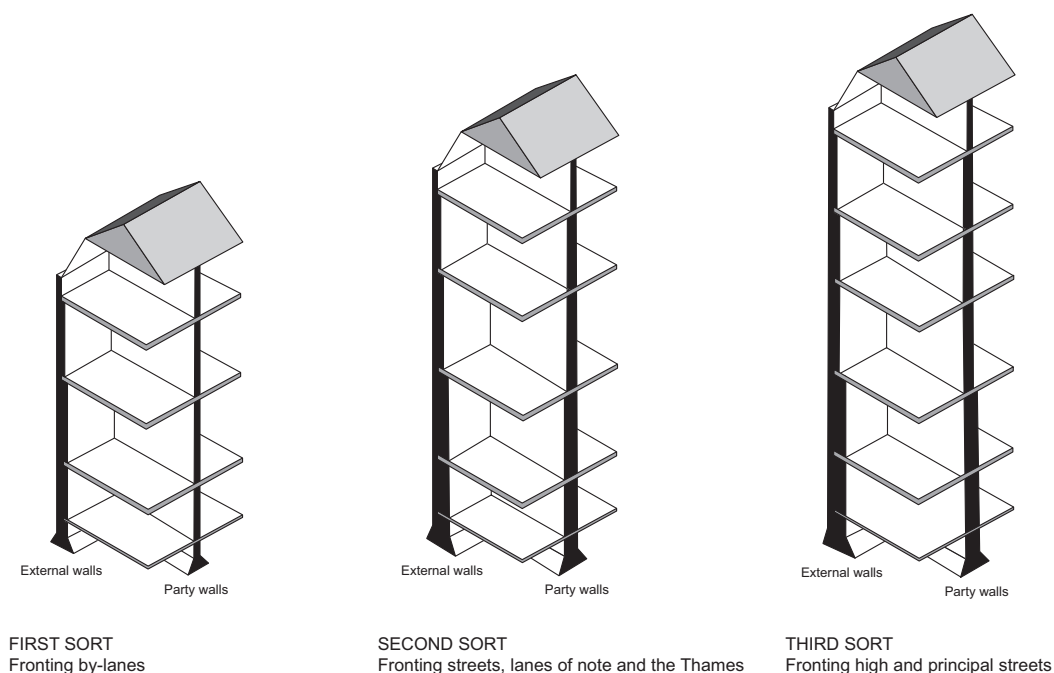

FIRST SORT
Fronting by-lanes

SECOND SORT
Fronting streets, lanes of note and the Thames

THIRD SORT
Fronting high and principal streets

Figure 4.
Three of the four housing types that were introduced after London's Great Fire of 1666.

4.   ESTABLISHING CHARACTER

The Industrial Revolution initiated rapid fundamental economic, social, and cultural shifts. As technology developed, machine-based manufacturing surpassed rural agricultural production as a driving economic force. The emergence of new industries and the availability of jobs in major cities across Europe and North America drew millions of people from rural areas to urban centres. Acute housing demands led to an increase in townhouse construction, and urban densities reached unprecedented levels as a result, as depicted in Figure 5. While the wealthy continued to live in lavish dwellings, working class families resided in substandard, cramped conditions.

The high housing demand in the eighteenth and nineteenth centuries resulted in poorly constructed townhouses. In an effort to reduce transportation costs, brick was often manufactured on-site, which significantly affected its quality. The bricks were laid awkwardly, and as a result structure collapses were common. In seaport cities, structures were constructed primarily of timber. The rest were a mix of
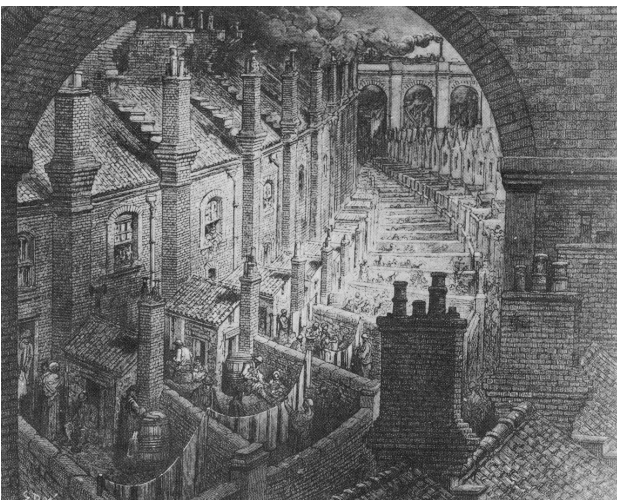

