

FROM PEDESTRIAN AREA TO URBAN AND METROPOLITAN PROJECT: ASSETS AND CHALLENGES FOR THE CENTRE OF BRUSSELS¹



Michel HUBERT², Eric CORIJN³, Julie NEUWELS⁴,
Margaux HARDY⁵, Sofie VERMEULEN⁶ and Joost VAESEN⁷

> Abstract

The new pedestrian area in the centre of Brussels is one of the most important urban projects of the last decades. In 2015, the central traffic artery, Boulevard Anspach, was pedestrianised. The public space and the biggest metro stations were renovated. The implementation of this project and the challenges it faces are inherently complex. Experiences in Belgium and abroad show that the impact on the city centre of Brussels will be significant at different levels: the quality of public space; housing and public services; local economy and employment; mobility, logistics and accessibility; and social and cultural activities. However, recent data and analyses are fragmented, non-existent or inaccessible for all stakeholders involved. Nevertheless, an urban project may only

- 1 This chapter is an update of the synopsis published in *Brussels Studies* on 11 September 2017, and is based in particular on the work published by BSI - Brussels Centre Observatory (<http://bco.bsi-brussels.be>), whose authors we wish to thank.
- 2 Université Saint-Louis — Bruxelles and Université libre de Bruxelles, Vice-Chair Brussels Studies Institute
- 3 Cosmopolis – Vrije Universiteit Brussel
- 4 Faculté d'Architecture, Université de Liège
- 5 Institut de recherches interdisciplinaires sur Bruxelles (IRIB) – Université Saint-Louis
- 6 Brussels Studies Institute – Brussels Centre Observatory
- 7 Vrije Universiteit Brussel

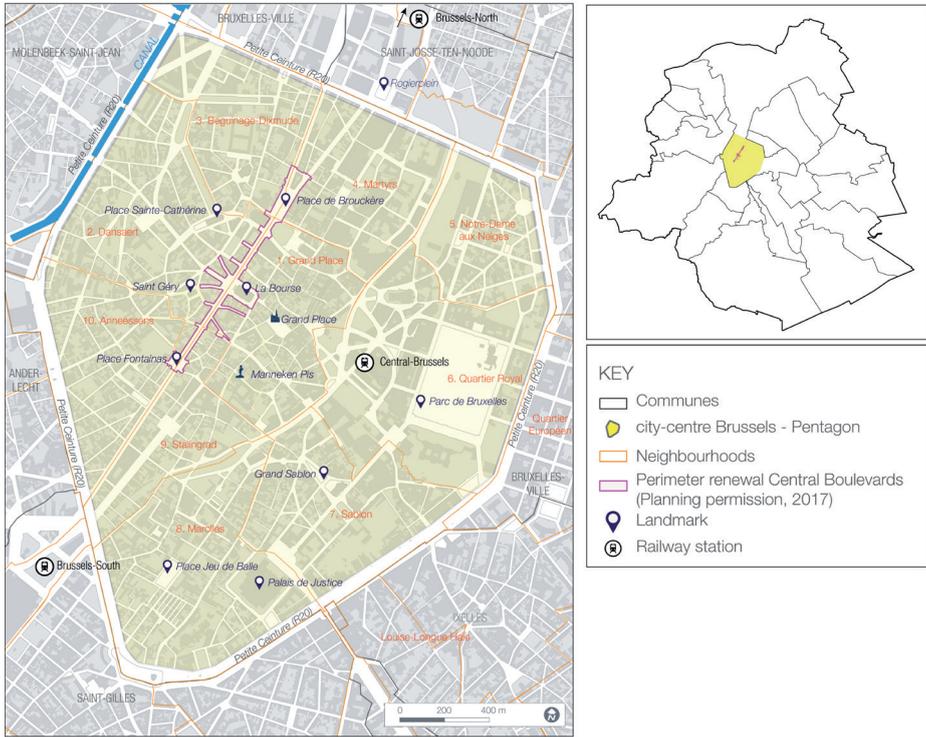
succeed when knowledge and expertise are gathered and shared, and used to support decision-making. Therefore, BSI - Brussels Centre Observatory (BSI-BCO) has been monitoring this project closely. Previously published research is further developed in this synopsis. Part 1 discusses the context of the project. Part 2 details the main challenges based on our observations. The synopsis concludes with concrete scenarios to improve the overall quality and management of the project.

1 > INTRODUCTION

Planned since the end of the 1990s, announced in 2012, and effective as of 29 June 2015, the pedestrianization of the central boulevards, i.e. from Boulevard Anspach which links Place De Brouckère to Place Fontainas (Figures 1 and 2), is unquestionably – for the centre of Brussels – the most significant urban project of the last decade, and one which has only just begun. More than just the development of public space, the ‘pedestrian area’ concerns many dimensions and levels in the making of the city. It provides major opportunities for the city centre, as well as for the Brussels-Capital Region (BCR) and the Brussels metropolis. The feedback from other cities in Belgium and abroad illustrates that pedestrianization can have the effect of fundamentally transforming the urban space by having an impact on its social, environmental, economic and cultural dimensions. At the same time, however, its success is not a given (Ghel, 2011; Ferial, 2013; Boussauw, 2016).

The outline of this chapter is based on work undertaken by the BSI-BCO in which the authors were closely involved: we shall focus on the pedestrianization of the central boulevards of Brussels as an important trigger and nodal point for rethinking not only the city centre but also the urban and metropolitan development of Brussels as a whole. Firstly, we shall briefly describe the general framework of pedestrianisation: the international trends, the expectations of the Brussels project, its challenges and the main factual data concerning it, as well as its recent developments. Secondly, based on the literature regarding other cities and a contextual analysis of the centre of Brussels, we shall reexamine the four main challenges and debates which we have discussed already in the past (Hubert et al., 2017), and which we feel the project has to face, along with a series of ideas for public action.

> **Figure 1.** Map of the pedestrianized central boulevards of Brussels



Data: City of Brussels, 2017; SumProject & B-Group-Greisch, 2015. UrbIS Release 2016Q2. CC- BY 2.0. CIRB-CIBG-BRIC.
Update: Sofie Vermeulen

> **Figure 2.** View of the boulevards before pedestrianization (2013), after pedestrianization (2016) and after development works (2020)



Sources from left to right respectively: 罗布泊 (author); BSI-BCO 2017; SumProject 2015; BSI-BCO, 2020

2 > FRAMEWORK

2.1 Pedestrianization: an urban development instrument

2.1.1 From functionalist project to urban project

The transformation of the streets of many European cities into spaces dedicated almost exclusively to traffic (to the detriment of non-motorized functions) and the gradual domination of cars (at the expense of other modes) in these spaces is the fruit of a long transformation process begun at the end of the 18th century (Loir, 2016). The first pedestrian areas, which appeared in 1959 in Germany (Kettwiger Straße in Essen) and in the United States (Burdick Street in Kalamazoo), constituted the outcome of this specialization of the public space. They emerged as a complement to the urban configuration dominated by cars and rapid modes of transportation. Advocated in particular since the 8th International Congress for Modern Architecture (CIAM) in 1951, the pedestrianization of certain main roads in city centres was a subject of discussion, publication and study trips, and became widespread in the 1970s (Brandeleer et al., 2016a). According to a functionalist approach, these pedestrian areas – which we can qualify as ‘first-generation’ – were manifested in a strict separation of modes of travel without calling into question

the use of cars in the city, and were usually created on main roads with a high commercial and/or touristic potential. The 1972 ban on parking on the Grand-Place in Brussels⁸ and the pedestrianization of Rue Neuve in 1975 are clearly part of this logic. As a result of policies in favour of car use, these pedestrian areas were not able to prevent vehicular traffic, which increased greatly during the postwar years in urban centres. The projects developed at the time in the United States have been commonly referenced in this regard, due to their failures in this respect (Ferial, 2013).

Since the beginning of the 2000s, pedestrianization has played a major role once again in the debates and projects related to urban development in Europe. The rationale behind many of these 'second generation' pedestrianization plans is not one of separation, but rather of a connection and coexistence between modes of travel (Ferial, 2013) and activities. This involves the combination of walking, cycling (and other light modes), public transport and/or limited car traffic according to the reference of shared space (Brandeleer et al., 2016a; Janssens and Vanderstraeten, 2016). The idea of public space in which the different modes of travel and activities exist in harmony – the logic which prevailed to a certain extent until the beginning of the 20th century (Jourdain and Loir, 2016; Loir, 2016) – thus re-emerged through a new way of connecting speed and slowness (Pelgrims, 2018).

> **Table 1.** Comparison of different types of shared space – pedestrian, residential and gathering areas – according to the Highway Code)

	Pedestrian area	Residential area	Meeting area
Function	mainly commerce/tourism	housing environment	housing environment, artisans, commerce, tourism, education, recreational activities
Relationships between users	pedestrians have priority in all cases	pedestrians have priority but mix of modes and uses (pedestrians may not hold up traffic unnecessarily)	
Access and car traffic			
Access	forbidden except in specific cases	authorised	
Speed	walking speed for exceptions	20 km/h, speed limited by speed bumps (in the case of residential areas), a non-linear development and a delimiting of start and end of the area (pavement across, etc.)	
Parking	forbidden, authorised stop in certain cases	forbidden except in defined areas, authorised stop	
Deliveries	if authorised, only at specific times	authorised in clearly identified areas with the least possible impact on pedestrians	

⁸ The final pedestrianization of the Grand-Place and its surrounding streets did not take place until 1991.

Cyclists	forbidden, but where authorised, obligation to get off bicycle when there are too many pedestrians	authorised	
Public transport	authorised	forbidden	authorised
Specific development according to traffic code	no specific development required, apart from signs at start and end of the area	specific development to guarantee the co-existence of modes (urban furniture, plants, etc. positioned in order to limit speed of vehicles and determine their route), development of street level, removal of pavements, delimiting of start and end of the area (signs + difference in level, for example), delimiting of parking spaces	

Source: Brandeleer et al. 2016: 166

This transition from a rationale of separation to one of connection meant that pedestrianization would be thought of more in terms of an urban project in the sense that it ‘allows developments to be considered for the city as a whole, without limiting interventions to single blocks’ (Ferial, 2013: 5). The reorganization of the sharing of public space between modes of travel and other traffic and living functions (walking, strolling, games, events, etc.) no longer attempts only to organize the functionality of the city, but also to ensure usability, social cohesion, entertainment, tourism, etc. in keeping with the territorialisation of socioeconomic policies and, more recently, environmental policies (Pinson, 2004, 2009; Dessouroux et al., 2009; Genard and Neuwels, 2016).

2.1.2 The positive potential role of pedestrianization

Today, pedestrianization constitutes a fully fledged urban development instrument whose potential role has been discussed in the international literature (Ghel, 2011; Boussauw, 2016; Keserü et al., 2016). In the cities studied, pedestrianization has:

- Led to a series of positive effects with respect to mobility choices, by promoting active modes of travel (bicycle, walking, etc.), the adaptation of delivery systems in favour of alternative systems and the improvement of public transport services;
- Had a positive impact on the accessibility of the city by decreasing car traffic and improving the performance of public transport in pedestrian areas;
- Resulted in better sharing between modes of travel and the freeing-up of spaces that were formerly dedicated to cars, thus allowing an improvement in the sustainability of increasingly densely inhabited cities;
- Improved the quality of life and the health of inhabitants and workers by reducing air and noise pollution resulting from road traffic;

- › Participated in the fight against global warming by reducing carbon emissions due to car traffic;
- › Turned out to be beneficial – after an initial downturn – for commercial activity and therefore for the creation of jobs, due to an average increase in the number of visitors and revenue;
- › Established places for sociocultural activities, quality interactions and social cohesion;
- › Led to the development of green spaces and contributed to urban biodiversity and the improvement of the local microclimate;
- › Created an opportunity to promote architectural heritage.

As underlined in the second part of this synopsis, the literature shows, however, that the success of pedestrianization projects is not a given. It may be threatened by the fragmentation of the institutional levels involved (both among and within themselves), by power relations that fail to permit the project to be brought to a successful conclusion, by failures in the governance tools used (strategic plans, economic incentives, participatory processes, etc.) or by a lack of clarity of and within the objectives pursued.

