

Constructing perpetual concrete funerary galleries in Brussels

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ABSTRACT: Demographic expansion in Brussels during the last quarter of the 19th century caused various problems for the organisation of an efficient disposal of corpses. Inspired by surface Mediterranean examples engineer Emile Bockstael introduced at the cemetery in Laeken the concept of subterranean funerary galleries for perpetual concessions. This innovative concept was first accomplished in brick, but for further extension of this new typology of funerary galleries Bockstael collaborated with contractor Blaton-Aubert. To fasten the building process, Blaton-Aubert proposed to work with his own version of *béton-aggloméré*, an industrialized, modular and durable construction material. This manner of funerary construction proved to be simple, fast, cheap and above all hygienic, conform to contemporary ideas and regulations on hygiene. Therefore the concrete funerary galleries of Laeken served as the ideal example for the further extension and maximization of burial space regarding perpetual concessions at the cemeteries of Saint-Josse-ten-Node and Saint-Gilles. Here Blaton's adaptation of *béton-aggloméré* was used consistently as construction material for subterranean as well as aboveground funerary galleries.

1 INTRODUCTION

During the second half of the 19th century, the municipalities in the first crown of Brussels witnessed an unprecedented demographic expansion. This gave rise to various problems, one of them being the organisation of a faster and more efficient disposal of corpses. Since the judgment of the Supreme Court of February 13, 1864 the management of the cemeteries was handed over to the civil power. Inspired by surface Mediterranean examples alderman of Public Works in Laeken and engineer Emile Bockstael (1838-1920) introduced in 1878 at the churchyard of Laeken the concept of subterranean funerary galleries for perpetual concessions. Laeken played a pioneering role in the introduction of this innovative typology of funerary galleries which were first accomplished in brick. In collaboration with contractor Blaton-Aubert (1) further extensions were consequently built in concrete. The construction of the subterranean funerary galleries at the Laeken cemetery incited several other Brussels communes and (north)

west European cities (in France, Germany etc.) to envisage building similar infrastructures.

This paper wants to examine the construction of underground funerary galleries in Laeken and their impact on the cemeteries in Brussel and abroad. Most of the information was found in the Archives of the City of Brussels (2) and onsite observation. In addition to the building specifications, correspondence drawings and plans the research during the ongoing restoration provided new and important data.

2 THE ORIGINS OF FUNERARY GALLERIES

The enlightenment in the 18th century led to a new vision of burial practices. Supported by scientific understanding the preservation of churchyards within the residential areas was from a hygiene point of view untenable and therefor reviewed. Thus in the 19th century under the influence of laicization and the growing importance of a bourgeoisie resorts of status and representation, new large cemeteries were built on the periphery of cities. The design of these modern urban

cemeteries was a new challenge for architects. In addition the historical funerary galleries at cemetery *Campo Santo* in Pisa were rediscovered and became an ultimate source of inspiration. This cemetery probably accommodates the first funerary gallery which was already built in the 13th century. The above-ground tombs are housed in a closed quadratic archway around a courtyard. The citizens of Pisa were buried in the garden; the funerary galleries were reserved for important and leading people. Already in the 16th and 17th century these galleries inspired other architects like Adrian Berteletto at *Sebastiansfriedhof* in Salzburg (1595-1600) and Christophe Gottsreiter at the *Petersfriedhof* (1615-1630). At the beginning of the 19th century the typology evolved and became a part of a broad-complex. For example at the *Cimiterio Monumentale della Certosa* in Bologna (1801) the galleries became a part of a majestic architectural framework. During the 19th century the type developed into a combination of corridors with mausoleums and individual niches. Superb embodiments can be found particularly in Italy at the *Cimitero monumentale di Staglieno* in Genoa (architects Carlo Barabino & Battista Resasco, 1844-1851) and the *Cimitero Monumentale di Milano* (architect Carlo Maciachini, 1866).

