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Published in:
Studies in the History of Services and Construction

Publication date:
2018

Document Version:
Submitted manuscript

Citation for published version (APA):
Spatial analysis of timber construction SMEs in Brussels (1880-1980)

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Introduction
Despite frequent innovations in the building process, timber has been persistently used as a construction material, from pre-industrial times until today. The activity of enterprises that were involved in timber construction, such as carpenters, joiners, cabinetmakers, sawyers and merchants, was therefore continuously indispensable. This was also the case in Brussels, where new building styles that required refined woodwork were abundantly adopted. Timber was not only used for the furnishing of buildings, but also for their structure, even during the age of iron engineering.

Although much historical research has been done on timber constructions in Brussels, both from pre-industrial and modern times, the many small and medium-sized enterprises (SMEs) that were involved in realising these constructions remain largely unexplored. In researching actors in the building process, the focus of attention within construction history has namely often been directed towards the few large and prominent enterprises. Nonetheless, the high labour intensity and the high degree of specialisation in the construction process generally obstructed economies of scale, which compelled most construction enterprises to organise their production on a small scale. There is a high need for profound knowledge on this multitude of small contractors, craftsmen and material suppliers that have persistently formed the backbone of the (timber) construction industry.

From the late nineteenth century on, a strong demographical growth caused a boom in construction activity in Brussels. The previously rural outskirts around the city centre rapidly developed into genuine suburbs. A substantial part of the construction labour market was formed by carpenters, joiners and other woodworkers. According to the Belgian industry census of 1896, nearly 12,000 people were professionally involved in the timber industry in all
municipalities of the current-day Brussels-Capital Region. They were dispersed over little more than 3,000 enterprises, employing on average four people – making most of them proper timber-SMEs. By 1910, a 50 per cent increase in only fourteen years had taken place, amounting up to slightly less than 18,000 people employed in the sector. This average was strongly surpassed in most Brussels suburbs that were rapidly developing at the time, such as Ixelles (from 1,040 to 1,700 timber workers, or a 63 per cent increase) and Schaerbeek (from 855 to 1,615 timber workers, an 89 per cent increase). Conversely, in the old city of Brussels a decrease of 13 per cent in timber employment took place (Fig. 1).
This study’s objective is to obtain new insights in the evolution of the organizational flexibility and activities of these small actors in the timber construction industry. This can benefit not only business historical insights within construction history, but also historical research into timber constructions. The paper focuses on the spatial management of the timber-SMEs in Brussels by analysing their economic-geographical logics (the location where they settled) as well as their architectural logics (the building types they used). In this way, we can assess how they were able or unable to spatially maintain their business activities in the urban fabric, precisely during the period when their embeddedness was challenged by comprehensive urban developments (such as functional zoning policies and rising real estate prices) that eventually drove many of them out of the city after the Second World War. The scope of the research starts well before these developments initiated (1880) and ends when their consequences had become clear (1980).

**Methodology**

The industrial patrimony used by the Brussels’ timber-SMEs between 1880 and 1980 functions as the interdisciplinary point of departure for the spatial analysis. The location of the remaining industrial buildings informs us about the economic-geographical logics, and their architectural typology about the infrastructural logics. Since the aim is not to map every single timber-SME, the fact whether a timber-SME’s infrastructure is still there today (regardless of the survival of the enterprise itself) functions as a convenient parameter to scale down the large number of enterprises to a practicable sample, which is however still sufficiently extensive to allow for statements on the spatial characteristics of the entire industry.

