Reuse and Recycle.Changing Actors and Material Practices of Brussels' Iron Scrap Trade (1880-1950)

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Abstract

In the early twentieth century, a new production process enabled steel to be produced entirely from metal scrap. As demand for scrap increased, a flourishing industry emerged—dedicated to the collection, sorting, processing, and resale of metal scrap. What impact did this new recycling network have on the construction industry? Were fewer metal building components reused? Or did both practices of reuse and recycling adapt and coexist?

This paper addresses this question through a detailed case study of a modular iron market hall in Brussels (1880–1945), whose components were pre-used, relocated, reused, and partially recycled across six decades. Drawing on unique municipal archives, the building's lifecycle is reconstructed, and the networks of demolition contractors, material resellers, scrap dealers, wholesale scrap merchants, and foundries are mapped.

We argue that reuse and recycling were not sequential stages but interwoven practices, shaped by shifting economic valuations, labour models, and material characteristics. While obsolete cast iron was scrapped, standardised wrought-iron I-beams retained their value for reuse—even during periods of wartime scarcity. These dynamics were embedded in local infrastructures and urban economies that facilitated the sorting, sale, and recirculation of metals. In doing so, the paper contributes to a more nuanced history of construction and demolition, in which the afterlife of building materials was not only materially determined, but also socially and economically constructed.

Introduction

Historians of waste and the environment have studied metal recycling primarily in the context of broader waste management systems [1]. In his study of the American scrap industry, Zimring situates metal recycling within the larger waste economy, highlighting themes that also resonate with construction history: the socio-economic profiles of industry actors, the development of commercial and logistical networks, the evolution of equipment and infrastructure, and the sector's gradual professionalisation.

The rapid expansion of the metal scrap industry in the twentieth century was closely linked to technological advancements in steel production. While modest quantities of scrap metal had

already been used in the nineteenth century to supplement primary iron ore, the introduction of the electric arc furnace in the early twentieth century represented a significant technological shift, as it enabled the production of steel using scrap metal exclusively. By the 1920s, this innovation had consolidated metal scrap as a critical industrial input. In the USA, for instance, in 1928 most of the iron and steel scrap originated from steel mills (42 per cent), railroads (16 per cent) and automobiles (11 per cent), with only 9 per cent coming from the construction sector [2].

Yet the implications of these developments for the construction sector remain underexplored. Did the rise of metal recycling undermine traditional reuse practices in the construction sector, or did both economies evolve alongside each other? And how was the emerging scrap trade linked to—or separated from—networks of salvage and reuse? Addressing these questions requires moving beyond technical analyses of recyclability to consider the concrete practices, actors, and valuations that shaped the afterlife of metal components in the built environment.

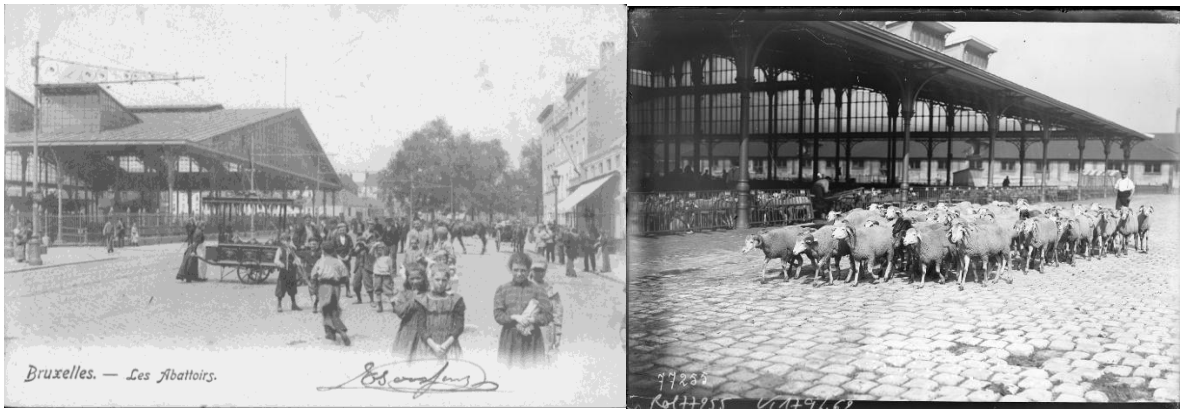

Figure 1: The design of the metal halls covering the cattle market in Brussels (left) was inspired by the halls of the Abattoir in La Villette, Paris (right). (Left: Collection Belfius Banque-Académie royale de Belgique © ARB – urban.brussels, Right: gallica.bnf.fr/BnF)

This paper addresses these questions by examining the material afterlife of an iron market hall in Brussels, constructed in 1880 and dismantled in 1945. (Fig.1) Through detailed archival analysis, we trace the building's trajectory—from design and 'pre-use' during an exhibition, to relocation, repurposing, and eventual demolition—focusing on how its structural components were resold, reused, or recycled. This case provides a rare opportunity to study the interaction between reuse and recycling over several decades, in relation to both market logic and municipal decision-making. The second part of the paper turns to the broader urban economy that shaped these decisions. Drawing on trade almanacs and advertisements, actors involved in the circulation of salvaged metals are studied: demolition contractors, resellers, scrap dealers,

wholesale merchants, and foundries. These actors not only enabled the reintegration of materials into new cycles but also reflected changing valuations, labour dynamics, and spatial configurations. By focusing on practices and actor networks, this paper contributes to a more situated understanding of how metal building components were recovered, evaluated, and mobilised in the urban economy of Brussels between 1880 and 1950.

