The foundation, planning and building of new towns in the 13th and 14th centuries in Europe: an architectural-historical research into urban form and its creation
Boerefijn, W.N.A.

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7 THE PLANNERS OF THE NEW TOWNS

In the previous chapters we studied the planning of new towns, and the people involved were broadly designated as ‘planners’; no specific persons, with names, professions and biographies were mentioned.

In fact, not much is known about the people involved in the planning of new towns in the 12th to 14th centuries, because the sparse written sources concerned with the planning of new towns generally omit the subject of the spatial design. Even when a written source actually considers the spatial planning, it mostly is just in very general terms, such as ‘and the king had the town laid out’ or something similar.

Since there are so little sources on the subject, the relevant information is gathered in this chapter in order to get a general picture of what sort of persons could be involved in the planning of new towns and the way they functioned. The material will be largely treated thematically, according to the status or profession of the people involved. The three groups of new towns that were treated in the first three chapters of this study will be treated in separate paragraphs.

7.1 Professional designers?

With the creation of a new town in the high-period of town foundation, a plan would mostly have been thought out in more or less detail before the work on the site actually started. Whether or not, or to what degree, a design was laid down in a drawing or in a description does not matter here: the point is that nearly always there must have been somebody who developed an idea in his mind, no matter how vague or clear, about what form the new town had to take on. This person, or possibly body of people, is designated as ‘planner(s)’ in this study.

In many publications of the last 150 years or so, scholars refer to the creators of the spatial layout of new towns form the 12th to 14th centuries as professionals from architecture and surveying or even as professional town planners. It appears, however, that this idea is not based on solid evidence. Many scholars just assume that, in general, professional designers planned the new urban layouts. For instance, Buselli claims that architects or military engineers made the designs for new towns in the 13th and 14th centuries. He does not explain why or how, he just takes it for granted, apparently because it seems logical to him. Other authors give specific attributions; but it appears that these mostly are not very reliable, as is shown by the following examples.

According to Enrico Guidoni the new town of New Salisbury in England, which was founded by the bishop of Salisbury in 1219, was designed by the ‘architect and mathematician’ Elias of Dereham. Guidoni gives no reference for this information. It appears that Elias of Dereham was a canon of Salisbury cathedral, and custos of the building fabric of this church. He has long been taken for the architect of the cathedral, as well as of other monumental buildings. But it appears that in fact he was a cleric and an administrator, and nothing indicates that he was an architectural designer. Guidoni also writes that ‘frate Elia, famosissimo architetto-urbanista’ led the re-planning of Cortona in 1247-53. This case is similar to the one of Elias of Dereham. Frate Elia (c.1175-1253) was a very important figure in the early Franciscan order in the 1230’s, and it was probably he who initiated the building of the church of S. Francesco in Assisi in 1228 and the church and convent of the same name in Cortona in 1245. In Italy he has come to be regarded as the architect of these buildings, as well as of other buildings of the Franciscans, but this is not based on historical sources. Guidoni does not mention a source. Therefore it seems that the identification of frate Elia as an urban planner is fiction rather than fact.

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1 For instance with regard to the town of Chiavari, founded by the City of Genova in 1178: ‘[... the consuls of Genoa have it measured and estimated and arranged in wards in the year 1178]’ (‘[... consules Janue mensurare fecerunt et aetimae atque distingui per vicos MCCLXXVIII’). (Fasoli 1942, p.182, n.240)
2 See Boerefijn 2005.
3 For the process of spatial planning, see par.9.6.
7 Elias may also have worked as a goldsmith. His identification as an architect seems to date from the 18th century, when Horace Walpole confused him with an Elias the Engineer. (Harvey 1972, p.82)
9 According to the 16th-century artist-biographer Giorgio Vasari frate Elia started the building of the church of San Francesco in Assisi in 1228. (Vasari 1991, p.121) It seems that the idea that Elia was an architect is strongly influenced by the great faith that has been put in Vasari’s Vite for centuries, being one of the very few sources on Italian artists of the 12th to 15th centuries. (see par.7.6)
A certain Itier of Angoulême is mentioned by some authors as the spatial planner of New Winchelsea in southeast England. It is claimed that Itier was an architect or even a town planner, and that he had also taken part in the planning of several bastides in Gascogne. It remains unclear on what source this is based, however. I have not found the name anywhere else, and therefore the claim may be doubted.

According to Friedman the new town of Villa real, which was founded in 1271 north of Valencia in Spain, was most probably designed by a building master from northern Italy named Nicolosa. Friedman based this on the fact that Nicolosa worked as a military engineer for the founding lord of Villareal, James I of Aragon. It is known that Nicolosa made a plan of attack on a town not far from Villareal in 1254 and that he built a wooden bridge in 1280, both for the rulers of Aragon. But the claim that he designed Villareal remains largely conjectural, much as the other attributions of urban design to professional architects and town planners above.

The same is true for the attribution of the design of Fribourg in present-day Switzerland, which was founded by Duke Berchtold IV of Zähringen in 1157, to a certain Lambertus, mansionarius del Fribor. Divorne believes that he was a professional building master and that he planned the town, because he was described as mansionarius from Fribourg. Once again this is a highly conjectural theory, since the term mansionarius generally means sacristan or holder of a domain or a farm, and since the source does not clearly identify him as the designer.

10 Morris 1972, p.88; Briggs 1927, p.77. According to Morris Itier was one of a team of three. One of the others was Stephen of Penhurst, ‘warden of the Cinque Ports’, a sort of maire of Winchelsea and four other towns on the southeast coast of England. The third man was Henry le Waleys, who primarily functioned as financier of the new creation of the town. Lilley (2005 II, p.225) mentions, following the original documents in the Calendar of Patent Rolls (1281-92, 3), that in 1281 the king appointed Stephen de Penecester, Iterius de Engelisma and Henry le Waleys ‘[…] to assess certain plots of land at Ihamme […]’, where the new town was to be founded. (Lilley 2005 II, p.225) It is not clear, however, to what extent they contributed to the planning of the town.

11 Friedman 1988, pp.110-111.


13 Besides that, the source is rather unclear. Divorne (1993, p.381, n.153) only refers to a source les origines de Fribourg by Pierre de Zurich.
All in all, there is not one case that proves, or even strongly suggests, that professional architectural designers or town planners created the layouts of new urban structures. The cases treated above clearly illustrate that the general assumption that such professionals designed the new towns and town extensions in the 11th to 14th centuries is not based on historical evidence. It seems that the assumption is rather based on analogy to the modern practice of town planning. This analogy, however, does not appear valid in this respect, as far as the historical sources demonstrate. In the following paragraphs it will be described what the historical sources actually do tell.

7.2 Various sources: ‘dessignatores’, ‘sapientibus’ and ‘incegnerii’

When the written sources of the period mention anything about the designers or the process of design, it mostly is in narrative sources of later date, which often give the founding lord the credit of the design. The layout for the new town of Nogaro in southwestern France, for instance, is reported to have been drawn up at the instructions of Ausindus, bishop of Auch and founder of the new Sauveté around the year 1055. Concerning the town of Victoria, which emperor Frederick II founded before the gates of Parma during a siege in 1247, a chronicle reports that it was designed by Frederick himself. Likewise, a contemporary chronicle describes the way the new town of Ciudad Real in Castile was set out by its founder King Alfonso X in 1255: he ‘[...] ordained how a town should be settled there and ordered that it should be called Villa Real and set out the streets and signaled the places where the enclosure should be made [...]’. For the new town of Manfredonia King Manfred of Apulia and Sicily (1258-66) is reported to have traced the walls and streets and to have begun the building of the town. A Napolitan nobleman called Mariano Capece would have been assigned to give direction to the building of the town, which was undertaken by more than 700 labourers.

Fasoli studied an enormous number of archival documents concerning new town foundations in north and central Italy. In these documents she found that the delimiting and division of the area for the new towns as well as the actual building was often directed by people who are described as supranstantes (executives), sometimes called designatores (demarcators) or incegnerii (engineers). But the actual inauguration, as it may rightly be called, was mostly done by the consoli (consuls) or the podestà (a sort of mayor) of the founding commune, by their own hands tracing the limitation, just as had been done in ancient Roman times. From this it may be deduced that it is well possible that the written sources which mention founding lords as creators of the spatial layout of towns must be understood in the sense that they traced the plan in the inauguration ritual, rather than that they actually planned the forms of new towns. Considering their status, it seems quite unlikely that bishops, dukes or kings designed the specific layouts of the towns they founded. Probably, they commonly assigned an officer to oversee the job. Lords of lower rank, like Benvenuto da Carturo, may have lead the operations themselves, but it is well possible that they assigned others to actually create the specific spatial layout.

The term designatores probably does not mean designers, as it might suggest; the word rather indicates the work they were supposed to do: to demarcate (designare) the different pieces of land in the new town. It seems likely that these designatores were in some way experienced in surveying; possibly they even were professional surveyors.

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14 The same is true for sources describing the planning of important buildings such as monasteries and churches. See Binding 2002, pp.101-104.
18 Franchetti-Pardo 1994, p.367; Valente 1980, pp.15-21. This information comes from the chronicle by Matteo Spinelli, which was written some decades later. ‘[...] Re Manfredo fiue imperzona a desegnare lo piedamento de la mura e a quatrare le strade de Manfredonia [...].’ (Valente 1980, p.16) Other cases of identification of founding lords as planners in ancient sources regard Freiburg in Breisgau and Itzehoe in Germany. (See Friedman 1988, pp.149, 265, n.1; Willett 1995, p.118)
19 Valente 1980, pp.15-21. According to the Dizionario Biografico degli Italiani (1975, p.423) it is, however, unlikely that Mariano (or Marino) Capece (c. 1230-1268) was the master builder of Manfredonia, since none of the contemporary sources, which are relatively many on his person, does indicate so.
20 Fasoli 1992, p.202. See also par.9.5. There was, however, not always such a clear distinction between lower functionaries plotting out the plan, and higher officials for the ceremonies: according to Higouret the land of the new town of Villafranca di Verona is reported to have been divided into lots by a consil and a procurator of the mother city Verona in 1186. (Higouret 1989, p.221)
21 According to Comba (2004), podestà’s of city-states were responsible for the foundation of many new towns by North Italian cities in the 12th to 14th centuries. The terms of office of these magistrates were limited, and therefore they often served different cities consecutively. Comba believes that they could therefore have spread specific experience in town foundation from the one city-state to the other. The evidence of their involvement in new town planning is, however, very thin. Comba’s main indications appear to be that various new towns were named after podestà’s (for instance the Novarese foundations of Borgo Agnello after podestà Zuchonis de Agnello and Borgo Lavezzeri after Peracha Lavezzerius). On surveyors, see par.2.7. Designatores are also mentioned in a document regarding the creation of a new allotment in the city of Vercelli. (Higouret 1989, p.221)
The documents that were made up in connection with the creation of new towns sometimes mention people who received the general responsibility for the realisation of the town foundation. Mostly, it regards persons in general organisational or administrative functions rather than people from the building professions or surveyors, who most present-day scholars seem to have hoped to find.

