

This article was downloaded by: [KU Leuven University Library]

On: 03 July 2015, At: 01:40

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London, SW1P 1WG



Journal of Urbanism: International Research on Placemaking and Urban Sustainability

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rjou20>

Towards a sustainable transformation of the detached houses in peri-urban Flanders, Belgium

Wouter Bervoets^a, Marijn van de Weijer^{ab}, Dominique Vanneste^c, Lieve Vanderstraeten^c, Michael Ryckewaert^{ad} & Hilde Heynen^a

^a Department of Architecture, KU Leuven, Leuven, Belgium

^b Faculty of Architecture and Arts, Hasselt University, Diepenbeek, Belgium

^c Division of Geography, KU Leuven, Leuven, Belgium

^d Department of Geography, Vrije Universiteit Brussel, Brussels, Belgium

Published online: 09 May 2014.



CrossMark

[Click for updates](#)

To cite this article: Wouter Bervoets, Marijn van de Weijer, Dominique Vanneste, Lieve Vanderstraeten, Michael Ryckewaert & Hilde Heynen (2015) Towards a sustainable transformation of the detached houses in peri-urban Flanders, Belgium, *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 8:3, 302-330, DOI: [10.1080/17549175.2014.909368](https://doi.org/10.1080/17549175.2014.909368)

To link to this article: <http://dx.doi.org/10.1080/17549175.2014.909368>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or

distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Towards a sustainable transformation of the detached houses in peri-urban Flanders, Belgium

Wouter Bervoets^{a*}, Marijn van de Weijer^{a,b*}, Dominique Vanneste^c,
Lieve Vanderstraeten^c, Michael Ryckewaert^{a,d} and Hilde Heynen^a

^aDepartment of Architecture, KU Leuven, Leuven, Belgium; ^bFaculty of Architecture and Arts, Hasselt University, Diepenbeek, Belgium; ^cDivision of Geography, KU Leuven, Leuven, Belgium; ^dDepartment of Geography, Vrije Universiteit Brussel, Brussels, Belgium

The housing stock in Flanders contains a significant share of detached dwellings. Recent demographical, economic and ecological developments, however, have induced a large demand for other housing types. This paper addresses the resulting issue of whether the adaptation of existing low-density neighbourhoods is possible, and hypothesizes that the presence of a certain NIMBY (not in my back yard) attitude among current residents might complicate any planning efforts that would bring about fundamentally different spatial patterns. The paper offers an analysis of the existing residential patterns, focusing on the presence of underused housing. This analytical part is complemented by qualitative research into the acceptability of different possible scenarios at the neighbourhood level. Three distinct strategies have been elaborated for discussion with homeowners. The paper concludes that a top-down projection of transformative strategies needs to be brought into balance with interests of residents, thus capitalizing on an ‘overarching interest’, bringing into play an alliance of different tendencies.

Keywords: detached single-family houses; underused dwellings; transformative strategies; public support analysis

Introduction

The Flemish landscape,¹ characterized by a much dispersed settlement pattern or urban sprawl, is inextricably tied to a long-standing anti-urban policy and an on-going promotion of private home-ownership (De Decker 2011). Post-war housing construction occurred in such a way that the detached single-family house has become the basic building block for Flemish suburban, peri-urban and semi-rural development; it has been built across the entire region. It is however common knowledge that this building typology and its low-density residential settlements create a number of concerns (Holden 2004; Vestergaard 2006). The contemporary discourse on sustainability of the residential environment lies at the basis of these concerns. Sustainability is a broadly interpreted concept, that is often dissected into different aspects: people, planet and profit (Elkington 1998) or social, environmental and economical sustainability (Williams and Dair 2007). Furthermore, the sustainable human settlement is interpreted in the form of diverse models, ranging from a compact, high-density city to a self-reliant, productive region (Houghton 1997; Droegge 2012).

*Corresponding authors. Email: Wouter.Bervoets@asro.kuleuven.be (W. Bervoets); Marijn.vandeweijer@uhasselt.be (M. de weijer)

In Flanders, the professional and societal debate on the existing suburban housing stock and future housing needs revolves around a number of interrelated topics that are part of this discourse on sustainability. According to the last projections, the population in the Flemish region will continue to grow and reach 6.6 million people in 2030; about 375, 000 or 6% extra people in 20 years. Taking into account the decrease in household sizes, frictional vacancy and second homes, it is estimated that for 2030 there will be a need for 330, 000 additional houses in the region (Ryckewaert et al. 2012). Another concern is what kind of housing to provide, anticipating the expected demographical and economical change – such as ageing, a decreasing average household size and increasing housing costs. Finally, there is the question about how to deal with environmental issues such as sprawl, loss of open space, excessive energy consumption and mobility problems that are inherent to the current housing stock and would get worse should the current housing model be continued as such.

This paper takes this search for sustainable housing in existing residential neighbourhoods consisting of detached dwellings (Figure 1) as a central problem. The research set out to investigate what kind of support and resistances would be found among homeowners regarding possible transformations of their neighbourhood, which were presented with projective sketches and corresponding scenario descriptions involving political, social and economic developments. Three observations define the starting point. First, the everyday reality of the Flemish residential landscape, which developed as the result of a long-standing anti-urban policy, is rather inert and not very open to change. Second, there is only little awareness in the public debate about the problematic character of the overstock of older detached dwellings, maladjusted to both ageing residents and small households. Third, there is a need for a better understanding of the applicability of concrete spatial concepts for adaptive reuse of low-density residential neighbourhoods. To address these issues, this contribution combines quantitative and qualitative methods of analysis. It



Figure 1. A typical Flemish ribbon development in Lummen (province of Limburg). Photo: W. Bervoets.

relies, on the one hand, on a statistical mapping of the presence of underused detached houses in Flanders and its further interpretation into an indicator for the potential for sustainable development of each neighbourhood, and, on the other hand, on a qualitative research among homeowners.²

The actual analysis is preceded by a literature review, which informs the elaboration of the problem statement in terms of the characteristics of the Flemish residential environment (in the second section), contrasted with the need for sustainable transformations of neighbourhoods (in the third section). Here a number of hypotheses are introduced which are further developed in the subsequent sections. The following section explains how the quantitative analysis, based upon statistical information of the latest census,³ translates into the construction of an indicator of potential, which might lead to differential planning strategies for different parts of the territory. In order to cross over from planning strategies to qualitative research with inhabitants, a number of transformative scenarios have been devised, informed by the international literature on sprawl and suburban landscapes (in the fifth section). These scenarios were used in the fieldwork in 10 low-density neighbourhoods⁴ consisting of 61 home-interviews⁵ with 91 homeowners of detached single-family houses⁶ (see the sixth section). The group of respondents consisted mainly of older, first-generation residents, whose children had left the parental home. Finally, the paper discusses the main findings of this explorative research, which are fourfold. Firstly, the conclusions address the attainability of three transformative solutions. Secondly, a sharpened view on the gap between spatial strategies and the inert, everyday reality of the built environment is presented. Thirdly, we propose a basis for finding an overarching interest with inhabitants of detached dwellings in transforming the residential environment. Finally, we evaluate the tentative indicator and explorative mapping as a touchstone for spatial transformations.

Characteristics of the Flemish residential environment

Especially since the Second World War, the single-family dwelling accounted for the major part of project briefs for most Belgian architects (Heynen 2010). The lot became the canvas on which families could realize their dream house, and they have done so in many variations (Figure 2). As such the detached dwelling has become the most represented housing type, covering around 36% of the total housing stock in Flanders. Today, on average 40% (about 330, 000 dwellings) of detached single-family houses are underused with extremes up to 80% in some municipalities. The underused, detached single-family houses represent 15% of the total housing stock. Under-usage is a concept defined by surface, the number of (bed)rooms, and the number of inhabitants, which occurs in multiple forms.⁷ Houses may become underused after family members (e.g., adult children) move out, but also houses in some instances are designed spaciouly, and may be expected to be underused throughout their entire life cycle. Without passing a value judgment over individual housing situations, this paper does address the specific Belgian condition, where houses are relatively big compared with European standards,⁸ and the housing market and residential mobility are rather static (Meeus and De Decker 2012). On a regional scale, this leads to spatial issues as a result of low-density settlement patterns. Table 1 illustrates that underused detached housing is not only a phenomenon in the urban fringe; such houses are spread across the territory (for the relation between underused dwellings and the degree of urbanization, see also Figure 3). They are especially prevalent in rural areas, and in some commuter zones, which offer the low-density, 'green' environments that are associated with this housing type. Mapping⁹ (Figure 4a) reveals that municipalities in the

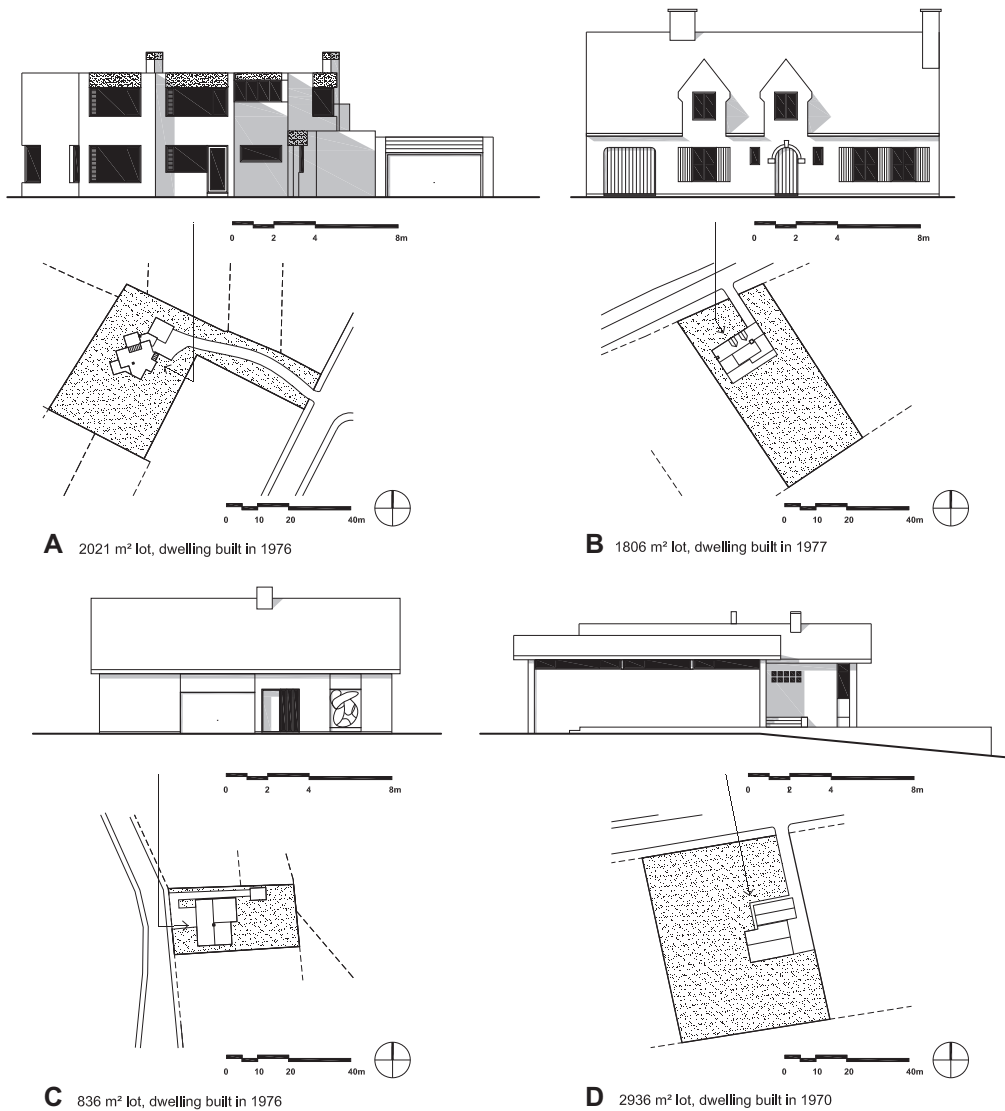


Figure 2. A sample of dwelling types and lots taken from the case study municipalities. Source: Fieldwork and Belgian cadastral maps; analysis: M. van de Weijer.

central part of the country have lower shares of detached housing because larger amounts of other types of housing (semi-detached single-family housing, terraced housing and apartments) are linked to the more urbanized character of the area. Furthermore, there is, for historical reasons, a clearly legible difference between the eastern and western parts of the region.¹⁰ The share of underused detached housing, related to the total housing stock (Figure 4b), therefore shows a very similar pattern favouring the wide fringe of major and regional cities as well as more rural parts in eastern Flanders – characterized by recent demographic growth and strong international economic impulses – without completely excluding the western part.

