Preamble to the Living City

Why is it important to talk about the «living city» nowadays?
History has shown that, depending on the model used to make the city, it is possible to produce a living city or an inert city; a city that connects or a city that fractures; an inclusive city that brings together all generations and social classes, or a city that produces exclusion and isolation.

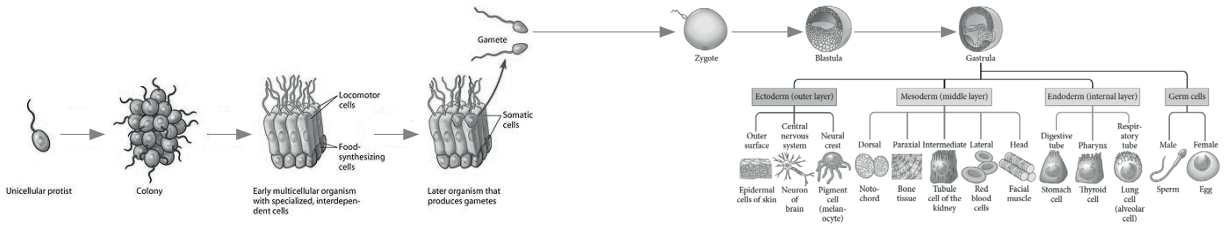
The traditional city, a city without a model
The constituted traditional city is linked to the territory by its positioning at points of connection: near waters and rivers, protected by hills or mountains, and at the crossroads of roads in order to promote trade and exchange. Thanks to open land on the periphery, the traditional city is productive and provides for its resource needs. Its unified urban fabric allows for the inclusion of all social classes and the city is organized around the pedestrian.

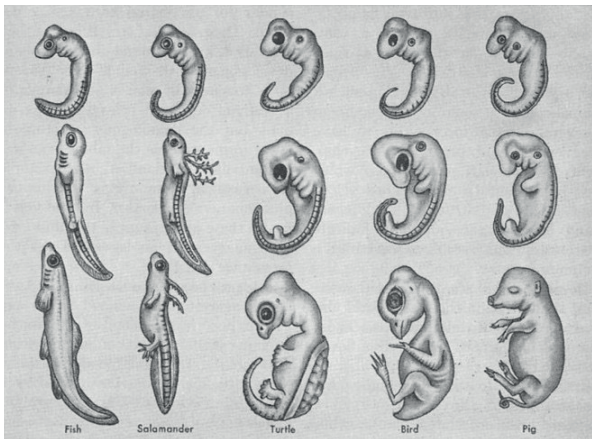
The industrial city, a functional city inspired by the machine
The organization of mobility in the industrial city essentially around the car leads to a separation of flows and a multiplication of infrastructures. These infrastructures create lasting ruptures between the city and the territory. Also, soils are made impermeable and unproductive, a phenomenon accentuated at the scale of housing by the construction of underground parking lots. At the level of the production process, the industrial city is thought of through a monodisciplinary planning, where the themes are approached separately. This is accompanied by a separation of the city's functions through a zoning logic. If we relate this model of the city to the problems posed by the «Living City» theme of Europan 16, we can wonder whether the industrial city is not the antithesis of the living city, an inert city.

The city of tomorrow, a natural and inclusive city, inspired by the living
If the inert city is organized around the machine, we decided to take the opposite approach and analyze what naturally comes into motion: the living organism.
To do this, we compared the evolution of the Geyisried district to the evolution of a living organism. By observing what is already there, we tried to identify characteristics of the Geyisried district that are analogous to the characteristics of a living organism. The aim is to develop a project based on the observation of the city as a living organism.

The living, from the unicellular organism to the evolved multicellular organism

In order for there to be life, there must first of all be favorable environmental conditions. Oxygen, water, sunlight and minerals are the conditions that allowed the first living organisms to appear, in the form of unicellular organisms (bacteria, viruses, algae). To ensure their survival and to evolve in an environment, certain unicellular organisms group together in colonies of the same species, to be able to evolve in their environment, while keeping an independent functioning. Some colonies have evolved into organisms comprising several cells, but each of which is specialized and interdependent on the other cells, in order to be able to move to acquire resources and transform them. This is the birth of the multicellular organism.
To be alive, an organism needs to have a favorable environment to survive, to feed itself, to develop according to a certain organization and to reproduce. This is how cells specialize in reproduction, which guarantees the