The new town of Monaco, for instance, is reported to have been built in 1215 by Fulcho de Castello, who was consul of the city of Genova, and his men. For the re-foundation of Haldersleben in northern Germany in 1224, archbishop Albrecht II of Magdeburg entrusted the operation of rebuilding and re-settling the town to a high officer at his court, bailiff Gerhard, who was also known as an able military leader. According to the ordinacions that were edited by King Jaime II in 1300 for the re-colonisation of the island of Mallorca, the lowland of the island was to be parcelled out anew by men who are indicated as ordenadors and stabilidos. These men also received the responsibility to lay out fourteen new towns of a hundred families each. Five of these men are known by name, from which it appears that they were administrators in the king’s service rather than technicians.

An illustrative and relatively well-documented case is described by Beresford. At the parliament of autumn 1296 in Bury St. Edmunds King Edward I of England summoned 24 towns ‘[...] to elect from among your wisest and ablest who know best how to devise, order and array a new town to the greatest profit of Ourselves and of merchants.’ This was a peculiar call, because this seems to have been the first time that an English king organised such a colloquium on the issue of town foundation. It is unknown whether this call really led to a successful meeting. Not much later, however, specific persons were summoned from London and twenty other English towns to come to the king to discuss the rebuilding of the town of Berwick-upon-Tweed, which had been largely destroyed in the war with Scotland. The colloquium met at Harwich, where it was decided that a smaller group from these men would go and execute the project. Unfortunately, no details of the discussions have survived. It is clear, however, that not all men were eager to set to work: one of them had to be excused and two others sent substitutes, one of whom was deaf and ineligible. Nevertheless, a castle and a town were built which served the king’s army to keep the Scots under control and which served the merchants and the king, as lord of the town, as an economic centre.

The motive for the colloquia must have been that the king wanted to make the towns to function as well as possible, and therefore he wanted to draw on the experiences of existing towns. Most of these existing towns were venerable and well-established, but among them was also a new town of recent creation: New Winchelsea, which was re-founded and rebuilt only 15 years before, in 1281. From this place came Thomas Alard, who was one of the leading merchants in the town, holding several properties within it. Since Winchelsea, which was re-founded and rebuilt only 15 years before, in 1281. (fig.7.1) From this place came Thomas Alard, who was one of the leading merchants in the town, holding several properties within it. Since Alard had been a prominent citizen of Winchelsea in the period of its re-foundation, he had some direct experience with new town creation. Another man present at the colloquium at Harwich, who could claim even more direct experience of town plantation, was Henry le Waleys. At the time, he was one of the most distinguished members of the merchant community of London. In that city he had been alderman and even

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22 ‘[...] XX sapientibus parmensibus de milibus et de populo, inter quos sint quator incugenierii [...] ire asque ad Carnisprivium ad videndum locum in quo melius et decentius feri possit [...] et usio loco et determinato et iipsi ad honorem Dei determinato et palificato’ (Fasoli 1942, p.192).
23 Wright 1994. Unfortunately, Fasoli does not go deeper into the matter, but she indicates that officers termed designatores and incugenierii are also mentioned in other documents. (Fasoli 1942, p.192)
24 Fasoli 1942, p.183, n.244. ‘[...] Fulcho de Castello with several noblemen from the city went with three galleys and other ships carrying timber and lime and a lot of iron tools to podium Monachi, and the tenth of June have begun to build a castrum’ (‘[...] Fulcho de Castello cum pluribus nobilibus civibus ivit cum galeis tribus et aliis lignis portantibus ligna-mer et calcium et fenamenta multa ad podium Monachi, et decimo iunii castrum hedificare cеperam’). It is also reported that they surrounded the place with a wall with four towers.
25 Schwinekper 1906, p.130, n.75; Schwinekper 1906, pp.241-242.
26 Alomar 1976, pp.54-55, 110. It is not clear whether both terms indicate the same people: no difference is recognisable between their functions. The known names are Pere Estura, Ramon Desbray, Bernat Beltran, Ansau Burgus, and Miguel Rofan.
27 Beresford 1967, pp.3-19.
28 The councillors of London were ordained ‘[...] que vos faisiez esire de la mesmes cite quatre prodehommes de plus suschauz et plus suschauz, qui mieux sachent deviser, ordiner, et arayer une nouvelle ville, au plus de profit de nous et de marchans.’ (Henry Thomas Riley (ed.), Monumenta Gildhalleis Londoniensis, Vol III: Liber Costumarum. London 1860, p.77) (the English translation is taken from Beresford 1967, p.3).
29 Beresford 1967, pp.5-10.
30 Beresford 1967, pp.6, 14-28.
It may be concluded that the various documents indicate that matters of urban planning, including the spatial design, were entrusted to people who did not have a specific professional background in architecture or town planning. It seems that the ability to conduct affairs was most important. Commissioners such as Thomas Alard and Henry le Waleys were organisers and administrators who knew from experience how a town would best be organised. They were informed men, so it may be assumed that they knew how to plan a basic spatial layout, but their prime knowledge and interest must have been with money, making investments and getting returns, rather than with street lines and plot boundaries. For the foundation of abbot Dietrich the case is much less clear, but there too, it does not appear that professionals from the discipline of architecture, land measuring or town planning were consulted. As for some other new towns, it is only known that ‘wise men’—which mostly seems to have meant men from the higher strata of society who were eligible for governmental functions—were involved. The designators that were mentioned in documents regarding some North-Italian town creations probably were not designers but surveyors. In the case of Carnisprivium, however, next to 16 ‘wise men’ from the commune of Fontanetto, another 12 are listed in a commission that was to choose the exact site, to delimitate the area of the town and to assign places suitable for a market and two churches. In analogy to the cases of Berwick and New Winchelsea, these ‘wise men’ may have been men from the burgess elite of successful older towns. For the re-foundation of Fontanetto Po in northern Italy, the responsibility was given to a committee composed of the potestate, the local officer of the marquis of Monferatatto, and seven sapientes (‘wise men’) from the commune of Fontanetto.

31 I do not know any details on these building operations, but it seems likely that Henry did not do this for the city’s profit only, but also for his own, because officials often used to operate as entrepreneur at the same time. In the rebuilding of Berwick Henry also had a personal share, since he took up some building plots on which he had a number of houses built, and he had his own quay for the transfer of goods there. (Beresford 1967, p.7)
32 Beresford 1967, pp.6–10. For the new towns in southwestern France, see ch.2. The towns Henry farmed the tax collection of, were the royal towns of Beaulieu, Beaumont-du-Périgord, Fonroque, Labastide-Villefranche (de Monestier), Lalinde and Molières, which were all founded not long before.
33 Beresford 1967, p.19; see also above n.10. Since the work did not progress much, a new commission was installed three years later, in which the Mayor of London, Gregory of Rokesley, was added to the team. (Morris 1972, p.88)
34 Dietrich called together ‘omnes sus consangueus et plus prudentes viros illud consilium approbasse [...].’ (Schweingrüber 1980, p.132) It is not impossible that prudentes viros were entrepreneurs in settlement creation, so-called locatours. (see par.3.2)
35 Panero 1979, p.107. The commune of the small town was probably given such a great role in the committee because the commune and members of it owned (part of) the land on which the town was to be rebuilt, for which reason their cooperation was absolutely necessary.
36 In my opinion it is wrong to translate ‘fachleute de plus sachuntz et plus suffisauntz’ as ‘besonders kenntnisreiche und geeignete Fachleute’, as Schich (1993, p.90) does. Fachleute would mean professionals in town planning or town building, but that is not what the document says, it rather says ‘most wise and able gentlemen’.
37 On the involvement of surveyors, see par.7.7.
38 See also par.7.4.
7.3 Settlement entrepreneurs: ‘locatores’

In the process of colonisation of central and eastern Europe, especially the northern zone of present-day Germany, Czechia, Poland and Lithuania, landlords who wanted to develop their territories into more productive lands often assigned large areas to a sort of property developers. Such an entrepreneur would be called locator, or sometimes promotor, cultor or magister incolarum.39 These locators received the fee farm of a specific area of land and the privileges that were newly attached to it from the founding lord, on the condition that he would create a new settlement. Subsequently he worked out the plans for the actual plantation of the new settlement. In order to make profit, the locator rented out the lots he devised, and usually he got the hereditary right to be bailiff (advocatus, Stadtvogt) in case the new settlement was a town, or village head (scultetus, Schultheiß) in case of a village. Of course, villages were more numerous than towns. Further, he also received a considerable part of the land for himself as well as special privileges such as the rights on milling, smithing, fishing, hunting, running an inn or a bathhouse, and selling beer, bread and meat.40

In this way, by farming out the land and the attached privileges on the condition of settlement creation, the lord of the land limited his risk and effort. Meanwhile, he would profit, if it all worked out as planned, from the new settlement by the collection of admission fees of the settlers, part of the rents, most taxes and tolls, as well as from income from justice. Sometimes the locator also had to pay an admission fee, probably particularly when there was competition among locators.41 In the contracts between the landlords and the locators one may sometimes find a clause that guarantees the lord the return of all the rights on his land in case the settlement might not become a success, for instance if no substantial number of settlers would take up properties within the year.42

The locatores commonly were entrepreneurs who had money and effort to invest, and who necessarily enjoyed the confidence of the landlord.43 It seems likely that they preferably also were experienced. This appears from the grant of a new settlement by King Premysl Ottokar II of Bohemia to the locator Conrad von Löwendorf. The king states that he has chosen Conrad to lead the project ‘[…] since We have heard that he is the right man for such things and is experienced […]’.44 The locatores often seem to have come from the lower nobility or from the higher urban classes, but in particular cases appear to have been cleric, tailor, baker, chemist and farmer. Sometimes, the son of a locator became the locator of another new settlement elsewhere.45

A case on which there is relatively much information, is the (re)foundation of the town of Liebenwerde (Kęty). An entrepreneur called Simon, in cooperation with his two brothers, had planned to transform a village into a town around 1261, at the invitation of Duke Wladislaus of Opole (Silesia). Some years later, however, the privilege was bought from Simon and his brothers by a notary called Arnold and his two

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41 Aubin 1966, pp.468-471.
42 Bartlett 1993, p.143.
43 In the paragraph above it is mentioned that Henry le Waleys farmed a number of bastides for a ten-year term. As a business transaction, this is more or less comparable to the locator enterprise. Important differences were that Henry only got involved some years after the bastides were created, and that his participation was temporary.
44 Bartlett 1993, p.142. Another locator who is likely to have been active in more than one place is Wilhelm von Reichenbach, who probably acted as locator for the duke of Silesia in both the towns of Reichenbach (Rychbach) and Fürstenwald (Bierutów) around the middle of the 13th century. (Helbig & Weinrich 1979, Bd.II, p.81)
knighthood of the brothers Rüdiger and Peter. Arnold was a cleric coming from a German noble family, who was in the
service of the duke, for whom he had worked among others on the drawing up of locatio charters for other projects. After he had bought the privilege, he created a town on the basis of the older village in 1277.
Two additional villages were planted in the surrounding area that belonged to the same territory. Some years later Arnold received additional privileges from the duke, while remaining in his service. In 1292 his brothers also received the locatio-ship for the new town of Zator from the duke, as an expression of gratitude for the service that Arnold had rendered to him. According to Kuhn, it is likely that high (legal) officers in the service of other princes in the colonisation areas east of the river Elbe were similarly rewarded and thus became settlement-entrepreneurs on the side.46