3 THE FUNERARY GALLERIES OF LAEKEN

The population of Laeken experienced a strong growth during the 19th century. In 1875 engineer Emile Bockstael insisted as alderman of Public Works on extending the available number of consent honour plots at the historical churchyard of Laeken. He was faced with the challenge of an ever-increasing number of corpses to be processed in the shortest possible time, and this in a hygienic manner and with a minimum loss of space. For the extension of the churchyard Bockstael wanted, to maintain the aesthetic character of this historic cemetery with high-quality statues and tombs. The construction of aboveground galleries would harm the attractive appearance. So he came with the innovative idea of constructing underground galleries. (3) This solved the entombment of the increasing number of corpses within a limited area, preserved the existing appearance of the churchyard and would offer extra income to the municipality. He designed an underground complex of six vaulted galleries in brick with superimposed niches containing each five burial cells. The gallery was 4,25m high and 2,50m width containing sequential niches of 0,9m width existing out of 5 cells of 0,5m height and 2,37m depth piled on each other. The surface above a niche was crowned by an individual

monument. If the niches were divided over several concessionaires, they were aboveground foreseen by a standard tomb at the expense of the city (Fig. 1). When a family bought a whole niche they were free to order an individualised tomb.

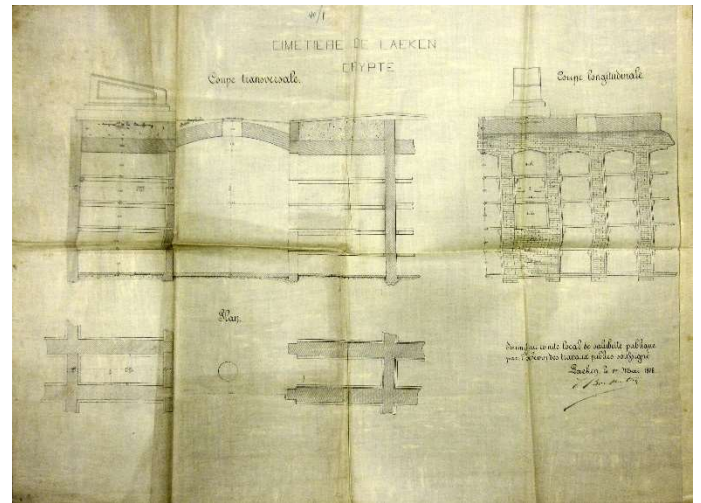


Figure 1. Plan of the first funerary gallery by Emile Bockstael dated May 1, 1876.

At the end this innovative idea also included economic and hygienic advantages. Each cell was sold with perpetual concession giving the municipality 400% of profit. When the corps was enclosed in a cell it received a layer of quicklime to fasten the dehydration. To excluded decomposition odour it was hermetically sealed. Of course the council of Laeken approved Bockstaels design. During the summer of 1877 the town council launched a public tender for the excavation, earthworks and debris transportation. This preparatory work was carried out by the local contractor Hippolyte Houbaer. A year later another local contractor Philippe Draps constructed the first 31m long gallery in brick. Already mid 1878 this gallery was inaugurated and received a natural stone entrance pavilion in eclectic style designed and conducted by the adjacent workshop of sculptor- and tombstone maker Ernest Salu I. This concept of galleries with the possibility of memorialisation above and underground was a huge success to the upper class society of Laeken. The success of this underground perpetual gallery attended a new expansion in 1880. Unfortunately the brick construction manifested a problem of moisture infiltration. Therefore a concrete construction was proposed. The Brussels firm *Ciments & Béton SA*, managed by the young Joseph Armand Blaton (1863-1929) and therefore better known as 'Blaton-Aubert', constructed the new galleries using their own, well preserved recipe of *béton aggloméré monolithe*. In 1891 Théodore Belval (4) observed the fact that brick was too willing to absorb