Figure 5.
The industrial revolution drew migrants to cities, which led to overcrowding and poor sanitary conditions as depicted by Gustave Doré in his painting of London.
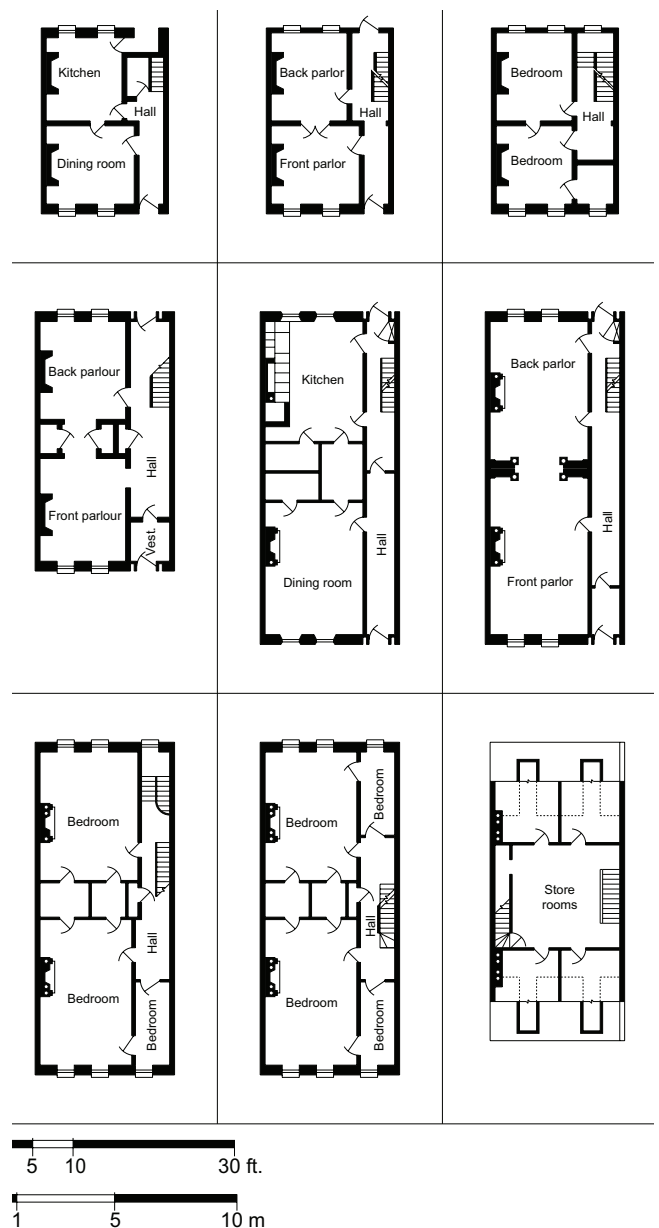

Figure 6.
Floor plans of three American townhouses that were designed in the Federal Style.

brick and wood, but even in those cases, brick usually composed only the front façade. Inland cities, such as Philadelphia, tended to have larger townhouses cladded with brick only.

A population decline during the American Revolutionary War of 1783 recovered rapidly in the decades that followed. Cities like Boston, Philadelphia and New York became centres for both local and international trade. Economic prosperity attracted mass immigration to urban hubs, causing a building boom (Lockwood, 2003). During these years, the Federal Style was applied to narrow-front homes that prevailed until the 1830s. Figure 6 shows the plans of three Federal Style American townhouses. This style diverged from the British Georgian style, and attempted to emulate classical Greek and Roman architecture. Considerable attention was paid to the entry doorway as public display. Front façades were

mainly brick and embellished with lintels over doors and windows. Modest houses followed a pattern of two stories above the high basement, with a pitched roof and two dormers. Inside, as Gorlin describes, the lower floor contained the kitchen and dining room, the main floor had two parlour rooms, and bedrooms were situated above (Gorlin, 1999). The staircase was along the party wall. In the 1820s, the row house was typically wider and not deeper than two rooms for the sake of having adequate sunlight, and therefore, the house was better suited to human scale.