Material Trajectories: The Lifecycle of the Brussels Market Halls, 1880-1945

Historical sources documenting building demolitions are generally scarce, largely due to the absence of archival records from key stakeholders such as demolition contractors and dealers in reclaimed building materials. Occasionally, photographic documentation of demolition phases exists, though this remains exceptional. For the present case study, the analysis draws on a rare and valuable set of archival materials: administrative documents and correspondence produced by the demolition site supervisor in 1944–45, preserved in the archives of the City of Brussels (CAB). While no photographs of the demolition site have been retrieved, an aerial image of 1944 is accessible via the Bruciel.Brussels platform, which hosts a collection of wartime aerial photographs taken by the British Royal Air Force and the United States Army Air Forces. [3]

Before addressing the 1944-45 demolition activities, the building's design and early use are examined to expand the conventional narrative of use and reuse. This case introduces an additional phase: the 'pre-use' of a building. In this article, pre-use refers to the utilisation of a building prior to the function for which it was originally designed.

Designing for Reuse: The Market Halls as Temporary Exhibition Structures (1880)

In 1840, a municipal slaughterhouse was constructed in the industrial quarter of Brussels, near the river Senne and the canal. The complex consisted of eight main buildings, and two open-air cattle markets. The idea of covering these cattle markets was already under discussion when architect Gédéon Bordiau (1832-1904) was commissioned to design the masterplan for the 1880 National Exhibition, held to commemorate the fiftieth anniversary of Belgian independence. Bordiau's proposal envisioned transforming the former *Champs de manœuvre* into a multifunctional exhibition and museum complex, comprising both permanent structures and temporary pavilions. For the temporary pavilions, covering over 11,000 m², the municipal authorities turned to private contractors, who were responsible for their construction, rental, and maintenance during the event, which concluded in November of that year. However, the

building specifications stipulated that two of these temporary pavilions—measuring 49.5 metres by 58 metres and characterised by cast iron columns supporting iron trusses— would remain the property of the City of Brussels [4]. While the practice of designing modular structures for temporary exhibitions with an eye to post-event reuse was already well established by that time, the case of the future market halls is particularly noteworthy. Designed in 1879 as cattle halls, the two pavilions were 'pre-used' as temporary buildings during the 1880 exhibition. Their typology, featuring distinctive rooflights, was clearly inspired by the cattle market of La Villette in Paris, constructed in 1867. (Fig. 1) The Brussels halls thus illustrate a form of planned reuse that began even before their intended function had commenced. Their use as exhibition halls in 1880 (Fig. 2) reflects an early and efficient approach to resource management in terms of time, cost and materials.

Figure 2: The two metal halls intended for the Brussels cattle market were pre-used during the 1880 National Exhibition. (Rijksmuseum Nederland, RP-F-2001-F-1655)

Figure 3: The relocation of the metal hall in front of the Brussels slaughterhouse complex was documented in S.A. John Cockerill's company catalogue. (Société Cockerill ca 1910, MMIL)

Partial Reuse and Material Recovery: The 1882-84 Relocation

When the 1880 National Exhibition came to an end, the two temporary halls owned by the City of Brussels were dismantled and relocated to the municipal slaughterhouse complex. (Fig. 3) The contract for this operation was awarded to S.A. John Cockerill, the prominent Belgian iron and steel manufacturer which had previously supplied all the iron and steel components for both the permanent and temporary buildings of the exhibition – covering a total surface area of 66,307 m² and amounting to 6,187 tonnes of iron [5].

In 1882, a formal agreement was concluded with SA. John Cockerill for the dismantling, transport, and reconstruction of the two halls in front of the slaughterhouse. Because the façades had to be adapted for use as freestanding structures, and additional features such as railings were required, not all original components could be reused. The contract outlined the terms under which surplus materials would be returned: Cockerill agreed to repurchase cast iron elements at 5.5 francs per 100 kg and wrought iron components at 8 francs per 100 kg [6].

These prices represented roughly 30 per cent of the original unit costs mentioned in the 1879 building specifications for the production, transport, assembly, and painting of new components—which were 15 francs per 100 kg for cast iron and 24 francs per 100 kg for wrought iron [6]. Although the repurchase rates may appear relatively high, the total reimbursement—2,630 francs for 28 tonnes of iron—accounted for just 2 per cent of the total reconstruction cost, which was approximately 150,000 francs.

