

The Stratification of Nature in the Dierentuinwijk of Ghent.

A park and a sewer as two poles of development in a new quarter for the city.

Birgit Cleppe

Abstract

In 1905 the city-engineer Victor Compyn presents the project for the allotment of the ‘Muinkmeersen’, partly on the grounds of the former zoological garden of Ghent. He structures the residential areas around two components. In the north we find a square, the ‘Muinkpark’, that is in fact a small remnant of the zoological garden. In the south, the Oude Schelde is being filled up and substituted by a sewer. There, Compyn plans a star-shaped street pattern that consists of two diagonal streets and one central north-south oriented axis that connects the square with the junction of the southern streets. With the filling up of the Oude Schelde, the last testimony of the former ‘natural’ hydrography of the Muinkmeersen had disappeared. Or not entirely, for the ‘course’ of the Tentoonstellingslaan – one of the two diagonal streets in the south – almost completely equals that of the filled up branch of the Schelde.

Like zoological gardens and municipal parks, networked infrastructures for sewerage and drinking water can be understood as urban constructs of nature. Each in its own way, they display the ambition to canalize nature in a concentrated and systematical way in order to give shape to a severely controlled urban landscape. By exhibiting its gratifying components in zoological gardens, public parks, and the conscious planting of avenues on the one hand, and by hiding and diverting its disagreeable properties underground on the other, nature is being deliberately stratified into a visible and an invisible pole. In the case of the Dierentuinwijk these two poles are explicitly deployed to give shape and meaning to a newly built part of the city.

During the Belle Epoque, city engineers, urban planners and theorists were particularly concerned about a rather ‘picturesque’ approach, where the presence of nature was manipulated in order to intensify the experience of the city. Many among them were present at the *Premier Congrès International et Exposition Comparée des Villes*, held in Ghent in 1913. Lectures were held by Raymond Unwin, Charles Buls, Joseph Stübben, Louis Vander Swaelmen, and also by engineer Alphonse Soenen who had formerly collaborated with Compyn, drawing a plan that indicated the vaulted and filled up waterways of Ghent. Through the specific case of the Compyn project for the Dierentuinwijk of Ghent, this paper intends to examine whether the implementation of underground infrastructures can be read as an equivalent counterpart of other constructs of nature in the city, such as municipal parks and planted avenues. It questions to what extent the filtering away of nature – especially waterways – is applied as a means of manipulation of nature and the urban landscape. Therefore, the paper will not only discuss the project of Victor Compyn, but will also confront it with the general discourses of the picturesque-minded contemporaries of Compyn at the time.

Birgit CLEPPE - doctoral researcher

Ghent University, Department of Architecture & Urban Planning

Jozef Plateaustraat 22, B - 9000 Gent

T: +32 (0)9 264 39 13 birgit.cleppe@ugent.be

Ph.D. “Networks for public interest. Urban infrastructure and town planning in Ghent, 1836-1977.”

Supervisors: prof. Pieter Uyttenhove, prof. Bart Verschaffel

The Stratification of Nature in the Dierentuinwijk of Ghent.

A park and a sewer as two poles of development in a new quarter for the city.

Birgit Cleppe

Introduction¹

« *Le plan d'une ville se réalise de deux manières: ou bien l'on satisfait à un accroissement de population et d'habitations par l'addition de voies nouvelles aux voies existantes, sans plan préconçu, ou, au contraire, c'est d'après un plan général de ville nouvelle ou de quartier que doivent s'ordonner les constructions projetées ou attendues. On a appelé le premier mode: naturel; le second: artificiel. Ces désignations sont erronées, car ce n'est pas répondre aux exigences naturelles que de laisser s'ajouter sans plan, des maisons les unes aux autres, et d'autre part, il n'y a rien d'artificiel à donner au plan d'une ville une base rationnelle, répondant à des nécessités constatées. Il serait donc plus juste d'appeler le premier procédé: fantaisiste, le second: méthodique. »²*

In the introductory paragraph of his article “*Règles pratiques et esthétiques à suivre pour l’élaboration de plans de villes*”, Joseph Stübben (translated by Charles Buls) makes a very puzzling and somewhat dubious statement on urban planning. He renounces the antithesis between the *natural* and the *artificial*, stating that there is nothing artificial about planning a city on a rational basis. Rather, he prefers to describe this *procédé* as *méthodique*. Furthermore, he is likely to portray the disorderly accumulation of streets and houses without the existence of a general plan as *fantaisiste* instead of natural. If we continue to read the article, that can be understood as a (very) brief summary of his extensive volume *Der Städtebau*, published in 1890, it is possible to comprehend this *procédé fantaisiste* as an aesthetical principle that is, however, merely the result of the artistic qualities of the author and is not to be achieved through the *procédé méthodique*. “*L’arrangement des places irrégulières et leur groupement fantaisiste*”, Stübben writes in *Principes Esthétiques*, the second part of his treatise, “*procèdent seulement du sentiment artistique et de l’expérience de l’auteur du projet. Ces sortes d’arrangements irréguliers et de groupements libres peuvent être employés avec succès pour les places nouvelles de villes modernes, quoique leurs plans soient généralement le résultat de la réflexion et du raisonnement.*”³ Thus, a *fantaisiste* arrangement of streets and houses is not opposed to a rational and methodological outline of the street pattern. Nevertheless, as we read in the very last sentence of the *Résumé* of the article, “*Pour un arrangement irrégulier, du genre pittoresque, il n’y a à consulter que le sentiment artistique.*”⁴ This remains very difficult to believe, though, since Stübben is suggesting to deploy the accidental

¹This paper is to be understood as a work-in-progress in the scope of the conference ‘Tussen beleving en verbeelding. Steden in een spanningsveld, 1800-1914.’ 9-11 maart 2011, Radboud Universiteit Nijmegen. My apologies for the fact that not all the Dutch citations have been translated to English.

² Stübben, J., *Règles pratiques et esthétiques à suivre pour l’élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs de Chicago, 1893*, in : *L’Emulation*, 1895, n°3, p. 35.

³ Stübben, J., *Règles pratiques et esthétiques à suivre pour l’élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs de Chicago, 1893 (suite et fin)*, in : *L’Emulation*, 1895, n°4, p. 52.

⁴ Ibidem, p. 53.

irregularities of nature in order to give shape and meaning to a new urban development. Furthermore, Stübben even gives instructions on how to achieve a picturesque effect when glancing at a statue, defining from what distance it should be observed. “Pour apprécier l’effet pittoresque, saisir les grandes divisions et la silhouette, à une distance au moins quadruple de la hauteur.”⁵ All of this seems to take place within a methodological framework, rather than being left to the tender mercies of the artistic qualities of an individual author. And within this methodology, the role of the engineer is highly respected.

In 1905 the city-engineer Victor Compyn presents the first project for the allotment of the ‘Muinkmeersen’, partly on the grounds of the former zoological garden of Ghent. He structures the residential areas around two components. In the north we find a square, the ‘Muinkpark’, that is in fact a small remnant of the zoological garden. In the south, the Oude Schelde is being filled up and substituted by a sewer. There, Compyn plans a star-shaped street pattern that consists of two diagonal streets and one central north-south oriented axis that connects the square with the junction of the southern streets. With the filling up of the Oude Schelde, the last testimony of the former ‘natural’ hydrography of the Muinkmeersen had disappeared. Or not entirely, for the ‘course’ of the Tentoonstellingslaan – one of the two diagonal streets in the south – almost completely equals that of the filled up branch of the Schelde.

Like zoological gardens and municipal parks, networked infrastructures for sewerage and drinking water can be understood as urban constructs of nature. Each in its own way, they display the ambition to canalize nature in a concentrated and systematical way in order to give shape to a severely controlled urban landscape. By exhibiting its gratifying components in zoological gardens, public parks, and the conscious planting of avenues on the one hand, and by hiding and diverting its disagreeable properties underground on the other, nature is being deliberately stratified into a visible and an invisible pole. In the case of the Dierentuinwijk these two poles are explicitly deployed to give shape and meaning to a newly built part of the city.

By confronting the writings of Stübben and other protagonists of the so-called *Picturesque School*⁶ with the design for the Dierentuinwijk of Ghent, we will try to see in another light the ambiguous relations between technology and aesthetics within the picturesque approach of urban planning. Through the specific case of the Compyn project for the Dierentuinwijk of Ghent, this paper intends to examine whether the implementation of underground infrastructures can be read as an equivalent counterpart of other constructs of nature in the city, such as municipal parks and planted avenues. It questions to what extent the filtering away of nature – especially waterways – is applied as a means of manipulation of nature and the urban landscape. Therefore, it is necessary to get a better understanding of how the discipline of engineering and the application of technology were deployed within the picturesque discourses to intensify *l’effet pittoresque* of a natural, or better *fantaisiste* environment.