As the originator of democracy, Ancient Greece resonated among Americans who were intent upon severing any remaining ties to their colonial past. The architectural references to ancient Greece and Rome in the Federal Style were meant to evoke patriotism and pride in democracy. Revival styles did not replicate ancient buildings; rather, they resulted from

Elevation   Section

0 5 10   30 ft.

0 1   5   10 m

Figure 7.
Elevation of a townhouse row in New York City designed by Seth Geer in 1833 following the Greek-Revival style.

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the search for essential architectural principles. Figure 7 shows an elevation of a townhouse row that was designed in the Greek-Revival style. Despite America's desire to mark its independence from England, the use of the Federal and Greek-Revival styles did not fully succeed in displaying a new cultural identity. In fact, other than the prevailing use of red brick in American homes, visitors often commented on the close resemblance between British and American townhouses (Lockwood, 2003).

The Gothic Revival Style played a crucial role in the process of refinement to arrive at the architectural ideals laid out by Romanticism in America. Its problem, however, was one of mostly poor execution, for Gothic-inspired elements seemed to appear where everything else was of Greek-Revival or Italianate. For example, the favour for asymmetry in Gothic architecture was absent in the plan, as it remained essentially the same Classical style. Instead, the 'Gothic' was expressed through exaggerated architectural ornamentation that seemed to disturb the simplicity and calmness sought inside a home. According to Murphy the introduction of machinery to produce such ornamentation aggravated the situation into a monstrous "absurdity" (Murphy, 2005). There was not even enough investment to have handmade ornaments. Thus, even at the time, there was a general agreement that Gothic Revival is hardly appropriate in an urban environment, or that its use should be confined to the sacred, such as churches (Murphy, 2005).

In The Baltimore Rowhouse, Hayward and Belfoure state that the success of such housing is partly because of the opportunity of immigrants to live the American life and own their own homes (Hayward, 1999). The emergence of townhouses in America became a defining image representing the average lifestyle. The evolution of these homes relates to political changes and shifts in cultural influence. The city which perhaps best illustrates this evolution is New York, initially a Dutch colony. Townhouses had incorporated the stoop, a small flight of stairs that connected an elevated first storey to the sidewalk, as noted above. Without any need to protect from flooding, as the case was in Amsterdam, the stoop served a more decorative purpose of architectural grandeur and pride than a functional one. Despite their encroachment onto sidewalks, stoops provided space for a separate frontal entrance to the kitchen which was commonly located in the elevated basement, below the first floor. They also encouraged homeowners to lounge casually in front of their homes, and added a friendly atmosphere to the neighbourhood (Lockwood, 2003).

Brownstone was a prevalent building material in New York City during the nineteenth and twentieth centuries. Brownstone quarries were found all over the northeastern United States and stone became easily extractable with steam-powered and pneumatic drills. Brownstone was initially associated with luxury in the early 1800s. However, as the efficiency of quarrying technologies improved, the material was commonly used and became known as cheaper substitute for marble. Because brownstone was widely available and relatively easy to shape, it became the material of choice during New York's building boom. Brick was only to be seen in the foundation walls below the first storey. Well-carved brownstone façades produce vivid shadows which highlighted rich workmanship. Today, this material is recognized as a defining characteristic of New York City architecture.

5. CONTEMPORARY TIMES

By the early twentieth century, industrialized cities in Europe and in America were severely over-crowded and polluted. Urban life was perceived as being disconnected from nature and, as a result, acquired negative connotations. A romantic idealization of the countryside created a desire among many to leave the chaos of the city. The invention of the streetcar and the development of public transit systems allowed the city to spread outwards to rural areas. Traveling at least three to seven times faster than horse-drawn cars, the streetcar made commuting drastically easier (Irvine, 1988). Despite the move away from the centre, housing densities in these early suburban areas remained high to maintain walking distances between

residences and streetcar stations. While rows of townhouses formed clusters around stations, the planning of larger front and rear setbacks prevented neighbourhoods from reaching the same density levels as the core. Only when the privately owned automobile began to rival the streetcar as a popular means of commute in the 1920s was the townhouse typology gradually replaced by the detached dwelling (Hunter, 1999).