external moisture, and soon de Laeken council decided to use concrete for further enlargements. In the various contemporary catalogs or *série de prix* of the *Ciments & Béton SA* they promoted their own version of agglomerated concrete for its aesthetics, lightness, resistance, stability and most of all its strength (pressure resistance of 400 kg/cm²). (5) This industrialized, modular and durable construction material fasten the building process. In addition this manner of funerary construction also proved to be simple, cheap and above all hygienic, conform to contemporary ideas and regulations on hygiene. At the end the expense of the construction in brick or concrete stayed the same, however for the construction methods and above all hygienic reasons concrete was more suitable. The combination of Bockstaels design and Blaton-Aubert agglomerated concrete resulted in a modular construction system that fastened the building process. Because of this industrialized modular system the expansion of the other five galleries could be accomplished during the successive years 1884, 1885, 1886 and 1887. A last enlargement of 200 burial cells took place in 1889. Since 1890 this concrete funerary gallery complex was accessible by a double access ramp (Fig. 2).

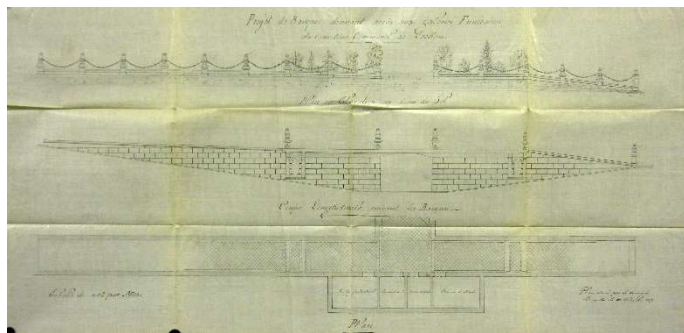


Figure 2. Blaton-Auberts design of the double access ramp dated November 21, 1889.

Already ten years after the completion of the first gallery complex the municipality of Laeken decided to construct a second underground gallery for 620 burial cells started from 1899 on. In a first phase they expanded the second gallery complex to the northwest in line with the first. The southern corridor of the first complex was lengthened to connect with the new gallery complex. This common corridor gave access to four transverse galleries in north direction. In a second phase from 1911 on the four galleries were lengthened to increase the amount with 480 burials cells. Bockstael, in meanwhile as mayor of Laeken, collaborated again with Blaton-Aubert. This second expansion of 1100 burials cells was also built in a concrete modular construction system and completed in 1912 (Fig. 3).

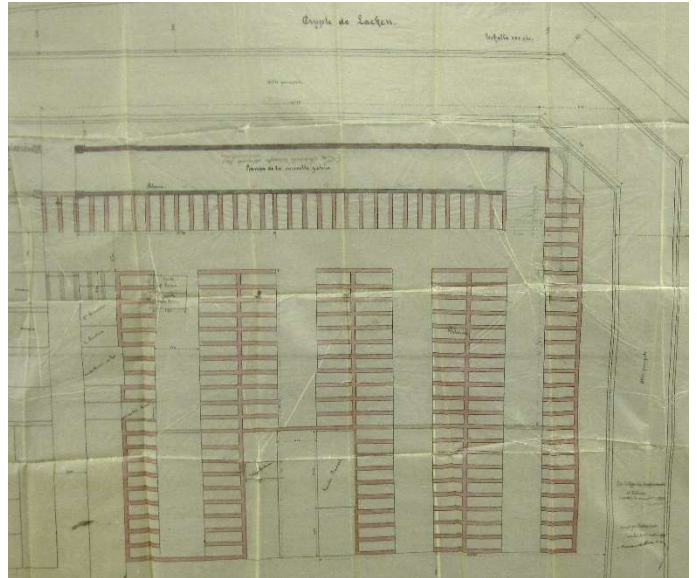


Figure 3. The masterplan of the second gallery built from 1899 until 1912 dated august 12, 1899.

In 1920 Bockstael passed away and was buried in the first gallery complex. The original entrance staircase was converted into an underground grave. During the interwar period the municipality of Laeken wanted a third expansion of the underground galleries. The architect François Malfait (1872-1955) designed this prestigious project in Art-Deco style between 1925 and 1935. Again the galleries were extended to the northwest side. The mutual corridor was lengthened for a third time. The three new underground galleries ended a fourth arched gallery with a stairs that leads the visitor to a monumental peristyle with additional burial cells aboveground. In contrary to the previous galleries this third expansion was constructed in reinforced concrete.

