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DE VLIESGEVEL IN THE NETHERLANDS BETWEEN CONSTRUCTION AND REPRESENTATION. PAST AND PRESENT-DAY EXPERIENCES IN SOCIAL HOUSING

Alessandro Dalla Caneva, Angelo Bertolazzi

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Abstract

The crisis of the contemporary urban landscape (meant to convey cultural and social values) is evidenced by the upsurge of self-referential architectural artifacts whose ephemeral features manifest how unsuitable their project-based approach is since it tries to attain spectacular architectural shapes even when dealing with housing. This alarming trend is also present in the Netherlands, even if a relevant tradition regarding the construction of urban spaces by means of façade-prospects is present there.

The lack of regard for the cultural and social values of residential collective housing is evidenced nowadays by the ephemeral façades of many Dutch quarters, where the values of traditional collective housing seem to have been lost. In this way, the all-encompassing feature of globalization gets confirmed: identical buildings appear in different cities and places.

This work focuses on project-based experiences of social housing implemented in some meaningful periods in the development of Dutch housing culture. Such projects are deeply rooted in their sites, and though they do not neglect to produce buildings that meet contemporary requirements, they keep the connections, ensuring continuity with the shapes and construction traditions of the past. In particular, the features of façades – thanks to their formal and construction-related developments – clearly manifest the choice to regard the project as a well-devised blend of past, present, and future.

This work relates the results of broader research regarding the urban role of residential collective buildings within the landscape of Dutch architectural culture in the early XX century.

Keywords

Façade, Urban space, Tradition, Identity, Memory.

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1. INTRODUCTION

Herman van Bergeijk – a historian of Dutch architecture – has explained how the development of architecture in The Netherlands underwent a sharp change during the 1980s. Mass collective housing, which consistently fell within the purview of the Socialist State, was then handled by private purveyors so that real estate companies became the organizers or managers of town construction.

Herman van Bergeijk regarded this switch as the death knell of collective civil architecture and the birth of private and self-centered architecture. The idea of civil architecture petered out with the architecture of Rem Koolhaas, who devised experiences of iconic architecture that were disconnected from the sites, the traditions, and the identity of the people. In the Netherlands, this approach

was challenged by some authors whose architectural works blend into the contexts thanks to their close links with the traditions, the sites, and the memories, so they aim to define project experiences that would fit the cultural identity of a country. The radicalism of an approach rejecting history as the litmus test for assessing the results produced by the culture of the project was counteracted by the attitude of those regarding the project as a well-constructed balancing of present, past, and future. As a result, the project preserves and enhances the values of history, which are interpreted according to both present-time material and spiritual needs. The architectural works relying on the above tenets embody the values of tradition and avoid being imitative representations of shapes belonging to the past, renouncing their up-dating, thus offering them as new as they were in the beginning.

In the Netherlands today, some architects are laying out social housing projects that fit the formal and construction-related traditions of the sites. Hans van der Heijden's residential housing projects offer a meaningful example of this approach to architecture, namely his projects, and his façades define the boundaries of those urban spaces in which the community finds its identity [1]. Hans van der Heijden's studies regarding curtain walls in mass housing buildings, on construction, and the expressiveness of bricks in their manifold variations and settings move along the trail blazed by early XX-century Dutch architecture by the Amsterdam school down to the Betondorp industrialization; they witness the will to bridge the gap caused by many 1990s architectural projects, so as to create an urban space in which innovation and tradition blend together. By retracing the most meaningful stages of the development of Dutch approaches to housing and curtain wall construction, this study means to underline how Hans van der Heijden's work continues this tradition, in which the regard for history does not impair the contemporary features of the projects.

2. DE VLIESGEVEL IN THE NETHERLANDS. CONSTRUCTION AND REPRESENTATION OF MASS SOCIAL HOUSING

Even today, collective imagination envisages the Netherlands as a place where picturesque cities dot the