Table 1. (Underused) detached dwellings according to the degree of urbanization.

Degree of urbanization	Detached dwellings			Underused detached dwellings			
	Absolute numbers	% (total detached dwellings in Flanders)	% (total housing stock in degree of urbanization)	Absolute numbers	% (total detached dwellings in degree of urbanization)	% (total underused detached dwellings in Flanders)	% (total housing stock in Flanders)
Agglomerations	152.141	18.3	17.3	68.899	45.3	20.7	3.0
Urban fringe	165.665	19.9	53.1	67.665	40.8	20.3	2.9
Commuters' zones	214.344	25.8	42.1	83.876	39.1	25.2	3.7
Small towns in the countryside	118.838	14.3	44.1	46.004	38.7	13.8	2.0
Rural areas	180.690	21.7	55.1	66.929	37.0	37.0	2.9
Flanders	831.678	100	36.2	333.373	40.1	100	14.5

Data: SEE 2001; analysis: D. Vanneste and L. Vanderstraeten.

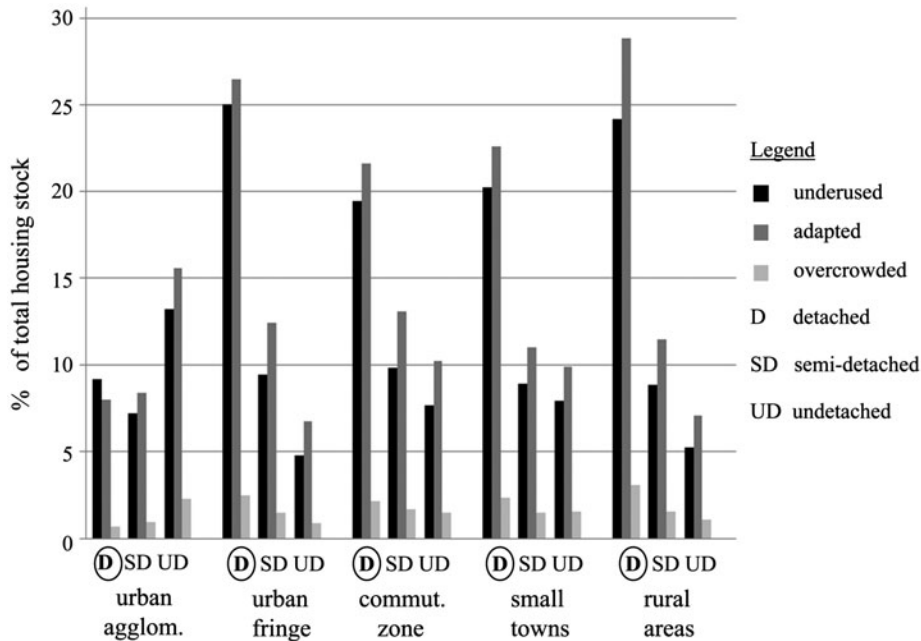


Figure 3. Share of overcrowded, adapted and underused single-family dwellings according to the type and the degree of urbanization (as a percentage of the total housing stock).

Data: SEE 2001; analysis: D. Vanneste and L. Vanderstraeten.

The historical development of Flanders resulted in a very dense settlement pattern dating back to the Middle Ages. Over time, foreign powers have installed all kinds of governance, from military despotism, over administrative tutelage to limited self-government, which resulted in a dislike of any form of authority and a widespread individualism. The undesirability of a strong authority was translated into a weak government that

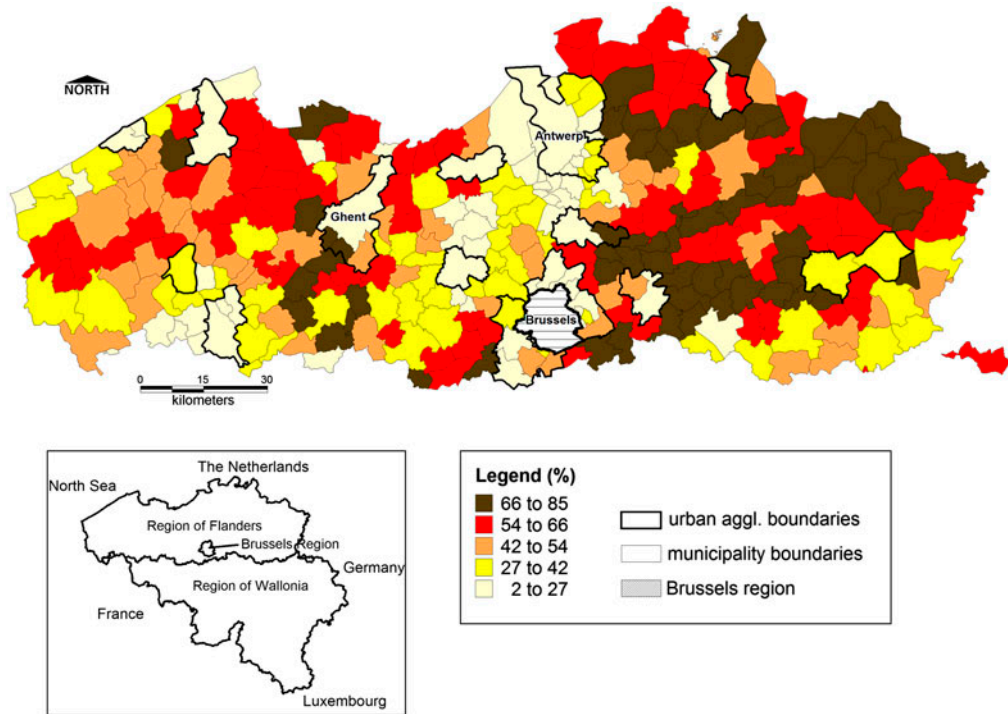


Figure 4a. Share of detached dwellings (per municipality).
Data: SEE 2001; analysis and cartography: D. Vanneste and L. Vanderstraeten.

left room for the pursuit of individual freedom (Uyttenhove 1997). Flemish construction practices are dominated by *laissez-faire* and encouragement of the private initiative, rather than by public regulation and intervention (De Meulder et al. 1999). The Belgian housing model matured after 1945, when a massive suburbanization trend occurred, but its roots lie in the evolving political economy of the 19th century, when Belgium became heavily industrialized (De Decker 2011), and even before that, since pre-industrial rural Flanders also was characterized by a fine-grained network of hamlets, villages and settlements (Vanneste 1997; De Meulder et al. 1999). The industrialization was accompanied by rapid urbanization, made possible by a very dense railway network with low fares (De Meulder et al. 1999; De Block and Polasky 2011; De Decker 2011). The Belgian model thus put the private initiative of pragmatic homeowners at the centre of housing policies, in contrast to modernist urban planning, which would rather imply top-down planning and large-scale projects (Vanneste 1986). This approach was reinforced after the Second World War (Bekaert and Strauven 1971), when housing laws¹¹ (Ryckewaert and Theunis 2006; De Decker 2011) and societal organizations supported and promoted homeownership (Floré 2004; De Caigny 2005).¹² The focus on production of detached dwellings resulted in a wide variety of fashionable styles and outlooks of these houses – ranging from the invented tradition of the *fermette*, based on a farmhouse (De Vos and Heynen 2007), over dwellings inspired by modernist aesthetics, to mass-produced prefabricated bungalows (Loeckx 2006). Regardless of their outlook, however, they share typological characteristics in terms of scale and organization, as well as in the position of the dwellings on their plot. They thus all adhere to the dream image of living in a green, quiet and spacious environment.

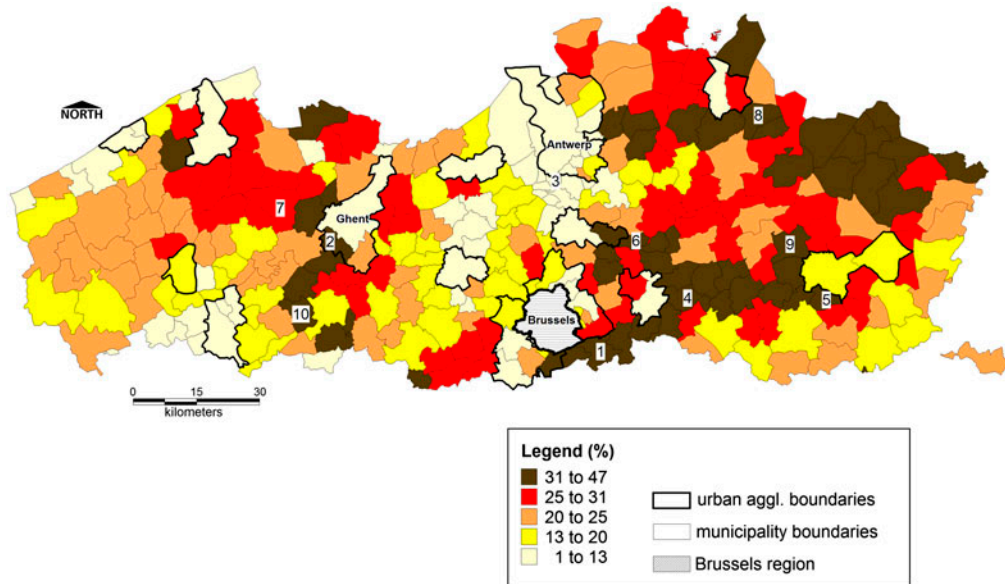


Figure 4b. Share of underused dwellings (per municipality). The 10 numbered municipalities are the case studies of the overarching research project.

Data: SEE 2001; analysis and cartography: D. Vanneste and L. Vanderstraeten.

Parallels have been drafted between the Flemish and the American housing model (Heynen 2010), but the swarm of post-war detached houses in Flanders has not amassed in large, uniform housing projects, like the Levittowns in New York, New Jersey and Pennsylvania. Instead, the new production landed in an already fine-grained landscape of small settlements. The construction industry developed on the basis of private initiative rather than large-scale social housing projects,¹³ and the single-family dwelling was constructed in allotments across the territory, with minimal links to existing urban or village centres (De Meulder 2006), further contributing to an on-going fragmentation of the landscape and to the development of ‘ribbons’ along countryside routes. Cities thus developed into urban regions with functional rather than morphological ties between the urban agglomerations on the one hand and the fringes and commuter zones on the other hand, which explains the distinction between degrees of urbanization made in Figure 3 (van der Haegen et al. 1992).

In 1997, the Spatial Structure Plan for Flanders (RSV) based on the principle of ‘Flanders, urban and open’ was adopted (Vlaamse Overheid 2011). The RSV intended to reverse the spatial trends towards further sprawl and aimed to protect the countryside and natural landscapes from further urbanization. It prioritized reinforcement of the urban areas; 60% of the new houses had to be built in delineated urban areas. In the slipstream of the RSV, the housing stock has been diversifying to a modest extent, but its ambitions have not been met (van Herck and De Meulder 2009; Voets et al. 2010; Thomas, Vanneste, and Quérriau 2011). The architectural profession, largely agreeing with the diagnosis of the RSV that further sprawl is to be discouraged, is exploring new housing types offering an alternative to the single-family dwelling, which would better fit the actual housing demand (Architecture Workroom Brussels 2012; Declerck, Ryckewaert, and Devoldere 2013). Collective housing types and shrinking plot sizes have thus led to a decrease in the average size of newly built dwellings (Vanneste, Thomas, and Goossens 2007; De Decker et al. 2010).

A large number of investigations has shown, however, that the majority of the Flemish population, including youngsters (Verhetsel et al. 2003), still aspires to own a large house with private garden outside the city (for an overview, see De Decker 2011). The detached dwelling is very strongly tied to Flemish socio-cultural norms and aspirations (a popular saying holds that Flemish people are born ‘with a brick in their stomach’). These aspirations tie into a system of traditionally developed construction methods and zoning regulations, the whole forming a complex, socially defined technological system. Hughes (1987) argues that such systems, because of their complexity, obtain a certain momentum in their development, which makes it difficult to change their course (Hughes 1987, 57–58). Given the challenges to this housing model outlined in the introduction, it seems however that change is necessary. In order to understand better the possibility for change, this research project set out to investigate what kind of resistances would be found among homeowners against possible transformations of their neighbourhood.