Comparaison d'embyons de différents animaux par le naturaliste Ernst Haeckel, in *Generelle Morphologie der Organismen*, 1866.

functioning of the species. This structure of the multicellular organism, made of specialized and interdependent cells, can be seen at the very stage of reproduction and development of the embryo of a new living organism: the fertilized egg multiplies into a multitude of stem cells, which at gastrulation specialize into different types of cells (example here of specialized cells present in all animals). By observing the embryos of different animals, the base of the specialized cells manifests itself under a similar morphology, to take different forms according to the species and its evolution towards its environment. This is how we can read in living organisms a similar structuring, manifested in forms specifically adapted to the environment.

« A living organism is a complex, organized living system. It is expressed by the interdependence between a structure (for example a skeleton), vital functions, and a belonging to a milieu, in which it draws the necessary resources for its subsistence. »

Intervening on the city by considering it as a living organism implies observing its urban structure as one observes the functioning of an organism, in order to understand its structuring and to respond specifically to its evolutionary challenges in its environment. The intervention involves 3 major steps: Observing / Analyzing / Completing.
Observing includes documenting the history of the neighborhood, understanding its identity, identifying its latent resources
Analyzing includes identifying the qualities and potentials, as well as the dysfunctions, in relation to the observations made previously
Complementing by working with the existing, in order to structure the existing, to fluidify the connections between the different functions, to activate the latent resources, to palliate the identified dysfunctions, and to end up with a figure on which new vital functions can be hung.

The skeleton
In a living organism, the skeleton is the rigid framework that supports the muscles and organs. The skeleton is thus the basic element thanks to which the vital functions are organized. In the Geyisried neighborhood, we observed the existing structure to determine what the skeleton of the neighborhood is made of.
Through the geomorphological analysis of the Geyisried site, we can observe that the boulevard of the Orpond road constitutes the backbone of the neighborhood. It manages the rapid circulation between the Geyisried neighborhood and the city of Biel and between the city and its territory. Its status as the future backbone of the neighborhood is demonstrated as early as 1918, when the Mett>Meinisberg railroad line was built. The head of the district is built around the Orpond square. It is the link between the city center of Mett and the neighborhood and represents the entrance to Geyisried from the city. The tail is formed around the business park, the end of the Geyisried neighborhood. The legs, consisting of the structuring public buildings, are located at the ends of the neighborhood.

In order to respond to the site's identity issues and to create a connection between the public buildings and structuring green spaces, we propose to complete the skeleton with a unifying element: an exoskeleton taking the form of a ring.

An exoskeleton in the living world is an external anatomical feature that supports and protects an animal. In the case of the Geyisried neighborhood, the ring forms a complementary skeleton to the boulevard, making it possible to complete the urban scheme of the fingerplan city with an additional scheme of the city structured around polarities. The ring consists of a pair of pedestrian and bicycle paths and a strip of green spaces and public buildings. The ring is designed to be inclusive, so that no resident is left out of the connection it offers between the different entities of the neighborhood. It is intended to be a place of exchange, of living together and of appropriation for the inhabitants of Geyisried.
The backbone of the neighborhood, the Orpond road, is currently a source of noise pollution for the neighborhood. In order to alleviate this problem, we propose to give a more urban character to the boulevard by changing its profile. The new profile has a continuous built-up frontage to the north, and a development and extension of the ground floor with local services to the south. The central part of the boulevard, from the new belvedere parking lot to Place d'Orpond, is reduced to 30km/h. This measure allows for regular crossings of Orpond Road for residents, including 2 major crossings at the level of the meeting of the ring road and the boulevard, and to serve the neighborhood parking garage with direct access from the boulevard.

The city's vital functions
The city's vital functions are the equivalent of the vital organs of a living organism. They are essential to the life of the neighborhood. They concentrate and organize the main uses in the city. The vital functions are intended to meet the needs of the different age groups of the inhabitants: babies, children, adolescents, youth, adults, seniors and the elderly.
Vital functions are divided into different categories in the neighborhood. Spaces for resourcing include green spaces, notably the forests and the Mâche marsh biotope, all the allotments on the edge of the neighborhood and places of worship. Spaces for innovation, creation and personal development are spread throughout the neighborhood in workshops, coworking spaces and sports fields. Spaces for sociability are structured around the developments around Orpond Road, primarily on Orpond Platz, and then by the neighborhood services along the boulevard. The spaces for community are concentrated in the courtyards of the collective housing. The spaces for transmission consist of the elementary school, the nursery and the Battenberg training center.