flat lands laboriously retrieved from the water that is their life-blood. [2] Amsterdam is built on the water: its houses rise above the liquid surface on top of sturdy foundations that have afforded mooring to the vessels of merchants and businessmen whose wealth has made the fortune of the country. Cities devoted to trade were paramount among medieval towns. Their urban landscape features houses built on narrow plots running perpendicularly along the navigable canals. Even when the relevant urban transformations of The Netherlands during the golden century produced irretrievable changes [3], the pattern of the merchant city featuring high and narrow houses flanking the waterfronts in a rhythmic progression is deeply rooted in the construction of the city. Amsterdam offers clear evidence of this urban layout. Throughout the XVII century, the city spread rapidly beyond its medieval walls; however, it maintained the construction typologies belonging to the ancient medieval city. The empty reservoir between the XVII century walls (provided with ramparts) and the medieval walls suggested a new housing typology: blocks enclosing courtyards. Anyway, the blocks embracing the empty spaces of the narrow and elongated courtyards still preserved the rhythmic features of individual living units, revealing their clear identity in their main façades. This feature was to be kept as late as the early XX century so that in the collective imagination, Amsterdam is pictured as the city still graced with manifold and multi-colored high and narrow gabled façades representing the urban space's main feature. This period saw the beginning of a sweeping renovation of the urban look of the cities [4].

The starting point was the 1902 housing law (Woningwet) [5], which – though not meant to improve architecture – in fact improved Dutch council housing projects by implementing new norms and minimal technical, sanitary, and social standard requirements when building new dwellings. Though the Woningwet provided just regulatory requirements, it triggered a process of renewal of architecture. The opinions and debates in its wake, in fact, connected the down-to-earth need to build rational dwellings resorting to producing standardized construction elements with the need to voice the working-people identity in new



Fig. 1. Hendrik Petrus Berlage, view of the plan of Amsterdam South (1915).



Fig. 2. Michel de Klerk, houses on Vrijheidslaan in Amsterdam (1921-1923).

council housing. This arguing led to the laying down of Hendrik Petrus Berlage's South Amsterdam expansion plan (1915) (Fig. 1). The unitary plan meeting the need to normalize urban growth beyond Renaissance walls represents the solution to the growing demand for new working-people housing. Planning an urban space representing social values plays a relevant role in Berlage's views since he regards city planning as a social art [6]. According to this approach, the curtain-walled blocks enclosing a courtyard were to provide the features of urban space [7]. The new social democratic city builds its own urban image, blending together individual housing units thanks to seamless façade curtain walls. Berlage did not participate in any block project enclosing a courtyard, which was formally designed by the Amsterdam School (Fig. 2) [8]. However, he suggested how the new residential blocks would look, based on research based on a formal simplification according to an "impressionistic" sensibility [9].

Berlage's approach was embraced by the architects of the Amsterdam School, first among others by Michel de Klerk, who, in the triptych of working-people houses built in Amsterdam Sparendammer Buurt (1914-1920) (Fig. 3), had already conceived the buildings as a sequence of seamless impressionistic surfaces that wrap the residential block [10]. The project of a district of council houses for railway and dock workers in Sparendammer Buurt, in the northern area of Amsterdam's western outskirts, started almost by chance, availing it-

self of Johan Melchior van der May's plan, according to a well-grounded, traditional typology, it laid down regular tracks and housing blocks surrounding courtyards. In the heart of the district, featuring a greenery garden (Plantsoen) that was situated so as to host the meeting of two rotated orthogonal grids – which designed an irregular diagram whose layout was not easy to solve – de Klerk was tasked with showing his talent and skill in endowing the symbolic center of the district with monumental features. A few more (perhaps 10) years were to pass before the three housing blocks were completed: they looked pretty disconcerting for those times. For centuries, the city had built its own image on the re-enactment of lengthwise-built Gothic houses and the rhythmic sequence of vertical façades – each endowed



Fig. 3. Michel de Klerk, Sparendammer Buurt, Residential block building. Source: drawing by Alessandro Dalla Caneva.

with its unique individuality –; now, instead, the city was presented with a sequence of seamless horizontal surfaces that did not refer to any individual housing unit, but rather to the symbolic unity of each individual dwelling hidden behind the same curtain wall surface. This newfangled look of Dutch council housing was still kept, notwithstanding the technological evolution of the 1920s, evidencing the all-encompassing research between construction and representation that characterizes Dutch architectural culture in the first half of the XX century. Another research got underway with the Amsterdam School's research of representation: it dealt with resorting to new materials and industrialized construction techniques in residential housing. The two aspects were strictly connected by the will to preserve the Dutch tradition, updating it according to the new technological and social context. Starting from 1921, in various Dutch cities (The Hague, Amsterdam, and Rotterdam), new construction solutions were introduced based on resorting to concrete rather than bricks, which were time-honored elements – related both to construction and representation – in Dutch construction tradition. Three were basically the main construction types [11], whose object was to experiment with new solutions based on rationalizing the construction process, in particular by cutting construction times:

a) monolithic procedures: they were based on employing standardized form-works over which the concrete slurry was poured; the “Greve”, “Koss-

el”, “Non Plus”, and “B.B.B. - Bims Beton Bouw” systems belonged to this typology. This last system employed pumice and concrete elements acting as disposable form-works, whereas the three former systems employed one-story-high wooden or metal form-works;

