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# Salvaging construction materials in Brussels, 1900–1925

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ABSTRACT: This paper studies the demolition and salvage process of construction materials in Brussels in the early 20th century (1900–25), a period that is generally considered a turning point in the reuse practice of construction materials but has not been researched in-depth. The paper is based on an analysis of the photographic collection of the Comité d'Etudes du Vieux Bruxelles, the building specifications of public sales of buildings to be demolished and municipal council reports. This gives insights into the process of demolishing buildings and the profile of the contractors involved, and offers a first glimpse of the selling and reusing of these building materials. With this case of the City of Brussels and through the study of these specific sources we aim to enlarge the knowledge of historic salvage of construction materials.

# 1 SALVAGING AND REUSING CONSTRUCTION MATERIALS

Today, reusing construction materials is again high on the agenda as it is considered one of the strategies within circular building to reduce waste and to decrease the environmental impact of the construction sector (Baker-Brown 2019). Although reusing materials has been a common feature in the construction sector for centuries, the practice came into disuse during the 20th century. The reuse of materials in this century is however hardly studied in the field of construction history (Bernardi & L'Héritier 2018: Hillebrandt et al. 2019: Stockhammer & Koralek 2020). The introductory chapter in the book on Déconstruction et réemploi (Ghyoot et al. 2018) covers the reuse practice in the 20th century throughout Europe and the USA and lists the main causes for the decrease of salvaging construction materials in the first third of the 20th century: the use of new, faster and more destructive demolition techniques: changing construction methods; and increasing labour costs. The chapter illustrates how this shift occurred with several events in various countries. For instance, due to the speed (45 days) of the demolition of the 13-year-old Gillender Building in New York in 1910, only few materials were salvaged, and in that same year Brussels' demolition contractors refused to demolish the Caserne Sint-Elisabeth if the time frame of three months was not prolonged (Ghyoot et al. 2018). The time pressure, raising wages and mechanization of the demolition process would further decrease the economic benefits of salvaging construction materials in the 20th century.

Although the constraints of time pressure and high wages are still valid today, new parameters such as environmental impact, life-cycle costs and material taxes are now taken into account. This changes the overall context and might further increase the demand

for reused materials. However, there is still a long way to go to reintroduce the practice of salvaging and reusing materials in the construction sector, since there are only few insights into its historical organization and underlying infrastructure.

In this paper we focus on the early-20th century (1900–25) to gain insight in the organization of the salvage and reuse of construction materials when this practice was still active and flourishing, and we investigate the speed at which it fell into disuse. Brussels is taken as a case because large demolition works took place (Figure 1) and specific sources are available to uncover parts of the process, networks and infrastructure that were used by the demolition actors. The main consulted sources are a collection of photographs ordered by the Comité d'Etudes du Vieux Bruxelles (1909–39), the building specifications of public sales



Figure 1. Vast demolition works were taking place in Brussels at the beginning of the 20th century. For instance, Rue des Douze Apôtres and Rue du Parchemin were demolished in 1909. Collection Comité d'Etudes du Vieux Bruxelles © Bibliothèque artistique, ArBA.



Figure 2. The Public Warehouse was photographed before its demolition in 1911. *Collection Comité d'Etudes du Vieux Bruxelles* © *Bibliothèque artistique*, *ArBA*.



Figure 3. Demolition contractor Guillaume Sauvage had 120 days to demolish the former Minimes Prison in Brussels in 1922. *Collection Comité d'Etudes du Vieux Bruxelles* © *KIK-IRPA Brussels*.

of buildings to be demolished and the municipal council reports (1900–25), preserved in the City Archive of Brussels (CAB). In total, 25 building specifications were analysed concerning the demolition of various kinds of buildings and ensembles, ranging from immense public buildings such as the Public Warehouse (Figure 2), the Minimes Prison (Figure 3) or entire streets with more than 100 houses (Figure 1).

First, the context of the photographic collection is sketched. Afterwards, the practice of demolishing and salvaging construction materials in Brussels is analysed: the process, the different actors involved, and the steps taken towards selling and reusing these materials.

