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Sterrenbossen in the Netherlands: originated in the international discourse on architectural rules

“[...] all that is most noble and agreeable in a Garden, namely, Woods and Groves; for no Garden without these can be accounted handsome, since they make the greatest Ornament thereof. [...] Woods are the essential Part of the Garden”.¹

Prince Frederik Hendrik of Oranje Nassau (1584–1647), captain general and admiral of the Republic of the Seven United Netherlands and stadholder of five of the seven provinces, played a significant role in the development of Dutch garden art at the beginning of the 17th century.² He fostered a type of afforestation that came to be known as “sterrenbos”, characterized by a grid layout, with an arrangement of radial pathways. This typical Dutch grove design would remain in use for almost a century. It was reproduced in many estates and advocated in different garden treatises.³ The influence of sterrenbossen on the (inter)national developments of gardens has not been examined before. This might be explained by the use of different terms for forests. The English term “grove” covers various types of man-made forest.⁴ The French, however, call a Grove Bosquet, “from the Italian Word ‘Boschetto’, a little wood of small Extent; as much as to say, a Nosegay, or Bunch of Green”.⁵ A “Starrebosch” or sterrenbos is the Dutch term for this particular type of designed and furnished grove. The lack of a historical study on

1 Dézallier d’Argenville (James edition) 1712, p. 63. In chapter VI Dézallier emphasizes that the beauty of the woods and ‘bosquets’ is the finest decoration of the garden.

In 1709 the French author Antoine-Joseph Dézallier d’Argenville (1680–1765), secretary of the king, described the ideas of André le Notre (1615–1680), court garden architect, in: *La théorie et La pratique du jardinage*. This book was published thirteen times in France and translated in three languages. The first edition in French (1709) was published anonymously. The second French edition (1713) indicated L.S.A.I.D.A. (Le Sieur Antoine Joseph Dézallier d’Argenville) as the author. The title page of the third French edition (1722) states: “Contenant plusieurs plans et dispositions



... Par le sieur Alexandre le Blond”. In subsequent editions, translations and references to the book, A. Le Blond was wrongfully mentioned as the author.

The first English translation by architect John James appeared in London in 1712. It was a translation of the French edition of 1712. The quotes in this article are taken from the third edition: J. James: *Theory and Practice of Gardening*, London 17283 (1712), which is referred to as Dézallier (James edition) 1712.

2 F. Hopper: *De Nederlandse klassieke tuin en André Mollet*. In: *Bulletin KNOB* 82 (1983) nr. 3 and 4, p. 106.

3 See for example the textbooks of A. Mollet: *Le Jardin de Plaisir*, Stocholm 1651. – Anonymous [A. J., Dézallier d’Argenville]: *La théorie et La pratique du jardinage*, Paris 1709. – P. de la Court van der Voort: *Bijzondere aenmerkingen over het aenleggen van pragtige en gemeene landhuizen, luthoven, plantagien en aenklevende cieraeden [...]*, Leiden 1737.

4 “There are Woods of divers Kinds, which may all be reduced to the six following: Forests, or great Wood of high Trees; Coppice-Woods; Groves of a middle Height, with tall Hedges; Groves opened in Compartiments; Groves planted in Quincunce, or in Squares; and Woods of Evergreens”. Dézallier (James edition) 1712 (see note 1), p. 64.

5 Dézallier (James edition) 1712 (see note 1), p. 63.

Fig. 1 The castle of Zuylestein, southern façade and gatehouse in 1829, by Theodoor Soeterik

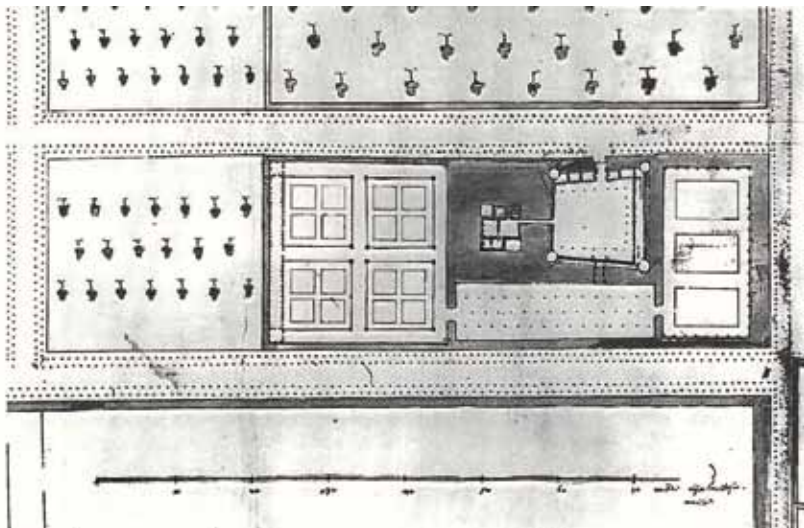


Fig. 2 Plan of Zuylestein showing the sixteenth-century layout in 1630, shortly before the first expansion

this subject led to a thorough investigation into the function of Dutch *sterrenbossen* and their significance for the development of (inter)national garden art.⁶ The main topic of this research was the estate of Zuylestein, which was famous for this kind of grove. Its hunting castle is situated in Leersum, to the west side of the Utrechtse Heuvelrug between the cities of Utrecht and Arnhem. The seventeenth-century renaissance layout of the estate was built in stages and has hardly been altered to date. It is still characterised by its regular grid, although the radial pattern is currently missing.

The aim of this article is to put the development of Dutch *sterrenbossen* into an (inter)national-context and to explain prince Frederik Hendrik's influence upon it. I will illustrate this with a historiography of construction rules from garden manuals and discuss on what principles and intentions they were

6 P. H. M. Debie: *Historisch onderzoek & toekomstvisie, sterrenbos en lanenstelsel landgoed Zuylestein*, Renswoude 2013.

7 In a *parforce* hunt game, mostly deer and boars, was chased over long distances on horseback. Since he became stadholder in 1625 Prince Frederik Hendrik visited the area regularly with his nephew, prince-electeur Palatine Frederik V (1596–1632), and his wife Elisabeth Stuart (1596–1662). Prince Frederik himself married one of Elisabeth's ladies-in-waiting, Amalia, countess of Solms-Braunfels. The friendly relationship of the two couples was acknowledged by the purchase of a hunting lodge in the same area. Frederik V moved to the town of Rhenen, Frederik Hendrik to Zuylestein, only ten kilometres away.

F. J. Gaasbeek, "Boscultuur, De esthetische aspecten van bosbouw op de landgoederen Zuilenstein en Amerongen" in: *Jaarboek Oud-Utrecht*, Utrecht 2000, p. 57.

based. A comparison between seventeenth-century building traditions and these principles will show whether they were observed. Zuylestein turned out to be a leading example, not just for Dutch woodlands, but, and even more so, for observing French fundamental rules. It would go beyond the objective of this article to elaborate upon the history of Zuylestein itself. Instead, the presented selection of pictures and specific details will give a general impression of how the estate has developed in the past centuries.

Pleasure groves at Zuylestein

In 1630 prince Frederik Hendrik bought the medieval manor-house Zuylestein as a hunting lodge. The princes of Oranje were passionate huntsman. Hunting was one of the privileges of a stadholder, in Western Europe it was traditionally reserved for the sovereign and symbolized his status. The hunting grounds of the Oranje family were originally situated in the surroundings of Den Haag. At the beginning of the 17th century their hunting reserve shrank, caused by deforestation and exploitation. To continue their beloved "parforce" hunt, they moved to scarcely populated areas on the Utrechtse Heuvelrug in the east of the Republic.⁷ These vast areas of open, waste moorlands were very attractive for hunting because of the hilly terrain.

