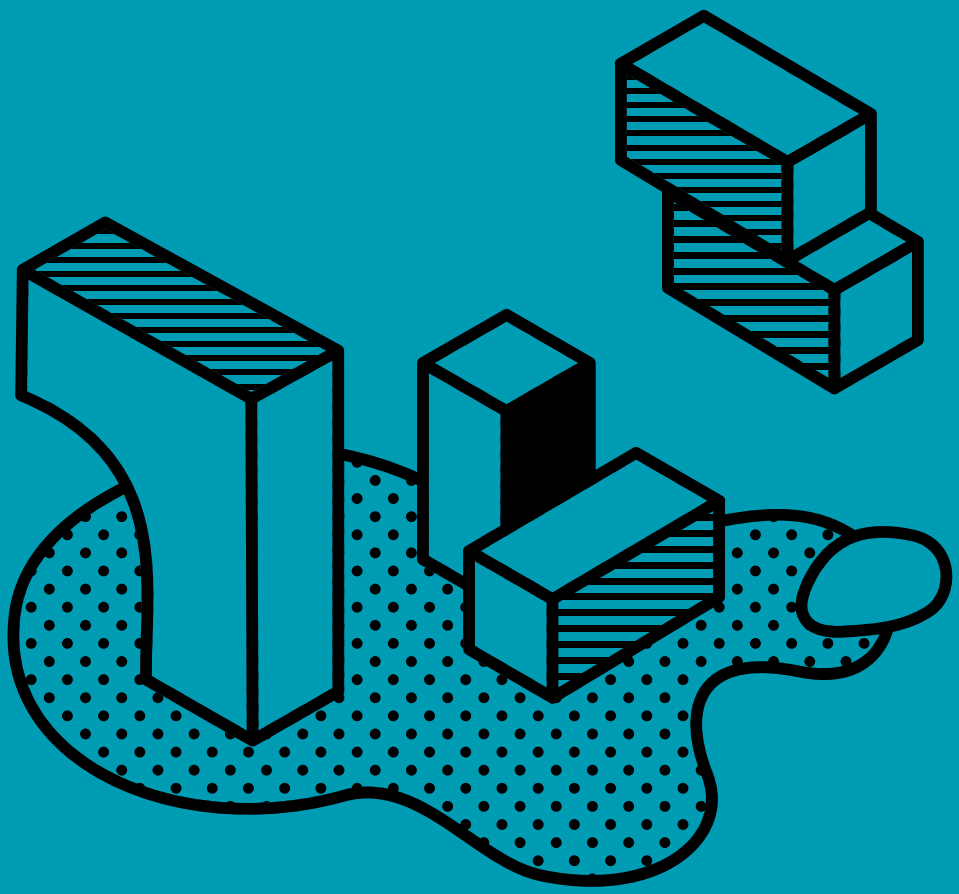
Designing Brussels Ecosystems

Metrolab Brussels MasterClass II



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Corentin Sanchez Trenado
(eds)

