MAGIS Brugge: Visualizing Marcus Gerards’ 16th-century Map through its 21st-century Digitization

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**MAGIS Brugge:**
Visualizing Marcus Gerards’ 16\textsuperscript{th}-century Map through its 21\textsuperscript{st}-century Digitization

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*MAGIS Brugge Project*

**Abstract**

Marcus Gerards delivered his town plan of Bruges in 1562 and managed to capture the imagination of viewers ever since. The 21\textsuperscript{st}-century digitization project \textit{MAGIS Brugge}, supported by the Flemish government, has helped to treat this map as a primary source worthy of examination itself, rather than as a decorative illustration for local history. A historical database was built on top of it, with the analytic method called 'Digital Thematic Deconstruction.' This enabled scholars to study formally overlooked details, like how it was that Gerards was able to balance the requirements of his patrons against his own needs as an artist and humanist.

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**Introduction**

The history of Bruges has long fascinated generations of researchers, in no small part because the town seems to have partially skipped industrial revolution and has often been considered a unique remnant of the middle ages, in its entirety.1 Books such as *Bruges-la-morte* (1892) by novelist Georges Rodenbach helped to create a hazy atmosphere around Bruges and a curious attraction to this mysterious place.2 As historiography took a turn at the beginning of Belgium’s existence, around and after 1830, so the gem called Bruges was ‘rediscovered,’ although it had of course never been lost. Publications about the history of Bruges were written one after another, often in the form of travel guides. This includes, for instance, Alexandre Ferrier de Tourettes’ *Description historique et topographique de la ville de Bruges* of 1836 and Joseph Buffa’s 1841 album with engravings and lithographs.3 Subsequent publications by Octave Delepierre (1840), James Weale (1884) and Alexandre Hannotiau’s 1894 homage to the city count among the various 19th-century books that opened up the history of the so-called Venice of the north to a larger public.4

Swept up in this stream of publications is a significant map of Bruges from 1562, made by the artist Marcus Gerards (Marcus Gheeraerts the Elder, 1521-1587). Frequently, authors like Adolf Duclos (1910) used this sixteenth-century map to illustrate the town’s written history.5 Gerards’ bird’s-eye view shows Bruges in astonishing detail, with an enormous amount of information fit into the large print made up of 10 plates together measuring 1 by 1.7 meters in total. However, Duclos and others have typically used the map as an image to support their texts, which is to say that it has always remained subordinate to the historical research written in the text. Moreover, the map, functioning as an adornment, continues to be well-known in and around Bruges as a fixture in modern publications, as well as serving as a popular decorative adornment for the hallways, living rooms, studies, and waiting rooms of the town’s residents today. Only recently has a growing interest in iconographic sources finally secured a long-overdue position for Gerards’ map as a primary document unto itself, leading to fresh discoveries about the artist, his cartographic strategies, and fascinating details about historical Bruges.

The present article considers Gerards’ map through the lens of a contemporary digitization project called MAGIS Brugge. This project is the brainchild of two researchers from Ghent University (Belgium), Dr. Bram Vannieuwenhuyze and Dr. Jan Dumolyn, who were inspired by the 1562 town view. MAGIS stands for Marcus Gerards Information System. Using a newly developed visualization method, Gerards’ map was entirely digitized to serve as a base for a dynamic knowledge platform on the history of Bruges.6 *MAGIS Brugge*—or ‘magical Bruges’ as it might be loosely translated—began in 2012. The project is a partnership between the Musea Brugge, the City Archives of Bruges, and three universities: the University of Ghent, and the Vrije Universiteit Brussel. Dr. Vannieuwenhuyze was interested in historic cartography when he developed a new method of analysis for the digitization of historical maps in his dissertation on the medieval development of Brussels.7 Dr. Jan Dumolyn specialized in the medieval history of Bruges, having been born and raised there himself. Both knew Gerards’ town plan of Bruges; putting their knowledge together they realized that much more could be done with this valuable historical source beyond its sole function as an illustration.

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3 Alexandre Ferrier de Tourettes, *Description historique et topographique de la ville de Bruges* (Brugge : Louis Hauman et Cie, 1836) and Joseph Buffa (ed.), *Louis Ghemar (ill.) and Henri Berremans (ill.), Bruges* (Brugge: Buffa, 1841).
7 Dr. Jan Dumolyn, who were inspired by the 1562 town view. MAGIS Brugge—a magical Bruges’ as it might be loosely translated—began in 2012. The project is a partnership between the Musea Brugge, the City Archives of Bruges, and three universities: the University of Ghent, and the Vrije Universiteit Brussel. Dr. Vannieuwenhuyze was interested in historic cartography when he developed a new method of analysis for the digitization of historical maps in his dissertation on the medieval development of Brussels. Dr. Jan Dumolyn specialized in the medieval history of Bruges, having been born and raised there himself. Both knew Gerards’ town plan of Bruges; putting their knowledge together they realized that much more could be done with this valuable historical source beyond its sole function as an illustration.
Indeed, the MAGIS Brugge project has shown how the map contains an almost inexhaustible wealth of information.