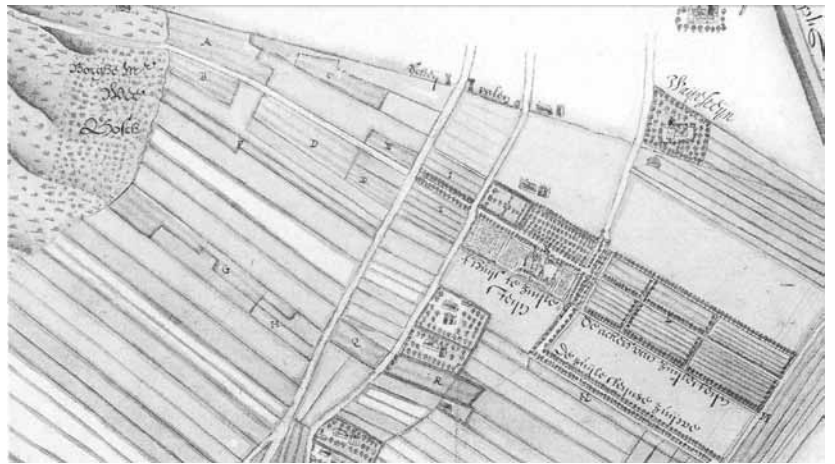
Zuylestein was transformed by Frederik Hendrik in three phases between 1630 and 1646 into an impressive renaissance structure. Vast avenue tracts, edged with ditches and planted embankments, intersected multiple plantations, wood compartments and orchards. Around the castle a walled courtyard was built and furnished with fish ponds, vegetable gardens and orchards. A Grand Canal connected the *sterrenbossen* on high, sandy grounds with the lower and wetter medieval Cope-fields with *Mastbos* (pine plantations), that was cultivated on "rabatten" (embankments). The *sterrenbossen* and their extensions were set up geometrically and divided in three almost equal compartments of 20×30 Rijnlandse roede (about 75×113 metre). The overall dimensions of the estate eventually measured approximately 136 hectare. A new, 500 metres long access avenue even reached as far as the hills of the Utrechtse Heuvelrug, to a height of 45 metres above sea level. Another avenue, straight and 1180 metres long, joined the castle and the access avenue to a hunting grove named "Het Wafelijzer" (waffle iron).

Large-scale afforestation provided income and shelter and also offered game a place to forage. The princes example was followed soon by owners of

new country seats on the Utrechtse Heuvelrug. This changed the open and inhospitable landscape drastically. Zuylesteins fame increased in the course of the 17th century. The castle remained important after Frederik Hendrik's death, because it was used as a stop between Den Haag and the hunting grounds in the provinces of Het Sticht (Utrecht) and Geldre (Gelderland), owned by his successors Willem II and Willem III of Oranje (1626–1650 and 1650–1702), the latter being the English king and stadholder. A series of impressive prints, engraved by Daniël Stoopendaal in 1710, shows the gardens around the castle. They are arranged in twenty-eight rectangular wood compartments according to a regular grid. Seven of the compartments are cut through by radial paths in the shape of Saint Andrew's cross (see fig. 16). The first of these sterrenbossen was called "plaisierbos" (pleasure grove) and, as will be explained hereafter, became a model for many groves at Dutch and French country estates.

Construction rules

The design of sterrenbossen in the Low Countries was based on a long tradition, started by Dutch stadholders in the sixteenth century. They made a



connection between classical Italian architectural rules and military science and techniques, added their practical hunting experience and applied these to the geographical situation by the laws of perspective. This practice was worked out by three important men: the stadholder prince Maurits of Oranje Nassau (1567–1625), the older half-brother of Frederik Hendrik, Jacques de Gheyn II (1565–1629), one of the most influential engravers at the time, and Simon Stevin (1548–1620), the well-known mathematician and engineer.

Fig. 3 (top) Overview of the Heerlykheid (manor) Zuylestein at Leersum. To the west of the castle are "rabatvelden" (fields with an embankment-and-ditch drainage system), framed by trees. Beside them lie "De Ackers van Zuylestein" and "de zuijlesteynse zuijwe" (fields), surrounded by avenues. Plantations and the first sterrenbos are visible at the south-eastern side of the castle, 1633

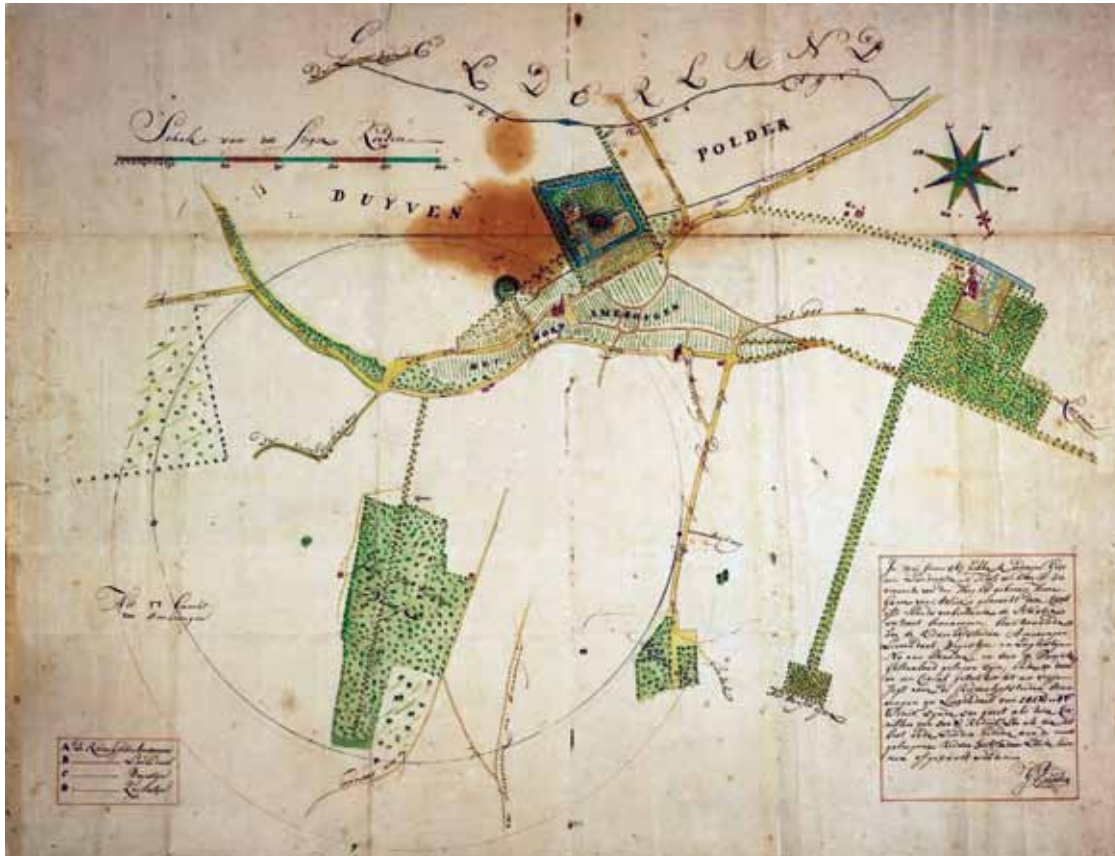


Fig. 4 The Free hunting grounds of Amerongen, Lieven-dael and Wayestein around Zuylestein (located on the right), 1767

