Visualizations of Rubens's Palazzos of the 17th Century in the Antwerp 'Nieuwstadt'

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Introduction

The *Visualizations of Rubens's Palazzos in the Antwerp 'Nieuwstadt'* is a report on several research projects, some finished, some still in progress, that have taken place over the last few years at the department of Design Sciences of the University College of Antwerp, which is now being integrated as a faculty into the University of Antwerp. A substantial part of this research was done by a former student architect Sigurd De Gruyter.

In this research project, we wish to examine Rubens's interest in the public space. An interesting thought is that he might have been thinking of the still nearly undeveloped area of the 'Nieuwstadt' (New Town), an extension of the medieval city in the north of Antwerp, just inside the new Spanish walls. We can begin to imagine how Rubens viewed a city extension by examining his *Palazzi di Genova* and applying its conclusions to this part of the city of Antwerp. The concept of the innovative Strada Nuova can theoretically be transferred to the large, long blocks of houses planned for the Nieuwstadt. The grid pattern appears to form a suitable basis for such a town-planning project, and this arrangement of streets is indeed found in the layout of the Nieuwstadt-project by the city architect Peter Frans.

Antwerp in its Golden Age

In the first part of the 16th century, the city of Antwerp was experiencing its first peak. At the height of its economic power with nearly 100,000 inhabitants (already 84,000 in 1540), it was the fourth of Europe's largest cities and became the most important economic centre in Europe. The growing pace of port activities and subsequent wealth meant that the 16th century may now be regarded as the 'Golden Age' of Antwerp. Northwest Europe assumed the position formerly held by the Mediterranean basin, and Antwerp took the lead over ports such as Genoa and Venice. The growing population necessitated the construction of a large number of new homes. Between

1496 and 1568 no fewer than 88 streets were laid out. The driving force behind these works was Gilbert Van Schoonbeke, a land speculator and building contractor.

Still confined within the boundaries of its medieval wall, the city was bursting at the seams. To the north as well as to the south of the city, there was a considerable amount of open land suitable for expansion (fig. 1). In the subsequent years both sides of the town were developed, in completely different styles, both in terms of economic purpose and layout. The North as a prosperous and efficient port extension according to the latest developments in urban planning, now called 'the grid', and the South as an extended defence system including a citadel.

Fig. 1 Antwerp seen from the west, anonymous copper engraving, ca 1525.

Fig. 2 Antwerp seen from the east, woodcut by Virgilius Bononiensis, 1565.

With Europe in political and religious turmoil, the city council, by order of the emperor Charles V, started the full renovation and expansion of the medieval wall into a bastioned defence system in 1542, to be compatible with the new ballistic developments of warfare. This wall, finished in 1553, would later be known as the Spanish walls and enclosed, to the north, an additional 25 acres that would become the Nieuwstadt (fig. 2).

Taking advantage of the city council's financially difficult situation in these turbulent times, the private entrepreneur Gilbert Van Schoonbeke persuaded the council, in exchange for his assistance with the construction of the fortifications, to be allowed to develop this ambitious Nieuwstadt with the aid of the city master builder Peter Frans, who had been active in the field for forty years. According to an inventory prepared by Adrian Bos in 1584, Peter Frans was responsible for at least fifty buildings, urban projects, infrastructure or military reinforcements in Antwerp.

In 1622, more than ten years after having returned to Antwerp from a professional and diplomatic visit to Italy, Peter Paul Rubens edited *Palazzi di Genova* (two books in one volume) (fig. 3). In this catalogue of Genoese palazzos, some erected in the Strada Nuova, the Strada Balbi and in the quarter of Sampierdarena, each building was depicted in full architectural detail. In fact, Rubens edited in folio the plans (ground plans, façades and cross sections) of 31 Genoese palaces and 4 churches, which were built between 1540 and 1620. Most of the buildings were seen by Rubens during his sojourns in Italy between 1604 and 1607. He collected about 137 drawings, some during his stay in Genoa and others were sent to him after he returned to Antwerp. 122 of those drawings survive, and belong to the collections of the Royal Institute of British Architects in London. The engraver was Nicolaes Ryckemans, employed in Rubens's studio. Rubens himself also added a number of corrections to the engravings. In his foreword to the first book, he brings attention to the interest those buildings have for the new architecture in the Low Countries. He wrote that he published these drawings of buildings because they are very useful and extremely comfortable for our citizens and noblemen. They are not so much characterised by the use of an inner courtyard, but by taking the form of a cube. Very remarkable is his preference of the Villa Cambiaso (1548) designed by the Roman architect Galeazzo Alessi (1512-1572). In this palazzo, the ground-floor plan is divided into nine rectangles, which are repeated on the second level. These types of houses are very compact and are also characterized by a *sala* (or *salone*) in the centre of the structure. The total structure of Alessi's city palaces is rational and simple and was a model for other palaces that Rubens saw in the Strada Nuova in Genoa. Another typical feature of the Genoese palaces is the use of mezzanine storeys between the main floors, for servant's quarters and service areas.

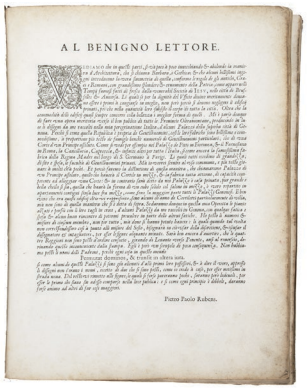
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Fig. 3 Peter Paul Rubens, *Palazzi di Genova*, Book 1, Introduction to the reader, Antwerp 1622.

The reason for such a publication as Rubens's was to realize similar palaces in his own town by encouraging his wealthy clients to build their new homes according to the examples in the book. With the architectural profession at that time less developed than today, and open to great artistic input, these buildings would of course benefit Rubens as well as his business.

Unfortunately Van Schoonbeke failed in his project, and the city lost its economic wealth due to the successful blockade of the river Scheldt in 1585 and the Spanish occupation afterwards. As a result of the religious troubles and the start of the Eighty Years' War, most of the potential palazzo owners fled to the Netherlands. The city extension was never developed as foreseen, and no palazzos were ever built in that part of Antwerp.

The Project

Moments in history rich in drawings of ideas and imaginary projects do not arise by chance. Brief periods of powerful and radical changes in administration or domination by foreign powers appear to be the greatest stimulus to the urge to redesign the 'Metropolis', to use Antwerp's other, grander name. Although the realization of these proposals was limited, and was largely reversed after the surrender of Antwerp to the Spaniards in 1585, the intentions behind this planning operation survived until the 19th century.[1]

The historical background to this situation provides an ideal opportunity to explore, via a 'what if' scenario, the drastic reordering of the existing medieval town in a way that was obviously inspired by the then new architectural concepts of 'Commoditas' and 'Voluptas', developed by the Italian Renaissance.[2] The wealth of detail in Rubens's *Palazzi di Genova* publication, and the fact that the historical Genoese setting is still largely undisturbed, provided assurance that the necessary data would be available for evidence-based research raising this 'what if' digital construction to a higher level than a mere historical architectural rendering.

Goal of the Project

Beside the fact that 'what if' research is always intriguing and not uncommon in historical research, there is a special interest in this case from an architectural and digital perspective. At the department of Design Sciences of the Artesis University College the use of digital tools in historical architectural research is mostly oriented towards the understanding of a historical context and the validation of derived assumptions. In these projects, the mere visualization of the architectural buildings is secondary but obviously necessary. This project therefore falls in line with previous projects such as *'The Virtual City of Hans Vredeman de Vries Digitaly Analysed'* and *'Peter Frans, Master of the Masons Guild'*.

In order to construct (not reconstruct, as no palazzos were ever build in the Nieuwstadt) a virtual but valid historical urban project, it is necessary to study similarly built or planned projects. On the other hand, to create a virtual valid architectural construction, it is important to take into account, as is necessary in the real world, the limitations to construction, on both an environmental and social level. Implementing the latter process creates an insight and understanding of the task that, when projected onto the initial historical research, opens up a new perspective on the case and a better understanding of similar but completed buildings.