With plummeting demand for narrow-front homes, North American developers recognized that row housing had to be reconfigured in response to competing suburban developments. Luxury apartments become a new housing type for wealthy residents. This confirmed not only a departure from narrow-front housing, but from all high density dwellings for the time being. Cities like Baltimore saw the last construction of luxurious row houses in 1910. Disguised under the name of Group Homes, alternative housing was placed within the suburbs for the wealthy who wanted neither the responsibility of maintaining a large garden, nor an apartment in the city. Not only did these group homes provide variety, they also served to insulate the expensive inner lots from the surrounding lesser homes.

From 1910 to 1950, townhouses were almost exclusively built for the poor. But these efforts were concentrated in recreating communities after the disasters of war, without satisfying any Romantic ideals of including access to the outdoors.

Once narrow-front homes began to be designed for higher living standards, comparable to that of the suburbs, townhouses were rejuvenated and dissociated from the negative connotations of city life. This time, there were new elements that had to be incorporated into the design. Out of these, the most obvious one was the issue of car storage. While the majority of families owned a car by the 1950s, it became common for a family to own a second car (Schonauer, 2000). The contemporary version of the row house was designed for middle-income families. The layout of contemporary narrow-front houses seems to enable more freedom for personalization than ever before. The conventional arrangement of rooms is compromised to take advantage of surrounding views, and an openness to the idea of reintroducing office space inside the house (Schonauer, 2000). Postwar designers and builders experienced a high demand in housing. They had to incorporate the most efficient and economic construction strategies. The extraneous decoration and ornamentation were the first things to leave the scene. This freed much more wall space, so windows covered a higher percentage of the walls. Instead of the "inward" focus of the old home, the new home was based on the inside looking "outward". In compensation for the decreased floor area, the residents borrowed exterior space.

Next, the new home followed a series of reorganization of rooms. Higher presence of domestic activities within the house was inevitable. The kitchen was liberated from the backroom. In some cases, sliding partitions were the only boundaries that distinguished the bedroom from the living room, so that the bedroom could become an extension of the living room when more space is required.

Some of the new development in narrow-front homes involves a complete renovation, such as the Hilpert House, in New York City, designed by Ogawa Depardon Architects and built in 1998 (Gorlin, 1999). In this project, the use of steel and glass glows in brilliant contrast compared to the neighbouring traditional townhouses. With the use of lofts, and closets attached to only one side of the wall, the plan brought maximum openness into the house.

Except when the consequences lead to higher maintenance costs or complicate home improvements, other strategies to reduce the cost of construction and finishing have been well received. These exceptional cases concern mostly the insulation of the house in the selection of windows, doors, and insulations. On the other hand, it is seen as reasonable to begin with inexpensive vinyl flooring, until the homeowner is financially secure enough to replace it with high quality material (Friedman, 2001). As industrialized materials have provided viable and efficient alternatives to traditional modes of construction, the prefabrication of building components has been an especially valuable innovation.

6. DISCUSSION

While the above designs describe some of our era's intentions, it is valid to ask how embedded and connected people are to these issues. Following analysis of various narrow townhouses archetypes, it is evident that adaptability is among its highest virtues. It seems that throughout history designers and builders adapted a template-like floor plan to emerging urban and social situations. A suitable design response to these changes explains the townhouse's survival.

The townhouse's narrow width eliminated the need for interior load-bearing walls or columns, permitting virtually any interior configuration. This accommodated the introduction of undercrofts in the Middle Ages, parlours in the Renaissance, and home offices in the contemporary dwellings. This flexibility is also reflected on the exterior, allowing for the emulation of a public market, a residence for the nobility or a low-income dwelling. By looking at a the exterior of a townhouse that was designed in a Federal Style, or a Gothic-Revival Style, a passerby can also "read" its interior.

As for our times, with affordability remaining a global concern, the need to use housing prototypes that cost less takes on an urgent priority. Being cost and energy efficient, the townhouse remained relevant and highly useful as environmentally friendly designs. Having a small footprint and consuming fewer resources is perhaps more valued today than ever, which adds to the allure of this type of dwelling. The narrow-front townhouse has lasted through centuries of transformation and, with all that it has to offer, it will likely to continue to be used by future designers.

ACKNOWLEDGMENT

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