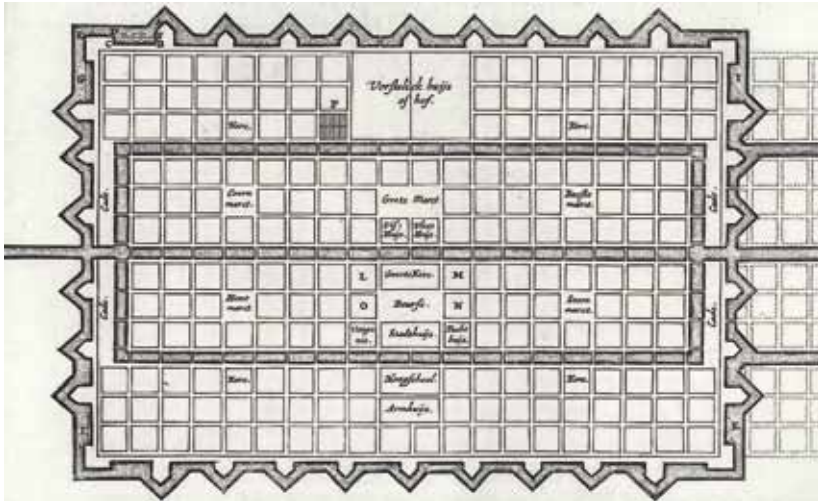


Fig. 5 (top) Functional order of an ideal town according to Simon Stevin, ca. 1605

Fig. 6 (right) Design for a military camp according to Simon Stevin: "eens Leghers, diens form langduerlic de zelve mocht blijven" ("Form of a military camp, that is supposed to remain the same for a long time")

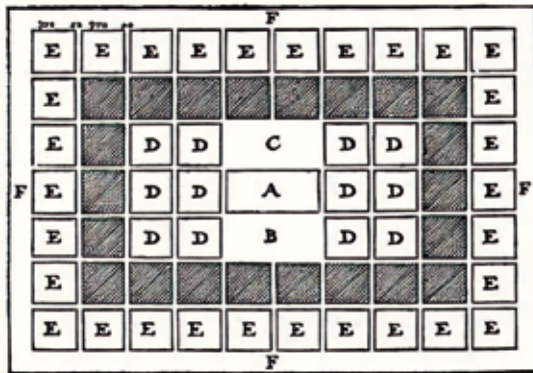
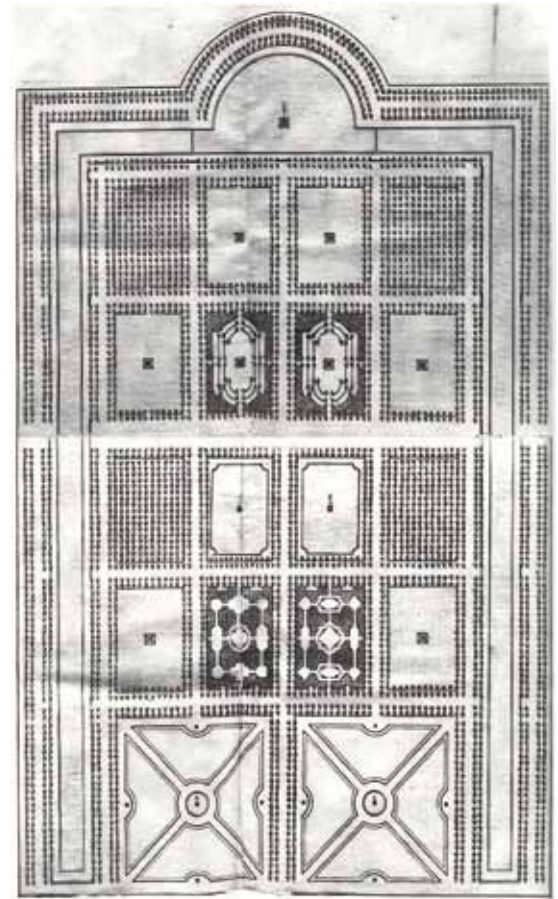


Fig. 7 (top, far right) André Mollets ideal plan #1. The two sterrenbossen in a grid, lined with trees planted on embankments, are comparable to the layout of Zuylestein.

In 1594 Stevin adapted the layout of ideal town plans to the Dutch situation and described it in "Vande oirdeningh der Steden" (fig. 5). The rectangular plan he created was used as an important reference for the development of Dutch fortified towns. And for the first time these basic principles were applied to gardens⁸ (see fig. 7). From then on the characteristic grid was frequently copied in country seats of the stadholders and their circle of friends and became known as sterrenbos.⁹ Dutch garden architecture, town building and military design show remarkable similarity. The systematic order of plantations with lined-up trees can be traced to a comparable order in military camps or cordons (see fig. 6). Both refer to an ideal fortification plan, in the case of Zuylestein to an ideal garden plan with geometric groves, laid out in a grid pattern. Except for aesthetic reasons, forests were planted for protection against the harsh and windy Dutch climate. They also marked the owners property in the uncultivated and open landscape and generated a regular income through wood sales. Practical benefits and beauty were simply combined in the lower countries in a typical "Dutch Way".



In his architectural treatise "De re aedificatoria" (1452) the Italian architect and theorist Leon Battista Alberti (1404–1472) described the perfect location for a palace or villa. Its position should enable a view of hills, plains and a town. The set up was submitted to classical architectural rules and expressed the social and economic status of its owner.¹⁰ Alberti based his theory of proportions on the writing of the Roman architect Vitruvius (ca. 85–20 v. Chr.), whose doctrine was built upon the dimensions and symmetry of the human body. In 1570, well after Albertis writing, also the Italian architect Andrea Palladio (1508–1580) explained his architectural ideas. After thirty years of practice he published the treatise "I Quattro Libri dell' Architettura", which summarized his study of classical architecture and included his criteria for an

⁸ Hopper 1983 (see note 2), pp. 99–101.

⁹ Except for the gardens of Zuylestein, grid plans were to be found in the gardens of Palace Honselaarsdijk, Palace Huis ten Bosch in Den Haag and the castle of Valkenberg in Breda.

¹⁰ C. Steenbergen and W. Reh: *Architectuur en Landschap*, Amsterdam 2009, pp. 21, 26.

ideal villa location.¹¹ Villas should be situated in the middle of their fields, close to a navigable river – for access to running water –, next to regional roads, on a prominent spot – to be visible from all sides – and if possible on the top of a hill or elevated terrain. The villa site should be demarcated and separated from the surrounding fields and farmlands by low walls or avenue trees, to make the size of the grounds clearly visible from the outside. Intersecting access roads and visual axes led from the villa into the landscape and often symbolized a bond between landowner and Church. Palladio emphasized the need for good infrastructure. He thought that roads should be built for military use like the Romans did, following the mathematical laws of universal order. If possible they should be realised as perfectly straight, continuous lines, so one could look far ahead and enjoy beautiful perspectives of the landscape. After having stated these rules he recommended: “[...] de aantrekkelijkheid van deze wegen wordt verhoogd door bomen die, als ze langs beide zijden van de weg worden geplant, ons met hun groen opvrolijken en deze, dankzij de schaduw die ze bieden, uiterst comfortabel maken [...]” (these roads will be more attractive and comfortable when planted with trees on both sides, cheering us with their leaves, and provide shadow).¹² The straight line, as a path, avenue or road through a forest, whether or not edged with trees or hedges, is a constant element in the Arcadian landscape that was created around the Dutch country manor.

