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Unfolding Wasteland

A Thick Mapping Approach to the Transformation of Charleroi's Industrial Landscape

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DOI
10.11116/9789461662835

Publication date
2019

Document Version
Final published version

Published in
Mapping Landscapes in Transformation

Citation (APA)
Furlan, C. (2019). Unfolding Wasteland: A Thick Mapping Approach to the Transformation of Charleroi's Industrial Landscape. In T. Coomans, B. Cattoor, & K. De Jonge (Eds.), *Mapping Landscapes in Transformation : Multidisciplinary Methods for Historical Analysis* (pp. 131-148). Leuven University Press. https://doi.org/10.11116/9789461662835

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Mapping Landscapes in Transformation

Multidisciplinary Methods for Historical Analysis

Edited by
Thomas Coomans, Bieke Cattoor, and Krista De Jonge

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Thomas Coomans, Bieke Cattoor & Krista De Jonge

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ISBN 978 94 5867 173 1 (Paperback)
ISBN 978 94 6166 283 5 (ePDF)
https://doi.org/10.11116/9789461662835



Leuven University Press

5.
Unfolding Wasteland

A Thick Mapping Approach to the Transformation of Charleroi's Industrial Landscape

Cecilia Furlan (Delft University of Technology / University of Leuven)

> 'The land, so heavily charged with traces and with past readings, seems very similar to a palimpsest' (Corboz 1985: 190).

Any territory is the result of multiple and simultaneous processes; some are taking place spontaneously, others as the direct result of human interventions. (Secchi 1990; Secchi and Viganò 2009) For urbanists, a territory is a constructed physical and mental entity, where several socio-economic and cultural processes generated a juxtaposition of urban elements that at first sight seem to lack any coherence (De Meulder 2008). Nevertheless, a closer look allows an understanding into the ordering logics that determine through time the continuous production and reproduction of space (Harvey 2001). These logics are embodied in the territory itself, making it comparable to a 'palimpsest', in which the traces of recent and ancient modifications 'lie' (Corboz 1985: 190). As Vittoria Di Palma suggests, each action on the territory, either good or bad, leaves traces and 'we cannot wish them away' (Di Palma 2014: 01).

Wasteland, in the form of abandoned built and un-built spaces, can also be seen as the remains of ancient transformation (Furlan 2017). An *a posteriori* mapping observation of these remains, as latent elements being temporarily unable to undergo transformation, allows us to understand what resists the flow of time, as well as what adapts or opposes itself to it (Viganò 2013). The presence of these traces can then be interpreted as signs of change. Consequently, mapping today's wastelands is instrumental to unfolding historical landscape in transformation throughout a thick description in time and space.



Fig. 1: Charleroi's wasteland, seen from the Terril des Piges (photo Cecilia Furlan, winter 2016).

Considering the landscape as a dynamic entity whose spatial features are *permanently emerging* and constantly undergoing modification (De Meulder 2008: 29), it is important to assume that the processes of transformation are grounded in a given space in ways that are both geographically and historically specific. Therefore, this chapter proposes to illustrate and test a thick mapping description through the case study of Charleroi's post-industrial landscape. The region of Charleroi is situated in the centre of Belgium and was historically manipulated to accommodate first coal-mine, glass and steel industries and then the wasteland generated by the shrinking industry (Fig. 1). Investigating Charleroi's wastelands and related landscape gives a unique opportunity to explore thick mapping as an approach to unfolding cultural context and meaning of historical landscape in transformation.

Mapping as way of inquiry transformations

Maps are powerful tools to inquire into the changes that have occurred through time, the traces left behind, as well as to indicate potential future changes (Secchi 1992). Based on Euclidean perspective, maps feature from above the land surface and consequently abstract the territory. Through time many mapping experiments

emerged, challenging each other on how to represent the dense surface of the Earth, with all its multiple layers and mutations. Many of these experiments, however, tend to simplify the historical territorial transformations as outcomes of linear processes of changing. This simplification often visually results in a chronological sequence of maps, frequently focused on one changing element, without featuring the relationship with the other landscape components. In order to address this challenge an interesting approach was proposed by the landscape architect, Ian McHarg (1920-2001). According to him, a systemic reading of the landscape and process of layering the different elements of the territory can reveal the logic behind how each element influences the others.