The ‘locating business’ could be very profitable, if only enough industrious settlers would come and stay in the new settlement. But apart from financial gain, the locatores also could improve in social status. As village head or bailiff, the locator actually was a vassal of the landlord, and sometimes this meant that he would effectively become absorbed in the nobility.47

From the previous example it already appeared that there could be several locatores for one new town foundation. For the case of Friedland the documents mention four locatores, and for Prenzlau there appear to have been no less than eight promotores in 1234. But it could also be the other way around: that several villages and towns were created under the same locator.48

All in all, it is obvious that the locatores did not have backgrounds as professional architectural designers; they rather were men with organisational and administrative abilities and an entrepreneurial spirit who could be trusted by the lord of the land.49 It is clear, however, that the land on which the new villages and towns were founded, had to be measured and allotted, not only in house lots but also in gardens and fields.50 It is likely that this was done by men with experience in surveying, although the written sources barely mention them. One of the scarce exceptions is a mensurator by name of Gregorius, who is mentioned to have measured out the territory of the village of Schönwald for the duke of Opole in 1269.51 Another indication may be recognised in the name Conrad Spannseil, who was the locator of Conradesdorf in northeastern Germany. Spannseil possibly means ‘measuring rope’, suggesting that the man was experienced in surveying.52

Entrepreneurs in settlement creation similar to the locatores also appear to have existed in Spain. There they were commonly called populatores, and it seems that their activity was limited to villages rather than towns.53 According to Divorne, locatores were also active in the foundation of the so-called Zähringer towns in southern Germany and northern Switzerland; but the evidence is very thin.54

There is one interesting case of an entrepreneur taking on the building of a new town in The Netherlands. Arent toe Boecop, who was steward of the duke of Gelre, created the new layout of the town of Elburg in 1392. (fig.7.3) Arent had bought a piece of land next to the existing town, and he obtained permission from his lord to extend and to rebuild the town, and to resettle the population of the surrounding area. From documents it appears that the settlers did not rent the house lots, as was usual in the period, but that they had to buy them. It is not entirely clear, but it seems that Arent largely sold his land, as well as a house, to the town and its mayors, from which the settlers bought the lots. In order to be able to buy the land, many settlers had to lend money from Arent and the mayors againstwe ally rent.55 All in all, this must have been quite a lucrative enterprise for Arent and the mayors. The story was described around a century later in a chronicle. ‘Thus he had a piece of his land […] marked out as large as he thought fit, so that the town would be in right

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46 Kuhn 1984, pp.97-102. Similarly, this may have been the case in 1257, when the Bohemian royal mint master Eberhard became locato for the new town of the city of Prague, the Malá Strana. He appears to have fulfilled this new function next to his position as mint master. (Hoensch 1989, p.103). The locato of České Budějovice in 1265, was also to become mint master later on, at Kutna Hora.
47 Zientara 1990, p.43.
48 Higounet 1986, p.285. See above, n.44.
49 The aspect of reliability probably was the reason for the fact that the locatores were often chosen from the circle of attendants or even relatives of the landlord. An additional motive may have been to keep the profits within the circle of relatives. For instance, it is likely that for these reasons Heinrich Fleming, bishop of Ermland (Warmia in Prussia), chose his brothers Johannes and Gerhard as locatores of the towns of Braunsch in 1279 and Frauenburg in 1310, respectively. (See Hammel-Kiesow 1995, p.265, n.6)
50 Not only the villages, but also the new towns were accommodated with significant areas of agricultural land, particularly in the lands east of the Elbe. (See par.9.23)
51 Higounet 1986, p.255. See also par.7.
53 Bartlett 1993, pp.117-118, 142.
54 Divorne 1993, pp.94-174.
55 There is a document which records that the duke ordained Arent to lay out the town anew. It seems likely, however, that Arent had come up with the idea and only received the order in answer to a request from his side. With the rebuilding of the town he must have invested a lot of money and effort, but he must also have received considerable returns, while meadowland was turned into valuable building land on which many inhabitants of the surrounding area were more or less obliged to settle. (Rutte 2000, pp.9-11; Rutte, Visser & Boereboom 2004, pp.122-133, 172-173)
proportion to the [existing] street of the Holy Ghost, and he had this town ordered right square, and the streets marked through it, and a stream directed straight through the middle of the town into the sea, and he had a ditch dug surrounding it and had it walled."56 Figure 7.3 clearly shows the regularity and symmetry of the plan; the only elements of irregularity being the older street with older plots adjacent to it in the western part of the town. The regularity of this town is unequaled in the Low Countries before the late 16th century. Therefore one might expect that the design was made by someone with a special consideration for aesthetics, possibly a professional designer of some sort, and one might also expect that the plan was set out by a professional surveyor. But, once again, the written sources do not tell so.

56 "Soe heeft hy een stukke landes van syn erwen, dyne hy in dat Oldenbruck hadde lygghen uyt laten sticken soe groot als hem dochte, dat dyne stadt nae proportie ven dye Hijllighe Ghistes strate solde wessen und hefft dye voirs Stadt recht viercant ghordinirt und dye straten dai in door laten sticken ende eijn beke dai recht myddel durch eijn stadt hent in eijn eyn ghetuyget und hefft dye graffte dairomme laten graven ende bemurren." (Westerink 1961, p.23)
4. The planners of Edward I’s new towns in Wales

Much the same as for other regions, there is very little information on the planners of the new towns in Wales. The only case for which the name of a planner is mentioned in the written sources, is Bala. Around 1310, King Edward II ordained his justiciar in the region, Roger de Mortimer, to order (‘ordinare’) the new town, after the district had been harassed by gangs that robbed travellers.\(^{57}\) Once again it is an administrative official, which the sources indicate as planner, and nothing is mentioned on any consultation of a professional surveyor or an architectural designer.

It is likely, however, that the boroughs of King Edward I, or at least those that were to receive defences from the very beginning, were planned at least partly by the people who the king had appointed to take care for the construction of the castles and defences. In places such as Flint, Rhuddlan, Aberystwyth, Conwy, Caernarfon and Beaumaris, which were begun as part of the English military campaigns of 1277 and 1282, large numbers of men had to be encamped safe from enemy attack.\(^{58}\) It is known that the building of castles and defences was begun simultaneously with the encamping at these places, and it seems likely that the defences for the camps were planned to become the defences of the new boroughs.\(^{59}\) Therefore, it is probable that at least the layout and form of the defences, whether built of earth or of stone, were planned by the king’s military engineers, possibly according to the king’s ideas.\(^{60}\) It is not clear to what degree the knights and clerks of the king’s household, who were given great responsibilities as overseers of the works, may have also been involved in the design.\(^{61}\) Of course, the form of the circuit of walls and the place of the gates therein determined the layout of the main streets within the defences. So, in absence of clear sources, it seems sensible to assume that the king’s engineers and overseers planned the defended castle towns.

Fortunately, there is quite some information on the people who were employed by Edward I on the building of the castles and defences in Wales. Much of this information comes from the documents of The King’s Works, which have been thoroughly studied by Taylor.\(^{62}\)

In July 1277 an ingeniator Richard of Chester was master of the works at Flint. In 1301-03 he was working there again on the repair of the castle.\(^{63}\) The king’s clerk William of Perton initially was ‘keeper’ of the works. Master William of March and a knight named Peter of Brampton lead the work of the diggers on the defences. It seems that the planner of the town, or at least its defences and thereby its basic structure, must be sought among these men.\(^{64}\) In the very first stage the area within the defences seems to have been a military camp rather than a town, but most probably it was already envisaged to become a civil settlement.\(^{65}\) Burke and Lavedan ascribe the design of Flint and Caernarfon to Richard of Chester, but they do not give good arguments why they do so. It seems that they were eager to ascribe the urban design to a person with an architectural background.\(^{66}\)

In 1277-78, an ingeniator regis (‘king’s engineer’) named Master Bertram, who probably was of Gascon origin, was responsible for the works at Rhuddlan. It seems that the planning of the castle may be ascribed to him up to some extent, and this possibly also holds for the defences to the southeast of it.\(^{67}\) The present town of Rhuddlan, to the north of the castle, may be some years younger\(^{68}\), and therefore it might have been created under Bertram’s successor on the construction of the castle from April 1278 on. It concerned engineer and master mason James of St. George, whose role on the various works in North Wales will be discussed below. The king’s clerk William of Perton was keeper of the works at Rhuddlan as well as at Flint in the first stage, but in late 1277 he was succeeded by Nicholas Bonel. In the summer of 1279 the clerk

\(^{57}\) Beresford 1967, p.557.
\(^{58}\) In the cases of Flint and Rhuddlan the number of men was at least several thousands. (Quinnell & Blockley 1994, p.219)
\(^{59}\) Although this probably was not eventually realised in that way at Rhuddlan, as explained in par. 1.7.2.
\(^{60}\) See Coldstream 2003, pp.30-31.
\(^{61}\) It regards people such as knights Eustache de Hache at Caernarfon, John de Bevillard at Conwy and William de Cicon at Rhuddlan and Conwy, and the clerks William de Perton and Nicholas Bonel at Flint and Rhuddlan, John of Candover at Conwy, John of Dunster and Hugh of Leominster at Caernarfon and Harlech and Walter of Winchester at Beaumaris. (Coldstream 2003, pp.29-30; Lilley, Lloyd & Trick 2005, s.v. Flint, Rhuddlan, Conwy, Caernarfon, Harlech and Beaumaris, Discussion, Early history)
\(^{62}\) Taylor 1950; Brown, Colvin & Taylor 1963, pp.1036-1041.
\(^{63}\) Taylor 1963, pp.309, 318. Later on, in 1283-84 Richard of Chester was working together with Master James of St. George at the works at Caernarfon castle, while in 1284-85 he was contracted for the carpentry at Conwy castle and in 1301-04 he supervised the works at Rhuddlan castle. (Taylor 1967, pp.353-346, 165)
\(^{64}\) Lilley, Lloyd & Trick 2005, s.v. Rhuddlan, Discussion, Early history; Lilley, Lloyd & Trick 2007, p.289. Lilley, Lloyd & Trick make no mention, however, of Richard of Chester in this context.
\(^{65}\) See par.1.7.1.
\(^{66}\) Burke 1971, p.51; Lavedan & Hugueney 1974, p.113. Burke even calls Richard of Chester ‘town planning expert’, without motivating this designation. Lavedan hints at a certain similarity between Flint and Caernarfon in the layout of the streets.
\(^{67}\) Bertram later also worked at Bere (in 1283 according to Taylor, but it seems more likely that it was in 1284), probably directing repairs at the castle, and at Caernarfon in 1283, where he died in that year. (Brown, Colvin & Taylor 1963, pp.1036-1037; Taylor 1987, p.77)
William of Louth, an important figure in the king’s wardrobe, was ordained by the king to make a survey of the town. William of Perton, James of St. George and the townspeople were instructed to help him. This event may have marked the shift from the area southeast of the castle to the smaller area north of it. William of Louth is also mentioned to have been involved as supervisor in the foundation of the bastide of Cussac or Cubzac in Gascony.