- b) element-based procedures: they resorted to factory-produced structural elements that were later assembled in the building yards with the help of cranes. Among these systems, the most widely employed were the “Bron” and the “Hunkemüller”, in which the elements were whole one-story-high walls made up of slag or pumice concrete;
- c) block-based procedures: in this case, the walls were made of small pumice concrete elements that substituted traditional bricks. Among the most widespread ones, the “Isotherme”, the “Isola”, the “Bredero” with hollow elements, and the “Winget”, which employed solid blocks, can be mentioned.

The peculiar feature of the above-mentioned systems was that they employed concrete plaster sprayed on the surfaces (cement-gun): it filled up the grout lines between the elements and made the surfaces smooth and uniform. In all three procedures, walls were perfectly two-dimensional, and the seamless curtain walls were emphasized by the decoration provided by the colored bands running from window to window, which were distinctly scanned by volumes that threw their de-



Fig. 4. Quartiere Betondorp (1921-1930), view of the construction site of a building made with «B.B.B. - Bims Beton Bouw» (left) e «Hunkemüller» (right).

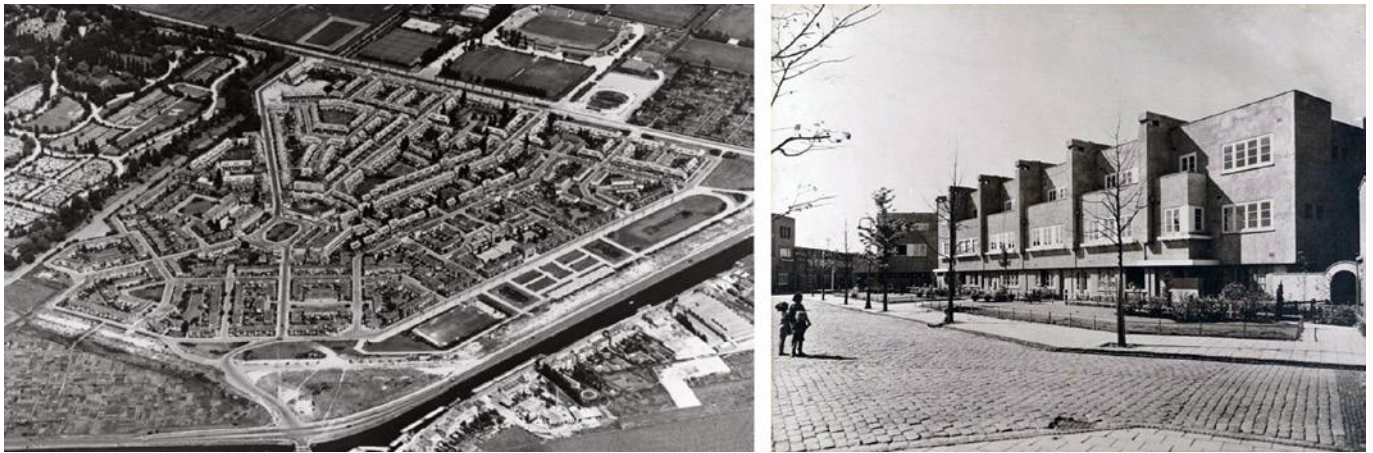


Fig. 5. *Betondorp* neighbourhood (1921-1930), '50s aerial view (left); ultimted construction in the '30s (right).

sign into relief. The first district resorting to concrete elements was the Kossel I (1921-1922) in the Rotterdam Bloemhof district, where the construction system bearing the same name was employed. In Amsterdam “West” district (1921-1924), instead, 6,000 apartments were built in blocks up to four stories high, resorting to various concrete-based (mainly pumice and slag) slurries; the most relevant intervention regarded the Amsterdam Tuindorp Watergraafsmeer district (1921-1930). Here, in 1923, all the main above-mentioned construction systems (Fig. 4) were implemented: the first parcel was completed in 1925 and was soon known as “Betondorp”, id est “Concrete village” (Fig. 5). On the one hand, the resort to bricks (which were the hallmark of the Amsterdam school) was abandoned entirely, though, on the other, their typological and morphological features were kept, namely low residential buildings unified by curtain walls, which became the staple feature of Dutch residential housing, as well as the original invention of this “alternative approach” in relation to the formal and technological orthodoxy of the New Objectivity.

