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*Thinking like a slag
heap. Environmental
mobilization and
planning around
the (post)extractivist
territory of the
Martinet in Charleroi*

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This study investigates the socio-environmental transformation of the Martinet (Le Martinet) site in Charleroi, Belgium, located at the center of the “fossil crescent.” Once part of a dense network of collieries in the Caroloregian agglomeration, the site became a locus of environmental mobilization against extractivism from the 1970s. Drawing on archival research and collective fieldwork with local actors, as well as multiscalar mapping using GIS, the research examines how post-mining landscapes embody tensions between extractivist logics, social struggles against industrial pollution, and emerging practices of ecological reparation.

The results show how local actors—residents and environmentalists—collectively redefined the meaning of ecological restoration and fostered a relational form of care toward more-than-human and territories.

From an epistemological and ontological perspective, the Martinet case highlights an emerging conception of ecological reparation and relational ontology grounded in post-mining territories. It also demonstrates how grassroots environmental mobilization can influence institutional planning and policy over time. Unlike many Walloon slag heaps redeveloped as industrial heritage and museums or leveled to make space for economic activities, the Martinet illustrates how environmental activism, ecological reparation, and planning can shape an alternative future of post-mining territories.

INTRODUCTION

Recent contributions to environmental history are challenging the idea of a linear narrative leading from natural exploitation to the environmental awareness of planetary boundaries^{1, 2, 3}. These contributions highlight the long history of struggles and mobilization against industrialization and environmental contamination. They also show the asymmetries of power relations between growth coalitions in favor of industrialization and extractivism, and those that suffer environmental contamination (workers, inhabitants, etc.). While many of these environmental mobilizations have led to the dramatic oppression of workers in the 19th century (Ashio and Riotinto copper mines in the 1890s), in other cases, the causes of industrial contamination were denied or attributed to the specific configurations of the environment (toxic smog of the Meuse valley of 1930).

While the recent contributions of Bonneuil and Fressoz¹, Jarrige and Le Roux² and Ambroise-Rendu et al.³ to environmental history offer a broad overview of environmental struggles on different continents, they do not systematically address the impact of mobilization on local policies and environmental planning. Furthermore, these contributions to socio-environmental history do not question the practices of ecological restoration⁴, ecological reparation⁵, and care for more than humans that have emerged since the end of the 20th century^{6, 7}.

This paper recounts the struggles around the Martinet site in Charleroi, Belgium, which constitutes an interesting case of environmental mobilization leading to an experiment in ecological restoration and environmental planning. Spearheaded by environmentalists and citizens, the aim of this movement was to reconnect human communities with their (post)extractivist landscapes and contaminated environments. Their struggle can be seen as one of the few community and grassroots mobilizations in Europe that have given shape to experiments in ecological restoration and environmental planning.

The following text traces the socio-environmental history of the Martinet to reveal the long-lasting tension between coal mining operations, the citizen struggle against extractivism and industrial contamination, and the experiment in ecological restoration and environmental planning.

The paper is based on archival research, press media analysis related to the Martinet and fieldwork conducted with local actors. Unlike more conventional desktop interviews, the collective fieldwork provides a more grounded understanding of the relationships between the site, its history and its diverse actors, both human and more-than-human⁸. Rather than simply extracting information from residents, the time spent on the slag heap was considered a shared experience. Emphasis was placed on exploring situated knowledge, use values, and practice of care through collective experimentation with various groups—recalling local stories, observing local flora and fauna, testing hiking routes, and engaging in convivial moments. Each visit involved walking with a different group composition and discussion. This situated methodology makes it possible to grasp the scope of human and more-than-human interdependencies embedded in the site's relational ontologies^{9, 10}. This research also encompasses a multiscalar mapping of (post) post-extractivist territories around Charleroi. Produced with a GIS combining historical and contemporary data, the maps make it possible to grasp the importance of the Martinet

- 1 Bonneuil & Fressoz, 2016
- 2 Jarrige & Le Roux, 2017
- 3 Ambroise-Rendu et al., 2021
- 4 Jordan et al., 1987
- 5 Papadopoulos et al., 2023
- 6 Haraway, 2016
- 7 Puig de la Bellacasa, 2017
- 8 We would like to express our particular gratitude to Martine Piret, a local resident, for organizing a substantial part of these visits with us and for sharing her archives from the Martinet Defense Committee.
- 9 Escobar, 2014
- 10 Escobar, 2017

and Charleroi within the fossil crescent territory, a vast coal-bearing region stretching from northern England to Silesia, considered the birthplace of the Anthropocene due to its role in the Industrial Revolution¹¹.

The Martinet is part of the dense network of collieries in the Caroloregian agglomeration, one of the historic centers of the coal industry in Wallonia (Figure 1). The first part of the study traces the key stages of the site's industrial development, situating them within the broader historical and economic context that shaped its evolution. This section also examines the labor struggles that emerged during the period of active coal extraction and transformation. This first part concludes with a discussion of urban planning efforts aimed at restoring economic growth following industrial decline in the 1950s.

figure 01 — page 16



The second part of the paper unfolds the history of the struggle led by residents and environmental activists to heal the landscape and restore the biodiversity of the slag heaps following the decline of extractive activities since the 1950s. This section explores the context of these initiatives, the key actors involved, their methods of action and the contemporary relevance of their struggles.

The third section examines the institutional process of planning and reclaiming this post-industrial site. It reviews several initiatives led by public authorities and highlights the trade-offs between economic development, heritage preservation, and ecological restoration.

Finally, the conclusion summarizes the key stages in the socio-environmental history of the Martinet and explores the underlying tensions between mining extraction, ecological restoration, grassroots mobilization, and institutional planning. The conclusion suggests how the socio-environmental history of the Martinet contributes to contemporary debates on ecological reparation, framing it as an everyday practice of care toward the more-than-human and as a modality of repair situated within and sustained by communities⁵.