2.2 The pedestrianization of the central boulevards in Brussels

2.2.1 From a shared space to an urban motorway

As an extension of the ‘comfort zone’ established gradually around the Grand-Place in the 2000s, the pedestrianization of the central boulevards is presented as an urban development tool by the City of Brussels. More specifically, it emerges as the expression and formalization of a paradigm shift with respect to post-war urban policies: a means of giving ‘the necessary impetus to the economic, cultural and social revival’⁹ of the centre of Brussels, which, over time, has become ‘a grey and increasingly crowded space [...] dominated by cars’. The objective is to make the city centre ‘more welcoming, greener, more breathable – a guarantee of better health and well-being for everyone’, and for ‘citizens (local inhabitants, workers, tourists and shopkeepers) to reclaim the public space and enjoy a healthier and more breathable city’.¹⁰

The challenges for the centre of Brussels are indeed great. Beginning in the 1950s, it was considered – by public authorities in particular – above all to be an

⁹ CITY OF BRUSSELS. Un nouveau centre-ville ambitieux et dynamique, In: Ensemble, faisons battre le cœur de Bruxelles (Centre-ville Bruxelles) (online). Retrieved on 23 February 2017. Available at: <http://centre-ville.bruxelles.be/fr/le-projet/objectifs>

¹⁰ *Ibid.*

administrative space and a place of consumption for the benefit of peri-urban residents, as well as 'one of the biggest crossroads in the western world' (Ministère des travaux publics et de la reconstruction, 1957: 8). The Brussels territory was then transformed by a major expansion of the road network for three decades subsequent to the 1958 Brussels World's Fair (Demey, 1992; Hubert, 2008; Ryckewaert, 2011).

Built in the 19th century after the covering of the Senne, the central boulevards were connected to this network via the transformation of the inner ring into a main road for heavy traffic (as of 1955) and redeveloped following the creation of the pre-metro (inaugurated in 1976). At the time, these boulevards were designed to be what would be referred to today as 'gathering areas' (Jourdain and Loir, 2016), yet over time the room left for pedestrians became severely restricted and was limited to the pavements, which were cluttered with flower boxes, café terraces and access points for the underground stations. Far from being as functional as planned, the central boulevards soon became a congested urban motorway at the heart of Brussels (also referred to as the Pentagon). At the same time, the surrounding working class neighbourhoods degraded and became poor areas following the deindustrialization of the nearby canal area (in particular the central part), the urban exodus, the disinterest of the public authorities and the speculative strategies favouring the dilapidation of buildings in order to justify demolition/reconstruction projects (Aron, 1978; Grosjean 2010; Ryckewaert, 2011). Traffic congestion, air and noise pollution, and the development of the service sector therefore created a vicious circle of the deterioration of the living environment: as the city centre decayed, the residential attractiveness – and therefore the municipal revenue – decreased, thus making the development of urban renewal operations more difficult (Zimmer, 2002).

2.3 The restructuring of the city centre

Beginning in the 1980s, politicians began to worry about the industrial and residential decline of the centre of Brussels (Hubert, 1982). The public authorities gradually became interested once again in the central neighbourhoods, through *neighbourhood contracts* in particular (beginning in 1993), from a perspective of urban revitalization and social cohesion (Noël, 2009). For its part, the City of Brussels created a *Délégation au développement du pentagone* (DDP, Pentagon Development Delegation) (1995), and, with the help of different instruments in the fight against empty buildings (industrial buildings in particular), it obtained rapid results.¹¹ The Pentagon thus experienced steady demographic growth as of 1999-2000 (+/- 2.2% per year between 2000 and 2011), at a rate which was close to twice as high as that for the Region as a whole (+/- 1.1% per year during the same period). Today, the centre of Brussels is a densely inhabited space, in particular in the western part, where there is an over-representation of people aged 20–34

(Decroly and Wayens, 2016). The area inside the Pentagon is home to more than 50,000 inhabitants,¹² which represents just under 5% of the regional population in 2.5% of its area.

This demographic growth is heterogeneous from a socioeconomic point of view. The south and southwest parts of the Pentagon are mainly home to disadvantaged populations, whereas the other parts (northwest, east) are undergoing gentrification, attracting young (and not-so-young) adults from privileged backgrounds, at least as regards cultural capital (Van Criekingen, 2006, 2013; Bernard, 2008), as well as investors (Dessouroux et al., 2016). This heterogeneity is also evidenced in the quality of housing.

Finally, the centre of Brussels is characterized by high levels of economic and sociocultural activity (Decroly and Wayens, 2016). It constitutes a major employment centre, with administrative, financial, commercial (dominated by clothing shops and the restaurant sector, as well as specific businesses with a wide reach), health and educational functions. The city centre also constitutes the main touristic and cultural centre in the Region, concentrated around the *îlot sacré* (Grand-Place and surroundings), the central boulevards and the Mont des Arts.¹³

2.3.1 A high level of road congestion with many consequences

Road transport is the biggest cause of air pollution in European cities, with a significant impact on health (Keserü et al., 2016). According to Bruxelles Environnement (2016), in 2012 (and also in the 2015-16 update), it was the main sector responsible for the emission of three major air pollutants in BCR: nitrogen oxides (NOx), carbon monoxide (CO) and fine particles (PM10), although the level of these pollutants has diminished significantly. It was also responsible for 16% of lead and non-methane volatile organic compound (NMVOC) emissions, and the sector responsible for the second-highest proportion of direct emissions of greenhouse gases (26% in 2013). The noise pollution caused by car traffic also has a negative impact on health by increasing the risk of ischaemic heart disease, high blood pressure, tinnitus and hearing problems (Keserü et al., 2016).

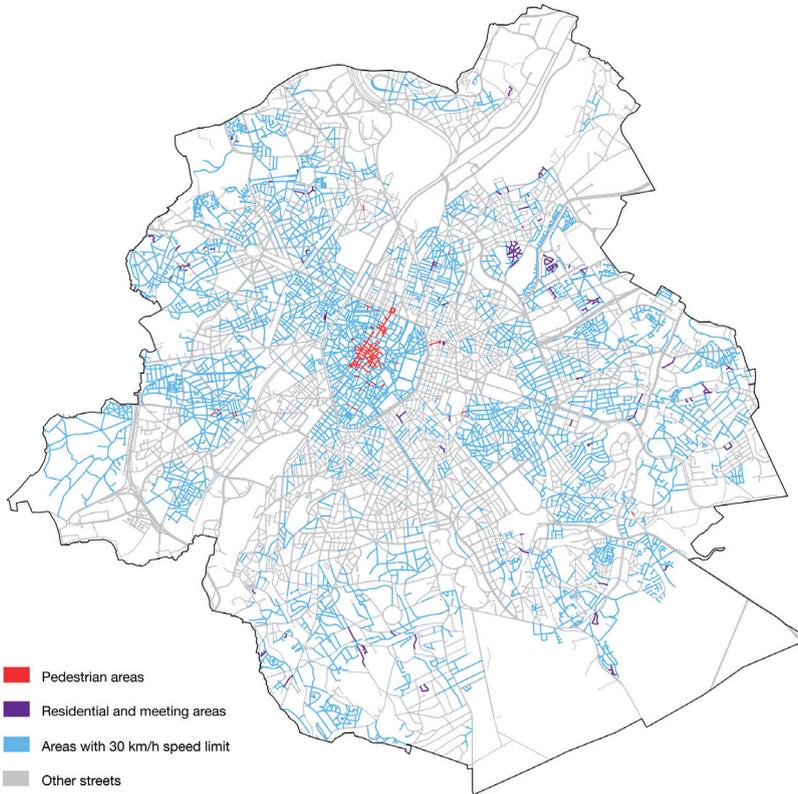
At present in the BCR, the sharing of space between different modes of travel takes place mainly through isolated interventions which restrict the access and the speed of cars: areas with 30 km/h speed limit, speed bumps, widening of pavements and parking barriers, dedicated lanes for public transport, etc. (Moritz, 2011; Brandeleer et al., 2016b). Pelgrims (2018) describes these interventions very precisely as mechanisms for speed *domestication*, speed *externalization* (outside the perimeters where car traffic is deliberately slowed down or prohibited) and speed object *invisibility* (with street parking restrictions and support for the reinforcement of off-street parking). In Brussels (Figure 3), the proportion of

¹² Online: <https://monitoringdesquartiers.brussels/>

¹³ See also the following chapter on the evolution of the centre of Brussels.

pedestrian, residential and gathering areas is relatively low with respect to the European pedestrianization movement which has been developing since the early 2000s (Brandeleer et al., 2016a), but has increased greatly in recent years, albeit with little continuity between these areas today.

> **Figure 3. Pedestrian and residential areas, and areas with a 30 km/h speed limit in the BCR**



Author: Thomas Ermans. Data: Bruxelles Mobilité, MobiGIS v2.0, March 2020

Furthermore, while a rapid evolution of travel practices has been observed in the Region in terms of greater multimodality (combination of the use of a car, public transport, walking, bicycle, etc. for a single trip or depending on the trip) and a reduction in the use of the car (Lebrun et al., 2013, 2014; SPF Mobilité et Transports, 2019), this evolution scarcely compensates for the increase in the total volume of travel due to the demographic boom, and must adapt to the continued high rate of use of the car for inbound and outbound travel (Hubert et al., 2013; Ermans et al., 2019). Also, the concentration of motorized traffic on regional and metropolitan roads –excluding residential neighbourhoods– has not helped to reduce congestion (Brandeleer et al., 2016b).

2.3.2 The pedestrianization of central boulevards: a turning point in a long decision process

It is in this context of demographic growth and reorganization of the city centre, followed by road congestion and noise and air pollution, and finally, the expectation for inhabited public space and quieter traffic, that we must understand the decision to take strong action, which has been manifested in the pedestrianization of the central boulevards in Brussels.

While the first study – referred to as ‘Simons’ – conducted by the architecture and urbanism firm *Groep Planning* – later to become *SumProject* – on mobility in the Pentagon dates from 1997/98, the renovation of the central boulevards only became part of the political agenda of the City of Brussels in 2003, in the framework of *Fonds Beliris*¹⁴ (Vanhellemont and Vermeulen, 2016). A more in-depth study was then assigned to *Groep Planning*, without immediate follow-up. While there was support from civil society for a reduction in road congestion (see *Plan NoMo* in 2000¹⁵), it took several years before the first concrete actions were implemented: the closure to car traffic of approximately ten streets around the Grand-Place (referred to as the ‘comfort zone’), whose planning permission was granted at the end of 2009, and the reduction of lanes for car traffic on Anspach, Lemonnier and Adolphe Max boulevards to the benefit of the development of bicycle paths in 2012. Finally, following the arrival of Yvan Mayeur as the mayor of the City of Brussels in 2013 (replacing Freddy Thielemans), the renovation of central boulevards – decided on by the Liberal/Socialist municipal majority after the 2012 elections – became clearer, with the decision to pedestrianize Boulevard Anspach between Place De Brouckère and Place Fontainas, thus extending the comfort zone around the Grand-Place. This evolution was justified in particular with regard to citizen movements, which called for the renovation of central boulevards in order to reduce car traffic, without specifically advocating their pedestrianization (in particular, *PicNic the Streets* in May 2012, as well as the *ParcAnspachPark* call for ideas organized by BRAL in July 2013) (Tessuto, 2016; Vanhellemont, 2016).

¹⁴ Following the Cooperation Agreement of 15 September 1993, the federal government committed itself to carrying out and financing a series of interventions upon Brussels's territory in the areas of mobility, green spaces, culture, heritage, social housing, etc. These interventions are ensured by the Beliris administration (from the name of this cooperation agreement), which is part of *SPF Mobilité et Transport*.

¹⁵ Association des Non Motorisés – Autrement mobile. At the time of writing (January 2020), this plan was still available on the Bral website (bral.brussels).