Course of the Project

The project followed a path of four distinct steps.

- Firstly, the historical research into 16th-century city planning and the development of the urban grid.
- Secondly, the implications of relocating the Genoese palazzos to this grid in the Nieuwstadt.
- Thirdly, the necessary adaptation of the Genoese palazzos due to the different environmental factors of the northern location of the city of Antwerp.
- Fourthly, the virtual construction of a set of these palazzos within the limitations of the case of the Nieuwstadt.

The New Urban Grid

The division of the Nieuwstadt into parcels by Peter Frans was influenced by some of the same principles as modern city planning developments now referred to as 'the Grid'. Designed in the years 1540s and 1550s, the Nieuwstadt revealed a plain grid of parallel and oblique streets with a geometrical checkerboard structure. It was the earliest 16th-century urban experiment in Antwerp that tried to solve the complex problems of urban planning on a large scale. The grid allowed for the creation of a new inner harbour by including three parallel canals, a series of quays for commercial purposes, the development of new commercial quarters with central warehouses

such as the Hanza House, and the realisation of an underground water supply system to provide the new breweries with clean water in a comprehensive, but flexible way (fig. 4).

Gilbert van Schoonbeke was responsible for the implementation of Peter Frans's project. It was an extension of the city to the north together with the realization of one of the most spectacular fortifications in Europe at that time. Over a total length of about 6000 m, a new bastioned rampart, designed by the engineer Donato Bono di Pelizzuoli (? – 1555) from Bergamo, was achieved in about 15 years.

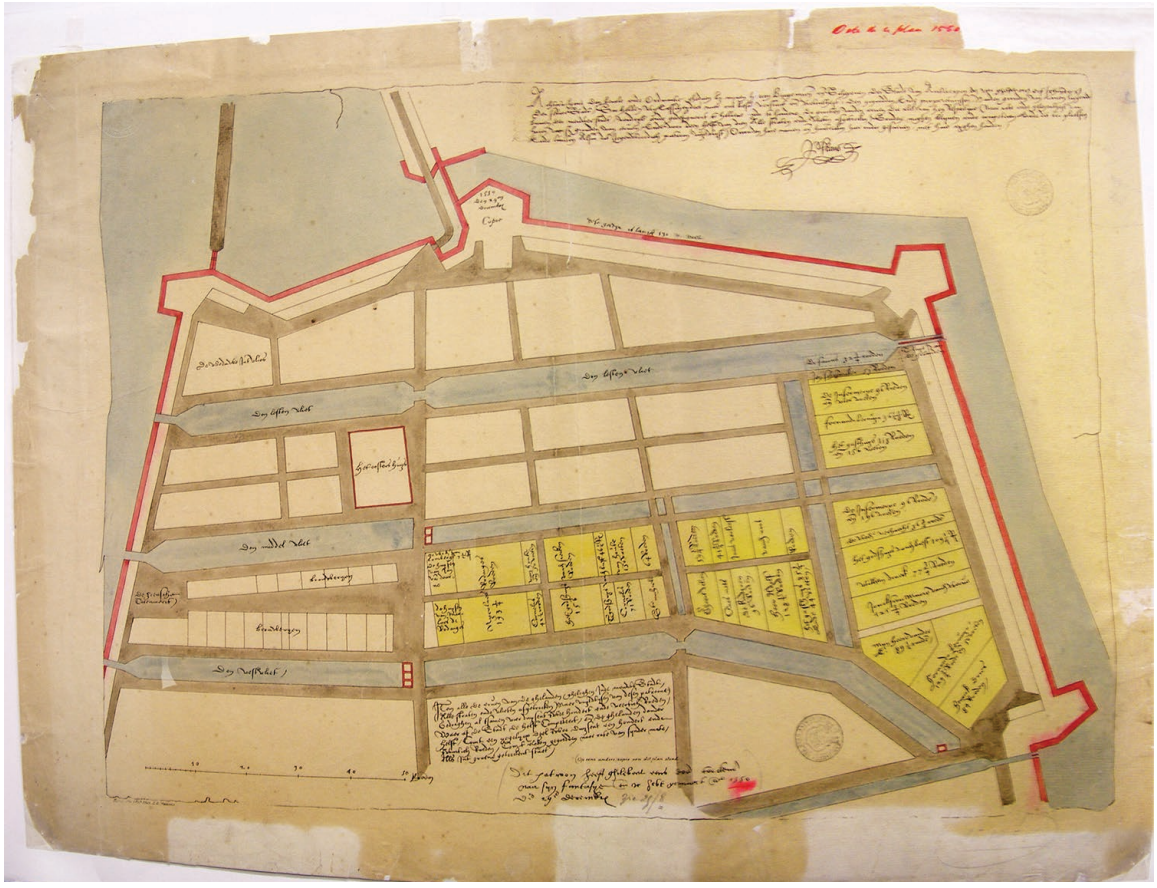

Fig. 4 Nieuwstadt, drawing by Peter Frans, ca 1550.

The *Castrametation of the Romans* by Polybius provides insight into how the blocks were further subdivided. This Roman historian of the second century BC designed a street plan of an ideal army camp, which was published in 1585 (reprint in 1592) in Godescaldus Stewechius's *Flavi Vegeti Renati, viri illustris De re militari libri quatuor* by the Plantin Press in Leyden. The model by Polybius comprises six parallel strips and two oblique strips. The grid model is not accentuated as such, but priority is given to the orthogonal street system. This street plan also inspired Sebastiano Serlio to propose his own project for a new city in his unpublished *Book on Castrametation* of the

Romans (fig. 5a). He transformed Polybius's castrametation into a walled city, paying special attention to the layout of the street blocks and their measurements. However, it is unlikely that Rubens saw this drawing and the text, due to its publication date.

Projects for city extensions that took place – or at least got as far as the planning stage – in the Northern Low Countries in the seventeenth century were examined to investigate what such a city extension could have looked like in Antwerp. One of the most interesting examples was the plan to develop a stretch of the Cingelgracht, an important canal in the city of Utrecht, as part of an urban expansion project drawn up in 1664 by Hugo Ruysch. The architect Antoni van Lobbrecht drew up a number of designs for this area in the periphery of the city (fig. 5b). The typology of the houses is very similar to the palazzos that Alessi drew for the Strada Nuova in Genoa. Their implantation along the canals is very regular and symmetric. It is certain that the Genoese palazzos were models of a new type of urban villas during the 17th century in the Northern and Southern Low Countries. These plans – preserved in both ground plan and vertical elevation – are indicative of the way in which the new harbour precinct of Antwerp's Nieuwstadt between the Brouwersvliet and the northern city walls might have been developed.

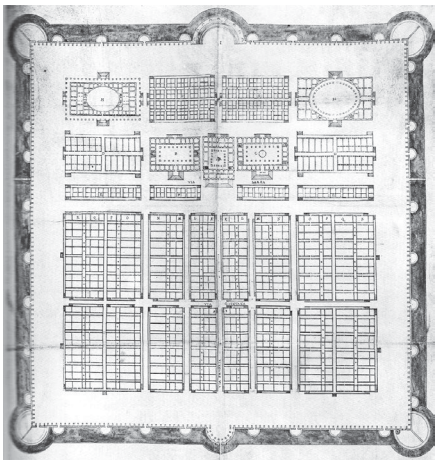

Fig. 5a Sebastiano Serlio: drawing of a 'citadella murata' or small walled city, from: S. Serlio, *Della Castrametatione* (1546-50).