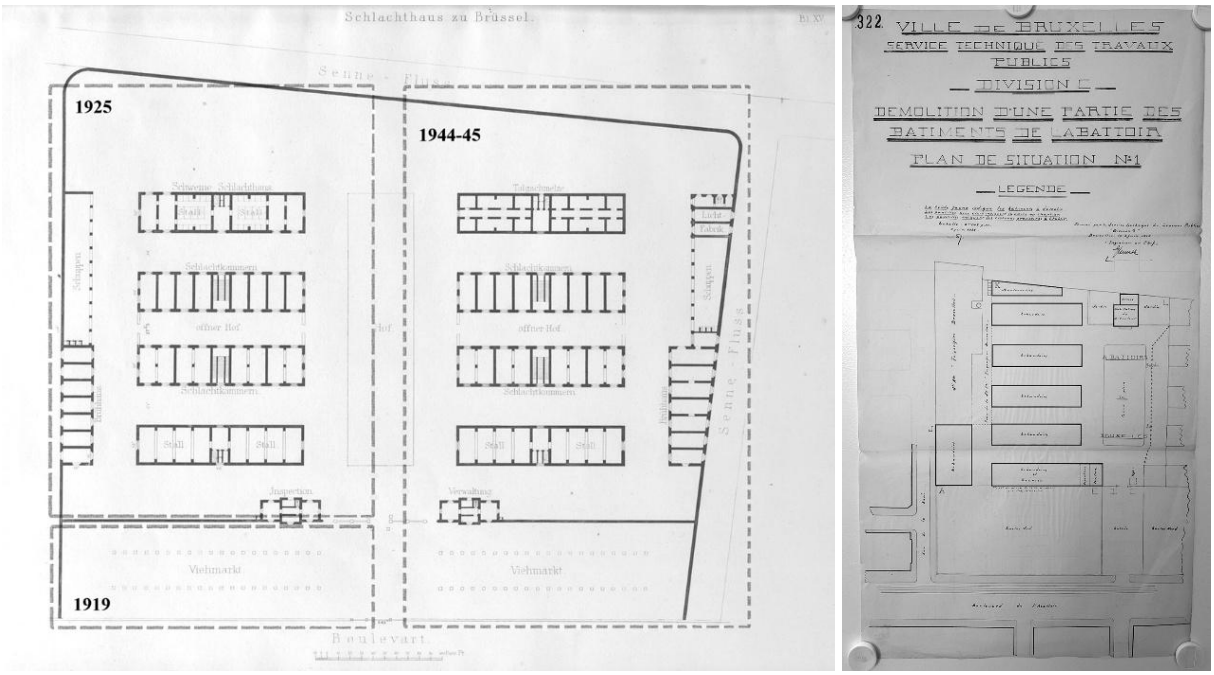

Figure 4: The demolition of the Brussels' slaughterhouse complex took place in three phases: 1919, 1925 and 1944-45. (left). For the 1925 phase, the City of Brussels attached a plan to the public tender, marking the buildings to be demolished in bold (right). (Left: Universitätsbibliothek Paderborn [25], Right: CAB TP 1925, 43664)

Salvage for Sale: The 1925 Demolition Campaign

As slaughtering operations caused increasing nuisance to local residents, they were gradually relocated to industrial areas on the urban periphery. In 1890, a new and extensive slaughterhouse complex was inaugurated in Anderlecht-Cureghem, further downstream along the river Senne and close to both railway and canal infrastructure. The former slaughterhouse buildings in the city of Brussels were repurposed before their eventual demolition. Following the First World War, the southern portion of the original slaughterhouse was redeveloped to house the *Institut des Arts et Métiers*. In preparation for this new construction, a demolition contract was issued in 1925 (Fig. 4), prior to the start of building works. This early scheduling was intended not only to allow the demolition contractor to complete the works under

favourable conditions, but more importantly, to enable the city of Brussels to maximise financial returns from the salvage and resale of demolition materials [8]. The southern iron-framed market hall, however, was excluded from the demolition tender, as it had already been destroyed by fire in 1919 and cleared in 1920.

Figure 5: Aerial pictures from 1930-35 and 1944 show the remaining northern part of the slaughterhouse site and its partial demolition in 1944. (Bruciel.Brussels)

Salvage for Self-Sufficiency: Wartime Demolition 1944-45

In 1944–45, plans were implemented for the demolition of the remaining northern portion of the slaughterhouse site, which included various masonry structures and the surviving northern iron-framed market hall. (Fig. 5) In contrast to 1925, the city opted not to issue a public tender for the demolition works. Instead, the demolition was carried out by municipal services, and the salvaged materials were reserved for internal use, primarily for repairs and maintenance of the city's building stock. This decision reflected the wartime context, in which building materials were both scarce and expensive. The demolition project also served as a form of social relief, employing some thirty workers who had been rendered unemployed by the war. In addition to processing materials from the slaughterhouse complex, the site also functioned as a hub for the recovery and sorting of materials salvaged from a nearby municipal school that had been damaged by fire [9].