The MAGIS Brugge project has allowed scholars, like myself, to identify specific value in Gerards’ masterpiece as a historical source. Because of certain distortions, this particular town plan of Bruges has often been considered unreliable. Although proportions are not always accurate and Gerards clearly exaggerates aspects of the representation, the project has helped to show that through spatial and historical cross-referencing, as well as a decent portion of common sense and a critical approach, scholars can countervail such manipulations. Although this bird’s-eye view has been mostly appreciated only for its decorative value, MAGIS Brugge has helped to transport the attentive and critical viewer back to a sixteenth-century town. Through this digitization project, the scholar is offered a view onto the socio-spatial realities of later 16th-century Bruges, as styled by the hand of its mapmaker.

The aim of this article is therefore to demonstrate how digital mapping can help to make sense of a traditional map like Gerards’ plan of 1562 and how one might get the most out of it as a historical source. I first contextualize the work by considering the artist, Marcus Gerards, his motivations, and his approach to creating the image. The second part of this article explains the MAGIS Brugge project, including how the map was digitized and the benefits of the process. Finally, I discuss a special selection of fascinating details made visible through the MAGIS Brugge project. Thus, the reader will see how a modern lens can help to identify just what makes this map this extraordinary.

A Foundational Map and its Maker

The fundament of the 21st-century digitization project first proposed to the Bruggemuseum by Vannieuwenhuyze and Dumolyn lies of course in the sixteenth century, and in the contextual history of the mapmaker and his cartographic view of Bruges. Both the man and the map were naturally products of their time, engaged within larger social and artistic networks that stretched well beyond the town limits. Marcus Gerards, also called Marcus Gheeraerts the Elder, was born in Bruges in 1521. As his father, Egbert Gerards, was a painter, Marcus seems to have been fated to become a painter as well. Nevertheless, Egbert was not able to pass on his skills to his son as he died at quite a young age. It was his stepfather, Simon Pieters, also a painter, who piloted him into the admirable profession.8 Surprisingly, it was only in 1558 that Marcus Gerards was registered in Bruges’s images-makers’ and saddlers’ guild as a master painter.9 Marcus was thirty-seven by then, which is a late age considering that typically a master’s son was eligible for enrolment as soon as he turned fifteen, assuming that he had the necessary skill.10 Therefore presumably he received additional training somewhere other than Bruges and not only by his stepfather.11 Antwerp was the hub of the printing trade at the time, so this may be where he became familiar with the graphic arts, in which he excelled. Another possibility was Bernard van Orley in Brussels, whose Passion Triptych he completed after Van Orley’s death. In that same year, 1558, Gerards married Johanna Struve, who later became the mother of a son and a daughter for Marcus Gerards. Marcus II Gerards, or Marc the Younger, followed in his father’s footsteps as a painter. He became a renowned portraitist in England and was even commissioned by the royal Court several times. 1558 was an eventful year for Marcus Gerards as he was already elected as “vinder” or board member of the guild.12 This shows how his fellow guild members must have trusted him and the good reputation he had. His

4 Albert Schouteet, De zestiende-eeuwse schilder en graveur Marcus Gerards (Brugge: Gidsenbond, 1941), 4-5; Anne van Oosterwijk, ed., Forgotten Masters: Pieter Pourbus and Bruges Painting from 1525 to 1625 (Gent: Snoeck Publishers, 2018), 177.
6 Ellen Vernackt, “De stedelijke gelaagdheid in de Brugse zestiendee Sint-Jan en Cermers in de zestiende eeuw aan de hand van het stadsplan van Marcus Gerards: Digitale analyse met aandacht voor open ruimte in de stad” (Master diss., Ghent University, 2011), 12.
8 Edward Hodnett, Marcus Gheeraerts the elder of Bruges (Utrecht: Haentjens Dekker en Gumbert, 1971), 9.
10 Van Oosterwijk, Forgotten Masters, 177.
12 Schouteet, Schilder en graveur, 4-17.
social network undoubtedly contributed to this or even induced it.

In 1561, Marcus Gerards began his renowned map of Bruges, a copperplate etching. It took him a year to finish this masterpiece. Besides some paintwork in Bruges, he is also celebrated for the richly illustrated publication *De warachtighe fabulen der dieren* (1567), which tells the moralizing Greek fables of Aesop, with text written by the Bruges rhetorician Eduard de Dene. The book was enriched with 108 engravings by Marcus Gerards, who printed it at his own expense. The content of the book, as well as the people Gerards worked together with, show his connections with the humanist movement in Bruges. He even dedicated his introduction to the humanist printer Hubertus Goltzius. A lot changed for Gerards in the following ten years, when he took a leading role in the Bruges protestant community. He made caricatures of the king, the pope and Catholicism, which explains why he left his wife behind in Bruges for England in 1568. Despite having left everything behind, he apparently found happiness again as he remarried in 1571. His second wife was Suzanna de Critz, the daughter of an Antwerp goldsmith who fled the Spanish Netherlands for the same religious reasons as Gerards had done three years earlier. This marriage produced three more children for Marcus Gerards, all of them baptized in London. Marcus Gerards’ work was rated very highly in England and just like his son, he received commissions from the court including two portraits of Elisabeth I which have been attributed to him.