To trace a substantial amount of buildings that accommodated timber-SMEs, we used an existing inventory of Brussels' industrial patrimony, the *Inventaire visuel de l'architecture industrielle*, composed in the early 1980s (therefore the *terminus ante quem* of our research). Multiple researchers of the Brussels' *Archives de l'Architecture Moderne* (AAM) then roamed the streets of the Brussels-Capital Region in search of industrial buildings they deemed worthy of inventorying, dating from 1940 or older, for their architectural and/or historical value. Although the inventorisation of buildings was not always based on profound historical argumentation (due to a lack of archives) and the approach was rather unsystematic on a regional scale, it is with over 1600 records the most efficient instrument to trace a multitude of
historical industrial buildings in Brussels. Buildings that had accommodated a timber construction activity (whether as their original, successive or actual (1980s) function) were filtered out by searching for keywords related to the timber industry and commerce. This resulted in a database of 157 buildings. 80 of them still exist today, on which we based the spatial analysis in this paper.

Analysing the data provided by the Inventaire visuel produced some basic information on the timber-SMEs: their location, activity (carpenters, joiners, cabinetmakers, sawyers, merchants...) and the period in which they were active (admittedly sometimes quite roughly estimated by the inventorisers). Furthermore, we investigated the infrastructural needs of the timber-SMEs by morphologically analysing the 80 buildings that are still present today. To grasp this multitude and complexity of industrial buildings, a systemic research methodology can be found in the extensive discourse on type and typology. Not surprisingly, the authors of the Inventaire visuel suggest its use for “the architectural historian engaged with the emerging study on industrial typology”. According to the Neo-Rationalists’ understanding of typology, the proliferation of ‘types of buildings’ in both space and time embodies certain strongholds under a multitude of cultural, political and economic influences. Interested in the logical construction of the built environment, this research methodology takes basic forms, or types, as the preferred knowledge instrument for researching the city. The type is defined as the abstraction of buildings with inherent similarities, albeit functional or formal, programmatic or stylistic. Even though it serves as the rule for proliferated artefacts, it can only be recognized a posteriori. By serially ordering these artefacts, it becomes possible to unveil and define such categories, or types of buildings. The typological study of the timber-SMEs’ buildings commenced with analysing the 80 still existing buildings we extracted from the Inventaire visuel. From an iterative process between the abstracting parameters and the abstracted object, 25 morphological parameters (of which a selection is presented in Fig. 2) were generated, informed by cadastral data, figure ground maps, building permits and aerial imagery. The parameters resulted in eight categories, or types, to which 90% of the 80 studied buildings attributed. We will present six of the eight categories. This selection is pragmatically based on the availability of data gathered via research of building permits, on-site investigations and the scope of this paper.
Figure 2 - Graphical representation of morphological parameters for Rue Marie-Henriette 52, 1050 Ixelles.

Confronting the different parameters on the timber-SMEs’ buildings (location, activity, period and building type) with each other, allowed for a spatial analysis of the subsector on a macro scale, both economic-geographically (by spatial GIS-mapping) and architecturally. To provide qualitative evidence for this macro analysis, we also investigated a selection of timber-SMEs and their buildings as case studies. These were selected based on the building types (either some similar cases that validated a type, or exemplary cases from different types), the availability of sources, and on-site accessibility. Both the buildings and the timber-SMEs they accommodated were submitted to an in-depth historical investigation by means of business historical sources such as commercial almanacs, fiscal registers and building permits.

The location of timber construction SMEs

**GIS-mapping**

By mapping the buildings that accommodated a timber-SME between 1880 and 1980 on an actual cadastral map (Fig. 3), as well as by mapping other parameters on the timber-SMEs, we can draw some economic-geographical conclusions on the subsector in Brussels.
Two main clusters become apparent. The first is situated along the Canal Antwerp-Brussels-Charleroi, more specifically in the municipalities of Schaerbeek, Molenbeek and Anderlecht (the Canal-cluster). The second cluster is located on the south-eastern side of the city centre, mainly in the municipality of Ixelles (the Ixelles-cluster). To interpret the main economic-geographical features of the industry, we focus on these two clusters by confronting them with the specific timber construction activities executed on these locations (Fig. 4) and with the periodisation of the clusters’ growth and decline (Figs 5-6).
Figure 4 - Geographical mapping of timber-SMEs’ activity, based on the Inventaire Visuel. Created by authors with the use of GIS-software and Brussels’ cadastral maps.