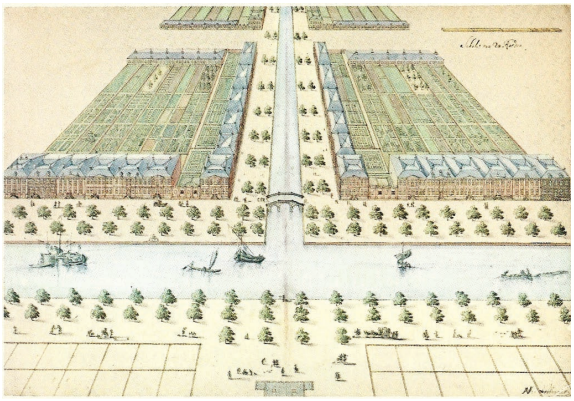

Fig. 5b Utrecht, 1664, drawing by Antoni van Lobbrecht.

The Relocation of Genoese Palazzos

It is tempting to just copy the concept of the innovative Strada Nuova from Genoa to Antwerp. Theoretically the concept could be transferred to the large, long blocks of houses planned for the Nieuwstadt according to the grid that was found in the design of Peter Frans. Van Lobbrecht's example, discussed above, already showed that compact town houses, with common walls and façades adhering to a strict vision, could display a harmony reminiscent of the Strada Nuova.

A digital relocation of the palazzos, even if only virtually, should at least take into account the environmental, social and constructional differences between the two locations in order to achieve a study object that allows valid analysis. The consequences arising from the environmental and social criteria will be discussed in further detail, but the differences in construction techniques require a preliminary observation. The biggest challenge would have been to compare the frequent elliptical vaults, which in the Genoese palazzos were always built in stone, whereas in the northern regions wooden vaults were common. This would imply the need to adapt stone construction to wood construction for all the major rooms. The examples of the Antwerp city hall in Italian Renaissance style (fig. 6a) and l'Hostel de Lyonne (Lyon), by Louis Le Vau (1660) (fig. 6b) show that there are several possible internal solutions which do not influence the interior of the buildings. It was therefore concluded that for this project it was not necessary to adapt the digital models to include specific construction techniques.

Fig. 6a Office of the Mayor in the Antwerp city hall (Jan Lampo – Hugo Maertens, 1993).

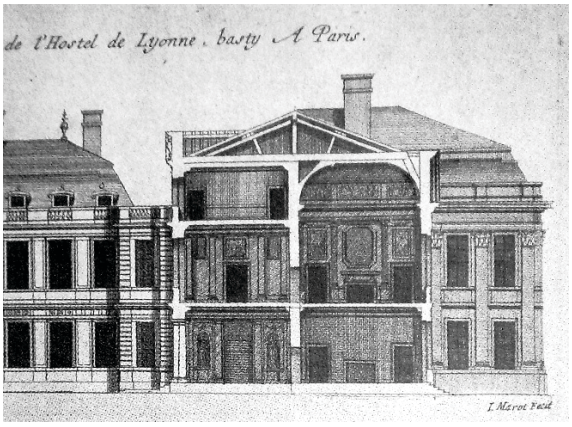

Fig. 6b Jean Marot, l'Hostel de Lyonne, by Louis Le Vau, 1660.

From 31 palazzos of several types that are illustrated in Rubens's two books, the palazzos A, B, D, E, F and G were selected. All those palaces are very compact, with no inner courtyard and considered very practical for cities of the size of Genoa and Antwerp. In this sense, Rubens was very aware of the resemblance of the large scale merchant cities of Genoa and Antwerp at that time.

It was of great assistance that Rubens has provided, for each of the houses, floor plans, façades and different cross sections, all dimensioned in detail (fig. 7). In Book I there are details of five different urban palaces situated in the Strada Nuova, two in other parts of the city and five in the quarter of Sampierdarena. The most innovative palaces were projected by the Roman architect Galeazzo Alessi. His palaces were very compact, with no inner courtyard (or only partly), a salone in mezzo, and a very regular ground plan with a grid structure of nine squares. The selected square palazzos, Rubens's favourites,[3] were duplicated in such a way that a total of 18 palazzos fitted into the structure of the empty building block of the Nieuwstadt without altering original dimensions.

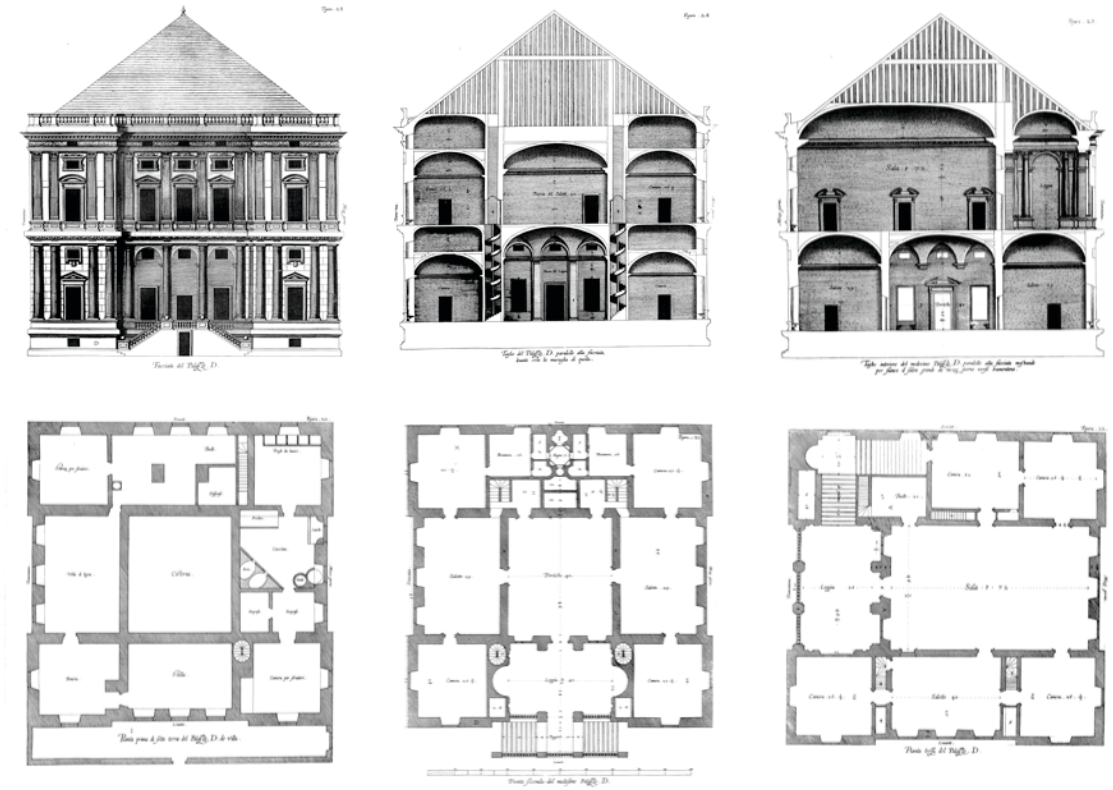

Fig.7 Façade, cross sections and floor plans of palazzo D, *Palazzi di Genova*, 1622, Peter Paul Rubens and Galeazzo Alessi.

The Adaptation of Genoese Palazzos

The different geographical locations of the city of Genoa and the city of Antwerp, the latter with latitude of 7° further north, would, on both environmental and urban level, require some adaptations to the palazzos in order to adapt them to the habitation conditions that the wealthy inhabitants of Antwerp were used to. On the urban level, the most radical alterations would have been the reorientation of the façades, the location of the gardens and the non-detached construction which results in the absence of side windows. On the environmental level, the different lighting conditions and, to a lesser extent, the temperature conditions were investigated.

Orientation of the Façade

It is very unlikely that Antwerp's rich inhabitants would have been content to have the façades of their houses turned away from the centre that is the origin of their wealth, i.e. the shipping activities taking place on the canals.

Location of the Gardens

Genoa is built on a hillside, were it is logical to have gardens in front of the house, oriented towards the bay, whereas Antwerp is flat and gardens are preferably protected by surroundings. Examples of such gated gardens can be found in Hans Vredeman de Vries's *Theatrum Vitae Humanae* (Antwerp, 1577), for instance in the engraving called *Childhood, or the Composite order* (fig. 16).