## 2 SALVAGE AND REUSE IN REMEMBRANCE OF THE OLD CITY

When Brussels became the capital city of the newly established country of Belgium in 1830, it underwent tremendous urban changes (Leblicq 1979). Infrastructure works to cover the Senne River in the 1860s erased large parts of the historic city centre. Although many,



Figure 4. Window frames are taken out of the buildings before demolishing the houses on Rue Montagne de Sion. Collection Comité d'Etudes du Vieux Bruxelles © Bibliothèque artistique, ArBA.

new large avenues were erected with luxury houses, apartments and monumental public buildings, protests against the mass destruction of complete urban districts and smaller heritage buildings arose. In this period, the Belgian Royal Commission for Monuments (1835) was mainly occupied with the protection of national and religious monuments such as castles and cathedrals, and was not focused on preventing the mass demolitions of the medieval fabric of the inner city (Meyfroots 2001). In 1903, the Comité d'Etudes du Vieux Bruxelles was established to study and document the architectural heritage of the 16th, 17th and 18th centuries in the Brussels' city centre and to compose a photographic album of characteristic buildings and architectural details (Ingelaere 2001; Leblica 1979). This interest in preserving such heritage was not a Brussels phenomenon. In Antwerp, a commission (1882–85) was set up to decide on the preservation of relics from the oldest town centre, which was demolished due to the rectification of the Scheldt Quays (1874-85) (Dobbels 2011). In other countries, similar committees were also established, for instance in Lyon and Bordeaux and the Commission du Vieux Paris in 1897 (Meyfroots 2001). The systematic study of characteristic old buildings by the Comité d'Etude du Vieux Bruxelles was often interrupted by urgent photographic campaigns to capture districts and streets that were to be demolished in the context of urban renewal projects. In 1907–08 the Isabelle and Lombard streets were, for instance, photographed before remodelling the *Hofberg*. And the Putterie, Isabelle and Ter Arken neighbourhoods were photographed before the demolition works of the North-South railway connection started. Although these photographs focused on the still existing and soon-to-be-demolished buildings, the collection of over 1500 photographs, taken from 1903–39, also captured (by accident) part of the demolition process, tools and workers. When looking carefully at the photograph (Figure 4) of buildings to be demolished in Rue Montagne de Sion, one can observe that the window frames were carefully dismantled in their entirety.



Figure 5. Sorting materials (brick, timber, blue stone) at the demolition site of Chartreux Chapel in 1905. Rue des Fabriques 1 in Brussels. *Collection Comité d'Etudes du Vieux Bruxelles* © KIK-IRPA Brussels.

In the foreground, two horse carts are waiting to be filled with salvaged bricks. In Figure 5, stone, bricks and timber are sorted during the demolition of a chapel in 1905.

From 1906 onwards, the committee played a more active role in heritage conservation. The committee members not only convinced the City of Brussels to acquire some important buildings (such as the Bellone House in Rue de Flandre) but they also promoted the relocation of buildings with heritage value whose preservation in situ was impossible due to planned demolition and urban transformation works. Their proposal to create an open-air museum of city fragments at the exposition site *Cinquantenaire* was not supported. Yet, the facade of the Gouden Huyve (Figure 6) was carefully disassembled in the 1920s and rebuilt against the Sint-Nicolas Church in 1929. Similarly, the facade of the Sint-Anna Chapel was reconstructed adjacent to the Magdelena Chapel (Meyfroots 2001). Smaller elements with architectural qualities such as doors and staircases were also documented, photographed and salvaged on request of the committee and stocked by the City of Brussels (Meyfroots 2001).

For the *Comité d'Etudes du Vieux Bruxelles*, the preservation of heritage buildings and architectural details was a way to raise public awareness about the old city centre. Since they focussed on structures



Figure 6. The facade of the *Gouden Huyve* situated in Rue de l'Etuve 13 was carefully dismantled in the 1920s and reconstructed in 1929 next to Sint-Nicolas Church. *Collection Comité d'Etudes du Vieux Bruxelles*. © *KIK-IRPA Brussels*.

and details with high architectural quality constructed before 1850, their activities do not represent the overall salvage practice. To gain more insight in the broader context of demolition, salvage and reuse of construction materials, the public sales of buildings to be demolished are studied in the following paragraphs.

# 3 BUILDING SPECIFICATIONS OF DEMOLITION WORKS

In contrast to many developments at the outskirts of Brussels, the infrastructure works within the densely populated city centre of Brussels were always accompanied by demolition works. In the period 1900-25, the City of Brussels published public tenders for demolition works in the framework of the development of the Maritime neighbourhood, the realisation of a railway that connected the stations in the North and the South and the redesign of the *Hofberg* to connect the upper and lower city. These works resulted in the complete destruction of, among others, the former Putterie and Isabelle neighbourhoods. The public tenders, together with the offers of the contractor(s) can be consulted in the City Archive of Brussels (CAB) in the Actes Administratifs (AA), that contain a yearly overview of all tenders and offers.