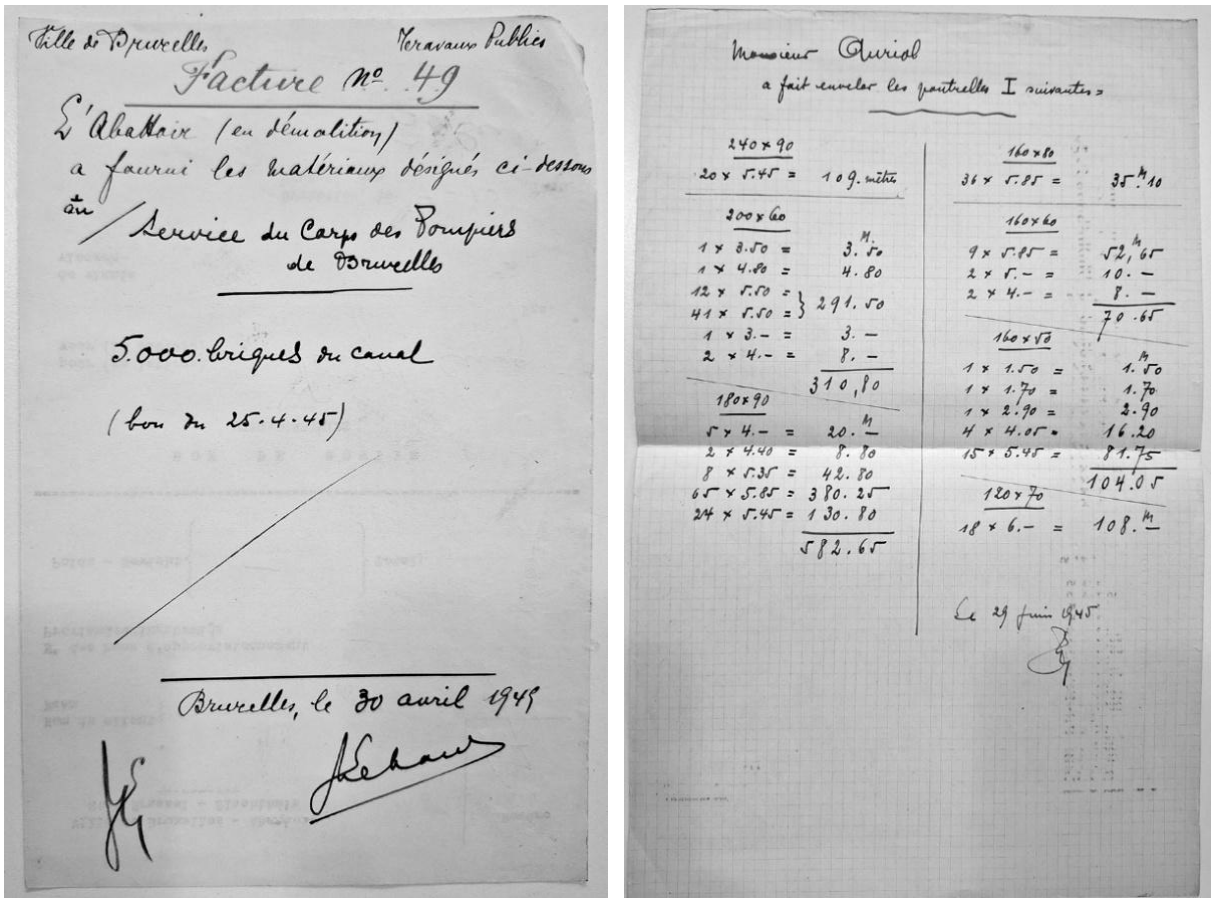

Figure 6: Material vouchers documenting the collector's name, type of materials, and date of collection provide insight into the material flows at the demolition site. (CAB TP 1944-48, 97918)

Table 1: Prices of salvaged materials and building components collected at the demolition site of the Brussels slaughterhouse in 1944-45

Salvaged materials	Price
Brick	0,18 franc /unit
Roof tiles Pottelberg	1 franc/unit
Crushed stone	50 franc/m³
Timber trusses	1000 franc/m³
Timber beams	1200 franc/m³
Timber boards	30 franc/m²
Firewood	0,5 franc/kg
Bluestone	1200 franc/m³
Copper	5 franc/kg
Lead	1,8 franc/kg
Zinc	1,6 franc/kg

Salvaged components	Price
Water Closet	60 franc
Storage tank	600 franc
Window frame	100 franc
Double door	250 franc

To streamline internal reuse, the city established a pricing system and informed municipal departments of available materials. These services were exempted from negotiating prices. The city departments eagerly made use of this opportunity: between January and September 1944, a total of 158 sales vouchers were issued to municipal departments, amounting to 777,761 francs [10]. The vouchers, which recorded the collector's name, the quantity of materials, and the date of collection (Fig. 6), served both accounting and inventory purposes. Despite site security, theft – particularly of timber and steel – remained a concern.
The vouchers show that nearly all building materials and components were sold for reuse in 1944 – not only bricks, roof tiles, timber beams and trusses, windows and doors, but even construction debris. (Table 1) Prices for reclaimed materials reveal their relative affordability. Second-hand bricks were sold at just 18% of the cost of new ones (1 franc per unit), which were used in the new buildings under construction on the site. At the time, a labourer earned 19.05 francs per hour, and a skilled worker 21.2 francs.