> '… historical geology, climate, physiography, the water regimen, soils, plants, animals and land use. This is the source from which the interpretation is made although the grain becomes finer. … We have explained that the place was "because" and to explain "because" we invoke not only natural evolution but cultural evolution as well. To do this we make a distinction between the "given" and the "made" forms. The former is the natural landscape identity, the latter is the accumulation of the adaptation to the given form which constitute the present city' (McHarg 1969: 106).

In distinctive ways, the impact of McHarg's approach influences several contemporary mapping and design practices, amongst others the works of Corner (1999), Mathur and Cunha (2001), Berger (2006), Shannon (2008), and Bélanger (2009). A common feature between these different mapping practices is the strategic overlaying of several layers/elements. This overlay allows the correlation among different information, revealing their interrelations, their synergy, and enabling the interpretation of the territorial body of content.

This approach, however, has some limitations. Firstly, mapping does not provide one-to-one copies of the existing situation, but requires continuous interpretation and reformulation. Secondly, by observing the territory from above and consequently abstracting it, a mapping approach often frustrates the reader. This method requires an effort from the viewer to change perspective, to understand how spaces transformed over time and how spatial relativities emerge and develop. Thirdly, the static nature of maps contrasts with the constant mutable condition of the territory. According to Cattoor and Perkins (2014) maps are visual descriptions of a present situation; they are like photographic shots of a portion of landscape surface at a precise moment in time. Therefore, how can the abstract forces that shape urban landscape be rendered artistically, spatially, and informatively in the

form of static maps? In what way can alternative visualisation provide a deeper insight capable of unfolding historical landscape transformations and revealing what conventional maps cannot reveal?

A possible answer to the question of how to represent in maps the transformations developed in time can be explored throughout a 'thick' or 'deep' mapping (Presner et al. 2014). The potentialities of mapping operations will be explored, focusing on the possibility of allowing maps to express narrative, complexity, and landscape changes in a densely descriptive thick mapping.

Mapping: a thick question

Following McHarg's approach and despite their flat nature, maps can be rather thick (Favaro, 2017). Thick maps or thick mapping is a well-known idea derived from the approach developed by the anthropologist Clifford J. Geertz (1926-2006) to describe cultural context and human practices in space (Presner et al. 2014). Following Geertz's notion of 'thick description', thickness connotes a kind of cultural analysis of the landscape through time trained on socio-economic and cultural realities which human beings act upon (Favaro 2017).

In this chapter, we use the concept of 'thickness' as a polyvalent way of revealing, collecting, and visualising several layers of landscape environmental and socio-ocultural information and synthetising them all in a map (Presner et al. 2014). The over-imposition of several layers allows one to correlate different materials, revealing their interrelations and generating a synergic thickness of content. Going beyond the idea of objective tools of representation, maps become revelatory and productive: they bring to light the invisible potential and contradiction within a greater milieu (Corner 1999).

Like in writing, thick mapping operations entail multiple explorations such as surveying, listening to the inhabitants, discovering the past and present everyday uses of the landscape, drawing, selective tracing and re-tracing of contemporary and ancient cartographies. Systematic explorations aim to reveal what normally seems invisible in conventional topographical cartography and geographical representations, and to disclose landscape variations. Landscape variations emphasise the dynamic relationship between aesthetic experiences, the modification of the natural environment, and social practices. The work of the geographer Denis Cosgrove (1998) is exemplary. His study focuses on revealing the ideological significance of landscape, aiming to trace the relationship between visualisation of

the natural environment, the social production of space and its development along with symbolic landscape (Gandy 2016). Cosgrove's position is also confirmed by Harley's who states that maps are 'constructions of the reality (…) laden with intentions and consequences that can be studied in the societies of their time. Like books, they are the products of both individual minds and the wider cultural values, in particular societies' (Harley and Laxton 2001: 36). Thus, how to represent in a map the cultural construction of the environment in a distinctive moment in time according with specific values?

In order to answer this question, maps need to become figuratively tridimensional, generating a thickness in representation. Like the actions promoted by Patrick Geddes (1854-1932) during his territorial exploration, thickness here intends to overlap more conventional geographic information with 'lateral views'. Following the French school of geography, Geddes's survey focused on a panoramic observation of the territory, preferably from a high vantage point; on historical cartographic analyses that would recognise the territory as an element in time; and on collecting narrative of the present and ancient transformations developed by direct contact with the inhabitants (Dehaene 2002). Here historical photography, geographic and literary descriptions, classifications, narratives, and collections of design strategies are taken as lateral views complementing the landscape mapping approach (Potteiger and Purinton 1998). Together with the tracing of territorial elements, these views help us to study and to understand the relationships between the spatial dimensions of historical transformations and the mental images that society projects upon them.

