

TRANSITION PATHWAYS TOWARDS THE STRONG SUSTAINABILITY OF THE BRUSSELS METROPOLITAN CITY CENTRE: A PLEA FOR AN ECOSYSTEMIC APPROACH



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> Abstract

This contribution reflects on the potential for strong sustainability resulting from the construction of the large pedestrian zone in the Brussels city centre. This so-called strong sustainability differs from weak sustainability by integrating the economic and social spheres into the environmental sphere. Evaluating whether the large pedestrian zone acts as a lever and a stimulant for such a transition first requires identifying the impacts of the transformation of public spaces on the practices of residents and users. This then invites us to examine how these forms of reconquering public space can induce new expectations and aspirations for public spaces in the city centre. This present reflection is based on feedback from some contemporary experiences in Brussels and other European city centres, as well as on foresight elements fed by methods from the fields of systems theory and ecology.

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1 > INTRODUCTION

Among the many imaginaries (see Chapter 6, Genard and Berger, 2020), desires and ambitions that the project of the large pedestrian zone inspired, that of sustainability particularly attracts our attention. It is indeed intrinsically the bearer of a multidimensionality, capable of bringing about radical transformations in the Brussels city centre. It also includes a potential support for the paradigm shift announced by the project's leaders, and hoped for by researchers, urban professionals and civil society activists alike. Sustainability is also present in numerous ad hoc initiatives and at different scales of the territory, and is carried out by a great diversity of actors. However, it does not yet seem to be sufficiently considered from a perspective of strong sustainability, in other words through the prism of the integration of the economic and social spheres within the environmental sphere.

In this text, we propose an exploration of the possibilities and conditions for the Brussels metropolitan city centre to enter into such a dynamic of transition. First, we hypothesize that an ecosystemic approach is required to understand both the urban phenomena and the transition dynamics. We then recall the geographic contours of the Brussels metropolitan city centre, henceforth 'the city centre', and establish what makes it unique and what defines the nature of its centrality. Finally, based on the work of Sybrand Tjallingii (1995), we offer critical and prospective ways of interpreting the dynamics at work in the city centre. For each of the three areas that Tjallingii defines – the responsible city, the living city and the participating city – and in light of experiences in other cities, we try to question the conditions for a sustainable transition.

This contribution is above all an intellectual positioning that draws both from scientific literature and from the reading of realities in the field. It is an opening and a way of debating concepts and approaches in order to help define an analytical framework.

2 > FOR AN ECOSYSTEMIC APPROACH OF THE TERRITORY AND ITS PROJECT

Before tackling the ecosystemic approach, it is necessary to define what we mean by 'transition'. In its most common sense, transition indicates a change of state or the passage from one state to another. In this sense, it has, in recent years, become used increasingly often to express optimist projects for the transformation or the replacement of technologies, modes of production or consumption in different areas: energy transition, alimentary transition, mobility transition or even more generally the ecological transition. These approaches are part of the long history of the evolution of our societies, more or less visible and noisy, more or less rapid and intense, more or less destructuring and producing inequalities. Thus,

transitions are here to be considered in the face of the lengthy historic period and the evolution of socio-technical systems, that is, the network of actors gathered around economic, cultural, ethnic and social ties (Calatrío, 2015). On the one hand, transition constitutes a pivot between two essentially stable periods – the new being an improvement of the old – and, on the other, it is a normal, steady state, a continuous process of transformations.

Within the transition approach, a socio-technical perspective is often advocated, because the socio-technical system in which we operate is seen as being locked upon a given, often unsustainable, trajectory. To initiate changes, a systemic approach to the phenomena is therefore necessary. In this context, the literature often takes a multilevel perspective (MLP) (Schot and Geels 2008, Geels 2011), 'which considers that transitions occur when changes in the cultural, political or economic context (landscape level) create possibilities for the development and spreading of innovations (niche level). This leads to the replacement of the dominant system (regime level) with a new system' (Calatrío, 2015). Besides this perspective, more recently the issue of transition management that values continuous transformations and the process of change over the long term has arisen. This involves new governance and instruments for collective, inclusive and participatory learning and experimentation (Calatrío, 2015). This last point is particularly reflected in Rob Hopkins's initiatives and the movement of towns and villages in transition. For around a decade, this initiative has aimed toward strong sustainability, particularly through promotion of the mobilization of citizens through virtuous and collaborative local commitments. These are processes that encourage innovation and niches, embedded in sharing facilities and bottom-up governance.

The systemic approach to transition takes the opposite view of the urban fabric's sectorial approaches. It addresses the issues in a transversal, interdisciplinary, or even transdisciplinary, manner, seeking answers regardless of possible sectoral considerations. It pays primary attention to the relationships between variables that can be both tangible and intangible (numerical, or textual for example). However, a hierarchy is often established between the variables, relegating aspects related to all living things to the background. However, environmental issues, like the preservation of environments, biotopes, biodiversity, etc. lie at the heart of the conditions for strong sustainability. It is in this sense that the ecosystemic approach provides an added value by integrating natural variables and all living things in general, addressing them in a non-hierarchical manner and from a perspective of equilibrium (de Lestrangé, 2016, p.25). The ecosystemic approach of the territory and its project takes a holistic stance and proceeds based on the interdependence of things. Basically, it poses change, living things and the taking into account of emerging properties,³ as the starting conditions of the project. Consequently, the

³ A property of a system is called emergent when its parts do not exhibit such a property on their own, but it originates from their interaction within the system as a whole: <https://en.wikipedia.org/wiki/Emergence>.

ecosystemic project aims, as mentioned above, to contribute to a strong transition through the advent of a co-existence between the ‘natural’ and the socio-technical dimensions of the environment – between biosphere and ecumene.

In such a perspective, a territory cannot be defined via exclusively anthropogenic criteria – functional as the hinterland or morphological as the built fabric – nor exclusively through environmental ones – ecotopes or drainage areas. The territory therefore must be considered a socio-environmental reality, perceived as an extension with fluctuating margins, defined by interrelated anthropogenic and natural, material and immaterial, eco-landscaped and socio-political characteristics. In other words, it is considered a bioregion. A variety of definitions of this concept can be found in the literature, more or less naturalistic (placing the emphasis on natural systems) or culturalist (placing it on the importance of anthropogenic factors). Their synthesis designates it as a unit defined – beyond the logic of political boundaries – by a specific integration between human and non-human systems, at the middle scale of the landscape unit (de Lestrangé, 2017).