It is astonishing to what extent Compyn’s project corresponds to the instructions given on urban planning by his picturesque contemporaries, and more specifically by Joseph Stübben. There can be no doubt that Compyn was familiar with the ideas of Stübben who’s ideas were generally known at the time. Apart from his extensive volume *Der Städtebau*, published in 1890, in 1895 an extensive

⁵ Ibidem, p. 51.

⁶ The selection of authors and texts will be discussed further.

article by the hand of Stübben (translated by Charles Buls) was published in *l'Emulation*, a widespread periodical among architects and planners in Belgium at the time.⁷ Furthermore, Stübben was frequently cited in numerous articles on urban design in Belgium. Among the authors, we can find two individuals Compyn has collaborated with. At first there is Alphonse Soenen, who was engineer at the technical service of Ghent, led by Compyn and thus one of his close collaborators. At the *Premier Congrès International et Exposition Comparée des Villes*, held in Ghent in 1913, Soenen presented a paper entitled “*Sur l'extension de Villes en général et de l'Agglomération Gantoise en particulier.*”⁸ The third part of his lecture, *Complexité de l'art de batir des villes. Vues générales de MM. C. Sitte et J. Stübben*, gives a brief outline of the ideas of Stübben (and Sitte) on urban design. Secondly there is the Ghent architect Louis Cloquet, *ingénieur honoraire des ponts et chaussées* and *professeur d'architecture à l'université de Gand*. In 1904 he held a lecture for the *Association des Ingénieurs sortis des écoles spéciales de Gand* entitled: “*La Construction des villes.*” In this lecture he states that his theory on urban planning is based on the ideas of two specialists in the matter, namely Stübben and Sitte.⁹

(In order to find an acceptable selection of texts that put aptly the picturesque discourses sustained by contemporaries of Compyn, we will limit ourselves to the ones cited in the papers by Alphonse Soenen and Louis Cloquet, mentioned above. Apart from Stübben and Sitte, they also mention the work of Charles Buls and an article by the hand of Vierendeel, published in the *Annales des Travaux Publics* of 1905 entitled “*Tracé des rues et places publiques.*”¹⁰ All of these texts (apart from the paper of Soenen) had been published before the execution of the southern part of the project and, since Soenen cites them, it is very likely that they were known to the staff of the technical service of Ghent, led by Victor Compyn. Moreover, the text by Stübben in *L'Emulation* has been published in Belgium, and the texts by Soenen, Cloquet and Vierendeel can be understood as applicable within a Belgian (even Ghent) context.)¹¹

The appropriation of the North: nature straitjacketed in an orthogonal grid.

Though situated within the town ramparts, the marchlands in the south of Ghent, named ‘Muinkmeersen’ lied almost completely fallow up to the first quarter of the nineteenth century. (fig. 1) Interjacent to two rivers, the Schelde and its branch the Oude Schelde, the grounds were spatially

⁷ Stübben, J., *Règles pratiques et esthétiques à suivre pour l'élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs du Chicago, 1893*, in : *L'Emulation*, no. 3, 1895, pp. 33-40. and (suite et fin) in : *L'Emulation*, no. 4, 1895, pp. 49-53. For a brief summary about the periodical *L'Emulation* and its impact, see for example: Vanlaethem, F., *Architectuurtijdschriften*, in: A. VAN LOO (ed.), *Repertorium van de architectuur in België: van 1830 tot heden*, Antwerpen, Mercatorfonds, 2003, pp. 204-209; Dubois, M., *Architectuurtijdschriften. Een fragmentair beeld*, in: *De beschikbare ruimte. Reflecties over bouwen*, Lannoo, Tielt, 1990, pp. 138-141.

⁸ Soenen, A., *Sur l'extention de Villes en général et de l'Agglomération Gantoise en particulier. Rapport présenté au Premier Congrès International des Villes tenu à Gand, du 27 juillet au 1^{er} Aout 1913*, Buxelles, Oscar Lamberty Imprimeur-Editeur, 1913, 19p.

⁹ Cloquet, L., *La construction des villes*, in : *Annales de l'Association des Ingénieurs sortis des l'écoles spéciales de Gand 1904*, Gent, Association des Ingénieurs sortis des l'écoles spéciales de Gand, 1905, pp. 1-41. A pamphlet with similar content, though not as extensive, was published by Cloquet : Cloquet, L., *L'esthétique des rues et des plans*, Lille, Desclée De Brouwer, n.d., 14p.

¹⁰ Vierendeel, A., *Tracés des rues et places publiques*, in : *Annales des travaux publics*, december 1905, pp. 1114-1151.

¹¹ As mentioned above, this paper is to be understood as a work-in-progress. Especially the aim to confront the project with the discourses of the Picturesque School has not been seriously developed yet. In particular (and unfortunately) the discourse by Sitte has been disregarded up to this point.

isolated from the rest of the city and were merely used as bleaching fields for the linen industry. From 1837 onwards, with the introduction of the railway, the area was thoroughly transformed.¹² At first the construction of the railway imposed embankments in the east of the area and its track drew the new eastern border of the Muinkmeersen. Furthermore, the establishment of the railway station entailed the urban development of the entire southern part of the city. Although the main focus was put on the construction of new roads in order to connect the station area with the centre of the city¹³, the first steps were taken to join up the three main southern districts of the city (St-Pieters, Muinkmeersen & St-Lievens) amongst themselves. Therefore, the construction of the François Benardstraat in 1841 turned out to be crucial. This street connected the Sint-Pieters quarter with the Sint-Lievens quarter by linking the bridge (Muinkbrug) in the west of the Muinkmeersen with a level crossing of the railroad in the east. This alteration did not only bring the area out of its spatial isolation, it also rigorously divided the neighborhood in a northern and a southern part. The François Benardstraat would remain a line of fracture in the urban fabric of the area within the further development of the quarter.

Shortly after, in 1844, a general project for the urbanization of the Muinkmeersen was ratified by Royal Decree.¹⁴ (fig. 4) Several streets were laid out in an orthogonal grid, that consisted of two main axes parallel to the railroad and several secondary streets perpendicular to them. Even though the plan was never entirely executed, it would nevertheless serve as a blueprint for future developments, especially those in the northern part of the Muinkmeersen. In 1851 the *Société Royale d'Histoire Naturelle de Gand*¹⁵ bought grounds in the north of the area in order to establish a Zoological Garden. Situated between de François Benardstraat and a parallel street in the north, the outlines of the 1844-plan were respected. (fig. 2 and 5) Also the project for the extention of the Zoo in 1852 was incorporated in the orthogonal grid of the 1844-plan. Only the parts of the streets that would slice through the territory of the zoo were not executed.

The design for the garden and the several pavilions was made by major Meurs and city architect Adolphe Pauli and was univocally applauded by the public.¹⁶ The book *Volledige Beschryving van Gent*, written in 1857 by J.J. Steyaert, offers a good understanding of how the zoological garden looked like and how it was perceived by its visitors at the time.¹⁷ Steyaert described the place as “one of the most graceful and frequented esplanades of Ghent” and remarked that within less than a

¹² For a detailed and precise survey of the urbanization of the Muinkmeersen, see: Kreps, P. and Perneel, X., *Het sociaal-ruimtelijk wordingsproces van de wijk der vroegere Muinkmeersen*, Gent, 1983, diss. burgerlijk ingenieur-architect, 2 Vol., ill. and Top, F., *De verkaveling van de Gentse Dierentuin (1905-1914) (1928-1935)*, licentiaatsverhandeling RUG, 1997.

¹³ For the period 1840-1845, the Jacob van Arteveldeplein, later renamed as Sint-Annaplein, the Statiestraat, the lengthened Brabantdam, the Keizer Karelstraat and the construction of the Marcellisbrug over the Schelde are worth mentioning.

¹⁴ The decision had already been taken on December 17th 1842 by the City Council. In this paper, I will refer to it as *the 1844 plan*.