Metrolab series

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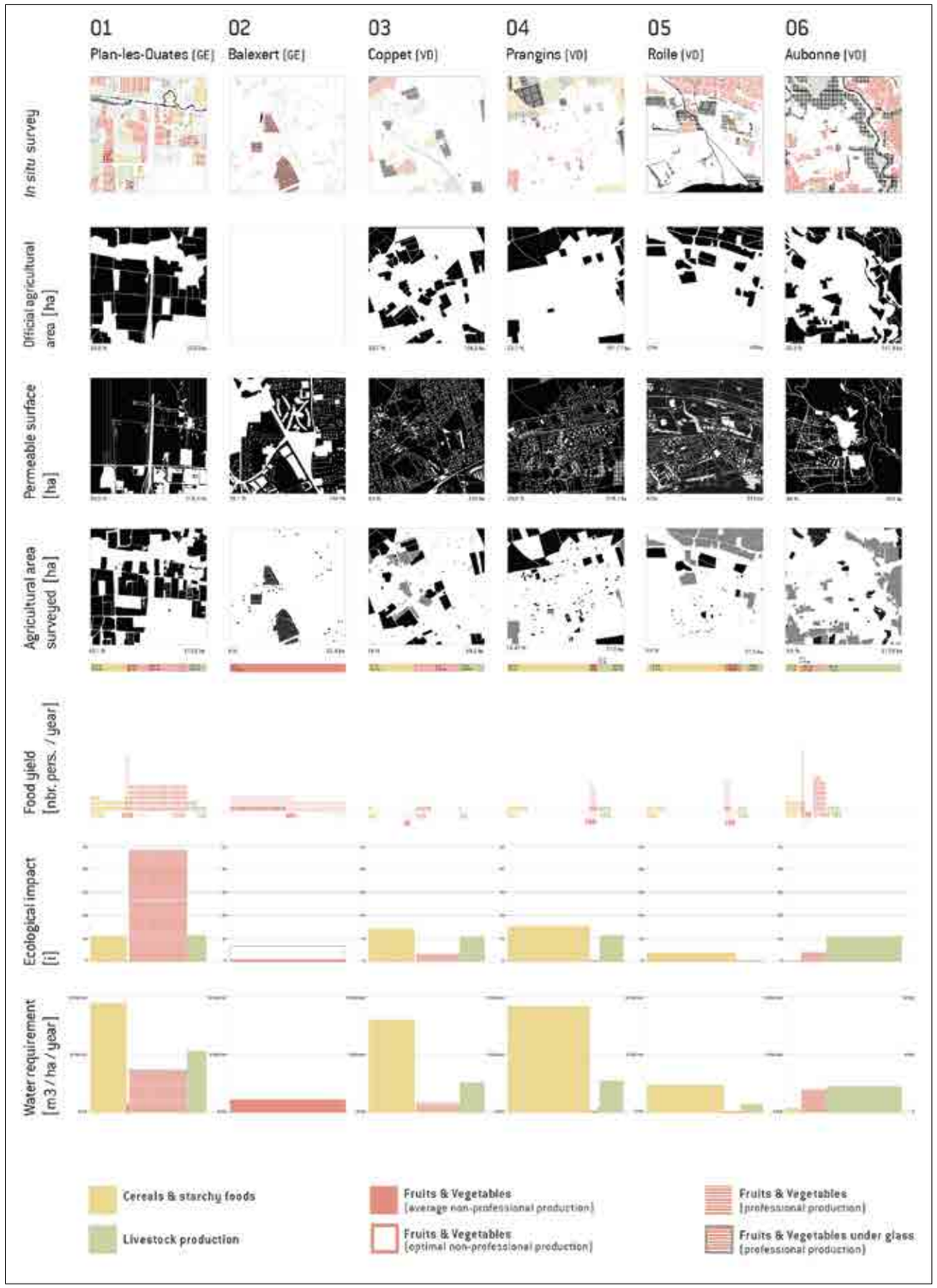

Brussels ecosystems in space

Solving the paradox between non-spatial ecosystem and design distance criterion

Elena Cogato Lanza

Some transdisciplinary ‘metropolitan laboratories’ created to improve the global transition by renewing concepts, analytical tools and project approaches have demonstrated a certain vivacity and capacity for experimentation. Metrolab in Brussels, for example, has joined the ‘Eco-Century Project’ programme launched by the Braillard Foundation in Geneva to develop a synergy and confrontation on the subject[1]; the interdisciplinary Habitat Research Centre of the EPFL and the Urban School of Lyon[2] pursue scientific objectives of fundamental and general importance by cultivating a privileged relationship with the urban regions where they are based.