The work at Aberystwyth was begun in August 1277 under master mason Henry of Hereford, but he was soon replaced by a Ralph of Broughton as ‘keeper and viewer’ of the works, under overall supervision of a knight named Roger de Molsis. It is known that under Ralph of Broughton in 1278 stones and timber were shipped in for the works on the castle and the town, which at least included the making of a town ditch. By that time the town must already have been partly built up, as it was chartered in December 1277.

In the early stages of the work at Caernarfon a Master Mannasser de Vaucouleurs lead the earthworks being carried out for the castle and the town, under the supervision of the king’s household knight Eustache de Hache and the clerk John of Dunster. It seems that a basic layout for the town and castle must already have been determined by then.

From 1278 on Master James of St. George (Magister Jacobus de Sancto Georgio, c.1235-c.1308) was made chief of the most important royal building operations in North Wales. He became supervisor of the works on the castles of Rhuddlan, Conwy, Harlech and Beaumaris. He was also controller of the works at Caernarfon, Flint, Aberystwyth and Builth, and he directed the works at Hope, Crickieth, Bere and Dolwyddelan. Apart from that, he received various smaller assignments elsewhere, among others in Gascony and Scotland.

He was alternatingly called ingeniator, cementarius or mazun, but from 1282 he carried the title of ‘master of the king’s works in Wales’. These professional titles suggest that it is highly likely that he was the main designer of the buildings and defences he worked on as supervisor right from the outset of the works, such as Conwy and Beaumaris, and probably Harlech and Caernarfon.

James of St. George was probably named after the castle of St. Georges-d’Espéranche, near Lyon, the construction of which he had directed between 1268 and 1274 as chief household architect of Count Philip of Savoye (1268-85). This count sent him off to enter the service of his nephew King Edward. In 1278 master James was on his way to Wales ‘[…] to ordain the works of the castles there […]’. Until 1298 he worked in Wales. In the same period there were also other masons and carpenters from Savoy working on the king’s works in Wales, some of whom had also worked at St. Georges.

Master James was schooled in his home country of Savoye, where he learned the trade from his father, who was a master mason, working among others on castles and town walls at Chillon and the new towns of Yverdon and St. Georges-d’Espéranche. The designs of the castles he worked on are of different types and do not follow one specific style. It is clear that forms, types and techniques were adapted to specific functions of the castles and to the circumstances of the different sites. As described in chapter 1, the same can be said for the defences and layouts of the towns that Edward founded in North Wales. As with the castles, the circumstances of the sites constituted a factor of decisive importance for the layout of the towns.

In July 1290, James was made constable of the castle of Harlech and mayor of the borough. It seems that he was designer and master of works of the castle, and by making him constable, the king probably meant to express his gratitude to him. He kept this function until 1293, while no serious construction work was undertaken on Harlech castle any longer after 1291. Already in 1284 James and his wife were rewarded with a pension, and in 1295 he received a grant for life of the manor of Mostyn in northeastern Wales. In the
history of the king’s works up to the 16th century there is no other craftsman who was entrusted so much responsibilities or who received so much of the king’s favour.83

It is only seldom that the names are known of people involved in architectural design up to around the 16th century, and it is even rarer with regard to urban planning. Hence, it is quite remarkable that the name of Master James of St. George and some details about his life and work are known. This seems to have brought a number of scholars to unreservedly take him for the planner of the towns associated with the castles he worked on.84 One must, however, be aware of the fact that James was primarily a specialist in fortifications, with which his prime concern was certainly in the construction of the castles. It is completely unclear to what degree he was also concerned with the creation of the towns. It seems most likely, however, that he was at least concerned to some extent at Conwy, Beaumaris and possibly Caernarfon and Harlech. If he were actually involved with the building of the towns, it would have been firstly with the building of the gates and walls rather than with the layout of plots and streets. Hence, one should be reserved with regarding him as the planner of the towns, and certainly beware of seeing him as a typical town planner of the period.

The conclusion is that it is not precisely known who the planners of the new Edwardian boroughs in Wales were. They must have been in the service of the king. But it is possible that king Edward also played a role in the planning himself. It is reported that he was closely involved in most of the projects and from the case of the castle of Linlithgow it is clear that Edward instructed his engineer Master James of St. George personally on the form of the castle and the materials to be used.85 It is unknown, however, whether the king was as interested in the construction of towns as of castles. It is also unclear to what degree the knights and clerks that Edward appointed as overseers or ‘keepers’ of the works, were responsible for the design of the castles or of the towns. For the boroughs that were to receive defences it is likely that the king’s engineers had a significant role in their design. Since these defences determined the plan forms of the towns to a considerable extent, it seems that the engineers must have been influential in the planning of at least the basic urban structure of these boroughs.

7.5 The planners of the bastides

Regarding some of the new towns of southwestern France, which are discussed in chapter 2, there is information on who the planners of the urban layout were. For the most part of the towns, however, nothing is known. In this respect the situation is much the same as almost anywhere else. Many scholars believe that specialist town planners were responsible for the laying out of the bastides. Divorne, for instance, claims that ‘The work of laying out the plan and the allotment generally is the accomplishment of specialists.’86 This claim is, however, not supported by the contemporary written sources, which mostly mention administrative officials or people of legal professions that were given the responsibility of realising the spatial layout as well as of other aspects of town creation.

One of the exceptional cases for which the name and profession of the planner was reported, is Montréal-du-Gers, which was founded by Count Alphonse de Poitiers in 1255. (fig. 2.28) In that year, the notary Pons Maynard from Agen was ordained to draw up a charter, to appoint the administrators of the new town and to ‘(...) to cut out streets, by dividing and assigning the places of the piazza and the house lot and the place of the houses’.87 Did this mean that he could do this according to his own insights? Unfortunately, there is no way to know, in absence of more specific sources. It appears that this notary was given the responsibility for almost the complete creation of the new town, covering almost every aspect of it apart from the actual construction of the buildings. Hence, it seems likely that he contracted personnel to help him with this job. It is possible, for instance, that he hired a surveyor to set out the spatial structure of the town and the gardens and fields belonging to it, but this is only speculation.

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83 Taylor 1987, p.7; Brown, Colvin & Taylor 1963, pp.204-205, 393.
84 For instance: Bell & Bell 1969, p.34; Morris 1972, p.90; Binding 1993, p.78. According to Coldstream Master James’ role in the design of the various castles in North Wales is also overrated by Taylor. (Coldstream 2003)
85 Coldstream 2003, pp.39-41.
86 ‘Ce travail d’implantation, de tracé et de lotissement est généralement le fait de spécialistes.’ (Divorne, Gendre, Lavergne & Panerai 1985, p.46)
87 ‘(...) ad talliandum carreriam, platea et casaleria et loco domorum dividenda et adjudicanda’. (Lavedan & Hugueney 1974, p.71)
Higounet writes that Montréal was designed by ‘traceurs professionels’, with whom he probably means Pons Maynard, despite the plural form. According to the sources, however, Pons was a notary, and he was not only responsible for the spatial layout but also for the legal and administrative organisation of the settlement. Some years later, he was given a comparable assignment in the creation of Castillonnes, together with a certain Gautier, who was bailiff of the bastide of Monflanquin.

Another notary had a role in the distribution of the gardens and fields that belonged to the bastide of Beaumont-de-Lomagne in 1282. This notary, Pierre de Guérin, was also surveyor of the royal domains in the sénéchaussé of Toulouse. He was probably involved because the co-founder of the town was Eustache de Beaumarchais as sénéchal of Toulouse. Apparently, a notary could be a professional surveyor at the same time, so perhaps it may be assumed that Pons Maynard was also surveyor. The link between the two professions is that both have a juridical nature. Boundaries between properties have a legal value, as do notarial documents. De Guérin was, however, only a member of a committee, in which also took part his employer Eustache de Beaumarchais and the surveyor of the city of Toulouse. The latter of these had also taken part in the committee that had been present when the co-founder, the abbot of Grandselve, officially handed over the land for the town and the additional fields to a lieutenant of the sénéchal, which took place almost two years earlier. Other members of this committee were the main judge of the district court and the four consuls of the future town. According to the related document the land that was handed over was meant ‘For to lay out streets, squares, roads and lots of the work of the said bastide’. The surveyor’s function probably was to check the amount of land and to mark its boundaries. He probably acted in the same role two years later, when the garden lots and the fields of arable land were handed over to the citizens of the new town. It is well possible that this surveyor allotted the land for the town and the gardens and fields surrounding it in the meantime. Unfortunately, nothing is known of who actually planned the layout of the town, but it does not seem unlikely that this surveyor actually designed what he set out on the ground.

It is reported that the realisation of the bastide of Baa was lead by a brother of the Dominican order called Richard of Escham. The town has disappeared completely since some centuries, but it is known from the preserved documents concerned with its creation, which are relatively extensive compared to the bastides in general. The English crown appointed the Richard as organiser and treasurer of the works, but he assigned the ‘ordering’ of the new town to a magister called Gerardo de Turri. Randolph suggests that Gerardo was a surveyor, but actually, he may just as well have been a notary such as Pons Maynard. He may also have had another profession, but the term magister suggests that he was appointed to this job because of his specific professional knowledge. Trabut-Cussac does not hesitate to call Gerardo ‘architecte urbaniste’. This is, however, a re-projection of the modern professional situation in town planning, for which there are no historical clues at all.

In the early 14th century, a lieutenant of Edward I’s sénéchal, by name of Bertrand Panissals claimed in a petition to the king that he had built the bastides of Roquepine (founded in 1283), Molières (1278-84) and Monpazier (1285). It seems that Bertrand was a sort of entrepreneur who often worked in the service of the king, for he also claimed that he had acquired the castle of Puyguilhem and its dependant territory for the king and that he had built a dam and watermills in the Dordogne at Lalinde. According to Higounet it is ‘beyond any doubt’ that Bertrand must have been the ‘chef-d’oeuvre de géométrie’ of the plan of Monpazier.