It is clear, therefore, that Marcus Gerards moved in protestant and humanist circles. He had professional, religious and intellectual ties with prominent humanists in Bruges, such as artist-humanist Lucas de Heere who likewise was forced to flee to England for his views. Another significant tie was to Cornelis van Hooghendorp and his family, who were active in minting. Marcus Gerards designed a bas-relief for the minting workshop and was part of the Calvinistic commune in Bruges together with Cornelis. Both were also friends with Hubertus Goltzius, who was himself a painter, printer and a Calvinist, and to whom Gerards dedicated his introduction to *De warachtighe fabulen der dieren*. Perhaps most significantly for his renowned contributions to the history of map making, cartographer and geographer Abraham Ortelius was a friend of Gerards.

Being part of a powerful network yielded both material benefits and cultural knowledge. Bruges’ artists went through a fairly rough time as a general economic decline resulted in a smaller demand for artistic products. But since Gerards could rely on his social network, he managed to compensate the lack of economic opportunities. This was an important matter for him, as it was a much more dignified alternative than the reproductions, standardisations and division of labour that seemed to become the norm. Apart from these material benefits, and more importantly, these contacts with humanists, intellectuals and artists induced a continuous flow of cultural ideas and knowledge of artistic and scientific innovations. If new techniques were developed in for example Antwerp, these networks made sure that also in Bruges interested humanists such as Gerards got acquainted with them. Antwerp became the trading metropolis of the Low Countries, partially because of printing. Naturally, Gerards developed his knowledge about mapmaking and geography through this social and intellectual network, in which an entire cartography tradition and more specifically, his Bruges map, developed. This humanistic background also proved to be helpful in his artistic career. It is in fact the only explanation

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13 Ibid., 27–28.
14 Van Oosterwijk, *Forgotten Masters*, 189.
17 Nevertheless, the protestant community was practically the same group of people as this humanistic network, which also proved problematic for Gerards. His daughter Esther was convicted in 1568 for her protestant beliefs and he had to leave everything behind to pre-empt death penalty. Even though England brought him some new opportunities, his exile was undoubtedly difficult and ambiguous. Gyselein, “Gerards Marcus,” 90.
20 Ibid., 329.
22 Ibid., 98.
for how a painter-engraver was able to accomplish an extremely detailed and almost completely accurate town plan without being trained as a geographer or cartographer.

The town plan of Bruges that Gerards made in 1562 is outright impressive, a composition made up of ten copper plate prints presenting the town within its larger landscape. It shows Bruges with the surrounding countryside and with the towns of Damme and Sluis right up to the North Sea (Fig. 1).23 Bruges itself takes up the majority of the map space, however, and is shaped as an almost perfect egg. The city center is drawn with an imposing amount of detail. Houses are shown with individual characteristics, windows, doors and chimneys. Gardens are dressed up with bushes, trees and plant beds. Streets have water wells at regular distances. Waterways carry boats with various loads and both wooden and stone bridges can be clearly recognised.

Although he was not a cartographer and he mostly painted for a living at that time, Gerards made the map because the city council asked him to do so in 1561. The commission is still preserved in the city accounts and clarifies a lot about the contemporary history of Bruges. The background of the town plan is a long-known fact in Bruges’ historiography. It was an explicitly propagandistic piece of work that was intended to show the glory days of Bruges which were, in fact, clearly over by then. Because of deliberate manipulations, to be highlighted below, historians have not properly valued the map as an iconographic source; instead it has been used as an attractive illustration by authors like the otherwise honorable Duclos. In the image, Bruges is drawn strikingly close to the North Sea, with waterways that are both too short and too broad. Gerards drew some of the main buildings slightly too large as well. A closer look reveals that the belfry is somewhat out of proportion. The portal seems to be as large as one of the regular houses standing a dozen meters away. This obviously fits right into his

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23 Stadsplattegrond Marcus Gerards (Brugge, s.n., mid-18th century) (Openbare bibliotheek Brugge, Historisch Fonds HF 530).
assignment to show the city in all its glory, since in this context, a belfry has always served as a symbol of urban power and autonomy.24

Another characteristic of this map is the fact that streets are invariably drawn too broad. Bruges had—and still has—a lot of narrow streets and alleys demarcated by often two-story houses. Considering the compositional point of view presented by the map, most of these narrow alleyways should not be visible simply because the row of houses in front normally blocks the view of the street and even overlaps with the row of houses in the back. Nevertheless, Gerards engravés all of the streets sizably too wide, so that they can easily be recognized. Measuring the width of a house by comparing its measurements on the map with the drawn street thus is not a reliable method.

Likewise, we can tell a lot about the greenery and open space on the map. Gerards could not possibly have visited every single garden in Bruges with the intention of representing them all flawlessly. Nevertheless, he filled in the gaps between the houses in a realistic manner and gave a good idea of how gardens might have looked like at the time.25 However, his approach makes it difficult to draw the line between reality and arbitrary additions, reminding us again why it is that many researchers have not used this map as a primary source. The kind of analysis required to determine accuracy also applies to ordinary and small houses. We must ask, for instance, if the structures represented are reliable depictions or if Gerards simply filled in the gaps between the notable buildings. As we shall see, a digital database that engages the already fully-analyzed map proves to be a huge help for anyone seeking to use this town plan for scientific purposes.

