

Architecture and the Ideology of Productivity: Four Public Housing Projects by Groupe Structures in Brussels (1950-65)

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Introduction

Despite our taste for geniuses and landmark buildings, the bulk of the built environment of the postwar world has been designed by unidentified architecture firms that produce buildings rather than discourse. Belgium forms no exception to this rule. Its landscapes are littered with constructions that testify to a mentality that values pragmatism and common sense more than inspired commitment or long-term vision. This is especially true in the field of public housing. However, this does not mean that it is of no interest to the scholar of the postwar period. Quite the contrary: the public housing sector formed the backdrop *par excellence* for two crucial phenomena in the shaping of the welfare state in Belgium: first, the compartmentalization along socio-political lines of any aspect of society in the course of the 1950s, including housing and town planning; second, the adaptation of the Belgian industry to the economic conditions of the postwar world, necessitating a profound renewal of the country's outdated manufacturing apparatus. This was especially true for the building trade. Whereas the cultural aspects of the housing problem have been well studied during the last decade - notably the ideological dimension of the discourse on housing - research on the impact of the technical and economic constraints on its production remains scarce.¹

This paper looks into a couple of public housing estates by Groupe Structures. The largest architectural firm in Belgium at its peak, it played a central role in the transformation of Brussels into a tertiary

centre in the 1960s. As it will be argued, the stylistic and typological evolution in these schemes - evolving from traditionalist interpretations of the 'garden city' concept to straightforward applications of the CIAM doctrine - reveals the growing impact of a 'productivist ideology' on the public housing sector in Belgium in the course of the 1950s. Paralyzed by the steeply rising cost of land, labour and building materials, the central buzzwords in the discourse became standardization, industrialization and prefabrication. However, as we will argue, the productivist doctrine failed to live up to its expectations as the public housing sector's turnover remained too marginal to put sufficient pressure on the construction industry in the adaptation of more rational methods of production and construction.

Groupe Structures, Gaston Bardet and the 'Nieuwenbos' estate

Groupe Structures was founded in 1949 by Raymond Stenier (1921-), Louis Van Hove (1920-2010), Jacques Boseret-Mali (1917-2003) and Jacques Vandermeeren (1920-2004) after graduating from the Institut Supérieur d'Urbanisme Appliqué (ISUA) in Brussels.² The ISUA, directed by the French urban theoretician Gaston Bardet (1907-89)³, was the first institution to offer courses on urbanism in Belgium. A typical exponent of the conservative 'culturalist' tradition in urban planning, Bardet openly rejected CIAM's functionalist and universalistic aspirations, as in his eyes it had transformed urbanism into an elitist, soulless 'planology'.

In Bardet's view, the city's material form was only subordinate to its fundamental role as a harmonious environment for social interaction. Thus, in the context of postwar reconstruction, the urbanist's primary role was to create a backdrop for the spiritual and social regeneration of the population: 'It is the love of our fellow man that stands at the heart of community and it is the task of the planner to arrange the form of the town and the region in such a way as to promote and nurture the strength of community.'⁴ Condemning large urban concentrations for reason of their supposedly alienating effect and their role in the exodus from the countryside, Bardet proposed an equal dispersion of people and industry in a network of smaller settlements covering the entire territory. In this manner, he sought to create 'an open form of society based on a federation of structured communities, shaped to the scale of man'.⁵

In the early 1950s, Groupe Structures integrated Bardet's ideas in a couple of projects for the Société Nationale de la Petite Propriété Terrienne (SNPPT) [National Society for Small Land Ownership], such as the 'Nieuwenbos' estate in Grand-Bigard, nearby Brussels.⁶ A public institution founded during the economic recession of the 1930s, the SNPPT focused on public housing in rural areas, outside the major agglomerations. Its mission was to halt the exodus from the countryside by establishing a network of smaller communities based on solidarity and mutual self-help. This way of modernizing the rural areas connected well with Bardet's ideas.⁷ Groupe Structures' projects for the SNPPT thus served as ideal vehicles for putting his principles into practice in the Belgian context.

Typically, 'Nieuwenbos' consisted of semi-detached houses in a neotraditional style, located on a large plot of land (800 m²). [fig. 1] This had to do with the compulsory (!) keeping of small livestock and crop growing - part of the SNPPT's strategy towards self-sufficiency and economic

independence. The master plan for 'Nieuwenbos' was designed in accordance with Bardet's theory of 'échelons communautaires' ('scales of community'), a hierarchical set of spatial and social subdivisions. The smallest scale was the 'échelon patriarcal' of the street or hamlet (10 to 15 families); then came the 'échelon domestique' of the housing block or village (50 to 150 households) and finally the 'échelon paroissial' of the neighbourhood (500 to 1,500 families).⁸ The 'échelon patriarcal' in 'Nieuwenbos' was formed by several clusters of semi-detached dwellings of different types, situated along dead-end streets. On the 'échelon domestique' in turn, these clusters were distributed around a central open area with commercial and communal infrastructure (not realized).