The simultaneous use of lateral views to look at the territory shows an interpretation from above, but also through the eyes of those who have experienced the territory, who have studied it, maybe even from an experimental perspective (Boeri 1998). Mapping offers a way to deal with complexity, an opportunity for extracting a synthesis image from a complex interpolation of different specific knowledge coming from different fields regarding the territory. They are deep sources of landscape transformations because they embody temporal dynamics through a multiplicity of layered information, sources, and data.

Representing a historical landscape in transformation is thus a 'thick' issue because of the multiple possible ways to address it. Indeed, how this issue is originally posed is fundamental: it generates more questions and consequently more answers (Favaro 2017). Therefore, thick mapping needs to be flexible, iterative, and constantly tested by exploring different regions. To test this approach, the

following paragraphs describe a thick mapping exercise through which the historical transformations of the region of Charleroi are observed and unfolded.

A thick mapping exercise in Charleroi

Through time, the territory of Charleroi has constantly been claimed and re-claimed, spawning the ideas of exploration, occupation, and regeneration [**Map 1**]. Founded in 1666 as a strategic military place by the Spanish rulers, Charleroi became one of the cradles of the industrial revolution in Belgium (Hasquin 1971). From the end of the eighteenth century, Charleroi's landscape has been intensely manipulated to accommodate industrial activities, starting with coal mining, subsequently with steel, chemical, and glass industries and the associated urbanisation (Schaeffer 1995; Remy 1962). Growth without planning resulted in the emergence of a chaotic network of railway lines, streets, buildings, factories, and mining sites (Brüggemeier 1994). In less than a century speedy technological-industrial development and strong capital investment brought wealth to the region and generated one of the most flourishing urban/industrial landscapes in Europe (Pirsoul 1952). However, the close proximity of houses, industries, and agricultural lands led to the dispersed condition of living and working together and an excessive proliferation of rail-road infrastructures.

Although sluggish overall and without any major economic structural change, the period between the conclusion of the nineteenth century and WW2 registered the beginning of a relatively slow decline and transition. The decline was characterised by the slow shift of industrial production from the Walloon axis (Liège-Charleroi) in favour of the more central and northern parts of Belgium, and by the change in the mode of production (Vandermotten 1998: 85). The decay of the mining, glass, and steel industries radically transformed Charleroi's territory, generating sixty years of transition and leaving a legacy of different levels of wasteland (Vagman 1991). This physical legacy is a constant reminder of the several processes that Charleroi underwent, some of which are still on-going.

Mapping wasteland, therefore, is the first step to understanding this transition. Today, Charleroi counts more than 1,000 identified wasteland spaces covering a surface of approximately one fifth of the 30 x 30 kilometres of its region. The research has mapped wasteland according to the spatial typologies observed on site and with the contamination data provided by the Walloon Region and other semi-public agencies. Within Charleroi, a territorial portion of 30 x 30 kilometres

and three particular zoom-ins of 1 x 1 kilometres were simultaneously cartographically investigated (Furlan 2017).

This operation aimed to extract specific elements from the territory and isolate them from the noise background. Practically, the proposed exercise is based on the juxtaposition of the direct observations of the site, on the photo interpretation of Google Maps' aerial imagery of 2013, 2014, 2015, 2016 and on the official survey done by the Walloon Region in 2003.[1] Each wasteland, represented in white, was identified during several survey operations across the territory done by foot, bicycle, and car. The resulting landscape image is composed by a variety of macro (industrial platforms/sites, railways, spoil tips, or 'terrils', greyfields) and micro (single building, warehouses) pieces of architecture and urban structures, as well with 'vacant land' like green-field and grey-field areas which, despite their appearance, are deeply environmentally degraded. The necessity to describe the quality and the differences of wasteland is addressed by overlapping the tracing of wastelands geography with pictures of the sites. The sequence of vertical pictures corresponds to the figures identifiable following a hypothetical vertical section across the region [**Map 2** and **Map 3**].

As the series of maps shows, it is possible to identify a milieu of wasteland situations. Each situation is the result of one or more distinctive processes of urbanisation related to specific industrial production and urban development. However, grasping the multitude of processes in an objective and systematic way is challenging. Therefore, the chosen mapping operations rely on unfolding the transformations of four systems that mainly generate in time the contemporary wasteland geography, namely: infrastructures, urban tissue, productive tissue, and afforested landscape.