All these initiatives share the urgency of a systemic understanding of urban phenomena and use the category of ‘metropolis’ less to designate a hierarchical role in the territory (from this point of view, the function of the ‘capital’ of Brussels is an exception in the face of Lyon, Geneva or the Alpine and Lake Geneva metropolis), but more to stress the various and transversal components and processes of the urban realm that are indissoluble from the present global socio-environmental conditions. It is about the ‘urban of the Anthropocene era’, as the distinctive formula of the Urban School of Lyon expresses it so well.

The reflections I will develop here in relation to the MasterClass ‘Designing Brussels Ecosystems’ are related to this intellectual context, which is marked, among other things, by a desire to renew both an understanding of the urban environment and our intervention tools in light of the notion of an ecosystem and its theoretical and practical applications. Some research projects led in Brussels resonate directly with the observations and questions we have developed on the urban region between Geneva and Lausanne[3], which we will mention here to cultivate some more general remarks. Was it not, in fact, in very direct bilateral exchanges, putting in resonance and in comparison with singular contexts, that

1 Namely, by the two editions of the seminar ‘Dessiner la Transition’ (spring 2018 and spring 2019) see https://www.braillard.ch/fr/eco-century

2 More information at https://www.epfl.ch/research/domains/habitat/ and https://ecoleurbainedelyon.universite-lyon.fr.

3 See our current research ‘Metropolitan Agriculture’, developed in the framework of the Laboratory of Urbanism at EPFL: https://www.epfl.ch/labs/lab-u/agriculture-metropolitaine/.

urban planning became a discipline? (Sutcliffe, 1981)[4] Would it not be topical again to conduct these exchanges in the spirit of empirical and experimental revision of our tools, taking some risks of mismatching with our own normative or legal frameworks? [5]

The variety of graphic languages used in the Brussels workshop is symptomatic of both a wealth of analytical and perspective tools, as well as a more fundamental problematic node. Indeed, since the objective is to design — in terms of urban planning projects — an ecosystem, two distinct traditions of visual representation clash. The visual representation of an ecosystem is usually done by means of a diagram, in continuity with the tradition of representing a system and its structure — the prefix 'eco' expressing the criterion of vital exchange that characterises the homogeneity of the system (and which therefore sets, in the negative, its limits). The urban planning project is part of a tradition of representation by the plan homologous to the Euclidean map, as well as by other representation techniques, such as the cross-section or the perspective view, whose accuracy is also established by respecting the Euclidean coordinates of the map.

If the diagram refers, in a synthetic way, to the spatialisation of exchanges, it certainly does not do so by homology with the Euclidean representation; above all, it is totally devoid of a spatial unit of measurement because the criterion of distance is not relevant. The length of the arrows in the diagram does not reflect the space in any way, either in its distance or in its material character.

In visual representations that are homologous to the map, on the other hand, space is given as an invariant: its coordinates, relative positions and distances are objective and stable, which ensures the very conditions of readability and implementation of the project. In summary: in the ecosystem diagram, distance does not matter; in the map, it is fundamental.

How can one deal with these two different relationships to spatial coordinates and distance criteria? In view of their irreducibility, we will never be able to claim a linear transition from one mode of representation to another — would it be desirable, moreover? On the other hand, when designing an ecosystem, it is inevitable to confront this fundamental paradox and take a stand. This is what the four works carried out in the MasterClass do, each one resolving the paradox in a different way by following three fundamental strategies — which are also three 'tricks', with serious consequences. The first consists in neutralising distance, and thus removing its relevance as a criterion; the second, on the other hand, creates the conditions for inscribing all exchanges in space, until space represents exchange by metonymy; the third identifies a third dimension, distinct from the two dimensions of space and ecosystem exchange, which works as an edge, intermediation and negotiation dimension. My remarks will be voluntarily provocative, and this is for a heuristic purpose.

4 According to the always valid interpretation by Anthony Sutcliffe.

5 On the opportunity to continue the comparative tradition in urbanism, see Cogato Lanza, Barcelloni Corte and Graezer-Bideaux (2019).