During 50 years and within three large building phases Laeken created a monumental complex of funerary galleries (Fig. 4). The concrete modular system executed by the Company Blaton-Aubert played an essential role and served as the ideal example for further extension and maximization of burial space regarding perpetual concessions at the cemeteries of Saint-Josse-ten-Node, Saint-Gilles, Watermael-Boitsfort and Molenbeek-Saint-Jean.

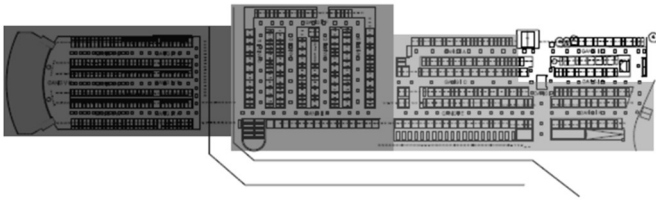


Figure 4. Scheme of the funerary gallery complex of Laeken indicating the three successive building zones. The white part in the first building zone indicates the first ever built gallery in brick. The light-grey zone built from 1878 until 1890, mid-grey zone built from 1899 until 1914 and dark-grey zone built from 1925 until 1935.

4 THE FUNERARY GALLERIES IN BRUSSELS

The Brussels Capital Region counts 22 cemeteries of which six are equipped with funerary galleries. That is a relatively large number noticing that Wallonia has only two examples (Wavre and Namur) and Flanders none! The explanation for this high number of funerary galleries can be found in the leading role the cemetery in Laeken at the end of the 19th century played in the Brussels area. One might distinguish two types of funerary galleries in the Brussels Capital Region: the underground type as in Laeken and Saint-Gilles and an aboveground type as in Saint-Josse-ten-Node, Molenbeek-Saint-Jean and Watermael-Boitsfort.

On account of their agglomerated concrete Blaton-Aubert was until World War I extremely productive regarding the constructing of funerary galleries in Brussels. A year after the inauguration of the new cemetery of Brussels in Evere, designed by architect Victor Jamaer and landscape architect Louis Fuchs, in 1877 the administration of the City of Brussels asked the municipality of Laeken for a copy of the Bockstaels underground vaulted funerary galleries. They were unfamiliar with this innovative concept and decided to seek information from the municipality of Laeken. The questions regarding strength, construction expensive and hygiene were positively answered, but no building plans were made. In 1886 Blaton-Aubert offered their services to the City of Brussels to built concrete funerary galleries on the cemetery. Despite all the effort the City of Brussels did not provide their cemetery with funerary galleries. One possible reason could be that the surface of the cemetery; a vast landscape of less than 38 ha large, did not need the sparing use of the concession lands.

Some years later the council of Saint-Josse-ten-Node already decided in 1888 to expand its cemetery with aboveground funerary galleries. Just like in Laeken the expansion options were limited because the cemetery was fenced by buildings. So to be able to offer enough concessions a funerary gallery was built. The surface of the cemetery had a difference of 7 meters. This disadvantage had to be taken as an opportunity. The municipality organised an architectural competition for the optimisation of the cemetery. Architect Alfred Lecloux won the competition with a design of an asymmetric elliptical aboveground gallery with 480 burial cells enclosing an oval lawn. At the ends of the ellipse he provided short straight galleries with 60 burial cells (Fig. 5). Bockstael had chosen to have five cells in one niche, Lecloux added one cell to become a niche with 6 burial cells. A staircase in the central gallery pavilion compensated the height difference with the rear part to the existing cemetery. This staircase gave access to the main axis leading to a central roundabout with the mausoleum of Charles Rogier (1800-1885) (architect Paul Hankar & sculptor Isidoor De Rudder, 1892). The contractor Blaton-Aubert was responsible for the execution of the work.