As recalled by Metrolab.Brussels,⁴ during its ‘Designing Brussels Ecosystems’ conference in October 2018:

┌ *The concept of urban ecosystem emerged in Brussels over forty years ago, in the context of studies conducted by the interdisciplinary team of Paul Duvigneaud. The goal of Duvigneaud’s work was to provide a broad perspective of the interdependencies that exist between the human and nonhuman worlds (Duvigneaud, 1980). While the positivist project of offering a global ecosystem science was eventually abandoned, the same ecosystemic concerns are still at the heart of research and innovation in a number of areas of natural sciences, social sciences, engineering, living space studies and the humanities. Each of them includes the concept of ecosystem into its field of study, in order to develop specific methods. Beyond the increasing weight of environmental issues, the ubiquity of the notion of ecosystem is contributing to an epistemological transition (...)*⁵ ┐

In 2015, the studies preceding the Metropolitan Landscapes international consultation identified four Brussels ecologies: the infrastructure valley, the built landscape, the park system and the wetland landscape (Loeckx et al., 2015). Although this typology corresponds to geographical and morphological characteristics, it also shows a multi-perspective understanding of the ecology (Guattari, 1989), which exceeds the original crucible of Environmental Sciences and mobilizes the different registers of ecology as resources for reflecting on the interdependence of urban components. These theoretical and historical preliminaries imply that one

4 Metrolab Brussels (MLB) is a trans-disciplinary and inter-university laboratory for applied and critical urban research, funded by the Brussels Capital Region through its ERDF program.

5 Designing Brussels Ecosystems, Conference Introduction, 18 October 2018.

cannot consider downtown Brussels exclusively in a hierarchical relationship with the *bruxellian*⁶ (bio) region, but also as the locus – the environment – characterized by an intensity of socio-natural connections, from which emerging properties manifest themselves across the whole territorial ecosystem.

➤ **Figure 1. Comité Alhambra**



Source: Gérald Ledent

3 ➤ BRUSSELS CITY CENTRE

At the crossroads of highways and waterways, Brussels was gradually built up over the centuries, based on walkable distances, while the pedestrian metric (see Chapters 4 and 7) followed a radio-concentric spatial structure. The major expansion of the 19th century developed the first urban centre. It created the first contours of a central area, serviced and structured by public rail transport and by the channel, in which the main stations – South, North, Luxembourg and West – as well as the quays of the port of Brussels would play a major role in terms of accessibility.

The topographic constraints of the railway lines and the canals came to generate a spatial frame that entered a dialogue with the system of valleys, which today

⁶ With reference to the geological layer of the bruxellian sands, a name which allows a non-hierarchical relationship to be established between the city centre and the territories of the metropolitan city (de Lestrangé, 2017).

provides the primary support for the natural green and blue network. This accessibility came to be structured around the original walkable road network of the city centre, organizing multiple pedestrian areas around internal nuclei, which, while certainly making the wider city centre territory walkable in its entirety, led to its but partial utilization. We conceptualize walkability in its strongest sense, meaning that the entire road surface was used by pedestrians, which was normal before the booming of cars, and which has once again become increasingly permissible through pedestrianized, meeting and residential areas; we will come back to this later.

The current densification of the Brussels Region is destined to be structured around and based on a polycentric⁷ framework wherein the area between the stations and the central harbour quays represents the main centre, and which plays a symbolic role in view of this position.

In addition to its pronounced patrimonial character, the city centre – which has long been a privileged place of convergence of routes – has become the core of a network of interconnections on many scales. It is distinguished through the large, even hyper, diversity of its activities, uses and attendances (see in this book Wayens et al. 2020; Rosa et al., 2020). If this structural diversity and the multiple exchanges between the activities that it constitutes may have been threatened and ignored at certain times and in certain places, like in the North District, the Administrative Centre or the European quarter, today it has again become the transformation's claimed objective. This underlines the specific urban vitality of the city centre.

If we accept that one of the factors of an area's resilience is its ability to be composed of a variety of elements (material and immaterial; living and non-living) and a fabric of interconnections that binds them together,⁸ then the city centre will be able to amplify its resilience potential by consolidating its consistency through the development of these multiple interconnections. So, right from the start, with respect to the urban plan, we can argue that it would be advisable to think more systematically in terms of interdependencies and synergies between activities and uses. This implies going beyond the timid notion of compatibility between assignments, regularly called upon in the Brussels Regional Development Plan, which only aims to guarantee an acceptable level of coexistence between activities. Shared public spaces, or third places, for example, are meeting and informal exchange areas, open to all, where work, services and relaxation intertwine, and which present, in an emblematic manner, spatial facilities capable of accommodating these developments.

7 Cf. Regional Plan for Sustainable Development of the Brussels-Capital Region.

8 Lietaer, B. and Kennedy, M. (2008). *Monnaies régionales; de nouvelles voies vers une prospérité durable*. Charles Léopold Mayer.

4 > THREE DOMAINS TO REFLECT ON REGARDING BRUSSELS CITY CENTRE'S ECOSYSTEMIC TRANSITION

Understanding the fabric of interdependencies that constitute the urban realities, essential to an ecosystemic approach, requires the definition of an analytical framework, or a reading grid, which allows the understanding and highlighting of the complexity of the phenomena at work. To do this, we propose to structure the remainder of this chapter based on three domains that were originally proposed by Sybrand Tjallingii (1995): the responsible city, which reduces resource consumption as well as waste and pollution, the living city, which takes care of the habitat of human beings, the fauna and flora, and finally the participating city, which structurally involves the inhabitants in its political, economic, social and cultural development. These domains constitute as many gateways and paths that allow the specific identification and illumination of these fabrics of interdependencies. Above all, they offer the opportunity to explore the city centre in a differentiated and complementary way. For the sake of simplification, for analytical purposes, some of these domains are subdivided into a series of themes, without, however, losing sight of the links between them.

On the basis of this, we will try to identify the tracks of a transition towards strong sustainability for each of these domains and themes. For this, we position our analytical focus on niches of innovation at different scales of the territory and involving a diversity of actors and fields of action. Where they do not apply to Brussels, arguments will be based on examples from other cities.