Terraced Construction

Due to the urban layout of the city of Genoa several small alleyways separate the palazzos in the Strada Nuova, and these function as important links within the city. According to the northern building style shown in Van Lobbrecht's example, the small alleyways between the Genoese palazzos were not applicable in Antwerp. It is however likely that over the total length of 267m (i.e. the length of the chosen building block of the Nieuwstadt), some intersections would have been appreciated. To determine passage widths, Sebastiano Serlio's Castrametation plan and the Peter Frans map were used. Based on the proportions of the primary and secondary streets in the plans, it was decided to include a transversal public street of 7m width and a longitudinal private walkway of 3m width. In figure 8, the layout of the Strada Nuova is projected onto the building block of the Nieuwstadt taking into account the above-mentioned alterations to better suit the Antwerp conditions.

Fig. 8 Left: Projection of the Strada Nuova on the Nieuwstadt building block. Right: The proposed layout adapted, with palazzos oriented towards the canals and enclosed gardens. (Both: AutoCAD™ 2009).

Lighting

In the Genoese setting, the palazzos were separated from each other by alleyways. Although they were relatively narrow, these alleyways allowed for the placement of windows on the side walls. Taking into account the depth of these palazzos (which sometimes extended as far as 30m) these windows were necessary to reach a working level of illumination in the central rooms. The Antwerp non-detached construction style results in a lack of windows in both side walls, and therefore we required a separate light analysis to determine the functional adaptations to be made to the palazzos.

The palazzo A, which is used as a representative for the other palazzos with respect to the light analysis, was digitally reconstructed using the AutoCAD Ecotect Light Analysis™ software. This allowed comparison of the light intensity, on the first and third floors, between the Genoese detached construction and the Antwerp terraced construction.

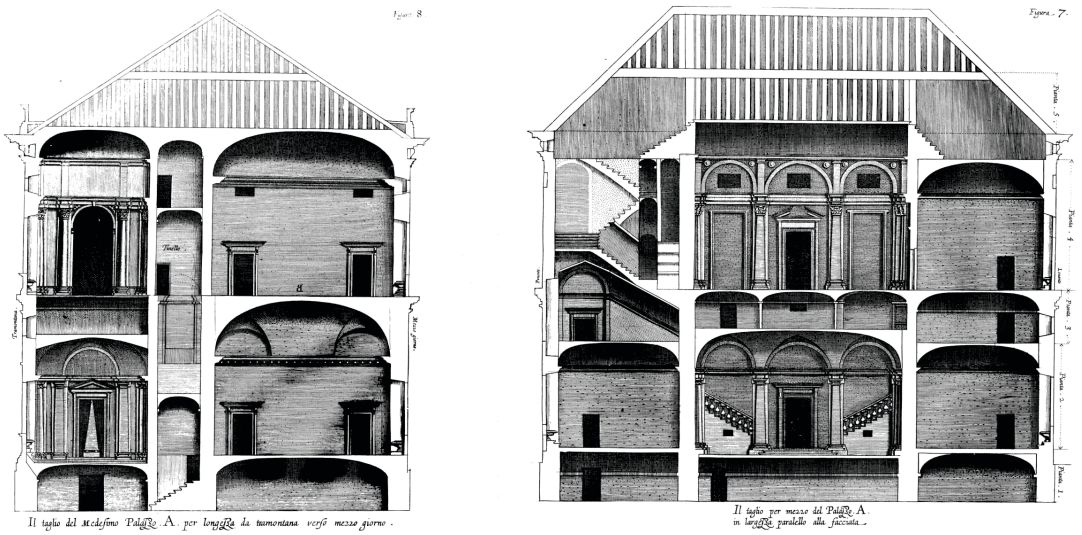

Fig. 9 Palazzo A, crosssection perpendicular to the façade (left), crosssection parallel to the façade (right); engravings by Nicolaes Ryckemans, 1622.

In the crosssections of palazzo A (Carrega-Cataldi), the centrally positioned portico and the salotto (loggia) is clearly seen on the first floor (pianta 2). The sala or salone is located on the third floor (pianta 4). Between the first and third floor there are several service areas, which in the Antwerp setting would prove to be problematic because of the missing windows. The primary focus of the investigation was on the most important living areas, located on the first and third floor.

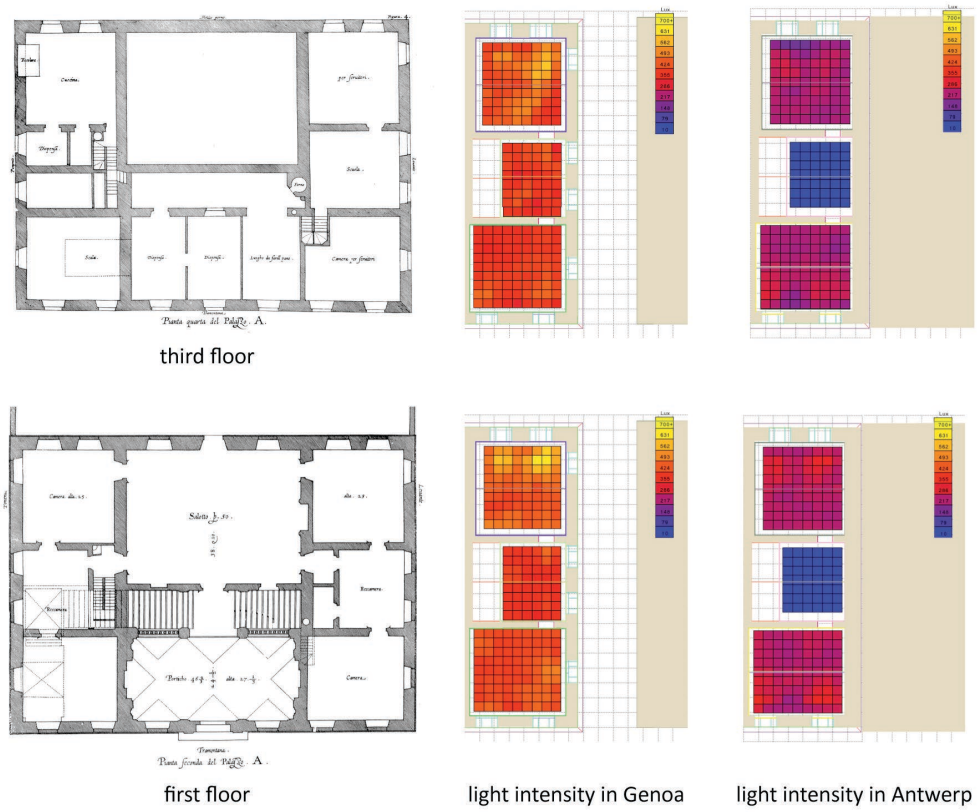

Fig. 10 Comparison of the difference in light intensity for the palazzo A between the Genoese detached construction and the Antwerp terraced construction (floor plans, engravings by Nicolaes Ryckemans, 1622; light simulations AutoCAD Ecotect Light Analysis™, 2009).

In the Genoa setting, 400 to 500 Lux was found in all rooms on the first and third floor. In the Antwerp setting, in the front and the back rooms a meagre 125 to 250 Lux was obtained, whereas in the central room the lighting conditions were truly problematic (fig. 10).

Serlio mentions in his books, that daylight in Italy is more intense than in the Netherlands, where it is more diffuse.[4] In fact, the average light intensity on a yearly basis is 5500 Lux in Genoa, compared to 4000 Lux in Antwerp.[5] This is a result of the difference in inclination of the sun above the horizon, namely 46° in Genoa and 39° in Antwerp. On the other hand, the lower inclination of the sunrays in Antwerp makes them penetrate deeper into the rooms than in Genoa. It is therefore not surprising that the relative window surface and their height–width ratio were remarkably different between the palazzos and the local Antwerp buildings of the time. Calculations on the façades of the selected Genoese palazzos and representative Antwerp buildings showed that on average the Antwerp window area was three to four times larger than the Genoese.[6] It is also a fact that the window height–width ratio in Antwerp decreases per floor (highest windows at ground floor) whereas the ratio in Genoa increases towards the top floor.