The reliability of a map also depends on the procedure by which it was made. Sadly, neither the city council documents nor other sources shed light on the topic. As explained above, Gerards had strong contacts with humanists and a scientific way of thinking. Notwithstanding, he still was a painter and engraver, rather than a geographer. This Bruges’ town plan of 1562 is moreover the only map he ever made, or the only one whose existence is known, implying that he probably did not have any cartographic experience whatsoever. So how exactly did he execute the task the city council gave him? Triangulation was invented during the first half of the sixteenth century by Gemma Frisius.26 So strictly speaking, Gerards could have had this method at his disposal. It has always been assumed that Jacob van Deventer was the first who put triangulation into practice. Although this is difficult to prove, it is a fact that both Van Deventer and Frisius wandered around in the same circles of mathematicians at Leuven University.27 As a matter of fact, it is immediately evident that Gerards did not use this method by looking closely to the map of Bruges. It is for example shown by the location of the north side on the map. In general, north lies at the bottom left of Gerards’ map, but it varies a little according to the location on the map. The same can be said about the shape of the city of Bruges; on a modern map it is shaped like an irregular egg. On the bird’s-eye view of Marcus Gerards, Bruges resembles an almost perfect circle. Both phenomena would not have occurred if Gerards used a proper triangulation. Still, places can easily be recognised by their position in relation to each other. And there are no zones that are strikingly crammed with houses because he started lacking space to draw. Despite a slight alternation in drawing size, the urban landscape seems to be represented fairly systematic and without obvious irregularities.

If Gerards did not use triangulation, nor engraved his map freehand, it has been suggested that he used the older prevalent method of polygonometry.28 This meant that distances were measured in a straight line with a chain or simply by counting steps. Encountered with a change of

25 Ibid., 17.
26 Reinout Rutte and Bram Vannieuwenhuyze, Studentenijn Jacob van Deventer: 226 stadsplassergronden uit 1545-1575 (Tielt: Lannoo, 2018), 32.
28 Van Oosterwijk, Forgotten Masters, 178.
direction, the new course was determined and written down.29 This method provided anchor points to be used as a foundation for the map, but of course not as accurate as what triangulation would produce. This description matches perfectly with what can be seen on the map. It is important to keep in mind that Gerards never had the experience of viewing Bruges from an aircraft, a balloon, a drone or even a satellite. The most plausible hypothesis is that drafters of this kind of parallel projections searched for locations that were high up in the landscape, such as church towers and ramparts.30 In all probability, this is what Gerards did, just like Jacob van Deventer.31 It is difficult to figure out which spots he chose, but the centrally located belfry is a logical suggestion, even though it is impossible to observe the entire town from that vantage point. A thorough mathematic and geographic analysis of the perspective and drawing size of several sections of the map would be helpful to determine which places might have been available to Gerards; that work remains to be done. Since the map is a copper etching, it had to be drawn entirely mirrored. This prodigious task surprisingly only took Gerards a year to finish, which seems nearly impossible given its degree of detail. Some scholars have suggested, therefore, that the plan was based on an earlier map, meaning he would not have had to start from scratch.32 Suggests range from an anonymous painted plan from the end of the fifteenth century to some now lost map, even though it remains a mystery. Another question is if Gerards might have received help compiling all the information, from for instance, land surveyors providing him with measurements and preliminary draughts. Others have suggested that he already had a map underway when the commission came through. Such theories have yet to be confirmed.

Although we might wish Gerards map to be categorized as unique, it is in fact a product of its time and place which shares both visual and conceptual properties with broader cartographic traditions of the time. Probably the best known comparable map is the view of Venice, made by Jacopo de Barbari in 1500, which is almost the same size, and consists of multiple sheets with a wealth of detail.33 Moreover, it is not oriented north and the shape was adapted in a subtle matter to fit the purpose of the map; despite reality, in the map, Venice is drawn like a dolphin or a fish. In Gerards map, too, the shape of Bruges is distorted; both representations have been considered simultaneously artistic and topographical works.34 A century later, Pedro Teixeira created his monumental map of Madrid, which consists of a whopping twenty map sheets and measures almost six square metres. As researcher Jesús Escobar has stated, the intention was clearly to impress the viewer.35 It is remarkable that the plates for this last map were engraved in Amsterdam and printed in Antwerp. These few examples show that the Gerards map was part of a larger industry that covered North-western Europe. What he did was not groundbreaking or revolutionary; nevertheless it was an impressive piece of work.

The Renaissance in general involved a remarkable growth in the production of city views.36 As H. Ballon and D. Friedman have observed, the novelty of these town plans and views lies in their wish to provide topographical information, whereas medieval maps showed an ideal world.37 As the sixteenth century unfolded, more techniques were applied for recording and representing a specific spatial reality. And what was new about this, according to the aforementioned researchers, was the fact that such images were now crucial to the authority of the town plan or view.38 Just like the Italian peninsula, north-western Europe was

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30 Koeman, Geschiedenis van de kartografie, 132.
31 Reinoud Rutte and Bram Vannieuwenhuyse, Stedenatlas Jacob van Deventer, 32.
34 Jürgen Schulz, “Jacopo de Barbari’s View of Venice,” 425.
37 Ballon and Friedman, “Portraying the City in Early Modern Europe,” 680.
38 Ibid.
characterised by a strong urban expansion from the eleventh century onwards. The development of town plans and cityscapes seems to be running parallel with that expansion as the town plans of 226 cities in the Low Countries by Jacob van Deventer demonstrate. This region in particular testifies to remarkable cartographic developments. And even though Van Deventer already worked with orthographic projection, most cartographers at the time still used bird's-eye view, just as Gerards did. Town plans and cityscapes were often woodcuts or engravings whose copies would circulate widely. Gerards' town plan was no exception. Records show that it was sold in particular at the market of Seville by 1564. The printing process for these kind of maps was of course not unique either. Printing in general evolved from woodcut to engravings on metal. More precision can be pursued with metal as lines are more regular, curves easier to cut and corrections comfortably made. Engraved or etched plates were regularly used as long as possible for reprints, as was the case for Gerards' copper plates too. It might even have been the intention to attach the sheets to canvas and suspended on rollers or framed, as was the habit for such maps.