➤ **Table 2. Main strategic plans concerning mobility and/or the renovation of central boulevards in the centre of Brussels before pedestrianization**

Name of the plan	Stakeholders and status
Tekhné Plan–1962	<p>'Master plan for the Brussels Pentagon'.</p> <p>Urban development masterplan for the entire Pentagon (horizon 1985). Carried out by Groep Tekhné.</p> <p>Commissioned by the City of Brussels–Alderman for Urban Development Van den Boeynants (CVP).</p> <p>Partly executed project.</p>
Simons Study–1997/1998	<p>Mobility study for the Pentagon–3 scenarios for a car-free city centre.</p> <p>Within the framework of the preparation of a Municipal Mobility Plan for the City of Brussels.</p> <p>Carried out by Groep Planning (now SumProject).</p> <p>Commissioned by the City of Brussels, Alderman for Urbanism H. Simons (Ecolo).</p> <p>Project never carried out, but resulted in the plans below.</p>
NoMo Plan–2000	<p>Proposal by the non-profit organization NoMo (experts and residents) on its own initiative for '50% less cars in the Pentagon'.</p> <p>Based on one of the three scenarios–the most ambitious–from the study by Simons (1997).</p> <p>Project never carried out, but served as a reference in the non-profit sector for a long time, and prompted the Beliris Plan (2003).</p>
Beliris Plan–2003	<p>Study for the development of the central boulevards.</p> <p>Carried out by Groep Planning (now SumProject).</p> <p>Commissioned by Beliris, for a project competition.</p> <p>Budget granted, but project never carried out.</p> <p>Led to the Simons Plan (2004) and the Ceux Plan (2010)</p>
Simons Plan–2004	<p>Mobility study for the City of Brussels on the development of the central boulevards.</p> <p>Carried out by Cooparch-RU (now ERU), under the auspices of AGORA.</p> <p>Commissioned by the City of Brussels, Alderman for Urbanism H. Simons (Ecolo).</p> <p>Study based on preliminary studies and scenarios proposed in 1998.</p> <p>Approved by municipal council but never carried out.</p>
Ceux Plan — 2010	<p>Mobility study for the City of Brussels (Pentagon section, p. 91).</p> <p>Within the framework of the preparation of a Municipal Mobility Plan for the City of Brussels.</p> <p>Carried out by Espaces mobilités and Transitec.</p> <p>Commissioned by the City of Brussels, Alderman for Urbanism C. Ceux (cdH).</p> <p>The study takes into account the regional strategic development and mobility plans (PRD II & IRIS II plans), but is not based on the Simons plans (1997/1998 and 2004).</p> <p>Never approved by the municipal council.</p>

Source: Vanhellemont & Vermeulen, 2016, p.48

The renovation of the central boulevards was therefore not included on the political agenda for a long time, which was less due to the need to prepare the project with many technical studies, than to the fear of decision makers to take on an urban project of such vast scope. Courtois and Dobruszkes (2008) and

Brandeleer and Ermans (2016b) have shown that this feebleness is common in Brussels when it comes to reducing the spatial and temporal ascendancy of cars at communal and regional level. This results in an ‘overemphasized importance of car users in the development of the city and mobility management’ (Courtois and Dobruszkes, 2008: 19). At the same time, Brussels is characterized by a network of relatively narrow roads, which makes the balanced coexistence of active modes of travel, public transport and car traffic complex and sometimes even impossible (Brandeleer et al., 2016b).

2.3.3 Controversies and a compromise to ‘take action’

Given the above, the implementation of the pedestrian area in Brussels appears to be an eminently political act (Vanhellemont, 2016). Encouraged by the last citizen mobilization efforts (*PicNic the Streets*) on the eve of the municipal elections of 2012, this ‘taking of action’ was possible at the time thanks to a great political compromise within the new municipal majority: the pedestrianization of a section of the central boulevards, provided that four new local car parks would be built, and reorganization of the traffic in the adjacent streets.¹⁶ This involved ensuring accessibility by car for visitors and inhabitants who were used to using or forced to use their cars, while making up for the disappearance of parking spaces in the pedestrian area (Keserü et al., 2016).

However, this compromise has blurred the political aim of the project and has generated considerable controversy. The announced development of four new car parks in the immediate surroundings of the pedestrian area was understood to be a strategy to render cars invisible, to the detriment of a policy to reduce road congestion in the city centre (Genard and Neuwels, 2016). The reorganization of traffic into a service ring around the pedestrian area was described as a ‘mini ring-road’, testifying to the fear that traffic and pollution would simply move to the surrounding neighbourhoods (Figure 4).

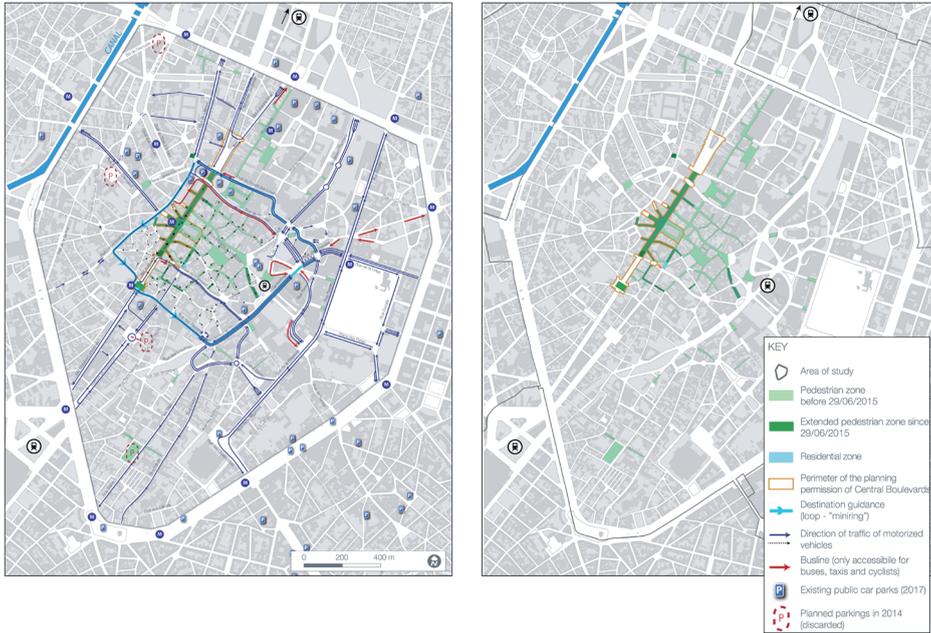
The lack of clarity of the political aim was also reinforced by the decision to increase the distance between bus stops and by the removal of certain dedicated lanes, which harmed the clarity and efficiency of the public transport surface network (Keserü et al., 2016), as well as by the coexistence of a rationale in support of ‘a city built for its inhabitants’¹⁷ and statements and actions in keeping with the perspective of economic attractiveness (make De Brouckère a ‘Times Square’, make the pedestrian area a ‘Belgian Avenue’ then a ‘Family Pleasure Shopping’, transform the Bourse into a ‘Beer Temple’, etc.) (Vanhellemont, 2016; Genard et al., 2016).

¹⁶ These car park projects were gradually abandoned following opposition (in particular to the plan to build a car park under Place du Jeu de balle in the Marolles neighbourhood).

¹⁷ City of Brussels, 2015. *Ensemble, faisons battre le cœur de Bruxelles*, p. 3.

Compromises are inevitable in the framework of the implementation of major urban projects (Le Galès, 1995; 2002). However, in the case of the pedestrian area in Brussels, the resulting lack of transparency means that these compromises may in the end become more divisive than unifying, and more ineffective than effective, if they are not explained and supported. The pedestrian area has indeed been the subject of many controversies and opposition movements. And the context of these controversies is complex, especially as the future of the city centre concerns many stakeholders, levels of authority and urban governance challenges well beyond the local challenges (Vanhellemont and Vermeulen, 2016; Genard et al., 2016).

> **Figure 4.** Traffic plan and pedestrian areas in the centre of Brussels – June 2016



Data: City of Brussels, 2014 and 2017; SumProject & B-Group-Greisch, 2015. UrbIS Release 2016Q2. CC- BY 2.0. CIRB-CIBG-BRIC. Update: Sofie Vermeulen

2.3.4 Difficult implementation in a context of indeterminacy yet exponential attendance

On 29 June 2015, Boulevard Anspach was closed to car traffic and temporary facilities were set up (wooden furniture, ping-pong tables, etc.). During the summer period, there was a good-natured atmosphere in the area during the day, which became more tense in the evening. But very soon, the implementation of the project was held back. The international context, with the Minister of the Interior's introduction of a lockdown following the attacks in Paris (November 2015), followed by the attacks in Brussels (March 2016), placed a leaden weight on the centre of Brussels, particularly its pedestrian area, which was subjected to patrols by armed soldiers. Tourism plummeted, and concern about the future was palpable. At the

same time, the accessibility of the city centre by car was being undermined by what would be referred to as the 'tunnel crisis'.¹⁸ While the media announced the start of works on the pedestrian area from the outset,¹⁹ these were delayed for more than two years, in particular by several appeals against applications for planning permission. As Fenton et al. (2020) explain,

┌ For many residents and merchants in the city centre, this period was experienced quite negatively and the boulevard was perceived as having been abandoned, left to its own devices by the authorities. The lack of communication as to the next steps, combined with the presence of temporary facilities considered by some to be of poor quality as well as indecision in terms of road management, were sources of concern and a feeling of stagnation, conveying negative ideas about the implementation of the project. What is more, temporary facilities led to uses which some residents and merchants in the area vigorously complained about. ┐

Work finally began in 2017 and, section by section, the boulevard was redesigned, as well as the Bourse and De Brouckère metro stations. However, a certain degree of indeterminacy (Fenton et al., 2020) continued to overshadow the project in terms of the regulatory status of the road infrastructure in certain places (Place De Brouckère or south of Boulevard Anspach, for example), communication and citizen consultation, and also political aims.

Meanwhile, private investors, particularly Whitewood and Immobel, were not idle and clearly believed in the future of the city centre. These two groups were involved in the renovation of Centre Monnaie (soon deserted by the city administration), the Allianz block (De Brouckère) and the former Tour Philips.

It should also be noted that a new mayor, Philippe Close, was appointed in July 2017 following the resignation of Yvan Mayeur in the wake of the Samu social scandal. This allowed the Socialist Party to revive itself just in time for the municipal elections in October 2018. This resulted in a new Socialist-Ecologist majority (plus Défi) which is expected, among other things, not to go back on the parking projects of the previous majority and to improve the accessibility of the city centre by public transport.

At the time of writing, the use of the pedestrian area is increasing sharply, especially

18 Temporary closure of several road tunnels for access to or around the city centre, following a rockfall due to the deterioration of these engineering structures that date to the 1950s and 1960s. The Brussels-Capital Region was obliged to implement a vast renovation plan as a matter of urgency, avoiding a debate on the future of this modernist infrastructure (Hubert, 2008).

19 See for example "Piétonnier sur les boulevards du centre de Bruxelles : le début des travaux", RTBF, June 22 2015, https://www.rtf.be/info/dossier/tout-savoir-sur-le-nouveau-pietonnier-bruxellois/detail_pietonnier-sur-les-boulevards-du-centre-de-bruxelles-le-debut-des-travaux?id=9013287, retrieved on 19/01/2020.

during major events such as the start of the Tour de France or Plaisirs d'hiver, and tourism is breaking new records only three years after the Brussels terrorist attacks. Only the renovation of Place de la Bourse and Place Fontainas is still in progress, with completion expected by autumn 2020. But the transformations in the centre of Brussels, particularly in terms of property, have only just begun.

3 > OBSERVATIONS AND CHALLENGES

The second part of this chapter explains what we feel are the four main challenges still faced by the project to renovate the centre of Brussels. Based on a number of observations from international literature and specific knowledge pertaining to Brussels, it aims to contribute to the objectification of debates on the future of the centre of Brussels, as well as to shaping their evolution.

3.1 Challenge 1: Clarify and achieve the objectives of the development of public space by taking action on the intangible – ‘life between buildings’²⁰

Established by the architecture and urbanism firm *SumProject*, the development plan for the public pedestrian space – when it was created in 2015 – proposed a division of the central boulevards into a series of spaces, each with a specific name designating an atmosphere: an ‘urban garden’, a ‘green walk’, an ‘urban scene’, a ‘home’ and an ‘agora’. Currently, only the spatial aspects of these developments have been defined and largely implemented (materials, equipment, greenery, etc.). While urban development and the organization of activities in the public space structure in part the behaviour of the different users (inhabitants, workers, visitors, etc.), they may not regulate it completely. There are several different uses, changes of use and conflicting uses which constitute the fundamental unpredictability of the ways in which users appropriate the space, and which are well documented in urban studies (Corijn and Vanderstraeten, 2016; Gehl, 2011; Lofland, 1998; Jacobs, 1993).

In order to achieve the objectives of a pedestrian area, there is a need for action involving more than just the development of public space; there must also be action involving the intangible aspects (uses, sociability, symbolic actions, etc.). The main challenge in this respect is to know how – with which instruments of governance, public policies and partnerships – to improve and ensure the continued existence of desirable social practices and their diversity in this reorganized public space.

3.1.1 Guaranteeing the diversity of atmospheres and uses of the public space

By detailing its development, the pedestrian area of the centre of Brussels differs from the pedestrian areas and shared spaces recently developed in the Brussels-Capital Region based on a freeing-up of space through minimum use (for example, Place Flagey, Place de la Monnaie or Chaussée d'Ixelles). *SumProject's* plan defines a series of sub-spaces, each with a key function (consume, walk, show, rest, gather and play, for the main part) and a specific development (traffic lanes, benches, plant containers, fountains, etc.). These functions and developments aim to create the specific atmospheres mentioned above.