4.1 Responsible city

The pathway towards strong sustainability for Brussels's city centre crosses the design of a more responsible operating plan for the city, which can be structured around 3 interrelated objectives. First, the disproportionate dependence on material, energy, food and water resources coming from increasingly distant regions, as well as on increasingly distant waste reception and absorption environments, needs to be reduced.⁹ Second, actions concerning the urban metabolism of inflows and outflows will benefit from integrating the issues of managing and maintaining stocks (Bortolotti, 2019), with 'maintaining' to be literally understood as 'holding in between', in this case between the incoming and outgoing flows. Third, local products and their distribution, as supported by a circular economy policy, should be boosted in order to make the products more visible, and to increase awareness among inhabitants as to the impacts of their consumption patterns. We will

⁹ BATIr (ULB), ECORES, ICEDD, (2015). *Métabolisme de la Région de Bruxelles-Capitale: identification des flux, acteurs et activités économiques sur le territoire et pistes de réflexion pour l'optimisation des ressources*. Bruxelles Environnement.

successively discuss transport and mobility, energy and materials, water, and finally food.

4.1.1 Transport and mobility

The ambition for the development of sustainable mobility – given its current high energy impact – has taken a decisive new turn with the pedestrianization of the central boulevards. The expansion of the walkable area, in the heart of the city centre, having metropolitan consequences, should incite us today to exceed both the limits of the project and its exclusively mobility-inspired character. The challenge we are faced by, however, consists of being able to overstep a critical threshold beyond which the priority given to pedestrians, cyclists and public and shared transport, structurally transforms the city centre's mode of operation, through the modes of living, working, consuming and distributing (see Vanin et al., 2020, in this book).

To move from a central pedestrian zone, predominantly commercial and recreational, touristically attractive, to an entire inhabited city centre area, a majority of the public spaces of which are at least shared, and whose mobility is organized in strong articulation with the regional and metropolitan sustainable transport network, represents a major opportunity for change. The challenge of the extension of the central boulevards project, as developed in several contributions in this book (Wayens et al. 2020; Mezoued et al., 2020; Vanin et al., 2020), is therefore indeed about overstepping a critical threshold beyond which a change in size becomes a change in nature.

Today, numerous cities demonstrate the positive effects of the development dynamics carried by projects of strong walkability, such as Ghent, Bordeaux, Oslo, and Pontevedra in Spain. These cities, whose public areas in the city centre have been redeveloped into pedestrian zones and meeting areas, duly illustrate these transformations and materialize Jane Jacobs's (1995) premonitory thought regarding the city's need to provoke the attrition of automobiles instead of its erosion by automobiles. She had already begun to draw attention to the risk that the development of pedestrian areas would lead, without other measures, to a mere shift in traffic patterns, without reducing levels. In this respect, the fortune of Brussels is that it is able to count on a strong framework of public transport, whose articulation with the city centre should continue to be improved as much as possible.

However, before serving effectively as a lever for future extensions and potential systemic transformation, there is probably a need to clarify and further improve what is in place today in the large pedestrian project. Hence, the project for the city, as communicated today, lies, if one refers to the rules of the Highway Code, between the pedestrian zone and the residential and meeting areas. It does not meet the definition of a pedestrian zone, since it allows access to vehicles for the disabled and infirm living in the zone, as well as for users involved in various organized events. Likewise, it does not meet the definition of a residential or meeting

area, which authorizes access to all vehicles without restrictions, rather involving measures to dissuade transit traffic, limiting the number of parking places and, where appropriate, introducing time-differentiated sharing measures.

That said, the City has expressed the wish to revise the Highway Code, which is inadequately named as there are, strictly speaking, no highways in the city¹⁰. Concretely, today, certain sections of the central boulevards and adjacent streets are redeveloped as a pedestrian area and others as a residential or meeting area. In the latter, one cannot fail to note there are bollards and other longitudinal delimitation devices that deviate from the ministerial recommendations¹¹ and blur the readability and comprehension of the orders of priority, as well as the maintenance of segregated profiles that, although they display an 'urban' aspect (paving, furniture), cannot mask their road-inspired nature based on the structuring of public spaces into dedicated, single-use sites.

4.1.2 Energy, materials and use of buildings

The general policy statement of the new regional government (presented on 18 July 2019) integrates, among other things, a number of objectives pertaining to the circular economy and building renovation, energy efficiency and renewable energy. To respond to this, the vision for the city centre requires, because of its high heritage value, developments specifically around actions to enhance and optimize the existing, to mutualize, maintain, recover, reuse and recycle. Indeed, many existing buildings, offices, shops and services are lightly occupied, with the upper floors even remaining unoccupied in many instances. Above all, such buildings would require an optimization of their occupation and allocations, and debate exists as to the transformation of unoccupied office space into housing, schools, etc. to meet the demographic needs of the Region.

These approaches require a culture of attention, care, invention and collective intelligence, which interestingly, also corresponds to what is recommended for the design of shared public spaces.¹² In redesigning public space in view of better-shaping its adoption, the opportunity to encourage individual or concerted initiatives to improve the built environment and surrounding areas should be further amplified. Whether this be through the development of ground floors of buildings, the renovation of facades, the renovation of grouped buildings,¹³ or the installation of shared technical networks.

¹⁰ Given the complex role they play in the city, highways are designated as streets, avenues, boulevards, etc.

¹¹ Regional circular relating to residential areas and meeting areas of 09/09/2013 - Brussels-Capital Region.

¹² Guide to the Brussels public space – www.publicspace.brussels

¹³ Cf. the BRAL initiative: *Collectief Isolé*

4.1.3 Water

In his thesis, Christian Nolf (2013) establishes a typology of Belgian cities based on their relation to the water (gate between land and sea, edge beachfront, *confluence*, *terminal* at the end of a plain, *bridge*, *water mill* and *finally ridge towns*). Brussels is a city – *terminal*, since its small river, the Senne, was only navigable downstream in the medieval period. The tenuous, but dense, network of its tributaries is inseparable from the fabric of the capital's territory (Deligne, 2003), generating and then serving its growth, despite a flood pattern with which the city was able to cope for a while. Like most of their congeners, Brussels's brooks and rivers have been exploited, modified, polluted and then buried. The city continued to grow, forgetting rather quickly that these living roots continued to run under its increasingly condensed base – a trend that its status as a City-Region has strengthened.