88 Higounet 1979, p.266. Laurent, Malebranche and Séraphin (1988, p.44) also seem to take him for an ‘arpenteur professionnel’.
89 This appears from, among others, article 43 of the charte de coutumes of the new town, in which Pons is assigned the task to reorganise existing parishes into the new jurisdiction of the commune of Montréal. (Berthe 1990, pp.98-99)
90 Lavalle & Hugueney 1974, p.73. According to Laurent Malebranche and Séraphin, Pons Maynard was also involved in the creation of Monflanquin, Villeneuve-sur-Lot and Villefranche-du-Périgord. (Laurent, Malebranche & Séraphin 1988, pp.44, 79) They do not mention what this idea is based on. Possibly, the plans of these bastides are ascribed to Pons because, according to Laurent c.s., they are of the same type, with which a supposed connection between designer and plan type would be confirmed. (Idem, pp.79-80; see par.2.10.3.2) Weyres (1960, p.64) mentions that Gautier de Rampoux assisted Pons at Castillonnes in the function of engineer, and that Gautier would have laid out Monflanquin by himself in 1240-1253. In this, Weyres follows De Verninck, who does not mention a source for this information.
91 Divonne, Gendre, Leragne & Panetier 1985, p.44. No source is mentioned for this information.
92 Laurent, Malebranche & Séraphin 1988, p.92.
93 Already in Roman times the agrimensor were schooled in law as well as in geometry. (Dille 1971, pp.63-65; Kostof 1991, pp.127-128) In the communal lawbook of the town of Den Briel in Holland of c.1405, it is clearly stated that an official surveyor also ought to have knowledge of law concerning property and neighbourship. (Pouls 1997, p.10) It seems quite likely that because of the important juridical implications of boundaries between different possessions, a sort of juridical guarantee (or ratification) would give them a higher validity, in order to avoid conflicts over possession or the height of rents or taxes on land. Possibly, this guarantee would be provided by the notary, who was under sworn oath.
94 ‘... Magister Gerardo de Turri, assignato ad ordinandum bastidam de novo inceptam quae vocatur Baa...’ (Saint-Blanquat 1985, p.62).
95 Saint-Blanquat 1985, p.62.
96 ‘... Magistro Gerardo de Turri, assignato ad ordinandum bastidam de novo inceptam quae vocatur Baa...’ (Traubt-Cussac 1961, p.142; see also Randolph 1994, p.203)
97 Furthermore, a clerk was appointed to the works and Gerardo is reported to have had an assistant. (Traubt-Cussac 1961, p.135)
(which is renown for its great regularity). This claim is completely conjectural and probably mainly inspired by the desire to put a name on the spatial design of the town. In my opinion, it seems more likely that Bertrand was an organiser and entrepreneur rather than an architect or a surveyor, as Higounet probably intends.

There are also documents that mention administrators in the role of organisers of bastidé building. It seems that the founding lords often appointed agents to organise and oversee the projects. In the case of a paréage, both lords might appoint one of their men. Thus, for the foundation of Villeneuve-sur-Lot a monk represented the abbey of Eysses and a knight was appointed by Count Alphonse de Poitiers. There was also a third appointed man, a notary by profession, but it is not clear whether he represented the local lord of Pujols or whether he was appointed by the three paréageurs together. A similar committee was instituted for the foundation of Granges. But in this case the members were of higher status, being the abbot of Clairac and the sénéchaux of Agenais and Aquitaine themselves, assisted by a treasurer. Together they were to ‘construct and realise’ the new town as they judged best. It seems likely, however, that the abbot and the sénéchaux did not constantly supervise the project themselves. They probably set employees to the job or left it to the treasurer to oversee. Unfortunately, it cannot be determined who actually devised the layout of the town, or to what degree the abbot and sénéchaux were involved in it.

With the foundation of Montgéard, by the French royal sénéchal Guiard Gui in 1317, an officer of unknown professional background was appointed to see to it that the realisation would be orderly, and that the planned dimensions of lots, streets and fields would be respected. For the foundation of Revel, by the French crown in 1342, Guillaume Flottes was appointed commissioner. As lord of Revel in the Dauphiné, he was responsible for the name of the new town. His function probably was the general organisation of the realisation of the new settlement and overseeing its construction. Just as in the previous cases it is not possible to tell to what degree he was responsible for the actual planning of the spatial form. The same is true for the prud’hommes (notables) that according to a document were to oversee the laying out of the town of Libourne, which was founded by the English royal sénéchal Roger de Leyburn around 1270.

### 7.6 The planners of the terre nuove fiorentine

‘Around the same time, the Florentines desired to erect the fortified towns of S. Giovanni and Castelfranco, for the convenience of the city and the food-supply by way of the markets; and Arnolfo made the design in the year 1295, and he did this so satisfyingly, as he had done on other occasions, that he was made Florentine citizen.’ This was written in 1568 by Giorgio Vasari, the father of art historical writing, in the biography of the architect Arnolfo di Cambio. (fig. 7.4) Thanks to this piece of text, the mighty gate tower of Castelfranco, the town hall of San Giovanni and their planners than on most other new towns of the period.

Over the centuries, Vasari’s biographies have remained important sources on Italian artists of the 13th to 16th centuries, but it has been suggested and demonstrated many times that they do not always record the historical facts and that this was not even Vasari’s primary goal. In this paragraph, the attribution to Arnolfo will be examined closer, and it will be discussed who the planners of the other terre may have been. In comparison to the previous paragraphs this is fairly extensive, due to the fact that more relevant information is known on the terre nuove and their planners than on most other new towns of the period.

The fact that Vasari did not always write down what actually happened, appears among others from his attribution of the design of the new town of Scarperia to the architect and sculptor Andrea Pisano. In 1306, when Scarperia was founded, Andrea was only about 16 years old, and it seems most unlikely that he was
fact, this is just about everything that is known of Arnolfo from primary sources. A secondary source mentions that an administrative document of 1294, now lost, indicated him to be the building master of the works of the city of Florence. Apart from this, there is no direct information on Arnolfo.

Vasari pictures Arnolfo as a true champion of 13th century architecture and attributes all the important building works in Florence of around the last quarter of the 13th century to him. Among others it regards various churches, the loggias of Or San Michele and the Piazza dei Priori, the Palazzo Vecchio and the so-called ‘third wall’ around the much extended city (1285-1333, see fig.7.4). Outside Florence he would have worked on the sepulchres of popes Honorius III and Boniface VIII in Rome. Due to his death in 1300, he left many of these works unfinished, according to Vasari. It is very probable, however, that not all the works mentioned by Vasari were actually Arnolfo’s. In fact, most works have also been ascribed to others by art historians at some moment. And conversely, art historians have ascribed other works of architecture, sculpture and even painting to Arnolfo. The fact is that nothing much is known of Arnolfo, and that Vasari’s biography must be taken with some reservation.

Since it is reported that Arnolfo was the master builder of the works of the city of Florence in 1294, which probably lasted to his death, and that he was highly regarded, it appears well possible that he was in fact given the assignment to make the designs for the Florentine new towns of Castelfranco and San Giovanni. These projects are more or less comparable to that of the ‘third wall’ of the city, the construction of which

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106 Only in 1340 Andrea was officially hired by the Florentine administration as master of the construction of the cathedral, and there are no recordings of his presence in Florence earlier than 1330. (Friedman 1988, p.277, n.86) According to Beccatini & Granchi (1985, p.308) Andrea designed the keep of Scarperia. Niccolai (1914, p.383) writes that he only designed the walls of the town, while the keep and its tower were designed by Arnolfo. None of these claims is supported by arguments. The question who actually planned the spatial structure of Scarperia is treated below.


110 The year of Arnolfo’s death mentioned by Vasari, is probably wrong. According to an obituary, ‘magister Arnolphus de lopera die Sancta Reparata’ (= Florence cathedral) died on March 8, but it is unclear which year. It probably was between 1301 and 1306. (Grote S.D., pp.36-37 (1301); Romanini 1991, p.504 (1302-1310); Toker 1983, p.104 (1301-1310), all three referring to the same document, published in C. Guasti , Santa Maria del Fiore, La costruzione della chiesa e del campanile secondo i documenti, Firenze, 1887, doc. no. 29.)

111 For modern biographies of Arnolfo and the works ascribed to him, see Romanini 1980 (2); Carli 1993; for a bibliography, see Romanini 1991, pp.513-514.
may also have been led by Arnolfo, as Vasari claims. They were all very important large-scale civic building projects that involved big budgets and probably considerable prestige. It may be that this precisely is why Vasari ascribed the design of the new towns to Arnolfo, since he clearly wanted to depict Arnolfo as the most important architect of the period\textsuperscript{116}, but it is also possible that he had specific sources on which his attribution was based. It is unlikely, however, that Arnolfo made the designs already in 1295, as Vasari claims, since the decision to found the two new towns was only taken in January 1299.\textsuperscript{113}

Most authors that have written about the terre nuove accepted Vasari’s attribution to Arnolfo without hesitation.\textsuperscript{114} There have also been modern scholars who ascribed the planning of Scarperia and Terranuova to Arnolfo.\textsuperscript{115} Since Arnolfo died between 1301 and 1310 it is not impossible that he made the design for Scarperia, which was founded in 1306; but it is highly unlikely that he designed Terranuova’s plan, since that town was only founded in 1337. Firenzuola and Giglio were also created considerable time after Arnolfo’s death. Nevertheless, comparison of the plans of Castelfranco, San Giovanni, Scarperia, Terranuova and Giglio shows that there are considerable correspondences that cannot be coincidental.\textsuperscript{116} Therefore, it seems unlikely that they were made completely independent of one another: either they must have had the same designer or the one design must have inspired the other.\textsuperscript{117} For Scarperia and Terranuova it is all the more likely that their plans were inspired by the first two terre, since they appear to have been proportioned by way of similar geometric constructions.\textsuperscript{118}

Fortunately, there are contemporary documents that contain information on the planning of Scarperia. The first document is the foundation charter of 29 April 1306. It states that officials of the Florentine administration were given the assignment to assess the land where the town was to be built, to select the future settlers, to lay out the streets, piazzas and churches, and to oversee the building of gates and bridges over the ditches, in ‘the way they think best’.\textsuperscript{119} Apparently, these officials were free to select the site for the new town. It seems, however, that they did not get far with their assignment, since, two months later, two new documents were made up in which the assignment to take up the planning of the town is given to an officer who was addressed as ‘dominus Matteus judex, magister de Egi...[?], officialis et capit anus ad hoc pro Comuni Florentie specialiter deputatus’.\textsuperscript{120} Dominus Matteus was capitano of the region for the commune of Florence, which meant that he acted as legal, administrative and military officer. He was given the assignment to lay out the town at the place called ‘La Scarperia’, in the form and size which he thought right according to his own judgement, and to build ‘(...) wells, fountains, roads, streets, and to direct and level them [...]’ as he considered appropriate.\textsuperscript{121} From this, it appears that the ‘officials’ mentioned in the first document only came so far as to establish the specific site of the new town and to seize or buy the required land.