The high demand for salvaged materials in this period is illustrated by correspondence from contractors and merchants. Two Brussels stone-cutters (*L. Fraiture* and *Everaerts & Cie*) requested to purchase blue limestone, which had become scarce due to quarry closures. In another case, the *Société Belge des Bétons* applied to buy large timber beams (30 x 30 cm, 5 m long), stressing their importance for constructing temporary railway bridges for the Belgian State Railways – thus linking their reuse to national postwar recovery. A metal merchant, *Devis & Cie*, was allowed to purchase old zinc at 1.6 francs per kilogram, on the condition that they also supplied new zinc sheets for the city's extensive repair works [11].
While most archival records dating from January-September 1944—a period during which Brussels was under German occupation—pertain to the sale of bricks and timber, the fate of the 277 tonnes of iron originating from the northern market hall is less clearly documented. However, some documents suggest that some cast iron was treated as scrap metal, while structural elements such as wrought-iron I-beams appear to have been reused. For instance, in October 1944, shortly after the liberation of Brussels, scrap dealer *Vanderwerff* expressed interest in scrap iron from the slaughterhouse demolition as well as in military scrap left behind by the German army. The firm *Auriol* submitted a more concrete proposal, offering 0.65 francs per kilogram for scrap metal— 50 per cent above the city's initial valuation (0.43 francs/kg) [12]. A February 1945 letter, between the municipal building department and the Requisition Office, confirms that 3 tonnes of cast iron scrap were collected by the British army, described

as "*déchet de fonte*", indicating it was scrapped and destined for reprocessing into new steel. In contrast, a June 1945 receipt for 271 iron I-beams (documenting height, width, length, and quantity) suggests that these elements were reused in their original structural capacity, rather than being recycled. (Fig. 6) *Auriol*, who purchased the beams, had also submitted bids for other elements such as doors, window frames, Eternit pipes, and timber, indicating that it functioned as a broad-based reseller of salvaged materials [13].

Materials matter

The pre-use, reuse and recycling of the structural elements of the Brussels market halls reflect a well-considered use of resources, not only during the wartime context of 1944, but already at the moment of their initial design in 1880 and again during the partial demolition in 1925. Although the 1944–45 demolition took place under exceptional circumstances —marked by acute material shortages and an increased demand for metal scrap—the ultimate destination of the metal components was primarily determined by their construction value. This suggests that rising demand for scrap metal did not, in this case, undermine opportunities for reuse. Cast-iron components – difficult to modify due to their brittleness – were scrapped, while standardised wrought iron I-sections in common dimensions retained their value as reusable structural components, commanding higher prices than scrap. Nonetheless, the demolition itself—and the 'activation' of its components—was clearly influenced by the broader drive to identify and reclaim ‘obsolete scrap’.

While the case of the Brussels market halls illustrates the interplay between reuse and recycling across several decades, it also raises broader questions about the actors who enabled these material flows. Who dealt in second-hand construction metals, who scrapped them, and how were these actors situated within the urban economy? To explore this, the following section turns to the scrap metal sector in Brussels between 1880 and 1950, reconstructing the networks through which construction metals circulated.

Urban Actors in the Scrap Economy: Metal Reuse and Recycling Networks in Brussels 1880-1950

Shifting Technologies

The nineteenth and twentieth centuries witnessed the rise of a dense and diversified network of actors involved in the reuse and recycling of metals. This development occurred against the backdrop of technological shifts in the metallurgical industry. Belgium followed international trends in improving energy efficiency by adopting more flexible furnace technologies. The Siemens-Martin furnace was introduced as early as 1871 by the *Hauts-Fourneaux et Charbonnages de Sclessin*, allowing for greater process control and the combined use of iron ore and scrap. In 1909, SA John Cockerill installed Belgium's first electric arc furnace capable of operating entirely on scrap metal. Yet, despite these innovations, the Thomas process remained dominant in Belgium and neighbouring countries (Germany, Luxembourg, and the Netherlands) until 1950 [14].

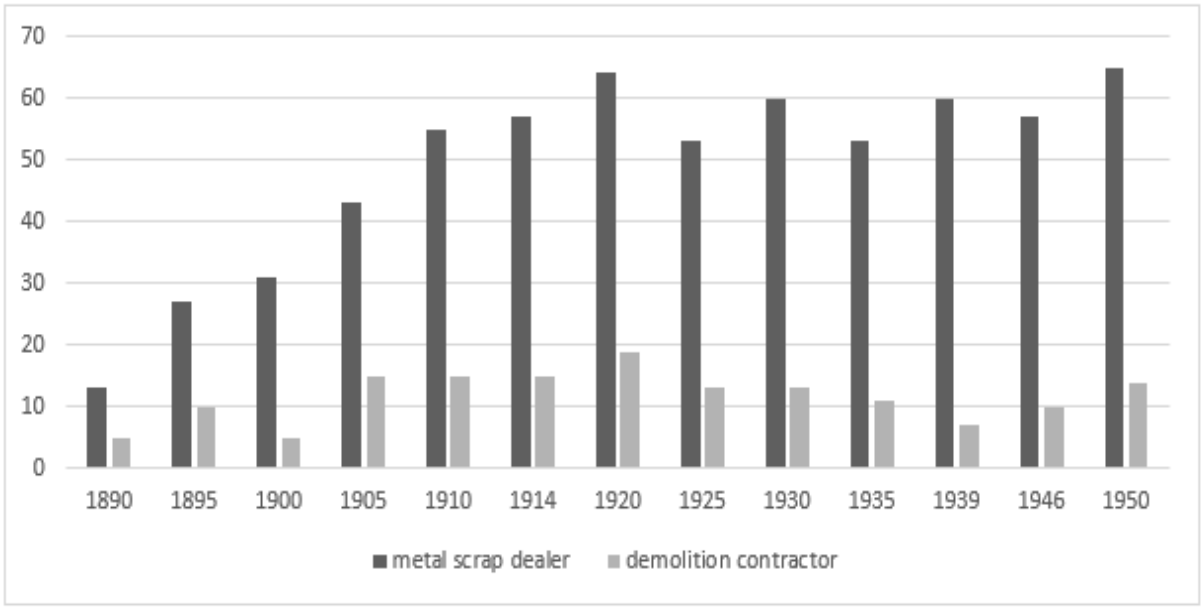

Figure 7: The number of firms identifying as 'metal scrap dealers' in the Brussels trade almanacs increased rapidly between 1890-1920, surpassing the number of demolition contractors.