¹⁵ Abbreviated as SRHN

¹⁶ Most sources only refer to Adolphe Pauli as the designer of the park. In his article *Het Zuidpark en de ex-dierentuin van Gent*, Alfons de Buck also mentions *artilleriemajoor Meurs* and states he constructed the park with the help of more than hundred workmen, whereas Pauli was responsible for the design of the buildings, cages and pavilions. See: de Buck, A. *Het Zuidpark en de ex-dierentuin van Gent (9)*, 1993, p. 6. (available in Stadsarchief Gent, section: SCMS - plannen, folder: Dierentuin)

¹⁷ Steyaert, J. J., *Volledige Beschryving van Gent of Geschiedkundige Beschouwing van deze Stad en hare Bewoners, de merkwaerdige Gebouwen, Gestichten en Maetschappyen, de beroemde Gentenaeren, enz.*, Gent, Boek- en Steendrukkerij van I. S. Van Doosselaere, 1857, 386 p.

year more than 3000 persons subscribed to the SRHN.¹⁸ From his writings we learn that everything had been done to create the perfect illusion of a magnificent and ample oasis of exotic wilderness in the city. Apart from a multitude of lawns, flowerbeds, and winding alleys, several water features were deliberately introduced to intensify the picturesque appearance of the park. *[The garden] (...) is criss-crossed with clear canals (...) there is a big reservoir with a fountain, spouting the water upward to a considerable height.*¹⁹ The use of water for picturesque purposes was a classical technique, both to deepen the experience of the stroller as well as in the construction of an image of the site. In her article '*Concrete and the Engineered Picturesque*', Ann Komora notes: "*In the eighteenth century, water features played a key role in the picturesque ideal. British theorist Uvedale Price, claimed that "the last finishing to places and pictures is water," with the caveat that the site be worthy of the effect.*"²⁰ Nevertheless, in the specific case of the Dierentuinwijk of Ghent it is still rather surprising that water is so explicitly deployed to construct an idyllic urban landscape. Especially when we note that the water in the park was taken from the Oude Schelde in the south of the Muinkmeersen – the very same watercourse that will be filled up no more than half a century later.²¹ Apparently the water shed was being 'displaced' to a site where it would be more likely to fulfill its duty: within the orthogonal grid, on the grounds of the zoological garden.

Althoug the Zoo was surrounded by brick walls and iron fences, the illusion was created that the park was immersed in the broader environment of the quarter. Especially the church of St-Pieters on the westbank of the Schelde was explicitly present in the Zoo – something Steyaert appreciates a lot. "*The church of St-Pieters and the gardens to the side, that one imagines to be part of the Park.*"²² In numerous drawings, etches and photographs, the area of the Muinkmeersen is represented as one of the most picturesque sites within the city of Ghent. Artists produced enchanting graphics both of the zoological garden as of the surrounding environment of the Muinkmeersen. More specifically, they showed a particular interest in the church of St-Pieters. Several graphics depict the Zoo with the church on the background. (fig. 8 and 9) Others show the church seen from the Muinkmeersen at the opposite side of the Schelde. In the journal '*L'Illustration nationale*', H. Van Duyse notes that the site offers one of the rare picturesque views in Ghent. « *Les coins pittoresques se font rares dans nos villes belges. (...) Gand a particulièrement souffert de ce système de nivellation et de rectification (...) Le Quai aux Moines est un des points de vue les plus réussis qui à Gand survivent au remaniement des vieux quartiers.* »²³ One can easily note that this picturesque scenery of the church is being as carefully integrated within the natural landscape of the zoo as the abovementioned flower beds, water sheds, or the artificially constructed rock with a music pavilion on top – one of the crown jewels of the park.

The urbanization of the grid & the restoration of the Picturesque.

¹⁸ Ibidem, p. 286. My translation, original text: "eene der bevalligste en meest bezochte wandelplaetsen van Gent".

¹⁹ Ibidem, p. 288. My translation, original text: "[Den tuin] (...) is doorsenden van heldere waterleidingen (...) er is een groote waterkom waarin eene fontein die het water tot op eene aerzienlyke hoogte doet sputten."

²⁰ Komora, A., *Concrete and the Engineered Picturesque*, in: *Journal of Architectural Education*, 2004, pp. 5-12.

²¹ de Buck, A. *Het Zuidpark en de ex-dierentuin van Gent* (9), Stadsarchief Gent, SMCS, plannen folder: Dierentuin, 1993, p. 6. Unfortunately de Buck doesn't mention the primary source that testifies of this specific fact.

²² Steyaert, J. J., op. cit., p. 288. My translation, original text: "de St-Pieterskerk en de tuinen ter zyden, die men waent deel van het Park te maken."

²³ Van Duyse, H. *Le Quai des Moines à Gand*, in : in "*L'Illustration nationale des fêtes et cérémonies du 50e anniversaire de l'indépendance de la Belgique: organe spécial des expositions*", juillet 1880, pp. 2-3.

« Ce qui fut le jardin. – Passé hier près de l'ex-Jardin Zoologique. Rien de navrant comme cette plaine saccagée, où tout a successivement disparu, chalets pittoresques, étangs romantiques, arbres aux superbes frondaisons. A peine, au centre du Jardin, quelques futaies dressent leurs bras décharnés. Qui pourrait se défendre d'un sentiment d'indignation devant cette ruine ? »²⁴

« L'acte de vandalisme est accompli. Malgré les protestations d'un très grand nombre d'actionnaires, la plupart des personnes en vue et notamment presque tous les anciens administrateurs de la Société d'histoire naturelle, il a été passé outre et la plupart des arbres ont été vendus. Il n'y a qu'un cri de blâme dans le public pour cet acte inqualifiable, de même qu'un cri d'horreur s'éleva lors de la mort barbare infligée à quelques ours après la vente des animaux. »²⁵

In 1904 the *Société Royale d'Histoire Naturelle de Gand* was disbanded and the city of Ghent was eager to purchase the grounds of the Zoological garden. But the negotiations between the SRHN and the City Council didn't proceed smoothly. Whereas the city claimed to have the priority to buy the grounds, the SRHN thought their bid too low. In the last resort, the SRHN decided to display the Zoo for sale and started to prepare the site for building to attract potential buyers. Many trees of the park were already uprooted and sold when the city managed at last to buy the grounds.²⁶ Emotional reactions in the local newspapers did not remain forthcoming, as the two excerpts above demonstrate. After the demolition of most of the buildings and the disappearance of the chief portion of the animals, trees and other 'natural features', the allotment of the area was but a logical step. With a view to the World Exhibition of 1913, the City Council planned to transform the neighborhood of the Muinkmeersen into a fully fledged residential area. In the meanwhile, Victor Compyn had been appointed city engineer and was in charge of the project. The plan of his project dates from July 8th 1905, and according to both the dates and the content of several articles published on the matter, it was executed soon after.

Since the area in the north of the François Benardstraat had already been more or less allocated with regard to the 1844 plan, Compyn proposed a project that 'restored' the grid of the 1844 plan. (fig. 7) This was a very practical decision, because most of those streets had been (partly) constructed with the establishment of the Zoological garden. The Hofstraat and the Hertstraat needed to be extended and parallel to the F. Benardstraat, a new avenue was constructed, the Muinklaan²⁷. The restoration of the grid was also due to an old claim by the City Council that dated from the time the Zoological garden was established. The article stated: " *Dans le cas où le parc d'histoire naturelle ne serait pas exécuté ou si, plus tard, cet établissement venait à changer de destination, la résolution précitée du conseil communal du 17 décembre 1842 et le plan général y*

²⁴ Excerpt from a local newspaper. N.N., *Ce qui fut le jardin*, in : Le Bien Public, 3 mars 1905.

²⁵ Excerpt from a reader's letter published in a local newspaper. Un abonné ami des arbres, *Le Jardin Zoologique*, in : La Flandre Libérale, 23 janvier 1905.

²⁶ See letter to the City Council by the *liquidateurs de la Société*, dd. 25.05.1905, Stadsarchief Gent G/1484. Existing studies on the urbanization of the Muinkmeersen devote very little attention to this matter. I only address it here very briefly as it is not of great relevance within the scope of this paper, but definitely more research has to be done.

²⁷ Sometimes the term *Muinkdreef* is used.

*annexé, ressortiraient leur plein et entier effet.*²⁸ This way, the 1844 grid was complete – at least for what the northern part of the Muinkmeersen was concerned.

Although it is difficult to trace what was exactly left from the former Zoo, it is clear that the new project aimed to incorporate the picturesque effects of the zoological garden in the new residential quarter. Therefore, Compyn decided to preserve part of the grounds as a square in the centre of the neighborhood. The reports of the City Council mention that “*between the two extensions, the Benardstraat and the Muinkdreef, a square was established where the most beautiful trees of the former Zoo were preserved.*”²⁹ The design of the square was well received by the press, and the descriptions were often as lyrical as those we read on the design of the zoo. “*the architect or planner (...) has managed to preserve numerous high and big trees, as well as the bushes and has drawn between them pretty winding alleys, so beguiling and loose (...). The shadow of the trees and the water of a relatively big pond (...) give a pleasant freshness to the visitors.*”³⁰ Also in the yearly published report by the City Council, the project was shouted with joy. It stated: “*De Muinkmeersen en deze van de wijk van Terplaten, veranderd in eene omgeving van burgershuizen, hebben thans een verrukkelijken tuin als middenpunt.*”³¹ However, it was clear that a big part of the former zoo had been destroyed. Therefore, a big terrain in the centre of the neighborhood was reserved as *Pleine des Jeux*. Although the establishment of this kind of places was rather fashionable at the time, it is likely that Compyn opted for this alternative simply because the trees had gone and the reconstruction of the park would have been too expensive.