The unfolding operation consists of:

1. Systematic tracing procedures of each system through 1777, 1939, 1969 and 2015 [**Map 4**]. The historical cartographies are: a portion of the Ferraris map or Map of the Austrian Netherlands (1770-78), produced by Joseph de Ferraris on the scale of 1:11520; topographic maps from 1873 and 1969 conserved at the Royal Library of Belgium in Brussels and drawn on a scale of 1:20.000.

1. http://dgo4.spw.wallonie.be/DGATLP/DGATLP/Pages/DAU/Dwnld/SAEDinventaire/SAED-InventaireAnn2CHARLEROI.pdf

2. The evolution of each system is synthetised in four coloured maps, in which emerge where and how the urbanisation processes developed and how the territory changed to accommodate this transformation.
3. Along with unfolding the historical spatial urban palimpsest, these mapping exercises overlapped the analytical layer that emerged by a selective tracing operation with the series of alternative visual elements. An analysis from above indeed demands to be complemented by an observation from below where an understanding of the Charleroi territory and the transformation of its landscape can be mapped from lateral views.

These lateral views consist of: historical pictures of the industrial production, paintings of pre-mining and mining period, for example the paintings of Pierre Paulus (1881-1959), ancient texts and postcards of formers workers and inhabitants of Charleroi [**Map 5**]. These data were informally collected during several surveys across Charleroi by directly engaging with people.

The combination between the more traditional cartographic analysis and the other type of sensible representation allowed us to understand, compare, and describe ancient transformation as well as the latent capacities of the landscape.

Particular maps [**Map 1** and **Map 5**] amalgamate, as a collage (McFarlane 2011), the topographical landscape features, economic data, industrial urban transformation (highlighted in different colours), and sequences of historical greyscale pictures of Charleroi. By modifying colour hue and saturation, the juxtaposition of different elements allows us to visualise through time the complex and unplanned urbanisation and industrialisation processes described by Pirsoul (1952). The central part of the map [**Map 5**] shows how the process of urbanisation related to industries developed mainly along the Walloon Meuse-Sambre river. Since the early seventeenth century, the river Sambre has attracted the establishment of a number of activities such as quarries, mills, sawmills, and stoneware potteries. Simultaneously, the bottom series of figures describes in time the technological transformation and the enlargement of the built structures.

The mapping assemblage of these interplays allows us to associate urban processes with socio-economic information and the lifestyle of Charleroi workers. This communicates to the viewers an inside knowledge of the distinctive features of this region. Moreover, it highlights the dynamism and trans-scalarity of the industrial metamorphoses that culminated with the present wasteland landscape.

Conclusion

This chapter proposes an alternative approach — thick mapping — to tackle a crucial issue of cartographic representation: the relation between space and time. In particular, we propose to address this relationship by observing firstly the contemporary landscape, the traces of recent and ancient modification left upon it, and then go back in time to map the processes that generate these traces. Maps, however, often have the prevalent position of representing the landscape as a two-dimensional plane in a precise moment in time. Therefore, the thick mapping approach tends to move forward from this static perspective of maps.

Thick mapping transforms maps into artefacts that allow us to read territorial changes and simultaneously identify the relationship between the different landscape components. Throughout the study of Charleroi wasteland's landscape, the use of thick mapping enables us to systematise different types of materials into analytical and denotative schemas. Therefore, maps become systematic montages, where multiple and independent layers are addressing social, economic, and urban transformations, being incorporated as a 'synthetic composite'. Specifically, in the case of Charleroi, thick mapping involves collecting oral history excerpts, associating them with other media (photographic images, paintings), and aggregating lots of multi-layered stories of the industrial wastelands. Consequently, the construction of each map requires a complementary reading from above with a reading from below. The former consists in a critical use of the available information produced by cartographic techniques from aerial views, historical maps, to GIS, while the latter includes systematic surveys across the territory, construction of narratives and the practice of tracing and re-drawing spaces. The use of distinctive techniques reflects the awareness of the study on Charleroi about the different intentions and logics behind the construction of each chosen map. As Farinelli (1992, in Pellizzi 2001) maintains, the cartographic logic upon each map depends on: a) the primary goal to be achieved; b) the correspondence between 'things' and signs (conventions), c) the reduction of the complexity of the reality to a phenomenal form.