Without distance

Cancelling the distance factor to allow a linear translation of the ecosystem into the project and vice versa is tantamount to creating the conditions for which all ecosystem exchanges take place in a space within which the greatest traversable distance is equal to zero: in other words, to creating the conditions by which distance does not matter. This seems to be, at best, a very sophisticated or, at worst, absurd reasoning, but in fact it is much more banal than we think. To favour the neighbourhood scale over all the others, to give the neighbourhood the reference scale value a priori, does it not amount to establishing a spatial extent within which distances do not count because they do not make a difference? Building the ecosystem design at the neighbourhood level avoids directly addressing the metropolitan ecosystem; starting with the neighbourhood provides an uncomplex ecosystem structure and creates the illusion that the transition to the metropolitan scale is to face a higher degree of complexity. Do the sociological arguments put forward to defend the relevance of one scale of proximity over all the others not tend to support a search for ease? In the same vein, are the strategies advocating acupuncture — through specific actions, apparently of limited scope, to achieve a more fundamental overall transformation — not also part of the desire to make an elementary reduction in the terms of the problem? Doesn't the degree of effectiveness of an urban planning approach by acupuncture always remain subject to a halo of mystery or the unfathomable? Obviously, this approach must overshadow the space of the actors, their different trajectories of action and distinction within multiple networks that only partially coincide to a neighbourhood scale or to an acupuncture area.

In the 'Circularity' group's proposal, each hotspot is captured in its components and processes; its relationship to the metropolitan level is dealt with by 'de-zooming' the same elements (i.e. with broadening the framework) than by taking into account the synergies between hubs or the understanding of components, resources or processes that are not already included in the hotspot. In this de-zooming movement, it is objectively difficult not to mobilise the figure of the 'mosaic' to grasp the relations between the hotspots and the metropolis — nor the figure of the 'island', by giving in to the temptation of the closed cycle and its intrinsic facility. The closed cycle is reassuring for the project (it identifies and limits its actors) and carries with it a strong conservative implication (the maintenance of a status quo, including that of the cycle itself). It is clear that, today, we are widely willing to hear a discourse of isolation and conservation: sensitive to criticism of linear logic (including that of the concepts of development or progress) and interested in designing a project that captures resources without consuming them or compromising their renewal cycles.

However, the fact of engaging in a project at the neighbourhood level can be limiting on another level: that of the imagination of the cycles of matter. The material moves, it disintegrates, but as long as we take for granted that we build through demolition, that we will not build far from where we demolish and, above all, that demolished buildings will lead to new buildings built or repaired, we will have no reason to move our focus, that is, to leave the hotspot to look elsewhere. On the other hand, based on large-scale construction-demolition themes, doesn't

the geography of hotspots deserve to be reconsidered? If we consider that from the demolition of buildings we can build infrastructures — aqueducts, banks, walls, viaducts, etc. — what geography of the circular economy of matter could we sketch out? The history of urban matter, whether mineral or organic, should help us. How were circular economies of matter organised? Did Hausmann's Paris come from its material substrate, and how? What were the routes taken by the stones from the underground quarries, the water that irrigated the parks and was distributed in the apartments, the plants grown in the greenhouses and nurseries? The circulation of material from building to building tends to simplify the identification of ecosystem actors. What about an ecosystem that organises exchanges between landowners, construction companies, cooperative societies or other partnerships that rent or occupy the built property, with industrial services or other monopolies? Or, better still, what economic and governance approaches make it possible to build an ecosystem based on this variety of public, private and associative actors? If the material is sought from the re-use that is envisaged, and not from the pure availability of the material itself, will the most appropriate principles and authority of governance not be different?