Furthermore, with the construction of the Muinklaan, parcels that gave out onto the Muinklaan, had to respect a zone ‘*non aedificandi*’ of 10m in order to establish a view on the hill of St-Pieters.³² The resulting Front gardens were thought to be very beneficial when it came to public hygiene and were, according to Stübben, even preferable to extra trees along the street. In the article in L’Emulation Stübben writes “*On peut recommander, au lieu d’augmenter les rangées d’arbres, de réserver des jardinets devant les maisons*”³³ Apart from that, it is clear that Compyn attempts to integrate the picturesque view on the church of St-Pieters within the project. Therefore, the alignment of the street was oriented towards the church. The front gardens sustained the perfect illusion that the church was seamlessly integrated in the area. A journalist of *La Flandre Libérale* concluded : “*On pourra ainsi admirer une des sites les plus pittoresques de la ville.*”³⁴ The integration of the

²⁸ This plan was, as mentioned above, ratified in 1844 by Royal Decree. Quote taken from the Bulletin Communal 1951, session of April 19th, cited in Le Comité de liquidation, *Rapport présenté par le Comité de liquidation de la Société d’Histoire Naturelle à l’Assemblée Générale du 11 mai 1905*, p. 3 (Stadsarchief Gent)

²⁹ My translation, original: *Tussen deze twee verlengingen, de Benardstraat en de Muinkdreef, werd een square ingericht waarin men de schoonste boomen van den ouden Dierentuin behouden heeft.* Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1905*, Gent, Annoot-Braeckman, 1906, p. 778.

³⁰ My translation, original: *De architect of planbaas (...) heft de menigvuldige hoogstammige en grote boomen, even als het houtgewas weten te bewaren en daartussen fraaie, kronkelende wegen weten te trekken, zoo bekorend en los (...).* Het lommer der boomen en het water van een tamelijk grooten vijver, waarin reeds zwanen en eendvogels zwemmen, geven eene weldoende frisheid aan de bezoekers. N.N., *De Dierentuin*, in: *De Strijd*, 7 September 1905.

³¹ Verslag diens der beplantingen, Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1905*, Gent, Annoot-Braeckman, 1906; p. 921.

³² It seems this decision has been taken after the plan was executed. Stad Gent, *Gemeentebulletijn: zitting van 18 september 1905*, Gent, Annoot-Braeckman, 1906, p. 218.

³³ Stübben, J., *La construction des villes. Règles pratiques et esthétiques à suivre pour l’élaboration de plans de villes.*

Rapport présenté au Congrès international des Ingénieurs du Chicago, 1893, in : L’Emulation, Mars 1895, p. 40.

³⁴ N.N., *L’emplacement de l’ancien Jardin Zoologique*, in : *La Flandre Libérale*, 21 juillet 1905.

picturesque view on the church of St-Pieters, as well as the front gardens and the trees along the Muinklaan, constituting a green screen in front of the houses, strengthen the impression of a residential neighborhood within a park rather than a park within a neighborhood.

Start from a ditch. The south in search of the Picturesque.

As mentioned above, in 1844 a general plan for the urbanization of the Muinkmeersen was ratified by Royal Decree. The orthogonal grid of streets was supposed to cover also the grounds to the south of the François Benardstraat. But this part of the plan had already been changed in 1869, because of the alignment of the Sint-Lievenslaan that would be constructed on the former town ramparts. (fig. 6) These had become of little use since the abolition of the toll, levied at the city gates in 1860. The project still consisted of an orthogonal grid, but with three north-south-oriented streets instead of two. The Sint-Lievenslaan, the Olifantenstraat and part of the Leeuwstraat were constructed shortly after, but the rest of the area was left fallow, apart from a powder warehouse and a small cluster of insalubrious houses called ‘Molenaerswijk’. In 1901, the City Council concluded that the existing situation in the Molenaerswijk did not comply with the required sanitary standards and described the quarter as a conglomerate of “*volstrekt stinkende beluiken*”.³⁵ The tenants of the Molenaerswijk were evicted from their homes, houses were appropriated and a new street, the Willem Wenemaerstraat was constructed – according to the 1869 plan. A couple of years later, in 1903, a local land owner, MM. Beyaert, proposed the construction of a new street, that did not coincide with the 1869 plan, arguing the original plan did not fit the prevailing situation. The City Council decided “*qu'il convenait de dresser un nouveau plan d'ensemble, mieux en rapport que l'ancien, avec les voies publiques existantes.*”³⁶

In 1906 Compyn proposed an alternative plan for the southern part of the Muinkmeersen. (fig. 7) By the time he prepared his project, part of the orthogonal grid had been built. Compyn’s plan incorporated the existent streets and most of the buildings in the area that had already been constructed. But, apart from that, he made a radical U-turn regarding the existing orthogonal proposals. These never took into account the presence of the Oude Schelde. The grids of both the 1844 and the 1869 plans rigorously sliced through the course of the river as if it weren’t even there. Compyn however, seized the opportunity to utilize the presence of this natural feature with both hands.

Instead of another orthogonal grid, Compyn plans a star-shaped street pattern that consists of two diagonal streets and one central north-south oriented axis that connects the square with the junction of the southern streets. In fact, the north-south oriented axis is nothing but the extension of the existent Leeuwstraat. Meanwhile, the ‘course’ of the Tentoonstellingslaan – one of the two diagonal streets in the south – almost completely equals that of the filled up branch of the Schelde. Substituted by a sewer, the Oude Schelde is the last testimony of the former ‘natural’ hydrography of the Muinkmeersen to disappear. Nevertheless, its course entailed the dynamic effect of the diagonal, curved street that would sustain the main identity of the quarter. Compyn deploys this “*accident de terrain*”, as Charles Buls described, “*pour produire une construction ayant la saveur du*

³⁵ Braun, E. *Gezondmaking van de wijk van Terplaten*, Gent, 7 mei 1901, Stadsarchief Gent, reeks Openbare Werken G/1616, p. 3.

³⁶ Stad Gent, *Gemeentebulletijn* sitting 9 april 1906, Gent, Annoot-Braeckman, 1907, p.570.

terroir et non la banale beauté qui se rencontre dans toutes les capitales d'Europe et d'Amérique."³⁷ The curved and diagonal alignment of the Tentoonstellinglaan provided, apart from its slightly spectacular effect, also great advantages when it came to the circulation within the city. The avenue was a diagonal shortcut through the area of the Muinkmeersen and, by linking the Dierentuinlaan in the north-east with the Citadellaan in the south-west, it would enable a fast connection between the railway station Gent-Zuid and the new railway station Gent-Sint-Pieters that was to be established in the south of the city, within the scope of the World Exhibition. Also Stübben notes that a diagonal alignment of certain streets can be a good solution to ensure an efficient circulation network. He explicitly renounces the orthogonal grid by stating : "*Un plan dans lequel toutes les rues se coupent à angle droit est à rejeter.*"³⁸

Nonetheless, the filling up of the Oude Schelde was not something everybody anyhow agreed upon. It is interesting to note that the Ghent *Commission of Monuments*³⁹ had given orders to take photographs of the site, prior to these radical interventions that would change it for good. (fig. 10 and 11) The Ghent photographer Edmond Sacré did not only take pictures of the houses of the Molenaerswijk before they were to be torn down. He also specifically photographed the Oude Schelde itself, portraying it – with the church of St-Pieters on the backdrop – as a site with a remarkably picturesque grace.⁴⁰ The issue is even thought worth mentioning in the yearly reports of the City Council. "*De Commissie heeft eraan gehouden in hare processen-verbaal te vermelden dat sedert 1907 een duiker, gebouwd onder de verlenging van de Dierentuinlaan, in de wijk van Ter Platen, de kronkelingen vervangt van het Oud Scheldeken, eerste loop van de Schelde, welke tot grens diende van het Duitsche keizerrijk,*" and mentions at the end of the report: "*Een groot getal nieuwe photografiën werden op bevel van het College genomen.*"⁴¹ But the information that the course of the Oude Schelde might be referring to an important historical fact, is not convincing enough to preserve it. In *L'Esthétique des Villes*, Charles Buls makes a plea for the introduction of modern technology that responds to contemporary transport issues and refers more specifically to the vaulting of the Zenne in Brussels. "*Qu'on ne nous range donc pas parmi les admirateurs intransigeants du passé qui, amants exclusifs du pittoresque, regrettent le voûtement de la Senne et les mesures infectes qui laissaient suinter la fièvre dans un cours d'eau immonde. Une ville prospère doit fatalement se transformer, s'adapter à des besoins nouveaux de circulation, à des exigences de propreté, d'hygiène et de confort.*"⁴² The priority of hygienic issues and the importance of a well-equipped urban environment with modern technologies is also apparent in the discourses of both Cloquet and Vierendeel. The latter states "*Les nécessités modernes d'ordre technique et hygiénique doivent, sans la moindre restriction, être satisfaites.*"⁴³ Cloquet stresses the fact that these hygienic considerations are very seldom incompatible with artistic measures when he notes: "*La question est avant tout d'ordre technique et hygiénique. Cette double condition satisfaite, il ne faudra souvent*

³⁷ Buls, C., *Esthétique des villes. Facsimile-uitgave*, 1894, Sint-Lucasstichting, Brussel, 1981, p20.