At the face-off between climate upheaval and changing rainfall patterns on one side, and the crux of Brussels's urban struggles on the other, a rehabilitation movement around the watercourses in the city has grown remarkably in recent years. Between micro-local niche situations like Ilot d'eau¹⁴ citizens projects for the rehabilitation of water as urban commons like the States General of the Water in Brussels,¹⁵ innovative projects from public authorities to meet supra-territorial policies (European Directives on water, biodiversity, habitats) or at the crossroads of these logics,¹⁶ the dynamics of reconnection between the city and its rivers bears witness to a transition in the relationship between Brussels and the water.

In a 'natural' register, the city centre is criss-crossed by waterways that are still active deep below it (besides the Senne, there are also the Maelbeek, the Molenbeek, and their respective tributaries). Despite recurrent flooding due to their overload during periods of heavy raining, opening them up is not possible everywhere, nor is it justifiable, even from an environmental perspective. In contrast, the provision of space for rainwater in the built fabric and in the frame of open spaces is particularly crucial in a territory that lies in the hollow of a valley and that is so unabsorbing. It is corollary of a paradigm shift that sees it as a resource or an amenity. The *Escaut sans frontières*' initiative¹⁷ – supported by Brussels Environment – wanting to *nature*, not *renature* the channel, meaning that this technical artefact would be turned into an ecological corridor, is an example of this.

In an anthropogenic register, the city centre has a duty to set an example in this dynamic of reintegration of living water into the city, and the pedestrian zone

¹⁴ Ilot d'Eau le retour is a project developed by the Latitude office and the La Cambre-Horta Faculty of Architecture of the ULB, to explore the challenges around a common and shared management of water at the scale of the urban block.

¹⁵ <https://www.egeb-sgwb.be/>

¹⁶ See the Brusseau project, which invites residents to develop, with researchers and stakeholders, diagnosis and development proposals to reduce the risk of flooding in Brussels, with the support of Innoviris. <http://brusseau.be/projets/>

¹⁷ <https://gs-esf.be/fr/publications/dossiers/corridorecologique.php>

can be a powerful lever in this regard. The symbolic importance of this historic neighbourhood in the territorial identity, along with its popularity, indeed gives it a valuable education and awareness-raising potential. The change of rhythm and the gaining of space provided by the pedestrianization, but also the very readable harbour history in the urban landscape, provide many opportunities to invent new urban rivers (Mahaut, 2009) and, like the dynamics of a hydrographic network, to spread this sensitivity to the water beyond the central area along the paths of those who trace the citizen initiatives¹⁸

The transversality of the large pedestrian zone's 'extended' vision and, in particular, the contribution of the Brussels Centre Observatory are therefore definitely to be considered assets. In contrast, the incredible complexity of the system of actors that have to be mobilized in order to overcome socio-technical blockages – of territorial, regulatory and political nature – that hinder a radical change in the relationship between city and the water, is worrying.

The implications of this change – water management at parcel level and its architectural corollaries, network separation and the consequent upheaval of the water management doctrine, reversal of the impermeability of the soil and 'de-paving' – are of course monumental undertakings, but a wait-and-see policy is no longer possible, even if only in terms of environmental justice.

4.1.4 Food

From this perspective, the responsible city in general, and Brussels in particular, faces a stumbling block which could paradoxically be the sole cornerstone of a strong transition: the food system. A few months ago, *The Lancet*, a leading medical journal, published a report denouncing the central role of the globalized food system and its agricultural techniques in regard to both climate change and the global malnutrition and obesity pandemic (Swinburn et al., 2019). Among the centrality dimensions (Monnet, 2000), there is the political space where urban strategies are born and debated. From this point of view, the centre of the metropolis can claim to be the initiator of a dynamic of strong transition: the Good Food Strategy.

This 5-year program started in 2015, and is organized around two axes: better production practices, mainly through an increase in local sustainable food production, which adds a dimension of the productive city that is not commonly considered, and eating well. To achieve these objectives, Brussels supports research and operational projects, and supports collaborations between sectors, but also, and above all, with its hinterland.¹⁹

¹⁸ In particular the States General of the Water in Brussels, <https://www.egeb-sgwb.be/>

¹⁹ Stratégie GoodFood, Bilan à mi-Parcours, Synthèse, 2018.

➤ **Figure 2.** Comité Alhambra



Source: Comité Alhambra, 2015

➤ **Figure 3.** Comité Alhambra



Source: Comité Alhambra, 2015

GoodFood generates many innovative projects—and as many emanate from it—such as BoerenBruxselPaysans²⁰ or the garden network, the *Bruxelles Environnement/Leefmilieu Brussel* initiative. Only through an ecosystemic approach to the Brussels transition can these local, sustainable and affordable production initiatives, often fragile and relatively isolated from one another, be transformed into a structured and structuring (eco)system in the food sector. Such an achievement would contribute to reducing the food basin of the metropolis to a more ethically and ecologically sustainable territorial footprint. Tentative studies of GoodFood report that about 1600 ha²¹, which can be mobilized in the useful horticultural area of the 2 Brabants, would suffice to supply 30% of the needs of the Capital Region in terms of fruits and vegetables.

However, is the food autonomy of cities, at the time the horizon of agrarian urbanism (Waldheim, 2010), seriously possible? According to our calculations,²² even when counting on an evolution in eating habits, reduction in water, soil and energy resource consumption,²³ when taking into account the age structure of the population (Statbel, 2018) and the potential agricultural surface²⁴ of the metropolitan area, this would only cover 10% of the needs of its population, based on unconventional crop yields.²⁵ So the Brussels food autonomy still is utopian. The transition of the entire system remains supralocal in scope. This does not question the need to relocate a maximum of production, in order to switch to a territorial agriculture, or, in other words a deeply socio-environmentally rooted agriculture.

Nor does this observation question the importance of production within the dense city. Its socio-cultural and ecological role is well established (GoodFood, *op.cit.*) and is crucial to changing dietary habits. In terms of nutrition, it contributes to

²⁰ As a flagship project of the GoodFood strategy and of the Feder programme for 2015-2020, this project, which brings together two public partners and two associative partners, aims to support the ecological transition of existing farms and the installation of new farmers in the Capital Region. Concretely the project offers a test space of about 2.5 ha and the renovation of an adjoining farm, technical support, as well as help in the search for land. It also develops sustainable urban and peri-urban agricultural models, and supports the development of a new local transformation sector.