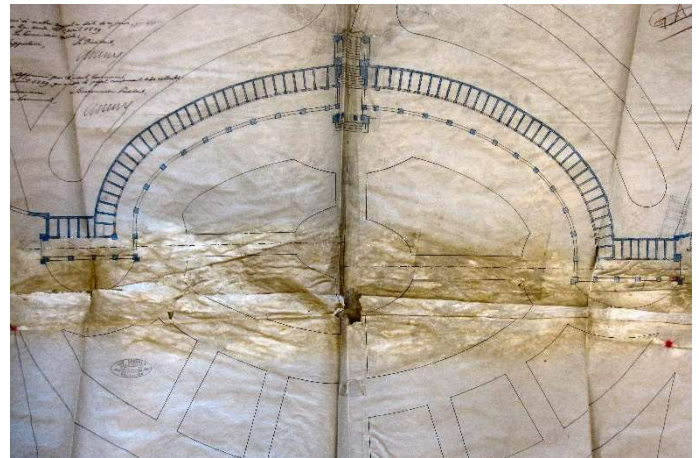


Figure 5. General construction plan of the funerary galleries of the municipality of Saint-Josse-ten-Node dated march 15, 1889.

The aboveground gallery was in 1906 expanded against the back of the first gallery. This second phase gave shelter to 576 burial cells and was made in the same materials and style implemented by contractor Blaton-Aubert. However, a small architectural difference was noticeable in the form of the burial cells, in the first gallery they were arched, in the expansion they were rectangular. Opposite this second gallery a third gallery was constructed between 1913 and 1914. Again the same principles, materials, and style were detained to provide 714 burial cells. At the end the three galleries together give shelter to 1830 burial cells.

Within the 19th century vision of building cemeteries at the periphery, the municipality of Saint-Gilles buys in 1895 a surface of 12,5 ha. Architect Edmond Quetin designed the general construction plan of this new cemetery. Despite the available surface, which was five times larger than the churchyard of Laeken, Quetin added underground galleries. Probably the municipality wanted to capitalize on the success of Laeken by taking advantage of the social, hygienic and economic profits of the construction. Quetin designed a funerary gallery complex inspired by Bockstaels design, based on a symmetrical plan with a wide central hallway, given access to three straight corridors. The complex provided in 108 niches with a total of 540 burial cells (Fig. 6). Fernand Bernier (1864-1929), a Brussels author, wrote in his monograph on Saint-Gilles in 1904 (6) about the funerary galleries following text: “*As in Laeken, the funerary galleries of the cemetery of Saint-Gilles are entirely underground, with upper terrace to install collective or individual tombs, above over one or more series of five superimposed burial cells. The gallery contains 540 cells in total. They are located in the middle of a wide oblong lawn, so that in the future expansion of the galleries to the right and left is possible.*” There is no archive preserved corresponding to Blaton-Aubert involvement in the construction, but onsite research shows that the modular construction system that Blaton-Aubert developed for Laeken was also applied here. The ground plan, material and measurements are similar.

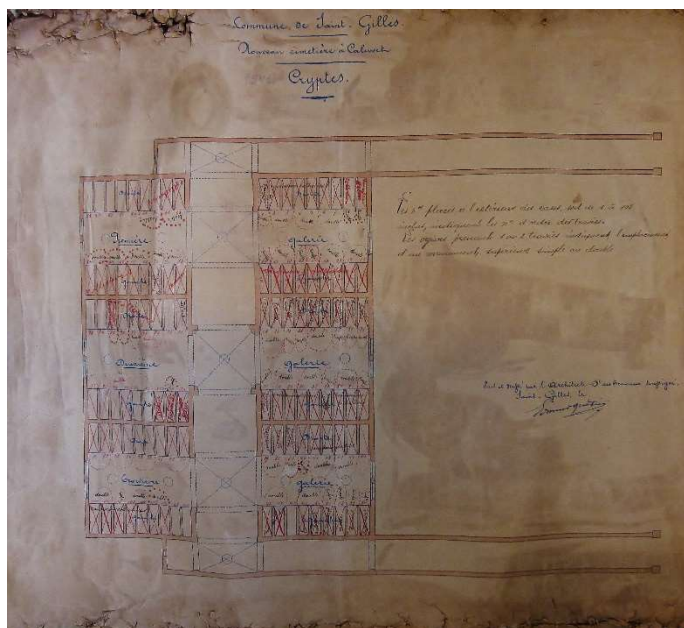


Figure 6. Overall plan of the funerary galleries of Saint-Gilles dated January 1, 1895.