Even in Bruges, the sixteenth century was a busy century in terms of cartography. At the end of the fifteenth century, an anonymous painted plan was made that still raises a lot of questions today. A striking feature on the map is a large basin with seagoing vessels that has never existed. After that, around 1560, Jacob van Deventer passed through Bruges for his town plan as a part of the larger project to map most of the Low Countries. These more than 200 town plans were commissioned by Philip II, possibly from a military-strategic or an administrative point of view. Marcus Gerards was the next to shed his light on the city of Bruges, with the ulterior motive of his patrons of course. He was quickly followed by Guicciardini (1581) and Braun and Hogenberg (1641), both of whom in fact based their work on Gerards' map of Bruges. A visually distinctive but geographically and conceptually related work is the painted Map of the Liberty of Bruges (1571) by Pieter Pourbus, entirely copied by Pieter Claesens in 1597. It shows Bruges itself only vaguely, but the surrounding countryside with towns and polders is displayed impressively accurate.

Although an entire article could be spent on sixteenth-century cartography in the Low Countries or even in Bruges, this contextual history suffices to observe that Gerards work was of a piece with the historical moment. Although not unique in terms of its concept, approach and motivation, it still is an impressive work with an enormous amount of detail. Indeed, it was a logical choice for an extended database.

Magical Bruges

At the time of its making, the 1562 map was a success, as its availability for sale in Seville demonstrates. The original copper plates, still preserved today, were reused innumerable times. In the course of the eighteenth century street names were added to the original plates. Eventually, the plates became too much worn out and the entire representation was manually transferred to lithography. When the twentieth century came to reveal that the map was still popular and still easily saleable, a modern offset version was published by Gidsenbond, partially colored. The map is still sold today. Even the recent exhibition Pieter Pourbus and the forgotten masters at the Groeningemuseum had a digital representation of Gerards' map as a final piece to give visitors more background information about the painters' families in sixteenth-century Bruges.

39 Rutte and Vannieuwenhuyse, Stedenatlas Jacob van Deventer, 23.
40 Bracke and Leenders, 100 kaarten, 56.
41 Ballon and Friedman, “Portraying the City in Early Modern Europe,” 680.
43 Bracke and Leenders, 100 kaarten, 52.
44 Excubat, “Map as tapestry,” 50.
46 Rutte and Vannieuwenhuyse, Stedenatlas Jacob van Deventer, 45.
47 Bracke and Leenders, 100 kaarten, 90 and 138.
49 Musea Brugge, Groeningemuseum, inv. BMG0565.
50 Rutte and Vannieuwenhuyse, Stedenatlas Jacob van Deventer, 45.
This last instance is a side product of the project MAGIS Brugge. Despite its popularity, up until recently, researchers did not always know how to approach Gerards’ map, especially given uncertainties about its limits of reliability; the safest option generally has been to use it as an image and not as a trustworthy source. This use of the map underestimates the potential that lies in its thousands of details.

It is consequently not surprising that a few researchers at Ghent University became determined to invest in this map and give it the attention it deserves. This ongoing, collaborative project inspired by and named for Marcus Gerards includes an online database, making the material accessible to a wide audience. The aim was to completely digitize the map so that information derived from historical sources and scientific literature could be attached to each and every spot on the map. Apart from a particularly extensive database, it also provided clever and attractive visualization possibilities. The database benefits researchers, museums, and national heritage partners on the one hand, and on the other, a general public mostly interested in strolling around Bruges’ past on this map as well. Working together with so many partners is not always easy, but in this case it turned out to provide a significant advantage; each partner provided in his or her own way their expertise on the matter. Some brought expertise in the field of historic cartography or GIS-technologies, others were more immersed in the history of Bruges and urban history in general.

This brings us to the method that was applied to digitize the map of Marcus Gerards. In 2008, Dr. Vannieuwenhuyze developed the DTD or Digital Thematic Deconstruction. “Digital” stands logically for the high quality digital scan of the map that is needed to work with. “Deconstruction” means that the map is virtually deconstructed or divided into its elementary parts, those being houses, trees, streets, water wells, and so on. By using GIS-technology, the map is of course not actually cut up in pieces. The digital scan of the map is used as the bottom layer and above that, a new layer is created with all of the puzzle pieces that together form the same map (Fig. 2). “Thematic” refers to the fact that every piece of the puzzle is assigned a typology, for example building, road network, waterway, nature, etc. Just this process captures already a thoroughgoing analysis in itself. It obliges the researcher to specifically take a close look at each and every detail that is drawn on the map. Moreover, if every category is given a different color, the image transforms immediately into a colourful version of the same map—but strikingly much easier to read (Fig. 3).