NIMBY attitudes and the need for a sustainable transformation of neighbourhoods

From the literature it can be deduced that homeowners in residential neighbourhoods are likely to put forward a series of NIMBY (not in my back yard) arguments against a possible transformation of their neighbourhood. Homeowners in Flemish low-density neighbourhoods have for the major part commissioned the building of their homes themselves under zoning regulations, involving scale, typology, positioning and appearance of the building. This personal investment of time, money and energy results in a reluctance of many inhabitants to deal with alterations in their immediate environment, often giving these residential neighbourhoods a somewhat exclusionary character. Clingermayer argues that the unwillingness to accept changes can amount official protest against plans for alternative housing types, based on ‘parochial or in other ways suspect’ motivations (Clingermayer 2004, 381). Hayden’s (1984) findings in the United States have shown how idealized suburban life prevents the alternative reuse of the existing housing stock. Similar to the United States, residential neighbourhoods in Flanders are often ‘mummified’ by the current regulations (Friedman 2002, 53). Encountering NIMBY attitudes in response to transformation schemes can therefore be expected (Berke 2002; Cneut et al. 2007; Schively 2007). Taking into account the continued appreciation of the detached dwelling, we expected to encounter the least resistance against a development scheme that would remain close to the current density, typology and outlook of Flemish suburban neighbourhoods.

In Flanders, the RSV has been criticized for not acknowledging the real housing desires of the population (Pisman, Allaert, and Lombaerde 2011). In line with recent efforts to give Flemish citizens a voice in the decision process on spatial planning (Pisman, Allaert, and Lombaerde 2011; Triest and Vandaele 2011), it is the aim here to involve the perspective of the inhabitants in evaluating the potential for transformation of their low-density residential environments. Furthermore, it is essential to know how inhabitants react to initiatives of public and private parties involved in building development processes (Schively 2007), especially with regard to how change in residential areas could be implemented – either top-down by planning experts and government action, or bottom-up in the form of development of small-scale projects by individuals. Williams, Burton, and Jenks (1996) have argued that change in the built environment, affecting the detached dwelling as a common type, might be socially acceptable as long as it remains abstract, but is likely to incite protest when made concrete in a specific environment. The ‘good for all’ indeed is often not appreciated when it starts to affect the ‘good of the individual’.

Anyhow, in a democratic society approval and understanding of involved inhabitants should be a prerequisite for alterations (Vestergaard 2006).

With respect to the starting point of the multiple challenges facing Flanders' spatial development and housing stock, we have to admit that merely facilitating the individual interests of inhabitants would only result in a status quo in conflict with the 'public interest' for change. In the field of spatial planning this 'public interest' can indeed be equated with sustainable development (Pisman, Allaert, and Lombaerde 2011). It is clear, however, that only taking into account all the individual interests of the inhabitants would result in a situation that counteracts sustainable redevelopment. We are wondering, nevertheless, whether the implementation of transformation strategies that diametrically oppose the individual interests of the inhabitants could ever offer a valuable solution. It rather seems preferable, as Lanckswaert (2011, see also Pisman, Allaert, and Lombaerde 2011) argues, that the 'public interest' or the goal of sustainable redevelopment should not be determined, protected or served only by experts or by the government. It rather should be constructed on the basis of dialogue between diverse public and private parties. This process would allow one to include a plurality of viewpoints and would thus result in a strategy that is more in tune with the very complexity of contemporary society. In this context, the redevelopment of residential neighbourhoods would become an 'overarching interest' that combines diverse norms and desires, bridging the gap between individual and public interests. The fieldwork serves this search for an 'overarching interest' and for publicly supported strategies to transform low-density neighbourhoods in a more sustainable direction. This approach is also in line with recent trends such as collaborative and adaptive planning, taking into account implicit and inherent normality or even the non-normative notion of adaptive capacity of residents (Basta and Moroni 2014).

Mapping potentialities for change

In order to generate ideas of a geographical logic for neighbourhood transformations, we developed an indicator of the potential for reuse and densification of underused detached housing, taking into account several variables related to sustainability. It was the primary goal, in developing this indicator, to take into account not only characteristics of individual dwellings but also their spatial location, which is determining transportation needs. This 'indicator of potential' thus relies upon a combination of factors, including the potential of the buildings themselves (surface and quality), mobility, servicing and population dynamics.¹⁴ First, as a general rule, we took into account (a proxy of) amenities and personal services. As a proxy for the presence of central functions, we used the Belgian system of neighbourhood outlining in which a clear distinction was (and is) made between town and village cores (with amenities), secondary neighbourhoods with concentrated housing and neighbourhoods with dispersed housing; this is embedded in the codification of all about 10, 000 neighbourhoods in Flanders. Second, the accessibility of employment was integrated by taking into account the distance to regional and major cities which represent important employment centres as well as the availability of a railway station which normally goes in pair with a major bus stop. Third, the population dynamics were taken into account by calculating positive and negative deviations from the Flemish average. Fourth, the potential (for densification) related to the dwelling as such was incorporated by indicators such as age (the newer the better), size (the bigger the better) and quality in terms of energy consumption (Table 2). The indicator has been calculated for all underused detached dwellings and an average was taken and mapped at the neighbourhood level.

Table 2. Indicator of potential for reuse and densification of underused detached housing.

Variable	Categories	Score	Maximum score	Minimum score
Age and renovation of the dwelling	Built after 1980	2	2	0
	Built before, renovated during the last 10 years	1		
	Built before 1980, not renovated during the last 10 years	0		
Size of the dwelling	≥ 125 m ²	2	2	0
	105-125 m ²	1		
	< 105 m ²	0		
Insulation	Double-glazing	1	3	0
	Insulation of the roof	1		
	Insulation of the outer walls	1		
	No insulation	0		
Distance to the 12 major and regional cities (including Brussels)	< 5 km	4	5	0
	5–10 km	3		
	10–20 km	2		
	20–40 km	1		
	≥ 40 km	0		
Availability of public transportation	Station in the neighbourhood	5	5	0
	No station in the neighbourhood	0		
Availability of local retail and services	Core neighbourhoods (in all degrees urbanization)	8	8	0
	Secondary neighbourhood adjacent to core in urban agglomeration or small cities			
	hab/ha > 25	6		
	hab/ha < 25 and > 15	5.5		
	hab/ha < 15	5		
	Secondary neighbourhood in urban agglomeration not adjacent to core	4.5		
	Secondary neighbourhood in small cities not adjacent to core	4		
	Secondary neighbourhood adjacent to core in urban fringe or commuting zones			
	hab/ha > 25	3.5		
	hab/ha < 25 and > 15	3		
	hab/ha < 15	2.5		
	Secondary neighbourhood not adjacent in urban fringe or commuting zone	2		
	Secondary neighbourhood adjacent to core in countryside			
	hab/ha > 25	1.5		
	hab/ha < 25 and > 15	1		
hab/ha < 15	0.5			
Secondary neighbourhood not adjacent in countryside	0			

Note: The maximum score for 'Distance to the 12 major and regional cities' implies that a neighbourhood can cumulate proximities to several major and/or regional cities. Analysis: D. Vanneste and L. Vanderstraeten.

This generated an explorative pattern showing municipalities and neighbourhoods with different levels of potential (Figure 5a and b). It appears that municipalities and neighbourhoods located in the agglomeration of major cities or in the 'Flemish

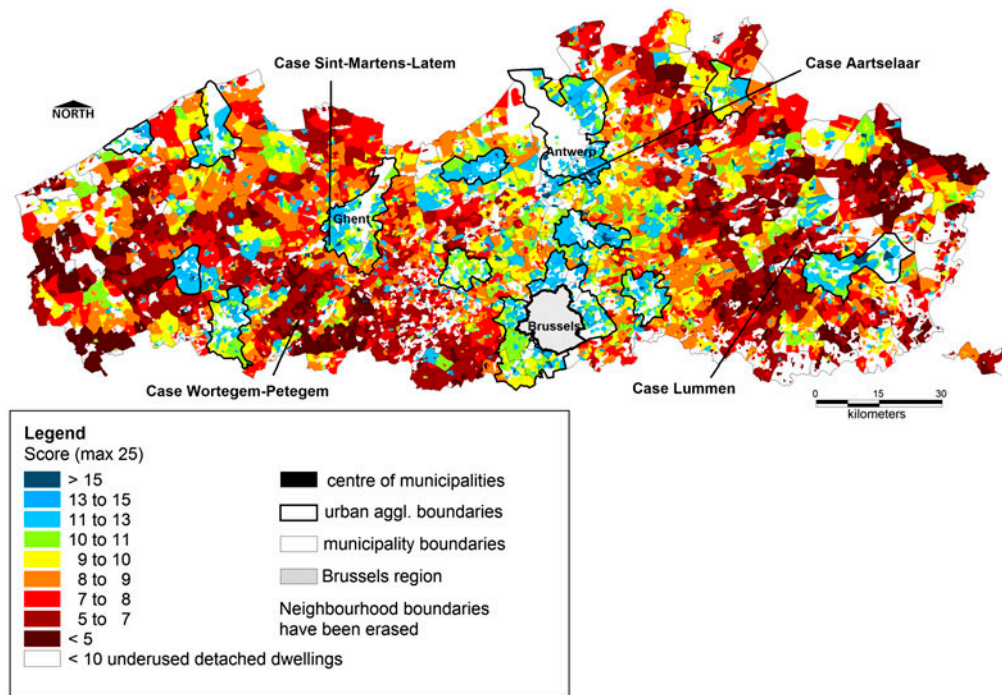


Figure 5a. Indicator of potential for *underused* detached housing: spatial outcome on a neighbourhood level.

Data: SEE 2001; analysis and cartography: D. Vanneste and L. Vanderstraeten.

diamond' – the centrally located region between the cities of Ghent, Antwerp, Brussels and Leuven – achieve the highest scores on the indicator, meaning that they have a high potential for sustainable development in contrast to the more remote rural municipalities which score rather low. This is consistent with the idea that closeness to a city will necessitate less transportation, and will thus, from an ecological point of view, be preferable to a rural location. Although several caveats should be taken into consideration,¹⁵ the methodology resulting in this map looks promising as a possible instrument for discussion and negotiation of spatially selective policies implying that the whole set of planning tools, subsidies and fiscal instruments might be spatially differentiated to transform existing residential neighbourhoods. The explorative character of this indicator is such that it would be entirely premature to already advocate its immediate use, but it shows its possibilities as a well-grounded basis for spatially selective policies. Such spatially selective policies were suggested already in a report on Belgian housing in 1999 (Goossens, Thomas, and Vanneste 1999). Of course, the threshold for switching between various strategies, such as phasing-out, construction bans or limitations and densification, should be validated in a discussion with various stakeholders. We do believe that differential policies will be necessary in future. They could imply densification strategies at one end of the spectrum (encouraging additions and infill on the level of plot or building) and phasing-out scenarios at the other end, possibly including construction bans. Such a spatially selective policy could only be realized on the basis of a spatial vision for the future of the Flemish region, which would be widely supported. The map we present can therefore be interpreted as

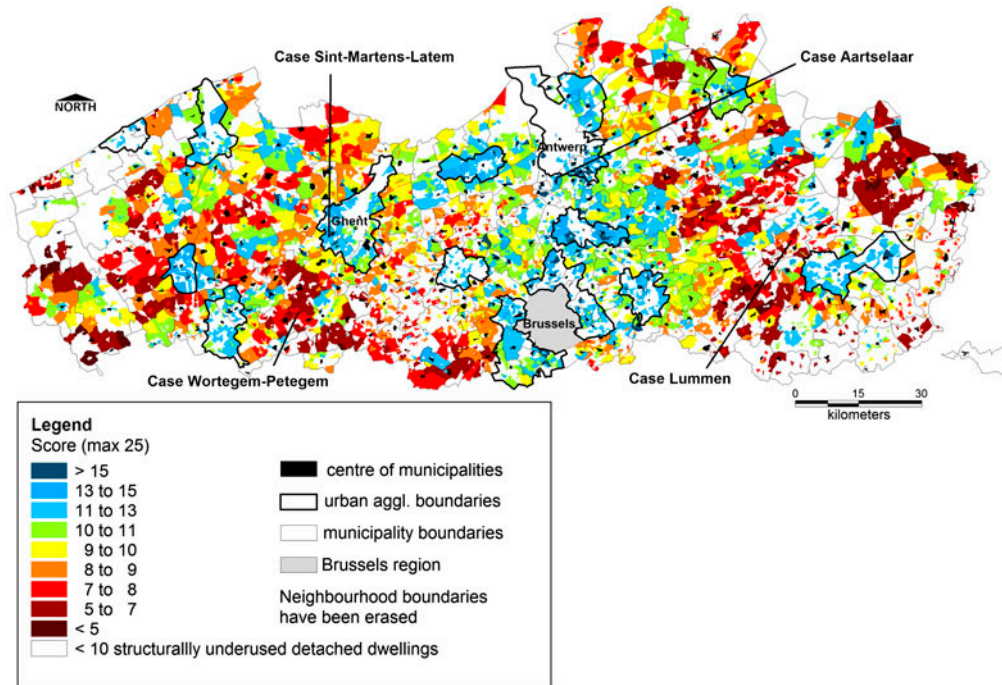


Figure 5b. Indicator of potential for *structurally underused* detached housing: spatial outcome on a neighbourhood level.