The lay-out of the six different house types was informed by Bardet's principle of 'social topography', a 'scientific' method combining various surveys of the historical, economic and social characteristics of the community under study.⁹ Finally, the design process was inspired by Bardet as well. Following his principle of 'organisation polyphonique', a permutational system of work organization, each team member alternately either coordinated the entire (design) process or collaborated on a specific part of the job.¹⁰ A team member would, for instance, manage the 'échelon paroissial' in one part of the project, while working on the 'échelon domestique' in another. In opposition to the monotony of many a modernist scheme, this plurality of visions was supposed to engender a variety of spatial concepts within a single project.¹¹

In the SNPPT's magazine *Landeigendom*, 'Nieuwenbos' was commented upon as follows:

*'Nieuwenbos' offers the families of Brussels sound housing, an open-air cure, a constructive use of leisure time, and a wholesome and abundant diet. An ill-accommodated family that moves into a SNPPT property improves its standing and human dignity.*¹²



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Fig. 1: Groupe Structures, *Nieuwenbos estate* (1953-1955), contemporary photograph. Source: *Landeigendom* 1 (1957).

A similar comment appeared in the architecture periodical *La Maison*:

*Given the choice between life in a flat in a fifteen-storey building located on the edge of town and life in a small land ownership of 800 m² acres, the 91 families that occupy the first section of Grand-Bigard did not hesitate. The city is not made for the child.*¹³

The anti-urban undertones in these comments reveal the polarized debate about (public) housing in Belgium in the postwar period. Whereas the state-controlled block of flats became a symbol for a socialist, collectivist way of life, the single-family house in a rural setting remained the image guide of the Catholic Block. As the latter dominated the social and political climate in postwar Belgium, individual home ownership became the norm, leaving only limited room for typological and technical experimentation. Although committed modernist architects such as Renaat Braem, Willy Van der Meeren and Groupe EGAU did receive large commissions, their work had only a limited impact on public housing policies in Belgium.

In such a context, it comes as no surprise that the SNPPT promoted 'rural' estates like 'Nieuwenbos' as an antidote to the alienating effects of the industrial city, since it was believed that closeness to nature enhanced the inhabitants' moral strength and stimulated family values. However, as can be derived from the lay-out and equipment of the dwellings (e.g. hot running water in the bathroom, a novelty at that time), 'Nieuwenbos' aimed at an urban rather than a rural public. Indeed, the first project by the SNPPT to be located so close to a major agglomeration, its ambition consisted less of modernizing the countryside than offering a suburban alternative to the lower middle classes in the Belgian capital.¹⁴

The crisis of the building sector and the ideology of productivity

Soon, however, the garden city paradigm for public housing came under pressure as the price of land around the major cities rose dramatically. In the Brussels area, for example, land prices doubled between 1955 and 1965.¹⁵ Although the rise in spending power partly compensated for this increase, it also resulted in higher expectations with regard to equipment and finishing. Added to this, the office building boom in the 1960s caused a considerable price increase in building materials. The biggest issue, however, was the growing shortage of qualified labour due to a massive outflow to upcoming sectors such as the automobile assembly and petrochemical industries. Estimated at 20,000 to 30,000 heads, this shortage put serious pressure on the building trade, as in the postwar period most contractors still utilized traditional, labour-intensive methods.¹⁶ It was estimated that 85% of the trade's turnover was realized by enterprises employing four workers or less.¹⁷ Such a decentralized and small-scale organization prevented any meaningful impulse with a view to boosting the construction industry's productivity level. As a result, the total building cost of modest dwellings rose by 10% between 1953 and 1955, to attain an annual increase rate of almost 10% in the early 1960s.¹⁸

This poor productivity record did not concern the building trade alone, but the entire Belgian economy.¹⁹ As a remedy, in 1951, the Belgian Service for the Increase of Productivity (BDOP) was founded within the framework of US Marshall Aid. Just like its sister institutions in the neighbouring countries, the mission of the BDOP was twofold: first, informing the different economic sectors about more efficient methods of design, production and distribution, and, second, propagating concepts such as productivity and scientific management as fundamental conditions in the pursuit of prosperity and progress.²⁰ Thus, apart from their economic role, these 'centres of productivity' also acted as

Trojan Horses in the introduction of the American consumerist model in the early days of the Cold War.

The most visible part of the BDOP's mission consisted of regular study trips, which it organized to investigate the technical and social mechanisms behind the United States' high performance level.²¹ In the summer of 1954, one of Groupe Structures' partners took part in such a study trip with a particular focus on the problems of mass housing. During a period of eight weeks, the delegation meticulously studied different aspects of the American construction industry, such as its position within the general economic climate, its financing mechanisms, and the methods of design, construction and site organization. Issues related to American urbanism, especially the phenomenon of suburban sprawl, were investigated as well. The delegation also met with numerous representatives of professional bodies and an extensive range of officials, design professionals (such as partners from SOM's New York and Chicago offices), contractors and academics from MIT, Harvard and IIT.²²

In its account, the commission reported in the first place on the cultural differences in the building trade between the USA and Belgium. It stated, for instance, that the USA's economic prosperity had perhaps less to do with technical superiority than with the existence of a stimulating entrepreneurial climate based on optimism, objectivity, a sense of enterprise, responsibility and mutual trust.²³ This led the commission to state that productivity perhaps had less to do with technological advantage than with a particular *attitude*. In its findings, it therefore focused primarily on methods and processes rather than on the resulting output. Or, as the delegation put it, it was less interested in *what* the Americans did, than in *how* they did it.²⁴