In particular, the development of successive sections of the boulevard may be understood as a compromise between economic and habitability objectives (Corijn et al., 2016). On the one hand, the project testifies to the will not to create a simple neighbourhood, but rather to target inhabitants as well as visitors by defining relatively neutral uses and facilities. On the other, the project seeks to restrict commercial activities in the public space in order to avoid an excess.

International research shows that, in general, pedestrianization favours an almost exclusive use of the road by certain commercial activities which privatize the public space (terraces, displays, etc.) to the detriment of social and cultural activities and leisurely walks (Mitchell, 2003; Dessouroux, 2006; Hass-Klau, 2015; Boussauw, 2016). The development plan was intended to limit this phenomenon by ensuring a certain functional sharing of the public space. This partitioning of developments raises questions in at least three respects:

- A lot of the research shows that the *a priori* overdetermination of the functions of public space favours certain practices and, therefore, populations. By overdetermining the development of an area, there is the risk that certain categories of the population in terms of sociocultural status, gender, generation, etc. will take over (Amin, 2008; Gehl, 2011; Wood and Landry, 2008). The mix and diversity of users and uses remain an important issue for the centre of Brussels and particularly its pedestrianized area, frequented by a population of mainly young people who are more often from the central neighbourhoods than from the outskirts (Keserü et al., 2016; Weigmann et al., 2018; Fenton et al., 2020), and mainly men in the evenings and at night (Fenton et al., 2020).
- The development of successive sections of the boulevards reproduces a significant north – south linearity. The west – east direction is less pronounced, despite the declared will to reconnect it. Despite the presence of living spaces and a street-level layout, users reproduce their usual movement patterns, favouring window-shopping, strolling and slow wandering along the facades, while the central strip is rather used for transit traffic on foot and by bicycle (and other light vehicles), if not by bus or car in the southern part of

Boulevard Anspach (Fenton et al., 2020). In between, terraces over-occupy the public space, particularly in the Bourse – De Brouckère section, without many restrictions (including in terms of type of furniture) and without it being clear how the mini green spaces will be used when the protective barriers surrounding them are removed. Conversely, it must be recognized that the low organizational level of the pedestrianized area before the works left the door open to multiple uses, ‘favouring the unexpected as well as the improvised’. It thus allowed ‘popular and informal creative resources’ to be taken advantage of instead of ‘the risk of a public space which would slowly be devoted only to consumerism’ (Genard et al., 2016: 69).

- › It is more difficult to ensure the quality of a public space when there are several different developments, stakeholders and instruments involved. For example, all of the material, plants and equipment used must meet technical constraints in terms of maintenance and use, durability, installation, etc. Equipment and materials that deteriorate rapidly, are not adapted to uses, or do not match the environment in aesthetic terms detract from the quality of the public space as a whole. In order to ensure the quality of this complex whole, it is not sufficient to merely follow construction standards. It requires continuous, coordinated and cross-cutting management. It should be noted here that after only a few months of intensive use, some surfaces have already deteriorated severely due to the authorized car traffic (e.g. Place De Brouckère and the southern part of Boulevard Anspach) or are considered unsuitable by people with reduced mobility (Fenton et al., 2020; Creten et al., 2019).

In keeping with the multifunctionality that characterizes the centre of Brussels (Decroly and Wayens, 2016), it therefore seems necessary to ensure the plurality of atmospheres and uses of the public space following its closure to car traffic, in order to increase quality. This involves spatial development (facilities, type of urban furniture, etc.), activities, and the management of public space (commercial/touristic, sociocultural, artistic, sports activities, etc.), which we shall discuss in the following section.

3.1.2 Supporting and defining activities in the public space

The *atmospheres* in the pedestrian area refer to intangible activities in the public space, which have become a true tool for urban policy (Bianchini and Parkinson, 1993; Pradel, 2007; Amin, 2008). Genard et al. (2016) highlighted the fact that activities in the pedestrian area constituted a central issue in the controversies, outlining at least three major ‘visions’ or ‘ideas’ of the city centre and the public space: *commercial* public space, *political or symbolic* public space and *aesthetic* or *cultural* public space:

- › For the advocates of *commercial* public space, the quality of the project for a pedestrian area is measured by its potential to be an impetus in terms of

economy and tourism for the city centre, and even for the Brussels Region. This impetus is dependent on a series of guarantees, such as the security of the neighbourhood and continuation of activities in the public space.

- For the advocates of *political or symbolic* public space, the first challenge involves the potential for appropriation of the public space by the population through participation in its design, co-production and co-management. The success of the pedestrian area is therefore partly due to its ability to symbolize the political and to be a welcoming place for events, activities, moments of celebration as a group, etc.
- For the advocates of *aesthetic or cultural* public space, it is thought of above all in terms of culture and experience. A vast space such as the pedestrian area must allow relationships of co-presence and co-visibility between strangers and produce an aesthetic of gatherings, stakeholders and spectators, following the example of the uses made of central boulevards in the 19th century (Jourdain and Loir, 2016). It is therefore necessary for people to be able to experience this and not be overly distracted by consumer activities, for example.

As regards the pedestrian area, these three visions of the public space are potentially complementary, as long as they are all applied and managed through a cross-cutting approach. Today, the activities in the pedestrian area are nevertheless not very well defined from this perspective. They involve the accumulation of specific actions initiated by the public authorities or by private stakeholders. But they do not seem to be considered or taken advantage of as an integral part of the creation of atmospheres and the urban project based on the development of the pedestrian area, as designed initially by *SumProject*.

The literature shows that the activity in the public space is generally in keeping with a perspective of privatization (economic or other), to the detriment of the usage value of the public space (Lefebvre, 1968; Decroly et al., 2003). The main roads with shops, restaurants and cafés are particularly prone to this mono-functional appropriation of the public space, to the benefit of commercial activities and to the detriment of socio-cultural activities (Gravari-Barbas, 2001). The pedestrianization of these main roads reinforces this phenomenon (Boussauw, 2016), as confirmed by the case of Brussels (Fenton et al., 2020).

Public intervention is therefore necessary in order to ensure a certain balance which allows a coexistence of the three visions of the public space (commercial, political and aesthetic) with respect to the pedestrian area. This involves establishing a calendar of activities with the stakeholders concerned, while ensuring 'idle time' in order to avoid a saturation of events and activities, to allow the pedestrian area to have a life of its own, and to limit the feeling of constant encroachment experienced by the inhabitants. This also involves facilitating and developing expressive and artistic activities in collaboration with the local cultural operators,

in order to prevent a predominance of commercial space, a phenomenon that is well underway today in the centre of Brussels. As for the political public space, it seems to be disappearing from the central boulevards, as demonstrations no longer take place there. It remains to be seen whether Place de la Bourse will once again become a space for expression and commemoration following its renovation (Fenton et al., 2020).

3.2 Challenge 2: Connecting the project to regional and metropolitan dynamics, and linking all of its dimensions together

The pedestrianization of the central boulevards and the transformation of the centre of Brussels have an impact at three levels: local, regional and metropolitan (Genard et al., 2016), and, arguably, even international. We know that good coordination between levels and stakeholders concerned is necessary in order to ensure the success of complex urban projects (Le Galès, 1995, 2002; Pinson, 2004, 2009). Furthermore, the presence of a multitude of ideas, interests, competences and motivations often requires the development of innovative instruments for public action in order to ensure the networking of projects (Boudry et al., 2003; Van den Broeck, 2010; Moulaert et al. 2013; Segers et al., 2013).

3.2.1 Outside the perimeter: positioning the pedestrian area in a wider spatial framework

By removing the barrier formed by the urban motorway that the central boulevards had become, and by recreating the squares which existed along the original Boulevard Anspach, the pedestrian area aims to reconnect the east and the west (in the lower part) of the city centre: the reconnection of the Grand-Place neighbourhood and the Saint-Géry, Sainte-Catherine and Dansaert neighbourhoods via the Bourse, and beyond the canal towards Molenbeek; the reconnection of the Anneessens and Jardin aux Fleurs neighbourhoods and the Saint-Jacques and Marolles neighbourhoods via Parc Fontainas; and the reconnection of the Rue Neuve neighbourhood and the Quais neighbourhood via Place De Brouckère.²¹

While the project reconnects the east – west premodern fabric (De Visscher et al., 2016) – which is a very important positive point – it fails to define the desired impact of the pedestrianization of boulevards on the connections between the city centre, the Region and the metropolis. What are the recommended relationships with the other major projects and/or vectors of urban centrality, at the level of the Pentagon (Sablou, Marolles, redevelopment of the North – South junction, canal, inner ring, etc.), the neighbouring municipalities (Molenbeek in particular), and the Region (Porte de Ninove master development plan, Canal Plan, etc.)? The City of Brussels considers that the city centre is its own business, and the BCR rarely challenges it on

this point. Thus, it was only *in extremis* that the Regional Sustainable Development Plan (PRDD), adopted in 2018,²² underlined the specificity of the city centre within the framework of a metropolitan and polycentric vision of the city. For the first time in an official document, there was the suggestion of extending the limits of the city centre: ‘The city centre is commonly confined to the “pentagon”, the historical centre of the city. The developments in Brussels make it necessary to reconsider this area and to extend it in order to be in keeping with current realities’ (p.22). The PRDD also calls for ‘positioning the Pentagon and the urban projects which are being developed there within a broader framework (the city centre framework) so as to meet the need for a link between the city centre, the Region and the metropolis and to deepen its relations with other strategic projects in Brussels’ (p.61).

It is nonetheless true that the *city project* underpinned by the pedestrian area does not appear clearly in the communications of the City and BCR, which discourages the acceptance of the project by society (Vermeulen and Hardy, 2016). Vanhellemont (2016) has shown that this has even stirred up controversies and has led to a loss of support from stakeholders who are in favour of the project. Furthermore, by focusing on the very local scale of the central boulevards and neighbouring streets, the project for the transformation of the centre of Brussels might not be able to achieve the desired paradigm shift.

It is therefore necessary to strengthen the possible relationships between the city centre and other strategic projects in Brussels. This also involves working on the structural axes to be deployed in order to expand the city centre from east to west and from north to south (see the second and third parts of the present book).

Although there is a difference in spatial scale, the project promoters – in particular the City of Brussels – could draw inspiration from the *International Bauausstellung*²³ (IBA), an instrument for urban planning and renewal developed in Germany. IBAs are flexible structures that unite – in a predetermined direction – a group of projects supported by different stakeholders in order to ensure overall coherence, while preserving independent project management. Usually ensured by a ‘chamber of quality’ – i.e. a multidisciplinary follow-up committee that ensures that the desired objectives are met, formulating practical recommendations and coordinated by a steward – their effectiveness is based on the fact that they are light and flexible governance structures established for the duration of the project. These structures ensure the overall coherence of urban transformation, which is formalized via a multitude of projects, by combining efforts and facilitating collaboration between the various public institutions involved (APUR, 2009; Pinch and Adams, 2013; Shay, 2012).

²² <http://www.prdd.brussels>

²³ <https://www.open-iba.de/en/>

3.2.2 Making the pedestrian area one of the milestones of an ambitious mobility policy at regional and metropolitan levels

Contrary to the (semi-)pedestrianization projects which are often cited as examples (Copenhagen, Bordeaux, Barcelona, Lyon, Ghent, etc.), the pedestrian area in Brussels is struggling to become part of a mobility policy at regional and metropolitan level (Brandeleer et al., 2016a; Boussauw, 2016; Keserü et al., 2016). It is not – or only scarcely – connected to the other spaces that have been made into pedestrian, gathering, etc. areas, or that are being developed for these purposes in the Brussels-Capital Region (Brandeleer et al., 2016a) (see Figure 3). A radical increase in the use of active means of travel (bicycle, walking, etc.) has therefore not been facilitated. The coherence of infrastructures and the connectivity of journeys have a determining influence in this respect (Gehl, 2011; Saelens, 2003; Craig et al., 2002; Handy et al., 2002).