Data: SEE 2001; analysis and cartography: D. Vanneste and L. Vanderstraeten.

both an argument in favour of the idea of centrality and compactness, acknowledging its logic in a concrete geographical setting, and as a challenge to unsustainable areas to elaborate strategies for improvement and reinterpretation.

Specific scenarios for discussion with homeowners

A differential spatial policy might take the form of different spatial strategies to be deployed for different areas. Depending on the location, transformative micro-strategies applied to low-density residential neighbourhoods might relate to different macro-strategies, inducing either compactness and concentration of habitation and amenities, or reinforcing an isotropic dispersal of densities and functions. While the *compact city* approach projects a firm concept top-down on a region characterized by sprawl, it has a counterpart in the bottom-up *dispersed city* concept. These two concepts illustrate extremes between which other, hybrid models can be placed, and which both play a strong role in Flemish spatial planning.

The compact city, regardless of its being considered a broad concept without very clear definitions or scale, is quite influential in politics, planning and urban design (Jenks, Burton, and Williams 1996; Burton 2000; Salet 2011). It mostly evokes the image of a single, high-density, urban municipality with a green hinterland. The benefits of the ideal of compactness are however often discussed as theorists doubt whether it allows equity (Burton 2000), and whether its focus on form, and underexposure of process, evolution and usage, truly help in achieving a sustainable environment (Neuman 2005). In Flanders,

the question is raised whether the compact city offers a fitting paradigm for the specifically *diffuse* situation of the region (Loeckx 1995). The 1997 RSV has adopted the concept of compactness and projected it on the local Flemish context through its proposals for densification in urban regions and protection of existing open spaces. By formulating the concept of ‘deconcentrated bundling’, it proposed to strive for compactness of the main city centres, but also of urbanized regions and smaller towns, hence appropriating the compact city model as far as the local context could reasonably allow for. The RSV has however failed to project these ambitions concretely on the actual diffuse Flemish landscape, and hence its ambitions were not met.

Alternatively, the dispersed city concept has taken centre stage, cultivated in European countries with diffuse and spread-out settlement patterns like Italy and, indeed, Belgium.¹⁶ At its basis lies a descriptive and realistic interpretation of contemporary spatial structures (Secchi 1992) and a pragmatic, context-bound design approach towards intervention (Secchi 1991). The acceptance of fragmentation as the current-day state of urbanism is a basic element in diverse concepts built upon this paradigm, such as the ‘Diffuse city’ (Boeri 1999) or the ‘Reverse city’ (Viganò 2012), both concepts which are looking for the reinterpretation of urban sprawl and for the development of new forms of public space. The dispersed city concept nevertheless faces criticism for simply legitimizing commercial consumption of the little open space that is left (Heynen 1990).

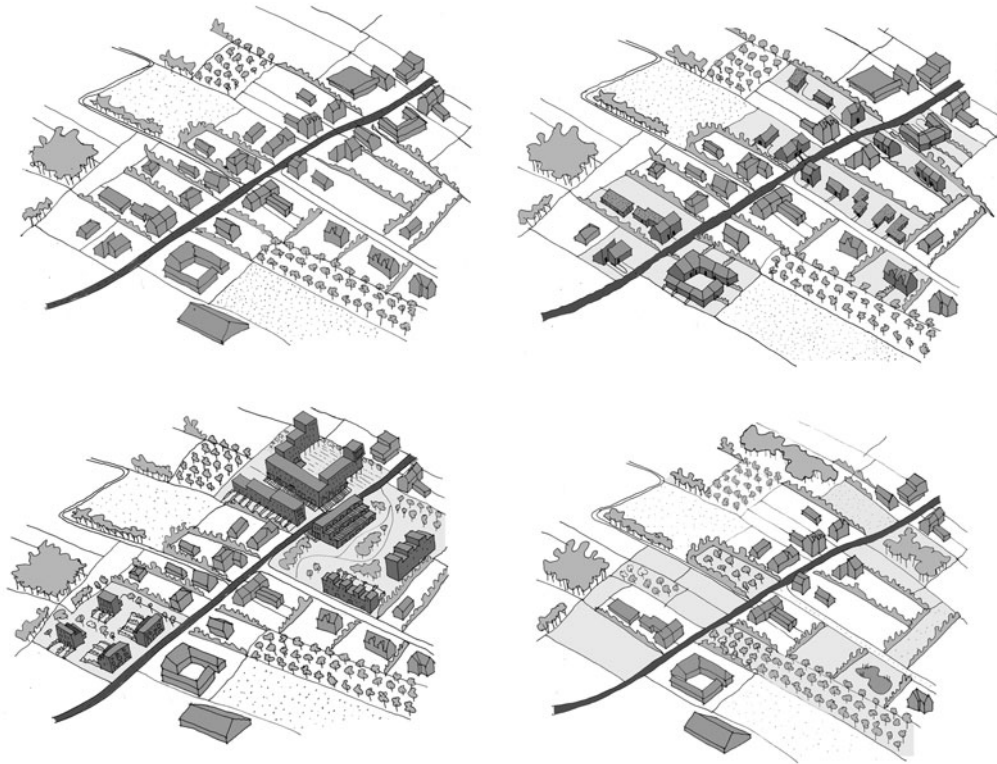


Figure 6. Scenarios discussed with inhabitants of detached dwellings. Upper left: representation of the current situation; upper right: ‘reconfiguration strategy’; lower left: ‘replacement’; and lower right: ‘removal strategy’.

Illustration: M. van de Weijer, 2013.

In Flanders several design practitioners endorse this theory and propose their projects within the diffuse Flemish landscape following its logic (Uyttenhove 2011). Nevertheless, it is also questioned in the Flemish context, as it is not clear how this paradigm could solve the problems of an ageing population, or how it could address the societal lack of awareness about the functional and ecological consequences of the chosen housing location (Vanneste, Vanderstraeten, and Thomas 2012).

Based on these two dominant paradigms, we have drafted three different transformative scenarios in order to have a concrete basis for discussions with inhabitants. Each scenario relates to one of the spatial strategies *reconfiguration*, *replacement* or *removal* (Figure 6) – whereby reconfiguration and replacement are both strategies deployed by the protagonists of the dispersed city concept, while the removal strategy would rather be applauded by those defending the compact city.

The discussions with inhabitants took place during fieldwork in 10 different municipalities (Figure 4b), characterized by different spatial conditions. In order to enquire into social acceptance at the level of the residential environment, the three transformation scenarios were supported by graphic material – based on a prototypical representation of a neighbourhood tissue – to be quickly legible. In the interviews these scenarios were shown and the researchers explained in what way these could come about, and what this could mean for the local housing stock. We discussed the strategies independently of neighbourhood scores assigned by the indicator of the potential for underused detached housing, and thus did not hypothesize specific correlations between them (the two parts of the research were implemented in parallel – hence their incomplete integration).

Reconfiguration strategy

A first possible scenario for transformation of low-density residential neighbourhoods towards more sustainability is based on transformation of dwellings and plots. Its main ingredient is that alterations, such as the subdivision of existing built structures, or the addition of small, single-household units on lots that before had only a single-family dwelling, would be facilitated or even encouraged. This scenario envisions a minimal role for the government, mainly on the level of the municipality. The role of authorities would be to raise the awareness of individual house owners about alternative patterns of building and inhabitation, and to provide the necessary alterations to the legal structure (e.g. zoning laws). If these adaptations are implemented, incremental infill could occur wherever there is a demand in such low-density residential environments.

Concrete examples of such transformations can be found mainly in a North American context, but also in France.¹⁷ Constructing *accessory apartments*¹⁸ has been studied mainly in North America since the 1980s in search of a mode for the reuse of typical suburban neighbourhoods. In the United States and in Canada this materialized as a search for a more collective cohabitation model replacing the typical suburban individualism (Hayden 1984), as a search for private benefits for homeowners such as extra income, more security, and a shared maintenance of the building and plot (Hare and Ostler 1987), or as a search for flexibility in the light of demographical developments of the inhabiting population (Friedman 2002). What is common to these approaches is the acceptance of the notion that the suburbs are ‘here to stay’, and that the question for other modes of habitation needs to be inscribed in the existing built fabric, with certain caution not to ruin the original character.

Similarly in Flanders, in recent years multiple documents have been published by provincial governments, politicians and project developers about the potential of house

subdivision (Coopmans and Verraes 2008; Provincie Limburg 2011; Provincie Vlaams-Brabant 2011; Architecture Workroom Brussels 2012; Vogels 2012). Many obstacles for its implementation still exist (for an overview, see Bervoets and Heynen 2013), but the alternative use of single-family houses is put forward as a solution to meet the demand for smaller dwellings in an ageing society, the preservation of the remaining open space and a reduction of the energy waste of the existing housing stock.

A recently published Green Paper (Vlaamse Overheid 2012) in preparation for the new Spatial Policy Plan, the successor to the RSV, cautiously puts the possible densification of residential neighbourhoods on the agenda. Likewise, the preliminary documents for the new Housing Policy Plan consider the potential of house subdivisions in existing residential neighbourhoods (Agentschap Wonen Vlaanderen 2011, 2012). Since 2009, with the implementation of the new Decree on Residential and Home Care and its translation into the Flemish Codex of Spatial Planning, accessory apartments in single-family houses are officially allowed and exempted from a building permit if some very specific criteria are fulfilled: a demonstrable care relation between the inhabitants, a minimum age for the care-dependent resident, and reversibility of the architectural intervention after the suspension of the care relation. This is a first sign that such infill scenarios are to be taken seriously. We therefore expect that this scenario is to encounter the least resistance from the respondents.

Replacement strategy

The strategy of replacement envisions new, large-scale developments next to neighbourhoods of detached dwellings in order to create new nodes in the urbanized landscape. These ‘gravity points’ could take the form of complete projects involving housing, public and commercial spaces, and would rather occur on strategic locations related to these neighbourhoods. The inhabitants of these neighbourhoods could profit from these amenities and consider moving to new dwelling types, thus applying the concept of ‘ageing in place’ to the neighbourhood. Such interventions also introduce public space in these residential neighbourhoods, a strategy discussed by Segal and Verbakel (2008) in the light of the decreasing importance of central public space and the emergence of new terrains of public interaction under conditions of sprawl.

In such a scenario, authorities have to play a stronger role than in the previous one, as the municipalities would have to allow for this new functional infill and for the rearrangement of valid zoning plans. Also, homeowners play a rather passive role, and developers a more active role, as this would involve the addition of large-scale projects in a symbiosis with the existing dwellings.

Such developments are not completely new to the Flemish context, although, in practice they rather take shape in an ad-hoc way, resulting in linearity rather than concentration. Commercial ribbons along important connector roads between urbanized cores have come about in such a way. Also, urban housing typologies such as apartment buildings and retirement homes are found in these ribbons. These residences occasionally take shape as private domains with luxury apartments. The ribbons consisting of diverse amenities are morphologically juxtaposed to the low-density residential neighbourhoods in the hinterland that they functionally service – so functionally they already perform in a way our replacements are imagined to work.

In the Flemish landscape there are also already a limited amount of examples of complex projects that combine diverse housing types with amenities and public space and as such service also the surrounding neighbourhood. The outlined scenario somehow holds

the middle between the pragmatism of ribbon development and the coherence of the urban renewal projects now found in brownfield locations in Flemish cities and village centres. It foremost builds upon a combination of amenities and new housing typologies.