The book “Le Jardin de Plaisir” of the French garden architect André Mollet (1600–1665) was published in 1651. It shows a model for a garden framed with avenues and lined up trees that was inspired by the garden of Honselaarsdijk Palace as Mollet had seen it in 1633, eight years after its construction.¹³ Like his predecessors Mollet thought it important to choose a location favourable for the embellishment of a manor house. About forests

he wrote: “Maintenant suit les bosquets, lesquels estans pratiquez dans le iardin de plaisir comme il appartient, y sont vn sort bel effect, les traits qui forment le dessein doiuent estre plantéz de Charme, Ligustrum, Philirias, ou autres arbres propres a faire pallisfades; & le dedans doit estre de toutes fortes d’arbrisseaux, pour former des bocages, lesquels attireront naturellement toute forte d’oyfeaux fans contrainte, & par ce moyen on aura vne voliere naturelle, qui sera beaucoup plus agreable que l’artificielle, los oyfeaux y ayans pleine liberte”. (“A beautiful effect in woods is achieved by the qualities of the design and the use of fine planting, like privet or Philadelphus or species of trees with characteristic high trunks. On the inside there should be shrubs that will attract birds of all sorts guaranteed and make a natural aviary, which is more pleasurable than an artificial one, because the birds will enjoy freedom completely.”)¹⁴ Apart from their shape and design the forests were appreciated for their natural aspects.

This value was also mentioned by Dézallier d’Argenville in 1709. Sterrenbossen were a relatively small type of forest, carefully designed and positioned, with splendid perspectives, that were intersected repeatedly by different paths, star-shaped, in the form of Saint Andrew’s cross or “patte d’oie” (goose foot).¹⁵ Forests in an open landscape or park larger than six to eight miles (9.66–12.88 kilometres) should exist of nothing else but tall trees or coppice wood, planted closely and without any hedges or rolled paths. They were only fit for hunting. These forests were usually planted around radial paths and a large circle, where the horsemen could gather. Like the forests of St. Germain, Fontainebleau, Senlis, Vincennes or Boulogne, they were uncultivated and situated in rural areas.¹⁶ The ornamental forests in large estates were frequently planted with coppice wood as well, the so-called “Bois Tailles” or the “Bois de moyenne futaie”, which also remained low. These types of coppice wood were highly appreciated for its young appearance, its variety and profit on a regular basis. To exploit this type of forest rightly, according to Dézallier, parts of approximately 405 square metre should be arranged in nine sections, that were cut and harvested in cycles of nine years.¹⁷

Apart from these forests, there were four types with middle heights kept at 30–40 feet (about 9.5–12.5 metres), which the French called “Bois Marmanteaux” or “Bois de Touche”. They were applied to more refined gardens and considered to be the most attractive: forests with tall hedges and square open spaces; forests with shrubbery and cabinets; forests planted in quincunx and forests with ever-

11 G. Smienk and J. Niemeijer: *Palladio, de villa en het landschap*, Bussum 2011, pp. 7, 30, 127 and 151.

12 Smienk and Niemeijer (see note 11), p. 29. – Steenbergen and Reh 2009 (see note 10), p. 111.

13 The British author Florence Hopper demonstrated that Mollet used the design of Honselaarsdijk as an example. Hopper 1983 (see note 2), p. 98.

14 Mollet 1651 (see note 3), p. 54–55.

15 Dézallier (James edition) 1712 (see note 1), pp. 63–64.

16 Dézallier (James edition) 1712 (see note 1), pp. 63–65.

17 Dézallier (James edition) 1712 (see note 1), p. 65; Woerdeman and Overmars “Parkbossen in de achttiende eeuw”, *Groen* 40 (1984) nr. 2, p. 22.

greens, decorated with open spaces, cabinets, galleries and fountains. Squares were edged by hedges and trellises, the paths were gritted with stone-chippings.

The first of these four types, open and fenced woods, named “Bosquets Parés” or “Embellish’d-Groves”, differed from other woods because they lacked plantation underneath. Paths were framed by hedges that were kept at chest height or three feet (0.942 metres) and existed of regularly planted lime-trees or horse chestnuts. Following two feet (0.63 metres) wide winding paths between the tree lines one could reach cabinets or green squares, which were interconnected by straight paths and vistas.¹⁸ The open squares were planted with rows of yew-trees or flower shrubs. At Zuylestein, the rectangular path structure was combined with different diagonal ones, that created numerous walks beneath the cooling canopy.

The second type, the woods with cabinets, had a strong resemblance to the first one, except for the undergrowth being present in this one.

The third type, woods planted in quincunx (like a playing card), offered several walks between tall trees in straight rows, over a floor that was free of vegetation and not framed by hedges. The ground was raked, rolled or finished with turf. A limited number of paths, covered with white sand, conducted the stroller to the centre of the wood.¹⁹ Views through the wood should be free in all directions and not be restricted by shrubs or other obstacles but the trees in a regular pattern. This type of wood, called “plantagie” (plantation), was realised in the gardens of Zuylestein as well. From 1633 a beech plantation could be found to the south of the new access avenue. It was extended to the east in 1639, up to the trade route called “Bovenweg”. Initially the beech trees at Zuylenstein were planted in quincunx, later they were replaced by oak trees in a square pattern.

The fourth type of wood, evergreen fir, was cultivated on embankments to produce masts and was situated in the west on the medieval Copefield. It was separated from the sterrenbossen on the higher grounds by a two hundred meter long Grand Canal.

In 1737 the extremely wealthy cloth merchant Pieter de La Court van der Voort (1664–1739), wrote a book about the design and construction of country seats, which influenced the layout of many eighteenth-century estates. De la Courts detailed description of the ideal set up of plantations around hunting lodges is noteworthy. They should be shady and have clipped hedgerows surrounding open compartments and be executed in one species and

colour. Gardens of hunting lodges were designed differently from those of pleasure palaces close to a town. According to De La Court game reserves and mazes wouldn’t be suited there, because they would be too tiresome. At hunting seats however, they would certainly fit. These hunting lodges needn’t be too large if outbuildings were available that were suitable to be used for hunting purposes. Despite the considerable expansion of its forest, the layout of Zuylestein castle has indeed remained modest. The arrangement of the forests and avenues can be recognised as game reserves, but it has never had a symmetrical and strictly classical appearance.

The French priest M. Noel Chomel (1632–1712) described the design of a Pleasure Garden meticulously in his “Huishoudelyk Woordboek” (1743). Besides “Parterren, Graswerken en Fonteynen” (parterres, grass works and fountains) it needed to have “Kreupel”- or “Starreboesjes” (small brush- and star-shaped woods), which he described in detail. These groves could be 26 French rod (50.674 metres) wide and be intersected by radial paths of two French rod (3.898 metres) wide, they could have a fountain in the middle that measured five by ten French rod (9.745 by 19.49 metres) and the square section could be surrounded by a path with a width of two and a half French rod (4.8725 metres).²⁰ By contrast, the sterrenbossen of Zuylestein measure approximately 75 by 75 metre today.

In 1753 the German gardener to the Frisian court, Johann Hermann Knoop, wrote: “Bosquets; of Bossen van wild Gewas, die in grote Plaisier Tuinen alleen tot Lommeringe [schaduw] sullen dienen, en met Wandelingen tusschen in geordineert worden, moeten digt en op deselfde Distantie als van de Bossen tot Brand- of Werk-hout te voren gesegt is, geplamt worden, op datse te verouden op groeien en dus vroeger Lommeringe maken”.²¹ (“Bosquets or Woods of wild Crops, that will only provide Shade in large Pleasure Gardens, and are arranged with Walks in between, should be planted densely and at the same distance as I described for Coppice-Woods, so they will grow tall faster for sheltered walks”.)

¹⁸ Dézallier (James edition) 1712 (see note 1), p. 65–66.

¹⁹ Dézallier 1712 (James-edition) (see note 1), p. 66.