Figure 7. Reconstruction of the facade of *Gouden Huyve* next to Sint-Nicolas Church. © Wouters.

For this paper, the *Actes Administratives* of the period 1900–25 were consulted. The annual books of the war years 1915–19 are, however, not preserved in the archive. In the studied period, the City of Brussels launched 25 tenders, *Vente publiques des bâtiments à charge de démolition*, unevenly spread over the years: varying from zero to six calls a year with a peak in 1904–11. The tenders for demolition followed the rhythm of the approval of urban transformation plans and the resulting forced appropriations. The buildings to be demolished were both private (houses) and public buildings (schools, a prison, a public warehouse).

The public tender documents, *Vente publiques des bâtiments à charge de démolition*, start with an explanation of the buildings to be demolished. It is mentioned that the buildings were sold in their actual state, excluding street pavements, gas and water service installations. In two projects, additional paragraphs are added. The building specification of 1910 covering demolition works in the Isabelle neighbourhood additionally mentions that the frame and woodwork of a door and window of the house in Rue Terarken 4 was excluded from the sale (CAB AA 1910: 7833). These architectural details were probably salvaged on request of the *Comité d'Etudes du Vieux Bruxelles*, as their 1907 photographical campaign depicts the street and the facade (Figure 8).

In 1914, not only architectural elements such as interior doors and a cast iron staircase, but also



Figure 8. The door and window frame at Rue Terarken 4, depicted via a photographic campaign in 1907, were salvaged during the demolition of the street in 1910. *Collection Comité d'Etudes du Vieux Bruxelles*. © *KIK-IRPA Brussels*.

technical equipment such as flush toilets with lead pipes and accessories, zinc discharge pipes, service taps and timber roof trusses were excluded from the sale of five out of 23 houses in Rue Madeleine (CAB AA 1914: 9083).

Next to a paragraph explaining the procedure about how and when to hand in the offers, the demolition works and the time limit for completion was discussed. The documents also mention the penalties in the event of non-completion at the end of the fixed deadline. In 1900, the penalty mounted to a fixed amount per day and from 1910 onwards this amount was fixed for the first fifteen days and doubled for the following ones. The time limit for completion of the works varies from fifteen days, for a small project in 1900, to six months, for the demolition of the large Public Warehouse in 1910 (Figure 2). The time limit was proportional to the size of the work. After 1910, however, the minimum period mentioned in the building specifications is three months, even for relatively small works. Ghyoot et al. (2018) defines the year 1910 as a turning point in the reuse of construction materials in Brussels. In that year, Brussels' contractors did not agree with the time limit mentioned in the building specifications of the demolition of the Caserne Sint-Elisabeth. The contractors requested an expansion of the period from three to six months, otherwise they would charge money to demolish the building instead of paying to carry out these demolition works (Ghyoot et al. 2018). In all 25 building specifications and the corresponding offers in the time period 1900–25 that were studied, the contractor proposed a budget to demolish the buildings. The turning point, when contractors were paid to demolish a building instead of paying to salvage the materials themselves, is not visible in our study. However, the number of tenders issued by the City of Brussels decreased after 1910 in favour of combined tenders where demolition works were included in the specifications of new buildings to be erected (Baes 2021).

Furthermore, the building specifications stipulated that the contractor had to build a solid, timber fence around the demolition works and that he could not use public spaces to stock materials.

When demolishing a terraced house, the roof of the adjacent building and the common wall had to be covered with tiles.

Attention had to be paid not to interrupt the rainwater runoff. Exposed side facades had to be flattened: bricks coming out of the wall had to be removed and openings created when taking out timber beams had to be filled. If a new wall was to be constructed to demarcate the plot, no recovered materials could be used for that purpose. This is somewhat surprising, as all demolition works generated salvaged bricks that could be reused for such works. The building specification of 1914, issued just before the First World War, stated that salvaged brick and timber had to be used to construct a wall, the fence and the gate. However, these reused materials had to be in perfect condition and their quality was judged by the Administration's agents (CAB AA 1914: 9083).