The Martinet shows how environmental mobilization and practice of ecological reparation can shape the future of a (post)mining territories and influence institutional planning on the long term. More broadly, it exemplifies how relational ontologies and practice of care for more-than-human can inform the evolution of the fossil crescent.

THE MARTINET INDUSTRIAL SITE:

EXTRACTIVISM AND THE MAKING OF A MINING LANDSCAPE

The Martinet site, which straddles the former communes of Monceau-sur-Sambre and Roux, now part of the City of Charleroi (Belgium)¹², is a major witness to the industrial history of the Walloon coalfield. Its evolution, from the first artisanal extractions in the 18th century to the cessation of its activities in 1979, embodies both the trajectory of coal mining in Wallonia and the contemporary challenges faced by industrial wastelands.

The Martinet is part of the Sambre-et-Meuse furrow, one of Wallonia's three major mining basins, along with those of Le Centre and Liège. These basins lie on the Carboniferous vein belonging to the vast Hercynian

11 Magnette, 2023
12 In 1977, Belgium underwent a vast merger of Communes throughout its territory. The former Communes of Roux and Monceau-sur-Sambre, along with 13 other former Communes, were merged into a new entity that is now the territory of the City of Charleroi.

deposit, which stretches from Great Britain to the German Ruhr and whose exploitation was one of the foundations of Belgium's industrial development in the 19th century.

According to popular accounts, the official structuring of the the Martinet colliery dates back to 1806, when two entrepreneurs - the Martin brothers - acquired 318 hectares of land with the aim of launching an organized operation. However, the real industrialization of the Martinet site occurred in the second half of the 19th century, with its integration around 1870 into the Société Anonyme des Charbonnages de Monceau-Fontaine (founded in 1804), one of the country's largest mining concessions (Figure 2).

figure 02 — page 16



In 1929, the company built on site a vast Central Coal Washing and Sorting Facility (Triage-Lavoir Central) – Figure 3 – on a ten-hectare plain to the south of the two slag heaps. This facility was designed to sort, wash, and grade the coal extracted from the entire concession.

figure 03 — page 17



This infrastructure, ultra-modern for its time, was also equipped with a vertical extraction shaft and a ball mill. This represented a strategic investment in the modernization of the industrial process and the optimization of the extractivist process.

At its peak in the 1930s, when it was equipped with a central sorting and washing plant, the Martinet site employed up to 1,200 workers in three shifts ¹³. It established itself as one of Europe's most efficient coal mining centers based on the combined exploitation of subsoil and human labor.

This does not mean that the Martinet colliery was free from industrial incidents or mechanical breakdowns. In contrast, the local press of the first half of the 20th century reported numerous accidents at the Martinet, many of which cost workers their lives ¹⁴. Given the strategic positioning and the unique industrial infrastructure of this mining site, the Martinet played an important role during the general strike that took place in the Walloon industrial basin in 1925, and labor struggles continued until the site closure in the 1970s. However, these labor struggles highlighted the poor welfare of workers without challenging the extractivist logic of coal mining or the site's environmental contamination.

The Martinet site played a crucial role in the Caroloregian economy until the 1950s. As in the rest of the Walloon basin, production gradually declined due to the depletion of deposits, increasing competition from emerging energy sources, such as gas, oil, and nuclear power, and the public authorities' strategic shift toward other economic sectors. In the Charleroi region, this decline was reflected in the successive closures of several emblematic collieries: the Sainte-Catherine colliery in Gilly in 1962, the Puits Saint-Quentin colliery in Jumet in 1966, and the Bois du Cazier colliery in Marcinelle, which was shut down in 1967 following the 1956 tragedy ¹⁵. The year 1984 saw the closure of Charbonnage du Rotton, the last Walloon colliery still in operation ¹⁶.

- 13 6am-2pm / 2pm-10pm / 10pm-6am.
- 14 See for example the Journal de Charleroi issues of 24 and 25 August 1923, 2nd July 1925, 15th July 1941, the Drapeau Rouge issue of 19 April 1956 and Le Soir issue of 26 April 1958.
- 15 The Bois du Cazier tragedy occurred on August 8, 1956, when a fire, triggered by human error, broke out in the depths of the mine. The fire trapped 262 miners, the majority of whom died from asphyxiation or burns, marking one of the greatest mining tragedies of the second half of the 20th century in Europe.

Economic decline gradually spread to the steel industry, concentrated around the Sambre industrial axis. At the same time, the chemical industry also suffered a setback, notably with the gradual closure of the Solvay plant in Couillet, part of a Belgian company that was already in the 20th century, one of the world's major chemical groups with sites in France, Italy, and beyond— whose main activities ceased between 1975 and 1985, marking the end of an important part of the region's chemical industries.

All of these closures are part of an overall process of deindustrialization and reconversion, which profoundly disrupts the social and economic fabric of the Charleroi basin. In parallel with the economic decline, Charleroi, like most of the fossil crescent territories, was suffering from The European coal curse: human capital indices (education and health) lower than in other European regions, due to a lack of investment in people's well-being¹⁷. This "coal curse" demonstrates that the extractivist regime is characterized by the exploitation not only of the soil, but also of human labor. In Papadopoulos, Puig de la Bellacasa, and Tacchetti's own words, it "involves a recognition that harm and recovery of environments and human societies are intrinsically linked"¹⁸.

At the Martinet, shaft n°4 closed in 1967, putting an end to local mining, while the Central Coal Washing and Sorting Facility remained operational until 1979, a sign of its logistical importance and its ability to process coal from other sites of the concession. The official bankruptcy of Charbonnages de Monceau-Fontaine in 1980 marked a decisive turning point; the site entered a period of partial abandonment and industrial decline.