A first critical difference concerned the client. As the delegation noted, American clients generally

came up with a highly detailed programme that needed no further modifications.²⁵ This contrasted greatly with the inconsistency of Belgian government institutions when it came to budgets and time schedules. As all the delegates knew from personal experience, the success of a public commission in Belgium depended greatly on the dynamics of the political barometer. The role of the architect was also different: it was not so much the highly gifted artist that outsourced most technical aspects of the project, but a highly skilled designer that produced well-thought-out and meticulous plans. Designing with modular systems and recurring as much as possible to mass-produced building parts, the American architect played a fundamental role in the transition of the traditional building trade from craft to industrial assembly. A last fundamental cultural difference concerned the contractors, invariably operating within the agreed cost estimates and time schedules. As the delegation stated in its conclusions, such a close collaboration between all the actors of the construction process, based on the common pursuit of maximum economy, contrasted quite sharply with the architectural culture at home, characterized by improvisation, empiricism, envy and conservatism.²⁶

In the eyes of the commission, one project in particular seemed to embody this rational, straightforward approach to architecture, namely the Hollin Hills allotment in Alexandria, VA by Charles Goodman. Located 10 miles outside Washington, DC, it comprised 390 individual homes and communal amenities, such as two elementary schools, a small shopping centre and a swimming pool. Apart from its distinctly modernist vision on American suburban life, the dominant element that set Hollin Hills apart from other developments was its general lay-out. Based on the complexities of the hilly site, Goodman had savagely taken advantage of the wooded, rolling character of the land, siting the houses to the fall of the land rather than to the street. As the individual properties were not fenced

off, private and public spaces merged with each other, resulting in a unified landscape unburdened by visual boundaries. The roads featured two other innovative elements for a speculative development: independent pedestrian routes and the use of the 'cul-de-sac'. Goodman's plans further went against local customs by maximizing the houses' rear frontage and not the valued front footage. To emphasize the sense of community, the houses were of a uniform aesthetic and placed on similar lots throughout. The interior lay-out followed the principle of the 'service-core plan': it was divided into three separate zones for living, sleeping and services. Besides its interest as an experimental building site for the delegates, Hollin Hills represented a totally different approach to dwelling: in opposition to the Belgian idea of the home as a long-term investment and a status symbol, its American counterpart appeared to be more of a product for mass consumption, reflecting the nation's preference for instant comfort over status, aesthetics or sustainability. Or as the delegation put it: 'They apply to the latter the proverb: "every generation its home"'.²⁸

The study trip to the USA would prove to be of invaluable importance for the further career of Groupe Structures. Not only did this 'crash course' in standardization, industrialized construction and prefabrication of building parts provide the firm with technical knowledge most of its local competitors were totally unaware of, the team also understood that the upcoming welfare state required a different type of architect: a smart and pragmatic businessman ahead of events rather than a talented genius waiting for the enlightened elite to give him a chance.²⁹ The mission was also an incomparable networking opportunity as it opened doors to some of the country's most influential actors in the building trade.

The 'Croix de Lorraine' estate, La Hulpe

Upon its return from the USA, Groupe Structures was invited by the SNPTT to implement its find-

ings in a bungalow prototype, in anticipation of the construction of a new garden estate of 300 dwellings in an area called 'Croix de Lorraine' near Brussels.³¹ This ambitious project (at least compared to Belgian standards) had a dual goal: first, increasing the SNPTT's market share in the outskirts of Brussels; second, stimulating research into standardization and prefabrication, as the increasing cost of land and labour put a heavy burden on the SNPTT's operations.

Looking much like a nondescript cottage at first sight, the bungalow contained a range of novelties inspired directly by what the architects had seen in the USA. [fig. 2] The simple rectangular plan was divided into two parts: the kitchen, dining and living area on one side, the bedroom and bathroom area on the other. The centrally located hearth, along with the few load bearing walls, formed the only masonry units in the house. They were erected on a simple concrete slab by means of insulating concrete blocks (YTONG), a material that had only recently become available on the Belgian market. For the interior subdivisions, plaster board partitions were used, requiring no further finish.³¹ The prefabricated floor-to-ceiling window units, whose lower part was filled in with wood siding, gave the bungalow its particular 'frame and infill' aesthetic. The roof, finally, was composed of light, pre-assembled wooden trusses developed in close collaboration with the National Institute for Timber Construction. The result was an almost 'dry' construction site and a significant reduction in manual labour on-site. The entire house, including finishing, was completed in only 40 days. Although it came with a fully equipped kitchen, washing machine, central heating and built-in cupboards, it was 10% to 15% cheaper than comparable constructions in the period 1955-59.³²

Whereas the prototype was widely published as a decisive step in the shift from traditional craft to industrialized assembly, it took another three years before the 'Croix de Lorraine' project continued

in a reduced version (100 dwellings only). To this aim, five new prototypes - each corresponding with a different house type - were built on-site with a view to fine-tuning the design and optimizing the construction process. This was no wasted effort: whereas construction of the prototypes took 100 days, the remaining 95 dwellings took only 200 days to build.³³ Although upon completion, the contractor offered to build the remaining 200 dwellings on far more favourable terms than the first lot, the SNPPT was unable to obtain the necessary credits from the National Public Housing Company, thus missing out on the potential return on investment.

The 'Ban Eik' estate, Wezembeek-Oppem

Apart from the 'Croix de Lorraine' project, Groupe Structures' American experience also led to another assignment, namely the 'Ban Eik' estate in Wezembeek-Oppem, also in the vicinity of Brussels. It formed part of the municipality's attempt to counter the steep increase in land prices, largely due to the influx of middle-class commuters from the capital. As chairman of the influential Association of Belgian Cities and Municipalities, however, the mayor's ambition went further than remediating a local problem. In his view, the project should have proposed a more general template for the problem of low-cost housing in the periphery. The challenge consisted in realizing a 'green' neighbourhood unit with a sufficient number of dwellings, so as to make prefabrication a viable option.