3. REPRESENTATIVE CONCEPTION OF THE FAÇADE

The curtain walls of the new working-people council houses are in keeping with the representative conception belonging to Dutch culture [12]. This outlook is best expressed in Michel de Klerk’s curtain walls. The façades of the buildings present organized patterns of

uniform layers of color and alternated rhythms of rectangular and square panels whose colors and materials vary. Such elements are ruled by the geometrical accuracy underlying their layout, but at the same time, they tend to tear apart the structure by submitting it to its surface value. The result is achieved by using bricks as modular units that produce decorative patterns whose expressiveness tunes into the expressiveness of the wall surfaces. In Amsterdam Sparndammer Buurt residential blocks, the seamless surfaces match the diverse organization of the construction elements, namely bricks, window frames, and copings that underline the seamless surface character of the façades lining the streets as a sequence.

An utterly personal stylistic vocabulary of construction-related details that enhance shapes relying on a wide variety of elements that are organized and alive so as to make up a unity; though deeply rooted in tradition, such elements undergo the influence of a renewed exotic bent, being reinterpreted and transformed originally and surprisingly, though always ancillary to spatial aesthetic principles. The aesthetic links with Far Eastern countries reveal how impressed the Dutch were by Indonesian art. Formal autonomy gets undone in the widespread brick surfaces: their decorative virtuosity, shapes, varied chromatic patterns, and differently-organized textures – embroidered with finely treated ornamental details – are reminiscent of Semper’s mythical textile theories, which were acquired through Berlage’s interpretation in his exemplary achievement of Amsterdam Stock Exchange [13].

4. HANS VAN DER HEIJDEN'S *VLIESGEVEL* IN RESIDENTIAL BUILDINGS. RECLAIMING A TRADITION

When faced with the images of liquid architectures dotting the Dutch urban landscape, not affording the slightest relation to the context they rise in, we welcome the efforts of those creating urban spaces communities feel they belong to. These architects express the will their architectures aim to tackle urban spaces by reclaiming Dutch urban tradition tenets [14], with reference to Mediaeval as well as to early XX-century architecture: the former out of reasons connected to the typological solution of the layout, the latter to the solution of façade walls.

This can be applied to Hans van der Heijden, an architect whose buildings create an urban space resorting to the already-mentioned curtain walls that unify a seamless surface of the individual living units. Hans van der Heijden's architecture faces a changed reality, where the demand focuses on small-sized one-family dwellings. Hans van der Heijden, however, does not give up his idea of monumental architecture. The challenge of designing small-sized dwellings is tackled by resorting to a well-known architectural typology belonging to historical tradition, namely the Gothic merchant seaman's house, built with the best depth and height. Anyway, the relationship between the houses and the streets is not solved by resorting to the pictur-

esque repetition of each façade but rather by unifying the individual façades, thus creating a monumental uniform front whose manifest references hearken back to the above-quoted formal experiences of the Amsterdam School.

The two residential working-people social housing blocks built in the Rotterdam Feijenoord district belong to this typology. The Persoonshaven block (Figs. 6 and 7) comprises 26 apartments, and the Oranjestraat block (Figs. 8 and 9) of 46 apartments. Both blocks are reminiscent of traditional two-door and three-window houses built on lengthwise lots. According to a time-honored custom, the Dutch do not like shared entrances, so each residential unit has its own private access. Façade surfaces (Fig. 10) resort to traditional ancient materials, namely bricks, as an evident reference to the Amsterdam school. Such bricks come in at least three different colors, from red to beige in different shades, with uniform surfaces that clothe the architectural structure. Vertical joints determined by the offsetting of the bricks, which reach up to waterspouts at the top of the walls, allow each living unit to be identified appropriately; they appear, however, to belong to a whole thanks to the seamless upper coping, to the ever-changing rhythm of the openings planned according to modules and the seamless bands at the base of the façades, which at regular intervals design portals so as to suggest the presence of living units in