Figure 5 - Geographical mapping of timber-SMEs’ activity’s starting date, based on the Inventaire Visuel. Made by authors with the use of GIS-software and Brussels’ cadastral maps.

Figure 6 - Geographical mapping of timber-SMEs’ activity’s ending date, based on the Inventaire Visuel. Made by authors with the use of GIS-software and Brussels’ cadastral maps.
The Ixelles-cluster mainly consisted of joiners and cabinetmakers. Lumber mills and timber merchants were on the other hand nearly exclusively located in the Canal-cluster. Concerning the periodisation, the mapping only shows some slight indications. It seems that the Canal-cluster hosted timber-SMEs for a longer period than the Ixelles-cluster. New enterprises were established throughout the entire period near the Canal, whereas in Ixelles this was mostly the case between 1893 and 1945. In both clusters, many timber activities disappeared after 1945.

In the following paragraphs we analyse why the two clusters developed on these locations, both by using theoretical frameworks and by zooming in on a few case enterprises that illustrate the general trends.

The Canal-cluster

For over a century, the Brussels’ Canal was the city’s main economic lifeline. From 1832 onwards, it connected the capital city of the brand-new Belgian nation with the southern coal-mining area around Charleroi. Until the Second World War, it attracted various industrial activities in Brussels and caused an enormous growth of the urban economy. Especially after 1860, a large-scale industrial development took place alongside the Canal. The least cost theory, formulated in 1909 by the German economist Alfred Weber, forms a logical explanatory framework for this development. It stipulates that industries tend to settle where transportation costs can be minimized. If the production process entails a considerable loss of weight, then the transportation costs to deliver raw materials into the factory are higher than those to deliver the finished products to the clients. Firms executing weight-losing industrial processes therefore settle as close as possible to their suppliers, or at least to the main supply transport channel. Weight-gaining industries on the other hand settle closer to the consuming market.

The least cost theory explains why most lumber mills and timber merchants settled in the Canal-cluster. Their industrial process was by definition weight-losing: large timber logs were brought to the factory, where they were sawn and processed into smaller, cheaper conveyable boards. Their settlement near the Canal in turn attracted other enterprises, such as joineries, that depended on their supplies.

An important timber merchant enterprise in the Canal-cluster was established by Jean-Mathieu Lochten in 1882. After a few temporary sites, he settled in 1890 in the Rue des Coteaux in Schaerbeek. It was an excellent location for a timber merchant. Supplies could directly be transported from the Canal via the straight Avenue Rogier (approx. 1.7 km) whereas a train
station next to the Rue des Coteaux gave additional transportation opportunities. After Jean-Mathieu Lochten’s death in 1908, his son Edmond took over the company. While Edmond’s business was continued by his son Henri Lochten after his death in 1932, his two other sons started a timber merchant enterprise of their own. François Lochten settled in 1923 on the other side of the street, in the Avenue Rogier, where this business is still present today. Louis Lochten moved in 1935 to the Rue d’Ostende in Molenbeek, only 750m from the Canal. Louis’ enterprise existed until the 1980s. In 1968, Jean-Mathieu Lochten took over the original Lochten company from his father Henri. It remained a family business until 1994, when an employee took over. The firm left the Rue des Coteaux in 2011, settling in an industrial zone in Forest. Today, it is through the enterprise founded by François Lochten that the name is still present in the same neighbourhood in Schaerbeek where Jean-Mathieu Lochten arrived nearly 130 years ago. It indicates the importance of another decisive economic-geographical factor: the strong long-term connection a firm can develop with a specific neighbourhood.