Groupe Structure's proposal consisted of a 'mixed development' scheme, comprising 289 single-family dwellings of five different types and two high-rise blocks with 89 and 60 rental apartments of four different types.³⁴ Whereas the one-family dwellings were arranged in rows of three to seven houses around intimate 'greens' and connected to a network of pedestrian routes, the apartment blocks were situated in the centre of the estate, next to the communal facilities: a primary school, a nursery and a self-service supermarket - another novelty

imported from the United States. Garages for cars were tucked away at the least favourable spots of the site. [fig. 3]

Designed according to similar principles as the 'Croix-de-Lorraine' estate, the different house types shared the same window frames, roof trusses and exterior finishings. Again, fully furnished prototypes of each variety were built on-site, providing hands-on training for the contractor and a full-scale catalogue for interested buyers. In the high-rises, the architects went a step further, eliminating almost entirely on-site manual work. The first implementation of the 'Barets' prefabrication technique in Belgium, the building's shell was assembled by means of walls, partitions, stairs and floors, cast entirely on-site and fully equipped with wiring, ducts and cavity wall insulation before being hoisted into place.

From the start, 'Ban Eik' attracted much attention. Put on display at the 1958 Brussels World Fair as a prime example of the nation's progressive policy in housing matters, it was rewarded with the First Prize of the National Housing Institute and extensively documented in its periodical *Wonen*.³⁵ At first sight, the project indeed seemed to have lived up to its ambitions as a 'model estate'. Even though all dwellings came with a fully fitted kitchen and bathroom, central heating and built-in cupboards, they were on average 10% cheaper than comparable projects on the private housing market, a surplus that enabled the financing of communal services.³⁶ Despite the average density of 29 inhabitants per hectare (considered as 'urban' in Belgium), the built area counted for only 12% of the total surface of 15 hectares, whereas more than half of it was kept as communal green space. To reinforce this 'rural' feel and strengthen the impression of uniformity, openness and order, both sides of the single-family houses were almost identical, with no distinction between front and rear sides. The houses only differed from each other by the colour of the skin-plate infills, depending on their location within the

estate. The estate's homogeneous aspect was further ensured by a set of regulations related to maintenance and use. Residents were obliged, for example, to border their small private gardens with a specific type of hedge not higher than 60 cm, and to hang out the laundry on one single type of fold-away drying rack (type 'Stewi'). As a counterpart to this formal homogeneity, the typological variety of the dwellings allowed accommodation of single persons as well as families of eight, thus ensuring a certain social mix. [fig. 4]

Mindful of Groupe Structures' American experience, however, the interest of the project lay not only in its architectural features. The close collaboration and commitment of designer, contractor and client also proved to be a key factor in the estate's success. Steering the project with perseverance and vision, the mayor was like an enlightened client with a forceful eye on its coherence. To this effect, he charged Groupe Structures not only with the design of the dwellings, but also the roads, the sewerage, the colour schemes and the landscaping. The contractor's unusual commitment to participate in such an experimental undertaking should also be mentioned here, as its net result was absolutely uncertain.

Nonetheless, 'Ban Eik' failed to live up to its expectations as a model project. In the first place, the basic conditions to make prefabrication economically viable, namely continuity and repetition, were not fulfilled. As funding for the second phase of the project (an additional 150 single-family houses) could not be secured in time, the advantage of prefabrication could only be played out in the high-rises. As it appeared that the uninterrupted use of moulds and formwork would result in savings of 4%, construction of the second apartment block was started immediately after the first one had been completed, rather than in a later stage as originally intended. Furthermore, even though many housing companies sent representatives to 'Ban Eik' for

inspection, none of them had been able to secure sufficient funds to repeat the experience. Finally, it was also questionable to what extent the scheme had offered a sustainable solution for public housing in the outskirts of a large agglomeration. A sophisticated manoeuvre to reconcile city with countryside, collectivity with individuality, and tradition with innovation, 'Ban Eik' in fact revealed how the dream of Arcadian living in the periphery was becoming untenable.

The 'Rempart des Moines' estate, Brussels

The presence of two apartment blocks in 'Ban Eik' is emblematic of the breakthrough of the high-rise scheme as the standard recipe for public housing during the 1960s in Belgium, both in the city centre and in the periphery. The 'Rempart des Moines' estate in Brussels, designed by Groupe Structures in 1962, is one of the characteristic examples of this emerging paradigm.³⁷ The pinnacle of the 'lutte contre les taudis' ('battle against the slums') by the City of Brussels in the first half of the 1960s, it made short work of a dilapidated 19th century industrial quarter in the western part of town. In the housing company's attempt to maximize the return on investment, the ideology of productivity reached its peak here. The estate's master plan resulted, for instance, from an almost mathematical equation between the allowed occupation density, maximum building height and optimum exposure. [fig. 5] The same applied to the 320 apartments: distributed over five identical 10-storey blocks, the idea of a 'social mix' became reduced to the most economical distribution of four different types of apartments around a single elevator cage.