Removal strategy

Besides reconfiguration and replacement, we also proposed a strategy of removal, inspired by discussions on shrinking regions, or on ‘unbuilding’ of obsolete dwellings. Such a strategy is framed in a scenario envisioning the gradual demolition of low-density areas – *in casu*, areas with many underused dwellings – sacrificing part of the stock of (structurally¹⁹ underused) detached dwellings, for landscape restoration and densification in urbanized cores. In this scenario, the government is supposed to take a strong lead and also to invest financially as well as organizationally in a revision of the residential landscape. Developers would still be able to play an important role in providing housing, however only in more central, urbanized contexts. Individual homeowners could possibly negotiate with the government to swap one property against another one. The demolition of the (sub)urban fabric in general, and of dwellings in particular, has not often been connected to the luxury problem of oversized living, but it has been discussed for shrinking regions, such as parts of the former German Democratic Republic (GDR) (Oswalt 2006). Eastern Germany’s decrease in population and the ensuing falling apart of the network of infrastructure and amenities (Beetz, Huning, and Plieninger 2008), however, offer a perspective significantly different from the Flemish context, where growth is still in order.²⁰

In Flanders, demolition of obsolete and/or structurally underused buildings is not yet a serious topic of political debate, but is already part of planning strategies in speculative design proposals, as, for example, proposed by POSAD (2012). From a purely ecological point of view, one can argue (and some have argued) that a significant amount of detached dwellings are unsuitable anyhow for adaptation in line with increasing standards of comfort and energy-efficiency, and that it is thus better simply to demolish them, without replacing them in the same spot by new houses. This type of intervention would enable a restoration of open space (Vandevyvere 2010). Whereas only some years ago many would have dismissed this option as totally unrealistic, there are now signs that the authorities are increasingly open for it. The so-called Green Paper (Vlaamse Overheid 2012), for example, which is a report about tendencies, opinions and possibilities for the spatial future of Flanders, states the intention to densify cities while actively fading out (deconstructing) decentralized suburban allotments.

The public support for transformation strategies

For the benefit of clarity, this article will mainly focus on the findings and comparison of the four neighbourhoods at both extremes of the spectrum which emerges from the geographic analysis of potential. The two best scoring neighbourhoods are ‘Bruynenbaert’ in Aartselaar and ‘residential forest Deurle’ in Sint-Martens-Latem, located, respectively, in the agglomeration of the major cities of Antwerp and Ghent (Figure 4b, numbers 2 and 3). Both neighbourhoods are morphologically significantly different (Figure 7). In Aartselaar, ‘Bruynenbaert’ is a master-planned neighbourhood characterized by rather modest building lots and modest house sizes. Inhabited by larger and younger families, these houses are not necessarily underused. In Sint-Martens-Latem, ‘residential forest Deurle’ is a more upmarket neighbourhood created through the gradual subdivision and development of an old forest. It is characterized by rather spacious building lots and house sizes. The houses

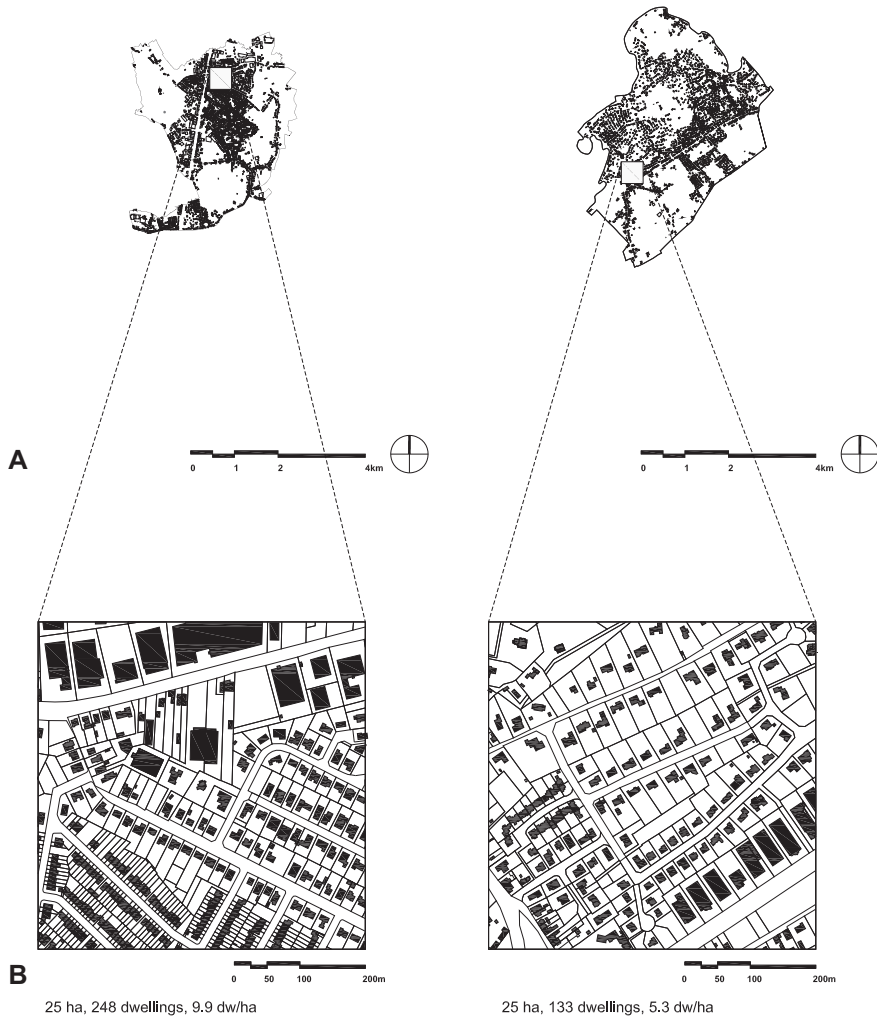


Figure 7. (A) Morphology of the built tissue of the municipalities Aartselaar (left) and Sint-Martens-Latem (right); and (B) sample of neighbourhood tissue in these municipalities. Source: Fieldwork and Belgian cadastral maps; analysis M. van de Weijer, 2013.

are underused, even when inhabited by families with children. The neighbourhoods with the lowest scores are 'Laren' in Lummen and 'Tjammelstraat' and 'Oudenaardseweg' in Wortegem-Petegem, both located in municipalities in rural residential zones (Figure 4b, numbers 9 and 10). In Lummen, 'Laren' is an old hamlet that has been expanded through ribbon developments. In Wortegem-Petegem, 'Tjammelstraat' and 'Oudenaardseweg' are ribbon developments located in between two hamlets (Figure 8).

Responses to the reconfiguration strategy

When presenting this first scenario, several respondents referred to the presence of already subdivided houses in their neighbourhood. Some of these houses had been subdivided in line with the strict regulations; other houses over the years had been subdivided without

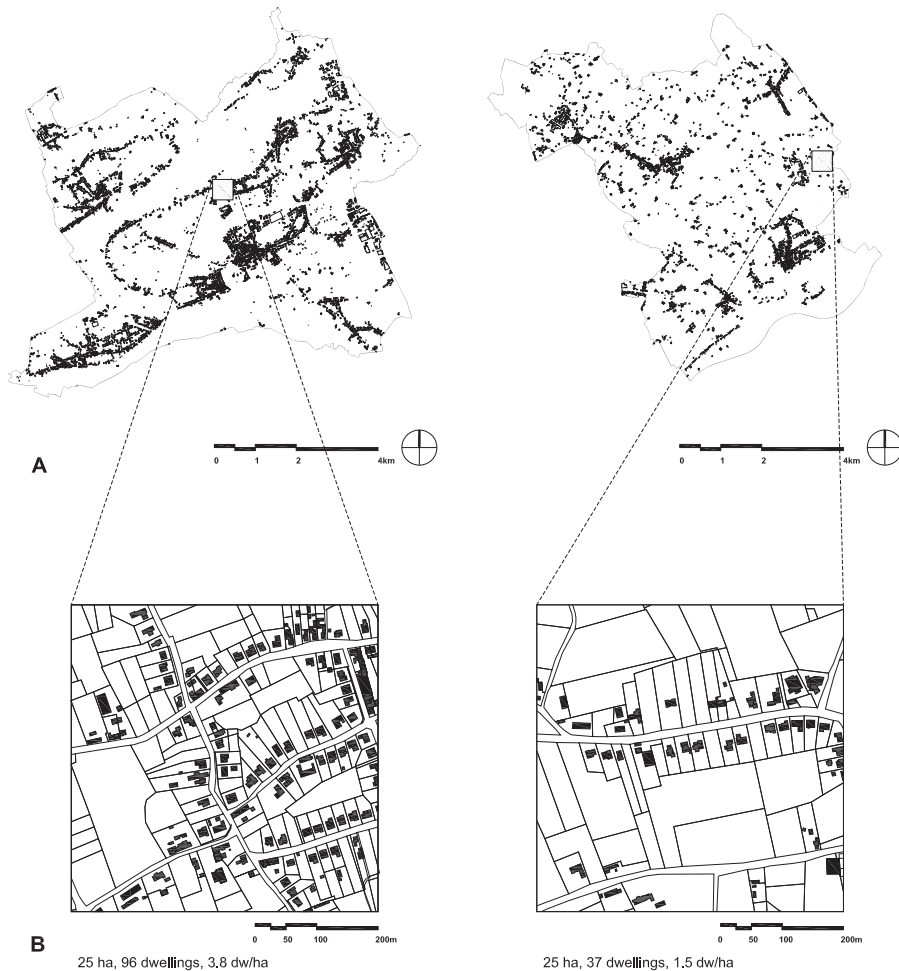


Figure 8. (A) Morphology of the built tissue of the municipalities Lummen (left) and Wortegem-Petegem (right); and (B) sample of neighbourhood tissue in these municipalities. Source: Fieldwork and Belgian cadastral maps; analysis M. van de Weijer, 2013.

building permit. Most respondents made no objection against this phenomenon – as long as they did not experience any nuisance from it and as long as the changes to the exterior remained limited. Also the subdivision of building lots is a practice people are quite familiar with and which is relatively well tolerated. Several respondents used an extra official building lot as additional garden space, or their building lot was large enough to be subdivided according to the existing local zoning regulations. Eventually in the future this extra land might be built upon by one of the children or grandchildren or it would be capitalized when selling the house. Because of this familiarity with existing practices of subdivision, we noted a reasonable public support for our reconfiguration strategy, with the positive comments outnumbering the negative ones.

This public support can also be explained by the deeply rooted economically liberal attitude of the Flemish population. Individual adjustments such as house subdivisions were certainly acceptable, or as many of our respondents articulated it: ‘My neighbour can do

whatever he wants on his lot; it is not my business' (Aartselaar_W5, man, 73 years of age). Some believed this strategy could generate more lively neighbourhoods: 'I don't mind. Young families might bring some life to the neighbourhood' (Sint-Martens-Latem_W3, woman, 64 years of age). Other respondents saw certain benefits in the strategy: the creation of more affordable housing or the stimulation of more efficient land use. This type of support declines, however, when people feel individually affected: in the case where numerous houses or parcels would be subdivided in their immediate vicinity, they are clearly less accommodating. On the negative side, extra households tend to be associated with extra traffic, degradation of the green character of the neighbourhood and a loss of privacy for individual dwellings. Some respondents also mentioned how the possible inflow of 'another kind' of people (clearly referring to marginalized groups such as unemployed people or welfare mothers) could lead to social problems. Since in Flanders the house is an important piece of property and often even the most important asset people own, one can understand that homeowners were also concerned with changes that might negatively affect the resale value of their house.

The analysis does not show any important link between the neighbourhood scores assigned by the potential indicator for underused detached housing and the public support for the reconfiguration strategy. At both extremes of the indicator spectrum – Aartselaar and Sint-Martens-Latem versus Wortegem-Petegem and Lummen – people share many concerns, such as a clear preference for the preservation of the 'residential' or 'rural' character of their neighbourhood. The public support seems more related to the individual attitude of the respondents or to the morphology of the neighbourhood. For example, the public support for lot subdivision in the residential neighbourhood in Aartselaar, characterized by rather small parcels, was notably lower than in the residential forest in Sint-Martens-Latem characterized by more spacious lots.