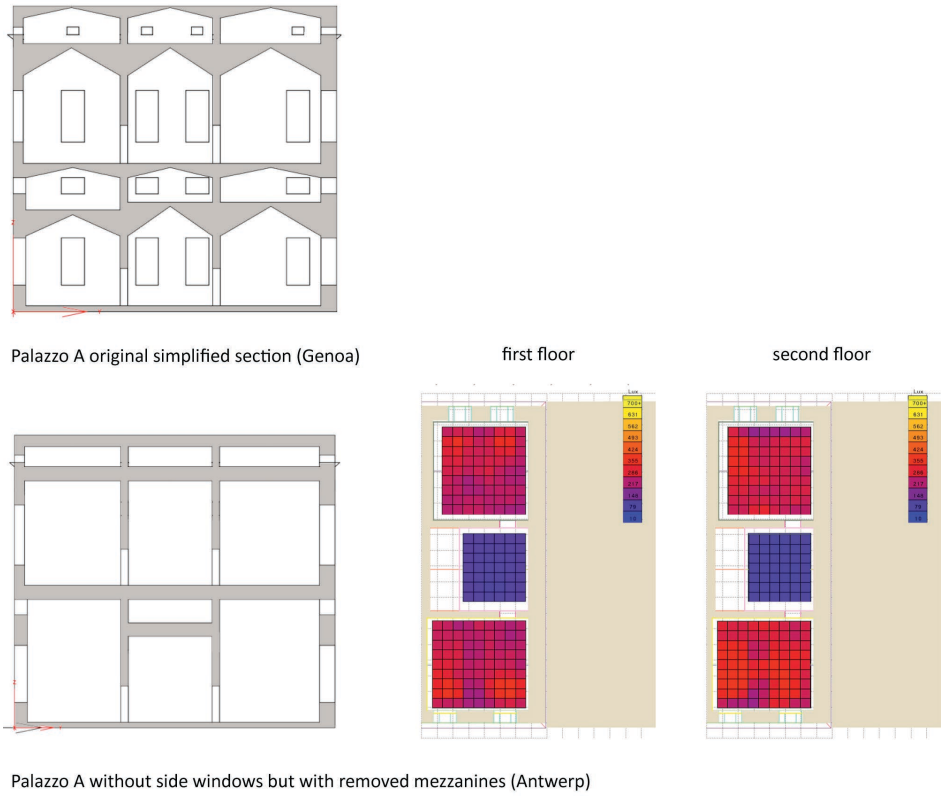

Fig. 11 Improved light intensity for the palazzo A, palazzo A with removed mezzanine (plans, engravings by Nicolaes Ryckemans, 1622; light simulations AutoCAD Ecotect Light Analysis™, 2009).

Given these conclusions, the same palazzo A was simulated after incorporation of the mezzanine area into the main rooms, but without alteration to the façade, i.e. retaining the mezzanine windows (fig. 11). The light analysis for the side rooms (where light conditions were most influenced by the lack of windows) showed a significant increase of light from 125 to 250 Lux, and up to 300 to 350 Lux in the front and back rooms on the first and the new second floor. Taking into account the less favourable indoor lighting conditions, to which people in the 16th century were used, it is considered that normal activities in these rooms were possible.[7] However, the light level in the middle rooms was still not sufficient. These spaces would therefore probably either be merged with the front or back rooms, or could be used for storage or activities that require low light levels.

In most of the palazzos depicted in Rubens's book, the staircases are either situated at the façade or at the rear, blocking the light to the central rooms. But the palazzo E and the twin palazzo by Giacomo Soluzzo and Battista Adorno show examples of a central staircase. The Trippenhuis in Amsterdam, which might have been inspired by this twin palazzo,[8] and which is well adapted to the northern lighting conditions, incorporates a central staircase.

Concerning the façades, no modifications were needed and it is interesting to note that the window ledges, extensively used in the palazzos, when situated beneath the window, in combination with the lower inclination of the sunrays, result in a better illumination of the adjacent room (fig. 12).

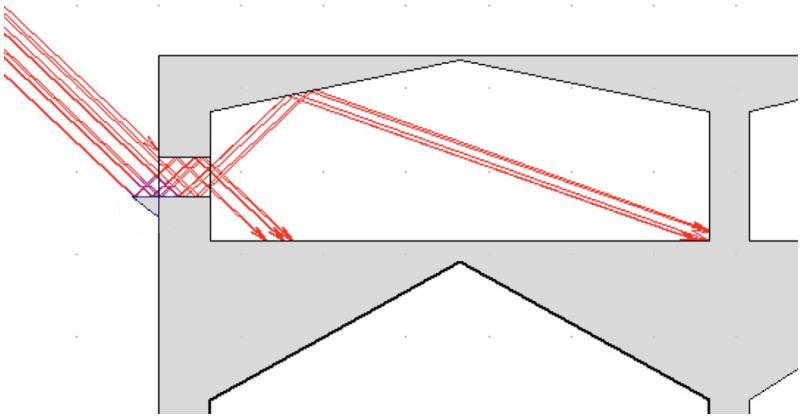

Fig.12 Incoming light reflected the window ledges increases the overall illumination of the room. (Plan and light rays simulation with AutoCAD Ecotect Light Analysis™, 2009).

Given the considerations discussed above, it is clear that relocation of Genoese palazzos to Antwerp would require a substantial, but not insurmountable, adaptation.

The Virtual Construction

Firstly, the building elements to be incorporated were defined or selected. These included an urban plan, a selection of about 6 palazzos, garden gates and ornamental elements, existing medieval and renaissance buildings and a schematic representation of the Spanish walls.

Cadastral Map

The original Peter Frans map and a plan from a later historical study were the basis for the urban plan executed in AutoCAD™ (fig. 13). With evidence of the first two blocks adjacent to the river already built, the block of choice was situated in the middle of the Nieuwstadt close to the former city development. As already mentioned, the success of this New City was very limited, due to the poor condition of the land, and above all, to the political instability of the Low Countries and especially of the city of Antwerp. The fall of Antwerp in 1585 was a real disaster for every further extension of the city. So, the plots and parcels of land remained undeveloped and were used by the citizens as gardens and for agricultural purposes.

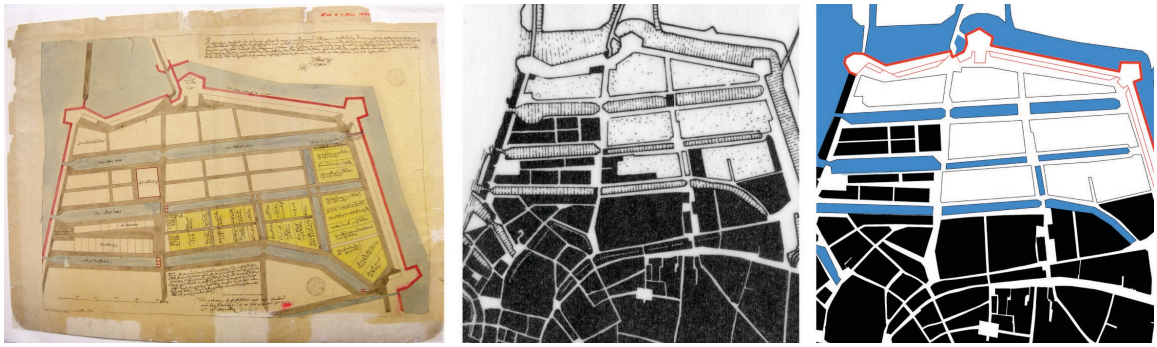

Fig. 13 Left to right: Peter Frans 1550, anonymous plan 1971, urban model in AutoCAD™ layout 2009.