The contractor also had to comply with the *Cahiers* des Charges Générale des entreprises de travaux de la Ville de Bruxelles (1884) that imposed obligations with respect to the workers: the contractor had to pay his workers the minimum wage and had to insure them against accidents. Lists of these minimum wages were available at the City Administration. In some building specifications, these lists are included. In 1905, the minimum wages for 36 professions in the construction sector are mentioned: the wage per hour of workers ranged from 35 to 55 centimes, the wage of helpers was about half of that. The profession of démolisseur was mentioned for the first time in such a list in 1910. The minimum wage for a demolition worker was 45 centimes and thus lower than the wage of masons and carpenters (50 centimes), yet higher than the 40 centimes for *charretiers et terrassiers* who guided the carts and moved the earth (CAB AA 1910: 7695). The building specifications included regulation of working hours, which could not exceed ten hours a day. The workday was further reduced to a maximum eight hours in the building specifications of 1922. These 1922 specifications also contained an article on the treatment of horses: "Horses used for the transport of materials must be fit for their intended purpose, free

of sores and lameness. They shall not be overloaded or mistreated" (CAB AA 1922: 8935).

#### 4 DEMOLITION ACTORS

The Actes Administratives include both the building specification and the offer of the contractor who was appointed the works. From the 1920s onwards, an overview of all submissions was added, which allows to compare the offers and get insight in the group of contractors submitting an offer. As such, we know that eight contractors sent in offers to demolish the former prison, Minimes, in 1922. Demolition contractor Guillaume Sauvage was granted the works as he offered 22,477 fr. The difference with the lowest bid was guite large: demolition contractor Pierre-Jules Jacquemyns bid only 7550 fr. (CAB AA 1920: 9835). For the offers submitted before the 1920s, some comparison is possible when the work was split up in different lots and when contractors sent in offers for several lots. The tender for the demolition of the Public Warehouse that was published in 1910, was split in three lots: (1) main building, (2) adjacent small office building and (3) iron fence. The contractors Guillaume Van Humbeeck and Louis Peppe were assigned the first two lots offering respectively (1) 52,000 fr., (2) 5520 fr., and (3) 1600 fr. for the works. The contractors Henri Wyckmans and Adam Driessens were assigned the third lot offering respectively (1) 32,825 fr., (2) 4775 fr., and (3) 2500 fr. for the lots. (CAB AA 1910: 7881) Although only these two offers of bidding contractors were included in the Actes Administratifs, it is again clear that the offers greatly fluctuated.

As the majority of the works was split up in two to four lots, the 25 demolition works represent 43 lots that were assigned to 26 different contractors. Contractors Jean Vandensanden (1905–07), Louis Peppe (1909–11) and Guillaume Van Humbeeck (1907–22) were the most successful ones as they were involved in respectively three, four and five demolition projects.

From 1900 onwards, the large majority of appointed contractors profiled themselves in their offer as 'demolisher' or 'demolition contractor'. They were also mentioned with the same job description in the Annuaire alphabétique belge du Commerce et de l'Industrie. Edition Bruxelloises. The contractors Jean Vandensanden, Antoine Vandesavel, Guillaume Van Humbeeck and Jacques Van Humbeeck were successful bidders and acted as (independent) demolition contractors. Other bidders combined the demolition of buildings with the selling and buying of salvaged materials. They also profiled themselves as demolition contractors in their offer, yet in the *Annuaire*, they were mentioned as 'demolition contractor and seller and buyer of old construction materials'. Contractors François Dufour, Henri Elsoucht, Louis Huyghe, Pierre-Jules Jacquemyns, Louis Peppe and Léopold Vanhaelen belonged to that category (Figure 9). Very often, contractors teamed up when sending in an offer.



Figure 9. Advertisements of demolition contractors Louis Peppe, Pierre-Jules Jacquemyns and Léopold Vanhaelen in the *Annuaires Alphabétique Belge du Commerce et de l'Industrie. Edition Bruxelloises. 1925.* © City Archive of Brussels.

Louis Peppe teamed up successfully with demolition contractors in four projects (1909–22). The bid was thus always submitted by a contractor, whether or not linked to someone who was also specialised in selling or reusing the construction materials. The offer for the demolition of houses on Rue de Flandre in 1907 is, however, an exception. The bid was not initiated by a contractor, but by a truck driver, F. Vandermeeren, who teamed up with second-hand material sellers Jules Bardiaux and Aloys Spilthooren (CAB AA 1907: 6697). Although exceptional, it was not illogical as the transport of materials and rubble was an important part of the demolition works.