In 1979, when the Martinet colliery ceased mining activities for good, the site was already more than just an industrial vestige: it was a stratified landscape, a material witness to almost two centuries of industrialization (Figure 4). The morphology of the site retains the physical markers of this history, notably the two emblematic twin slag heaps. The East slag heap, formed between 1766 and 1936, reaches an altitude of 56 meters, while the larger West slag heap, built between 1900 and 1976, rises to 85 meters. In addition, the Central Coal Washing and Sorting Facility plain, whose infrastructure was gradually dismantled in the early 1980s, has a flat topography, reflecting the logic of spatial optimization and rationalization of industrial flows. Finally, the site is also characterized by the past presence of two headframes associated with shaft n°4, which is now dismantled. Their disappearance has left only a group of secondary but significant buildings, which still allows us to trace the functions and organization of the mining complex.

figure 04 — page 17



In the 1970s, the discussions surrounding the drafting of the Land-use Plan (Plan de Secteur) – the first plan regulating land use in Wallonia – already reflected the uncertainties surrounding the planning of the Martinet site. Officially adopted in September 1979, this plan was the result of almost a decade of debate and analysis by public authorities concerning the future of an area marked by first signs of industrial decline¹⁸. Conceived on a conurbation-wide scale, the Land-use Plan reaffirmed the industrial vocation of the Sambre Valley and the Charleroi-Brussels

- 16 Coal mining ceased in 1973 in the Centre region, in 1976 in the Borinage, in 1980 in the Liège region, and in 1984 in the Charleroi region.
- 17 Esposito & Abramson, 2021
- 18 Arrêté royal établissant le plan de secteur de Charleroi, 1980

Canal, which in the 19th century had been the structuring axes of the region's industrial development. However, it also demonstrated the political will to restore growth by setting aside areas for emerging economic activities, notably on the northern plateau of the conurbation along the Wallonia highway (Manage-Fleurus section, inaugurated in 1968). In the specific case of the Martinet site, which was already in decline when the Plan was elaborated, the initial zoning for all the slag heaps was classified as a green zone, reflecting a generalized zoning approach of slag heaps at the time. However, as shown in Figure 5, in the final version of the Land-use Plan that entered into force in 1980, this green zone was abandoned in favor of a Comprehensive Renovation Zone (Zone de Rénovation Globale)¹⁹ designation, with a focus on economic development for this area toward high-technology companies¹². Unlike other similar sites, such as the Piges, Blanchisserie, and Naye à Bois slag heaps, which remained entirely designated as green zones because of their landscaping role, only a portion of the Martinet site benefited from this designation. It partially covers the two slag heaps and forms a buffer zone with a small residential area on the northern edge of the site, from which the Ryan Europe Project was later challenged. Figure 5 shows that both the large slag heap of the Martinet and the slag heap of Machine du Bois were meant to disappear within an area designated for urban expansion (red hatching). The thick black dashed line symbolizes the planned location of a new motorway infrastructure to the north of the Martinet site. The thin black dashed line symbolizes the planned location of a new railway infrastructure (since then realized) to the south of the Martinet site.

figure 05 — page 18



In addition, the presence of reserved areas for transport infrastructure to the south and north of the site reflects the desire to correlate economic redevelopment (an area dedicated toward high-technology companies) with that of the Caroloregion motorway network, with the two R3 and R9 ring roads. The southern reservation zone corresponds to the route of railway line L112, which was inaugurated in 1984 and marks the southern boundary of the Martinet site. In this section, part of the Walloon railway backbone linking Liège to Tournai via Charleroi was designed as part of the electrification of the network to bypass the excessively tight curves of the historic route through Goutroux and Fontaine-l'Évêque. To the north, on agricultural land, another reservation zone, still in force today, was planned for a major bypass road linking the A54 highway to the R3 ring road. This road, of which only a few sections were finally built on the A54 side, was intended to open up and connect the Martinet site and its future high-technology company area to the new motorway network.

The co-presence of these two infrastructure zones in the immediate vicinity of the Martinet, coupled with a Comprehensive Renovation Zone perimeter that also extended over the site of the "Machine du Bois" slag heap opposite to the southwest, bear witness to this desire - characteristic of that period - to correlate economic development with motorway infrastructure.

19 ZRG : Zone de Rénovation Globale or "Comprehensive Renovation Zone". The ZRG overlay meant that the site could only be developed or occupied after approval by the competent authority of a master plan covering the entire zone. This regulatory tool was used to ensure coordinated and planned redevelopment of complex or sensitive areas. Later, during the 1980's, the ZRG evolved into a ZACC (Zone d'Aménagement Communal Concerté, or Concerted Municipal Development Zone) which is the actual zoning of most of the site.

FROM ECOLOGICAL EXPERIMENTATION TO CITIZEN MOBILIZATION

Originating from the accumulation of coal mining waste, slag heaps were initially perceived as stigmas of the mining past, unsightly, environmentally harmful, and economically devaluing structures due to their instability and unproductive character. Over time, however, some, such as the Martinet, have been transformed into sites of ecological restoration, symbols of civic struggle, and eventually protected landscapes. Two major phases mark this trajectory: the first, experimental in nature, took place in the 1950s under the direction of landscape architect Guy Capart (1906–1991), in the 1950s while mining was still active; the second, militant and political, unfolded between 1976 and 1996, characterized by unprecedented grassroots mobilization against proposed industrial reuse. This movement ultimately influenced local authorities to adopt policies aligned with civic initiatives.

1. Early revegetation experiments: Guy Capart's work (1947-1950)

As early as 1904, debates on afforestation of slag heaps appeared within the Belgian Chamber of Representatives. This led to the law of August 19, 1911, on “the conservation of landscape beauty” which required operators to restore post-mining land by afforestation or vegetative cover. However, public and private actors remained largely inactive, citing a lack of technical methods and funding²⁰.

By the late 1940s, with coal mining declining in the Charleroi basin, citizens and environmentalists began envisioning slag heaps as sites for ecological restoration. In 1945, the Hainaut Institute for Economic Research (Urban Planning Commission) commissioned Guy Capart to study plant recolonization in a priori hostile slag heap environments, including sterile substrates, acidic soils, lack of organic matter, and severe erosion²¹. His preliminary report (1946) emphasized observing the adaptive behavior of vegetation as an indicator of soil vitality and as an action guide for habitat restoration, recommending contemporary forester methods to combat erosion.