The Ixelles-cluster

From the second half of the nineteenth century onwards, a large-scale urban development took place beyond Brussels’ pre-industrial city ramparts. The wealthy urban elites settled in large numbers in the eastern uptown districts. The south-eastern suburb of Ixelles attracted many of them between 1880 and 1910. The number of inhabitants more than doubled during this period, from 36,000 to 73,000. It quickly became a densely built municipality. From the GIS-mapping it appears that, from 1893 on, also quite a lot of timber-SMEs, especially joiners and cabinetmakers, settled in this area.

Transportation costs to deliver raw materials were also for the timber-SMEs in the Ixelles-cluster an important locational factor. Most of them settled in the valley of the Maalbeek (so-called ‘low-Ixelles’, Fig. 7). As steep inclinations were nearly insurmountable for heavy-fraught horsedrawn carriages, this valley developed as an industrial axis for SMEs in Ixelles. There were probably even some pre-industrial antecedents of supply transportation costs as cause for the emergence of the Ixelles-cluster. Back then, the nearby Sonian Forest was still a timber resource for the city. Timber suppliers mostly settled in Ixelles, the city’s peripheral village closest to the forest. The age-old presence of the timber industry in Ixelles likely facilitated the local continuity of the subsector.
Figure 7 - Geological map showing the contours of the municipality of Ixelles and its timber-SMEs' patrimony.

Image created by authors by the use of GIS-software and cadastral maps.
Nonetheless, supply transportation costs can only partly explain the emergence of the Ixelles-cluster. As the least cost theory states, the construction process is in the first place weight-gaining, since it results in an immovable structure. The furniture-making and other finishing woodwork labour in the workshops of joiners and cabinetmakers had to take place as close as possible to the construction sites, in order to diminish transportation costs for delivering the finished products. As many of the wealthy elites (who had a large demand for woodwork) built their houses in and around Ixelles, the settlement of many timber-SMEs in the same district was a logical consequence.

Locating near clients in a dense residential urban fabric is generally not that easy for the often large-scale weight-gaining industries. However, since the industrial activity of these joiners and cabinetmakers was so small-scale (cfr. infra), their settlement in this dense fabric was not at all problematic. In this way, the timber-SMEs could economic-geographically behave not only as weight-gaining industries, but also as retail businesses. According to Walter Christaller’s central place theory, retail businesses usually settle where customer accessibility is maximised, according to their products’ threshold (the minimum market needed to make it profitable) and range (the maximum distance consumers are prepared to travel to acquire it). Both theories (least cost and central place) therefore explain the emergence of the Ixelles-cluster. The cluster consisted of timber-SMEs that were able to spatially focus on the demand side. It confirms the observations of similar developments in other regions and periods of construction (finishing) labourers settling where construction activity boomed.

After the settlement of multiple ‘pioneer’ timber-SMEs in the late nineteenth century, the Ixelles-cluster was consolidated in the first half of the twentieth century, even when construction activity slowed down. Knowledge transfers, settlements of apprentices near their masters, the proximity of local supply distributors and mechanised sawyers, and other agglomeration forces are likely to have continued the long-term local embeddedness of the industry in Ixelles. Just like the Lochten enterprise, many joiners in Ixelles maintained their business on the same location or in the same neighbourhood during their whole professional career. A suitable location was sometimes even handed over to the next generation, so some places eventually hosted timber-SMEs for over a century, as some examples may clarify.

In 1894, joiner Pierre De Groef settled in the Rue Dillens 23 in Ixelles. In 1930, joiner Charles Edrich took over his business and installed a mechanical sawmill, thus providing valuable
services for the many not yet mechanised joineries in the neighbourhood. After the war, joiner Vander Velde took over, but quickly left the enterprise to his son, who still runs it on the same location today.

Joiner Alfred Hulet initiated his business in 1897 in the Rue Washington in Ixelles’s brand new Ten Bosch neighbourhood. In 1902 he resettled in an adjacent street, the Rue de Tenbosch 46. His firm existed on this very spot until 1968.