The extension of the pedestrian area has also not been an occasion to reinforce the accessibility of the city centre by public transport and/or increase the frequency of service (Keserü et al., 2016), while 27% of the inhabitants of Brussels do not have easy access to the centre via public transport, given their distance from it (Lebrun, 2016). On the contrary, the modification of the STIB/MIVB bus network which accompanied the pedestrianization of the central boulevards was not exactly beneficial in terms of services to and from the centre (reduction in the ‘legibility’ of the terminals, more complex connections, removal of dedicated transport corridors, etc.). The lingering issue of the structuring of bus lines (through or terminus lines) and the location of bus terminals is yet to be resolved, as is the question of the creation of a structuring east – west tram line. The international literature details how essential easy access by public transport is for the success – in particular, the economic success – of pedestrian areas (Sandahl and Lindh, 1995; Boussauw, 2016). As regards motorized travel (Keserü et al., 2016), the view that the city centre has become inaccessible (also due to the ‘tunnel crisis’) has not been thwarted by a *park & ride* policy reinforced at regional and metropolitan level, while signage and electronic signs for public car parks were implemented at a late stage, and are still not perfected today. Furthermore, the systems for goods deliveries are having trouble adapting to the pedestrian area due to a regional policy which is not yet fully operational (Verlinde et al., 2016).

This situation is common in Brussels. The institutional context, the multitude of stakeholders involved, and the diverging opinions prevent the development of a coherent and ambitious mobility policy (Courtois and Dobruszkes, 2008), to the benefit of scattered actions, which are developed on a ‘case-by-case’ basis (Moritz, 2011: 12). Analyses of pedestrianization projects carried out in the 1960s and 1970s have highlighted the fact that isolated solutions have not allowed the problem of car traffic and the coexistence of various modes of travel to be solved (Ferial, 2013). We must not disregard the potential ‘mass effect’ which could result from the multiplication of qualitative projects in favour of active forms of mobility.

3.2.3 Connecting the public space development plan to commercial, economic, touristic and heritage promotion development plans

The implementation of the pedestrianized area aims in particular to boost economic activities in the city centre, especially in the retail sector, which is currently undergoing a major reorganization phase in response to changing consumer practices, and which is developing its offer in other parts of the city, notably through recently opened or planned shopping centres (such as the one included in the City of Brussels Neo project). Thus far, the pursuit of this objective has essentially opened the door to development studies on its commercial future conducted by GeoConsulting (commercial development perspective for the city centre) and Citytools/Devimo (management of commercial property belonging to the property management service and located in the pedestrian area).²⁴ While the economic impact of pedestrianization has received little attention, Boussauw (2016) presents a review of the literature which identifies useful information with respect to the case of Brussels:

- As it cannot be ensured by the resident population alone, the economic success of pedestrian areas is related in particular to the presence of commercial as well as cultural, administrative, educational, etc., hubs which allow them to differentiate themselves from shopping centres, for example (Bromley et al., 2003).
- Whitehead et al. (2006) have shown that, overall, following an approximately two-year downturn, pedestrianization has led to an average increase in visitors, sales revenue and rental prices for commercial space. But this increase is asymmetrical, benefitting organized trade (franchisees, branches), mainly in the areas of clothing and restaurants/cafés (Mérenne-Schoumaker, 1981; 1983). This is what seems to be happening today in the Brussels pedestrianized area, presenting a potentially serious drawback for the clothing sector, which is subject to the dual pressures of e-commerce and developments in the outskirts.
- Conversely, the improvement in economic attractiveness thanks to pedestrianization may lead to the disappearance of other types of business, mainly in the sectors which do not benefit from higher profits related to an increase in traffic that leads to a proportional rent increase (Wong, 2014). A commercial turnover therefore tends to establish itself at the expense of a diversity of supply in the city centre, which constitutes an advantage with respect to shopping centres in outlying areas (Grimmeau et al., 2004). This evolution is also accelerated by the development of mass tourism and the resulting 'touristification' of shops (Wayens et al., 2020). All of this takes place to the

²⁴ Studies financed respectively by the City of Brussels (2015) and *Régie foncière de la Ville de Bruxelles* (2016).

detriment of the neighbourhood city, i.e. economic supply addressed above all to the inhabitants (thus having an impact on the profiles of users of the public space).

- However, the economic success of a pedestrian area also depends in part on the density of the resident population and its purchasing power (Boussauw, 2016). Since the beginning of the 2000s, the centre of Brussels has experienced significant demographic growth which involves an increase *and* a diversification of needs for services and local businesses (schools, nurseries, sports activities, daily shopping, etc.) (Van Crielingen, 2006, 2013; Decroly and Wayens, 2016; see also Chapter X in the present book). The importance of local (and regional) aspects in ensuring the economic success of the pedestrian area in Brussels seems all the more important considering the decline in pedestrian areas in North American city centres since they first appeared in the 1980s, which is partly explained by the fact that mobility culture is focused traditionally on accessibility by car (Faulk, 2006), as it is in Belgium.
- Finally, the economic success of pedestrian areas is also linked to a certain flexibility of uses in time, on a daily basis (with the special challenge of the night, which can make a city centre uninhabitable) as well as over the years, according to urbanistic and economic reorganization. Among other things, the quality and flexibility of developments must be ensured with regard to the many worksites which exist throughout the life of a commercial area during reorganization/renovations, which are much more frequent than for other functions.

In terms of activities, a balance must therefore be established between the city of leisure and tourism, and the neighbourhood city, similar to the Local Urbanism Plan for Paris, which was adopted in 2006 (ARAU, 2014). In this respect, the economic dimension of the pedestrian area must not be considered only in commercial and touristic terms, and must instead better integrate the cultural, administrative, health, educational, etc. aspects that characterize the centre of Brussels (Decroly and Wayens, 2016). And, spatially, the reflection should not only take into account the boulevards and Rue Neuve, because a significant proportion of the shops which make up the specificity and commercial originality of a city centre (especially those which are highly specialized in terms of product or public) tend to be located on its margins (Grimmeau et al. 2004).

It is also necessary to connect the heritage promotion plans to the development of public space. Among others, the pedestrianization of Boulevard Anspach represents an occasion to promote its heritage, which has been altered over time (loss of homogeneity, transparency and identity), with the presence of equipment (benches, lighting, etc.) and a plan for façades/signs (Jourdain and Loir, 2016), bearing in mind that heritage quality is also a source of attractiveness (Grimmeau and Wayens, 2003). Such a plan does not as yet appear to be underway,

and a city official is currently working alone to try to save what can be saved, especially in the interiors of buildings.

3.3 Challenge 3: Working together on an urban and metropolitan project

The debate regarding the pedestrianization of the central boulevards was heated, taking place in the political arena and in society, with the involvement of the media. The context of the controversies regarding the requests for planning permission is complex (Vanhellemont and Vermeulen, 2016; Vanhellemont, 2016) and involves many aspects of urban reality and different ideas of Brussels, its public spaces, mobility, inequalities, economy, etc. (Genard et al., 2016; see also Chapter X in the present book). The controversies are not limited to an opposition between authorities and citizens, shopkeepers and inhabitants, or motorists and cyclists; on the contrary, potential and expected supporters of the project have opposed each other and continue to do so to this day (Vanhellemont, 2016). There are many reasons for this complexity:

- › Due to the diversity of functions and uses, the status of city centre emphasizes the diverging points of view in terms of needs, expectations, challenges, risks, etc. In this respect, even if it is not always explained clearly by the stakeholders, the question as to the level (local, regional, metropolitan) at which the city should be considered is at the heart of the debates (Tessuto, 2016; Genard et al., 2016).
- › As in many major urban projects (De Rynck and Dezeure, 2009) and as presented above, the compromises made in the political and administrative arena have interfered with the favourable reception of the political aim of the project (Vanhellemont, 2016).
- › Conversely, by exacerbating the terms of the debate, many stakeholders (project promoters as well as their 'opponents') have played a part in spreading a simplistic vision of the project throughout society (Vanhellemont and Vermeulen, 2016).

There are many controversies regarding the implementation of major urban projects (De Rynck and Dezeure, 2009), and projects involving (semi-)pedestrianization are no exception (Boussauw, 2016; Vermeulen and Hardy, 2016). At the same time, the analysis of examples in other countries shows that the authorities should build on such conflicts (at least in part), in order to carry out complex large-scale urban projects (Pinson, 2009; Castillo-Manzano, 2014), win the support of civil society, private, semi-public and public stakeholders and thus ensure the realization of the project and its *effective* appropriation. It is also an occasion to take advantage of *common knowledge*, i.e. the knowledge of stakeholders in the field that decision makers and consultancy firms lack, and which may add substantial impetus to the project by ensuring that it is in line with reality (Callon et al., 2001).

3.3.1 Developing a communication policy equal to the project

To date, the City of Brussels has been solely responsible for organizing official communication regarding the pedestrian area, with different services having shared the task according to their competences. The communication department for the City manages the production of various tools to promote the pedestrian area (kiosks set up on site, flyers, a brochure, a video, etc.). The public peace department manages a contact point via email, and on several occasions (between late 2015 and 2016) worked with the public stakeholders involved in order to establish joint answers to the questions received. *Brussels Major Events* (BME) set up an information kiosk at Place de la Bourse for a certain amount of time. At the same time, many public and private stakeholders have communicated about the project, in particular via the media. When it comes to the pedestrianized area, the City's policy today is essentially reactive, as in the example of the alcohol ban introduced for six months from 1 February 2020, following a media campaign pointing the finger at this problem. The dominant strategy is to communicate as little as possible for fear of rekindling past controversies. Consequently, contrary to what is done in other cities (see, for example, the Ile de Nantes renovation project²⁵), a global communication strategy for this major urban and metropolitan project has not been implemented in coordination with the different stakeholders concerned. However, large parts of the Brussels and metropolitan population, in particular those that have long since deserted the city centre, are still far from supporting the project (Weigmann et al., 2018; Fenton et al., 2020).

In order to better understand the challenge regarding the future of the city centre, it is therefore necessary to adopt a cross-cutting communication strategy, bringing together all the actors involved in the project, while ensuring a certain degree of transparency is upheld. The Brussels-Capital Region should be involved in this policy by developing adapted means of support. There is also a need to adopt a proactive approach, taking into consideration not only those who seek information. Finally, special attention must be paid to the celebration of the main steps of progress of the project.

3.3.2 Organizing transversality and co-production

Participation constitutes one of the key aspects of the controversies – such as the one concerning the centre of Brussels – or, at the very least, insufficient participation often represents one of the arguments put forward by certain critics of major urban projects. Participation is subject to power relations, and in essence does not ensure the democratic nature of a project (Le Naour and Massardier, 2013). One may also consider that, given the scope of the challenges, the limitation of the participatory process allows the 'taking of action' and the implementation of a project for which a consensus could never be reached. However, the literature highlights

a series of elements that show the importance of establishing room for participation, i.e. co-production:

- › The implementation of participatory processes could favour the acceptance of a project and bring all of the stakeholders together in the same approach (Pinson, 2004; Vermeulen and Hardy, 2016).
- › These processes also provide an opportunity to take advantage of the common knowledge of stakeholders in the field. This common knowledge, which experts and politicians do not necessarily have, constitutes a basis for ensuring that the project is in keeping with the reality in the field (Callon et al., 2001). In this sense, participation allows the needs and expectations of inhabitants, users, shopkeepers, etc. to be met, the problems encountered to be highlighted, and efficient means of action to be defined (Lascoumes and Le Bourhis, 1998).
- › The co-production and co-management of a project favours the development of a feeling of belonging to a place and, therefore, respect towards it (Vermeulen and Hardy, 2016).

The opening of project implementation to different fields of co-production would thus allow an improvement in its quality. There are at least three pertinent levels of co-production: economic co-production through dialogue on the economic and commercial development of the city centre; intangible co-production concerning activities in the public space, and the *material* co-production of the public space.

However, in order for co-production involving stakeholders outside the strict sphere of political decision-making to be possible, transversality is necessary within the governing bodies. It has to be said, however, that there is a great deal of compartmentalization between departments and areas of competence within the City of Brussels, and, until recently, a certain reluctance to collaborate with the regional level.

3.4 Challenge 4: Confirming the paradigm shift

The pedestrianization and redeployment of the city centre were initially presented by the project leaders, in particular the mayor of the City of Brussels, as the formalization of a paradigm shift with respect to post-war urban policies. The implementation of this paradigm shift is, however, faced with three major difficulties.

Firstly, the project is not located in an ordinary neighbourhood, but rather in a multifunctional city centre with many different users (underprivileged and privileged inhabitants, workers, tourists, customers, etc.) who have different relationships with the city centre, which are sometimes difficult to reconcile

(Decroly and Wayens, 2016; Genard et al., 2016; Van Crieelingen, 2006, 2013; Van Hamme et al., 2016).

Secondly, the project is torn between the usual feebleness of Brussels decision-makers with respect to reducing the influence of car traffic (Courtois and Dobruszkes, 2008) and the increasing rejection of cars to the benefit of non-motorized mobility (Genard et al., 2016; Genard and Neuwels, 2016).