Friedman clearly registers that there was a shift in responsibilities in the different projects for the terre nuove.\textsuperscript{112} For Castelfranco and San Giovanni a committee was instituted existing of two officials called rectores, who were experienced in legal issues. As with many other commissioners in contemporary Florentine administration, they were chosen from the politically active citizenry of the city.\textsuperscript{113} These officials, among whom the father of the poet Petrarca, were to assess the land on which the towns would be built, to organise

\textsuperscript{111} Vasari seems to have given Arnolfo a more important role in his history than he actually had, in order to create an exemplary figure of an architect in what he termed the first stage (primo stile) of the renaissance, as a counterpart to the more or less contemporary painter Cimabue and sculptors Nicola and Nicola Pisano. (Panofsky 1972, pp.115-117)
\textsuperscript{112} Friedrich 1988, pp.308-310, doc.3.
\textsuperscript{113} Only Friedman (1988, Carli (1981), Van den Heuvel (1983) and Pirillo (1989) question the attribution to Arnolfo.\textsuperscript{114} Regarding Scarperia, see Nicolai 1914, p.382; Becattini & Granchi 1986, p.307; Grandini 1976, p.25. It seems that this idea is based on a local oral tradition according to which Arnolfo was assigned to do the job in 1292. This date is certainly wrong, however. Lino Chini (1959, p.174; originally 1875) writes that somebody by the name of Mini ascribed the design of Scarperia to Arnolfo. Regarding Terranuova, Guidoni writes that he has ‘unambiguously’ demonstrated it to be designed by Arnolfo, by ‘analyses of structure’, with which he probably means his proposed design schemes. (Guidoni 1970, p.229; see par.6.4.1.1)
\textsuperscript{115} As explained in par.3.8.4, the plan of Firenzuola was changed in the late 14th or 15th century, after the town had been severely damaged several times. It is probably only since then that the plan shows some relevant aberrant traits: the original plan at least had two intersecting main streets and four town gates, just like the other towns.\textsuperscript{116} Because of the similarity in the methods of design by use of complex geometry between Castelfranco, San Giovanni and Terranuova, the latter town must also have been designed by Arnolfo according to Guidoni. (Guidoni 1970, pp.229, 215-216, for the design methods, see pars.6.4.1.1, 6.4.2) This seems quite unlikely though, given the fact that it was only founded in 1337 and Arnolfo died before 1310.
\textsuperscript{117} See par.6.4.2.
\textsuperscript{118} The document is published by Friedman as document no.2. (Friedman 1988, pp.310-312) According to Friedman the assignment was given to two officials. (Friedman 1988, p.310)
\textsuperscript{119} According to Nicolai his proper name was Matteo di Neri di Gubbio. (Nicolai 1914, p.383) Nicolai mentions the provisioni of June 28 and July 18 of the Priori delle Arti e Gonfalonieri di Giustizia. Friedman only used the latter of these two documents, which he also published in an appendix. (Friedman 1988, pp.313-314, doc.4) According to Grandini his name was Matteo de’ Neri de Cassio, but he gives no proper reference for this. (Grandini 1978, p.23)
\textsuperscript{120} […] fecer in dicta terra putea, fontes, vias, stratas, et dirizzare et splanare quocumque et qualscumque opus et delibaverent fieri decens et ad sui liberam voluntatem […]’. (Friedman 1988, p.313, doc.2, 18 July 1306) See also Nicolai 1914, p.383.
\textsuperscript{121} Friedman 1988, pp.310-312.
\textsuperscript{122} For the committees governing the Florentine public building projects, See Davidson 1973, vol.V, pp.246-252.

295
the work to be done by the settlers and to tax them for the expenses of constructing the new towns. The committee was not responsible for the actual designing and building of the towns, unlike the officials that were assigned the responsibility for the organisation of the new towns of Scarperia and Firenzuola six years later, as discussed above. For Castelfranco and San Giovanni the central Florentine administration, more particularly the priors of the guilds and the Gonfaloniere di Giustizia, held the right to establish ‘[...] in length and breadth and which manner and form [...]’ the towns would be laid out.126

Still later, the organisation of the new town planning took on another form. For the restarted project of the new town of Firenzuola in 1332, a special committee was instituted to oversee the complete project in all its aspects. From every one of the six quarters of the city a citizen was chosen to serve a six month term in the committee, which had a budget of its own and was fairly autonomous in its decisions. This committee was responsible for the planning of the new town as well as for the pacification of the region, as were the appointed officials in the case of Scarperia. Later that year, the committee was also given the responsibility for the project of the new town on the Consuma pass-road, of which much less is known and which seems to have been aborted soon after.125 Likewise, the projects for the fortification of the town of Cerretto Guidi and for the new town of Terranuova were given over to this committee in 1338, respectively 1339, after they were first begun under distinct committees. Other projects of fortification and extension of existing towns were assigned to other committees. Shortly before the middle of the 14th century, however, a new committee was made responsible for the all fortifications in the Florentine countryside. The members of this commission, which was also responsible for the planning and realisation of the new town of Giglio Fiorentino, were called the Ufficiali della Castella.126 The members of these committees were no specialists: they were just part of the section of citizenry that participated in the government of Florence at the time. Many of them served in other committees or public functions in other years.

The committees hired employees for specific jobs that were paid by the day or by the month, such as a treasurer, a notary and a clerk. Most probably, there also must have been a master who stood at the head of the building equip, whether existing of professional workers or of residents of the region who were obliged to work on the project. Apart from this person, master builders who were valued for their knowledge, such as for instance the leading master of the cathedral opera, were hired for short periods to advise the committee on specific problems.127 It is, however, a matter of speculation to what degree important non-technical parts of the design, like, for instance, the size of the town and the lots, or the place and form of the piazza, were determined by advisors, the master of the works or the officials in the committee. For the cases of Firenzuola, Terranuova and Giglio Fiorentino, and apart from Vasari’s remark also for San Giovanni and Castelfranco, it is not known if there was a specific master of the works associated with the planning and building of the towns, let alone that it would be known who actually made the design.

Friedman is convinced that the officials hired ‘professional designers’ to do the job. In this, he is inspired by the analogy with other cases for which it is known that the capomaestro of the cathedral opera or his assistants (in Florence and other cities) received the responsibility, or did advisory work, for communal building projects.128 There is no such source, however, regarding the planning of a new town, apart from Vasari’s reference to Arnolfo.129 Friedman gives much weight to the document reporting that Neri Fioravanti assisted two members of the committee responsible for the realisation of Giglio Fiorentino on a trip through the Val d’Ambra in late June and early July 1350, for which reason he takes Fioravanti to be the designer of the Giglio plan.130 Fioravanti seems to have been vaguely associated with the cathedral opera in Florence, and worked on various projects of greater or lesser importance in Florence.131 Friedman’s point is not very strong, however, as Fioravanti’s trip with the committee appears to be after the site for Giglio was chosen and the

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124 ‘[...] in latitudine et longitudine et eo modo et forme [...]’ (Friedman 1988, document 2, p.308)
125 For the new town on the Consuma pass road, see pars.3.3-3.5.4.
127 Friedman 1988, pp.150-158.
128 Friedman 1988, pp.162-166. Braunfels (1953, pp.216-247, esp. 245) even claims, regarding Tuscany in the 13th to 14th centuries, that ‘Dombaumeister sind Stadtbauermeister’ (‘cathedral building masters are city building masters’). By this he does not mean that the masters of the cathedral projects built complete cities, but that they also served the cities in other communal building projects. Binding, however, writing on the official institute of communal building master (which is first recorded in Bourges in 1247) claims that these city building masters usually were administrators rather than professional builders or designers. (Binding 1993, p.92) The difference might be explained, however, by the fact that Braunfels is only concerned with Tuscany, while Binding is more concerned with Europe north of the Alps.
129 Buselli claims that the new Lucchese town of Pietrasanta (see app.B, pars.2.2) must have been designed by a master builder named Lombardo, since he was the head of cathedral opera of Luca between 1256 and 1260, the period in which Pietrasanta was founded. (Buselli 1970, p.40) Since Buselli mentions not one concrete indication, the attribution appears to be completely conjectural.
130 Friedman 1988, pp.158, 162.
131 Neri Fioravanti is among others reported to have vaulted the great hall of the communal Bargello palace, to have cut stone for the campanile of the cathedral, to have started work on the church of Santi Anna and to have proposed a new version of the choir of the cathedral around 1366 together with other artists. (Friedman 1988, p.138)
layout was designed, and for as far as known only regarded other projects in the Val d’Ambra (in which Giglio was planned as well). Apart from this trip, his only other reported involvement with the committee was that he spoke for it with respect to another project, three years later in a meeting of a government council. Consequently, it is very much conjectural that Friedman ascribes the design of Giglio to Neri Fioravanti and those of the other towns to other ‘professional designers’ from the cathedral workshop. He solely attributes the design of Scarperia to a non-professional designer, being dominus Matteus, the administrative official of the region. He does so because he assumes that no geometry or arithmetical order guided the plan design of Scarperia. In his opinion it is just an adaptation of the model of San Giovanni, which was pragmatically changed in various aspects in order to fit the circumstances. In paragraph 6.4.2, however, it is argued that it actually is likely that there are geometrically determined dimensions in the plan of Scarperia, similar to the plans of Castelfranco, San Giovanni and Terranuova.

Dominus Matteus was made responsible for the design of Scarperia, but this does not necessarily mean that he actually designed the form of the town. At some stage he must have hired people from the building profession to design and build gates, bridges, a church, etcetera, and probably he also hired a surveyor to set out the plan as it was designed. It is, of course, possible that he employed a professional architectural designer or a surveyor to design the town plan. But since there is no concrete indication that suggests so and since the document cited above shows that the assignment to lay out the town was given to Matteus himself, it appears most obvious, by lack of further information, to assume that it was he who made the design, making use of the examples of the two earlier terre nuove.

But if Matteus designed the spatial layout for Scarperia, then why could the layouts of the later terre nuove not be ascribed to the officials in the committees, rather than to professionals from architecture or land measurement? After all, these officials were not just ordinary men: they all had a certain standing and some of them even were important men from the urban elite. So if they had an example of an earlier town, and if they knew the way it was designed, they probably must have been able to create variations on it. After all, the information about the planners of other towns elsewhere throughout Europe also suggests that notaries or entrepreneurs, rather than ‘architects’ planned the physical layout of new towns. But then again, this information is scarce and often not conclusive, and with their underlying geometry and relatively strong regularity the plans of the terre nuove are certainly more sophisticated than was the average new town plan.

In principle, it is possible that one person designed the plans of Castelfranco, San Giovanni, Scarperia and Terranuova, which were all proportioned by use of more or less similar geometric methods. And possibly this also holds for the original plan of Firenzuola. After all, the period in which they were founded, from 1299 to 1337, lies within the span of a possible professional career. It seems more likely, however, that the plans were designed by different people, but that the designers were inspired by earlier examples. Possibly, it happened as follows. The designer of Castelfranco and San Giovanni – who may well have been Arnolfo di Cambio – showed the cunning geometric method that he used for proportioning the plans to his assistants, his patrons, the surveyors that actually set out the plans on the ground, or to everyone that was interested. Subsequently, the basic type of plan of San Giovanni and the proportioning method of Castelfranco was used by another planner – possibly dominus Matteus – for the design of Scarperia’s plan. Much later, an adapted version of the basic layout and the geometry was also used, probably by other planners – possibly one or more members of the committee or professionals hired by them – for Terranuova and maybe also for the original layout of Firenzuola. Giglio Fiorentino was not designed by use of a similar sort of geometric proportioning, but by relatively simple arithmetical proportioning. But there too, the same basic layout was used again by the designer, who may have been a committee member or a hired professional.