Rise and Consolidation of the Urban Scrap Economy 1890-1950

These innovations in the metallurgical industry stimulated metal scrap trading in urban areas. To map the local actors involved, this paper draws on the trade almanacs, *Almanach Général Officiel du Commerce de L'Industrie* (1820-1969), which annually listed Brussels-based residents and firms by name, profession and address [15]. In 1859, the second-hand metal trade first appeared under the joint heading 'rags and scrap' (*chiffons et ferrailles*). From 1890 onwards, metal scrap dealers (*négociant en vieux metaux*)' were listed in a separate category. A longitudinal analysis, sampling entries every five years between 1890 and 1950, reveals a steep increase in the number of metal scrap dealers—from 13 companies in 1890 to 64 in 1920—followed by relative stability, with 65 firms listed in 1950. (Fig. 7) [16]. This trajectory reflects the rise and consolidation of the scrap trade as a distinct and stable economic activity in Brussels. By contrast, La Fonderie's 1990s study shows that, after the economic crises and deindustrialisation of the 1970s, fewer than 30 firms remained [17].

Mapping the Sector: Five Actor Types

Literature on metal scrap recycling generally identifies actors such as collectors, peddlers, dealers, processors, brokers and foundries [18]. This paper, however, adopts the demolition site as its point of departure, asking which actors expressed interest in salvaged construction materials and whether these metals were destined for reuse or recycling. In what follows, the paper distinguishes five actor types active in Brussels' scrap metal sector between 1880 and 1950: demolition contractors, material resellers, scrap dealers, wholesale merchants, and urban foundries. While these categories often overlapped in practice, each reveals different dynamics in how construction metals circulated—either for reuse in their original form or for recycling into new products. To identify these actors, trade almanacs were consulted and company advertisements analysed. By tracing salvaged materials from the demolition site to their new uses, the paper reconstructs how reuse and recycling actors were embedded in the urban fabric.

Figure 8: Advertisements in the Brussels trade almanach for demolition contractor Louis Peppe (1910), material reseller J. Hastière & Cie (1905), zinc foundry Jules Houssa (1939) and scrap dealer Jacobs (1946). (CAB Almanach)

Demolition Contractors: From Recovery to Service Provision

Demolition contractors occupied a strategic position at the intersection of reuse and recycling economies. As the primary agents responsible for dismantling buildings, they controlled access to a key urban resource: salvaged materials. Previous research on the emergence of demolition contractors in Brussels between 1860-1970 had shown that, until the mid-twentieth century, their business model relied heavily on the profitable resale of salvaged building materials – metal components included [19]. However, this model began to shift in the 1930s, when rising labour costs and increasing demands for speed transformed the logic of the sector. Demolition contractors gradually moved away from recovery-based income towards a fee-for-service model in which clients were charged for demolition work itself.

Trade almanacs offer a glimpse into this changing landscape. Some demolition contractors, like *Louis Peppe*, adverted both the "sale and purchase of materials and metals" (Fig. 8) and positioned themselves at the overlap of demolition and resale. Yet the small number of firms explicitly listed as demolition contractors (Fig. 7) suggests that a growing number of other professionals operated in the re-circulation of metal components – raising questions about how demolition work and scrap dealing were organised, and how their boundaries evolved over time.

Material (Re)sellers: Bridging New and Reclaimed Markets

Material resellers played a pivotal role in channelling recovered components from demolition sites back into the construction economy. Unlike demolition contractors, who dealt primarily with raw recovery, material resellers operated as intermediaries: they sorted, stored, and revalued components, often without altering them. Operating at the intersection of new production and second-hand trade, these actors enabled the reintegration of salvaged metals into building practices. Firms such as *Hastière* exemplified this dual positioning. Active between 1880 and 1920, *Hastière* advertised under both 'construction materials' (*matériaux de construction*) and 'used equipment' (*matériel d'occasion*), signalling its ability to serve both mainstream construction markets and the more opportunistic reuse economy. A 1910 advertisement for the firm (Fig. 8) specifically mentions a "storage facility for reclaimed beams, columns, and pipes made of cast and wrought iron" – a rare and tangible indication that structural metal components were not only reused but actively marketed as such. The firm's location on the Quai de Mariemont (Fig. 9) in Sint-Jans-Molenbeek—close to both canal and railway infrastructure—highlighted the logistical importance of such hubs in keeping the reuse market viable and competitive [20].