Finally, for a multitude of institutional levels and public stakeholders, the project is based on a diversity of visions of the city, its centre, motivations and objectives (Vanhellemont, 2016). The challenge in this respect is to ensure that the compromises necessary do not reduce the impact of the project.

3.4.1 Taking action on and via housing

On the part of the public authorities, the pedestrianization of central boulevards is justified in particular with regard to two major joint objectives: 'to go from being a utilitarian city designed for car transit, to a city designed for its inhabitants and where it is nice to live'; and 'to revitalize economic activity in the centre' by targeting visitors for the most part (workers, tourists, consumers, culture enthusiasts, etc.).²⁶ On the contrary, the analysis of debates highlights the role of the opposition between 'inhabitants' and 'visitors' in the controversies (Vanhellemont, 2016; Tessuto, 2016; Genard et al., 2016), implying that the two objectives revealed by the public authorities would be difficult to reconcile. The pedestrian area would prejudice certain categories of stakeholders, namely the inhabitants and/or shopkeepers in the city centre, depending on the point of view.

Many international projects testify to the fact that the improvement in habitability and economic revitalization are not antagonistic, but that precautions must be taken in order to ensure a balance. The literature shows that the economic success of pedestrian areas depends in particular on residential density (Boussauw, 2016). At the same time, it highlights two possible harmful effects of pedestrianization on the residential sector, which are visible when there is too great a focus on commercial attractiveness:

- The creation of a pedestrian area generally results in an increase in rental prices for commercial space (Sandahl and Lindh, 1995; Boussauw, 2016), which favours the mono-functionality of the area. Therefore, it sometimes becomes more worthwhile, from an economic perspective, to make all of the available commercial space in a building profitable and to not utilize the upper floors for residential purposes, not to mention the fact that it often becomes difficult to access these floors (Dessouroux, 2006).

- › The predominance of the commercial function also hinders residential attractiveness, as disturbances due to activities in pedestrianized public spaces cause the middle and well-to-do classes to leave (Wackermann, 1982).

The Pentagon has experienced a strong demographic growth that is heterogeneous from a socioeconomic point of view. This leads to an increase in and a diversification of housing needs, subject to pressures from the development of the residential tourist offer, and especially rooms or flats, or even entire buildings made available on the Airbnb reservation platform and similar. In 2017, this accounted for nearly one third of the housing capacity in the BCR (Decroly et al., 2019) and a significant share of the total number of private dwellings in parts of the Pentagon (Decroly and Wayens, 2016).

It is therefore essential to take action on and via housing. This involves ensuring residential attractiveness while maintaining a balance at two levels: on the one hand, between the necessity to revitalize the city centre and the risk of gentrification and, on the other, between the increase in temporary housing (Airbnb, hotels, bed and breakfasts, etc.) and the need for permanent inhabitants. The question therefore arises as to the strengthening of technical and legal levers that favour or require the maintenance of residential functions in commercial and tourist areas (in particular ERU 2001–2012; 2012–2014; Decroly et al., 2019), and the future of buildings that belong to the city and the Brussels CPAS located in the pedestrian area and its surroundings.

3.4.2 Preventing the transfer of pollution

The car-free areas and the areas with low emissions may improve the quality of life of inhabitants and workers in three ways: (1) by improving air quality through a decrease in the emission of air pollutants (Genc et al., 2012; Lim et al., 2012; IBSA, 2016), (2) by reducing the noise caused by road traffic, and (3) by favouring the use of active modes of travel (Gehl, 2011; Keserü et al., 2016). In order to achieve the desired paradigm shift, the challenge is to allow these improvements to benefit the entire city and not only the pedestrian area:

- › The feedback from North American projects from the 1960s and 1970s indeed shows that the pedestrian areas themselves do not give rise to a decrease in the use of cars and therefore do not regulate the pollution they cause (Ferial, 2013). They may lead to a shift of traffic and pollution to the surrounding streets. In order to have a positive impact beyond the area of intervention, pedestrianization must be integrated into an ambitious mobility plan that ensures a modal shift.
- › The extent, content (air, noise, etc.) and scope of the impact of the pedestrian area in Brussels have yet to be the subjects of exhaustive and continuous evaluations. While measures have been established, these have been obtained in an isolated manner by different sources (Bruxelles Mobilité,

Atrium, ProVélo, City of Brussels), and according to different methodologies and timescales (Bruxelles Mobilité, 2016). Due to a lack of systematic collection of data, it is very difficult to evaluate the quality of results. At the same time, the data gathered concerns volumes of traffic and does not provide a detailed interpretation of the situation (for example, modal shares, effects due to car traffic, etc.).

- › Although it is quantitatively minimal, the shifting of car traffic to certain neighbouring streets may have the effect of increasing the deterioration in air quality tenfold, as it depends in particular on urban morphology (Keserü et al., 2016) (for example, around the Central Station and Boulevard de l'Empereur, an increase of 270 vehicles/hour (Bruxelles Mobilité, 2016), Quai du Commerce or Rue des Six Jetons). Air pollution is less easily extracted in narrow streets.
- › Although the volume of traffic stagnates or decreases, it is possible that car traffic might increase in certain streets, thus increasing noise pollution and air pollutants.
- › The shifting of traffic to the neighbouring streets can discourage the use of active modes of travel and have a negative impact on the commercial speed of public transport (Keserü et al., 2016), as we can see in particular during major events (Plaisirs d'hiver, etc.).
- › The excessive development of activities in the pedestrian area could hinder the suppression of noise caused by road traffic.
- › The shift of pollution and the creation of new types of pollution ignite controversies (Vanhellemont, 2016; Genard et al., 2016).

In order to ensure the sustainability of the city centre, the pedestrianization of central boulevards is insufficient in itself. At the same time, there is a very real risk of a shift of pollution to the streets surrounding the pedestrian area. Various monitoring efforts underway will allow an objective view of the situation and could constitute the basis for the revision of traffic and mobility plans.²⁷

3.4.3 Integrating the existing car parks into the reflection on the evolution of the pedestrian area

As a consequence of postwar urban policies, the centre of Brussels is characterized by the presence of a very high number of private and public car parks (Hubert et al., 2013). To the best of our knowledge, the gradual reduction in the number of existing car parks when environmental permits are renewed is neither on the agenda of the City of Brussels, nor of Bruxelles Environnement (which issues these permits). The presence of these car parks has a direct impact on the configuration,

²⁷ In particular the BSI-MOBI project "Monitoring the impact of travel behaviour, accessibility and satisfaction with regards to the city centre", supported by Bruxelles Mobilité.

organization and perimeter of the current and future pedestrian area, as well as on the air quality in the city (Brandeleer et al., 2016a; Keserü et al., 2016):

- › The existing (off-street) public car parks in the Pentagon provide approximately 25,000 parking spaces (i.e. far more than in other city centres with a comparable surface area), and play a ‘role as an “attractor” of cars’ in the heart of the pedestrian area or in its immediate surroundings (Hubert et al., 2013).
- › These car parks, whose access must be legally guaranteed, have determined the perimeter of the pedestrian area (for example, Rue de l’Ecuyer and Rue Fossé-aux-loups).
- › They limit the possible future widening of the pedestrian area (other cities, such as the City of Ghent, have faced this difficulty).
- › Their number and scattered location make it difficult to design *P-routes*²⁸ allowing a means to enter and exit car parks.

An action that suggests that cars are no longer welcome in the city leads to heated debates in the public sphere as well as in the political arena (Courtois and Dobruszkes, 2008). In the framework of the pedestrian area, these debates were stirred up by the lockdown following the Paris attacks, the effects of the Brussels attacks and the closing of the tunnels, which gave the impression that the city centre was no longer accessible by car (Vanhellemont and Vermeulen, 2016; Genard et al., 2016).

As expressed by Brandeleer et al. (2016a), the pedestrianization of the centre is significantly restricted by the presence of car parks and not the reverse. If their pertinence is not called into question, power relations will always be established in favour of parking infrastructures, and the ability for the city centre to create a paradigm shift may be limited.

3.4.4 Achieving a true sharing of public space

The notion of *comfort* for pedestrians, *hospitality* of public spaces towards walking (see Chapter X in the present book) or *mechanisms for accelerating slowness* (Pelgrims, 2018) is expressed through the safety of slow routes, obtained through the domestication of car flows, and the spatial and temporal continuity of facilities (Pelgrims, 2018).

But the modal segregation of public space, i.e. the clear separation of the spaces devoted to each mode of transportation within the public space (Brandeleer et al., 2016), is deeply rooted in Belgium, and particularly in Brussels. Its roots can be

²⁸ A *Parking route* or *P-route* is a marked circuit, generally in a loop, which leads motorists from outside the area concerned towards one or more car parks, and which allows them to leave the area easily.

traced back to the end of the 18th century (Loir, 2016), and it did not disappear with the pedestrianization of certain fragments of the central city. Thus, it can be found in the accounts of users, as well as in the development of the central boulevards (Fenton et al., 2020). The longitudinal morphology and the organization of the width of the main sections of the boulevards contribute to the reproduction of 'classic' travel patterns (pedestrians on the sides, two-wheelers and other vehicles – when they can enter – along the central strip). The modal segregation which is implicit to this morphology is reinforced through certain layouts, such as the change of surface for the different lanes in the boulevard or the near-ubiquitousness of bollards, classic symbols of this modal segregation, between areas where motor vehicles are allowed and those where they are not. However, at times of high density pedestrian flows, segregations between modes and rhythms of travel become more complicated. Pedestrians occupy the whole area in a more homogeneous way, making it nigh on impossible to mix modes of travel. Clashes and frictions appear, fuelling debates on ideas of the city for pedestrians, and reinforcing the archetype of modal segregation in the eyes of some. Consequently, modal segregation often remains the standard according to which the functioning of public space is assessed and perceived, both in terms of efficiency and safety. It conflicts with the principle of a shared space, which implies the coexistence of different modes of transport within the same space, without physical arrangements necessarily marking their separation. For such a novelty to become permanent, restrictions are clearly not enough, especially if an idea as prominent as that of modal segregation continues to occupy people's minds. A change in mentality through a long-term informative and educational effort is necessary. But it also involves relieving the pressure on a city centre which, at certain times, concentrates too much pedestrian flow.

If a sharing of public space between all modes of travel is yet to be achieved at city level, avoiding an over-occupation of space by one mode to the detriment of all of the others, the same applies to the balance between traffic and living functions. The standardization of facilities and the limited diversity possible in the uses of public space (apart from traffic and consumption) reduce 'the plurality of ways of being and, therefore, the richness of the urban atmosphere' (Pelgrims, 2018).

In this context, the Brussels public space undoubtedly needs relief, with the help being offered in the form of an ambitious social policy. As Wayens et al. (2020) write,

▮ *the increase in homelessness is widespread in Brussels (Quittelier and Horvat, 2019) and is reinforced by flows of migrants associated with political instability and many conflicts at international level. As long as care for these people is insufficient and limited to the night, the pedestrian area, consisting mainly of commercial spaces, will remain, for many reasons (social control, specific urban morphology, availability of boxes, pedestrian flows, etc.), havens for marginalized populations in the urban space (Malherbe and Rosa, 2017). (...) A purely security-based response is*

obviously inappropriate given the scale of this social crisis, but it is high time to invest massively, together with shopkeepers, in a pragmatic and humane management of the issue of homelessness and marginality in the public space.



4 > CONCLUSION

Successful pedestrianization and redevelopment of a city centre are not a given. As seen in the literature, various precautions must be taken and many aspects must be dealt with. The realization of a complex urban project is an art in itself, requiring, among other things, the collaboration of stakeholders and services which are not necessarily in the habit of doing so, the combination of different – and even competing – levels of governance, the creation of positive political and civic dynamics regarding the project, and the taking advantage and development of the levers for action that allow the long-term goals of the project to be achieved.

In this chapter, we have highlighted four possible areas for improvement. This would involve (1) adding to the spatial planning by taking action on the intangible aspects, through better planning of the different atmospheres and social, commercial and artistic activities in the city centre; (2) including the project in a multi-scale vision of territorial development and associating it with different plans (mobility, environmental, trade, tourism, culture, social, housing, etc.); (3) increasing the support for the project by qualitatively improving information and communication, as well as participation and coproduction, and strengthening the transversality within and between the governing bodies; (4) deepening the paradigm shift by clarifying the anticipated city project, as outlined by the PRDD. This is what we have attempted to explain in Parts 2 and 3 of the present work.