²¹ Stratégie GoodFood, bilan à mi-parcours, synthèse, 2018 p.4.

²² The Bruxellian bioregion between phenomenon and project: the agro-ecological horizon in *Bioregional Planning and Design. Perspectives on a transitional century*, David Fanfani and Alberto Matarán Ruiz Dir., Springer 2020.

²³ Less animal protein in favour of vegetable protein, as recommended by TYFA studies (Poux, X., Aubert, P.-M. Iddri-AScA, Study N°09/18, Paris (2018). *Une Europe agroécologique en 2050 : une agriculture multifonctionnelle pour une alimentation saine*), AFTERRES (Solagro, (2016). *Le scénario Afterres 2050*), WWF (WWF, ECO2Initiative (2017). *Vers une alimentation bas carbone, saine et abordable.*)

²⁴ Useful agricultural surface + de facto cultivated surface according to CAP declarations.

²⁵ Based on an estimate of a yield specific to this context and to the unconventional practices: «Évaluation de la production agricole primaire professionnelle en Région de Bruxelles Capitale et sa périphérie», Laboratoire d'agro écologie, Université libre de Bruxelles, 2018; études Afterres 2050, TYFA et WWF, *op.cit.*

the need for horticultural products and even small-scale farming products. But the main nutritional energy contributions are supplied by cereals and other carbohydrate-rich foodstuffs, which require surfaces that cannot be provided in city centres, whatever the type of agricultural practice employed.

In order to strengthen and consolidate a network of metropolitan agriculture, the ecosystemic approach allows us to take into account both public and private spaces' having a nutritious potential compatible with their urban use. In this regard, the *Continuous Productive Urban Landscapes* strategies developed in other European cities (London, The Hague, Berlin) are quite inspiring (Viljoen, Bohn and Howe, 2005). They consist of networks of nourishing landscapes, in more-or-less continuous urban spaces. On a micro-scale, they unfold as vegetable gardens in public parks, as cultivated interior gardens or open spaces of public or corporate land, or as above-ground ecological agricultural projects (thus depending on living and non-inert energy). At the meso-scale, landscape elements (rivers, forests, metropolitan parks) welcome more ambitious programs, such as farms and agricultural parks. Combining, at the design stage of the projects, the aesthetic with the agricultural technical requirements, and working with the private and public domain, the CPUL's strategies use an ecosystemic and co-design method to integrate agriculture in the urban space in a coherent and structured way. The foundations of such an approach are widely present in the city centre: a CPUL project would deserve serious consideration here.

Apart from the spatial question, another resource of the city centre resides in a less open manner in every household: organic waste. There was a time, not so long ago, when cities' 'sludge' and 'green' waste fertilized the land of their food basin (Rosenthal and SOA 2018). A recent study, at the crossing of GoodFood and the PREC²⁶, identifies the potential of garden waste from the Brussels-Capital Region and offers local solutions for its enhancement into compost according to the type of urban fabric (Bortolotti, 2019). In this scenario, the dense city centre, although not very green, is not outdone, mainly thanks to the catering industry, including the many office, school and association canteens. Why not imagine structuring these dynamics and complementary resources not only in the centre, but throughout the metropolitan territory? The combination of networks adapted to local and technical logics would ensure a certain variety of production at the metropolitan level.

It is in this perspective that, within the Metrolab.Brussels framework, the idea of a 'yellow network' (de Lestrangé, 2019) was developed. This 'mesh' would connect isolated and scattered unconventional agricultural practices across the territory, by making use of the niche situation created by the social importance of the food issue. This agro-landscaped network serves nutritional, as well as ecological and socio-cultural, functions, and has project potential both at the scale of the isolated

²⁶ PREC (Regional Program in Circular Economy), adopted by the Government on 10 March 2016.

practices and at the scale of the bioregion where it finds its ecosystemic consistency. It generates a multiscale geography, which interrelates the districts of the dense city with the spatial, ecological and agronomic resources of the bio-region, the forms of which have been conceived in a spirit of reconciliation between urban and rural areas (de Lestrangé, 2019).

The coming together of the immense resource that organic waste constitutes (in 2018, 50% of white bag waste was organic, according to Bruxelles Propreté/Net Brussel), the agro-ecological dynamics that are expanding through the metropolitan territory, combined with the ambitions of the Brussels-Capital Region and those of Flanders²⁷, make this project possible.

4.2 A living city

The development of a living city invites us to think about the quality of the living environment for people and all living organisms. The city's attractiveness will depend on the one hand on the ability and quality of reception of a diverse population, their needs and their aspirations (see Chapter 3), and of the animal and plant species on the other. Here, we will explore some answers based on approaches of urban nature and, secondly, on considerations about the built and developed environment.

4.2.1 Urban natures

A nourishing basin, relocated if possible and offering healthy and affordable nourishment, where water regains its right to the city, is key to becoming a living city. The ecosystemic approach and its mesological basis designate the latter as an environment where the conditions for the care of the living, in all its forms, are fulfilled. In the living city, the urban natures of the three orders²⁸ co-exist, even symbiotically. This requires the attainment of the spatio-environmental and socio-technical conditions so that they can 'nature' with, in, on, by the city – i.e. in its anthropic artefacts as much as in its dedicated spaces. Living buildings, development of/caring for agro-eco-landscape networks, regulatory possibilities to generate hybrid, multifunctional and heterogeneous landscapes guaranteeing the resilience of socio-ecosystems are some of the conditions for the transition of the dualistic city, which separates nature and culture, city and countryside, centre and periphery, or dimensions of the living, towards the living city.

²⁷ Within the Flemish Strategic Plan for Organic Agriculture, the Brussel Lust initiative aims to encourage farmers around Brussels, hitherto predominantly conventional, to supply the capital with organic products.

²⁸ The concept of the three natures is proposed by John Dixon Hunt, landscape historian; he defines the first nature: wild; the second nature: domesticated, the cultivated countryside; and the third nature: the garden. Hunt, John Dixon, *L'Art du jardin et son histoire*, Paris : Éditions Odile Jacob, coll. 'Travaux du Collège de France', 1996.