Responses to the replacement strategy

When confronted with the scenario involving rigorous replacement, some respondents reacted favourably to the idea of new public and commercial facilities at walking distance from their home. They especially liked this possibility in view of their inevitable ageing. Other respondents saw the possible construction of apartments in their vicinity as an advantage, since it would enable them to move to an apartment in their current neighbourhood when they could no longer maintain their house. The construction of apartments was also advocated as a way to create more affordable housing for the younger generations, or as an alternative for the still expanding ribbon developments. Negative comments on the replacement strategy, however, outnumbered the positive ones. Many of our respondents feared that a 'gravity point', when realized in their immediate vicinity, would result in a deterioration of the green and quiet environment they had so specifically opted for. Also, an increase in social problems and decrease of property values were perceived as possible threats. Some respondents considered multifamily dwellings as an inappropriate building typology for the suburban or rural context they were living in: 'To my opinion, this would really be sad. Such complexes should be built in or around a city, but – God forbid – not in the countryside. Flanders has already been turned in one large city – let's please preserve something of countryside' (Wortegem-Petegem_W4, woman, 73 years of age). Some also questioned the need for bringing public or commercial facilities to the neighbourhood: 'If you choose to live here, you know that [there is a lack of facilities], if that is not agreeable to you, please get up and leave' (Wortegem-Petegem_W4, woman, 73 years of age). The use of the public space imagined in these possible 'gravity points' also raised

concerns: ‘Here, most people have a private garden, so what use would we have for public space? Creating a gathering place where children of thirteen year old could smoke cigarettes out of sight of father and mother? One wonders about the risks involved’ (Sint-Martens-Latem_W1, man, 67 years of age). Other respondents rejected the replacement strategy because they considered their house already at walking or cycling distance from the facilities in the existing village centre. Others, on the contrary, considered their neighbourhood to be located too far from the local town centre and thus inappropriate for new developments, which in their eyes had to be concentrated in the town centre.

As in the previous scenario, the analysis did not find any direct links between the score assigned in the potential indicator for underused detached housing and the public support for this, more invasive, scenario. At both extremes of the indicator spectrum older respondents seemed to see more benefits in the advent of apartments and shops in their neighbourhood, as it would allow them to age in place more comfortably. But among the older respondents there was also an important group of people who were planning to move out to a more urban and central location and they were less inclined to make concessions for the time they had left in the neighbourhood. The hope to age in place was more pronounced in the rural municipalities of Lummen and Wortegem-Petegem, where multiple respondents were born and raised, compared with Sint-Martens-Latem or Aartselaar where several inhabitants expressed the hope to move back one day to the nearby cities of Ghent or Antwerp. But we also noted subtle differences between Sint-Martens-Latem and Aartselaar: the respondents in the first municipality seemed to be more concerned about the social status and overall appearance of their neighbourhood than those in the second. Also between the rural municipalities of Lummen and Wortegem-Petegem differences could be noticed. In Lummen the scenario involving intrusive replacement strategies was seen by some respondents as a possible strategy to revive the old hamlet, while respondents in the ribbon developments of Wortegem-Petegem rather perceived it as a disruption of the rural character.

Responses to the removal strategy

Again some respondents saw benefits in a landscape recovery strategy: ‘This scenario would give us some open space back [...] our lot would become a really nice piece of land that way’ (Wortegem-Petegem_W2, woman, 63 years of age). However, similar to the previous strategy, the negative comments outnumber the positive ones. Some feared it would destroy the social life in their neighbourhood or would make detached housing unaffordable: ‘In that case, living on the countryside would only be affordable for rich people, other people would be forced to live in apartment buildings’ (Lummen_W4, woman, 56 years of age). Others feared the negative impact on property prices: ‘I doubt homeowners will strongly favour this, it certainly doesn’t generate an added value for the houses’ (Aartselaar_W3, man, 72 years of age) (note that the two comments are contradictory – the one forecasting a rise in property values, the other a drop). The most common criticism focused on the perceived lack of political and financial feasibility of this scenario: ‘A minister who would propose such a thing wouldn’t get a single vote anymore’ (Lummen_W1, man, 71 years of age) and ‘There will never be enough money for this, I can’t imagine a government doing this’ (Aartselaar_W3, man, 72 years of age). Because of the overall satisfaction with the existing green in their neighbourhood, the sensibility of the scenario was questioned: ‘This is completely unrealistic. In Deurle we already have a forest, but nobody is using it, nobody is entering it [...] because people in this neighbourhood have a large private garden’ (Sint-Martens-Latem_W2, woman, 70 years of age).

Instead of demolition, respondents argue for the protection of existing open areas and for the transformation of existing neighbourhoods in Flanders.

Again, the public support for such ‘unbuilding’ seems to be independent of the scores assigned by the potential indicator for underused detached housing. If people saw benefit in it, then it was for other neighbourhoods but certainly not for their own: some inhabitants of residential neighbourhoods, for example, favoured the conversion of ribbon developments into open landscapes, while some inhabitants of the ribbon developments perceived removal as a useful strategy to create more green areas in urban areas. Also when comparing the public support between residential neighbourhoods, differences could be noted: while in the master-planned residential neighbourhood of Aartselaar many inhabitants perceived unbuilding as a decline of their neighbourhood, in the residential forests of Sint-Martens-Latem some respondents saw it on the contrary as a restoration and reinforcement of the natural elements. Parallels can be drawn with our two rural case studies at the other end of the sustainability spectrum: in the old hamlet of Lummen some respondents saw the ‘dilution’ scenario as the demise of their neighbourhood, while in the more dispersed ribbon developments of Wortegem-Petegem, some respondents welcomed the restoration of the open landscape in which they once built their house.

The search for an ‘overarching interest’ for neighbourhood transformations

As expected, our public support analysis indicates a strong NIMBY attitude. Nevertheless, the analysis also provides some useful elements to break through the inertia of low-density residential neighbourhoods in Flanders. It is clear that the reconfiguration strategy raises least resistance among the residents. This strategy leaves the neighbourhood character most intact and the approach is most closely related to the tradition of piecemeal parcel-by-parcel urbanization, the *laissez-faire* attitude of the population and the already common practice of (informal) house and parcel subdivisions. For a sustainable redevelopment of residential neighbourhoods, a new policy could thus be to tolerate and even stimulate house subdivisions in selected areas. As some respondents argued, this should not imply an elimination of restrictive zoning plans, but it would on the contrary demand a new set of very clear building guidelines, regulating the minimum distance between buildings, maximum building heights and densities, and extra parking spaces for the extra families. Other respondents demanded that the actual inhabitants should be involved in the setting up of these rules to ensure a good balance between the transformation process based on private initiative and the need to protect the overall green neighbourhood character.

Additionally, the NIMBY attitude against the replacement and removal strategies can and must be nuanced. As the respondents argued, their final approval or disapproval of the replacement strategy would strongly depend on its spatial integration in the neighbourhood, the size of the project, the proximity to the town centre, the architectural style of the buildings, the foreseen public facilities and the sort of inhabitants the project would house. The final approval or disapproval of a strategy facilitating unbuilding strongly depends on the specific location, the costs versus benefits analysis, and the age and structural condition of the houses to be demolished. For all three strategies overlaps between individual and public interests can be found. As such these three strategies can be complementary. The replacement strategy could, for example, be applied as a strategic instrument for the revival of rural village centres, in combination with reconfiguration of the nearby low-density residential neighbourhoods. Additionally the removal strategy could be applied as a step-wise approach for strategic landscape recovery projects, to reconnect precious natural landscapes at specific sites in the ribbon developments.

In general, people are very satisfied with the living environment they consciously opted for, but we also noticed among the respondents many individual concerns about the general sprawl condition in Flanders. Many respondents seem to have a love–hate relationship with the Flemish landscape. A sense of overpopulation because of a lack of open space and of natural landscapes, annoyance with daily traffic congestion, with the limited offer of public transport in rural areas (at least perceived as such), the perceived ugliness of the ribbon developments, etc. All these elements led to a feeling that the housing model and spatial planning in Flanders are problematic: ‘Yes, in terms of urbanisation something should change in Flanders. It is no coincidence that we are termed “the ugliest country in the world”’ (Aartselaar_W6, man, 74 years of age). We also noticed concerns about the evolution of the property prices. Some respondents doubted that the current resale value of their house would be high enough to buy a comfortable, more centrally located apartment for their old age. Other respondents even feared a collapse of the property prices of detached, single-family houses if nothing was adjusted: ‘I believe home owners should accept the transformation of their neighbourhood. If not, we will end up in a couple of years in a situation in which these houses have become worthless’ (Sint-Martens-Latem_W5, man, 54 years of age). Other respondents were more worried about the difficulties of their children and grandchildren in finding an affordable house. Many respondents thus share one or more concerns of the sustainability debate, dependent upon specific social, economic and environmental elements that they experience in their daily life. Such quotes illustrate that, while inhabitants may be opposed to or in doubt about concrete design *strategies*, there is awareness of spatial issues which render the *scenarios* discussed plausible in the viewpoint of the interviewed inhabitants.

Taken as a whole, these individual issues with the Flemish sprawl landscape do not yet lead to a general sense of urgency with respect to the need to transform existing residential neighbourhoods. The overall satisfaction with the living environment is translated in a very limited demand for change, as change is at first associated with a deterioration of the current living quality. The transformation of their immediate living environment is often seen as a problem for the next generations, an evolution to which the original home builders should not be exposed: ‘As long as I live here, they shouldn’t change too much [...] but they can do whatever they want once I’m gone’ (Sint-Martens-Latem_W6, man, 66 years of age). But despite the NIMBY attitude, we believe that all the individual concerns with the Flemish sprawl landscape that surfaced through the interviews could ‘nourish’ the public debate about the need for redevelopment of existing low-density residential areas. We believe, therefore, that it is possible to increase the public support for neighbourhood transformations by raising awareness about the inextricable link between the individual concerns of inhabitants and the actual condition of the built environment in Flanders. It should become clear to public opinion that solutions for seemingly individual problems (e.g. ageing in place, children who do not find affordable housing) can be found when accepting adjustments to the collective built environment. The role of the media covering urban planning issues should not be neglected. Today, the reconversion of low-density neighbourhoods remains a very rare phenomenon in Flanders and thus also invisible in the popular press. To increase the awareness and public support for neighbourhood transformations, we thus urgently need thought-provoking transformation projects – big and small – which succeed in the preservation of actual neighbourhood character and qualities, and show the positive impact of densification in terms of amenities, personal services and mobility. This would also imply a break in the trend in property development to keep fitting the concept of the detached dwelling on ever smaller parcels. Raising awareness combined with alternative and appealing projects might lead to the joint construction of an

‘overarching interest’ (Lanckswert 2011) which equally represents the interests of inhabitants, government and advocates of sustainability.

Conclusion

This paper has aimed to generate a clearer perspective on the possible transformation of residential Flemish neighbourhoods, and the detached (often underused) dwellings that have shaped these neighbourhoods, in line with the debate on sustainability. By way of conclusion, we discuss the four main findings that have surfaced in the research.

First, the explorative analysis demonstrates that among the current residents – the respondent group consisted mainly of ageing, first-generation residents – only rather limited public support can be expected for transformations that overcome the typology of the single-family house or that drastically affect the residential character of the neighbourhood (see also Cneut et al. 2007). From the analysis emerge a number of conditions that determine whether specific interventions might be seen as acceptable or not. These conditions have to do with the role of the authorities – facilitating private initiative without direct intervention seems to be preferred – and with the safeguarding of the green neighbourhood character. Under these conditions, insertion of alternative housing types into existing residential zones might be possible without major resistance. This applies to both small incremental growth and large-scale nodes with added amenities.

Second, the research reveals how wide the gap is between spatial strategies imagined by urbanists and architects, on the one hand, and the everyday reality materialized in the omnipresent detached dwelling, on the other hand. This gap, however, is not absolute: whereas the limited success of planning tools like the RSV in achieving more density and urbanity seems to challenge the attainability of compact city logic, the compact city nevertheless exists as an ideal in the perception of homeowners who, however, consider the urban core to be the prime locus of densification, and see no benefit in local diversification and transformation of low-density residential areas. Even so, this perception of compactness is most of all projected on the historical centres, and thus often disconnected from the individual living environment idyll. In turn, the idea of living in a green environment is at odds with the reality of the existing built environment, which shows obvious aspects of dispersion. The interviewees are most often not aware of such contradictions. Their ‘green’ environment (green in terms of vegetation, not in terms of sustainability) offers them a kind of staged rurality: the image of the countryside is more or less preserved, while the residents inhabit these areas in an ‘urban’ way – relying upon a diversity of amenities that are only a car-drive away.