³⁸ Stübben, J., op.cit., p. 52.

³⁹ In the reports is the commission mentioned as *Commissie der Monumenten* (Dutch), and: *Commission des Monuments* (French), but the full title, as can be read in the full reports of the commission in the municipal archive is *Stedelijke Commissie voor Monumenten en Stadsgezichten*. Stadsarchief Gent, SCMS oud archief doos SMCS 92 (1907-1908).

⁴⁰ Stadsarchief Gent, SCMS foto's straatnamen, folders (Ter Platen) 487 - 488 – 489, SCMS 6537 and 6534

⁴¹ Stad Gent, Verslag over het bestuur en den toestand der stad Gent 1907, Gent, Annoot-Braeckman, 1908, p. 608 and 614.

⁴² Buls, C., op.cit., p. 19.

⁴³ Vierendeel, A., *Tracés des rues et places publiques*, in : *Annales des travaux publics*, december 1905, p. 1150.

que peu de chose pour faire œuvre artistique. Aussi bien les exigences de l'art et de la technique sont rarement incompatibles."⁴⁴

The role of the engineer is, in this conception, highly respected. Moreover, the ambiguous relation between technology and aesthetics is an important issue within a picturesque approach of urban planning. As Buls notes: "*c'est précisément en suivant les principes indiqués par l'ingénieur que l'artiste trouvera les solutions les plus conformes à son idéal.*"⁴⁵ In the very same 1907 report of the City Council that highlighted the historical value of the Oude Schelde, as cited above, one can find a rather technical description of the construction of the replacing sewer in the swampy area. "*In de nieuwe wijk der Muinkmeersen, werd eene riool in ijercement, van 1m60/1m30 opening, met platten bodem, gebouwd in vervanging van het deel der Oude Schelde (lengte 412 meters). De deelen der riool op slechten grond gevestigd, rusten op houten palen.*"⁴⁶ Nevertheless, Compyn manages to complement this rigorous act of engineering with a more graceful ornamentation of the Tentoonstellingslaan. Apart from the integration of the curvy course of the Oude Schelde in the street pattern, he enhances the effect through the planting of trees. The 1908 report notes that: "*De nieuwe Tentoonstellingslaan werd afwisselend versierd met Acacias Bessoniana en Crataegus William Paul.*"⁴⁷ From the report of 1907, we learn that these species were to be used for avenues "*waar de wegenis niet breed is, daar deze twee soorten zich niet teveel uitbreiden.*"⁴⁸ The planting of Avenues had become a common practice both for hygienic as for aesthetical reasons. With the transformation of the picturesque idiom from a residential to an urban aesthetic, in the nineteenth century, nature was being set up as a "visual commodity" to be consumed as a "pictorial treat".⁴⁹ Within this scope, municipal parks and, also meticulously planted avenues, proved to be excellent mediators to underpin the 'Metropolitan Gaze' of its beholders.⁵⁰ In fact, we can state that their existed some kind of *horror vacui* among planners when it came to the planting of trees, squares and parks. Stübben states, for example, "*Toutes les parties qui ne sont pas nécessaires à la circulation doivent être consacrées à des plantations ou à des objets d'art.*"⁵¹ This was also in Ghent a well-known practice, and became even of greater importance within the scope of the World Exhibition in 1913. In the 1905 report, in the section of the '*Dienst der Beplantingen*', we read that "*men [is] overgegaan tot het herstellen der lanen en der beplantingen dezer squaren, die heerlijk groene hoekjes uitmaken, welke door de wandelaars met voorliefde worden opgezocht. (...) Ook heeft de*

⁴⁴ Cloquet, L., *La construction des villes*, in : *Annales de l'Association des Ingénieurs sortis des l'écoles spéciales de Gand 1904*, Gent, Association des Ingénieurs sortis des l'écoles spéciales de Gand, 1905, pp. 1-41. cited in Soenen, A., *Sur l'extention de Villes en général et de l'Agglomération gantoise en particulier. Rapport présenté au Premier Congrès International des Villes tenu à Gand, du 27 juillet au 1^{er} Aout 1913*, Buxelles, Oscar Lamberty Imprimeur-Editeur, 1913, p. 8.

⁴⁵ Buls, C. op.cit., p.19.

⁴⁶ Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1907*, Gent, Annoot-Braeckman, 1908, p. 838.

⁴⁷ Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1908*, Gent, Annoot-Braeckman, 1909, p. 976.

⁴⁸ Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1907*, Gent, Annoot-Braeckman, 1908; p. 980.

⁴⁹ For an extensive publication on this issue, see: Green, N., *The Spectacle of Nature: Landscape and Bourgeois Culture in Nineteenth-Century France*, Manchester University Press, 1990, p. 94.

⁵⁰ As Stephanie Ross describes in the book review of '*The Spectacle of Nature*', Green argues that French attitudes toward nature and landscape were social constructions. With the building boom in Paris from 1820 onwards, the improvements to the city's infrastructure, the window displays of luxury goods etc... new codes of looking were developed to read the street. Green describes this new kind of gaze that structured the flow between the promenade, theatre, café and arcade as 'the metropolitan gaze'. See: Ross, S. [untitled review] in: *The Journal of Aesthetics and Art Criticism*, vol. 58, no. 4, autumn 2000, pp. 410-411.

⁵¹ Stübben, J., *Règles pratiques et esthétiques à suivre pour l'élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs du Chicago, 1893*, in : *L'Emulation*, no. 4, 1895, p. 50.

Minister der spoorwegen zich verhaast de inrichting van dergelijke hofjes aan te moedigen in de meeste niet benuttigde hoekjes der statien van ons uitgestrekt spoorwegnet.”⁵²

The gardener, the engineer and the archeologist.

If we take a look at the yearly published reports by the City Council alone, it is possible to identify two different stances towards nature, more or less coinciding with two different sections in the reports. We could link them to the disciplines of the engineer and the gardener and could, in doing so, link those stances to a visible and an invisible pole of nature. At first, there's the '*Dienst der beplantingen*', making notice of all the plantings that have been done in the course of the past year. Here, nature is regarded from the point of view of the gardener. Nature is, in this case, both an ornamental feature for the grace of the aesthetical quality of the site, as well as having beneficial effects on the health of the inhabitants. It is an artificial construct that is to be understood as the visual counterpart of the underground networks. As Antoine Picon has pointed out regarding the greenery network of Paris designed by Alphand, the construction of parks, squares and planted avenues – *cette nature domestique à laquelle les hygienists prêtent des vertus curatives* – was part of a more general ambition to put a minimum of *resources* at the disposal of the different classes in society.⁵³ In other words: here, nature is implemented in the urban fabric with the same ubiquitous ambition as every other kind of public utility.

Secondly, there are the numerous projects mentioned in the section '*Dienst der wegen en waterlopen*', where the alignment and paving of new streets as well as the implementation of all kinds of underground networks are listed. In this section, nature is mainly canalized underground with regard to hygienic precautions. The obsession of planners to conceptualize cities primarily as healthy environments dates from the eighteenth century and was, as Richard Sennett notes, closely related to a better understanding of the human artery system. "*Enlightened planners*", he writes, "*wanted the city in its very design to function like a healthy body, freely flowing as well as possessed of clean skin.*"⁵⁴ Both the metaphors of the invisible "veins" and the clean "skin" became central features in the praxis of urban design in the next 150 years. At first, the notion of "*the circulation of the blood created the requirement that air, water and [waste] products also be kept in a state of movement.*"⁵⁵ This '*state of movement*' was, apparently, a *natural* condition that needed to be projected on the urban fabric. All of which enhanced the shift in attention of planners from the monumental destination of the movement in the city to the street and the journey itself. In his article *Le naturel et l'efficace*, Antoine Picon notes that the creation of a ceaseless flow of water is one of the main analogies between the disciplines of the engineer and the gardener. "*L'aménagement du territoire et l'art des jardins partagent tout d'abord une vision de la nature en termes de flux et des mouvements incessant. (...) Concrètement, l'aménagement et l'art des jardins ont tous deux affaire à la circulation des eaux.*"⁵⁶ In both disciplines or stances, nature is canalized in

⁵² Stad Gent, Verslag over het bestuur en den toestand der stad Gent 1905, Gent, Annoot-Braeckman, 1906, pp. 921-922.