Exchanges shift into spatial patterns

The opposite attitude is based on the belief that the ecosystem is subject to spatial conditioning. Space is seen as an actor, an agent that conditions exchanges because it facilitates, encourages, limits, resists or prevents them. On the basis of this premise, we can design the ecosystem as equivalent to the spatialisation system of all exchanges: its existence is displayed, by metonymy, by the spatial framework that hosts it; this spatial framework can be objectively described and represented. The ecosystem does not only exist through spatial connectivity; moreover, it is expected to depend entirely on it. In this case too, the apparent abstraction of reasoning is quickly overtaken by the evidence of the associated design approaches. The fortune of the concept of *porosity*, referred to the most disparate spatial scales and all types of flows, can be understood as a desire for infrastructure exchanges by the design of the space. The book by Bernardo Secchi and Paola Viganò (2011), which sets out a theory of the *Porous City*, demonstrates both the immense openness of the concept and the rational precision required by the project — assuming as an objective to design the ecosystem, the pursuit of porosity requires an exact and fine-tuned drawing of the exchange space.

In this approach of observing and designing space as infrastructure, beyond the infinite categories that detail its components (types of roads, planted spaces, watercourses, bridges, gantries, doors and windows, squares, courts, parking, stairs, corridors, galleries, tunnels, etc.), we see a profound resonance with Ildefonso Cerda's theoretical concepts. The concept of porosity is at the same level as that of movement and rest, with the consequent distinction between the urban forms of the first and the second. Through this return to the archaeology of urban planning, we identify here two milestones — *The Theory of Urbanization* (Cerdà, 2018) and *The Porous City* (Secchi and Viganò, 2011) — of an approach attentive to connectivity as the fundamental dimension of the city; an essentially progressive approach, privileging structures, grids and patterns. To this tradition,

we easily associate the 'Urban Agriculture COOP's on a Shared Landscape' proposal. The attention for patterns, the green network, the representation of situations by their association with a mobility infrastructure, as well as the sketching of networks from the narrative of individuals, lead to a project that follows an approach opposite to the one that seeks cycles or loops. The blue and green corridors define a metropolitan infrastructure, while each situation, hotspot or place, is represented as a crossroads.

These patterns allow actors to cooperate — space, in its geometry and matter, being confirmed here as 'actor' of the ecosystem. The framework it offers — and the framework that porosity as a reference principle of this approach aims to guarantee — is a framework of freedom. In the sense that the framework serves to allow, and not to determine exclusively: the infrastructure is such in the fundamental sense of the term, avoiding any intention of specialisation. The 'way' is the space of movement: in the last images showing the future landscape of urban agriculture COOPs, the cart loaded with potatoes could also lead, at the same time or alternately, the elderly to the care centre or the children to school. The roads, which are from now on intended for no-automobile traffic, will not work as longer specialised and waterproof pipes. Finally, as soon as the paradox between the non-spatial structure of the ecosystem and the criterion of distance is resolved by representing the ecosystem through the infrastructure that allows its exchanges, the pattern is the privileged if not exclusive object of the project.

Third measures

A third trick is to articulate the two irreducible dimensions of the space project and the eco-systemic structure through a third dimension, distinct from both. The term 'dimension' is deliberately chosen, referring to its synonym, in the vocabulary of physics, of 'value'. A specific unit of measurement corresponds to each dimension, each value: the metric unit of measurement for space is distinct from the one used, for instance, to quantify an ecosystem exchange (related to quantity of matter exchanges, its change in status, and the temporal delta, for instance). The introduction of a third quantity is used to establish a quantitative transition between the first two dimensions. An extremely clear example is the work 'Interweaving work and life. A project of doors'. The title itself is indicative of an approach that focuses on transitions, thresholds, shifts and equilibrium conditions, including a non-static but evolving equilibrium that is built over time. Time represents the third dimension proposed in this work. The representation of the occupation of the site by the actors and the activities over time is used to visualise the exchanges, meetings and constituent avoidances of the three ecosystems (current and potential) that can be associated with the authorities of Recyclart, LaVallée and Zinneke. The search for a third unit of measurement — the hour or the day — is all the more significant, as we are faced with instability in the area (abandonment of the headquarters and new installation for Recyclart; annual reconfiguration of the geography of Zinneke; opening onto spatial typologies not pre-established according to the needs of the workshops in LaVallée). The use of rhythm in Density: Rhythms in-between the City. Occupation of Time is of the same nature, whereas the confrontation between strategies (opportunism