We find the theoretical foundations of this current in the critical urbanism of the Inversion Movement, generated by the works of Geddes (*Cities in Evolution*, 1915), Olmsted (*Public Parks and the Enlargement of Towns*, 1870), MacHarg (*Design with Nature*, 1969), Mumford (*The Decline of the cities or the Search for a new urbanism*, 1956), etc. Depending on the region, this movement resulted in the theories of Ecological urbanism, Landscape urbanism or territorialism, with inversion today being characterized by a prevalence of agro- and eco-landscape problems and resources.

▮ *Starting from an anthropo-biocentric ethics which translates the values of co-presence and co-evolution, [it] methodologically shifts the primary attention of urban planning from land use to neo-ecosystemics, from territorial objects to their relationships, and from planning to caring. Thinking the relationship between city and countryside as an ontology, it places open spaces, local practices [and third-party dynamics] that activate them at the heart of the territories' production. The ecosystemic approach of the project that this posture is committed to, acts on the nodes, connecting the natural and anthropogenic variables of the territorial systems to strengthen their co-evolution. It tends to organize spatially at the scale of the bioregion a fine-grained territory, structured by [agro-] eco-landscape continuities. This configuration, optimal for the natural environment, allows to rediscover the human measure of the living and the balance between the logics of local and long networks.*

(de Lestrangle, 2016, p. 395)

The sharp transition of the centre of the Brussels bioregion, i. e. its landing, its reconnection with its environment's socio-natural resources, can only be considered if this transposition from a dualistic to a third regime can flourish. This has undoubtedly gained momentum in Brussels over the past decade. The development of green and blue networks or of the vegetable network, the Metropolitan Landscapes consultation (op.cit.) and the BKP²⁹ testify to this within the landscape project's register. Its technical conditions include (without pretending that this is exhaustive) tools such like the ecopotential, the CBS and the CBS+,³⁰ the guide to sustainable construction, or the Urban Agriculture facilitators³¹. The centre of Brussels in particular is a pool of dynamic third parties (micro-projects of urban agriculture, temporary occupations, third party places of work or art), which are situation-niches of that regime change (Schot & Geels, 2008; Geels, 2011). They share the (re-)discovery of the value of sharing, the richness of heterogeneity, and the prospect of a common good territory. The basis of the latter being, without

²⁹ Beeldkwaliteitsplan, landscape and urban quality plan for the Canal territory.

³⁰ Biotope coefficient per Area, see *Bruxelles Environnement* and *écorce, Bâti et biodiversité*, 2018.

³¹ At the initiative of *Bruxelles Environnement*; an interdisciplinary information and support service for the development of projects in urban agriculture.

question, the recognition of ecosystemic resources, starting with the living soil as a common good.³² In terms of governance, the challenge of transforming such a utopia into an eutopia is considerable – but there are many avenues, such as the concept of transappropriation³³ brought forward by François Ost (The environment, a hybrid object that eludes the public-private distinction in *Public Privé*, 1995) taken over by Donadieu (*Paysages en Commun*, 2014) and of which the Community Land Trust is, among others, a form of experiment in the city centre.

4.2.2 Habitat

The built morphology of the city centre forms a palimpsest developed over the centuries. Its vitality produced by the intermingling of its different phases of urbanization (see Jaumain, 2020) and edification feeds the inspiration for future transformations. This patrimonial building process, to be understood in the broad sense, has experienced re-structuring³⁴ episodes of mutation on an incremental basis. Let us remember, as cited previously, the piercing of the boulevards, the creation of the Northern Quarter, the Administrative City, the building of the railway junction or the Béco area. Nowadays, the city centre is subject to new pressures linked to population growth and the subsequent densification.

We will not come back to the difficulties of developing a coherent planning at the scale of the metropolitan area, which would make it possible to reduce these pressures. However, it seems important to valorise the reasoned densification opportunities such as optimizing the occupations of existing buildings, or, more specifically, the occupation of uninhabited floors,³⁵ the slight elevations of buildings, the time-sharing of convenience and service spaces, as well as the new forms of transient occupations or mixed working-living purposes. These perspectives deserve to be integrated into the public debate on vertical densification by the construction of apartment towers whose global eco-socio-results³⁶ today are a long way off achieving the desirable and necessary sustainability performances. This enables us to put the benefits of vertical densification into perspective and to bring forward new ways of thinking about the production of the habitat: cooperative, cohousing

³² The common goods differs from the public goods (non-rivalrous) by their strong rivalry, and from the private goods (excludable) by their low excludability. https://fr.wikipedia.org/wiki/Biens_communs

³³ The transappropriation would subordinate the rights of the owner of a property to constraints related to the defence of the general interest.

³⁴ We would like to clarify that these are transformations affecting the scale of the urban structure, beyond those of the single building or collection of buildings.

³⁵ Cf. On the one hand, the remarkable work of the social real estate agencies and, on the other, the research and the achievements of reoccupying the floors of shops often poorly used for storage, or the Saint Vide, Brussels 20th district action. (<https://www.leegbeek.brussels>).

³⁶ In terms of energy and resources, there are not only structural difficulties in achieving a sufficient level of performance in the operating consumptions, but also in reducing the quantities of materials and grey energy per m² of habitable space.

initiatives, Community Land Trust, etc. These urban models are more resilient, and allow both the desired densification and a commitment to the path of transition.

In parallel with this densification opportunity, it is also necessary to integrate as firmly as possible in the development of public spaces what should be termed the 'living function': the 'liveability', as a neologism echoing 'walkability'. The life between the buildings, in reference to the eponymous works of Jan Gehl (1971), constitutes a major stake of the densification and more generally of the living city. Each square metre of public space is – and continues to be – increasingly valuable from the moment that the inhabitants and occupants of the city centre, who have too few private or common outdoor spaces, begin to grow in number.³⁷ This increase in the number of inhabitants is desired by the city, which clearly aims to maintain and develop an inhabited city centre, and is likely to produce and amplify a diversity of social atmospheres at the very heart of the city centre. The mingling of populations configures multiple forms of temporary social life between inhabitants, regular and occasional users, visitors, tourists, etc., each of them able to claim equality in the appropriation³⁸ of public spaces. These prospects for intermingling or social mixing, specific to city centres, demonstrate a need for the implementation of a set of measures for land management and for the development of public housing for the less fortunate populations in the different parts of the enlarged city centre (see Chapter 3), or, in other words, an avoidance of the uncontrolled phenomena of gentrification, which accelerate and reinforce exclusion and marginalization.