The cabinetmaking firm Wallaert forms a contrast with the long-term local embeddedness of many timber-SMEs, at least during the nineteenth century. Its foundation by Louis Wallaert dates to 1818. It was situated in the Rue de la Montagne, one of the most popular shopping streets of Brussels’ city centre at the time, indicating the early importance of customer accessibility for timber-SMEs. In 1827, he moved to a larger workshop around the corner. His son Louis E. Wallaert relocated the firm in 1856 to the eastern urban extensions, a brand-new district that attracted many wealthy citizens. In 1868 and 1870 he relocated again to keep up with the urban developments. His brother Hector Wallaert continued this habit after he took over in 1882. He settled along the boulevard surrounding the old city centre, near the Avenue Louise which was the late nineteenth century attraction pole for the wealthy elites. Hector’s son Jules Wallaert established the final relocation in 1894 by moving across the street to the Boulevard de Waterloo 90. His son Hector Wallaert continued the firm on the same location from 1916 until 1975, when the then nearly 160 years old family enterprise ceased to exist. Whereas the nineteenth century saw frequent relocations to keep up with the rapid spatial shifts in demand, the firm was able to establish a local embeddedness during the twentieth century, just like several joiners in Ixelles did.

Through this economic-geographical analysis, a contrast became clear between timber-SMEs in the Canal-cluster and those in the Ixelles-cluster. Whereas the former were spatially more focused on the supply side, the latter were focused on the demand side. In both clusters there were nevertheless firms that developed a long-term connection with a specific neighbourhood. A lot of sites were used by an enterprise for many decades, but they also frequently relocated to new sites in the immediate surroundings, according to their evolving infrastructural needs. By evaluating the timber-SMEs’ infrastructure, we can therefore explore and explain the contrasting spatial needs of the enterprises in both clusters more in depth.
The architecture of timber construction SMEs’ workspaces

The study of the morphological embeddedness of the industrial patrimony unveils a considerable distinction between building blocks of residential and industrial nature. The patrimony located in residential building blocks largely exceeds other surrounding buildings in terms of horizontal building depth (2,5), built-unbuilt ratio (1-5), parcel width (4,5) and deviates in terms of volumetric composition (1,2). On the other hand, the patrimony in industrial building blocks is surrounded by similarly large structures. What follows is an overview of the studied types and their paragon examples.

![Figure 8 - Representation of case studies for industrial types by means of 3D GIS-data, cadastral maps and images from the Inventaire visuel (© AAM / Fondation CIV/A Stichting, Brussels). From left to right: (1) Rue Saint-Georges 93 Ixelles, (2) Rue de Tenbosch 46 Ixelles, (3) Rue de la Brasserie 118 Ixelles, (4) Chaussée de Boondael 365 Ixelles, (5) Avenue Rogier 116 Schaerbeek and (6) Rue de Birmingham 58 Molenbeek.]

The ‘industrial hall’ is conceived as a plan-libre with load bearing walls, few columns and high roof structures to be as generic as possible to altering uses. As built/unbuilt ratios are large (up to 100%), the plan entirely depends on the shape of the parcel. Few cases, however, are constituted of multiple industrial halls with intermediate courts accommodating trucks to load and unload goods. Strikingly, none of the industrial halls from the Inventaire visuel was originally constructed for a timber-SME, yet they accommodated a wide scope of timber activities: carpentry firms, saw mills and timber merchants. The industrial hall can therefore be regarded as ‘generic’ and indifferent to its use. As elaborated above, these buildings and
activities are mainly found in the Canal zone (Fig. 9), in industrial enclaves and alongside transportation infrastructure – indicating the importance of transportation costs for the enterprises accommodated by these industrial halls. Exemplary is the joinery Thumas (Fig. 8.6) that occupied an industrial hall between 1960 and the 1980s in the Rue de Birmingham in Molenbeek, located next to the Canal, which previously had accommodated different metal construction companies from the early twentieth century on.\textsuperscript{35} 

Contrary to the industrial halls, most of the remaining industrial building types were embedded in residential building blocks. The hypothesis for further research is that these structures, due to their persistence in time, hold insights on the qualitative co-existence with other (mainly residential) uses. It concerns buildings of older ages, mainly constructed around the turn of the twentieth century. To further categorize these buildings, a distinction is made concerning the volumetric infill of the parcel in three main categories: the monolith building, the main volume withdrawn towards the back, and the gated terraced house with industrial activity in the back.