In conclusion, we can therefore maintain that mapping wasteland is both a way of reading transformations and a form of knowledge production (Viganò 2010). It is thus not simply about visualisation and representation. Moreover, unfolding wasteland and related historical process through a thick mapping aims to clarify the complexity of landscape transformations in time in relation to socio-economic processes. As André Corboz (1985) highlights, representing the territory already means mastering the same. The obtained representation is not a cast, but a construction. A thick map is firstly made to gain knowledge, and subsequently to act upon it.

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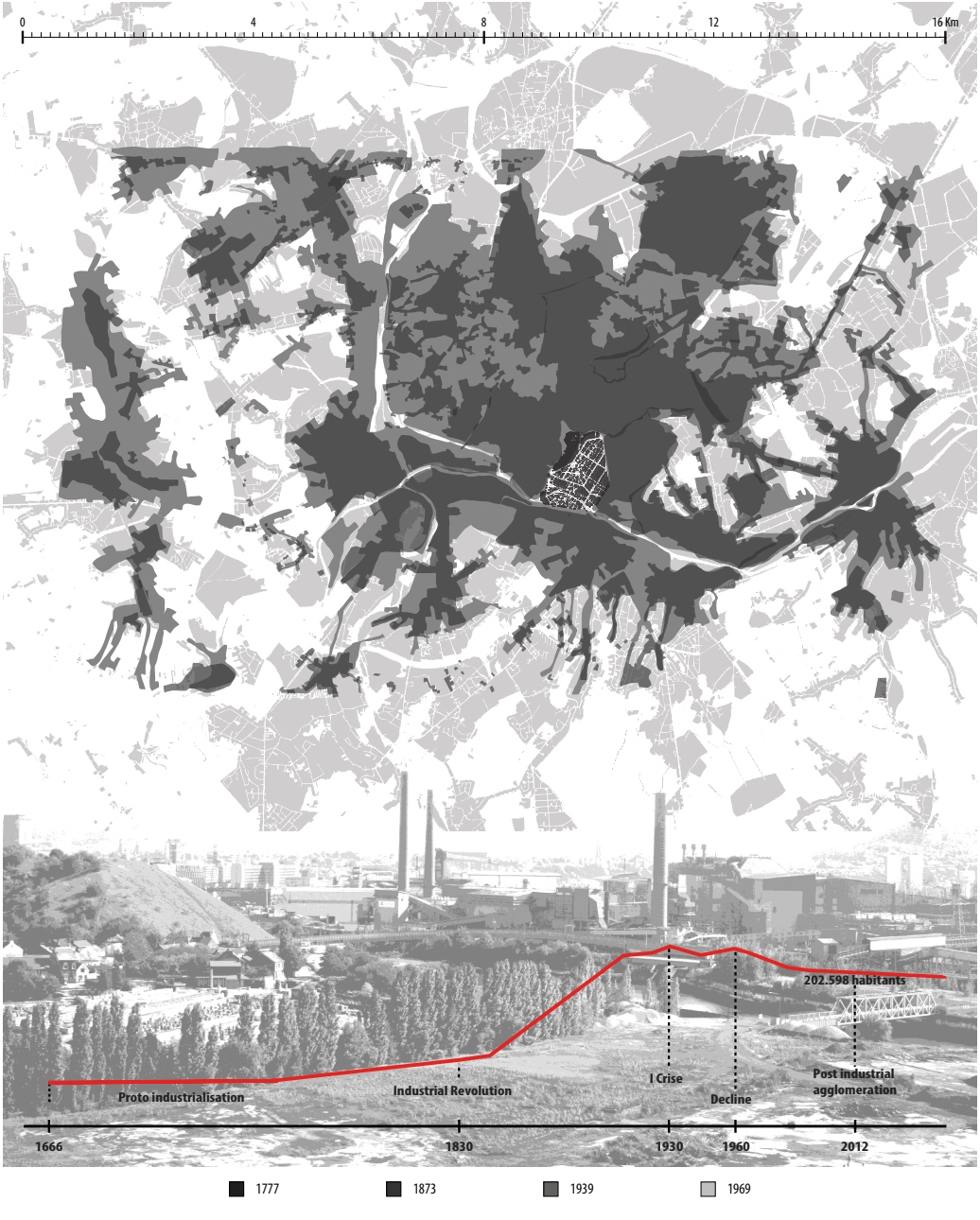
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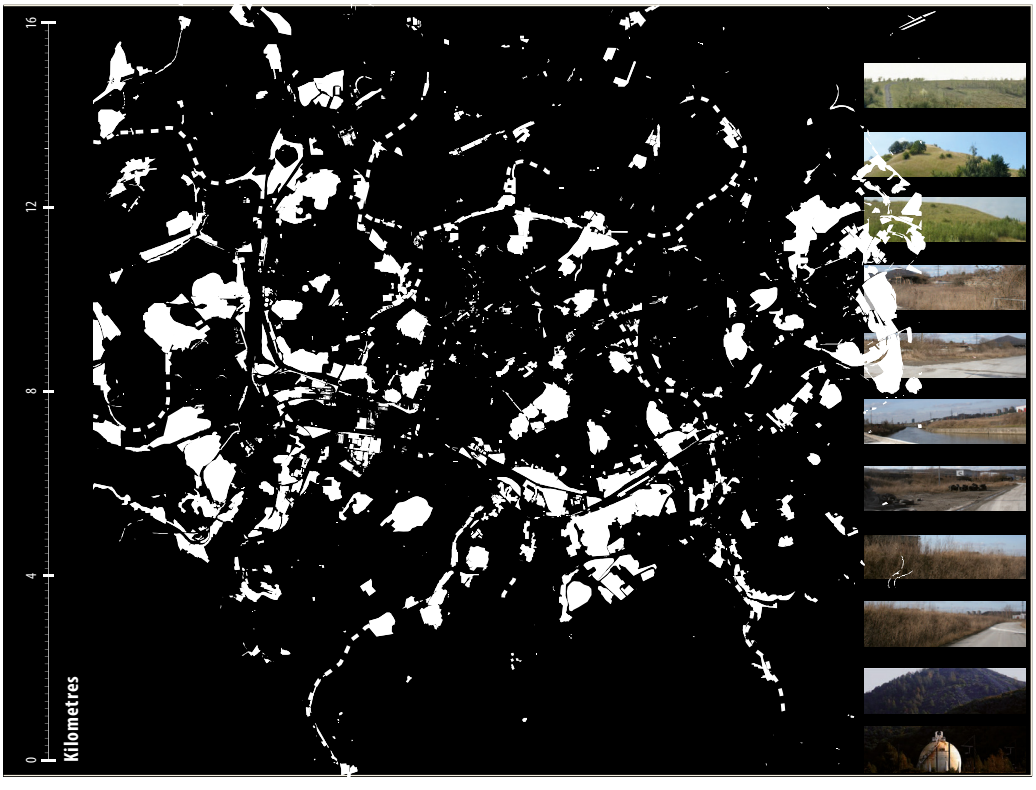
Maps