Fig. 6. Hans van der Heijden, *Two-door houses, social housing buildings realized in Rotterdam, Feijenoord district (2012-2015), views from the street.*

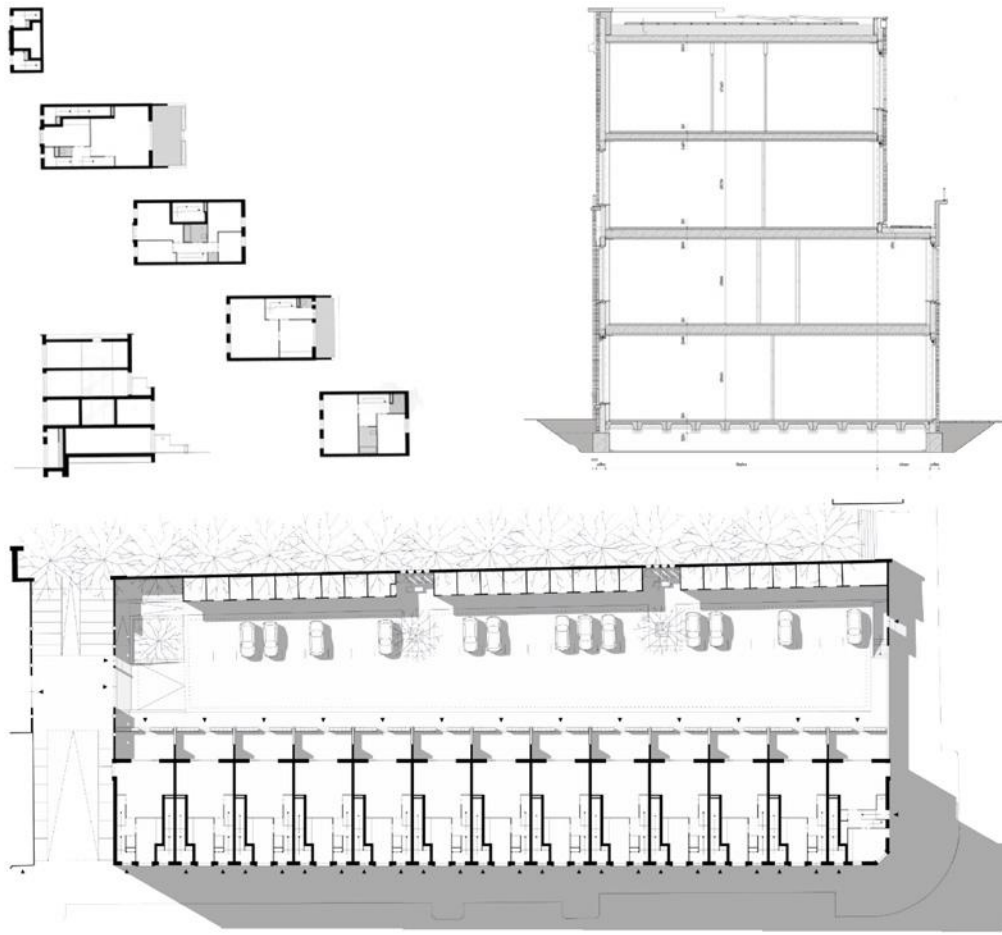


Fig. 7. Hans van der Heijden, *Two-door houses*, social housing buildings realized in Rotterdam, Feijenoord district (2012-2015).

an urban scale. The whole surfaces of the brick curtain walls present patterns designed to dispel the sensation of solidity. Particularly regarding the cladding of the urban portals, which resorts to square patterns that define the surfaces, neglecting tectonics and looking like mere cloaking, reminiscent of Semper's principles. De

Klerk's research follows in Semper's footsteps. However, he reveals his trick of joining individual façades, or rather individual living units, solving the formal features of working-people social housing through a strict and open relation between the morphology of residential buildings and the typology of individual



Fig. 8. Hans van der Heijden, *Two-door houses*, social housing buildings realized in Rotterdam, Feijenoord district (2017-2020), recent views.