²⁰ M. Noel Chomel: *Huishoudelyk Woordboek, Verwattende vele middelen om zyn goed te vermeerderen en zyne gezondheid te behouden*, Leyden/Amsterdam, p.518, 519, 521. A “toise” (French rod) is 6 feet or 1.949 metres.

²¹ J. H. Knoop: *Beschouwende en werkdadige hovernier-konst, of Inleiding tot ...*, Leeuwarden 1753, p. 393.

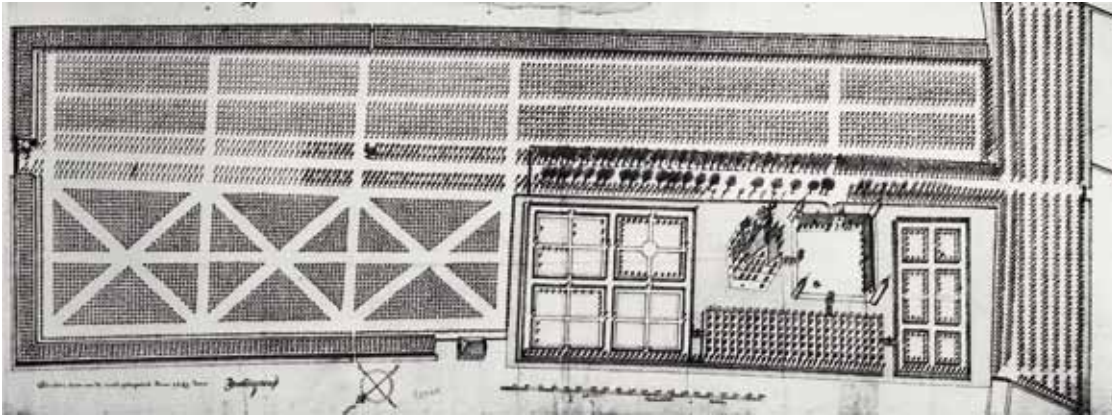


Fig. 8 Bird's-eye view by surveyor Jan van Diepenem, showing a detailed reproduction of the arrangement of trees and compartments at Zuylestein. The surrounding embankment was planted with four rows of trees, 1641.

The writers mentioned above all demonstrated that they were aware of the decorative value of forests, although, as stated before, in The Netherlands they could be cultivated for other motives as well. Historical sources indicate clearly that, apart from them satisfying aesthetical demands, forests were cultivated for wood production. The economical mentality of the Dutch could have been an important reason to invest earnings in land property. Afforestation on newly cultivated land was a favourite type of business at the time and rather profit-

able. Coppice wood provided a regular short-term profit, whereas the heavier wood from the avenues and plantations generated income in the long term. According to historian Willem Overmars, planting in coppice woods was more efficient and economical for wood production than avenues. He argues that planting valuable species in dense patterns generated higher profits than the single or double rows of trees from avenues.²² The revenues in the Zuylenstein book-keeping show that annually cut coppice wood could be a reliable source of basic income.²³



Fig. 9 Birds-eye view on "Garden and palace near the villa of Tivoli", original print 1525/35–1604, hand-coloured engraving from bound volume of Dutch, French, and Italian garden prints and engravings, probably assembled in eighteenth century. Published in Amsterdam: Pierre Mortier. Cartographer: After Etienne Dupérac

Enclosures

To protect young trees in the forests from the harsh Dutch climate or being eaten by animals, trees were planted on embankments to fence them. The Dutch court gardener Jan van der Groen (1624–1671) described the sheltering qualities of trees in 1670. He suggested several species, such as oak, abele, elm and even birch.²⁴ These windbreaks would be planted even before building started, so the trees would be tall enough to give shelter to the works under construction and to vulnerable new plantations.²⁵ De La Court also emphasized the importance of a garden fenced with a moat, wall, palisade, trellis or hedgerow in his book from 1737. And he too recommended the building of a windbreak beforehand to protect the woods behind it.²⁶ Species with thick but flexible branches and a strong and dense canopy, such as poplar, met these criteria. Also white- and red-stemmed willows were fit, which should be planted at a distance of three feet (0.94 metres).²⁷ De La Court did not mention the elm as a suitable species, but it was certainly used for lining and fencing the country estates of the stadholders. Sources refer to a “Ypen Mantengh” (an elm enclosure) at Zuylestein castle and Hofwyck Palace, that was used to separate the moat and the immediate surroundings of the house.²⁸ The “Ordenantieboek 1637–1640” of Zuylestein mentions elms being planted on the embankment of the outer fences, which confirms their sheltering function.²⁹

The basis for a good design should be a rectangular plan, because it enabled the best arrangement of garden ornaments.³⁰ In 1594 Stevin had thought this design principle the most suitable for the flat Dutch landscape.³¹ The layout should not be too large, while an artful pattern of paths deceived the stroller about the size of the park. Special objects should surprise and entertain walkers and provide a refreshing walk underneath the tall trees, hedges and groves. To enhance this experience there were no vistas with a view out of the park, into the landscape.³²

Already in 1570 Palladio had described that the location of a villa should be enclosed and separated from the surrounding pastures and fields by low walls or avenue trees, which heightened the visibility of the estate in the landscape. These design principles apply to Zuylestein on several accounts and can be recognized in other country seats of Frederik Hendrik.³³ At Zuylestein, the edging for the estate was designed in 1633. In 1639 it was built on an embankment that was flanked by ditches and planted with four rows of

elms in a triangular pattern on both sides of a grass path. Except for its drainage function, this planted embankment ought to keep intruders out. In addition it sheltered the newly planted trees and shrubs in the park from strong wind, served as a terrace for viewing the environs during a stroll through the garden and was a landmark from outside the property. The castle garden with geometrical wood sections was surrounded by a moat that was eventually replaced by a wall, which fenced it off. Only a shallow trace is still recognisable as the remnants of the moat. This closed set up is directed inwards and is a characteristic Dutch classicist design. Owners of country seats followed the example of the courtly gardens of the stadholder by surrounding their gardens with planted embankments, flanked by ditches or moats.

Path structures – diagonal or enclosing

Dézallier describes different kinds of walks in the parks; closed and open ones, single and double ones and white and green walks. The main promenade should be directed at the façade of the manor house

22 W. Overmars, H. M. J. Tromp and E. V. Buitenhuis: *Cultuurhistorische aspecten van lanen op Nederlandse landgoederen en buitenplaatsen*, s.l. 1987, p. 4. – Woerdeman and Overmars 1984, (see note 14), p. 19.

23 According to the ledgers wood sales provided an average annual income of 1186 to 4519 guilder. *Het Utrechts Archief: Rekeningen over het beheer van Zuylestein, leersum, Ginkel en Wayestein, 1814, 1831–1855*, access no. 1001 Huis Amerongen, inv.nr. 707.