\textit{The monolith building (1)}

Much like the industrial hall, this type is constructed over its entire parcel, copying the dimensions to the building perimeter and providing an open plan. The 100\% built ratio of the parcel does not enable sufficient daylight, nor does it leave room for a garden, or parking to accommodate hybridity with the residential use on the same plot. Large openings in the façade enabled the efficient manoeuvring of the goods. The brick warehouse-like structures were not used for storing wood, but accommodated saw mills, carpentry firms and joineries. Contrarily to the industrial hall, most of these buildings were originally designed for their use in timber activities. The monolith typology is mainly found in Ixelles (Fig. 9). Rue Saint-Georges 93 in Ixelles (Fig. 8.1) accommodated five consecutive small woodworking firms between 1928 and 1969. Afterwards there were multiple non-industrial uses, demonstrating its generic nature.\textsuperscript{36} 

\textit{Volume withdrawn towards the back (2)}

This type is characterized by its specific volumetric composition: the main (and sometimes only) volume is withdrawn towards the back of the parcel and thus neglects the alignment of its neighbours, making it an eye-catching element in the streetscape. The main volume is used for multi-storey joinery firms. The space in front is used as offices or part of the workshop when covered, or as unloading zone or parking area when uncovered. All cases are multi-storey joineries that were originally constructed for their specific use. None of them was hybrid with
a residential use within one parcel. Striking is the short period (1900-1920) during which these wooden buildings were constructed. They are found in Brussels’ south-eastern suburbs amidst a dense residential fabric (Fig. 9). Rue de Tenbosch 46 in Ixelles was constructed in 1902 by joiner Alfred Hulet. He altered the building twice. In 1912, the first building at the back of the parcel was enlarged with a cellared, wooden building that is still present today (Fig. 8.2). In 1924, the workshop was again enlarged towards the front, replacing the office space that was relocated to the Rue du Mail, 350m away.37

_Gated row house with industry in the back (3,4)_

The largest populated type has the setup of a row house in the front and industrial activity in the back. A two-meter-wide gate usually enables access to an open court between the front and back building(s). Typologically, a division is made regarding the width of the industrial building in the back: it either equals the front house’s width (3) or largely exceeds it (4).

In the Rue de la Brasserie in Ixelles, two adjacent buildings of type (3) accommodated two joiners: Noël Levèque and J. Van Eyck. Before they decided to construct their workshops next to each other in 1903, they already lived nearby, 600m from this new location. It is unclear if they had a contractual collaboration. Van Eyck’s enterprise existed on this location until 1925. Levèque’s until 1921. Apart from minor stylistic aspects, both backyard workshops are identical (Fig. 8.3). The ground and first floors are constructed in brick walls and load bearing beams, the attic and roof structure in wood. Over the past eighty years, the buildings were used by a printing shop, an accountant and other non-productive functions.38

In contrast to type (3), Chaussée de Boondael 365 in Ixelles is constructed on annexed parts from adjacent parcels, making its width largely exceed that of the gated front house. Joiner Théophile Delay built his brick workshop in 1927 in the back of the multi-family row house he inhabited (Fig. 8.4). In 1931 he enlarged it towards the back with another workshop, courtyard and drying room for the wood.39