132 Friedman 1988, pp.158. Friedman believes that the design for Giglio must have been made by a professional designer, since in his opinion it is a great achievement that the plan of Giglio, which was proportioned by simple metrology, was adapted from the plan of Terranuova, which was designed by use of complex geometry. (Friedman 1988, p.162; see pars.6.4.1.2, B.3.1) I do not see, however, why one should specifically need to be an architectural designer to conceive the Giglio plan. After all, it is a lot easier to do so when one has a model. For deciding on dimensions of lots, open spaces and the keep, one does not necessarily need an architectural training, but rather an example, some competence in adding numbers as well as a portion of common sense. In my opinion, the possibility that it was not planned by a professional, is higher for Giglio than for Castelfranco, San Giovanni, Scarperia and Terranuova, as their designs appear to be more complex. (see pars.6.4.2, B.4)

133 According to Friedman the three terre in the Valdarno must have been designed by professional designers because of their ‘complexity and sophistication of composition’ (Friedman 1988, p.163), but he believes that Scarperia and Firenzuola were not designed in such a subtle way. The plans of these two northern terre, however, would have been inspired by the design of San Giovanni. (Friedman 1988, p.159)


135 See n.116 above.

136 See pars.3.9.2.1, 6.4.2, B.4.
7.7 Surveyors as town planners

Above, it is already mentioned that some scholars believe that professional surveyors were responsible for the design of the ground plans of new towns.\textsuperscript{137} Indeed, this seems likely, since it appears logical that professional surveyors who are reported to have measured existing plots of land and who set out new agricultural allotments, were also assigned the job to set out urban allotments.\textsuperscript{138} If they were, this would not automatically mean that they made autonomous decisions on the form of the plan, but since many new town plans are so simple in structure, one is tempted to assume that these surveyors were given the free hand, within reasonable limits. Unfortunately, there is not much evidence to support such an assumption.

There is one source that gives relatively much information on the planning of a new urban structure. It regards the new extensions of the town of Ardres in the northwest of France. Around the year 1200, a local priest wrote a chronicle on the early history of the town and the lordship of Ghisnes, which describes how, during the 12\textsuperscript{th} century, the town was gradually made into the administrative, social, economic and demographic centre of the territory by its lord Arnold IV. According to the chronicle the town was enlarged and fortified in 1139. This operation was led by a man by the name of Symon who was described as a doctum geometricalis operis magistrum, which probably means that he was a surveyor, or possibly a mathematician in a more general sense. This master Symon is described to have set out the plan by estimation with his eyes rather than by measuring with his rod, after the design, which he had conceived ‘in his mind’.\textsuperscript{139} The chronicler goes on to report that he had houses and farms taken down and gardens, orchards and fields erased, as he projected the streets in their place. Meanwhile, older streets were widened and regularised. Unfortunately, this cannot be verified from what is preserved of the town above ground level\textsuperscript{140}, but what is important in the present context, is that a doctum geometricalis operis magistrum is mentioned as the designer of the new layout.

Above it is already mentioned that the surveyor of the city of Toulouse was present when the land for the bastide of Beaumont-de-Lomagne was handed over to the royal sénéchal in 1280 and again two years later when the garden lots and fields were handed over to the settlers. This surveyor may have been the person who took the decisions considering the plan form of the town, but this is no more than a conjecture.\textsuperscript{141} The same holds true for the mensuratore Communis of the city of Bologna, who was to set out the extension of the town of Castelfranco Emilia, as described in a document of 1231.\textsuperscript{142}

Another case where the involvement of a surveyor in the laying out of the lots of a new town is documented, regards the town of Bricherasio in Savoy. This town was moved to a new site by its lord Filippo di Savoia Acaia, after he had a new pass-road laid out.\textsuperscript{143} A document describes that three man, among whom a mensuratore (surveyor) called Johannis de Corio de Vigone, were sent to the place for two and a half days ‘[…] in order to measure and set out the plots for the new town of the lord in Britaiasio […]’\textsuperscript{144}

In many cities of considerable size, there seem to have been official communal surveyors.\textsuperscript{145} In Florence, for instance, there was one since the late 12\textsuperscript{th} century.\textsuperscript{146} In the 13\textsuperscript{th} century, however, the lots in the new extensions of the city seem to have mainly been measured out by monks\textsuperscript{147}, but it is not impossible that these monks were in fact experienced surveyors. A document of 1298 mentions that a widened street in Florence is measured out by a magistro Nieri who is designated as ‘abbachista et mensuratore’, which means that he was a sort of arithmetician, probably accountant, as well as a surveyor.\textsuperscript{148} Various Florentine documents from the 13\textsuperscript{th} and 14\textsuperscript{th} centuries record that surveyors were also called in for the construction and repair of roads in the countryside.\textsuperscript{149} Hence, it seems legitimate to assume that professional surveyors must also have been

\textsuperscript{137} Divonne, Gendre, Levergne & Paneraï 1885, p.44; Higounet (1975, p.360), regarding the notary Pons Maynad as designer of Montréal. See also Meckseper 1991, p.66
\textsuperscript{138} Such as, for instance, the mensuratore by name of Gregorius, who was reported to have measured out the territory of the village of Schönwald for the duke of Opole in southern Poland in 1269. (Higounet 1986, p.255) As argued above, it is also likely that the designators recorded in a document from Vercelli (Higounet 1989, p.221; see par.7.2) were surveyors.
\textsuperscript{139} ’opus in mente conceptum’. Lamberti Andensis Historia comitum Ghisonensium (MGH ss.24 p.696); elaborated on by Binding 1999, p.79; Irsigler 1983, esp. pp.17-18.
\textsuperscript{140} Irsigler 1983, p.18.
\textsuperscript{141} See par.7.5.
\textsuperscript{142} Friedman 1988, p.272, n.51.
\textsuperscript{143} This situation is more or less similar to that of the building of the Florentine new towns of Scarperia and Firenzuola, which were also focused on a newly laid out pass road. (see pars.3.8.3, 3.8.4)
\textsuperscript{144} ’[…] causa mensurandi et trebucandi castalia burgi novi domini in Britaiasio […]’ (Fasoli 1942, p.180, n.226)
\textsuperscript{145} Braunfels 1953, p.98; Schulz 1978, p.432.
\textsuperscript{146} Davidsohn 1962, vol.IV, pp.246-252.
\textsuperscript{147} Szura, cited in Franchetti-Pardo & Sanfilippo 1976, p.272.
\textsuperscript{148} Pampaloni 1973, p.118.
\textsuperscript{149} Richter 1940, p.362, n.54; Pampaloni 1973, p.140.
involved in the laying out of the Florentine terre nuove. The only mention of a surveyor in connection with the creation of a Florentine new town, however, concerns ser Tinaccio magistro et mensuratori who was involved in the building of the walls at Pietrasanta (present-day Casaglia) as a clerk and surveyor in 1293.\footnote{Friedman 1988, p.305, doc.1, 23 September 1293. Friedman (p.156) translates magistro as ‘building master’. He does not explain why he does so, but essentially it is incorrect.}

In the lands of central Europe east of the river Elbe, many new towns and villages were founded since the 12th century, for the most part on ground that was newly reclaimed from marshes and forests. So much land needed to be measured and allotted for these foundations, that it seems highly likely that there were people who made their profession of this work.\footnote{Meckseper 1982, p.77.} From the 13th century on, documents confirm that mensuratores were active in the laying out of new settlements in these lands, but this is mainly with regard to agricultural allotments.\footnote{Schich 1993, p.91.} As already mentioned above, a mensuratorum Gregorius was reported to have worked on the allotment of the village of Schönwald in Silesia.\footnote{Kuhn 1975, p.251. Unfortunately, I have not been able to find out how these places were reorganised in spatial sense. It might be interesting to investigate if there are significant differences in the layout or the dimensions of these settlements in comparison to newly laid out settlements in the area of which it is known that they were settled by locatores who were no surveyors by profession.} A KIRSTANNUS mensurator, who was also bailiff of Ossig, is mentioned in a document of 1276. It is likely that, as a bailiff, Kirstannus had acted as the locator of the town. This is all the more probable since he is reported to have bought two villages in 1287, to reorganise them into the new town of Borkwitz.\footnote{Kuhn 1975, p.251.} Starting from the 13th century, there are also sources which testify that professional surveyors were set to this work in Prussia. Often, however, clerics were assigned to the job in this country, as it was governed by the knightly clerics of the Teutonic Order.\footnote{Erlen 1992, pp.149, 257.} Possibly, these clerics were experienced surveyors. It seems too bold, however, to assume that all new settlements and holdings east of the Elbe were set out by professional surveyors, as some scholars do.\footnote{See par.7.2.}

### 7.7.1 ‘**Mensores literati**, geometrical treatises and town planning

Not much is known about the surveyors in Prussia in the 13th and 14th centuries. But fortunately there is an important source in the form of a treatise on surveying from Prussia of around 1400. It is called Geometria Culmensis, after the important Prussian town of Culm (present-day Chelmno), and it is written by an anonymous surveyor in the service of the Teutonic order, presumably a cleric.\footnote{See par.10.2.1.}

In the treatise it is mentioned that there are two groups of mensores. The first are the mensores literati who are learned in mathematics and whose work is mainly theoretical, and the second are the mensores layci, who are mainly concerned with the practice of land measuring. It is specified that the treatise is particularly meant for the second group.\footnote{Schich 1993, p.91.}

Various scholars believe that mensores literati, literally meaning ‘lettered measurers’, played an important role in town planning in the high-period of town foundation. For instance, Zagrodzki believes that they can also be recognised in the ‘wisest and ablest men’ summoned by King Edward I of England to the colloquium for the rebuilding of Berwick-upon-Tweed. This is, however, quite unlikely to be correct. Although these men were supposed to ‘[…] know best how to devise, order and array a new town to the greatest profit of Ourselves [the king] and of merchants’, it is pure speculation to assume that they must have been learned in geometry.\footnote{Zagrodzki 1966, esp. p.454; Zagrodzki S.D., esp. p.101. See also par.10.2.1. The Roman surveyors were called agrimensores or gromatici (after the Roman instrument for laying out an orthogonal plan, the groma, a sort of cross-staff) hence the term for the group of manuscripts that were preserved and copied in different monasteries, corpus agrimensorum or gromatici veteres.} Zagrodzki states this claim in order to support his theory that new towns from the 12th to 15th centuries generally must have been planned by people who had knowledge of theoretical works on geometry and land measurement, and specifically the late-antique Corpus agrimensorum.\footnote{Zagrodzki 1966, esp. p.454; Zagrodzki S.D., esp. p.101. See also par.10.2.1. The Roman surveyors were called agrimensores or gromatici (after the Roman instrument for laying out an orthogonal plan, the groma, a sort of cross-staff) hence the term for the group of manuscripts that were preserved and copied in different monasteries, corpus agrimensorum or gromatici veteres.} This hypothesis is also conjectural, being solely inspired by the superficial resemblance between the plans of the orthogonal colonial towns of Roman times and those from the 12th to 15th centuries (particularly those in Zagrodzki’s home country Poland), which cannot be coincidental in his opinion.\footnote{Zagrodzki 1966, esp. p.454; Zagrodzki S.D., esp. p.101. See also par.10.2.1. The Roman surveyors were called agrimensores or gromatici (after the Roman instrument for laying out an orthogonal plan, the groma, a sort of cross-staff) hence the term for the group of manuscripts that were preserved and copied in different monasteries, corpus agrimensorum or gromatici veteres.}

Since around the 10th century, scholarly works were written on the liberal art of geometry, based on the remnants of antique knowledge. The most important sources for these works were the Elements of the
Greek mathematician Euclid (first half of the third century B.C.) and the instructive manuscripts of Roman surveyors, collected in the Corpus agrimensorum. In the 11th century, new treatises on geometry were written by among others Gerbert of Aurillac and Pseudo-Boethius. Although the literal meaning of the word ‘geometry’ is ‘measuring the earth’, these works were of little use for the practice of measuring pieces of land or the laying out of allotments; they were strongly theoretical in nature. Even when the treatises went under the title of ‘practica geometria’ (‘practical geometry’), as many did, their contents mostly were far more complicated than would have been necessary for the practice of the surveyor, treating many theoretical subjects. And when the treatises commented on practical topics, it mostly regarded rather complex problems such as the measuring of the height of towers or mountains, the depth and width of rivers, the circumference of the earth, etcetera. They barely treat more usual practical examples, whereas the creation of new allotments is not treated at all.