A textbook example of standardized conception, designed entirely with a view to prefabrication, the 'Rempart des Moines' estate nevertheless became another missed opportunity for raising the building industry's performance level. Quite surprisingly, the cheapest contractor's proposal suggested erecting the buildings according to conventional techniques

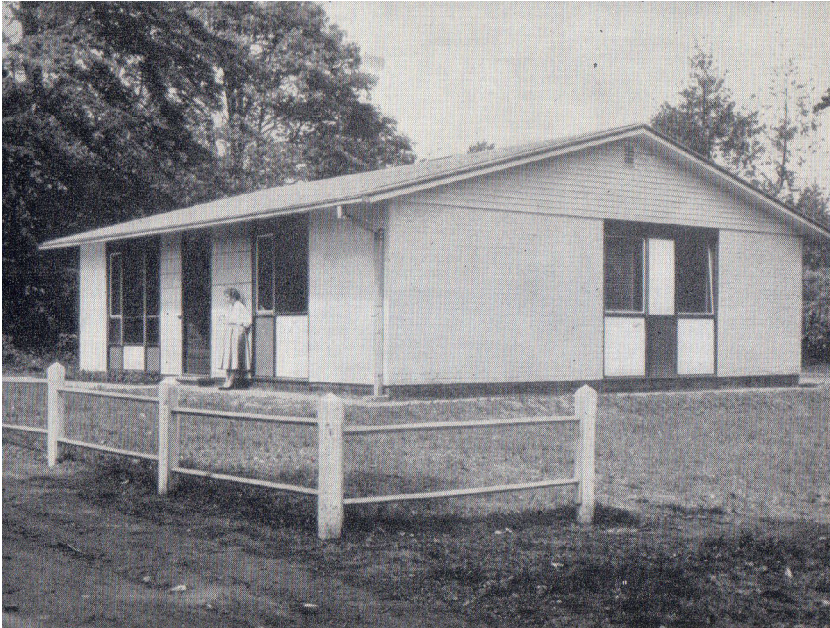


Fig. 2

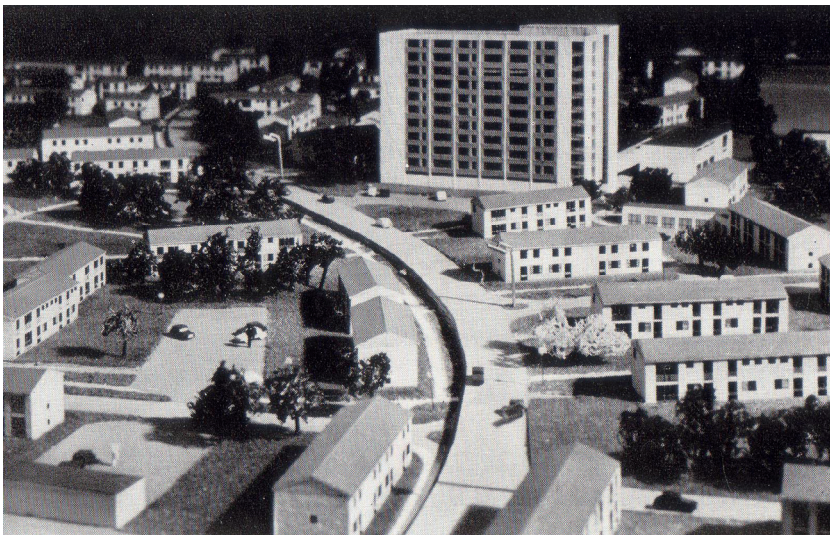


Fig. 3

Fig. 2: Groupe Structures, *Bungalow prototype* (1957), contemporary photograph. Source: *Bouwen en Wonen* 4/5 (1957).
Fig. 3: Groupe Structures, *Ban Eik estate* (1957-1960), model as shown at the 1958 World Fair. Source: *Architecture* 33 (1960).

(i.e. in situ poured concrete) without recurring to any form of prefabrication. Even taking into account the necessary additional calculations, the contractor still outrivalled his competitors.³⁸ The 'Rempart des Moines' estate thus made it painstakingly clear that most public housing schemes in Belgium were simply too small scale to make prefabrication a viable option.

Apart from a technical disappointment, the 'Rempart des Moines' estate also constituted a failure in terms of town planning. The five apartment blocks, together with the central heating plant and the car park, only left a few residual open spaces for the inhabitants to appropriate. The dichotomy between the estate's rational morphology and the surrounding 19th-century fabric was also left unresolved, as it was believed that the latter would soon disappear anyway. The technocratic, almost unworldly, spirit of the project became only too obvious in the solution conceived by the public housing company to address the residents' feelings of alienation and nostalgia: it suggested to name the apartment blocks after the streets that had been erased for their construction.³⁹ Given these social and spatial discontinuities, it is safe to say that rather than revitalizing the city's fabric, the 'Rempart des Moines' estate advanced its further decline. So here, quite paradoxically, Groupe Structures delivered a perfect demonstration of the kind of urbanism their mentor Gaston Bardet had tried to steer them away from hardly 15 years earlier.