Types (3) and (4) are constructed with similar logics. The cases reveal that the front house is older than the industrial building in the back, of which 80 per cent was originally constructed for a timber-SME (joinery or cabinetmaking enterprise). These buildings are predominant in the Ixelles-cluster, but also strongly present in the northern suburb of Schaerbeek (Fig. 9). Most of them were constructed between 1900-1925 for type 3, and between 1890-1910 for type 4.
**Industrial enclave in residential fabric (5)**

The final type is the industrial enclave embedded in dense residential building blocks. These complexes exist of multiple buildings, constructed at once over large-scale parcels. Logically, they were designed for their original use, mainly large saw mills, timber trade and carpentry firms. In 1923, François Lochten constructed a complex of timber, open structures, surrounded by a brick wall, to store and sell tropical woods (Fig. 8.5).\(^{40}\) His patrimony in the Avenue Rogier in Schaerbeek served the same activities over the course of the past 95 years.

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**Figure 9** - Geographical mapping of the typology of timber-SMEs' patrimony, based on the Inventaire Visuel.

Created by authors with the use of GIS-software and Brussels' cadastral maps.
Conclusion

The *Inventaire visuel de l’architecture industrielle* proved useful to trace industrial patrimony from a certain sector – in this case the timber construction industry – in the Brussels-Capital Region. It enabled us to list 80 still-existing buildings used by a timber-SME between 1880 and 1980. The spatial analysis of these timber-SMEs demonstrated that the economic-geographical level and the architectural level are strongly interrelated, providing insight in the way timber-SMEs spatially organised their activity to partake in the production of the urban space.

By mapping the building types and other parameters we extracted from the *Inventaire visuel*, two industrial clusters appeared, one along the Canal and the other in Ixelles. The Canal-cluster was characterized by large industrial complexes (types 5-6), accommodating enterprises such as lumber mills and timber merchants. In the logic of Weber’s *least cost theory*, transportation costs were decisive in their locational decision-making. Since they executed a *weight-losing* industrial process, they were spatially focused on the supply side and settled near the Canal, the main supply transport channel. The Ixelles-cluster on the other hand was characterized by smaller buildings (types 1-4), mainly for joiners and cabinetmakers who executed a *weight-gaining* process. It compelled them to spatially focus on the demand side, as retail businesses did, in accordance with Christaller’s *central place theory*. Their limited spatial needs enabled a fluent embeddedness of their industrial activity in the dense residential urban fabric of Ixelles, where around 1900 the demand for their refined woodwork was at the highest. Some timber merchants and others with more spatial (storage) needs (type 5) settled in a dense urban fabric as well, for instance in the northern suburb of Schaerbeek. The buildings in a residential urban fabric (types 1-5) demonstrate an *activity-based* functionality. They were originally built for timber-SMEs, were used by these enterprises for a long period, and were frequently morphologically adapted to their evolving spatial needs. In contrast, the larger industrial halls of type 6 demonstrate a *generic* functionality, accommodating multiple activities over time, among which those of timber-SMEs, for which they were rarely originally built.

Many timber-SMEs preserved a long-term presence in specific neighbourhoods in Ixelles and Schaerbeek, many of them also in the same building for a long period. It indicates that their resilience was facilitated by their small scale and consequent local embeddedness. This seems to contradict Christopher Powell’s research on the lifespan of nineteenth-century building firms in Bristol. Only ten per cent existed for more than 35 years, and especially carpenters’ firms were prone to early termination. A comparable general business historical analysis on
Brussels’ construction enterprises is still to be executed. It will shed more light on the relation of the building-SMEs’ resilience with their spatial management and local embeddedness.

Acknowledgements
This paper proceeds from the ongoing interdisciplinary research project (IRP) ‘Building Brussels’ at the Vrije Universiteit Brussel. It investigates small and medium-sized construction enterprises in Brussels from a locational, architectural and business historical perspective.

We thank the Brussels’ Archives de l’Architecture Moderne (CIVA Foundation) for placing the Inventaire visuel de l’architecture industrielle and its photographs at our disposal.

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