5 INTERNATIONAL FAME

Previous text pointed out that the design by Bockstael and Blaton-Aubert was inspiring for the local cemeteries. This modular construction system accompanied with the hygienic advantage of this manner of entombment which was praised and therefore promoted internationally. The design of the first underground funerary gallery complex was exhibited through a plaster model at the International Hygiene Exhibition that took place in London in 1884. (7) A bilingual English-French plan (Fig. 7) was added in which one recognizes clearly the first construction zone with the central entry pavilion of Ernest Salu (which has been converted into a grave for Bockstael in 1925). One counts 336 vertical niches or 1680 burial cells. The same plan was also published in 1892 in the publication of Th. Belval. However, this is a major project which was not fully implemented yet in 1884.

Throughout the 1870s and in 1880 the municipality of Laeken, and Mayor Emile Bockstael in particular, received several letters from internal and foreign colleagues (mayors, architects and doctors) asking to organize a visit to the funerary galleries or to receive a copy of the plans. It turns out that in any of these cases (underground) funerary galleries have been built.

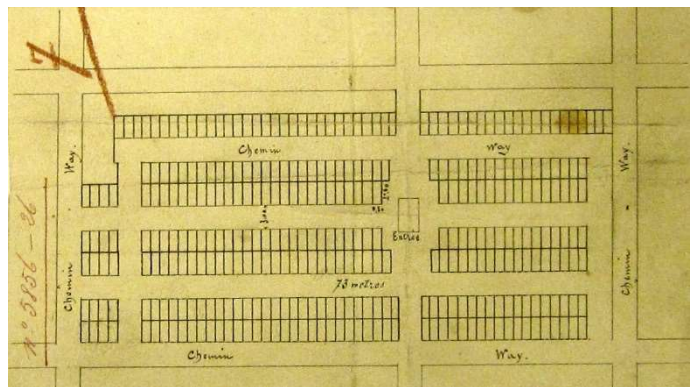


Figure 7. Masterplan of the first funerary galleries of Laeken built between 1878 and 1890. This plan was added as documentation to the plaster model for the London International Hygiene Exhibition of 1884.

However, commissioned for the city of Epernay (Marne, France), the city architect Alban Gaillandre gave a very detailed description for the building project of an underground funerary gallery in 1890. The construction was planned to be built in concrete, provided with 750 burial cells, spread over two corridors of each 59 meters long. The Laeken example was evident as inspiration, thus was also referred to: “*Since several years Belgium renovated this burial mode with great success. Since the first application was*

made, a couple of decades ago, a very large number of burial cells were built at the cemetery in Laeken, near Brussels.” (8) The report by Gaillandre, addressing his administration, describes the project and finally a justification for its construction by bringing the benefits but limited building space, hygiene and above all the economic benefits. These findings were the result of a correspondence between the municipality of Laeken and Epernay.

6 RESTORING THE GALLERIES

The tomb galleries are partially protected since 1997. Since 2013 the restoration of this unique heritage started. This is done in two stages: dismantling the aboveground tomb marks to ensure the waterproofing of the underground section, followed by the restoration of the underground section.

To get the surface waterproof, all tombstones are dismantled piece by piece, and relocated temporarily on site. If necessary, they are restored on site and replaced.