Third, the research shows that the NIMBY attitude towards change is strongly connected with the high level of satisfaction of the inhabitants with their current living environment. Many inhabitants are resistant to changes because they associate them with the deterioration of neighbourhood character and qualities. Taking all these individual interests into consideration would lead to a status quo. But our public support analysis also brought individual concerns with the sprawl landscape to the fore: the difficulty to age in place because of the lack of facilities or alternative housing typologies in the immediate vicinity of their current dwelling, the problem of traffic congestions or the uncertainty of future property prices. These individual interests that exist among the inhabitants of low-density residential settlements do not conflict with the public interest. On the contrary, these individual concerns could nourish the debate on sustainable redevelopment of residential neighbourhoods, and alter it from a rather abstract and ideological ‘public interest’ into an

‘overarching interest’ (Lanckswaert 2011) supported by the inhabitants and even stimulated in a framework of collaborative planning.

Finally, our explorative mapping based on a promising, but still embryonic, indicator showed different potentialities between residential neighbourhoods in the Flemish region. Our parallel explorative fieldwork did not reveal a strong correlation between this objectified functional appreciation of neighbourhoods and the public support for specific neighbourhood transformation strategies. The research shows that the public support for transformation rather relates to the individual situation of the homeowners, as well as to the specific location or character of the neighbourhood. Both the explorative mapping and public support analysis imply that a generic solution for low-density residential neighbourhoods in Flanders is difficult: we need to develop spatially diversified policies with customized and site-specific solutions. As a decision instrument for one or another transformation strategy on the neighbourhood scale, the indicator in its current, explorative form lacks flexibility, on the one hand, and is still sensitive for a number of caveats, on the other hand. We see it in the first place as an instrument that underpins the plea for spatially selective policies in Flanders, and which could contribute – as one analysis among others – to raising public awareness about the need for such policies.

Acknowledgements

This research was supported by The Research Foundation Flanders - FWO [grant#G.0599.10] for the research project ‘Large underused dwellings in Flanders. Development of architectural and users’ strategies in view of demographic trends and ecological constraints’ carried out at the KU Leuven and Hasselt University, headed by Professors Hilde Heynen, Koenraad Van Cleempoel, Dominique Vanneste and Michael Ryckewaert. We would like to thank Bieke Cattoor and Peter Aeschbacher, and four anonymous reviewers for their feedback.

Notes

1. Flanders is the northern, Dutch-speaking region of the federal state of Belgium, and excludes the Brussels capital region. It has a large governmental autonomy including spatial planning, urbanism and housing policies. This autonomy has gradually increased starting from the 1960s – meaning that up till that point in time planning, urbanism and housing were regulated by the Belgian state, and not yet by the Flemish region.
2. A total of 74.4% of Flemish households are homeowners (De Decker et al. 2010, 22).
3. The latest population and housing census is from 2001. The authors thank the Federal Agency for Scientific Policy which provided data through the valorization of the results of the ‘Atlas of Belgium’ programme.
4. On the basis of a cluster analysis, 10 municipalities were selected with a high share of underused houses, taking into account the geographical spread over the region and the degree of urbanization. The findings in this paper are based on the first results of fieldwork in 10 municipalities (Figure 4b): Overijse (1), Sint-Martens-Latem (2) and Aartselaar (3), part of the agglomeration of, respectively, Brussels, Ghent and Antwerp; Lubbeek (4) and Alken (5), located in the urban fringe of the regional cities of, respectively, Leuven and Hasselt; Keerbergen (6), Aalter (7) and Retie (8), located in the commuter zones of, respectively, Brussels, Ghent and Turnhout; and Lummen (9) and Wortegem-Petegem (10) located in a rural residential zone. In each of these municipalities, based on an analysis of the residential underuse at the neighbourhood level as well as on the morphology, neighbourhoods were selected for the fieldwork.
5. The research into the public support for neighbourhood changes is part of a larger research project on the ‘underuse’ of the housing stock in suburban Flanders. The respondents were found by delivering letters to the private mailboxes of all houses in the selected neighbourhoods. Approximately 3% of the households were willing to participate in the research. In this way, 53 respondents were found supplemented with eight respondents who were found through

snowball sampling. Between September 2010 and December 2012, 61 semi-structured in-depth interviews were conducted that varied in length from 44 to 152 min, with an average duration of 81 min. This paper is based on three out of the eight sections of the questionnaire; the transcriptions were imported and coded in NVIVO. During the 61 home-interviews, 91 people, 48 men and 43 women, were interviewed. Their age varied between 31 and 87 years, with an average age of 64 years. Because the research focus was on ‘underused’ housing, the younger generations of residents as a consequence are underrepresented in the respondent group. From the 91 respondents, 79 had Belgian nationality, seven had Dutch nationality, two had British nationality, two had Austrian nationality and one had French nationality. The majority, 65 of 91 respondents, had followed post-secondary education. The respondents had been living in their houses for between one and 53 years, with an average of 28 years. From the 91 respondents, 55 were retired, 22 had a full-time job, nine a part-time job and five considered themselves to be a homemaker.

6. The plot surface area owned by the respondents varied between 399 and 15 363 m², with an average surface area of 2086 m²; the gross surface area of the dwellings varied between 126 and 775 m², with an average surface area of 369 m² ($N = 59$ as two visited houses could not be documented properly for a calculation of the surface area). Of the 61 houses, 44 had been built by the current homeowners, 16 were bought from the previous owner and one house was inherited. The age of the houses varied between eight and 62 years, with an average of 34 years.
7. In line with international definitions for ‘underused’, we took the number of rooms and the number of bedrooms as an indicator, while adding the surface of the living space (including living room, kitchen, bedrooms and home office; but excluding bathrooms, hallways, garages, basements and attics) and the size of the household. This resulted in a complex algorithm for classifying a dwelling as ‘(extremely) underused’ if the house offers at least one (two) bedroom(s) per member of the household, while the number of rooms indicating under usage goes up with the size of the household. We also are taking into account that, for the same number of rooms and the same household size, a larger house is more likely to be underused than a smaller one. For example, a dwelling inhabited by a two-person household is considered underused if they have three rooms or more at their disposal when living in a house with less than 125 m² of living space, lowering that to two rooms or more if the living space is larger than 125 m². This takes into account special ways of living such as lofts versus subdivided dwellings with a large number of small rooms.
8. According to an analysis of Bartiaux et al. (2005), the Belgian house on average counts over 130 m², while in countries like Sweden, Finland, the Netherlands and the UK this average lies between 70 and 80 m².
9. All maps are designed according to the ‘natural break’ method; Brussels is not included since it constitutes a separate region within the federal structure of Belgium.
10. These differences are linked with the history of the settlement system, which can be explained from differing pre-industrial and industrial assets and population dynamics of the sub-regions within the region of Flanders (Vanneste, Thomas, and Goossens 2007).
11. The 1889 Housing Law installed the legal base for the financing of social loans, the construction of social purchase dwellings and tax exemptions for homeowners. After the Second World War, the need for both new housing and a stimulation of the construction industry was met by the De Taeye Act in 1948, providing fiscal incentives for private home builders.
12. In 1935, The National Society for Small-scale Land Ownership was established; it was a social housing company that encouraged living in rural areas and provided a serious amount of newly built one-family homes on sizeable lots.
13. Only 6% of the Flemish housing stock is social housing; this amount has remained stable over the last years, despite several government programmes to increase the social housing stock. Homeownership is still increasing, however (Ryckewaert et al. 2012).
14. For now, the indicator is in an experimental phase of exploring possible methodologies. The present indicator is based on statistics, available at the neighbourhood level. Results would probably improve if the proximity of secondary neighbourhoods of the core neighbourhood can be better elaborated (e.g. with GIS functions such as adjacency) and should take neighbourhood densities into account. Furthermore, the series of chosen variables can benefit from adding cadastral information as well as information (map layers) of areas in danger of flooding and natural or ecological values. Nevertheless, in this stage, the mapped indicator shows the

spectrum of potential for reuse and densification on the scale of neighbourhoods, starting from the existing housing stock and taking mobility into account.

15. First, the data that compose the indicator must be available at the neighbourhood level; second, the (weights of) scores can influence the result and must be tested extensively; and third, a combination of data and methodologies is required such as statistical data combined with object-oriented data in GIS.
16. The neighbourhoods that served as case studies can be categorized based on their morphology and the way they were planned or built; ribbon developments, allotments, and residential parks or forests can be distinguished. The ribbon developments in this sample have densities ranging from 0.8 dwellings per hectare to 3.8 dwellings per hectare; for the allotments, densities range between 4.0 and 15.5 dwellings per hectare; and for residential parks and forests, densities range between 1.8 and 4.1 dwellings per hectare.
17. Here we will mainly discuss the literature from the United States and Canada. For the French situation we can refer to the 'Build in my Backyard' project (see <http://www.bimby.fr>).
18. Accessory apartments, also called ancillary units or granny flats, are secondary dwelling units attached to a dwelling or built on the same lot. These are small residential units, attached to the main dwelling or built on the same lot, that are usually inhabited by a member of the family, such as a grandparent, who can benefit of this proximity.
19. We defined a dwelling as 'structurally' underused if the characteristics of the dwelling are such that it can be labelled 'underused' even when inhabited by a family with two children. According to these criteria, the number of 'structurally' underused dwellings in Flanders is about 210 000; the number of 'structurally' underused detached dwellings is about 130 000.
20. As predicted for the development of the Belgian population until 2060 (FPB and ADSEI 2013).

Notes on contributors

Wouter Bervoets is a PhD candidate in the Department of Architecture, KU Leuven. His current research focuses on the future of suburban housing in Flanders.

Marijn van de Weijer is a PhD candidate in the faculty of Architecture and Arts, Hasselt University, Diepenbeek, and in the Department of Architecture, KU Leuven. His current research focuses on the future of suburban housing in Flanders.

Dominique Vanneste is an Associate Professor at the Division of Geography, KU Leuven, Research groups of Socio-economic geography and tourism. Her research field covers regional development, heritage and identity.

Lieve Vanderstraeten is a scientific collaborator at the Division of Geography, KU Leuven and participated in the research project on 'Large, underused houses in Flanders'.

Michael Ryckewaert is a Post-Doctoral Researcher at the Department of Architecture, KU Leuven, and Assistant Professor at the Department of Geography of the Vrije Universiteit Brussel. His research focuses on housing and urbanism history.

Hilde Heynen is a Full Professor and Chair of the Department Architecture, KU Leuven. Her research focuses on issues of modernity, modernism and gender in architecture.

References

- Agentschap Wonen Vlaanderen. 2011. "Debatnota Woonbeleidsplan Vlaanderen." Accessed June 6, 2013. <http://www.wonenvlaanderen.be/uploads/documentenbank/e32dff72cc4f83777aa3a066648b1561.pdf>
- Agentschap Wonen Vlaanderen. 2012. "Wonen in Vlaanderen 2050: Krijtlijnen van een toekomstvisie." Accessed June 6, 2013. <http://www.wonenvlaanderen.be/uploads/documentenbank/c9dbbc8ee62092f878b48d895560a4cb.pdf>