So even without an associated database, the analysis of a map with DTD is a useful investment. However, MAGIS Brugge has been taken a few steps further. Once the map was digitized, every single detail was made clickable and so began the work to build a database that could fit all the information we wanted to attach to the map. A lot of developing, testing, adapting and re-testing an extensive system was built in which many kinds of data can find a place, ranging from tables with small facts and their sources, over images, to themes, tags and streetview links. By bringing all this information, most of which had already been published, together upon one map, new connections can be found between phenomena that were never interrelated before, or at least not on such a scale.

This project created the opportunity to thoroughly analyse the map and to discover answers to new questions. In turn, these answers made it possible to write a more substantiated story about this famous town plan. For instance, the Boterhuis or butter house at the Eiermarkt in Bruges does not
Cartographic Styles and Discourse

Figure 2. The DTD-analysis in progress.
Bruggemuseum, Stadsarchief Brugge, UGent, KU Leuven and VUB, MAGIS Brugge. Marcus Gerards Informatie Systeem Brugge. Brugge, since 2012, with the support of the Flemish Government.

Figure 3. Visualisation possibilities are manifold thanks to the MAGIS Brugge project.
Bruggemuseum, Stadsarchief Brugge, UGent, KU Leuven and VUB, MAGIS Brugge. Marcus Gerards Informatie Systeem Brugge. Brugge, since 2012, with the support of the Flemish Government.
make a notable appearance in Bruges-related literature and there has hardly been any archival research to it either. Only Duclos mentions that the butter house was located somewhere around the Eiermarkt. Only during the digital analysis did it become apparent that the structure drawn against the Saint-Christopher’s chapel does not in the least look like a part of the chapel, although a first and shallow look would lead one to assume the latter. The DTD-analysis therefore allows the researcher to look beyond what a more superficial study might reveal. The structure drawn on that exact spot looks similar to other, better known market halls in Bruges, such as the Westvleeshuis or western meat market, but is more rudimental (Fig. 4). Through Duclos, we learn that the wholesale of butter and cheese was located there and it was abandoned around 1540 while the building was demolished about forty years later. This explains the questionable state of the building on the map of 1562. Even though this part of the map, ridiculously close to the central market place, has been looked at an awful lot of times, the DTD-analysis revealed this building hidden in plain sight, in its remarkable, abandoned state.

Apart from this very specific example, other new insights came into being during the DTD-analysis and even more during the input of information in the database connected to the map. Only an exhaustive survey of the map online can describe sufficiently how every event, phenomenon, and process is intertwined with another and with its location in the town of Bruges. Seeing locations of taverns, trading places, nobility, merchants, industries and even hospitals and cloisters together confirms the virtual stratification of this (late) medieval city. Another more amusing example of new discoveries on the map can be found just outside the city walls; this one concerns a lady with an urgent problem, to be described further on.

Designers of MAGIS Brugge have addressed issues of usability with extra features. Anyone who has tried using the database of MAGIS Brugge might have found it somewhat circuitous. Every user needs to create an account and login, and there are many buttons whose function is not always evident; additionally, there is a substantial amount of tables and popups. Therefore, the decision was made to develop some derivatives that are more user-friendly for the general public. This includes, to begin with, a more straightforward website that provides the same map with data, albeit streamlined, an intuitive design and only those functionalities that are useful for a wider public (Fig. 5).

Evidence and time have demonstrated that the website has been enthusiastically embraced by both inhabitants of Bruges that want to know how their dwelling place looked like in

58 Duclos, Bruges: histoire et souvenirs, 433.
59 Ibid., 433.
60 To be consulted at www.kaartenhuisbrugge.be/magis.
1562, as by local historians and researchers working in the field of historic cartography. A subsequent addition was an educational tool for teachers who want to teach about late-medieval urban development, contemporary urban trade, and also about how to use historic maps. Bruges in 1562 is applied as a case-study.61 A questionnaire for the pupils is provided, but also a PowerPoint presentation and instructions for the teacher. It was already made clear that the digitization of Marcus Gerards’ map unveiled some new insights in the history of Bruges. And in good habit, new insights also bring new questions in historical research. Thanks to the educational tool, the map also serves as an instrument for pupils who first learn about urban history.

The possibilities of side products for MAGIS Brugge have so far appeared to be innumerable. Xplore Bruges, an application that combines many walking and biking routes relating to heritage in and around Bruges, also offers a walking route called ‘Bruges in the year 1562’.62 Following this route, one can visit some places that still look exactly the same as they did almost 500 years ago, but also spots that are no longer recognisable whatsoever. The application provides fragments of the map to compare the location of the user with how it looked in 1562. A lot of supportive iconographic material is inserted as well that provides substantive added value.

The Map, Exposed

Through the lens of MAGIS Brugge, we can also determine how Gerards balanced this commission from the city council against his own desires as an artist. As we have seen, the job required certain distortions of reality for propaganda. At the same time, Gerards was an individual with his own style and taste; here then, we can consider the details that show the character of the artist which were (re)discovered during the DTD-analysis.