and activism), while being just sketched, is important because it implies that the ecosystem is, within it, plural. In these two works, designing an ecosystem means describing the movements and transfers of people or materials directly in time and indirectly in space; identifying before/after sequences; representing the stakeholders' time and objectives. In the first work, the operation of 'verbing the actions — transaction, transmission and conflict — also reveals an emphasis on transitions and translation as a key aspect of the process. The function of time as a translation dimension in both works is consistent with the project's use of the narrative register: this identifies a third form of enunciation, the narrative, different from those specific to the diagram or the Euclidean map, which we introduced at the beginning of our essay and both of which are visual language.

Positions

The three strategies for resolving the paradox between the spatial dimension of design and the non-spatial dimension of the ecosystem cannot be exhaustive. However, they are sufficiently distinct to serve as the initial coordinates for a mapping of design positions on a metropolitan ecosystem. There would be a risk of caricature if the characters were too extreme, so that the temptation to associate the first strategy with the theme of the limit, the second one with that of the grid and the third one with the threshold is only mentioned here with the aim of guaranteeing maximum clarity.

The three strategies as coordinates could prove very useful in structuring exchanges between metropolitan laboratories, including those mentioned in the introduction. Our "Metropolitan Agriculture" research project, for example, can easily fit into the third strategy. Its objective is to develop an analytical and prospective tool capable of considering synergies between modes of occupation and land use that are rigidly distinct by the legal and normative framework in force in Switzerland: on the one hand, urban areas and, on the other hand, agricultural areas. These two planning domains are now in competition because, as they are in need of expansion, they are governed in such a way that an increase in the surface area of one is gained at the expense of the other, and this occurs in configurations that tend to eliminate the situations of entanglement. By taking the opposite approach to this struggle between land use efficiency in terms of building density and agricultural production efficiency, we are putting in place a complex description with many intermediate parameters — such as permeable surface, water requirement, ecological impact, caloric efficiency, etc. — that make it possible to consider multiple scenarios of co-existence alternatives to the mainstream and to submit them to debate and negotiation.

In principle, the design domain is not limited to scenarios, but includes the sketching of various contents and forms of occupation, in tension with conventional categories (agricultural use can be declined according to a variety of techniques not currently provided for by law, just as built density is declined itself in plural forms). Our quest for intermediate dimensions draws its inspiration directly from the Wahlen Plan for Food Autonomy of the 1940s (Cogato Lanza and Villaret, 2019), an extraordinary experience of land planning at the national level where resources and forms of use were structured into a system thanks to the adoption of the calorie as a unit of measurement capable of relating them all from a quantitative point of view: the ecosystem approach was possible in consideration of animal yield either as food or traction force; the yield of a plot was evaluated according to the type of crop, and considering it in proportion to its food yield, the need for manpower, for fuel or for fertiliser; the overall food yield according both to diets and the recycling of waste from meal preparation, etc.

If we insist on the inspiration that comes to us from a planning process led by agronomic competence, it serves us to address a final implication of the three strategies, relating to the status of design competence. The third dimension strategy is the one that, more than the other two, exposes design competence to strong hybridisation and non-exclusive control by architects and urban planners. On the other hand, the second strategy — the eco-systemic pattern project — implies a strong proposal of the architectural designer's competence, while the first strategy is not ready to give up this exclusive, but in a more defensive, posture. That in the ambition to design the metropolitan ecosystem, there is the risk — and the opportunity — of exposing oneself to a profound revolution in the roles and prerogatives of design, scientific, technical and ordinary knowledge, it is still an urgent subject of debate, right at the heart of metropolitan laboratories.

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