Existing Buildings

The information relating to the development in the early years of the Antwerp Nieuwstadt is very limited. Three chronologically successive images, that were produced in the period 1557 to 1603, show with certainty late medieval buildings in the bock between the Brouwersvliet (brewer's canal) and the Middenvliet (central canal). Between the Middenvliet and the Timmersvliet (carpenters's canal) the Hansa House, which was completed in 1568, can be identified. In the other areas, there is inconsistent depiction of buildings, which may cast doubt on the accuracy of the images (fig. 14).

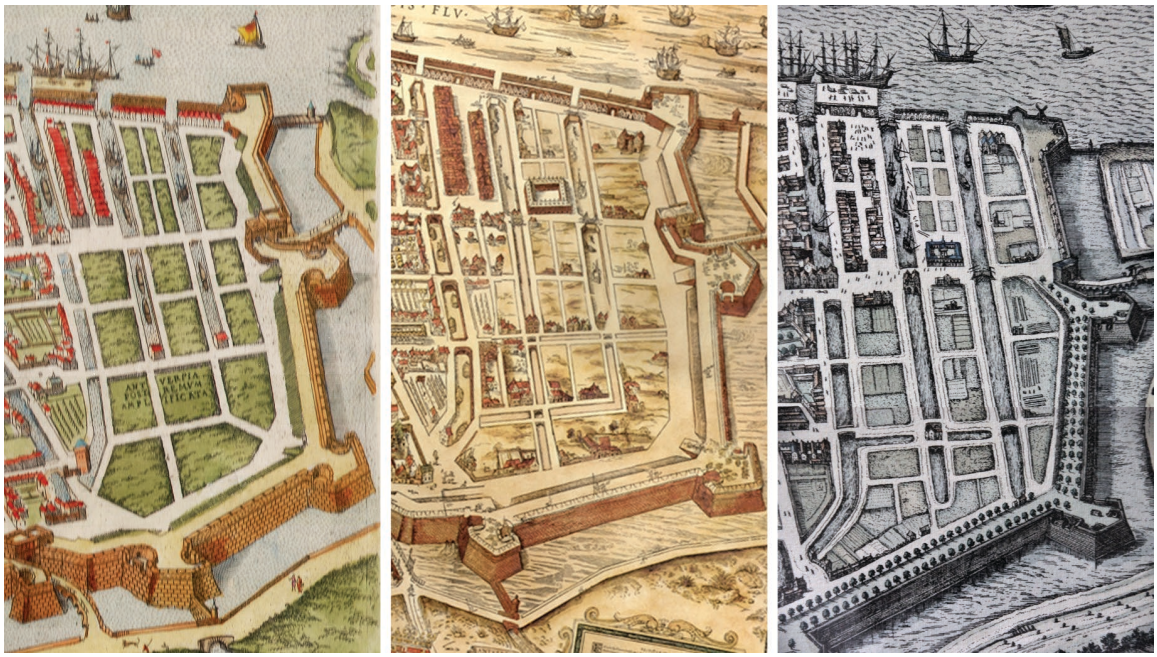

Fig. 14 Left to right: Claudio Duchetti, ca 1557 – Virgilius Bononiensis, 1565 – Joris Hoefnagel, 1598.

Palazzos

As it was not the intention to create a highly realistic and detailed rendered environment, the commonly available Google SketchUp 8 ™ software was used. The palazzos A, B, D, E, F and G were modelled, from the floor plans, elevations and façades available in Rubens's book and adapted where required (fig. 15). The 3D models, and the specific and dynamic sections that could be made in every plane, allowed us to study the light conditions in the succession of the rooms.

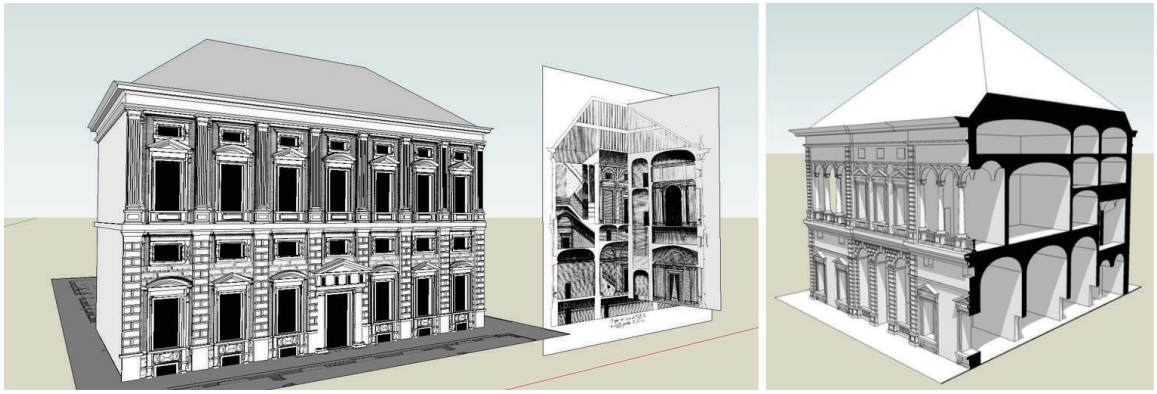

Fig. 15 Left: Palazzo A digital construction and corresponding drawings from Rubens's *Palazzi di Genova*. Right: Palazzo D, façade to back section showing the succession of rooms. (Palazzo A and D, Google SketchUp 8™, 2009).

Garden Gates

The reorientation of the buildings left the garden space and the transverse footpaths unprotected. Fortunately, well-documented works by Rubens's contemporary Hans Vredeman de Vries provide an example of how the garden space could be enclosed with a portico (fig. 16). This solution is very typical for the Renaissance gardens at that time, and offers the advantage of creating circulation patterns between houses and different parts of the gardens. Porticos can also be used as alternatives for the traditional brick walls between the parcels.

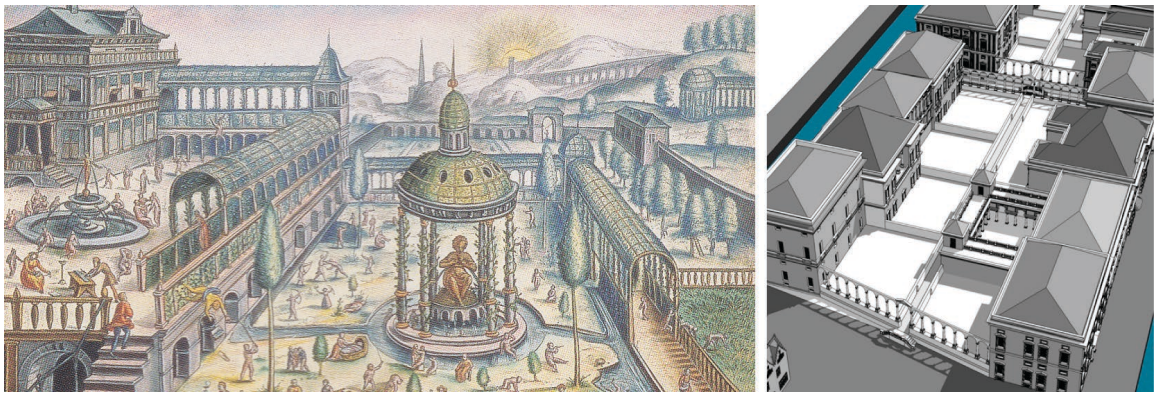

Fig. 16 Left: Gardens enclosed by porticos depicted in Hans Vredeman de Vries, 1577, *Theatrum Vitae Humanae,* Antwerp. Right: Inclusion of the porticos in the Google SketchUp 8™ 3D model, 2009.

Medieval Buildings

Although the medieval buildings were not the first concern, the fact that they are the only buildings on the site in large numbers meant that they had to be modelled to show their main characteristics in comparison with our subject. The terraced, gabled houses covered on average a width of between 3.44 m and 5.75 m and were up to 12 m deep.[9] Their construction and layout were straightforward, and in most cases determined by the adjacent buildings. Figure 17 shows a model of a typical Antwerp merchant house. The block between the Brouwersvliet and the Middenvliet (fig. 14) was filled with dense building, based on representative images of late medieval dwellings (fig. 18).