From 1947, Capart collaborated with a young botanist from the Ecological and Phytosociological Research Center (IRSIA, Institute for the Promotion of Scientific Research in Industry and Agriculture) to monitor the vegetation behavior of slag heaps, analyze soils, and conduct five detailed phytosociological surveys. Their report (1947) demonstrated that slag heap revegetation was technically feasible, detailing both the technical conditions of success and the causes of failure. The objectives were twofold to stabilize the slopes of the heaps while initiating an ecological dynamic of verduration. Capart deliberately spoke of verduration (revegetation) rather than afforestation to emphasize ecological dynamics beyond simple afforestation. For him, this semantic shift underscored the political will required to move toward concrete action: designing spaces according to their future uses, while mobilizing natural processes within the framework of applied ecology and practical botany. This perspective called for slag heaps to be conceived as spaces to be reclaimed by nature¹⁴. In 1950, Capart and his collaborator carried out experimental plantations at Capart's own expense on a two-hectare plot at the Martinet, where the black slopes had already been naturally colonized by diverse plants. Complementing this natural revegetation, Capart introduced a range of native hardwood species – oaks, beeches, maples, wild cherries, rowans, and chestnuts – on the northern slope of the larger slag heap, with the aim

of assessing their capacity to adapt. The experiment demonstrated the potential of unstable, nutrient-poor, and often acidic soils from slag heaps to evolve into living environments, supporting biodiversity.

In this view, Capart's experiments paralleled contemporary Aldo Leopold's *Land Ethic*²², viewing humans as part of the biotic community capable of participating in environmental stewardship through ecological restoration processes²³. This emerging practice of ecological restoration transforms slag heaps from residues of extractive processes into living environments and is capable of supporting the emergence of new biodiversity. As Leopold wrote, the Land ethic means to stop regarding "the land as soil, and its function as commodity-production" and "to regards the land as a biota, and its function as something broader"²².

Although Capart's interventions were successful, they did not lead to a systematic policy of greening derelict slag heaps²⁰. Mining authorities continued to consider the 1911 law inapplicable, and in 1969, the Inspector General of the Urban Planning Administration lamented that shale extraction for highway construction had been undertaken on afforested slag heaps. Nevertheless, Capart's work set an early precedent for integrating ecological restoration into post-industrial landscapes, attracting international attention and influencing subsequent research on ecosystem recovery in mining regions, such as that undertaken by Paul Duvigneaud²⁴.

2. Citizen mobilization, environmental resistance and legislative change (1976-1996)

The environmental struggle around the Martinet took a decisive turn in 1976 amid the aftermath of the 1973 oil crisis and soaring energy prices. Slag heaps became targets for reexploitation owing to residual coal. Against the backdrop of a general economic decline, they represent an opportunity to revive mining activities. This is the background to the formation of Ryan Europe. As early as 1970, this company was set up in the Charleroi region with the aim of recovering the coal contained in the slag heaps to resell it to electricity companies²⁵. The project appealed to local politicians who were facing rising unemployment and rampant deindustrialization. By exploiting slag heaps, Ryan Europe promised to create jobs in a region in crisis, giving the illusion of a second stage of growth and extractivism. However, the number of jobs created would remain limited (65 jobs would be created, compared to 1,200 at the industrial peak). In the long term, the slag heaps, which became "natural monuments to labor", would have disappeared from the landscape²⁶.

Residents of the Martinet neighborhood resisted these plans. As soon as the project to re-exploit the site was announced, a citizen movement emerged in the working-class district around Place Frédéric north of the site. They formed the Martinet Defense Committee (Comité de Défense du Martinet) to protect the vegetation and biodiversity of slag heaps, symbols of ecological value restored and nurtured by the community. Motivated by their attachment to their living environments, residents voiced concerns about the nuisances and ecological damage that a new industrial operation would cause. Because dumping ceased, the black slopes of the slag heaps were gradually colonized by a wide variety of plants and trees, naturally interacting with the landscape substrate planted by Guy Capart. This plant cover, quickly recognized by locals for its value, has become a symbol of restored biodiversity cared for by the inhabitants themselves.

- 22 Leopold, 1987/1949
- 23 Like Capart, Leopold had experimented ecological restoration techniques at his Wisconsin farm in the 1930s–40s.
- 24 Duvigneaud et al., 1971
- 25 Egueur, 1990
- 26 Vercheval-Vervoort, 1978

For almost two decades, the residents of the Martinet neighborhood have steadfastly and resolutely opposed plans to re-exploit the former slag heaps. Citizen strategies against re-exploitation included mobilization during public inquiries (1977, 1986), political advocacy to revise the Walloon Decree on slag heap valorization (1985)²⁷— further revised to require municipal oversight strengthening democratic control of the decision at the local level (1988), and campaigns for legal protection. In addition, contemporary scientific surveys have been used to demonstrate the biodiversity established on the heaps^{28, 29}. These twenty years of struggle eventually succeeded. By 1995, the Martinet had been registered as a protected category A slag heap, preventing industrial exploitation³⁰, which led to the site's heritage classification in April 1996. Subsequent acquisitions by the City of Charleroi beginning in 1998³¹ ensured its conservation and integration into the urban landscape.