Figure 9: The depot of material reseller J. Hastière & Cie (left-side) was located along the canal in the industrial municipality of Sint-Jans-Molenbeek, 1902. (Collection Belfius Banque-Académie royale de Belgique © ARB – urban.brussels)

Figure 10: The family-run scrap dealing business Mathay (1930s-1990s) bought its first second-hand truck in 1947. (delcampe.net)

Scrap Dealers: Local Collectors in an Expanding System

Scrap dealers formed a vital link between the construction trades and the broader scrap economy. Between 1890 and 1920, the number of scrap dealers in Brussels increased fivefold. Many of these were new entrants to the sector: former farmers, transport workers, and small entrepreneurs who capitalised on emerging opportunities in metal recovery. Drawing on close relationships with roofers, plumbers and other trades, these dealers collected a wide array of materials: cast-iron radiators, zinc downpipes, copper wiring, lead plumbing components, and other residuals from construction and renovation work. In addition to discarded materials, they also sourced process scrap generated by offcuts and remnants from mechanical and construction workshops. The known origin and uniform quality of this process scrap made it particularly desirable for reintegration into metallurgical cycles, with higher prices offered by steelworks and foundries [21]. To accommodate diverse clientele and material streams, scrap dealers accepted both ferrous and non-ferrous metals; by processing and sorting the scrap in different categories, scrap dealers increased the resale value of their inventory when selling to wholesale merchants. Their ability to differentiate and pre-process metals was key to their profitability and to the overall efficiency of recycling system.

Logistics further shaped their urban presence. Until the 1950s, scrap transport was still largely dependent on horse-drawn carts, which encouraged dealers to cluster near workshops and small industries in working-class districts [22]. One illustrative example is *Mathay*, a family-run scrap dealing business that operated in Sint-Jans-Molenbeek from the 1930s to the 1990s. In 1947, the firm acquired its first motor vehicle (Fig. 10)—a second-hand truck— enabling it to advertise 'rapid collection' services for both ferrous and non-ferrous metals [23]. This shift illustrates how dealers adapted to changing mobility infrastructures, gradually extending their reach while remaining embedded in the neighbourhood economies that sustained them.

Wholesale Scrap Merchants: Processing Hubs and Port Logistics

Wholesale scrap merchants played a central role in transforming salvaged materials into standardized industrial inputs. While they received large quantities of scrap from local dealers, their sourcing networks were broader, extending to demolition contractors, industrial enterprises, and even private individuals. At their yards, they meticulously sorted ferrous and non-ferrous metals into distinct quality categories and processed them—by cutting, shearing or crushing—according to the specifications of their clients in the metallurgical industry.

During the 1950s, Brussels' two main wholesale scrap merchants expanded their operations. In response to growing demand and the need for space-intensive, specialised equipment, they relocated to the city's port area. *Vanderwerff* established its facilities along the canal linking Brussels to the seaport of Antwerp, optimising conditions for export. *Stevens*, by contrast, positioned itself at the Vergote Dock, with direct access to the metallurgical centres of southern Belgium via the Charleroi Canal. These strategic moves illustrate how urban infrastructure and logistics shaped the evolving scale and spatial footprint of the scrap economy.

Urban Foundries: Direct Recycling and Short Material Loops

Urban foundries formed the final link in the Brussels' metal reuse and recycling chain. Numerous foundries within the city sourced reclaimed materials for direct use in their production processes. To broaden their appeal, many expanded the range of metals they accepted. For example, the firm *Jules Houssa*, originally a zinc foundry, also processed lead and copper. (Fig. 8) Other actors, such as *Bernard Hagebaum*, specialised in supplying foundries with scrap metals – both ferrous (iron, cast iron, steel) and non-ferrous (copper, bronze, lead, tin, zinc).

While these foundries served diverse industrial sectors, the material loops involving construction components could be remarkably short, particularly when processing occurred

locally. In 1910, the Brussels-Capital Region still counted 23 ferrous and 61 non-ferrous foundries, with significant concentrations in Sint-Jans-Molenbeek (21), Anderlecht (18), and the city of Brussels (8) [24]. These same municipalities also housed the highest number of scrap metal dealers. This spatial clustering was no coincidence. Foundries, scrap dealers, and material resellers alike benefitted from strategic proximity to suppliers, railway lines and the canal. Between 1880 and 1950, this dense and efficiently networked urban fabric ensured that building professionals rarely had to travel far to secure favourable prices for reclaimed metal. The result was a locally embedded system of recovery and redistribution that enabled rapid reintegration of salvaged construction components into new (industrial) cycles.

While this paper distinguishes between categories of actors, their roles frequently overlapped in practice. For example, in the 1880s, the steel manufacturer S.A. John Cockerill repurchased surplus iron components from the city of Brussels—its original client—after the dismantling of the exhibition hall, thereby bypassing any intermediary scrap dealer. Similarly, by the mid-twentieth century, wholesale scrap merchants such as *Vanderwerff* had begun moving into demolition work themselves, advertising services such as 'factory demolition' and positioning themselves as direct competitors to established demolition contractors.

Conclusion

In early twentieth-century Brussels, reuse and recycling of metal components were not opposing or successive phases, but coexisting and interdependent practices. Their interplay was shaped less by ideological preference than by the practical realities of economic value, labour availability, and material characteristics.

The detailed study of the Brussels hall's lifecycle—from its prefabricated origins to its wartime demolition—illustrates how material choices were deeply contextual. Standardised wrought iron I-beams, which matched contemporary construction norms, were carefully resold for reuse. In contrast, brittle and outdated cast-iron elements were treated as scrap, destined for recycling. Hence, up to 1945, the growing demand for scrap metal appears to have had limited impact on the reuse of metal building components, whose continued use was largely determined by their functional compatibility with new building practices.