⁵³ Picon, A., *Le naturel et l'efficace. Art des jardins et culture technologique*, in : Mosser, M. & Nys, P., Le Jardin, art et lieu de mémoire, Besançon, Editions de l'Imprimeur, 1995, p.391.

⁵⁴ Sennett, R., *Flesh and Stone. The Body and the City in Western Civilization*, New York, W.W. Norton & Company, 1994, p.263.

⁵⁵ Ibidem, p. 265. [waste] is the author's interpunction.

⁵⁶ Picon, A., *Le naturel et l'efficace. Art des jardins et culture technologique*, in : Mosser, M. & Nys, P., Le Jardin, art et lieu de mémoire, Besançon, Editions de l'Imprimeur, 1995, p. 385. See especially the chapter : *Alphand ou la nature en réseau*.

a concentrated and systematical way in order to give shape to a severely controlled urban landscape.

Even so, more can be said when we once more take a look at the specific case of the allotment of the Dierentuinwijk. We could easily understand the park in the north and the sewer in the south as two different poles of development within the area, each representing a different stance towards nature – even though it is also true that in both parts of the project both stances towards nature are present. Still, one essential dimension within this framework is missing. It is a dimension that is apparent and indispensable within the conception of nature, both in the northern as in the southern part of the allotment. In both cases, nature has, apart from a visible and an invisible (underground) pole, also a historical value. From this point of view, nature is seen as a testimony of history, or is referred to as a specific factor defining the authenticity of the site. Very often, we find this archeological stance towards nature in the reports of the '*Commissie der Monumenten*', covering all kinds of issues concerning the preservation of monuments and historical sites in the city. But it is also an essential layer within the construction of the Picturesque. Vierendeel points at the importance to incorporate specific topographical properties to provide a site of picturesque allures. "*On étudiera soigneusement la topographie du terrain, pour réaliser les points de vue les plus pittoresques (...) si sur le terrain à aménager il y a un monument ancien, une vieille maison intéressante, un bel arbre, un buisson rustique (...) s'y a un chemin serpentant, on ne le rectifiera pas ; s'il y a un cours d'eau vagabond, on en tirera profit en le conservant à l'état naturel.*"⁵⁷ Although he definitely did not agree on the last point, also Buls, as quoted above, specifically refers to the integration of '*les accidents de terrain*' within a project in order to create a unique and authentic urban scenery. So also in his view, the reminiscence of the former landscape within a new urban development was considered to be of high importance, a point of view that is also present in the discourse of Stübben, when he stated: "*Il ne faut pas se contenter de conserver les monuments de toutes sortes, les rues pittoresques et le paysage même; il faut profiter de ces héritages du passé et de ces bienfaits de la nature, les mettre en valeur et s'aider de leur charme pour donner à la ville un cachet artistique qui lui soit particulier.*"⁵⁸

In the northern part of the Dierentuin-project, the part centered around the park, this stance towards nature is present within the ambition to integrate the view on the church of St-Pieters and its surrounding gardens as well as within the choice to preserve part of the former zoological garden. Nevertheless, also the other two stances can easily be recognized. At first there is the fact that both the Muinklaan and the Lamstraat were planted with trees, there are the front gardens to be constructed in the Muinklaan and there is of course the park that is, apart from being a nostalgic testimony of the former the zoo, nevertheless a newly constructed artifact of nature. For what the case of the Oude Schelde is concerned, it has been tirelessly stated that the course of the Oude Schelde remained present within the alignment of the Tentoonstellingslaan. From the report by the '*Commissie der Monumenten*' and the picturesque pictures taken by Sacré, Vierendeel might have

⁵⁷ Vierendeel, A., *Tracés des rues et places publiques*, in : *Annales des travaux publics*, december 1905, p. 1150. Also cited in Soenen, A., *Sur l'extention de Villes en général et de l'Agglomération gantoise en particulier. Rapport présenté au Premier Congrès International des Villes tenu à Gand, du 27 juillet au 1^{er} Aout 1913*, Buxelles, Oscar Lamberty Imprimeur-Editeur, 1913, p. 7.

⁵⁸ Stübben, J. *De la Construction moderne des villes en Allemagne*, in : *Revue de l'institut international de l'art public*, Bruxelles, Institut International d'Art Public, n°1, 1907, pp. 43-48.

concluded to preserve the water course all the way. Compyn however, preferred to combine hygienic standards of a modern city with a subtle reference to the former river – a solution that is closer related to Buls' and Stübben's instructions. Although this decision also implied some practical advantages concerning the expropriation of land, nonetheless it is puzzling that these practical considerations never showed up when the orthogonal grids were presented and ratified by Royal Decree. This fact strengthens the idea that Compyn's U-turn towards these plans was to a great extent given in by his ambition to follow his contemporaries in their picturesque-minded footsteps. Furthermore, the plan meets both hygienical and aesthetical standards because of the construction of sewerage, and the establishment of a beautifully curved and planted avenue.

We hope to have shown how the ideals and techniques of the Picturesque School oscillate between those three different stances towards nature. It is through the stratification of nature into the disciplines of the gardener, the engineer and the archeologist that this layered and ambiguous approach towards urban planning, which can even be seen as a design methodology, is being developed in order to construct a severely controlled urban environment in accordance with the ideals of the Picturesque School. One more question remains: what is to be of the artist?

Bibliography

Primary sources

- Stadsarchief Gent:

Section G (Public Works): folders: 1484-1487, 1490-1491, 1593-1601.
 Section SCMS (Stedelijke Commissie voor Monumenten en Stadsgezichten)
 'Foto's Straatnamen' folders: 89-90, 344, 487-489
 'oud archief': SMCS 92
 'plannen' folders 27, 36, 48.
 Wegwijzer der Stad Gent, editions 1899-1918
 Section D (administrative staff of the city of Ghent): D2/6, folder Compyn

- Hadschriftenzaal Universiteitsbibliotheek Gent: Vliegende Bladen:

Compyn, Victor (famille)	Hygiène
Braun, Emile	Boulevard du Jardin Zoologique
Buls, Charles	Horticulture
Plantations	Exposition Universelle

Published & Secundary sources

AIGRET, C., *Flore analytique et descriptive des plantations le long des routes de l'état en Belgique*, in: Annales des Travaux Publics 1905, pp. 472 e.v.
 BULS, C., *Esthétique des villes. Facsimile-uitgave*, 1894, Sint-Lucasstichting, Brussel, 1981, p20.
 CLOQUET, L., *La construction des villes*, in : Annales de l'Association des Ingénieurs sortis des l'écoles spéciales de Gand 1904, Gent, Association des Ingénieurs sortis des l'écoles spéciales de Gand, 1905, pp. 1-41.
 CLOQUET, L., *Essai sur les principes du beau en architecture*, Gand, Desclée, De Brouwer et Cie, 1894, 32 p.
 CLOQUET, L. La voirie urbaine en Europe et en Amérique, in : Revue de l'institut international de l'art public, Bruxelles, Institut International d'Art Public, n°2, 1907, pp.47-48.