The milieu
As it stands, the Geyisried neighborhood could be compared to a fetus in its last stage of embryogenesis, before it «comes into the world». Its gestation begins in a marshy milieu, a fertile land between the Jura Mountains in the west, the Swiss Plateau in the northwest and Lake Biel in the south. The milieu is the part of the world in which a living organism is in contact. The milieu determines the morphological reactions and adaptations of the organism, and in return is modified and transformed. The city and agriculture, like twin sisters, developed in the Mett Marshes until they were separated by the arrival of the railroads in the 19th century. The city then took the path of metropolization through this transcantonal scale infrastructure, and continued to grow at the expense of farmland, bringing in resources from afar. By pushing its resource production to the periphery and relocating it, the city continued its gestation by gradually disconnecting itself from its immediate environment.
With the establishment of the ring and the completion of the skeleton, the Geyisried neighborhood would complete its gestation. From then on, the neighborhood would evolve in an eminently contextual way, and would form a new milieu through the synergy with the amenities of its local territory: The ring would connect, through a figure clearly identifiable by its form, its materiality and its accessibility, large axes radiating towards different resources that are either active or still latent. These great axes would be as many streams flowing in both directions between a great diversity of environments: from the biotope of the Mett marsh, the allotment gardens, the equestrian center, the natural monument of Heidenstein, etc... to the ring, and from the ring to these different environments.
The milieu of Geyisried and the surrounding environments could then reciprocally take advantage of their specificity, being able to give place to a city in movement, place of programmatic hybridizations, born from the meeting between several imaginaries.

«A living organism is characterized by its capacity for self-regulation when the conditions of the milieu vary. This ability allows cells to survive.»

Self-regulation, thinking the intervention process in the Geyisried neighborhood
Self-regulation in a living organism is the ability to keep the organism alive by modulating its vital functions according to its internal evolution and that of its milieu. Applied to the city, self-regulation presupposes that the city must be able to evolve in its internal functions and in relation to its territory, while maintaining a state of equilibrium. Intervening in the Geyisried neighborhood implies the development of a project process capable of maintaining this balance. Thanks to the principle of self-regulation, the projected process is phased, involving a process governed by the city in parallel with a process driven by the inhabitants. Our proposal imagines the process as follows:

Phase 1
Quick win
+ 1 an, City of Biel

Implementation of the ring and the crosswalks on the boulevard

Phase 2.a
Concertation | Inhabitant participation
+ 5-7 years, cooperatives and residents

Appropriation of structuring green spaces by residents' initiatives
Resident concertation lot by lot

Phase 3.a
Application of the guide plan
+ 10-15 years, coops and residents

Mutation des lots au gré des besoins des habitants et des opportunités financières

Phase 2.b
Planning | Establishment of a guide plan
+ 5-7 years, City of Biel

Establishment of new urban rules
Division of lots and densities
Definition of the new boulevard profile
Definition of the new building frontage on the boulevard

Phase 3.b
Application of the guide plan
+ 10-15 years, City of Biel

Launching of procedures for the public interest lots (MEP, competitions, ...)

The cells
The cells define the various ways of living in the neighborhood, according to their positions of adhesion to the new skeleton. The typologies of the dwellings in the district are divided into 4 groups: along the boulevard, people live in a collective manner around a common courtyard. Around the Place d'Orpond, people live in density, close to shops and services. Along Rue du Midi, people live for the unobstructed view of the Jura; and on the outskirts of the ring road, people live in a more private way in the calm of the vegetable gardens. Whatever the needs, there is room for every generation in the neighborhood.
We assume that it is the urban and landscape qualities of the immediate environment that define the ways of living in the housing typologies and not the reverse.
The diversification of the ways of living takes place most clearly along the boulevard: the parallel bars are assembled two by two by a building housing the «common areas»: workshops, coworking spaces, bicycle room and common terrace. They thus form a «U» shape with a central courtyard for common use. In the existing buildings, which have been made accessible to people with reduced mobility, small apartments are located alongside duplexes and shared apartments.