Fig. 17 Scale model of an Antwerp merchant house (1991).

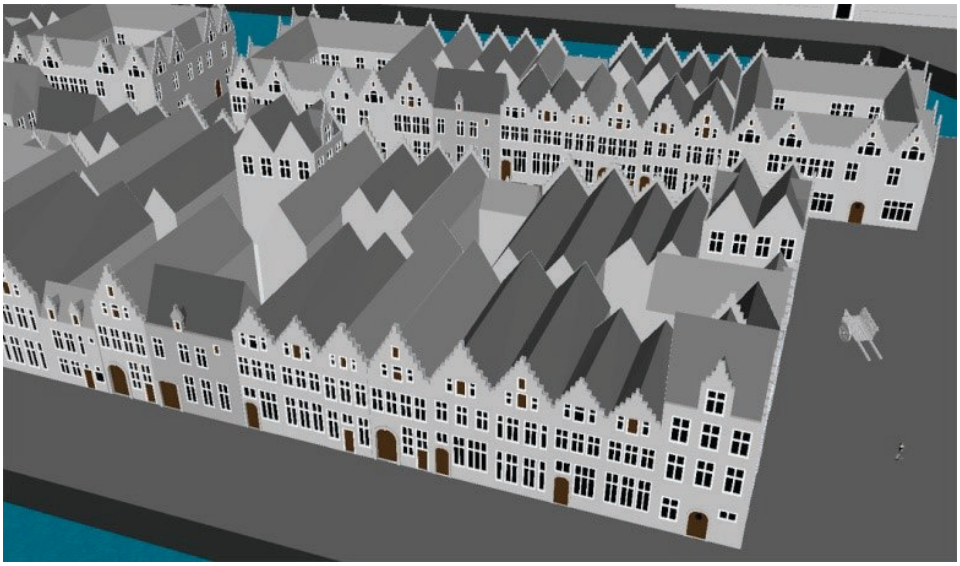

Fig. 18 3D simulation of medieval dwellings (Google SketchUp 8™, 2009).

Renaissance Buildings

The prosperity of the Antwerp merchants and craftsmen resulted in a demand for larger residences which became increasingly complex.[10] As some good images exist of the impressive renaissance Hanza House, actually built on the site, it is incorporated as one of the only authentic buildings in the visualisation (fig. 19). Other supporting buildings in the simulation were constructed according to images and descriptions by Hans Vredeman de Vries (fig. 20). The architect Hans Vredeman de Vries represented traditional scrolled gables in his drawings and prints. In his book *Architectura* (1577), he wrote that the condition of the parcels and streets in the Low Countries is such that the houses are small in length, deep and high.

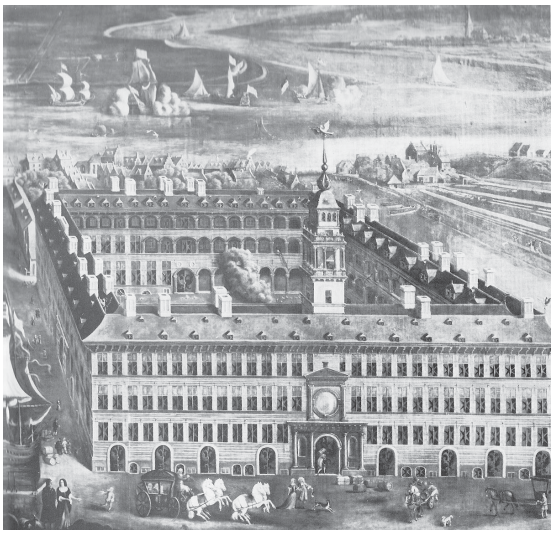

Fig. 19 The Hanza House, 18th century, artist unknown, Deutsche Marinemalerei.

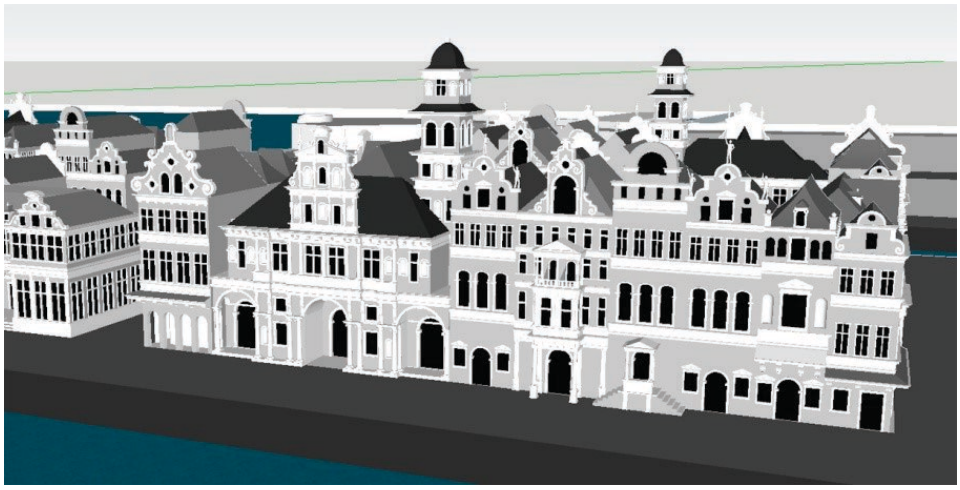

Fig. 20 3D reconstruction of buildings as depicted in Hans Vredeman de Vries's *Architectura* (Google SketchUp 8™, 2009).

Result

The result can be viewed as a series of perspective views of the Nieuwstadt filled with a Medieval quarter, a Renaissance quarter and the early Baroque Palazzo quarter which was the subject of the research. To provide a sense of setting from the perspective of residents, an animated walk-through was produced.

As mentioned earlier, the whole area of the Nieuwstadt was scarcely built upon in the aftermath of Antwerp's Golden Age (fig. 14). Nonetheless, there is good information on what the density of buildings in specific historical periods was. The image in figure 21 depicting the three quarters illustrates the striking difference between the visualised principles of the prevailing 16th-century Low Countries 'Medieval' buildings and the Italian, 'Renaissance' and 'early Baroque' approach. The figure shows, along the side of the late medieval city (bottom from left to right) the quay of the Brouwersvliet built up with a mix of medieval buildings. In the middle on the left side there is a densely built medieval quarter. This is the only area which was actually largely built, and includes a few remaining buildings. Above to the left, is the renaissance quarter, of which only the Hanza House was actually built. In the middle on the right, is the early baroque palazzo quarter. It is clear that such a neat segregation of building styles and ages is highly unrealistic. But with no palazzos ever built in Antwerp, there is no evidence of what a realistic mix might have been. It was decided, in the hypothetical context of the project, to keep the strict partitioning as this would enable a better demonstration of the differences (fig. 21).

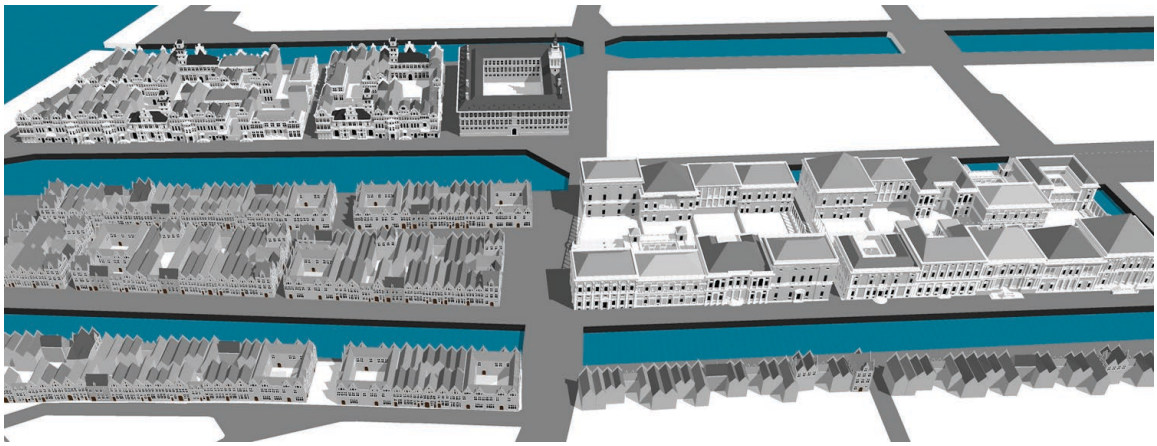

Fig. 21 Overview of the Antwerp Nieuwstadt depicting the medieval, renaissance and early baroque palazzos quarters (Google SketchUp 8™, 2009).