- CLOQUET, L., *L'esthétique des rues et des plans*, Lille, Desclée De Brouwer, n.d., 14p.
- DE BUCK, A. *Het Zuidpark en de ex-dierentuin van Gent* (9), 1993, p. 6. (available in Stadsarchief Gent, section: SCMS - plannen, folder: Dierentuin)
- DUBOIS, M., *Architectuurtijdschriften. Een fragmentair beeld*, in: De beschikbare ruimte. Reflecties over bouwen, Lannoo, Tielt, 1990, pp. 138-141.
- GANDY, M., *Rethinking urban metabolism: water, space and the modern city*, in: City, December 2004, Vol.8, n°3, pp.363-379.
- GREEN, N., *The Spectacle of Nature: Landscape and Bourgeois Culture in Nineteenth-Century France*, Manchester University Press, 1990, p. 94.
- KAIKA, M., *City of flows. Modernity, nature and the City*, New York, Routledge, 200p.
- KARVONEN, A., *Metronatural: Inventing and reworking urban nature in Seattle*, in: Progress in Planning, 2010, iss. 74, pp. 153-202.
- KOMORA, A., *Concrete and the Engineered Picturesque*, in: Journal of Architectural Education, 2004, pp. 5-12.
- KREPS, P. and Perneel, X., *Het sociaal-ruimtelijk wordingsproces van de wijk der vroegere Muinkmeersen*, Gent, 1983, diss. burgerlijk ingenieur-architect, 2 Vol., ill.
- MELOSI, M., *Humans, Cities and Nature : How Do Cities Fit in the Material World ?*, in: Journal of Urban History, 2010, iss. 36(1), pp. 3-21.
- N.N., *Ce qui fut le jardin*, in : Le Bien Public, 3 mars 1905.
- N.N., *De Dierentuin*, in: De Strijd, 7 September 1905.
- N.N., *L'emplacement de l'ancien Jardin Zoologique*, in : La Flandre Libérale, 21 juillet 1905.
- PICON, A., *Le naturel et l'efficace. Art des jardins et culture technologique*, in : Mosser, M. & Nys, P., Le Jardin, art et lieu de mémoire, Besançon, Editions de l'Imprimeur, 1995, p.391.
- ROSS, S. [untitled review] in: The Journal of Aesthetics and Art Criticism, vol. 58, no. 4, autumn 2000, pp. 410-411.
- SENNETT, R., *Flesh and Stone. The Body and the City in Western Civilization*, New York, W.W. Norton & Company, 1994, p.263.
- SMETS, M., *Charles Buls, les principes de l'art urbain*, Liège, Mardaga, 1995, 305 p.
- SMETS, M., *De ontwikkeling van de tuinwijkgedachte in België: een overzicht van de Belgische volkswoningbouw van 1830 tot 1930*, Brussel, Mardaga, 1977, 223p.
- SOENEN, A., *Sur l'extention de Villes en général et de l'Agglomération gantoise en particulier. Rapport présenté au Premier Congrès International des Villes tenu à Gand, du 27 juillet au 1^{er} Aout 1913*, Buxelles, Oscar Lamberty Imprimeur-Editeur, 1913, 19p.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1905*, Gent, Annoot-Braeckman, 1906.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1906*, Gent, Annoot-Braeckman, 1907.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1907*, Gent, Annoot-Braeckman, 1908.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1908*, Gent, Annoot-Braeckman, 1909.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1909*, Gent, Annoot-Braeckman, 1910.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1910*, Gent, Annoot-Braeckman, 1911.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1911*, Gent, Annoot-Braeckman, 1912.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1912*, Gent, Annoot-Braeckman, 1913.
- Stad Gent, *Verslag over het bestuur en den toestand der stad Gent 1913*, Gent, Annoot-Braeckman, 1914.
- Stad Gent, *Gemeentebulletijn 1904*, Gent, Annoot-Braeckman, 1905.
- Stad Gent, *Gemeentebulletijn 1905*, Gent, Annoot-Braeckman, 1906.
- Stad Gent, *Gemeentebulletijn 1906*, Gent, Annoot-Braeckman, 1907.
- Stad Gent, *Gemeentebulletijn 1907*, Gent, Annoot-Braeckman, 1908.
- Stad Gent, *Gemeentebulletijn 1908*, Gent, Annoot-Braeckman, 1909.
- STEYAERT, J. J., *Volledige Beschryving van Gent of Geschiedkundige Beschouwing van deze Stad en hare Bewooners, de merkwaerdige Gebouwen, Gestichten en Maetschappyen, de beroemde Gentenaeren, enz.*, Gent, Boek- en Steendrukkerij van I. S. Van Doosselaere, 1857, 386 p.

STÜBBEN, J, *Der Städtebau*, Braunschweig, Vieweg, 1980, 561p.

STÜBBEN, J., *Règles pratiques et esthétiques à suivre pour l'élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs de Chicago, 1893*, in : L'Emulation, 1895, n°3, p. 35.

STÜBBEN, J., *Règles pratiques et esthétiques à suivre pour l'élaboration de plans de villes. Rapport présenté au Congrès international des Ingénieurs de Chicago, 1893 (suite et fin)*, in : L'Emulation, 1895, n°4, p. 52.

STÜBBEN, J., *Rapport de M.J. Stübben, architecte, conseiller intime royale, échevin à Cologne*, in : Premier Congrès Internationale de l'Art Public, Liège, Bénard, 1898, pp. 89-93.

STÜBBEN, J. *De la Construction moderne des villes en Allemagne*, in : in : Revue de l'institut international de l'art public, Bruxelles, Institut International d'Art Public, n°1, 1907, pp. 43-48.

TOP, F., *De verkaveling van de Gentse Dierentuin (1905-1914) (1928-1935)*, licentiaatsverhandeling RUG, 1997, 3V.

Un abonné ami des arbres, *Le Jardin Zoologique*, in : La Flandre Libérale, 23 janvier 1905.

Union Internatitonale des Villes, *Premier Congrès International et Exposition Comparée des Villes : 1. Construction des Villes, 2 : Organisation de la Ville Communale*, Bruxelles, Union Internationale des Villes, 1913, 88p.

VANLAETHEM, F., *Architectuurtijdschriften*, in: A. VAN LOO (ed.), Repertorium van de architectuur in België: van 1830 tot heden, Antwerpen, Mercatorfonds, 2003, pp. 204-209

VAN DUYSE, H. *Le Quai des Moines à Gand*, in : in "L'Illustration nationale des fêtes et cérémonies du 50e anniversaire de l'indépendance de la Belgique: organe spécial des expositions", juillet 1880, pp. 2-3.

VAN REYBROUCK, D., *Stedelijke wildheid. Dierentuinen in de Lage Landen*, in: Ons Erfdeel, februari 2003, n°1, pp.2-10.

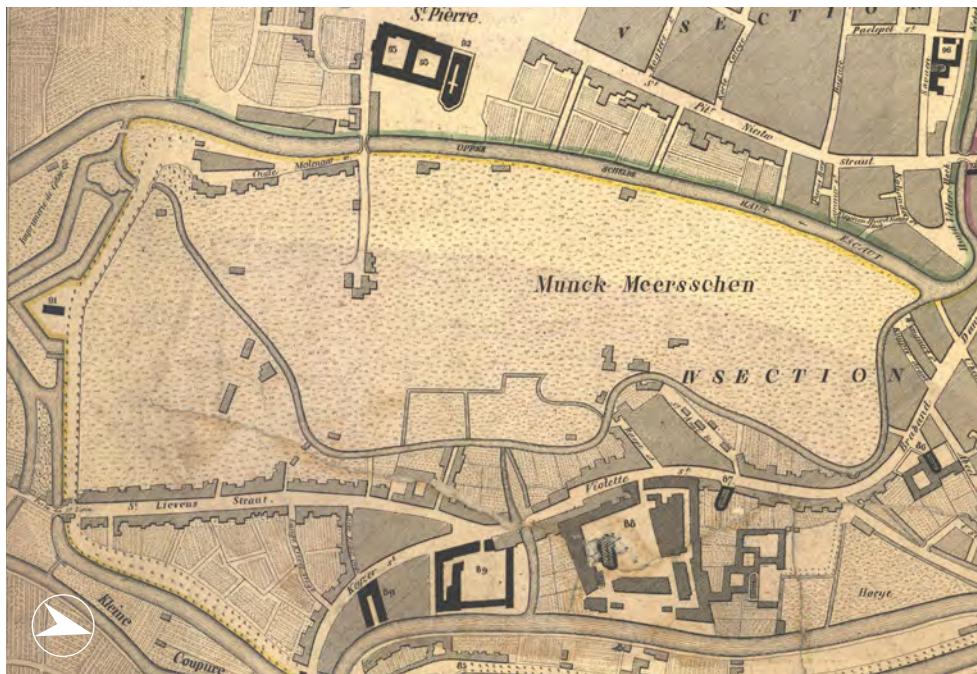
VAN REYBROUCK, D., De dierentuin, een schitterend bedrog, in: De Morgen, 3/08/2002.

VIERENDEEL, A., *Tracés des rues et places publiques*, in : Annales des travaux publics, décembre 1905, pp. 1114-1151.

Illustrations

Note: The Illustrations have been grouped into 3 parts.