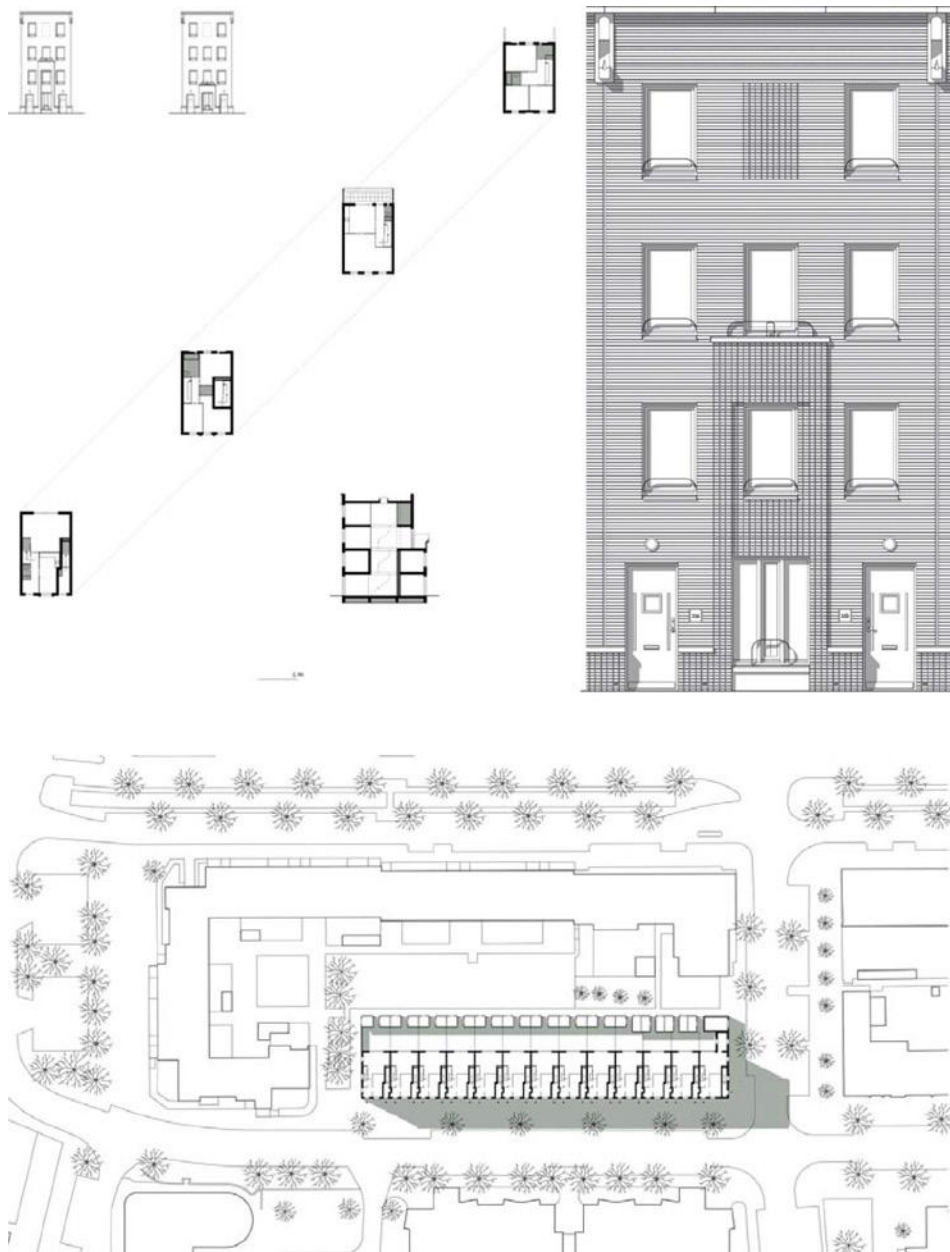


Fig. 9. Hans van der Heijden, Two-door houses, social housing buildings realized in Rotterdam, Feijenoord district (2017-2020), plans and elevation.



Fig. 10. Hans van der Heijden, Two-door houses, social housing buildings realized in Rotterdam, Feijenoord district (2012-2015), original elevation.

living units. The complex problems of duplex residential buildings, caused by having to make do with the scanty space afforded by the living module, do not neglect to offer comfort and suitability by managing to provide solutions according to the use of the rooms, a regarding orientation, light, views over the street, on one side, and over more homely views, on the other. Accordingly, the two façades have different features. The front façade is exalted by the severity and the geometrical interplay of the layout of the elements; the façade giving onto the courtyard is more homely, above all, thanks to the presence of a terrace overlooking the courtyard.