Map 1: Cecilia Furlan (2017), *Map of the Main Urbanization Phases in Relation with Several Waves of Expansion of the Urban Landscape.* [Source: Florence Vannoorbeek (2005) *Recherche en banlieue industrielle Charleroi-Nord*, KU Leuven, MAUSP, promoter Bruno De Meulder.]

Situated in the centre of Europe, along the Walloon coal '*dorsal*' and in a strategic position next to the Sambre river, the region of Charleroi is one of the symbols of the European mine industrial revolution. Following the industrial revolution from 1850, in less than 150 years the territory has passed from a small rural centre into one of the largest industrial cities in Belgium: 'Le Pays Noir'. The presence of mines, glass, and steel industries have generated an urban transformation, creating a polycentric, dispersed territory around the historical core, which is defined by a series of linear settlements along the main road and the industries.

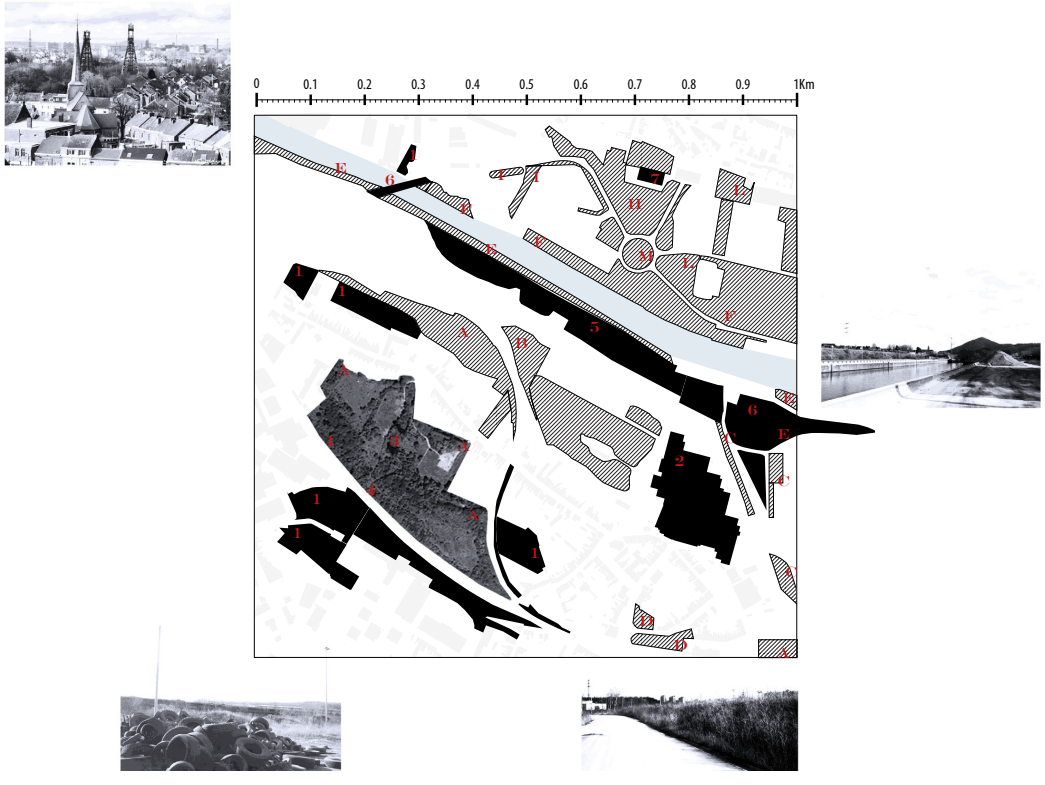


Map 1: Map of the Main Urbanization Phases in Relation with Several Waves of Expansion of the Urban Landscape.



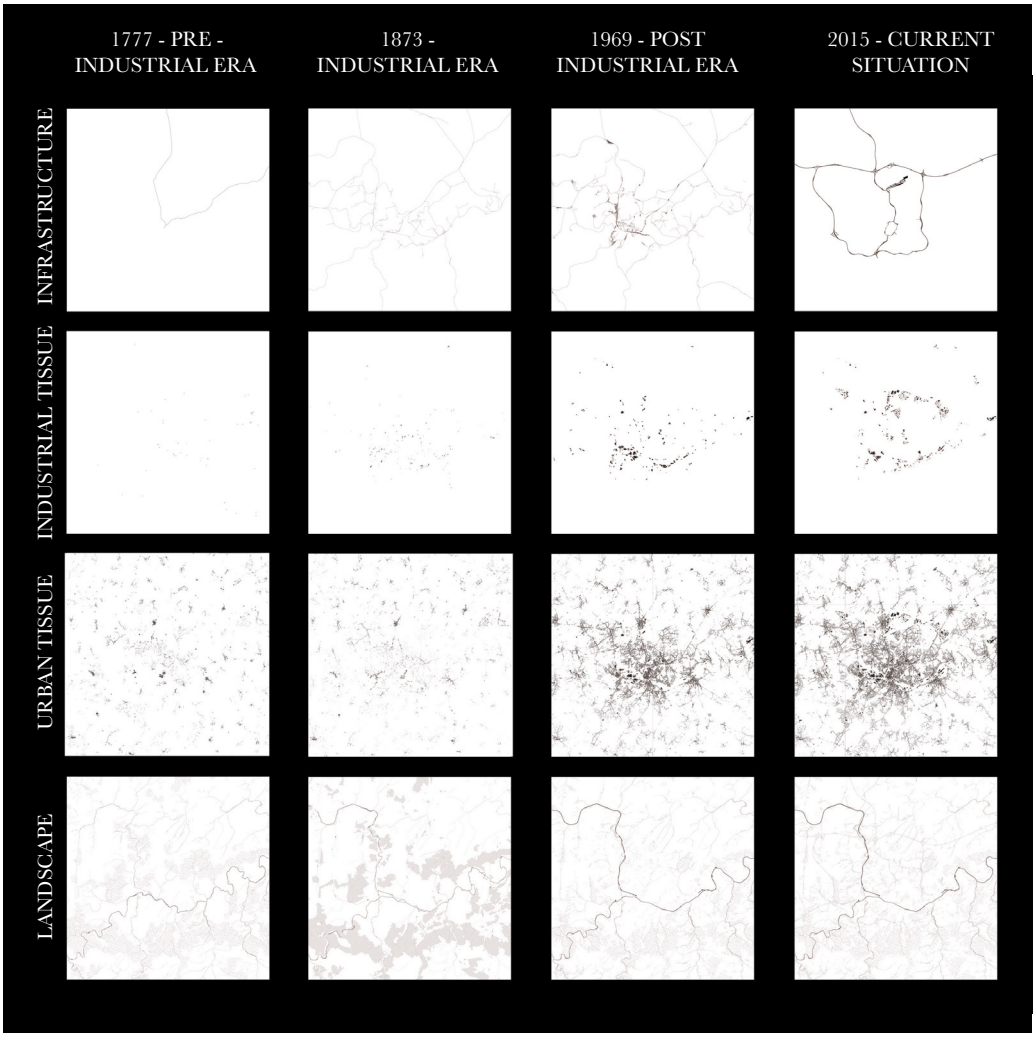
Map 2: Cecilia Furlan (2017), *Distribution of Wasteland across a Portion of 16 x 16 Kilometre of the Charleroi Region, Captured between 2013 and 2016*.