The Martinet's transformation was as cultural as it was ecological. Festive events were organized in the neighborhood to strengthen social cohesion while asserting a symbolic presence in public spaces and collective socio-ecological consciousness. Reflecting deep attachments to these landscapes, photographers, poets, and activists from the Walloon Association for the Protection of the Slag Heaps (Association de "Défense des terrils") celebrated the industrial, social, and environmental history of Belgian slag heaps. Metaphors such as "monuments to labor struggles", "extinct volcanoes", "dark molehills", "misty hills", "sacred mountains", "Himalayas", "Annapurnas", or "industrial pyramids", testified to their enduring place in the Walloon landscape²⁶. In opposing new exploitation, the Martinet Defense Committee invoked the powerful metaphor of the Amazon (Figure 6)—an emblem of resistance to extractivism recalling the struggles of Chico Mendes and the seringueiros against deforestation and solidarity with indigenous communities^{8, 9}. Like Mendes and the seringueiros, Martinet's residents emphasized the interdependence of human and non-human communities, conceiving territory not as property to be exploited but as a set of relationships requiring a practice of care and stewardship. Thus, the struggle reflected the wider tensions between extractivist economic interests and environmental land ethics. Inspired by global movements such as those crystallized at the Rio Earth Summit (1992), residents framed their cause as both ecological and social, linking local defense of the slag heaps to global demands for biodiversity protection. Through cultural production and everyday practice of care, the Martinet became a symbol of what Padadopoulos, Puig de la Bellacasa and Tacchetti call "ecological reparation," its residents transforming industrial residue into a living landscape shared by human and more-than-human⁵.

- 27 The first text designed to provide a legal framework for the exploitation of secondary deposits contained in slag heaps.
- 28 Centre Marie-Victorin, 1989
- 29 Leurquin, 1990
- 30 Décret concernant la valorisation de terrils, 1985
- 31 The City of Charleroi acquired the Martinet site in three stages from the bankrupt Coal and Mineral Development (Ryan Europe branch): in 1998, the two slag heaps, the TLC plain, and the ball mill plain; in 2008, pit no. 4; and in 2009, the roadside house on rue de Roux. The latter two acquisitions were financed by the Walloon Region via the SAR mechanism.

figure 06 — page 18



The Martinet case illustrates the interdependence between ecological restoration and environmental mobilization embedded in the notion of ecological repair. Capart's early interventions proved the technical feasibility of slag heap restoration, while grassroots mobilization ensured everyday protection and care. The Martinet demonstrated the potential of local com-

munities to reappropriate and protect (post)extractivist territories, asserting the role of everyday acts of care and repair by communities in shaping environmental policy. Since 2010, the Martinet has been integrated into the Boucle Noire walking trail around Charleroi post-mining, highlighting its reappropriation by citizens³².

INSTITUTIONAL PLANNING (1996-2021)

BETWEEN LAND RECLAMATION AND ENVIRONMENTAL CONSERVATION

Following the environmental mobilization around the Martinet, the public authorities refused Ryan Europe's requests to re-exploit the slag heap of the Martinet twice, in 1976 and 1995³³. Furthermore, they decide to purchase the site to make it public. It was conducted in three stages by the City of Charleroi under the auspices of Mayor Jean-Claude Van Cauwenberghe³⁴. From this period onward, a new phase of institutional planning emerged, oscillating between land reclamation and ecological conservation efforts. The designation of a large area of the Martinet as a protected site was definitively put aside from the Ryan Europe project. This was a major success for citizens, as their environmental struggle resulted in public policy for the protection of (post)mining landscape and heritage. The designation as a protected site added also an additional layer that prevents construction otherwise authorized by the land use plan, making Martinet a striking example of overlapping planning and protection measures (Figure 7).

figure 07 — page 19



Since 1995, when the site was acquired, three main phases of reclamation of the post-industrial site have been undertaken by the various stakeholders involved.

The first phase (1996-2010) was characterized by the continuity of the grassroots mobilization. It involved concrete actions to maintain the site, the opening of trails, and collective reflection on environmental stewardship. These initiatives are mainly led by the defense committee and supported by other associative partners and public institutions. In 1996, a structured partnership was established between the Martinet Defense Committee, now the Neighborhood Committee (Comité de Quartier), the City of Charleroi, and various associations, with the aim of formalizing a shared vision for the reclamation of the site and the conservation of its natural resources. This collaboration led to the drafting of an application for a grant from the King Baudouin Foundation³⁵, articulating three major objectives: the ecological conservation of the site, its accessibility to the public, and the development of an educational approach to environmental awareness. This project received institutional recognition through the award of a prize by the King Baudouin Foundation, which supported its implementation and was inaugurated in June 1999. With the support of the Natural and Ornithological Reserves of Belgium (Réserves naturelles et ornithologiques de Belgique) and the Royal Society of Naturalists of Charleroi (Société royale des naturalistes de Charleroi), several ecological and educational features were installed. Didactic panels illustrating the site's wealth of flora and fauna were installed, while a range of educational materials, including an educational notebook and an introductory book-

- 32 Chemins des terrils, 2016
- 33 Ryan Europe (S.A. Ryan Europe) was active in Belgium in the 1970s–1980s in the re-exploitation of slag heaps to recover residual coal.
- 34 Jean-Claude van Cauwenbergh was Mayor of Charleroi from 1983 to 2000. He took part in some of the environmental mobilization in the 1970s. He left his post in 2000 to become Minister-President of the Walloon Region (2000-2005).
- 35 The King Baudouin Foundation is an independent, non-profit foundation based in Belgium. It supports projects and initiatives that promote social justice, democracy, and sustainable development, both in Belgium and internationally.

let on the ecological characteristics of the site, were published to enhance public understanding of the site³⁶.

The second phase began between 2008 and 2012 and marked a significant turning point in the redevelopment of the Martinet site. This period was boosted by a major project led by a landscape architect from the City of Charleroi, whose interest in the site's landscape and heritage issues has been apparent since the 1990s. Right at the start of this sequence, the city applied to the Walloon Region for classification as a Site to be Redeveloped (Site à Réaménager). This classification, obtained in 2010, made it possible to mobilize substantial public funding for the rehabilitation of the site, as well as to finalize the acquisition of plots and buildings still outside the municipal perimeter. As part of this process, a master plan was developed to outline the main development directions for the site. This strategic document was produced by the local urban planner, Chantale Vincent, commissioned by the city on behalf of her firm "Dessin et Construction". The plan proposed a program articulated around several complementary functions, including housing, economic activities, public facilities, and natural spaces. Among the most noteworthy proposals was a 3.5-hectare housing zone on the rue de Roux side, which would ultimately not be implemented. Another zone dedicated to economic activities and public facilities is located along the new railroad line. The integration of economic, housing, and natural areas reflects a willingness to balance ecological restoration with economic growth and urbanization.