Although these demolition contractors and the sellers and buyers of old construction materials are important actors, not much is known about them. Through the Annuaires we were able to trace the addresses of their offices and depots and get a view of their geographic distribution within the city. Most of their depots for salvaged materials were located near the canal and the railway (Rue d'Allemagne, Rue Goujons, Rue Ropsy-Chaudron) in the industrial neighbourhoods. The location strategy of these second-hand-material sellers therefore seemed similar to the companies that were selling new construction materials to the City of Brussels (Vandyck & Degraeve 2019). The depots of Brussels' two largest material suppliers were also located near the canal and the railways: that of Ackermans at Quai de Matériaux and that of Fontaine at Quai de Willebroeck (Baes 2021). Today, none of the depots of salvaged materials used by the mentioned demolition contractors still exists, as they have all been demolished.



Figure 10. The Brussels' demolition contractor Henri Elsoucht explains to a client in 1922 that he can sell eight salvaged steel trusses in perfect condition. © Delcampe.be.

## 5 SELLING SALVAGED MATERIALS

The analysis of 25 demolition projects issued by the City of Brussels in 1900–25 shows that contractors paid large amounts of money to demolish a building and transport the materials to depots. How profitable was this business and to whom could they sell the salvaged materials afterwards? These important questions could not be answered by the sources analysed. Studying archives of demolition contractors would be very relevant, yet until now these could not be retrieved. The letter, sent in 1922 by demolition contractor Henri Elsoucht, (Figure 10) in which he is actively seeking a customer for the sale of eight salvaged metal trusses, is indicative of the importance and large potential of such (still to be discovered) demolition contractors archives.

To gain some insight into the selling of salvaged building materials, we analysed the public sales organised by the City of Brussels in 1900–25. A *Vente publique d'objets trouvés, vieux matériaux et objets sans emploi* was regularly organised at the City material warehouse at Cail-Halot. (CAB *Bulletin Communal* 1900–23) These announcements of the public sale of found objects, old materials and unemployed objects contain a general list mentioning the sale of items such as old furniture, beds, baskets, ladders, wheelbarrows, handcarts, and also architectural components such as stairs, doors, frames, shutters, and marble fireplaces, and construction materials such as blue stone

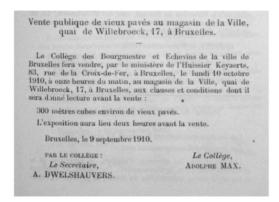


Figure 11. The City of Brussels organised public sales of old cobblestones on a regular basis. *Ville de Bruxelles. Bulletin Communal 1910* © City Archive of Brussels.

and cast-iron scrap. Such a public sale was organised ten times in the studied period of 25 years. However, these general announcements do not allow us to determine precisely how many construction materials were sold and to whom. Yet, the fact that the City of Brussels continued to organise the sales, means they will have been profitable.

The City of Brussels also organised a sale of old cobblestones one to five times a year at the City's material depot at *Quay Willebroeck* 17 (Figure 11). The yearly number of cobblestones sold varied from  $300 \text{ m}^3$  to  $2950 \text{ m}^3$ . The large amounts sold in 1909-12 originated from the demolition works in the Maritime neighbourhood and the Public Warehouse (CAB Bulletin Communal 1902-23).

## 6 CONCLUSIONS

The first third of the 20th century is often referred to as the period when reusing construction materials got out of practice. This study demonstrates that the City of Brussels continued to issue public tenders to demolish buildings in the period 1900–25 and that contractors continued to offer bids to salvage the materials. The bidding contractors profiled themselves as specialised contractors in demolition works and often teamed up with sellers and buyers of salvaged building materials. In 1925, there were still many demolition contractors active in Brussels, willing to submit bids as is demonstrated by the eight bids for the demolition of the prison in 1922. The overall decline in the reuse of construction materials that is mentioned in literature, is thus less evident in the sources we have studied. However, there is a clear decline in the number of public tenders that was issued by the City of Brussels for demolition works after 1920.

The photographs of the *Comité d'Études du Vieux Bruxelles* depict possible reasons for the long period in which the salvage of construction materials was common practice in the City of Brussels. The pictures show that the buildings to be demolished were

constructed according to the traditional construction techniques (brick, stone, timber, lime mortar) making them easy to dismantle. Moreover, we do not see workers using mechanical equipment which means the materials were dismantled carefully, they were less damaged (when compared to mechanical demolition works) and could be reused and sold more easily.

Further research will enlarge the period and geographic area studied and will include demolition contractors' archives.

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