Concluding remarks

In the postwar period, public housing became a crucial instrument in the democratic distribution of wealth and prosperity. However, as has been shown, this ambition could only be realized by imposing the same productivity standards on the building trade as on the other economic sectors. The fundamental question thus became: how can we build more, faster and cheaper? As Groupe Structures' partners discovered, this had as much to do with

technical innovation as with a shift in mentalities. Determined by economic constraints rather than humanist aspirations, the issue of public housing demanded a pragmatic attitude towards architecture. Thus, rather than asking *why* a dwelling should be as cheap as possible, Groupe Structures asked *how* this could be done. Modelling the home to the laws of mass production, it substituted the notion of architecture as the product of artistic creativity and individual expression for a well-planned, collaborative effort based on economic reasoning and industrial planning. Groupe Structures' capacity to act as a reliable, business-minded partner would provide the clue to the firm's rise in the 1960s, when it became the preferred designer of Brussels' political and financial establishment. In this capacity, it continued its research into prefabrication in the vast Berlaymont monastery and school campus in Waterloo, designed and realized in only a year's time (1962). This, however, was only a prelude to the group's most impressive achievement, namely the design and construction of the expansive NATO headquarters in barely nine months' time (1966).⁴⁰

Nevertheless, the 'ideology of productivity' did not find fertile ground in Belgium, and particularly not in the (public) housing sector. Contrary to the UK and France, the Belgian government continued to stimulate private ownership and the building of individual homes until deep into the 1970s. It thus undermined any meaningful typological and technical innovation in the field of public housing and prevented the sector from putting sufficient pressure on the construction industry to boost its performance level. Consequently, the ever-growing demand for low-cost dwellings resulted in an inverse correlation with the quality of their design and construction. In this respect, the increasing triviality of Groupe Structures' public housing projects towards the 1960s embodies the tension between the welfare state's ideal of equal distribution of wealth and the seemingly unavoidable matter-of-factness of its material implementation.



Fig. 4

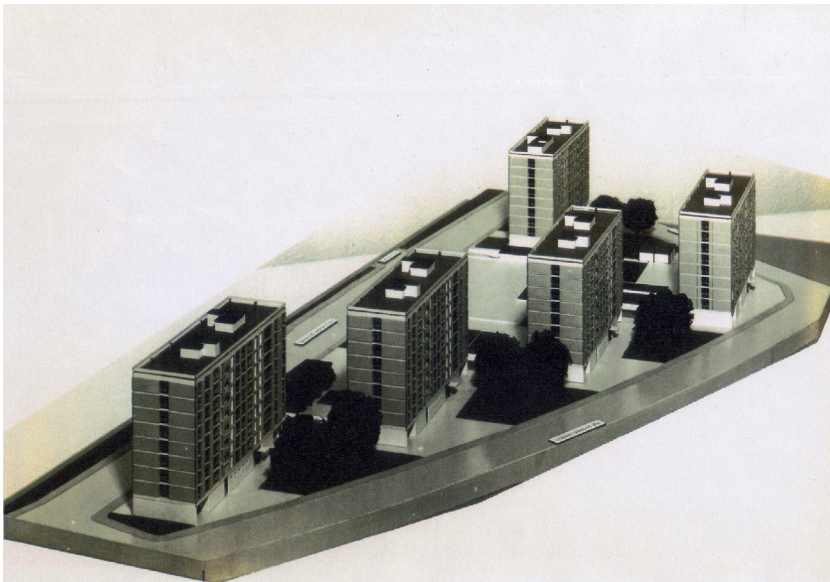


Fig. 5

Fig. 4: Groupe Structures, *Ban Eik estate* (1957-1960), contemporary photograph. Source: *Wonen*, 26-27 (1964).

Fig. 5: Groupe Structures, *Rempart des Moines public housing estate* (1962-1965), model of scheme as realized. Source: Foyer Bruxellois Archives, Brussels. Used with permission.