As stated earlier, Bruges went through a difficult period in 1562, as it lost its pre-eminent position as the hub of trade for northern Europe.63 Various factors were to blame, ranging from political and military events to the prevailing economic

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61 All documents are available at www.kaartenhuisbrugge.be/educatie, only in Dutch.
63 Van Oosterwijk, Forgotten Masters, 178.
climate. More and more merchants left Bruges for Antwerp and not much was left of the thriving activity of trading nations from the previous century. Multiple uprisings caused a general sense of unsafety. One of the issues was also Bruges’ problematic connection with the sea. The Zwin, the main waterway to the sea, started to silt up already in fourteenth century. A new channel was dug to improve navigation, but it did not solve the problem. Bruges focused, too much as it would appear, on the sea and seemed to forget that trade over land had its potential as well. The city tried to maintain its privileges and its position in international trade, but it bumped into nothing but rigidity and formalisation. Bruges had a convulsive and conservative reflex in these circumstances and lacked the dynamics that once made it great. Even though Bruges still had a lot to offer and was relatively prosperous, its heyday was over.

It is easy to see that the city council would have gone far to get Bruges back into the flourishing current they knew earlier. This is why they started digging another new channel to improve Bruges’ link with the North Sea. The commission for this map of Bruges by Marcus Gerards belongs in this context. The idea was to announce the existence of the new channel to merchants everywhere. The map was an advertisement of sorts for Bruges’ international trade. The council specifically asked the artist to show Bruges as being closer to the sea than it actually was and make the waterways look wider than they really were, ‘ten fine men mercken mach de goede navigatie’, so that the good navigation could be seen. Taking a good look at the map one can easily see that Gerards did exactly as he was told. If Gerards’ map showed a reflection of reality, the beach would be at walking distance from the city. Anyone who knows Bruges and its surroundings immediately sees that the artist grossly exaggerated this proximity. Knowing his background as a humanist, this is a strange observation to make. It was already mentioned that topographic knowledge was a new aim in early modern cartography all over Europe. Nevertheless, illustrating the fame of any illustrious city fit within a humanist pursuing of fame. Town plans and cityscapes turned out to inspire the most complex representational strategies. According to Hillary Ballon and David Friedman, “Whether they were instruments of propaganda sponsored by government or commercial ventures aimed at a more general public, the challenge of picturing the city included the need to characterize it.”

It is within this more specific context that we might consider how Marcus Gerards tried, and succeeded, to capture Bruges in its individuality, portraying correct topographic information and still responding to the wishes of the city council. Knowing Gerards’ humanistic background, it is easy to be puzzled by whether he had some issues with his assignment. A scientific approach and a new rationality are characteristic of the humanist movement. The directive to make deliberate mistakes—drawing waterways too short and too wide—must have presented itself to Gerards as a certain complication. It is not unthinkable that he might have had some doubts about the matter and maybe even seriously considered refusing the assignment. It has already been made clear how devoted Gerards was in his beliefs and it would be really surprising if he put his faith, his principles and his personality aside for a single command. Nevertheless, the economic decline that started the century before, caused major assignments to drop behind. And refusing an assignment from the city council, which probably ensured payment, might have been an unwise thing to do. Therefore, Gerards needed to be inventive in how he would handle the assignment.

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66 Ibid., 10.
67 Ibid., 14.
68 Schouten, Schilder en graveur, 33.
69 Schulz, Jacopo de Barbari’s View of Venice” 472.
70 Ballon and Friedman, “Portraying the City in Early Modern Europe,” 680.
71 It is now clear for what purpose this bird’s-eye view of Bruges was made. But why did the city ask him to make it and not anyone else? Peter Pourbus for example manufactured several cartographic works in Bruges at that time, he would have been a suitable candidate as well. A hypothesis may be that Gerards already started preparations for such a venture and the city council heard about that. This would explain how he managed to finish the map in merely a year. However no prove has been found yet to confirm this theory and the real answer might never be found.
At a glance, it is immediately obvious that Gerards took the instructions of the city council seriously. Bruges lies way too close to the North Sea on the map and is vastly too large compared to the towns of Damme and Sluis, which are also depicted. Nonetheless, a closer look reveals how the engraver guarded his dignity as a humanist and indicated where he changed the scale of his map. A subtle dotted line—barely distinguishable, but unmistakably there—designates where the scale changes (Fig. 6). Everything behind this line is engraved smaller and an attentive mind might have already seen that the map contains not one, but two indications of scale with the typical compass. Further towards the middle of the countryside surrounding Bruges, a highly decorated cartouche explains the approach. With a Latin text, Gerards explains to the viewer that everything up to the dotted line is drawn correctly. Beyond the line, it is all uncertain and undefined—vaga et indefinite—except for Damme and Sluis which are depicted equally. He even adds that he did it on purpose to be able to draw the entire waterway to Sluis. In short, Marcus Gerards could not have done more to clarify why and how he made the deliberate manipulation, which we no longer understand to be a mistake. Nevertheless, he replied neatly to the wishes of his patrons. He did exactly as he was told, but in his own way, fairly scientific for the time.