24 J. van der Groen: *Den Nederlantsen hovenier*, Amsterdam 1670, pp. III and 12.

25 J. van der Groen 1670 (see note 25), pp. 6–7.

26 De la Court van der Voort 1737 (see note 3), pp. 1, 10 and 15.

27 De la Court van der Voort 1737 (see note 3), p. 187.

28 Overmars, Tromp and Buitenhuis 1987 (see note 23), p. 3.

29 NA, access nr. 1.08.11 Nassause Domeinraad inv.nr. 992 fol. 313 and 993 fol.38.

30 De la Court van der Voort 1737 (see note 3), p. 3.

31 Hopper 1983 (see note 2), p. 99.

32 De la Court van der Voort 1737 (see note 3), pp. 1–2 and 12.

33 Both for the palace of Het Loo as for Renswoude castle Palladios design principles were demonstrated by the author. See P.H.M. Debie and J. Holwerda: *Historisch Onderzoek lanenstelsel kasteelpark Renswoude*, Renswoude 2014. – P. H. M. Debie: *Historisch Onderzoek lanenstelsel paleis Het Loo*, Renswoude 2013.

or another attractive object. Examples of secondary ones were “the Parallel-Walk, the Strait-walk, the Cross-walk, the Winding or Circular-walk, the Walk returned square, and the Diagonal or Bevel-walk, in respect of that at Right Angles”.³⁴ In addition, level walks were distinguished from those with an easy descent. The width of the paths was in proportion to the length. For example, a path of 600 feet (188.4 metres) long had to be 30 of 36 feet (9.42–11.30 metres) wide. Dézallier suggests that forest paths lying further away from the main route could be more narrow.³⁵

The 1639 print of Zuylestein by surveyor Jan van Diepenem shows three *sterrenbossen* with paths in the form of a diagonal or Saint Andrew’s cross (see fig. 10). Two paths divide the forest diagonally, corner to corner, a third one intersects it at a right angle in the middle and is aligned with the façade of the manor house to form a vista. In 1540 this layout had already been applied to three wood compartments in the garden of villa d’Este in Tivoli by the Italian painter, architect and writer Giorgio Vasari (1511–1574). Its gardens are arranged on a slope in a grid along a central axis. De La Court described the form of Saint Andrew’s cross as the most advantageous to deceive the eye. Particularly in small gardens, avenues at an oblique angle could give an impression of depth, although he recommends a square angle as the best option for small forests.³⁶ This might be the reason why at Zuylestein *sterrenbossen* were not created everywhere.

34 Dézallier 1712 (James-edition) (see note 1), pp. 51–52.

35 Dézallier 1712 (James-edition) (see note 1), pp. 52–54.

36 “Een Gelyck-beenige Driehoek is de voordeeligste omtrek, om het oog te bedriegen; voornamentlyck op Plaetzen van eenen kleinen grond: maer de Laeningen komen aldaer, om dat ze scherphoekig vallen, voor het oog zoo bevallig niet voor, als die regthoekig zou eindigen”. Een Gelyk-zydige beslaet meer grond, en maekt geen zoo lange Laen-gezigten: ook komen de buiten-laeningen hoekig te eindigen. Ongelyk-zydige zyn nog nadeeliger. (“An equilateral triangle is the most favourable perimeter to deceive the eye; especially when applied to small terrains. But these avenues are not so elegant to the eye, because they meet at a sharp angle, as when they would have ended at a right angle. An equilateral one covers more ground and does not create long perspectives, besides, the outer the outer avenues will end at an angle. Scalene triangles are even less advantageous.”) De la Court 1737 (see note 3), p. 4.

37 De la Court 1737 (see note 3), p. 5.

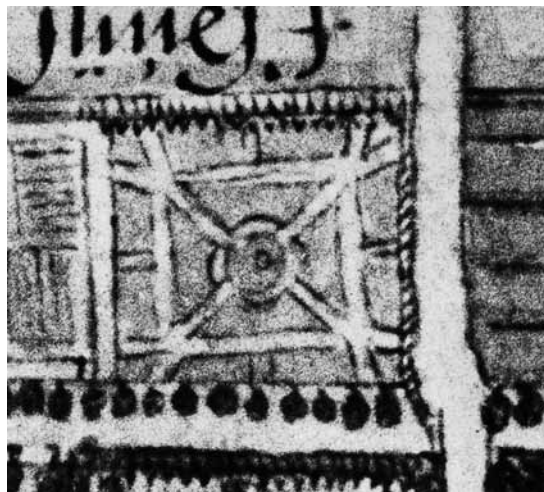


Fig. 10 (top) Section of a map of surveyor Jan van Diepenem, showing three *sterrenbossen* planted in front of Zuylestein castle within a surrounding embankment with trees. The oblong squares existed of open forest, 1639

Fig. 11 (left) Detail of the first *sterrenbos* called *Wercken van Plaisantie* (Works of Pleasure) or pleasure grove at Zuylestein, by Hendrik Vers-tralen, 1633

The diagonal cross would create the best perspective for a “lange Laen-Gezicht” (“view of a long avenue”) in the small wood compartment. The paths generally were two rod (7.534 metres) wide and consisted of “hooge Scheer-heggen” (high clipped hedges).³⁷ Because planting behind the hedgerows was kept low, the perspective could be experienced constantly. At Zuylestein the diagonal paths were about 110 metres long. On horseback this was a relatively short distance, which could be covered in sixteen jumps of a galloping horse. In Zuylesteins *sterrenbossen* there would be no “persue-hunting”, which prince Frederik Hendrik loved so much, as they were not large enough for this type of hunt. The straight avenue to the “WafelIJzer” was most probably used for this type of hunt. Therefore prints of *sterrenbossen* do not show hunting scenes, but

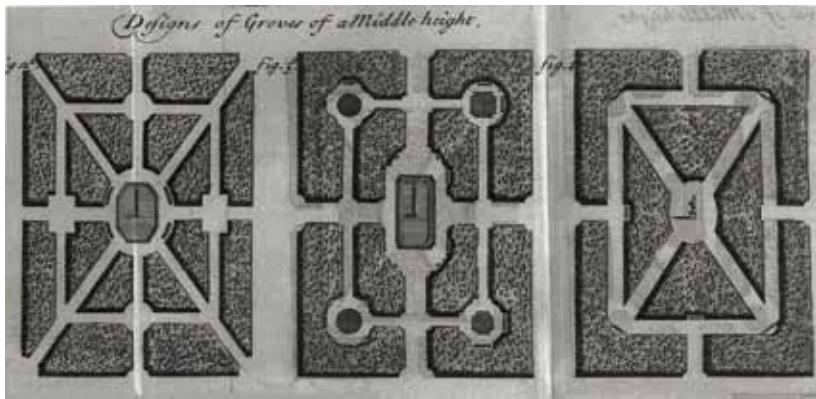


Fig. 12 Three models of sterrenbossen, "Designs of Groves of Middle height", taken from Dézallier d'Argenville. The left model has a remarkable resemblance to the Zuylestein pleasure grove of 1633.

they do depict walkers in the avenues (see fig. 14). And Dézallier mentioned the particular effect that sterrenbossen had on a walker.³⁸ Hunting in these woods possibly took place on foot, or not at all, so the sterrenbossen only served as pleasure garden or maze. This seems to be confirmed by a drawing of 1633 picturing the first sterrenbos at Zuylestein. Its author, surveyor Hendrick Verstralen, referred to it as "Wercken van Plaisantie" ("Works of Pleasure") (see fig. 11). In the centre of this wood was a pond, around which paths were laid out in a square, with diagonal paths that ran towards the middle and bifurcated from the outer angles. From the middle of the sides of the square four short connections ran outward. This sterrenbos at Frederik Hendriks Zuylestein can be regarded as a very

early example. It was copied frequently and actually included as a model in Dézalliers book seventy-six years later (see fig. 12).

The models are somewhat similar to the design made from 1504 by the architect Donato Bramante (1444-1514) for his high Renaissance garden on request of Pope Julius II. Bramante's landscaping was situated between the villa Belvedere and the Vatican Palace. It controls the landscape with terraces, steps, walls and hedges with antique statuary. This specific part, the enclosed garden surrounded by hedgerows, shows two ideal architectural forms; the square and circle. Indeed, as the author Roy Strong stated, Bramante's garden design had a revolutionary influence on garden planning, as they were adapted in the design by Prince Frederik Hendrik (1633) for Zuylestein and later in the models of Dézallier d'Argenville (1709) (See fig.13).