Each wasteland, represented in white, was identified during several survey operations across the territory done by foot, bicycle, and car. The result of the survey was constantly compared with observation through aerial pictures and official archive done by SPAQuE, and the Walloon Region environmental agencies. Although mapped all with the same colour these spaces are very different from each other. A series of pictures taken according to a hypothetical north-south section shows this differentiation.



Map 3: Cecilia Furlan (2014), *Observation of a Territorial Sample of 1 x 1 Kilometre, Winter 2014*.

This assemblage shows the heterogeneous character of wasteland. The sample is located in the central part of the Charleroi region illustrating the former mining site of Couillet: le Pechon, located along the Sambre river. The site points out the massive presence of large abandoned green-field and huge former industrial buildings located across and along the river, and the existence of the ruins of the former mining site and infrastructures hidden by tall spontaneous vegetation, as consequences of the historic process of de-programming of different production models. The combination of map and pictures aims to show the complexity of wasteland. In an abstract way, this combination highlights the coexistence of diverse materials, forms, and dimensions that characterised this wasteland.



Map 4: Systematic Inquiry through Time of the Transformation of Four Landscape Systems, Namely: Infrastructure, Industrial tissue, Urban Tissue and Afforested Landscape.

Map 4: Sven Merten, Michael Stas, Benjamin Vanbrabant (2016), *Systematic Inquiry through Time of the Transformation of Four Landscape Systems, Namely: Infrastructure, Industrial tissue, Urban Tissue and Afforested Landscape. In: Exploring le Pays Noir. Design Investigation for a Productive Landscape in the Charleroi Region*. Promoter Bruno De Meulder; co-promoters Cecilia Furlan and Racha Daher, KU Leuven. [Source: *Ferraris Map or Carte de cabinet des Pays-Bas* is a complete cartography of the Austrian Netherlands; drawn up between 1770 and 1778 by Count Joseph de Ferraris and his team of military` topographers.

The topographical map of Charleroi region is a highly refined cartographic endeavour to visualise the first territorial survey recorded by the officers of the Dépôt de la Guerre, between 1860 and 1873. Topographical map of Charleroi region representing the territorial survey executed between 1804 and 1939 and published at the scale of 1:20.000. Series of NGI-IGN topographical maps of 1969, 1981 and 2016 on a scale of 1:25.000 drawn up by the Belgian geographical military institute, Institut Géographique national/Nationaal Geografish Instituut.]

The territory of Charleroi underwent drastic changes to accommodate forestry, agriculture, underground mining activities, heavy industries, different types of infrastructures, and dwellings. These changes are shown through a delayering operation of a portion of 30 x 30 kilometres of the Charleroi region.



Map 5: Cecilia Furlan, Sven Merten, Michael Stas, Benjamin Vanbrabant (2016), *Transformations of the Industrial Activities in Charleroi Region between 1777 and 2015.*

Three juxtaposed layers comprise the map. The top layer highlights with four main colours the different industrial tissue accumulated through time. The second layer shows in light grey the distribution of the contemporary infrastructural system of river, railways, and road network. The background layer shows historical images relative to industrial activities. The image at top left describes different sections of mining construction building. The image in the centre illustrates an everyday activity of a worker in Couillet (a Charleroi neighbourhood) painted by Pierre Paulus. The photography, in the bottom part, illustrates the succession of different types of industrial activities in time.