Between 2008 and 2012, the City of Charleroi was in charge of the project management, whereas Dessin et Construction was in charge of the design and landscaping. As shown in Figures 8 and 9, the work program includes sanitation, safety, landscaping of the site, and the restoration of several emblematic buildings (Salle des Pendus, Remise aux Locomotives, covered hall, Salle des Machines, former engineers' quarters), for which no new schedule has been set. In parallel with this work, several environmental analysis campaigns were conducted to assess the state of soil and subsoil contamination.

figure 8 — page 19



figure 9 — page 20



The third phase of institutional planning was initiated by Paul Magnette, elected mayor in 2012, who launched a renewed round of reflections on the future of the Martinet. This was part of the implementation of the Plan Catch, a reconversion strategy introduced in 2016 following the bankruptcy of the Caterpillar machine tool production company. In the Plan Catch, the Martinet was identified for the implementation of a local ecosystem oriented toward sustainable food production. This led to several initiatives, including the occupation of two buildings through food production activities (a brewery and a bakery workshop), the establishment of a vineyard on a plot of land close to the route de Trazegines, and the development of an (unfortunately unsuccessful) biomass production initiative. Under the leadership of Charleroi Bouwmeester – a public institution established in 2013 to guide and coordinate urban development and architectural quality in the city – a masterplan setting out the main orientations of the site was drawn up and approved by the Municipal Council executive of the City

of Charleroi in 2021³⁷. In this master plan (Figure 10), economic activities are carefully positioned within the former buildings and occupy very limited footprints on the former Central Coal Washing and Sorting Facility site and its surroundings. The two slag heaps were left intact and preserved, and the entire site was integrated into the route of the Black Loop.

37 Charleroi Bouwmeester, 2021
38 Descola, 2005

figure 10 — page 20



The intermunicipal economic development agency, Igretec, has also been commissioned by the city to develop a micro-zone of economic activity on a reduced portion of the site on the Rue de Roux side. However, the precise definition of this area has been the subject of much discussion to limit the negative impact of economic activities on biodiversity.

Although several initiatives have already been launched, the governance and financing mechanisms required to create a genuine food production ecosystem are yet to be defined. The central challenge remains to find an equilibrium between the economic development objectives and ecological preservation of the site. Achieving a balance between local citizens' practice of care for the living and economic initiatives led by public stakeholders remains a persistent challenge.

CONCLUSION

The story of the Martinet exemplifies the complex, non-linear history of struggles and mobilization against industrialization and environmental contamination in the fossil crescent. For over a century, it has been viewed through the prism of a modern, dualistic ontology that distinguishes the human community from nature^{9, 10, 38}. According to this dualistic ontology, the soil is a material resource to be exploited for economic growth thanks to capitalist investment in an extraction infrastructure. However, the Martinet's history shows that this extraction infrastructure relied on the exploitation of both soil and human labor. While labor struggles emerged in the early 20th century to defend worker rights against industrial accidents and poor welfare, it did not question the extractivist logic of coal mining or the environmental contamination of the site. Nevertheless, the history of the Martinet shows us "that harm and recovery of environments and human societies are intrinsically linked"⁵.

Abandoned from the 1950s, when extraction costs were no longer profitable and the world economy turned to oil and gas as energy sources, the Martinet, like most of the fossil crescent, became a heavily contaminated post-industrial landscape. Abandoned by industrial capitalism, the Martinet was gradually reappropriated by the grassroots initiative for the ecological restoration of the slag heap.

Beyond the dualistic ontology opposing humans to nature, environmentalists and citizens initiated a long-lasting practice of care and repair of the biotic community enacting what Arturo Escobar calls a "relational ontology" with living ecosystems^{9, 10}, what Haraway calls a multispecies relationships of care⁶ or what Padadopoulos, Puig de la Bellacasa and Tacchetti call "ecological reparation"⁵. The socio-environmental history of Martinet shows how these environmental mobilization and practice of ecological reparations informed the future of the (post)mining site and influence its institutional planning on the long term.

While this long-lasting practice of care and repair made it possible to maintain a large part of the biodiversity of the Martinet, the implementation of a large-scale landfill site on the adjacent Beaumont field since 2000, partially localized on the already mentioned "Machine du Bois" slag heap, demonstrates that soil is still perceived as a material resource for industrial development³⁹ (Figure 11). The imperatives of economic growth are also exemplified by some (build and unbuilt) projects for reclaiming slag heaps and their bases for public amenities, residential neighborhoods, or shopping centers. For example, the Mambourg slag heap was removed and returned to the Ville 2 shopping center and the Carollywood cinema complex, which opened around 1990. During the same period, the Saint-Charles Poirier slag heap was completely leveled to make way for a new post-modern residential and office neighborhood. The Viviers slag heap in Gilly leveled in the late 2010s and was replaced recently by the Grand Hôpital de Charleroi.