In his book Dézallier shows various models of a grove cut by different square-shaped or radial path structures, like a double star or Saint Andrew's cross. In the centre is a "Sale de Jardin", furnished with a variety of "Halls" and a fountain in the middle, with yew evenly planted around it.³⁹ These "Halls" or cabinets were always situated in a way that there was a view of at least three paths, which together formed a goose foot. They were small and sophisticated and should be discovered while strolling. The changing perspective offered beautiful views

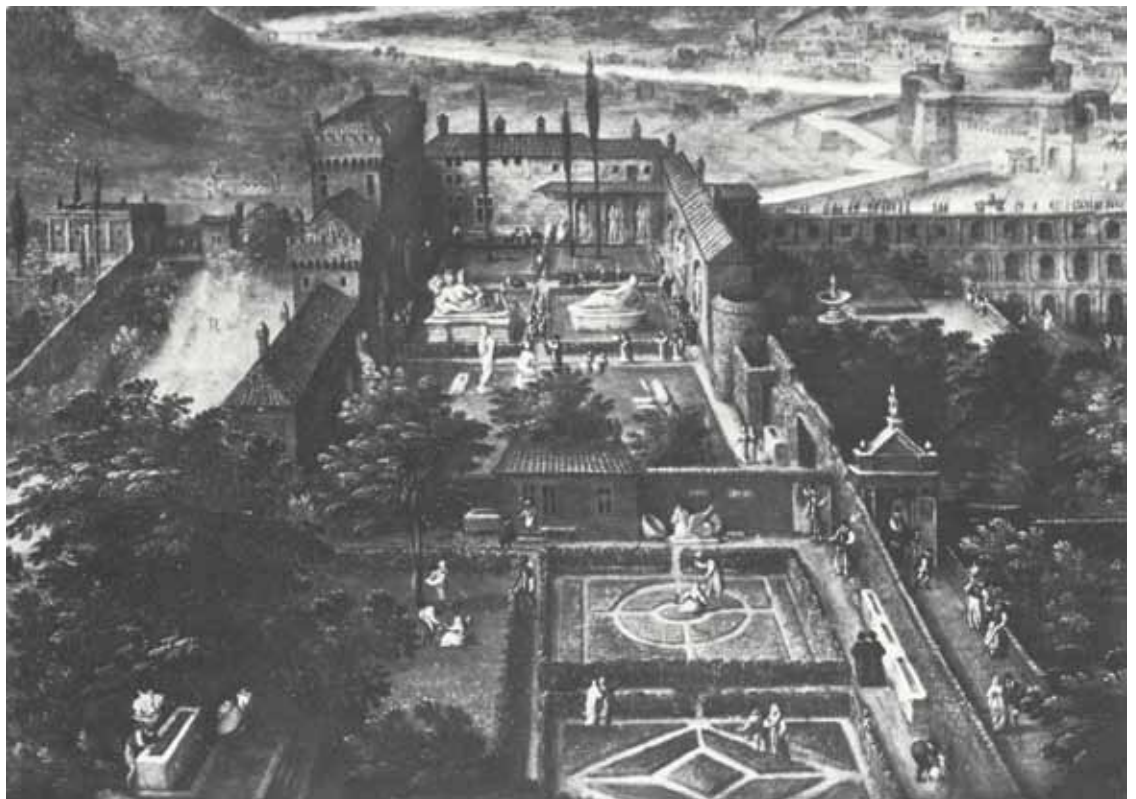
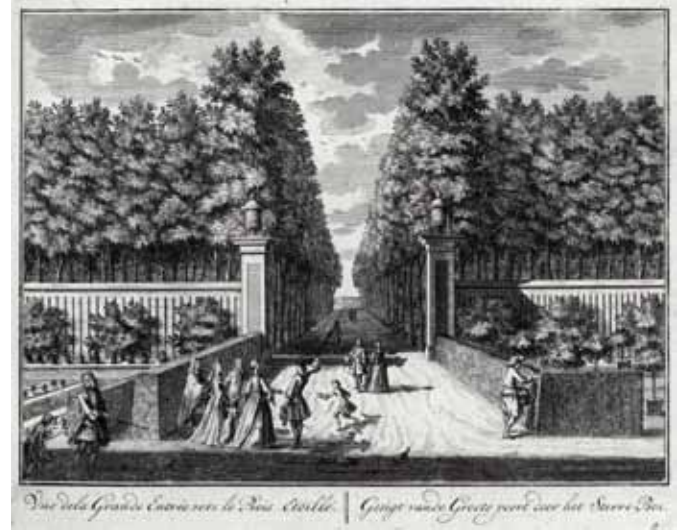


Fig. 13 Detail of the high Renaissance garden (1504) by Donato Bramante. The enclosed garden shows two ideal architectural forms; the square and circle. "The Vatican and Belvedere", Painting by anonymous artist, second half of the sixteenth century. Formerly Kunsthistorisches Museum, Vienna



through the avenues.⁴⁰ This can be seen in the sterrenbos of palace Het Loo, which was planted about 1686–1692 and consisted of six lanes with high clipped hedges and a central fountain (see fig. 14).

38 Dézallier 1712 (James-edition) (see note 1), pp. 64–65.

39 A “Sale de Jardin” or “Hall” is a large and evenly shaped square where the French held banquets. Dézallier 1712 (James-edition) (see note 1), pp. 74–75.

40 Dézallier 1712 (James-edition) (see note 1), p. 67.

41 Dézallier 1712 (James-edition) (see note 1), p. 69.

42 F. M. Maas: Van theekeopel tot caravan, de buitenplaats als bijdrage tot de landschapsvorming, Delft 1967, p. 6. – C. L. van Groningen: De Utrechtse Heuvelrug, deel 1: De Stichtse Lustwarande. Buitens in het groen, Zwolle/Zeist 1999, p. 224.

43 “Uitgave aengaende verbeteringe ende reparaties aen Thuyn hoogheits Huys te Suilesteyn Betaelt [aan] André Mollet Opsichter van Syne hoogheits Thuijnen (...) voor reys ende teercosten bij hem verleit, gaende door last van Syne Hoogheit naar Suilesteyn om de Thuijnen aldaer te besichtigen by Specificatie ende Quitantie overgenomen opde Maendrekeninghe vande Domeyn Maert 1634 20 verso”. (“Spend for the improvement and repair to the Garden of [his] highness’ House of Zuylestein, paid [to] André Mollet Supervisor of His highness’ Gardens [...] for travel and consumption expenses he made, going to Zuylestein by order of His Highness and view its Gardens according to the Specification and Receipt copied to the Monthly Account of the Domain, March 1634 20 verso”). NA, Nassause Domeinraad, folio. access nr. 1.08.11, inv.nr. 1043 fol. 243.

44 V. Bezemmer Sellers: Courtly Gardens in Holland 1600–1650. The house of Orange and the Hortus Batavus, Amsterdam 2001, pp. 35–36 and 330. NA, Nassause Domeinraad, access nr. 1.08.11, inv.nr. 1042 fol. 232.