The project for the redevelopment of the centre of Brussels is still far from complete. Given the extent and range of the challenges, stakeholders, instruments and levels of action, the implementation – as was recently done for the BeursBourse project – of a cross-cutting operational structure coordinated by an independent steward recognized by all stakeholders, and which would be responsible for the organization of structured meetings with stakeholders in the field, as well as the creation of a ‘chamber of quality’, are more pressing than ever. The latter, composed of recognized experts and representatives of the different levels of authority involved (City, Region, Beliris, etc.), would ensure compliance with the defined objectives and the quality of the implementation of the project. This method has borne success for over a decade in many European cities, such as Amsterdam, Antwerp and Zurich (Moulaert et al., 2013; Segers et al., 2013). In this context, the maintenance of a city centre observatory such as BSI-BCO²⁹ makes sense, not only

²⁹ On the challenges of regional observatories such as BSI-BCO, see in particular Roux and Feyt (2011).



in order to facilitate the monitoring of the evolution of social uses and practices, habitability, air quality, mobility and accessibility, economic, commercial and touristic dynamics, larger scale effects, etc., but also to explore and experiment with the implementation of the aforementioned city project through action research and – research by design – mechanisms.

5 > BIBLIOGRAPHY

AMIN, A. (2008). Collective culture and urban public space. *City*, No 12 (1), pp. 5–24.

APUR (2009). Initier des projets métropolitains : l'IBA, une pratique féconde. Note rapide. *Territoires*, No 478. Available at: <http://www.apur.org/etude/initier-projets-metropolitains-iba-une-pratique-feconde>

ARAU (2014). *Des commerces de proximité pour la diversité dans la ville!*, (Retrieved on 6 April 2017). Available at: <http://www.arau.org/au/ef671fa2aade854bdf33a32cb553673d85715bfb.pdf>

ARON, J. (1995). *La Cambre et l'architecture : un regard sur le Bauhaus belge*. Brussels: Mardaga.

BERNARD, N. (2008). The impact of the European Union on real estate in Brussels: between stereotype and underestimate. *Brussels Studies*, No 21. Available at: www.brusselsstudies.be

BIANCHINI, F. and PARKINSON, M. (1993). *Cultural policy and urban regeneration: the West European experience*. Manchester: Manchester University Press.

BOUDRY, L., CABUS, P., CORIJN, E., DE RYNCK, F., KESTELOOT, C. and LOECKX, A. (2003). *De eeuw van de stad. Over stadsrepublieken en rastersteden*. Witboek. Brussels: Ministerie van de Vlaamse Gemeenschap.

BOUSSAUW, K. (2016). Lokale economische aspecten van voetgangersgebieden: een beknopt literatuuroverzicht. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages - Kader, Ouvertures - Aanzet, Focus*. Brussels: BSI-BCO, pp. 79–86.

BRANDELEER, C., ERMANS, T. and HUBERT, M. (2016a). Zone piétonne, résidentielle, de rencontre : le cadre légal du piétonnier bruxellois en contexte. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages — Kader, Ouvertures — Aanzet, Focus*. Brussels: BSI-BCO, pp. 149–158.

BRANDELEER, C. and ERMANS, T. (2016b). When traffic light management prefigures mobility choices: the strategic challenges of a technical tool. In: *Brussels Studies*, No 103. Available at: www.brusselsstudies.be

BRANDELEER, C., ERMANS, T., HUBERT, M., JANSSENS, I., LANNOY, P., LOIR, C. and VANDERSTRAETEN, P. (2016c). *Le partage de l'espace public en Région de Bruxelles-Capitale*, Brussels : Bruxelles Mobilité — Service public régional de Bruxelles, Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale, No 5.

BROMLEY, R., HALL, M. and THOMAS, C. (2003). The impact of environmental improvements on town centre regeneration. *Town Planning Review*, Vol. 74, No 2, pp. 143–164.

BRUXELLES ENVIRONNEMENT (2016). *État de l'environnement, rapport 2011-2014*. Brussels: Brussels-Capital Region.

BRUXELLES MOBILITÉ (2016). *Évaluation intermédiaire des impacts de la piétonnisation des boulevards du Centre et de la mise à l'essai du plan de circulation du Pentagone*. (non public). Brussels: Brussels-Capital Region.

CALLON, M., LASCOUMES, P. and BARTHE, Y. (2001). *Agir dans un monde incertain. Essai sur la démocratie technique*. Paris : Le Seuil.

CASTILLO-MANZANO, J. I., LOPEZ-VALPUESTA, L. and ASECIO-FLORES, J. P. (2014). Extending pedestrianization processes outside the old city centre; conflict and benefits in the case of the city of Seville. *Habitat International*, Vol. 44, pp. 194–201.

CORIJN, E. and VANDERSTRAETEN, P. (2016). Qu'est-ce qu'un espace public ? In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 15-20.

CORIJN, E., VANDERSTRAETEN, P. and NEUWELS, J. (2016). Remarques préliminaires concernant le plan d'aménagement du piétonnier. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 67-75.

COURTOIS, X. and DOBRUSZKES, F. (2008). The (in) efficiency of trams and buses in Brussels: a fine geographical analysis. *Brussels Studies*, No 20. Available at: www.brusselsstudies.be

CRAIG, C. L., BROWNSON, R. C., CRAGG, S. E. and DUNN, A. L. (2002). Exploring the effect of the environment on physical activity: a study examining walking to work. *Am. J. Prev. Med.*, No 23 (2 Suppl), pp. 36-43.

CRETEN, A., HUBERT, M., LETESSON, Q., MEZOUE, A., COCU, X., HINDRIJCKX, M., and VAN DAMME, O. (2019). *Gènes piétonnes dans les rues commerçantes. Rapport de recherche pour Bruxelles Mobilité*, Brussels : Centre d'études sociologiques et Centre de recherches routières.

CRESWELL, J.W. and CLARK, V.L.P. (2007). Designing and conducting mixed methods research. *The Journal of the Public Health Association of Australia*, No 4 (31), pp. 53-106.

DE RYNCK, F. and DEZEURE, K. (2009). *Burgerparticipatie in Vlaamse steden - Naar een innovierend participatiebeleid*. Bruges: Vanden Broele.

DE VISSCHER, J.-P., NEUWELS, J., VANDERSTRAETEN, P. and CORIJN, E. (2016). Brève histoire critique des imaginaires à la base des aménagements successifs des boulevards. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 135-147.

DECROLY, J.-M. and WAYENS, B. (2016). Le centre-ville : un espace multifonctionnel. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 21-34.

DECROLY, J.-M., DESSOUROUX, C. and VAN CRIEKINGEN, M. (2003). Les dynamiques contemporaines de privatisation des espaces urbains dans les villes européennes. *Belgeo*, No 1. Available at: <https://belgeo.revues.org/15280>

DECROLY, J.-M., BERNARD, N., BRODERSEN, M., DEBROUX, L., LANNOY, P. PERILLEUX, H., RETOUT, M., et al. (2019). *Mission d'évaluation de l'ordonnance du 8 mai 2014 relative à l'hébergement touristique*, Brussels : BSI.

DEMEY, T. (1992). *Bruxelles. Chronique d'une capitale en chantier. 2. De l'Expo 58 au siège de la C.E.E.* Brussels : Paul Legrain.

DESSOUROUX, C. (2003). La diversité des processus de privatisation de l'espace public dans les villes européennes. *Belgeo*, No 1. Available at: <http://belgeo.revues.org/15293>

DESSOUROUX, C. (2006). *La production des espaces publics dans la ville contemporaine. Enjeux, acteurs et logiques de gestion et d'aménagements dans trois communes de la Région de Bruxelles-Capitale*. Doctoral thesis in geography. Brussels: Université libre de Bruxelles.

DESSOUROUX, C., VAN CRIEKINGEN, M. and DECROLY, J.-M. (2009). Embellissement sous surveillance : une géographie des politiques de réaménagement des espaces publics au centre de Bruxelles. *Belgeo*, No 2. Available at: <https://belgeo.revues.org/7946>

DESSOUROUX, C., BENSLIMAN, R., BERNARD, N., DE LAET, S., DEMONTY, F., MARISSAL, P. and SURKYN, J. (2016). Housing in Brussels: diagnosis and challenges. *Brussels Studies*, BSI synopses, No 99. Available at: www.brusselsstudies.be

DOBRUSZKES, F. and FOURNEAU, Y. (2007). The direct cost and geography of Brussels mass transport's operating delays. *Brussels Studies*, No 7. Available at: www.brusselsstudies.be

EERMANS, T., BRANDELEER, C., D'ANDRIMONT, C., HUBERT, M., LEBRUN, K., MARISSAL, P., VANDERMOTTEN, C. and WAYENS, B. (2019). *Analyse des déplacements domicile-travail et domicile-école en lien avec la Région de Bruxelles-Capitale*, Bruxelles, Bruxelles Mobilité, Service public régional

- de Bruxelles, Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale, 6, 239 pp. Available at: <https://mobilite-mobiliteit.brussels/fr/cahiers-de-lobservatoire-de-la-mobilite>
- FAULK, D. (2006). The process and practice of downtown revitalization. *Review of Policy Research*, Vol. 23, No 2, pp. 625–645.
- FENTON, G., GLORIEUX, A., LETESSON, Q. and MINNEN, J. (2020). *Centre-ville, piétonnisation et modes de vie*. Brussels : BSI-BCO and Forum des vies mobiles (Paris), under the supervision of Genard, J.-L., Glorieux, I. and Hubert, M.
- FÉRIEL, C., (2013). Le piéton, la voiture et la ville. De l'opposition à la cohabitation. In: *Métropolitiques*. Available at: <http://www.metropolitiques.eu/Le-pieton-la-voiture-et-la-ville.html>
- FEYT, G., ROUX, E. (2011). *Les observatoires territoriaux : sens et enjeux*, DATAR, La Documentation française, Collections Travaux, 14.
- GEHL, J. (2011). *Life between buildings. Using public space*. Washington: Island Press.
- GENARD, J.-L., BERGER, M. and VANHELLEMONT, L. (2016). L'architecture des débats : les imaginaires mobilisés. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN AND M. (eds.), *Portfolio#1: Cadrajes – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 53-66.
- GENARD, J.-L. AND NEUWELS, J. (2016). Le développement durable comme objet de transactions. *SociologieS*. Available at: <http://sociologies.revues.org/5378>
- GRAVARI-BARBAS, M. (2001). Les enclaves ludiques : Le cas du Navy Pier à Chicago. In C. GHORRA-GOBIN (eds.) *Réinventer le sens de la ville : Les espaces publics à l'heure globale*. Paris : L'Harmattan, pp. 159-168.
- GRIMMEAU, J.-P. and WAYENS, B. (2003). Le commerce à Bruxelles et l'évolution de la ville. In RÉGION DE BRUXELLES-CAPITALE (eds.), *Commerce et négoce*. Brussels: Mardaga, pp. 31-42.
- GRIMMEAU, J. P., BEYS, N., BASTIN, S., VAN CUTSEM, S., VERHETSEL, A. and WAYENS, B. (2004). *Le commerce dans les grandes villes belges et leur périphérie*. Study for Cellule Politique des Grandes Villes, SPP Intégration Sociale. Brussels.
- GROSJEAN, B. (2010). *Urbanisation sans urbanisme. Une histoire de la « ville diffuse »*. Bruxelles : Mardaga.
- HALLEUX, J.-M. (2005). *Structuration spatiale des marchés fonciers et production de l'urbanisation morphologique : application à la Belgique et à ses nouveaux espaces résidentiels*, Doctoral thesis, 24 June 2005, Université de Liège, Département de Géographie.
- HANDY, S. L., BOARNET, M. G., EWING, R. and KILLINGSWORTH, R. E. (2002). How the built environment affects physical activity: views from urban planning. *Am. J.Prev.Med*, No 23 (2 Suppl), pp. 64–73.
- HASS-KLAU, C. (2015). *The Pedestrian and the City*. New York and London: Routledge.
- HUBERT, M. (1982). *Perspectives pour une renaissance du Pentagone Ouest*, Study for the ministre et le Secrétaire d'État à la Région bruxelloise. Brussels: Inter-environnement, 46 pp.
- HUBERT, M. (2008). Expo58 and 'the car as king'. *Brussels Studies*, No 22. Available at: www.brusselsstudies.be
- HUBERT, M., LEBRUN, K., HUYNEN, P. and DOBRUSZKES, F. (2013). Daily mobility in Brussels: challenges, tools and priority undertakings. *Brussels Studies*, BSI synopses, No 71. Available at: www.brusselsstudies.be
- HUBERT, M., CORIJN, E., NEUWELS, J., HARDY, M., VERMEULEN, S. and VAESEN, J. (2017). From pedestrian area to urban project: assets and challenges for the centre of Brussels. *Brussels Studies* (online), Synopsis, n° 115, published online on 11 September 2017. URL: <http://journals.openedition.org/brussels/1551>; DOI: 10.4000/brussels.1551
- HUNT, J. D. and ABRAHAM, J. E. (2007). Influences on bicycle use. *Transportation*, No 34, pp. 453–470.
- INGALLINA, P. (2008). *Le projet urbain*. Paris: Presses universitaires de France
- JACOBS, J. (1993). *The death and life of great American cities*. New York: The Modern Library.