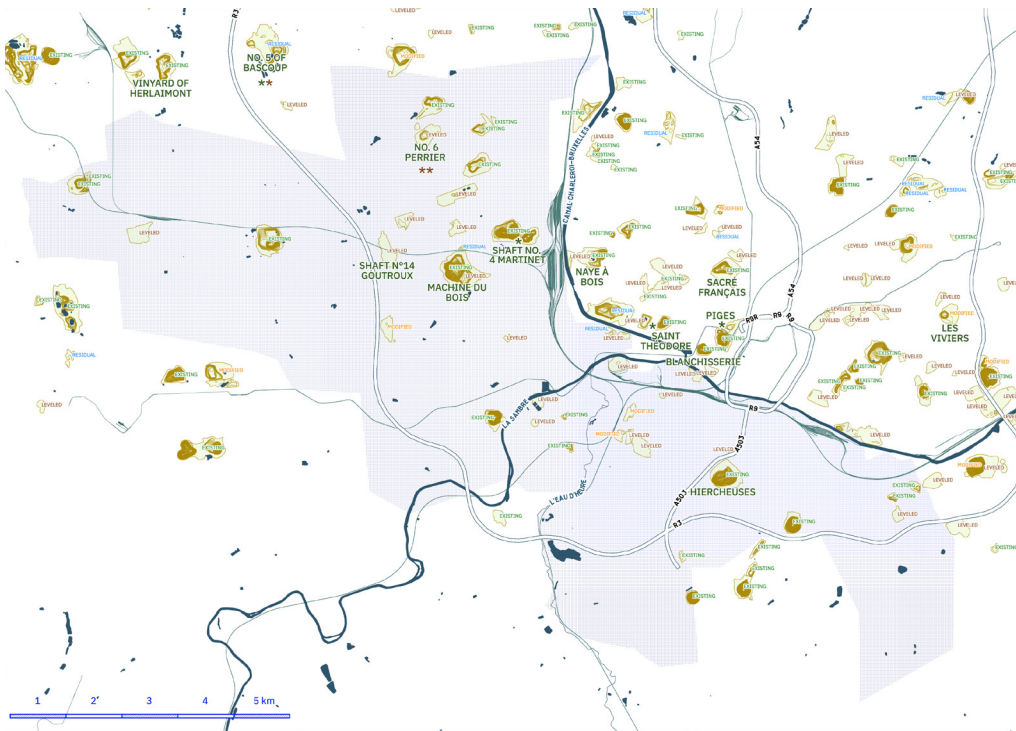
figure 11 — page 21



Unlike the practice of care for the living environment enacted at the Martinet, these reclamation projects usually involve soil excavation or sealing and complete erasure of the territorial heritage of the fossil crescent. As such, they exemplify the multiple tensions surrounding the fossil crescent, torn between the desire to revive the modern ontology of industrial development and economic growth and the attempt to enact a long-lasting relational ontology with the living environment.



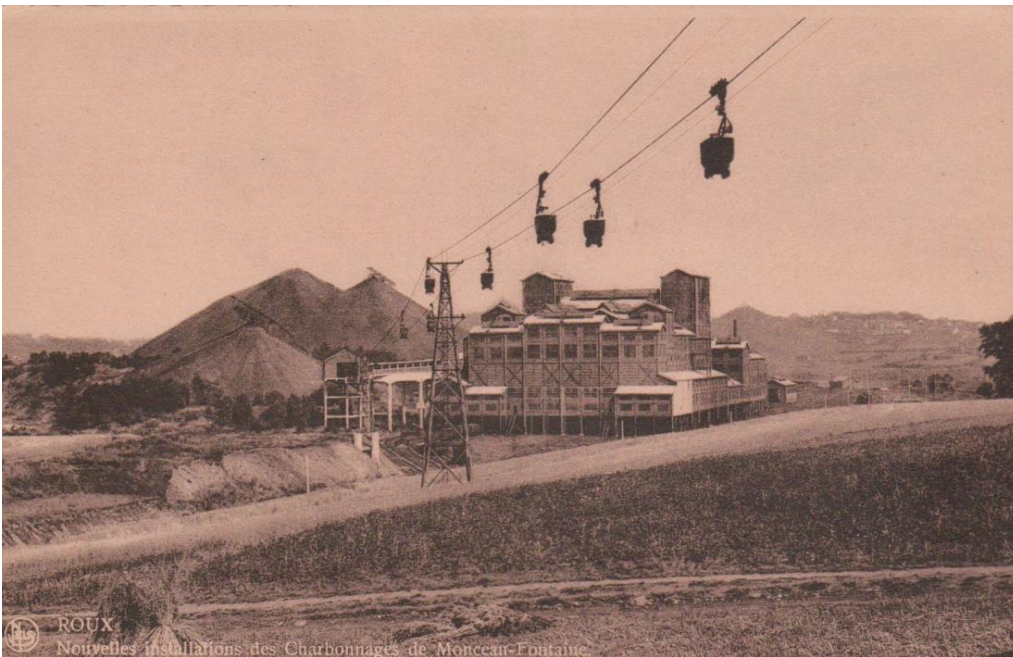
01



02

01 The Fossil Crescent
 In 1931, Châtel and Dollfus's atlas mapped the territorial distribution of coal concessions and production in major industrial countries, detailing the types of fuels extracted from each basin. This map overlays the atlas index with European faults and tectonic structures, highlighting the geodynamic forces on which mining ultimately depends

02 The Concession of Monceau-Fontaine, Marcinelle and Northern Charleroi
 This map shows the extent of Monceau-Fontaine (blue dashed), slag heaps over 0.6 ha (green dashed), and their topography (ochre). Slag heaps are labeled by current condition: leveled, existing, modified, or residual, 1978 citizens' committee slag heaps (*green) and Ryan Europe re-exploitation sites (*brown)