Notes

1. For a general overview of (public) housing culture in Belgium in the 20th century, see Bruno De Meulder, Pascal De Decker, Karina Van Herck, 'Over de plaats van de volkswoningbouw in de Vlaamse Ruimte', in: *Huiszoeking: een kijkboek sociale woningbouw* (Brussels: Ministry of the Flemish Community, 1999), pp. 10-86; *Bouwstenen van sociaal woonbeleid. De VHM bekijkt 50 jaar volkshuisvesting in Vlaanderen*, ed. by H. Lyben (Brussels: Vlaamse Huisvestingsmaatschappij, 1997), and *Wonen in welvaart: woningbouw en wooncultuur in Vlaanderen 1948-1973*, ed. by Tom Avermaete, Karina Van Herck (Rotterdam: 010, 2006). For a more discursive analysis, see Fredie Floré, *Lessen in goed wonen. Woonvoorlichting in België 1945-1958* (Leuven: Universitaire Pers, 2010).
2. This paper results from the first systematic study devoted to Groupe Structures, undertaken by the author. As no central archive has been kept by the original partners, most of the information has been gathered from the archives of the public administrations and housing companies involved, as well as from secondary sources, such as contemporary architectural magazines. I am greatly indebted to Louis Van Hove, founding partner of Groupe Structures, and Jeanine Robyns, his lifelong secretary, for giving me insight into the history and the daily routine at the office in its early years. I am also grateful to Christine Boseret-Mali for sharing with me the personal archives left by her late father. Unfortunately, Louis Van Hove passed away during the research for this paper. I am grateful for his generosity in sharing with me his recollections during our long and instructive conversations between January and May 2010.
3. Gaston Bardet was appointed director of the ISUA in Brussels in 1947 and occupied that position until 1974. He was a prolific theoretician, writer and lecturer, but had little opportunity to put his ideas into practice. His most significant project was the garden city of Le Rheu in Brittany (France). His vision of urbanism is best exposed in his book *Le Nouvel Urbanisme* (Paris: Fréal, 1948). For an introduction to Bardet's work and ideas, see Jean-Louis Cohen, 'Le nouvel urbanisme de Gaston Bardet', *Le Visiteur*, 2 (1996), pp. 134-45; Nicholas Bullock, 'Gaston Bardet: Post-war Champion of the Mainstream Tradition of French Urbanisme', *Planning Perspectives*, 25, 3 (2010), pp. 347-63.
4. Bullock, p. 354.
5. Bardet, cited in Bullock, p. 355.
6. On 'Nieuwenbos', see J. Boseret-Mali, 'Groot-Bijgaarden. De NMKL bouwt aan de poorten van Brussel', *Huisvesting*, 6 (1952), pp. 475-480; *Habitat et Habitations*, 15, 7-8 (1955), p. 107; 'KLE-bungalow in Groot-Bijgaarden', *Landeigendom*, 116 (Aug. 1957), p. 296; '350 PPT à Grand-Bigard et Dilbeek', *La Maison*, 12, 8 (1956), pp. 240-1.
7. On the SNPPT, see Guy Dejongh, Peter Van Windekens, *Van Kleine Landeigendom tot Vlaamse Landmaatschappij* (Brussels: Vlaamse Landmaatschappij, 2001).
8. The principle of the 'échelons communautaires' is exposed by Bardet in *Le Nouvel Urbanisme*, pp. 214-26.
9. In his account of the project, one of Groupe Structures' partners stated that the different house types in 'Nieuwenbos' were designed in cooperation with their future occupants. We were unable to verify this statement so far. See Jacques Boseret-Mali, 'Groot-Bijgaarden. De NMKL bouwt aan de poorten van Brussel', *Huisvesting* 6 (1952), pp. 475-80.
10. On this concept, see Gaston Bardet, 'L'organisation humaine est polyphonique', *Culture humaine*, 8 (1950), pp. 339-348; 'La dernière chance: l'organisation polyphonique', *Connaître*, 3 (1950), pp. 5-9; 'Une nouvelle démonstration. L'organisation polyphonique'. *Architecture, Urbanisme - Habitation*, 10, 2 (1950), pp. 29-36.
11. The clearest demonstration of this working principle can be found in the joint thesis project by the four later associates of Groupe Structures. Their proposal for a 'Cité de l'Air', hosting the employees of the new airport of Orly (in the South of Paris), was put on display at the Journées Internationales de l'Urbanisme Appliqué (Palais des Beaux Arts, Brussels, November 1949) and published in Gaston Bardet, 'Une nouvelle démonstration. L'organisation polyphonique', *Architecture, Urbanisme - Habitation*, 10, 2 (1950), pp. 29-36.

12. Comments on the verso of the cover of the January 1957 issue of *Landeigendom* (author's translation). Original quotation in Dutch: '[Nieuwenbos] biedt aan de Brusselse gezinnen gezonde huisvesting, een openluchtkuur, nuttig gebruik van de vrije tijd, gezonde en overvloedige voeding. Elk slecht wonend gezin dat in een kleine landeigendom komt, verhoogt zijn standing en zijn menselijke waardigheid.'
13. Author's translation. Original text: 'Entre la vie en appartement dans une tour-building de quinze étages située en bordure de la ville et la vie dans une PPT de 8 ares, les 91 familles du premier quartier de Grand-Bigard n'ont eu aucune hésitation. La ville n'est pas faite pour l'enfant.' Source: '350 PPT à Grand-Bigard et à Dilbeek', *La Maison*, 12, 8 (1956), p. 241.
14. This is clearly stated by officials of the SNPTT in 'De wijk van de NMKL te Overijse en Terhulpen. Een proefneming die zonder gevolg bleef', *Landeigendom*, 207 (March 1965), p. 99.
15. Ibid. See also Dejongh & Van Windekens, p. 58.
16. See on this matter 'De NMKL en de evolutie van de bouwmethodes'. *Landeigendom*, 248 (July 1968), p. 302.
17. Stephanie Van de Voorde, *Bouwen in Beton in België. Samenspel van kennis, experiment en innovatie*, PhD dissertation, Ghent University, 2010, pp. 452, 468.
18. 'De NMKL en de evolutie van de bouwmethodes', p. 302. See also Dejongh & Van Windekens, pp. 58-9.
19. Compared to the US Level (100), the labour productivity in Belgium was estimated at 48%. Compared to its neighbourhood countries, this was not that bad a score: only the Netherlands (51%), Sweden (56%) and the UK (62%) performed better. France was estimated at 45%, Germany at 35%. Source: Bart van Ark and Nicholas Crafts, *Quantitative Aspects of Post-war European Economic Growth* (Cambridge, 1996), p. 45, cited in Bent Boel, *The European Productivity Agency and Transatlantic Relations, 1953-61* (Copenhagen: Museum Tusulanum Press/University of Copenhagen, 2003), p. 292.
20. On the notion of productivity in the Belgian context, and the Belgian Service for the Increase in Productivity in particular, see Hubert Cécile, 'La campagne de productivité en Belgique: modernisation autour du modèle américain (1948-1958)', in *Milieus économiques et intégration européenne*, ed. by Eric Buisnière, Michel Dumoulin (Arras/Louvain-la-neuve, 1998), pp. 197-213; and Kenneth Bertrams, 'Productivité économique et paix sociale au sein du plan Marshall. Les limites de l'influence américaine auprès des industriels et syndicats belges, 1948-1960', *Cahiers d'Histoire du Temps Présent*, 9 (2001), pp. 191-235.
21. Between 1951 and 1955, 21 such missions were organized, related to fields as diverse as food distribution, the production of cement agglomerates, market survey techniques and the sugar industry - overview in Bertrams, 'Productivité économique et paix sociale au sein du plan Marshall', pp. 213-4.
22. Amongst the 13 participants in the mission, the following names are worth mentioning: Lucien De Vestel (chairman), a confirmed architect who would later go on to design the Berlaymont Building, seat of the European Commission; Jean Gilson, whose architectural firm Groupe Alpha participated in many large public building projects in the 1950s; Jozef Paquay, chairman of the 'Nationaal Instituut ter Bevordering van de Huisvesting' (National Housing Institute); Ado Blaton, chairman of NV Blaton-Aubert, one of the principal contractors in the Brussels area; Victor Roisin, a partner in NV François & Fild, another major contractor. Groupe Structures delegated its youngest partner, Raymond Stenier, securing an invitation through its good connections with Jozef Paquay. The mission toured the USA from 12 July until 18 August 1954, and made stops in New York, NY, Washington, DC, Dayton, OH, Lafayette, IN, Urbana, IL, South Bend, IN, Chicago, IL. Its findings were published as *Verslag van de zending Constructie van Gebouwen* ['Report of the Building Construction Mission'] (Brussels: Belgische Dienst Opvoering Productiviteit, 1957).
23. *Verslag van de zending*, p. 14.
24. *Verslag van de zending*, p. 13.
25. *Verslag van de zending*, p. 16.
26. *Verslag van de zending*, p. 167.
27. On Hollin Hills, see 'Bungalow, Hollin Hills, Virginia. Architects: Charles M. Goodman Associates', *House*