At the same time, the broader material economy was undergoing a transformation. From the 1890s onward, the number of urban scrap dealers rose sharply, while traditional resellers of

building components declined. Demolition contractors—once central brokers in the reuse economy—gradually shifted towards fee-based models and delegated sorting to others. Scrap dealers, often new to the building sector, took over the task of evaluating, processing, and redirecting materials. These actors professionalised the scrap trade and embedded it more firmly within urban infrastructures and labour networks.

Thus, up to 1945, reuse of metal components did not simply give way to recycling. Instead, both practices adapted to changing industrial, logistical, and economic conditions. Reuse became increasingly selective, tied to standardisation and construction utility, while recycling expanded through new entrepreneurial networks and foundry demands.

This entangled history complicates linear narratives of decline or substitution. It reveals how the fate of materials was not only a matter of technical properties, but also of shifting valuations, evolving labour models, and spatially embedded networks. Decisions about whether to reuse or recycle were negotiated at the intersection of material form, economic calculation, and urban infrastructure—reminding us that the afterlife of building materials was shaped as much by social and economic organisation as by physical durability.

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[3] The online platform Bruciel.Brussels brings together aerial photographs and geolocated images of the Brussels Capital Region from 1930 to today. https://bruciel.brussels/ (Consulted on 14th April 2025).

[4] City Archives Brussels (CAB), Actes Administratives (AA), 1879, *Exposition Nationale de 1880. Devis et cahier des charges relatifs à l'établissement d'annexes en fer et en bois de clôtures à ériger à l'ancien Champs des Manoeuvres pour L'Exposition Nationale de 1880*

[5] I. Wouters, 'The architectural and structural works of S.A. John Cockerill (1842-1955): balancing between craftmanship and mass production' pp.24-39 in S. Holzer, S. Langenberg, C. Knobling & O. Kasap. (Eds), *Construction Matters: Proceedings of the 8th International Congress on Construction History*. Zurich 2024, Zollikon: vdf Hochschulverlag AG, 2024; Société Cockerill. *Notice sur les produits divers des usines de la Société Cockerill figurant à l'exposition de Bruxelles de 1880*. Liège: Imprimerie de Léon de Thier. 1880.

[6] CAB, Travaux Publics (TP), 1882-87, 30060, Entreprise Cockerill

[7] CAB, (Note 4)

[8] CAB, TP, 1925, 43664, 'Plan demolition d'une partie des batiments de l'abattoir'. 9 June 1925

[9] CAB, TP, 1944-48, 97918, Abattoir de Bruxelles. Démolition

[10] CAB, (Note 9)

[11] CAB, (Note 9) Letter of *Fraiture* to City of Brussels (21 June 1945), Letter of *Léon Everaerts & Cie* to City of Brussels (19 March 1945), Letter *Société Belge des Bétons* to City of Brussels (19 June 1945)

[12] CAB, (Note 9), Rapport Abattoir de Bruxelles

[13] CAB, (Note 9), Letter From *Opeischingsdienst Stad Brussels* to *Inspecteur Général* (22 February 1945), Letter from *Vanderwerff* to City of Brussels (30 October 1944)

[14] F. Pasquasy, 'Elaboration et mise en forme du fer et de l'acier, de 1863 à 1945' pp.54-57 in B. Espion e.a. (Eds) *Patrimoines de fonte, fer et acier. Architectures et ouvrages d'art*. Brussels: FABI, 2018.

[15] The trade almanacs (1840-1969) of the City of Brussels can be consulted online via archives.brussels.be/online-archives

[16] Trade Almanacs, (Note 15).

[17] L.-A. Bernardo y Garcia, 'De la charette à bras au camion container. La récupération des métaux à Bruxelles, *Les Cahiers de la Fonderie*, no.17, 1994, pp.2-9.

[18] Zimring, (Note 1) p.52-53

[19] L. Reyniers, S. Van de Voorde, I. Wouters, ‘Small but significant. Tracing the emergence and evolution of the demolition profession in Brussels (1860-1970)’ in S. Holzer, S. Langenberg, C. Knobling & O. Kasap, Proceedings (Note 4), pp.1069-1076

[20] M. Degraeve, ‘Building Brussels. Construction Entrepreneurs in a Transforming Urban Space (1830-1970)’ (Ph.D. thesis, Vrije Universiteit Brussel, 2021)

[21] N.J.G. Pounds, ‘World production and use of steel scrap’, *Economic Geography*, 35(3), 1959, pp.247-258

[22] L.-A. Bernardo y Garcia, (Note 17).

[23] La Fonderie, B4155, Rapport ‘*Les Ferrailleurs. Louis Mathay*’, 1992, p.3

[24] La Fonderie, B9715, Rapport ‘*La récuperation des métaux à Bruxelles de 1841 à nos jours*’, 1992, p.13

[25] Reworked drawing (Plate XV) from: J. Hennicke, *Schlachthäuser und Viehmärtkte in Deutschland, Frankreich, Belgien, Italien, England und der Schweiz*. Berlin: Verlag Von Ernst & Korn. 1866. Plate XV, retrieved via digital.ub.uni-paderborn.de