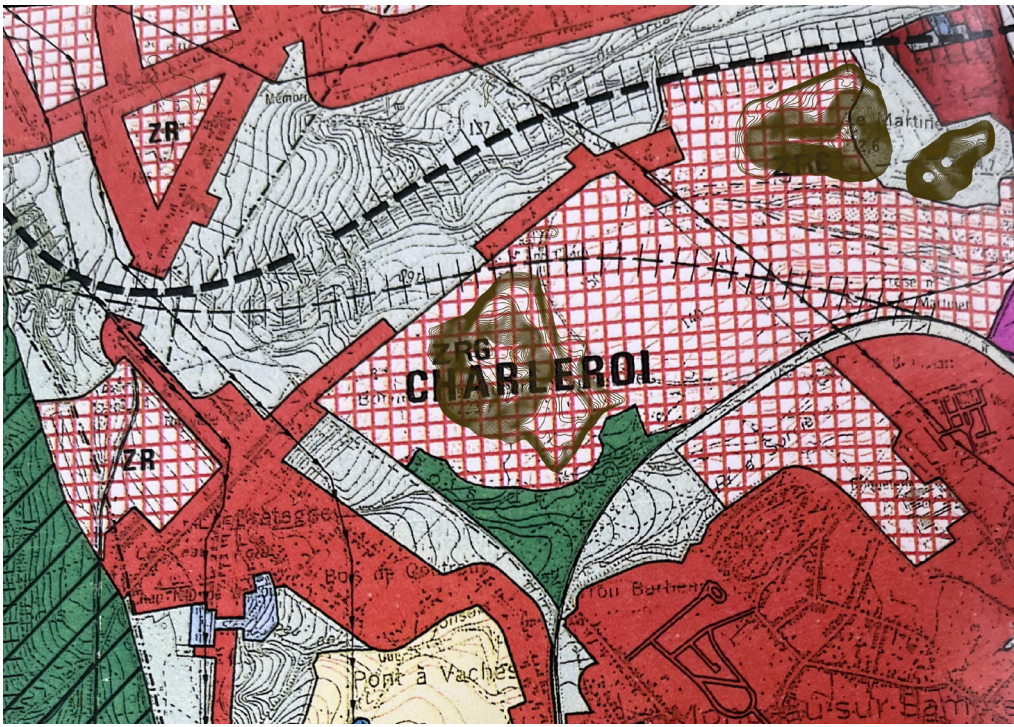
03



04

03 Central Coal Washing and Sorting Facility, circa 1930

04 Aerial view of the Martinet site after its closure, circa 1980



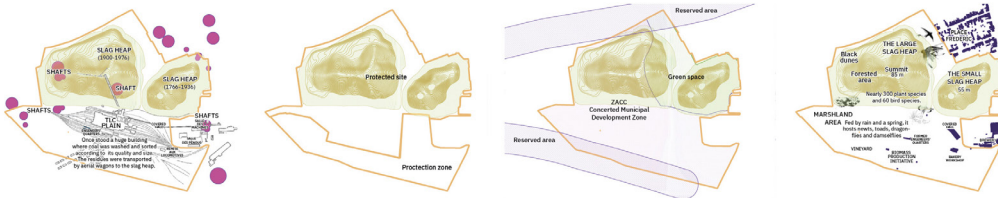
05



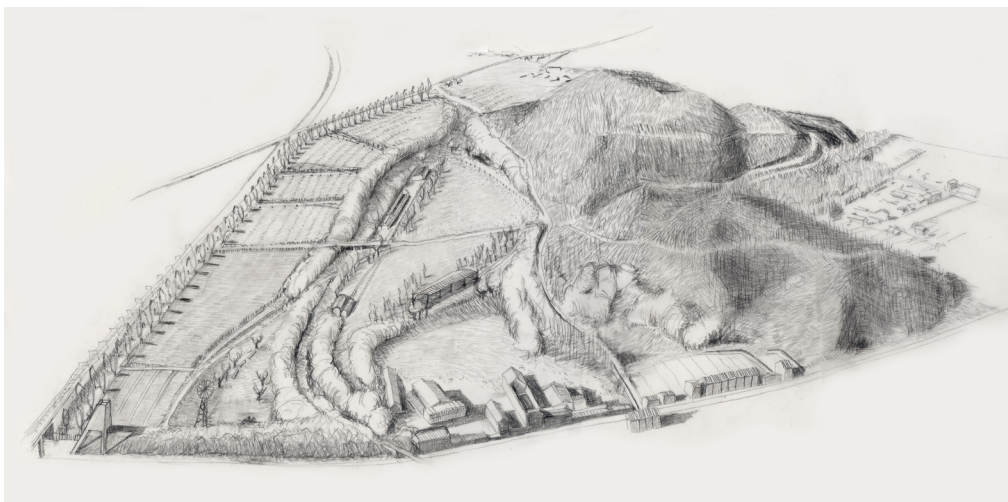
06

05 Land Use Plan adopted in 1979 and entered into force in 1980 (detail)

06 Information meeting held in Roux, 1976



07



08

07 Palimpsest Map of the Martinet Slag Heaps (1950-2025). This composite map overlays 2025 cadastral data, buildings, topography, and land-use zoning onto the 1950 Public Works map. The comparison of current and historical layers highlights lost built heritage (grey) and the changing morphology of the slag heaps since 1950

8 General view of the project for the Sanitation, Rehabilitation, Securing, and Landscaping of the Martinet Site. Hand-drawn illustration produced between 2008 and 2012



09



10

09 General view toward the Martinet site, focusing on the buildings known as the “Hanging Room” (in the background) and the “Engine Room” (in the foreground) following the rehabilitation project

10 Master plan for the development of a Nature and Food Hub on the Martinet Site



11

11 Aerial view of the Martinet site (2021), with the landfill located on the adjacent Beaumont field visible in the background

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This study draws on qualitative fieldwork conducted with local stakeholders. Interview notes, audio recordings, and related archive materials are stored on a secure internal drive and cannot be shared publicly due to confidentiality commitments and data-protection requirements. The spatial analyses and maps presented in the paper were produced using openly accessible datasets; all source datasets are publicly available from their respective providers. No additional datasets were generated for public release.

COI

The authors declare no conflict of interest.

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G. Grulois, B. Moritz and M. Declève contributed to data gathering, fieldwork, interviews with stakeholders and manuscript draft. G. Grulois and B. Moritz contributed to the final writing of the manuscript. M. Declève developed the GIS for this research and designed the maps.

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