- & *Home*, 1 (1954), pp. 140-3, and Gabriela Amendola Gutowski, *Hollin Hills, the Future that is Now the Past: Challenges of Preserving a Post-war Suburban Community*, Unpublished master's thesis in historic preservation, University of Pennsylvania, 2007. Last accessed through http://repository.upenn.edu/hp_theses/78 on 20 September 2011.
28. *Verslag van de zending*, p. 66. Translation by the author. Original text: 'Zij passen naar de letter het gezegde toe: "iedere generatie haar eigen huis."'
29. On this aspect, see the following comments by Jacques Boseret-Mali, one of Groupe Structures' founding partners, reflecting on his career: 'La condition première pour pouvoir exercer son métier d'architecte et d'urbaniste étant d'obtenir des contrats, nous nous sommes fixés (dès le départ) comme objectif de nous hisser au niveau des plus grands. (...) Nous estimions, et cela s'est vérifié, qu'une stabilité constante ne pouvait s'établir que par l'obtention de contrats importants; que c'était à ce niveau que la concurrence était la plus réduite et que pour des raisons politico-socio-économiques il y aurait toujours sur le marché un nombre suffisant de grands travaux.' Undated note by Jacques Boseret-Mali, personal archives of the architect, probably December 1980.
30. Note of the Board of Directors, 22 July 1955, Archives of the SNPTT, Brussels.
31. The bungalow prototype was published in *La Maison*, 8 (1956), pp. 246-7; *La Maison*, 4 (1957), pp. 118-9; *Bouwen en Wonen*, 5 (1957), pp. 174-5 and *Landelijkheid* 10 (1957), p. 375.
32. 'De NMKL en de evolutie van de bouwmethodes', p. 303.
33. This was significantly shorter than the average construction time of a comparable dwelling, estimated at 338 working days. Source: 'De NMKL en de evolutie van de bouwmethodes', p. 302-3.
34. Although presented in the contemporary press coverage as the first application of the mixed development concept in Belgium, it had already been experimented with in the 'Oud Oefenplein' estate in Mechelen (arch. Jos Chabot, 1950) and the 'Casablanca' estate in Leuven (arch. Léon Stynen, 1956), both featuring high-rises amidst an array of single-family houses.
35. A model of 'Ban Eik' was presented in the Pavilion of Public Housing and Health, where it figured next to an impressive, widely published model of the Cité Modèle, a high-rise proposal for 5,000 inhabitants right next to the fairgrounds. Together with Renaat Braem, René Panis and other architects, Groupe Structures was involved in this scheme as executive architect.
36. Details of the cost calculation in *Wonen*, 26-27 (1964), pp. 24-5.
37. The 'Rempart des Moines' estate was only one of a series of large public housing schemes destined to clear up the old city centre. On this campaign, see Maureen Heyns, 'De krotwoning als "sociaal probleem nr. 1"', in *Wonen in Welvaart*, ed. by Tom Avermaete, Karina Van Herck (Antwerp: VAI, 2006), pp. 147-65. Amongst the other projects realized within this framework, we can name the following: rue des Potiers (90 flats, also designed by Groupe Structures), rue Haute (designed by Charles Van Nueten) and rue des Brigittines (150 flats, designed by Gaston Brunfaut). For more details, see *3000 Foyers Bruxellois* (Brussels: La Fonderie, 1997), pp. 49-56, and *La Maison*, 12, 10 (October 1957).
38. As communicated to the author by Louis Van Hove, founding partner of Groupe Structures. Personal communication, Brussels, 14 January 2010.
39. This anecdote is related in *3000 Foyers Bruxellois*, pp. 51-52.
40. On the Berlaymont monastery, see *La Maison*, 22, 6 (1966), pp. 167-72; *Architecture*, 62, 44 (1962), pp. 61-3. On NATO Headquarters, see *La Technique des travaux*, 44, 5/6 (1968), pp. 155-66.

Biography

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