The images in fig. 22 and 23 show the palazzo quarter seen from the southwest (fig. 22) and from the east (fig. 23), both using a bird's eye perspective. In both images, the façade arrangements and the transversal footpath linking the gardens are depicted, enclosed at the ends by the Hans Vredeman de Vries porticos.

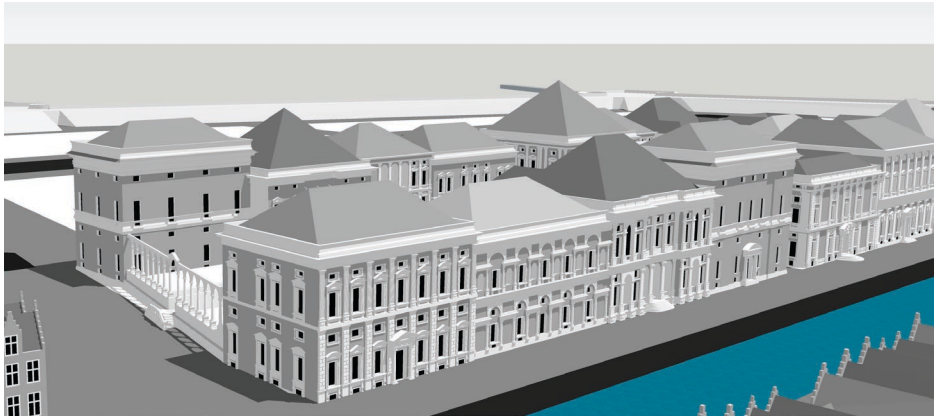

Fig. 22 Façade arrangement depicting in the front, from left to right, the palazzos A, H, E, Antonio Doria, (passage), I and F (Google SketchUp 8™, 2009).

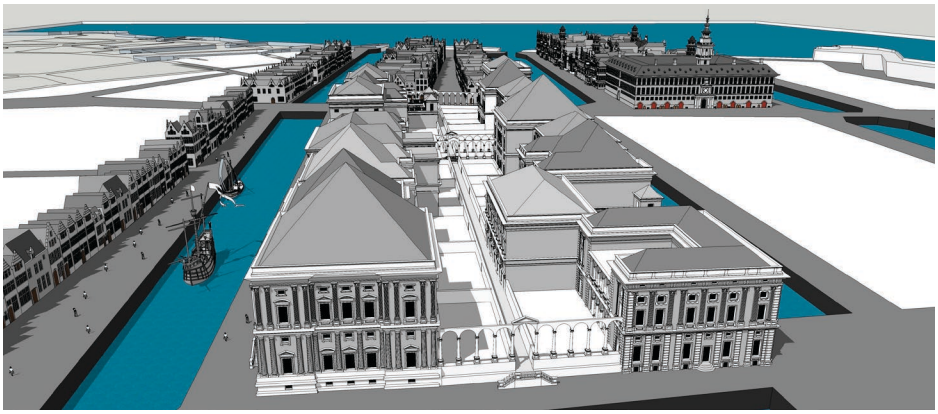

Fig. 23 Seen from the east, from left to right, the palazzo D, the Hans Vredeman de Vries Portico and palazzo I (Google SketchUp 8™, 2009).

Fig. 24 The Brouwersvliet viewed from eye level, showing medieval dwellings opposite palazzos (Google SketchUp 8™, 2009).

The images of the digitally constructed Antwerp Nieuwstadt illustrate, in respect to the palazzo quarter, a harmonious and unifying urban landscape. When considering:

- the connections between buildings;
- the similar heights of the roofs and the cornices;
- the well-structured inner gardens;
- the straight inner streets with access to both the outer streets and to the different back parts of the houses;
- and the openness of the building block,

it can be seen that, if a building programme based on palazzos would have taken place, it would certainly have radiated the image of Dignità and Grandezza – which are the two very important theoretical concepts of architecture and the arts that Rubens highlighted in his introduction to the book *Palazzi di Genova*, and which he found prevailing in the city palaces of the Strada Nuova and the Strada Balbi in Genoa.

Conclusions and Further Work

To draw conclusions from a study in which there are many unknowns, it is sometimes better to evaluate the methodology than the outcome. The approach taken in this project has clearly led to a result that is visually acceptable, and in accordance with historical examples. However, it should be noted that in this case several important environmental and urban factors were necessarily excluded. Recently, research has been started to examine 'the transformation of the city in the Low Countries', that will provide better insights into 16th- and 17th-century urban dynamics. This may eventually lead to a revision of the present study, with increased scientific substantiation and visual realism. This study has placed Rubens's Palazzos in the Antwerp Nieuwstadt, certainly a place they deserved to be in, but fate decided otherwise.

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Sources

Antwerp, City Archives, Inventory Peter Frans, prepared by Adrian Bos (SAA PK#2228 f26)

Illustrations

Fig. 1 Amsterdam, Rijksmuseum, Print Room.

Fig. 2, 14 (center), 14 (right) Antwerp, Museum Plantin-Moretus, Print Cabinet, World Heritage.

Fig. 3, 7, 9-10 Antwerp, library of the department of Design Sciences, historical collection.

Fig. 4, 13 (left) Antwerp, City Archives, SAA 12#4992.

Fig. 5a Antwerp, private collection.

Fig. 5b Utrecht, City Archives.

Fig. 6a-6b Antwerp, library of the department of Design Sciences.

Fig. 8, 13 (right) Projections, S. De Gruyter.

Fig. 10-11 Light simulation, AutoCAD Ecotect Light Analysis ™, S. De Gruyter.

Fig. 12 Rays analysis, AutoCAD Ecotect Light Analysis ™, S. De Gruyter.

Fig. 13 (center) Antwerp, library of the department of Design Sciences

Fig. 14 (left) Antwerp, City Archives, SAA 12#4109 and 12#4110.

Fig. 15, 16 (right), 18 3D digital reconstruction, Google SketchUp 8 ™, S. De Gruyter, 2009.

Fig. 16 (left) Lyon, Bibliothèque Municipale.

Fig. 17 *Stad in Vlaanderen: cultuur en maatschappij 1477-1787,* ed. Jan van der Stock (Brussels, 1991). Antwerp, library of the department of Design Sciences.

Fig. 19 Dresden, Deutsche Marinemalerei, 18th century.

Fig. 20-24 3D digital construction, Google SketchUp 8 ™, S. De Gruyter, 2009.

[1] Lombaerde 1990, p. 46.

[2] Ibid.

[3] Lombaerde 2002, pp. 64-66.

[4] Rosenfeld 1978, p. 56.

[5] Calculations carried out with www.nsesoftware.nl/wiki/maps.asp?params=51_13_17_N_4_23_50_E_type:city_region:BE&pagename=Antwerpen_(town) and params=44_025_00_N_8_056_00_E_zoom:13_region:it&pagename=Genua_(town).

[6] Calculations carried out by S. De Gruyter on five medieval dwellings in Antwerp in De Gruyter 2009, p. 28.

[7] For rough work, 125 to 250 lux is needed, but for normal work 250 to 500 lux is needed (www.kimbols.be/ogen/zien/verlichting.php).

[8] Lombaerde 2002, p. 92.

[9] De Naeyer 2008, p. 36.

[10] De Naeyer 2001, pp. 14-20.