In Hans van der Heijden's projects, construction-related research follows the research of representation to employ materials in a mindful and up-to-date way to fulfill present-day standards as far as internal comfort is concerned. The choice to resort to double walls enclosing an insulating air cushion can again be referred to as 1920s building techniques. Moreover, it manages to bring together formal choices (namely, facing bricks) and technical choices (employing insulating high-performance materials). On the one hand, this allows the energy performances required by present-day norms to be attained; on the other, it deploys all the formal and material solutions, leading to recovering the ties with the Dutch tradition of curtain walls in working-people housing.

5. CONCLUSIONS

The experiences of social housing in The Netherlands provide meaningful examples of the construction of urban space. The research of representation in façades on a formal and construction-related plane marks a relevant stage in defining an urban project. It represents the balance between the inside and the outside or between the areas devoted to private and public life. In this sense, façades are the places in which public relation among individuals takes place. Therefore, they acquire a civic character since communities consider them symbols of their identity. This condition of the suitability of façades to the civic role they deserve explains how the social housing projects in The Netherlands have a strict rela-

tion with the representative and construction-related traditions of the country. Their being related to tradition connects them to the fundamental features of the areas in which they are located.

Hans van der Heijden's experience of planning working-people social houses in Rotterdam affords a non-conformist example compared to the common practice of uprooting architecture from its context. His social houses consider the *genius loci*, the background of memories, and the population's identity according to urban space construction patterns already well rooted in Dutch architectural tradition. Urban space, meant as social space, is what Dutch architecture aims at, and symbolically, façades exhibit their role and civil value within the space they create, in which the individuality of the inhabitants finds expression in the unity of collective living.

Nowadays, the suitability of the project to the real features of the place is not regarded as necessary. On the contrary, it even seems to be considered as hindering the architectural creativity that refuses to believe in the history, in the place, in the memory of any given context. When faced with approaches taking pride in making a *tabula rasa* of the past, we are drawn to those architectures that look upon tradition as a valuable asset since our identity can be found and recovered only in tradition. That is why Hans van der Heijden's architecture questions and goads our consciences by suggesting rethinking the primary motivations underlying architectural projects. Such motivations do not belong merely to the material but to the spiritual sphere.

References

- [1] Van der Heijden H (2008) *Architectuur in de kapotte stad*. Uitgeverij Thoth, Bussum
- [2] Diderot D (1989) *Viaggio in Olanda*. Ibis, Como
- [3] Jacob M (2009) *Il paesaggio*. Il Mulino, Bologna
- [4] Fanelli G (1978) *Architettura Edilizia Urbanistica*. Olanda 1917/1940. Papafava Editore, Firenze, pp 1–70
- [5] Casciato M, Panzini F, Polano S (1980) *Olanda 1870-1940. Città, Casa, Architettura*. Electa Editrice, Milano
- [6] Van Bergeijk H (1985) *Hendrik Petrus Berlage*. Architettura, Urbanistica, Estetica. Zanichelli Editore, Bologna
- [7] Secchi B (2011) *La città del Ventesimo secolo*. Laterza Editori, Roma-Bari

- [8] Casciato M (1997) *La scuola di Amsterdam*. Zanichelli Editore, Bologna
- [9] Berlage HP (1894) *Architecture and Impressionism*. In: Whyte IB (ed) *Hendrik Petrus Berlage. Thoughts on style 1886-1909*. The Getty center for the history of art and the humanities, Santa Monica, pp 105–121
- [10] Dalla Caneva A (2012) *Progetti urbani. L'immagine della città nell'invenzione dell'edificio di massa popolare da Hendrik Petrus Berlage a Michel de Klerk*. Cleup Editore, Padova
- [11] Minnucci G (1926) *L'abitazione moderna popolare nell'architettura contemporanea olandese*. Libreria di Scienze e Lettere, Roma, pp 212–230
- [12] Fanelli G (1968) *Architettura moderna in Olanda*. Marchi & Bertolli Editori, Firenze, p 19
- [13] Fanelli G (1994) *Il principio del rivestimento. Prolegomena a una storia dell'architettura contemporanea*. Laterza Editori, Roma-Bari, p 258
- [14] Gravagnuolo B (1997) *La progettazione urbana in Europa 1750-1960. Storia e Teorie*. Laterza Editori, Roma-Bari