The main goal of the treatises appears to be the education of the liberal art of geometry, as part of the training in philosophy in the tradition of the seven liberal arts as the curriculum of higher education. The treatises that go by the name of ‘practica geometria’ treat geometry by way of giving examples from practice or an imaginary practice. This does not mean, however, that they were actually meant to teach for practice.

Zagrodzki claims that the use of complex geometry in the design of town plans indicates that the planners knew the geometrical treatises and that they were mensores literati. And in his opinion many of the new towns of the high-period of town foundation were designed and set out by use of complex methods using modules and working with geometrical relations. However, in chapter 6 and appendix B it is argued that most theories which claim that complex geometry was used in the design of new town plans in the period under consideration are unlikely to be correct, and that is also true for Zagrodzki’s proposals.

For the terre nuove fiorentine, however, it does appear likely that complex geometry was used for the design of elements of the plans. But even then: although the designers must have had a certain knowledge of geometry, they need not necessarily have been acquainted with theoretical writings on geometry, since the specific geometry in question is not treated in the ‘practical geometries’. It would have been even less necessary for them to be acquainted with the manuscripts of the agrimensores, since the material treated in these works is still more remote from the sort of geometry that probably underlies the plans of the terre nuove.

Hence, it is clear that Zagrodzki’s claim that ‘the mensores literati may therefore be regarded as the real authors of the regular plan in medieval urbanistics’ is an overstated conjecture. Lilley also claims that designers of regular plans must have had significant knowledge of the theoretical geometry of among others Euclid. This claim can be challenged, however. In the cases of regular orthogonal planning the people who designed and set out the plans must have had a basic knowledge of practical geometry in order to make straight and parallel lines and right angles at regular intervals. For this, one did not need to know the contents of the literature on geometry, however. Only in a limited number of cases involving more complex geometry, such as the proportioning of the terre nuove, the designers and surveyors must have been more able in geometric construction, and therefore they probably must have had some schooling in geometry. As described in paragraph 7.6, they may not have been professional mensores (surveyors), but at least they were literati.

Master Symon, who is reported to have planned the extension of Ardres, seems to have been a surveyor with a theoretical background, since he was described as a doctum geometricalis operis magistrum, and the same may hold true for magistro Nierio who, as a ‘abbachista et mensuratore’, was involved in the widening of a street.
in Florence.\footnote{See above in this paragraph.} Most surveyors, however, may have learned their job from the practical tradition, and possibly also from treatises containing basic and practical techniques of surveying, such as the Geometria Culmensis and the nearly contemporary work by Bertrand Boyset from southern France.

The Geometria Culmensis and the treatise by Boyset clearly aimed at explaining the basic rules of practical geometry explicitly to surveyors. They also regard some more theoretical aspects, but they are different from the ‘practical geometries’, in the sense that they were meant to treat the theory behind the practice of surveying.\footnote{Pouls 1997, p.43.}

In both treatises it is emphasised how important it is to measure and calculate correctly and that fixed measures and boundaries must be respected. In the introduction of the Geometria Culmensis, the writer, an anonymous surveyor in the service of the Teutonic order (presumably a cleric), states that he was assigned to write a ‘book about the employment of practical geometry’ because there are too many faulty measurements and calculations, which create discord among the people.\footnote{Guerreau 1995, pp.88, 92-94, 102} From the treatise on land measurement by the surveyor Bertrand Boyset (Arles, c.1405) it clearly appears that the writer essentially saw the divine as the fundamental guarantee for the legitimacy of fixed dimensions and boundaries.\footnote{Boyset even writes that Jesus designated himself as destrador (extricator), aternemador (demarcator) and esquairador (someone who traces right angles?). (Guerreau 1995, p.90, n.9) It appears that Boyset had only limited knowledge of geometry: he writes nothing about angles, circles, parallels, diagonals or drawing plans to scale, and his descriptions of geometric figures are rather confused. According to Price, this limited knowledge is typical of ‘medieval’ surveyors. (Price 1955, pp.2-3, 5) Apparently, the treatise was really meant for practice: the measuring in the treatise is mostly meant for lots to be sold and methods are given to calculate the area and the value of the lots. (Guerreau 1995, pp.88, 92-94, 102)\footnote{Price 1955, pp.2-3, 5} Therefore, the people who marked off the plots had to be reliable, preferably guaranteed by a sworn oath, they had to be able in measuring, and their measuring rods and ropes needed to have the right length.

For all this, it seems likely that professional surveyors were involved in the planning or at least the setting out of new town plans. But all in all there are only a very limited number of references to the involvement of professional surveyors in the laying out of new towns. And there is only one reference to a surveyor, or possibly a scholar in geometry (doctum geometricalis operis magistrum), as the planner of an urban layout, regarding master Symon at Ardres in the second half of the 12th century.\footnote{See par.7.7.} One should keep in mind, however, that the written sources are scant and that it is likely that surveyors were far more often involved, at least in setting out the plots, than the contemporary documents tell.

7.8 Clerics as planners or as surveyors

So, honesty was regarded as a precondition for the surveyor to function well, and the divine was called upon to see that surveyors did their work right. It is known that in the period under consideration monks sometimes acted as surveyors. Possibly, this was because, as men of God, they were regarded to be honest. The fact that they were generally relatively well educated was probably also relevant.

Some examples of clerics as surveyors are already encountered above. Many of the surveyors in Prussia under the Teutonic order seem to have been monks, and the allotments in the new extensions of the city of Florence also appear to largely have been set out by monks. For the large-scale extension of the city of Brescia in northern Italy in the years following 1237, it is known that the operation of measuring out the new streets in relation to the existing properties was led by a monk. His name was Alberico da Gambara and...
he was a brother from the mendicant order of the Umiliati. Another brother of the Umiliati, by name of Domenico, is reported to have led the building of the new town of Paganico. This town was founded by the government of Siena (in 1292) and therefore it is no accident that Domenico’s community resided in that city, just as Alberico’s friary resided in Brescia.

In 1286 two men were called to the job of laying out the town with the telling name of Newton on the south shore of England. These men were personally appointed by King Edward I and were ordained to make it so that it would be ‘appropriate for merchants’. They were to lay out streets, lanes, a market place, a church, building plots and a harbour. Of the two appointed officials it is only known that one of them was a cleric from Gloucestershire. It is not clear whether they were to be in charge of the whole operation of town foundation or whether their job was only to create the spatial structure.

7.9 Conclusion

The few contemporary written sources commonly do not mention anything about the planners of new towns. In the modern literature on newly created towns from the high-period of town foundation, many authors ascribe the spatial planning to professional architectural designers or even to professional town planners. This appears, however, to be a retro-projection of the modern situation, which is not justified by the evidence. The writing of the history of town planning in the past 150 years or so, has often been the subject of scholars with a background in the discipline of architecture and urban planning rather than in the discipline of history. It appears that particularly these scholars have sought to identify the planners as professional architectural designers or town planners.

The sole source that mentions professional architects as designers of new towns is Giorgio Vasari’s Vite, which was written in the 16th century. Vasari identified the architects/sculptors Arnolfo di Cambio and Andrea Pisano as designers of the early Florentine terre nuove in the period around 1300. These attributions, however, appear not to be very reliable. The attribution to Andrea is almost certainly wrong, while that to Arnolfo may be right but cannot be positively verified. One other clear source identified a ‘geometrician’ as the planner of an urban extension at Arders in northern France. Furthermore, relatively many written sources identify the founding lords as the designers of new towns, but this is a topos that generally is unlikely to reflect what actually happened.

As far as written sources mention specific people involved in the planning of new urban structures, it nearly always regards persons that were responsible for the general organisation and administration: clerics, clerks, notaries, officers and notable citizens such as the men in the committees that were responsible for the planning of Giglio Fiorentino and Berwick-upon-Tweed. The sources also mention entrepreneurs that were engaged in the planning of villages and, less often, towns. They are particularly numerous in the lands east of the river Elbe, where they were commonly designated as locatores. For all these officials and entrepreneurs it is not known to what degree they actually were involved in the spatial planning of the urban structures, but by lack of sources that show otherwise, they must be held responsible. Some of these men have been wrongly labelled as professional town planners by modern scholars, while other scholars suppose that these men must have hired others that were experienced in spatial planning.

It does indeed seem likely that the experience was sought of men that had been doing a similar job elsewhere in the time before, much as experience was sought after in the king’s call for advisors for the re-building of Berwick-upon-Tweed: ‘[…] from among your wisest and ablest who know best how to devise, order and array a new town to the greatest profit of Ourselves and of merchants.’ It seems particularly likely that, when several towns were created for the same lord, he set the same men to work at the different towns. But there are no

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183 Guidoni 1981 (II), p.168. According to Guidoni, the order of the Umiliati was relatively often engaged in urban building operations, since it was a specifically urban monastic order, which was relatively open to the surrounding world and which actively took part in the urban economy. (Guidoni 1981 (II), pp.127-146; Guidoni 1981 (I), pp.155-156) Guidoni also suggests that experience in town planning, particularly in orthogonal new town planning, was transmitted over Europe within the monastic order of the Cistercians. (Guidoni 1981 (III); Guidoni 1992, p.109) But his argument is not convincing, among other things because some of the towns that serve as his examples have nothing to do with the Cistercian order, whereas towns that were founded by this order are overlooked.
184 Beresford 1967, pp.427-428. The whole project appears to have been aborted not long after, so nothing seems to have been realised.
185 Note that, much as the modern scholars who assume that professional architectural designers or town planners were responsible for the urban planning in the high-period of town foundation, Vasari also had a professional background in architecture.
186 Beresford 1967, p.3; see par.7.2. Note that this call probably regarded the total project of making the town revive after it was heavily damaged in war, and not solely the architectural aspect.
written sources to confirm this, apart from the notary Pons Maynard, the committee that was involved in the foundation of Castelfranco, San Giovanni and a third town in the Valdarno di Sopra, the ordenadors and stabliders that were to create the fourteen new towns at Mallorca, and a number of locatores that were involved in the planning of several villages and towns. In a certain sense, one might call these people (part-time) town planners, but with this it is essential to note that the most important part of their job was to organise and oversee the operation of the creation of new towns, rather than to design their urban form.

By lack of further sources, it seems valid to assume that surveyors who were involved in the setting out of spatial structures may also have been involved in the design of these structures. These surveyors may have been full-time professionals, or they may have been notaries, monks or teachers in geometry. In a small number of cases it seems likely that military engineers, for whom military architectural design was probably part of their job, planned new towns. For instance, the ingenii mentioned in a document regarding the layout of Carnisprivium in northern Italy probably were professional military engineers. It also seems that the spatial planning of new towns that were founded in relation to military campaigns and that were laid out in relation to new castles, as for instance Flint, Conwy, Caernarfon and Beaumaris in north Wales, may be ascribed to military architectural designers.