- Architecture Workroom Brussels. 2012. *Naar Een Visionaire Woningbouw. Kansen en opgaven voor een trendbreuk in de Vlaamse woonproductie*. Brussels: Vlaams Bouwmeester.
- Bartiaux, F., G. Vekemans, K. Gram-Hanssen, D. Maes, M. Cantaert, B. Spies, and J. Desmedt. 2005. *Socio-Technical Factors Influencing Residential Energy Consumption*. Brussels: Belgian Science Policy.
- Basta, C., and S. Moroni, eds. 2014. *Ethics. Design and Planning of the Built Environment*. Dordrecht: Springer.
- Beetz, S., S. Huning, and T. Plieninger. 2008. "Landscapes of Peripherization in North-Eastern Germany's Countryside: New Challenges for Planning Theory and Practice." *International Planning Studies* 13 (4): 295–310.
- Bekaert, G., and F. Strauven. 1971. *Bouwen in België 1945–1970*. Brussels: Nationale Confederatie van het Bouwbedrijf.
- Berke, P. 2002. "Does Sustainable Development Offer a New Direction for Planning? Challenges for The Twenty-First Century." *Journal of Planning Literature* 17 (1): 21–36.
- Bervoets, W., and H. Heynen. 2013. "The Obduracy of the Detached Single Family House in Flanders." *International Journal of Housing Policy* 13 (4): 358–380.
- Boeri, S. 1999. "The Diffuse City." *Archis* 7: 20–21.
- Burton, E. 2000. "The Compact City: Just or Just Compact? A Preliminary Analysis" *Urban Studies* 37 (11): 1969–2006.
- Clingeremayer, J. 2004. "Heresthetics and Happenstance: Intentional and Unintentional Exclusionary Impacts of the Zoning Decision-Making Process." *Urban Studies* 41 (2): 377–388.
- Cneut, C., R. Houthaeve, S. Durgun, P. De Rijcke, P. De Decker, M. Loopmans, B. Claessens, et al. 2007. *(Her) Gebruik Van De Bestaande Woningvoorraad in De Klassieke Woonwijken Uit De Jaren 1960 – 1980*. Brussels: Vlaamse Overheid, Departement RWO.
- Coopmans, F., and W. Verraes. 2008. *Kangoeroewonen. Een Mens- En Budgetvriendelijk Woonidee*. De Pinte: Wolfgang Verraes.
- De Block, G., and J. Polasky. 2011. "Light Railways and the Rural-Urban Continuum: Technology, Space and Society in Late Nineteenth-Century Belgium." *Journal of Historical Geography* 37 (3): 312–328.
- De Caigny, S. 2005. "Catholicism and the Domestic Sphere: Working Class Women in Interwar Flanders." *Home Cultures* 2 (1): 1–24.
- De Declerck, J., M. Ryckewaert, and S. Devoldere, eds. 2013. *Pilootprojecten Wonen. Nieuwe Vormen Van Collectiviteit*. Brussels: Vlaams Bouwmeester.
- De Decker, P. 2011. "Understanding Housing Sprawl: The Case of Flanders, Belgium." *Environment and Planning a* 43 (7): 1634–1654.
- De Decker, P., M. Ryckewaert, B. Vandekerckhove, A. Pisman, F. Vastmans, and M. Le Roy. 2010. *Ruimte Voor Wonen*. Trends en Uitdagingen, Antwerp: Garant.
- De Meulder, B. 2006. "De Belgische Stedenbouw En De Behoeftte Van Welvaart 1945-1975. 10 Punten over De Veranderende Productie Van Het Wonen." In *Wonen in Welvaart : Woningbouw En Wooncultuur in Vlaanderen 1948-1973*, edited by K. Van Herck and T. Avermaete, 128–145. Rotterdam: 010 Publishers.
- De Meulder, B., J. Schreurs, A. Cock, and B. Notteboom. 1999. "Patching up the Belgian Urban Landscape." *Oase* 52: 78–113.
- De Vos, E., and H. Heynen. 2007. "Shaping Popular Taste. the Belgian Farmers' Association and the Fermette during the 1960s and 1970s." *Home Cultures* 4 (3): 237–259.
- Droege, P. 2012. "Beyond Sustainability. Architecture in the Renewable City." In *The Sage Handbook of Architectural Theory*, edited by C. G. Crysler, S. Cairns and H. Heynen, 590–601. London: Sage.
- Elkington, J. 1998. *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Oxford: Capstone.
- Floré, F. 2004. "Lessons in Modern Living: Home Design Exhibitions in Belgium 1945-1958." *The Journal of Architecture* 9 (4): 445–462.
- FPB (Federal Planning Bureau) and ADSEI (Algemene Directie Statistiek en Economische Informatie), 2013. "Bevolkingsvoorzichten 2012-2060." Available from http://www.plan.be/admin/uploaded/201305241032120.For_Pop_1260_10467_N.pdf
- Friedman, A. 2002. *Planning the New Suburbia; Flexibility by Design*. Vancouver: UBC Press.
- Goossens, L., I. Thomas, and D. Vanneste. 1999. *Le Logement. Réalités Socio-économiques Et géographiques 1981-1991/ Huisvesting in Sociaal-Economisch En Demografisch Perspectief*

- [A Socioeconomic and Demographic Perspective on Housing]. Brussels: Min. Affaires économiques – INS & Services fédéraux des Affaires scientifiques, techniques et culturelles.
- Hare, P. H., and J. N. Ostler. 1987. *Creating an Accessory Apartment*. New York: McGraw-Hill.
- Haughton, G. 1997. "Developing Sustainable Urban Development Models." *Cities* 14 (4): 189–195.
- Hayden, D. 1984. *Redesigning the American Dream : The Future of Housing, Work, and Family Life*. New York: Norton.
- Heynen, H. 1990. "Fragmentatie in De Periferie: De 'tapijtmetroopol' Van Willem-Jan Neutelings." *Archis* 3: 16–21.
- Heynen, H. 2010. "Belgium and the Netherlands: Two Different Ways of Coping with the Housing Crisis, 1945–1970." *Home Cultures* 7 (2): 159–177.
- Holden, E. 2004. "Ecological Footprints and Sustainable Urban Form." *Journal of Housing and the Built Environment* 19 (1): 91–109.
- Hughes, T. 1987. "The Evolution of Large Technological Systems." In *The Social Construction of Technological Systems*, edited by W. Bijker, T. Hughes and T. Pinch, 51–82. Cambridge: MIT Press.
- Jenks, M., E. Burton, and K. Williams, eds. 1996. *The Compact City: A Sustainable Urban Form*. London: E & FN Spon.
- Landckweerd, E. 2011. "Naar Een Andere Constructie Van Het Algemeen Belang." *Tijdschrift Voor Bestuurswetenschappen En Publiekrecht* 2: 103–105.
- Loeckx, A. 1995. "De Moeilijke Kunst Van Het Tweevoud." *Het Ruimtelijk Structuurplan Vlaanderen*. *Archis* 10: 48–53.
- Loeckx, A. 2006. "Wonen Uit De Fabriek. De Vele Levens Van De Bungalows Van Danilith-Delmulle." In *Wonen in Welvaart: Woningbouw En Wooncultuur in Vlaanderen 1948-1973*, edited by K. Van Herck and T. Avermaete, 231–247. Rotterdam: 010 Publishers.
- Meeus, B., and P. De Decker. 2012. "The Dynamic of Not Moving in Flanders." *Belgium. Ruimte & Maatschappij* 4 (2): 1–24.
- Neuman, M. 2005. "The Compact City Fallacy." *Journal of Planning Education and Research* 25 (1): 11–26.
- Oswalt, P., ed. 2006. *Shrinking Cities Volume 2, Interventions*. Ostfildern: Hatje Cantz.
- Pisman, A., G. Allaert, and P. Lombaerde. 2011. "Ideaal Wonen Vanuit Het Perspectief Van De Bewoner." *Ruimte En Maatschappij* 3 (2): 23–44.
- POSAD, 2012. "Flemish Metropolitan Dream." Accessed 07 March 2013 <http://www.posadlabs.com/flemish-metropolitan-dream/>
- Provincie Limburg. 2011. *Woningopsplitsing: Richtlijnen voor de kwalitatieve opsplitsing van woningen in meerdere wooneenheden*. Hasselt: Provincie Limburg.
- Provincie Vlaams-Brabant. 2011. *Woningdelen. Een Volwaardig Woonalternatief?* Leuven: Provincie Vlaams-Brabant.
- Ryckewaert, M., and K. Theunis. 2006. Het Lelijkste Land, De Mythe Voorbij. *Stedenbouw En Verstedelijking in België Sinds 1945*. *Stadsgeschiedenis* 1 (2): 148–168.
- Ryckewaert, M., P. De Decker, S. Winters, B. Vandekerckhove, F. Vastmans, M. Elsinga, and K. Heylen. 2012. *Een Woonmodel in Transitie; Toekomstverkenning Van Het Vlaamse Wonen*. Antwerp: Garant.
- Salet, W. 2011. "The Compact City from a National Policy Perspective: Institutional Resistance or Institutional Reform?" In *Compact City Extended: Outline for Future Policy, Research and Design*, edited by L. Boelens, et al., 54–71. Rotterdam: 010.
- Schively, C. 2007. "Understanding the NIMBY and LULU Phenomena: Reassessing Our Knowledge Base and Informing Future Research." *Journal of Planning Literature* 21 (3): 255–266.
- Secchi, B. 1991. *The Periphery*. *Casabella* 55 (583): 20–22–60.
- Secchi, B. 1992. *Descriptive City Planning*. *Casabella* 56 (588): 22–23–61–62.
- Segal, R., and E. Verbakel. 2008. "Introduction: Urbanism without Density." *Architectural Design* 78 (1): 6–11.
- Thomas, I., D. Vanneste, and X. Quériiau. 2011. *Atlas De Belgique. Habitat/ Atlas Van België. Wonen* [Atlas of Belgium. Housing]. Ghent: Academia Press & Politique scientifique fédérale.
- Triest, P., and W. Vandaele. 2011. "Verhaal Zkt. Vertellers." *Ruimte* 11: 44–47.
- Uyttenhove, P. 1997. "The Belgian Back Room." *Archis* 2: 8–15.
- Uyttenhove, P. 2011. *Stadland België. Hoofdstukken Uit De Geschiedenis Van De Stedenbouw*. Gent: A&S books.

- Van Herck, K., and B. De Meulder, eds. 2009. *Wonen in Meervoud. Groepswoningbouw in Vlaanderen 2000–2010*. Nijmegen: SUN.
- Van der Haegen, et al. 1992. “Les Villes/ De Steden.” In *Géography De La Belgique/Geografie Van België* [Geography of Belgium], edited by U. J. Denis, 428–482. Brussels: Crédit Communal.
- Vandevyvere, H. 2010. *Strategieën Voor Een Verhoogde Implementatie Van Duurzaam Bouwen in Vlaanderen*. Thesis (PhD): KU Leuven.
- Vanneste, D. 1986. “Le logement et la différenciation sociale et résidentielle dans la ville pré-industrielle en Europe occidentale (XVIe-XVIIIe siècles).” *Espace, Population, Sociétés* 4 (1): 125–136.
- Vanneste, D. 1997. “Rural Economy and Indigence in mid-Nineteenth-Century Belgium.” *Journal of Historical Geography* 23 (1): 3–15.
- Vanneste, D., I. Thomas, and L. Goossens. 2007. *Le Logement En Belgique/ Woning En Woonomgeving in België. Monographie N°7*. Brussels: SPF Economie, P.M.E., Classes Moyennes et Energie & Politique Scientifique Fédérale.
- Vanneste, D., L. Vanderstraeten, and I. Thomas. 2012. “Appreciatie Van De Woonomgeving En Woon-Plaats in De Stad: Een Trade-off?” In *Zo Lang De Leeuw Kan Bouwen: Liber Amicorum Prof. Dr. Luc Goossens*, edited by P. De Decker, et al., 155–184. Antwerp: Garant.
- Verhetsel, A., et al. 2003. *Jongeren En Wonen in Vlaanderen. Woon situatie, Woonwensen En Woonbehoeften* [Young People and Living in Flanders. Living Arrangements, Housing Desires and Housing Needs]. Antwerp: De Boeck.
- Vestergaard, H. 2006. “Single-Family Detached Housing: A Branch of Paradise or a Problem?” In *Home Ownership. Getting in, Getting from, Getting out. Part II – Housing and Urban Policy Studies 30*, edited by J. Doling and M. Elsinga, 75–91. Amsterdam: IOS Press.
- Viganò, P. 2012. “The Contemporary European Urban Project: Archipelago City, Diffuse City and Reverse City.” In *The Sage Handbook of Architectural Theory*, edited by C. G. Crysler, S. Cairns and H. Heynen, 657–670. Los Angeles: Sage.
- Vlaamse Overheid. 2011. *Ruimtelijk Structuurplan Vlaanderen – Gecoördineerde Versie*. Brussels: Vlaamse Overheid, Departement RWO.
- Vlaamse Overheid. 2012. *Groenboek Vlaanderen in 2050: Mensenmaat in Een Metropool? Beleidsplan Ruimte Vlaanderen*. Brussels: Vlaamse Overheid, Departement RWO.
- Voets, J., B. De Peuter, B. Vandekerckhove, D. Broeckaert, M. Le Roy, P. Maes, and P. Blummel. 2010. *Evaluerend onderzoek naar de effectiviteit van de uitvoering van het ruimtelijk beleid in Vlaanderen*. Brussel: Vlaamse Overheid, Departement RWO, Afdeling Ruimtelijke Planning.
- Vogels, M. 2012. *Het Nieuwe Wonen. Vlaams Woonbeleid Op Nieuwe Sporen*. Leuven: Lannoo Campus.
- Williams, K., and C. Dair. 2007. “What is Stopping Sustainable Building in England? Barriers Experienced by Stakeholders in Delivering Sustainable Developments.” *Sustainable Development* 15 (3): 135–47.
- Williams, K., E. Burton, and M. Jenks. 1996. “Achieving the Compact City through Intensification: An Acceptable Option?” In *The Compact City: A Sustainable Urban Form?* edited by M. Jenks, E. Burton and K. Williams, 71–83. London: E & FN Spon.