These temporary forms of social life take on more depth and meaning when they stand out from other modes of appropriation of public spaces expressing the more sustainable and regular presence of inhabitants and occupants, as well as a kind of attention and attachment to the place. It would therefore be appropriate, depending on numbers of residents and users, to better organize the liveability in between the buildings. In terms of layout, this can take the form of intermediate spaces, or of thresholds between, or even penetrating into, the buildings and public spaces. Whether they are terraces, stalls, benches, plants, bicycle storage facilities or other installations, these sub-spaces allow various appropriations and better coexistences between uses. In the parts of the city centre where housing dominates, their thresholds, alongside the facade, could offer a privileged support for forms of neighbourhood sociability and micro-game opportunities for children. These interspaces should, in most cases, be part of the public space, respecting the depth limits set by public authorities to ensure the passage of pedestrians. The excessive invasion of certain public places by café and restaurant terraces, supported in the beginning to ensure animation and social control, is questionable, given the effect of privatization and exclusion that they generate.

³⁷ It is undoubtedly useful to recall here how 'space-eating' the individual car is – the average surface of the public space used by a passenger compared to the other users; in particular, the parking – this qualification being all the more relevant when the public space of a busy city centre is limited.

³⁸ Appropriation in the sense of finding the right suitability and not of seeking to possess.

Remember that when the first sidewalks appeared in our cities at the end of the 18th century, pedestrians could continue to use the road surface. When in 1936, some 150 years later, traffic laws prohibited pedestrians from using the road and obliged them to use the pavements,³⁹ these took on a completely different meaning. Their exclusive assignment as passageways induced the progressive annihilation of the living and service functions they previously bore. What could be described as a denaturing of the pavement has been maintained until today, and is illustrated by the Brussels Regional Planning Regulations which defines the pavement as:

「 a part of the public road, whether or not alongside the road, which is specifically designed for pedestrian traffic, covered with hard material and whose separation from the other parts of the public road is clearly identifiable by all users. The fact that the sidewalk crosses the road does not affect its use.⁴⁰ 」

In such a view the sidewalk does not include living and service functions. However, some good practices elsewhere, especially from Dutch cities, allow us to imagine and conceive a change in practices and uses of public spaces, based on these forms of resident appropriations, without physical modifications to their profiles. Thus, pedestrians are in some way invited to 'borrow' and share the road because of the occupation of the sidewalks by the locals. They peacefully reclaim the entire base of public space. Cars parked lengthways are still permitted there, by means of a discreet marking of the parking spaces. This is, for example, the case in the city of Delft. In lieu of financial means to redevelop public spaces in the city centre, it would in some way be like returning to the regime that prevailed in Brussels between 1776, when the first sidewalks appeared, and 1936, when the first law was passed prohibiting pedestrians from using the roads. Let's not forget that meeting areas, just like residential areas, already (re-)permit pedestrians' use of the entire width of the road.

4.3 Participating city

As emphatically demonstrated by the movement of cities and villages in transition, a co-design and co-production of the city involving all actors and stakeholders concerned offers the best chances for its suitability and appropriation. Studies on the residents' and users' degree of involvement at different stages and at different scales of urban projects are a regular subject of discussion. We thought it to be interesting to explore and initiate some reflections upon two generally less-developed domains: first, the domain of collaboration with the research community

³⁹ Loir, C. (2016). *De l'espace partagé à la ségrégation modale: le long processus de transformation de l'espace public (1775-1936)*. Cahiers de l'observatoire de la mobilité, number 5, pp.13-29.

⁴⁰ RRU (Regional Planning Regulations), Titre VII, *La voirie, ses accès et ses abords*, p.7.

– and, more specifically, the action research community – and second, the domain of relationships between the design of the urban environment and citizen initiatives.

4.3.1 Co-design

The paths delineated so far share one important condition: the epistemological renewal of the disciplines of spatial design and management. In this respect, Brussels and Belgium have a founding document at their disposal: the manifesto of the *Société des Urbanistes Belges*,⁴¹ which did not aim for durable, sustainable or resilient development, but rather ‘a sensitive harmony with the environment’. It anticipates, by almost a century, Edgar Morin’s plea (*La tête bien faite. Repenser la réforme, réformer la pensée*, 1999) for a break from the ‘paradigm of disjunction of knowledge’. Therefore we must consider the knowledge, our knowledge, as a suitable connecting thought, according to the disciplines of spatial transformation, for describing the sites, discovering their conditions of consonance and, within them, unveiling the co-presence of the appropriation forms. In short, we must (re-)learn how to act *for, with* and *by* the inhabitants of Brussels, including non-humans.

For a decade, initiatives of such a kind have been widespread throughout Brussels – a fact probably related to the historical tradition of urban struggles (see Chapter 6). They are particularly active on the territory of the centre, which is subjected to the greatest pressures and dynamics of transformation, and whose inhabitants often feel dispossessed. However, it would be impossible to list all platforms, participatory research actions, operational dynamics in co-creation, citizens’ states-general and other collectives here. For this reason, and to allow the reader better knowledge of this topic, we would like to elaborate on one of the initiatives attempting to break out of this justly denounced disjunction of knowledge: the MasterClass Designing Brussels Ecosystemics organized by Metrolab in January 2019, centred on the territory of the Canal.⁴²

Based on identified paradoxes in public policy, and niche situations corresponding to four key themes for the Brussels transition (agro-urbanity, circular building economy, transitory urbanism and third places of the social economy), the master class brought together researchers and field workers with different disciplinary⁴³ and geographic backgrounds. It produced both a descriptive atlas of innovative projects and niche situations in Brussels and a scenario and proposals for strengthening them in the sense of radical ecology (Arnsperger and Bourg, 2017). The experience made it possible to identify four tactics: (1) grounding and scaling;

41 Manifeste de la Société des Urbanistes Belges, pp. 37-40 in *La Cité*; urbanisme: architecture, art public, no. 3, Sept 1919, Ed° Techne.