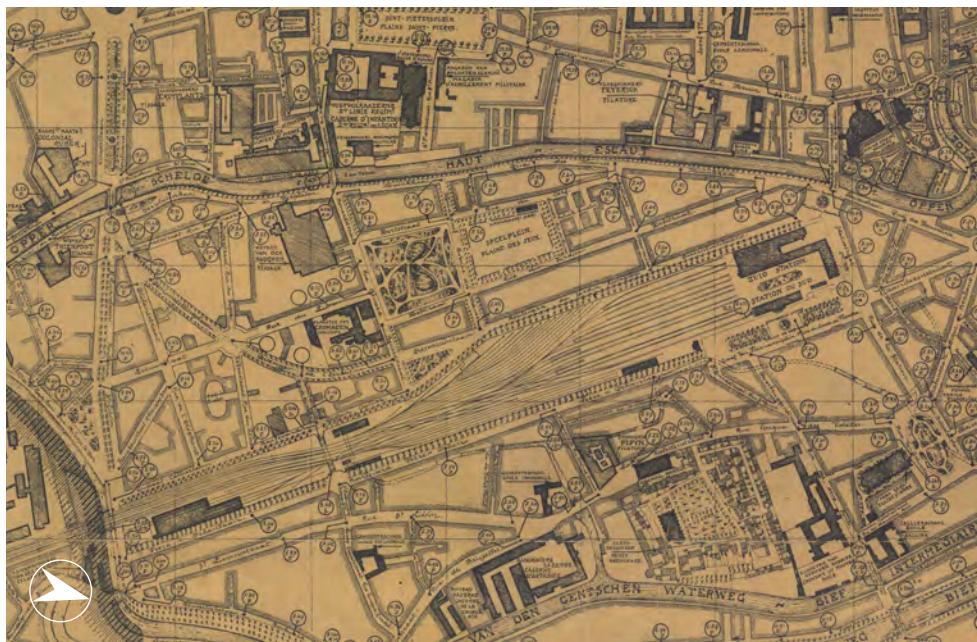
- The first page illustrates the chronological evolution of the urbanization of the Muinkmeersen with the help of (sections of) three city maps.
- The second page shows the different projects that have been developed for the area.
- The third page displays a selection of 'picturesque' etches and photographs of both the Zoological Garden as well as of the Oude Schelde.



1. Plan Routier de la ville de Gand
divisé en V sections,
A. Roothaese, 1829.



2. Plan Parcellaire de la ville de Gand
et une partie de sa Banlieue,
P. Gerard, 1855.

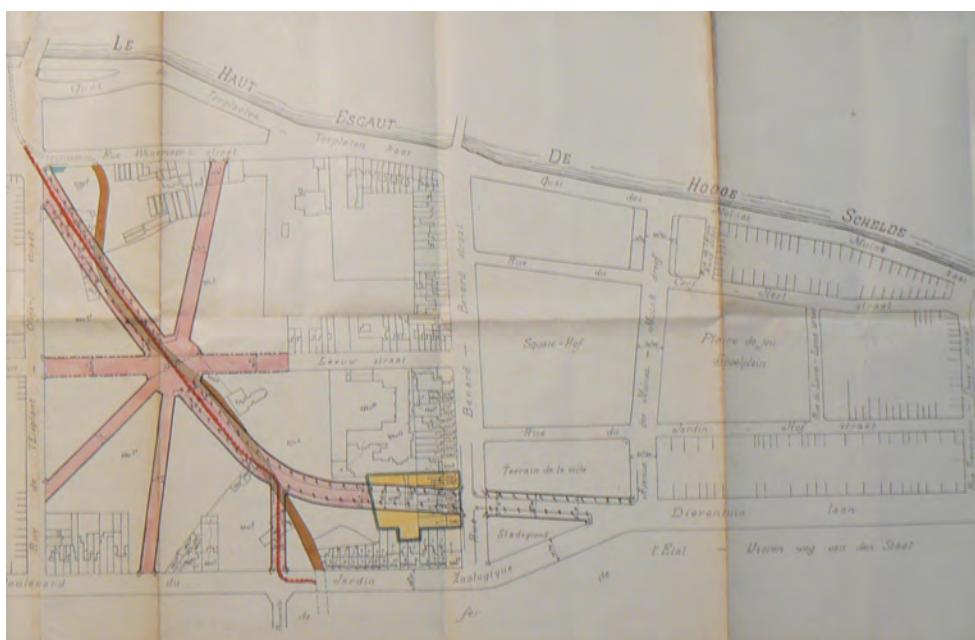
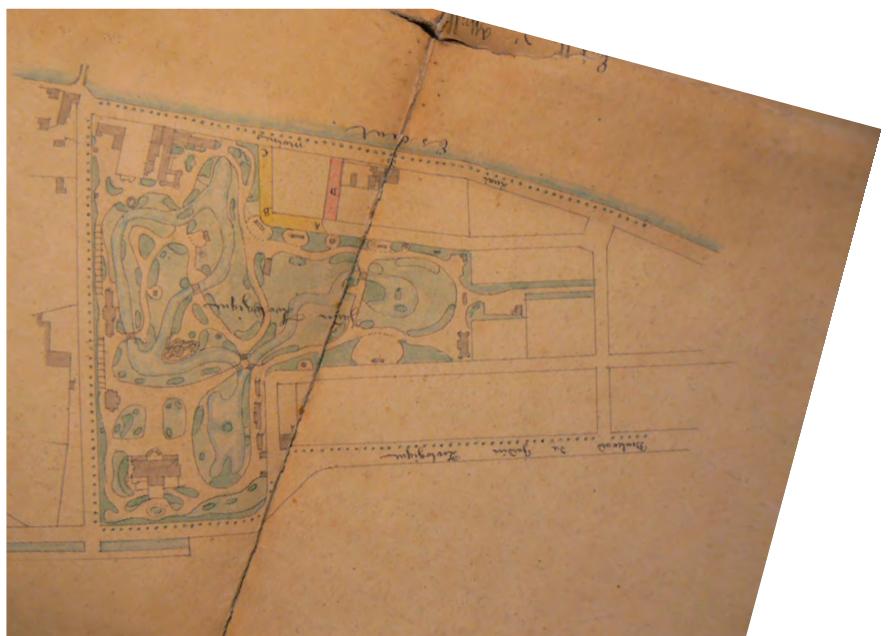
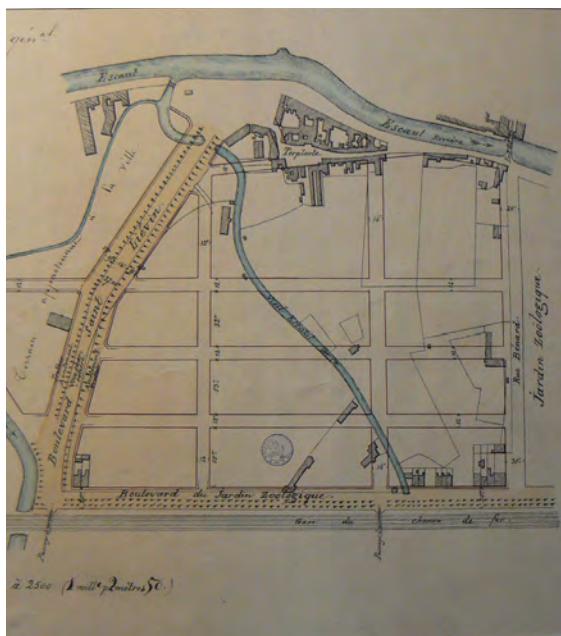


3. Plattegrond van Gent met Peilen, Opgemaakt door den Dienst van de Stadswerken, 1912.



4. The orthogonal grid of the 'Plan Général', ratified by Royal Decree in 1844. Indicated on 'Plan der Stad Gent', by B.J. Saurel, 1848. (left)

5. The implementation of the Zoological Garden. 'Modification du Plan Général', 1860, Stadsarchief G/1485 (below, right)



6. Modification of the Plan Général due to the construction of the St-Lievenslaan on the former town ramparts. 'Nouvel Alignement Général', Plan annexé à la résolution du Conseil Communal du 22 mai 1869 et approuvé par Arrêté Royal du 11 octobre 1869. (above, left)

7. The Compyn-project for the southern part of the Muinkmeersen (left), also indicating 'the 1905-restoration of the grid in the north of the 1844-plan with the 'Muinkpark' (right). 'Création d'un nouveau Quartier dans les prairies des Moines', V. Compyn, 2 april 1906.



8. View on the Zoological Garden, 1856.
Stadsarchief (above, left)



9. View on the Zoological Garden, by E. Syts,
1864. Stadsarchief, SCMS folder 36
'Dierentuin'. (above, right)



10. View on the Oude Schelde. Stad Gent, Commissie der Monumenten en Stadsgezichten, Photograph with inscriptions 'Ter Plaeten', 'Vieil Escaut', signed E. Sacré. It is impossible that the date of february 1908, as refers to the moment it has been taken, as the Oude Schelde was filled in by then. Most probably the picture had been taken between 1903 and 1907. Stadsarchief, SCMS/6537.



11. View on the Oude Schelde. Commissie der Monumenten en Stadsgezichten van Gent, Photograph with inscription 'Terplaeten-wijk', no date and no author mentioned. Stadsarchief, SCMS/6534.