JANSSENS, I. and VANDERSTRAETEN, P. (2016). Espaces partagés : du concept à la mise en œuvre. In C. BRANDELEER et al., *Le partage de l'espace public en Région de Bruxelles-Capitale*. Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale No 5. Brussels. pp. 14-104.

JOURDAIN, V. and LOIR, C. (2016). Le régime de mobilité et les modalités d'usages de l'espace public sur les boulevards centraux à la fin du 19^e siècle. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages — Kader, Ouvertures — Aanzet, Focus*. Brussels: BSI-BCO, pp. 123-134.

KESERÛ, I., WUYTENS, N., DE GEUS, B., MACHARIS, C., HUBERT, M., ERMANS, T. and BRANDELEER, C. (2016). Monitoring the impact of pedestrianization schemes on mobility and sustainability. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 87-95.

KESTELOOT, C. and DE MAESSCHALCK, F. (2001). Anti-urbanism in Flanders: the political and social consequences of a spatial class struggle strategy. *Belgeo*, n° 2, pp. 41–62, available at: <https://belgeo.revues.org/15346?lang=en-article-15346>

KÜBLER, D. (2005). Démocratie et gouvernance d'agglomération : quelques leçons européennes. *Pouvoirs locaux*, No 65, pp. 85–91.

LASCOUMES, P. and LE BOURHIS, J.-P. (1998). Le bien commun comme construit territorial. Identités d'action et procédures. *Politix*, No 42 (11), pp. 37–66.

LE GALÈS, P. (1995). Du gouvernement des villes à la gouvernance urbaine. *Revue française de science politique*, No 1 (45), pp. 57–95.

LE GALÈS, P. (2002). *European cities: social conflicts and governance*. Oxford: Oxford University Press.

LE NAOUR, G. and MASSARDIER, G. (eds.) (2013). *L'action publique sélective*. Paris : Librairie générale de droit et de jurisprudence.

LEBRUN, K., HUBERT, M., HUYNEN, P., DE WITTE, A. and MACHARIS, C. (2013). *Les pratiques de déplacement à Bruxelles*, Brussels, Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale, n° 2, available at : <https://mobilite-mobiliteit.brussels/fr/cahiers-de-lobservatoire-de-la-mobilite>

LEBRUN, K., HUBERT, M., HUYNEN, P. and PATRIARCHE, G. (2014). *Les pratiques de déplacement à Bruxelles : analyses approfondies*, Brussels, Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale, n° 3, available at : <https://mobilite-mobiliteit.brussels/fr/cahiers-de-lobservatoire-de-la-mobilite>

LEBRUN, K. (2016). L'accessibilité de l'« hypercentre bruxellois ». Premiers résultats pour le transport public. In E. CORIJN, M. HUBERT, N. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages – Kader, Ouvertures – Aanzet, Focus*. Brussels: BSI-BCO, pp. 159-165.

LEFEBVRE, H. (1968). *Le droit à la ville*. Paris : Anthropos.

LOFLAND, L. (1998). *Public realm: exploring the city's quintessential social territory*. New Brunswick: Transaction Publishers.

LOIR, C. (2016). De l'espace partagé à la ségrégation modale : le long processus de transformation de l'espace public (1775-1936). In C. BRANDELEER et al, *Le partage de l'espace public en Région de Bruxelles-Capitale*, Brussels : Bruxelles Mobilité - Service public régional de Bruxelles, Cahiers de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale, No 5, pp. 13-29.

LOOPMANS, M., DE DECKER P. and KESTELOOT, C. (2010). Social Mix and Passive Revolution. A Neo-Gramscian Analysis of the Social Mix Rhetoric in Flanders, Belgium. *Housing Studies*, vol. 25, n° 2, March, pp. 181–200.

MÉRENNE-SCHOUMAKER, B. (1981). Structure commerciales des rues et centres piétonniers : Essai de comparaison de quelques cas français et belges. *Bulletin de la société Belge d'études géographiques*, Vol. 50, No 2, pp. 135–144.

MÉRENNE-SCHOUMAKER, B. (1983). Les activités commerciales dans les secteurs piétonniers : structure et évolution. *Analyse de l'espace*, No 2, pp. 19–37.

MINISTÈRE DES TRAVAUX PUBLICS ET DE LA RECONSTRUCTION (1956). *Bruxelles, Carrefour de l'Occident*. Brussels: ministère des Travaux publics et de la reconstruction.

MITCHELL, D. (2003). *The right to the city: Social justice and the fight for public space*. New York: Guilford Press.

MORITZ, B. (2011). Designing and developing public spaces in Brussels. *Brussels Studies*, No 50. Available at: www.brusselsstudies.be

MOULAERT, F., VAN DYCK, B., KHAN, A. Z. and SCHREURS, J. (2013). Building a Meta-Framework to 'Address' Spatial Quality. *International planning studies*, No 18 (3-4), pp. 389-409.

NELSON, A. and ALLEN, D. (1997). If you build them, commuters will use them: association between bicycle facilities and bicycle commuting. *Transportation Research Record: Journal of the Transportation Research Board*, No 1578, pp. 79-83.

NOËL, F. (2009). La politique de revitalisation des quartiers : à la croisée de l'action urbanistique et sociale. In P. DEJEMEPPE, C. MOUCHART, C. PIERSOTTE, F. RAYNAUD, and D. VAN DE PUTTE (eds.), *Bruxelles (dans) 20 ans*. Brussels: Brussels-Capital Region, pp. 213-233.

PELGRIMS, C. (2018). Aménager la lenteur. La dimension imaginaire de la piétonnisation du centre-ville bruxellois. *Espaces et sociétés*, 4/175, pp. 143-162.

PINCH, P. and ADAMS, N. (2013). Lessons from the IBA Emscher Park. In M. E. Leary, and J. McCarthy (eds.) *The Routledge companion to Urban Regeneration*. London: Routledge. pp. 230-240.

PINSON, G. (2004). Le projet urbain comme instrument d'action publique. In: Lascoumes, P. and Le Galès, P. (eds.) *Gouverner par les instruments*. Paris : Presses de Sciences Po., pp. 199-223.

PINSON, G. (2009). *Gouverner la ville par projet. Urbanisme et gouvernance des villes européens*. Paris : Presses de Sciences Po.

PRADEL, B. (2007). Mettre en scène et mettre en intrigue : un urbanisme festif des espaces publics. *Géocarrefour*, No 82 (3), pp. 123-130.

PUCHER, J. and BUEHLER, R. (2008). Cycling for Everyone: Lessons from Europe. *Transportation Research Record: Journal of the Transportation Research Board*, No 2074, pp. 58-65.

REMY, J., VOYÉ, L., BLONDEL, J.-P. and DESIMPELAER, W. (1974). Scénarios de vie urbaine. A+, No 12, p. 23.

RYCKEWAERT, M. (2011). *Building the economic backbone of the Belgian welfare state. Infrastructure, planning and architecture 1945 1973*. Rotterdam: 010 Publishers

SAELEN, B. E., SALLIS, J. F. and FRANK, L. D. (2003). Environmental correlates of walking and cycling: findings from the transportation, urban design, and planning literatures. *Ann.Behav.Med*, No 25 (2), pp. 80-91.

SANDAHL, J. and LINDH, C. (1995). Impact of improving the attractiveness of town centres. *Transport Policy*, Vol. 2, No 1, pp. 51-56.

SEGRS, R., VAN DEN BROECK, P., KAHN, A., MOULAERT, F., SCHREURS, J., DE MEULDER B., VIGAR, G. and MADANIPOUR, A. (eds.) 2013. *Handboek Ruimtelijke Kwaliteit*. Brussels: ASP éditions.

SHAY, A. (2012). *The contemporary International Building Exhibition (IBA): innovative regeneration strategies in Germany*. Doctoral thesis in urbanism. Cambridge. Massachusetts Institute Of Technology. Available at: <http://dspace.mit.edu/handle/1721.1/73709#files-area>

SPF Mobilité et Transports (2019). *Enquête MONITOR sur la mobilité des Belges*, Brussels.

TESSUTO, J. (2016). *Changer la ville pour changer la vie? Le mouvement citoyen PicNic the Streets et l'invisibilisation des enjeux socio-économiques liés au réaménagement du centre-ville de Bruxelles*. *Environnement Urbain/ Urban Environment*, Vol. 10. Available at: <http://eue.revues.org/1405>

VAN CRIEKENGEN, M. (2006). What is happening to Brussels' inner-city neighbourhoods? *Brussels Studies*, No 1. Available at: www.brusselsstudies.be

VAN CRIEKINGEN, M. (2013). La gentrification mise en politiques. *Métropoles*, No 13. Available at: <http://metropoles.revues.org/4753>

VAN DEN BROECK, P. (2010). *De sociale constructie van plannings-en projectinstrumenten. Onderzoek naar de socio-technische dynamiek in het 'Eerste Kwartier' in Antwerpen*. Doctoral thesis in engineering. Leuven: Katholieke Universiteit Leuven.

VAN HAMME, G., GRIPPA, T. and VAN CRIEKINGEN, M. (2016). Migratory movements and dynamics of neighbourhoods in Brussels. *Brussels Studies*, No 97. Available at: www.brusselsstudies.be

VANHELLEMONT, L. and VERMEULEN, S. (2016). De aanleg van de voetgangerszone in het Brusselse stadscentrum (2012-...). Een analyse van (het discours van) het procesverloop. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages - Kader, Ouvertures - Aanzet, Focus*. Brussels: BSI-BCO, pp. 35-51.

VANHELLEMONT, L. (2016). *The Power of the Imaginary in Urban Planning Processes*. Doctoral thesis in urban sociology. Milan. Milano-Bicocca University.

VERLINDE, S., KIN, B., STRALE, M. and MACHARIS, C. (2016). Sustainable freight deliveries in the pedestrian zone: facilitating the necessity. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages - Kader, Ouvertures - Aanzet, Focus*. Brussels: BSI-BCO, pp. 97-109.

VERMEULEN, S. and HARDY, M. (2016). Communication et participation dans le cadre de grands projets urbains. In E. CORIJN, M. HUBERT, J. NEUWELS, S. VERMEULEN and M. HARDY (eds.), *Portfolio#1: Cadrages - Kader, Ouvertures - Aanzet, Focus*. Brussels: BSI-BCO, pp. 111-119.

WACKERMANN, G. (1982). Le vécu commercial en zones piétonnières européennes. In *Annales de Géographie*, No 506, pp. 454-462

WAYENS, B., DECROLY, J-M., STRALE, M., DA SCHIO, N., KESERÜ, I. and PERILLEUX, H. (2020). Pedestrianization of a multifunctional space: challenges and early observations on the Brussels Pentagon. In S. VERMEULEN, A. MEZOUE and J.-P. DE VISSCHER (eds.), *Towards a Metropolitan City Centre for Brussels*. Brussels: EUB & VUBPRESS.

WHITEHEAD, T., SIMMONDS, D. and PRESTON, J. (2006). The effect of urban quality improvements on economic activity. *Journal of Environmental Management*, Vol. 80, No 1, pp. 1-12.

WIEGMANN, M., VERMEULEN, S., KESERÜ, I., TE BOVELDT, G., HEYNDELS, E. and MACHARIS, C. (2018). *Impactanalyse bereikbaarheid, verplaatsingsgedrag en tevredenheid rond de uitbreiding van de Brusselse voetgangerszone*. Report voor Brussel Mobiliteit, Brussels, VUB-MOBI en Brussels Studies Institute.

WONG, H. (2014). *Impacts of Pedestrian Schemes on the Types of Retailers*. Doctoral thesis in urbanism and design. Hong Kong: The University of Hong Kong.

WOOD, P. and LANDRY, C. (2008). *The intercultural city. Planning for diversity advantage*. London: Earthscan.

ZIMMER, P. (2002). La politique de l'habitat dans la Région de Bruxelles-Capitale. *Courrier Hebdomadaire, CRISP*. No 1746-1747.