42 <http://metrolab.brussels/news/metrolab-organise-the-masterclass-designing-brussels-eco-systems>

43 Sociologists, anthropologists, architects, town planners, landscapers, ecologists, political scientists, economists, entrepreneurs, farmers, artists, civil servants ...

(2) maintaining transdisciplinarity and interculturality at the heart of thinking processes, fabric, or transformation of the territory; (3) life-size and in-situ collective experimentation; and finally, what seems a truism, but is too often forgotten, (4) the requirement to plan not *on* or *for*, but *with* the environment – including the non-human living (without considering it as a legal person). This is in line with the axes of Philippe Clergeau's *Manifeste pour la Ville biodiversitaire* (2015), insisting on the systematic integration of the 'professions of the living' (namely ecologists and anthropologists) in the management of the urban project. It also seems urgent to reconsider the role of research, both involved and critical, as an active agent in the production of the territory, crossing formal and informal knowledge. This is the game that the city centre lends itself to, where participatory research-action experiments are multiplying – in particular those carried out by the Brussels Centre Observatory and mentioned in Chapters 6, 10, 11 and 12 of this book.

The city centre is therefore fertile ground for this co-creative process, this 'planning with ...' But its ability to shift the gaze, to consider itself not as a central piece, but as an element of a non-hierarchical system which crosses it, surpasses it, conditions it and feeds on it, is proof of its potential to implement such a transition. In this perspective, the initiatives of observatories, permanent transdisciplinary and civic inquiry mechanisms, should be utilized to perpetuate and multiply around connecting and ecosystemic issues such as the landscape.

4.3.2 Taking part in everyday life

If the question of participation obviously arises at the level of governance and management, it also arises at the level of the daily experience of public spaces and the living together for which they provide the support. These two levels feed each other and interact in different ways in everyday life. The capabilities⁴⁴ of individuals or their abilities to master and sufficiently appropriate their living environment determine the chances of residents' involvement in participatory processes.

In this regard, if the potential for appropriation of intermediate spaces is worth considering, it is also necessary to take into account the possibilities of appropriation for all users through the function of living. One of the fundamental characteristics of the public space is its ability to accommodate the widest range of public life activities whose unpredictability, although relative, must be one of its characteristics. The least deterministic forms of programming and planning represent an essential stake in this respect, particularly in city centres with the least public space per inhabitant and/or user.

A discussion about the evolution of the use and meaning of the concept of the 'event' can be enlightening in this regard. In fact, etymologically, 'event' literally refers to something happening (*unexpectedly*) and is likely to question and challenge a certain established order. But the increasingly dominant meaning today, when

⁴⁴ A concept proposed by Amartya Sen.

it comes to evoking urban life, refers first and foremost to the organization of exceptional activities in an increasingly controlled manner and formatted upon a prefabricated canvas to avoid and anticipate any form of nuisance. As a result, urban events that determine the city centre's rhythm today tend to trivialize forms of privatization of public space, even increasingly charging fees for access to it. This is supported by the unprecedented development of the mobility of information (social networks, applications, and similar). This trend, together with the disproportionate invasion of public spaces by pavement cafés described above, contradicts one of the fundamental achievements of public spaces, namely their free (of charge) access and use for everyone. On the other hand, it is also important to ensure fair distribution of events across the whole of the territory of the city centre and beyond, in order to avoid saturation of certain epicentral spaces in which tensions linked to exclusive forms of appropriation thrive today. This is yet another example of how interesting it could be to extend the current scope of the pedestrian area to a larger shared city centre, rich in open space resources.

Finally, if the participating city is built on several facets, there is one – belonging to the economic sphere – which arouses interest and debates and whose aim cannot leave us indifferent, namely that of a local currency. This undoubtedly has the double advantage of supporting local production of goods and services and of weaving social ties between the various stakeholders, including *consum'actors*, as some like to qualify themselves. It is interesting to note the affinities between these local currency projects and the circular economy development policy, which could induce a particular consistency linked to the specificity of the city centre by raising awareness and involving not only the inhabitants, but also employees, visitors and tourists, for example.

5 > CONCLUSION

In summary, the conceptual framework of the eco-systemic approach posited in this text allows us to outline numerous avenues for a transition to strong sustainability *of*, and *from*, the city centre. Among them, the following trajectories – both dormant and active – seem to be priorities:

The first is, as mentioned throughout this volume, a rethinking of the perimeter of the city centre and its extension beyond the pentagon to the stations. This would make it possible to integrate the diversity of residents and occupying populations and, moreover, to welcome visitors and commuters immediately upon their arrival. Furthermore, this enlargement would do justice to the successive strata that have shaped the history of Brussels, including that of the industrial period – currently at the forefront – to reinvent the productive city, which is essential for reducing its ecological footprint. The corollary of this enlargement is to think of the centre in a non-hierarchical way in its relationship with the rest of the socio-environmental

territory of the bioregion; in this chapter we have highlighted the urgency of a renewal of the city-countryside relationship.

The second trajectory involves giving ourselves the means – planning-wise, regulatory, political – to fully allow co-rejuvenation with the urban natures, including the productive nature. This implies, like in agroecology, the finding – and transposition to the fabric of the city – of the modalities for ‘coping with’ the environment’s resources: transappropriation of the soil seen as a living volume, new urban rivers, strengthening the capacities of local communities in the daily production of resources, etc. This trajectory does, however, bear implications, among which the greatest is the challenge of giving our corporality a central place within the city project.

This is the meaning of the third trajectory: the advent of a walkable city in the strong sense, to which we must add ‘liveability’ as a caveat. By revisiting history, in contrast to ‘Modernity conceptualized from a blank sheet’, the retaking and reinventing of the shared space of the 18th century, or that of before 1936, can be achieved by adapting it to contemporary aspirations and needs – integrating all types of users, including fauna and water! This will require anticipating the change in uses to best guarantee future appropriations, but also the design of spaces not only resilient in the face of climate change, but contributing to limiting it. Many of the ways applied in our territory have been mentioned.

As illustrated by the images offered, a multitude of transitional socio-ecosystems are blossoming in the city centre. However, there is an urgent need to explore them, to understand their driving forces and implications, and to inter-relate them, in order to maximize their potential as structuring vectors of strong sustainability.

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