There are additional tricks Gerards applied to achieve the image he had in mind. Although the city council did not literally ask for it, he anticipated their perception of Bruges and depicted the city as a peaceful and quiet place. He extended the demand of the city council by displaying Bruges as the ideal spot for merchants to develop their activities. The main issue was making the city look this placid by drawing it on the map in a very neat way. It was a nice bonus that this made the important buildings pop out more as well. He made it look less cluttered for instance by leaving some blank space around the edge of a building, where other lines should connect (Fig. 7). Despite the fact that the street pattern is drawn accurately, in the sense that one could still find his way in Bruges with this map, they are proportionally too wide as was already pointed out. For Gerards, this was an ultimate trick to make the town look more peaceful, as other map makers had done before. Broader streets meant no overlap between housing blocks and thus a map that was easier to read and a city that appeared more ordered. A similar thing happened to the trees. Even in places that must have had an orchard

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72 “Hoc habeto lector ad hanc usque lineam punctis diffuetem omnia suis dimensionibus constare reliqua vero esse vaga et indefinita praetam Dammam et Slusam quae oppida similis cum alius symmetria sunt deliniata quod sane eo consilio factum est ut aquaeductus bruganus oculis subictatur qui Dammam usque miliar Flandricum inde Slusam delabitur ad miliar duo.” Bruggemuseum, Stadsarchief Brugge, ©Gent, KU Leuven and VUB, MAGIS Brugge, Marcus Gerards Informatie Systeem Brugge (Brugge, since 2012, with the support of the Flemish Government).


74 Ibid., 21.
not a single tree is drawn partially in front of another. Looking at a current aerial photo, it is obvious that not every tree could have been a solitary one. This means he drew details like trees in a more arbitrary way, giving him at the same time the advantage of a more orderly map.

Gerards used several techniques to draw Bruges as a magnificent and peaceful town. Making notable buildings pop out by leaving a blank space around it was only one of them.

The houses on the map are more complicated. Clearly large and distinguished houses are detailed very accurately. The belfry as it was drawn by Gerards in 1562 still looks the same today, aside from the spire. Of course, Gerards could not have known that the spire would burn down once more. For the ordinary houses the question of accuracy is not that easy to answer. It seems that Gerards used what can be called a reasoned arbitrariness and filled in the gaps between the more striking houses with the type of buildings that was often built in that area of the city. But remarkably, case study research often reveals that these seemingly arbitrary houses are not random all the same and that the direction of the ridge line and the type of façade is frequently correct. This implies that the safest approach is to critically consider each case separately and keep in mind why and how Gerards created his map.

Gerards presented the portrait of an idealized trading city as per the wishes of his patrons, the city council of Bruges. Apparently his approach worked, as he was even paid more than was originally agreed on. However, this did not restrain his dignity as a humanist and map maker. Marcus Gerards’ education as a painter has been clearly recognized through the DTD-analysis project; a number of interesting details have been registered in the database and studied up close. Gerards may well have been a humanist and a fairly scientific working map maker, he was also an artist and member of the painters’ guild. Looking closely at the map, it is striking that not a living soul is to be seen inside the city walls. At first, that might seem surprising, as Gerards was asked to show Bruges as the magnificent trading city it once was, but it is a stylistic decision that was once again typical for the zeitgeist.

Representing a town as an empty place, completely void of any life, corresponds to the perception the elite had of urbanism and social order. Simplified, this means that an empty city looks more decent, quiet and peaceful, exactly what Gerards guessed the city council wanted.

Outside the city walls, however, these restrictions were omitted and he could exercise some artistic freedom. Typical sea monsters afflict the North Sea, plumes of smoke rise from the beacons, a man walks his dog, cartloads of hay and other wares are pulled by multiple horses, a man reads his breviary and a couple in a boat spends the day fishing. But the tiny detail that probably tells the most about Gerards’ personality is a woman who is relieving...
herself, al fresco, just outside the Dampoort complex (Fig. 8). Although the detail hardly stands out, it is an unexpected detector of Gerards sense of humor. In 1604, Karel van Mander already described how Gerards had the habit of drawing this so-called 'peeing lady,' but this tiny personal touch still comes as a surprise on an otherwise proper map of Bruges. This humorous detail was first discovered during the DTD-analysis, even though hundreds of people had seen the map on an almost daily basis.

Figure 8. Marcus Gerards showed himself as being in for a joke and drew a peeing lady just outside the ramparts.
Stadsplattegrond Marcus Gerards, Brugge, s.n., mid-18th century, 10 map sheets (Openbare bibliotheek Brugge, Historisch Fonds HF 539), detail.

Conclusion

*MAGIS Brugge* has been critical in demonstrating Gerards’ distinctions; his work must be studied in detail, seen in the light of his life story, his social network, and his beliefs. As is probably the case for any artist at the time, his religious background was firmly interwoven with his intellectual network. His humanist connections had a clear impact on his work and must be taken into account. Although his map of 1562 is often accused of being unreliable, in fact, careful study reveals his scientific honesty. The bird's-eye view was made for propaganda purposes, ordered by the city council itself. Their order to intentionally draw waterways too short and too broad does not match with Gerards’ background and convictions. Nevertheless, he succeeds in responding to the demands of his patrons without losing his credibility as a humanist and thus rather scientific map maker. The solution was as simple as drawing a dotted line where the scale was changed, accompanied by a cartouche with explanatory text and a compass. Seen together with other detailed conceits revealed through the digitization of his map, Gerards succeeded in an impressive way and his work can finally be engaged as a rich historical source.

This article has also worked to show how the implementation of a DTD-analysis, with an extension to a database, is an excellent way to let a map tell the whole story it captures in its details. Where published literature, primary sources, and the map as a source itself come together, new insights into the history of a place are revealed as never before. As we have seen here with Marcus Gerards’ 1562 Map of Bruges, a global visualization of a town's history magically becomes legible.

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79 Ibid., 179.