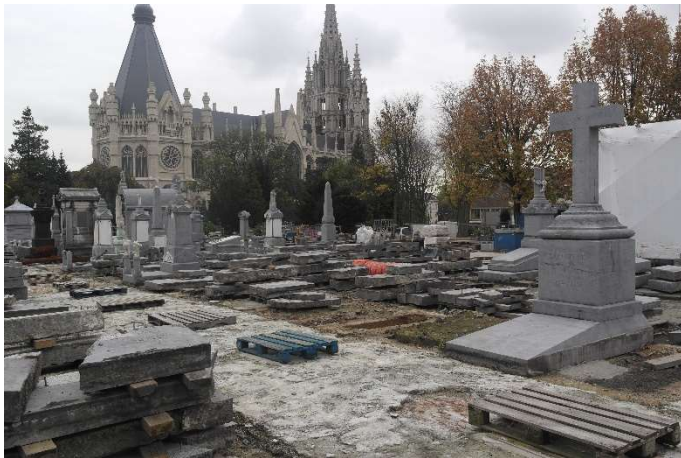


Figure 8. View on the partially dismantled tombstones. In the front the first gallery in brick (situation in October 2014).

The restoration should be finished in the spring of 2017.

7 CONCLUSION

The Brussels-Capital Region occupies a very unique position regarding funerary galleries. The construction system and the success of the underground galleries grave in the cemetery of Laeken inspired cemeteries of other Brussels municipalities.

The size of the Laeken funerary galleries with her 1,5 ha of area and more than 300 meters ahead, never surpassed in Belgium. Unique is the surprising combination of underground burial cells and aboveground

tombs, elaborated in an impressive and monumental way. While the first funerary gallery was built in brick, soon became clear that this material was permeable. Thus, it was rapidly proceeded to construct in non-reinforced concrete, and subsequently in agglomerated concrete. All these works were conducted by the contractor Blaton-Aubert which, it seems, to exploit the maximum of the Laeken experience, to build funerary galleries in other Brussels municipalities. The material appears to be extremely suitable in relation to the typology - compact and modular - and the wishes of the client: fast, cheap, hygienic and profitable.

8 ENDNOTES

1. The company *Ciments & Bétons SA ancienne firme Blaton-Aubert SA* was established in Schaerbeek since 1850 (rue du Pavillon n°4) in a former brewery, located along the railway line.

2. Archives de la Ville de Bruxelles (AVB), Fonds Cultes 1499-1502.

3. AVB, Cultes 1501, *Cimetière de Laeken – Nouveau mode d’inhumation – Salubrité – 1878-1908*.

4. Belval, Th., 1892. *Contribution à l’étude des sépultures au point de vue Hygiénique. Caveaux et Galeries funéraires*, Bruges, p. 28. Théodore Belval (Tournai, 1832 - Brussels, 1897) was a Brussels-based pharmacist, doctor of sciences and founder and editor of the magazine *Le mouvement hygiénique*. Belval was the prototype of the hygienist. In 1881 he bore the title of *Inspecteur de l’hygiène scolaire au ministère de l’Instruction publique*. Belval will publish work on dozens of hygiene and public health and will thus make numerous contributions in national and international magazines used. Most important of his hand, is the *Essai sur l’organisation générale de l’Hygiène Public*, published in 1876.

5. *Ciments & Bétons Société Anonyme Ancienne firme Blaton-Aubert. Série de Prix*, [1889], p. 4 : *Le procédé de construction connu sous le nom de Bétons agglomérés (Système Blaton-Aubert) est déjà employé depuis plusieurs années.... Les pièces artificielles, fabriquées dans mon usine, sont employées avec succès pour la construction et la décoration des édifices...*

6. Bernier, F. 1904. *Monographie de la commune de Saint-Gilles-lez-Bruxelles. Avec un avant-propos de Maurice Van Meenen, bourgmestre*, Bruxelles, pp. 215-219.

7. AVB, Fonds Cultes 1499, *Exposition internationale d’hygiène de Londres; maquette d’une galerie funéraire*.

8. Report of Alban Gaillandre to the City Council of Epernay dated November 14, 1890 (AVB, Fonds Cultes 1501).

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