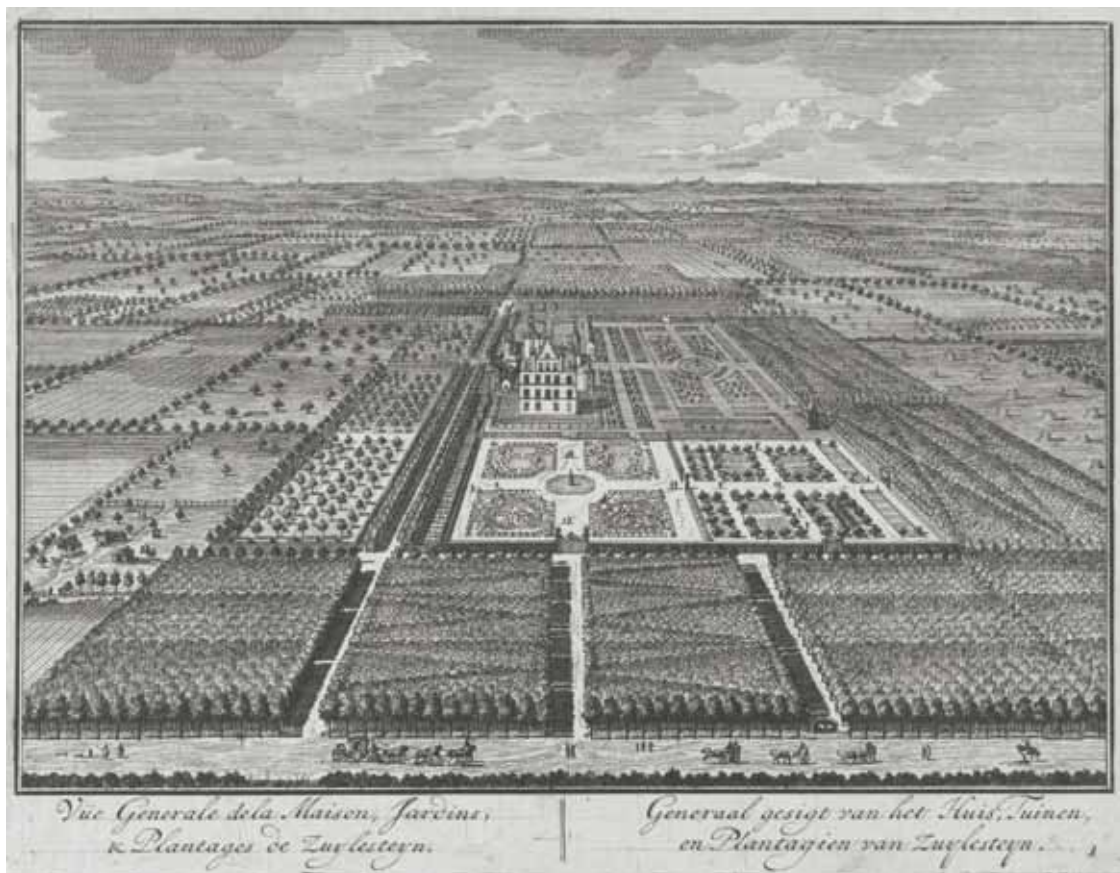
The resemblance between the first sterrenbos at Zuylenstein of 1633 and the example of Dézallier of 1708 is remarkable. In both designs paths cut through the forest in the shape of a diagonal cross and led to a large central square with a fountain. They end in four cabinets. According to Dézalliers description two of these were used for dancing parties, the other two, which had turfed seats and were decorated with statues and flowers, served as resting-places. The whole had the effect of a green theatre.⁴¹

This first sterrenbos at Zuylenstein may well have been a source of inspiration for French garden architects. Both André Mollet (c. 1600–1665) and Daniël Marot (1661–1752) visited the estate. Mollet came to The Netherlands to advise prince Frederik Hendrik on the design of, among others, the gardens of Huis Ten Bosch in Den Haag and of the castles at Breda and Buren.⁴² On the fifth of march 1634 the accounts of the domain of Nassau mention a payment to Mollet of twenty-six pounds and fourteen shilling for his work visit to the gardens of Zuylestein.⁴³ Mollet gained fame by the work he did with his father on the parks of Fontainebleau, the Tuileries and Saint-Germain-en-Laye. Since 1630 he was employed at Honselaarsdijk Palace, for which he designed the parterres. As “Franschen architect hovenier” (French architect gardener) he received an annual allowance of eight hundred pounds for the work he did for the gardens at Buren, Honselaarsdijk and Zuylestein, whereas other gardeners received three hundred pounds on average. Mollet was not the author of the overall garden design. He supervised and directed the execution of it for the princely gardens of Frederik Hendrik.⁴⁴ The publication of his “Le Jardin de plaisir” in 1651 enhanced his status. His work at Zuylestein was relatively modest, indicated by only one allowance,

Fig. 14 (left) Square with six lanes at Palace Het Loo, by Romeyn de Hooghe, 1700. The entertainment in the sterrenbos varied from walking and playing to strolling. The falconer on his horse would have given demonstrations for the audience at the scene. Because of the presence of beautifully dressed women, children and precious sculptures, it is unlikely that rough hunting parties would have taken place here.

Fig. 15 (right) “Gesigt van de Grooten poort door het SterreBos” (“View on the main gate through the Sterrenbos”) at Zuylestein by D. Stoopendaal, 1710. The third expansion is situated on the north side and consists of four sterrenbossen. The outer trees of each compartment were clipped to create a perfectly straight frame for the avenue.

Fig. 16 Bird's-eye view of Zuylestein by D. Stoopendaal, 1710. Around the castle seven sterrenbossen and various plantations can be seen. Avenues connect the gardens to the surrounding landscape.



and suggest that, apart from designing the parterres, Mollet only would have performed the task of inspecting the execution.⁴⁵ Because he was known for his decorative details and much less for architectural design or modifications, he probably executed the personal instructions of Frederik Hendrik. The stadholder had a thorough knowledge of architectural principles and redesigned and detailed the gardens at Huis ter Nieuburch in Rijswijk himself. He preferred his own design to that of the talented Dutch architect Jacob van Campen (1596–1657) and guided his visitors proudly around his palaces, where he discussed architecture, art and horticulture with them afterwards.⁴⁶ It is therefore plausible that Frederik Hendrik had a personal involvement in the design of Zuylestein. In any event, the first purchases of land for the execution of an expansion plan for a grove were done on July thirtieth 1634, after an inspection by Mollet. That day, two parcels of land by the size of seven rods and two “morgen” (a Dutch measure for the land that could be ploughed in one morning) were acquired for fourteen hundred pounds.⁴⁷

The sterrenbos in front of the castle, which had already been realised, was partly transformed to improve the unity of the garden. The grove was characteristically arranged in three sections accord-

ing to “sesquitertia”, the Pythagorean-Vitruvian harmonic ratio or multitudes of three that Alberti had described and recommended for small plans and that were applied for the first time to the gardens of Honselaarsdijk in Naaldwijk.⁴⁸ Of particular interest is a comparison with the wood compartments in a grid arrangement around the ornamental gardens directly behind the palace of Honselaarsdijk, because they are very similar to the wood sections in grid lay out at Zuylestein. The wood compartments at Zuylestein, that measure 75×75 metre, are almost identical to the ones at Honselaarsdijk, being 20×27 Rhineland rod or 75×101 metre.⁴⁹

Frederik Hendriks ideas were spread in France by Mollet, after he visited the stadholder gardens of Honselaarsdijk, Buren, Zuylestein and others. In the foreword of his book he recognised that it was based on the instructive period he spent in The

⁴⁵ Bezemer-Sellers 2001 (see note 45), p. 145.

⁴⁶ Bezemer-Sellers 2001 (see note 45), pp. 170–171.

⁴⁷ NA, Nassause Domeinraad, access nr. 1.08.11, inv. nr.1043 fol. 304 verso.

⁴⁸ “De bouwmeester van het heelal heeft alle dingen in drieën beschikt”. (The architect of the universe has ordered everything in three parts) Hopper 1983 (see note 3), pp. 106–112.

⁴⁹ Hopper 1983 (see note 2), p. 111.

Netherlands and other countries.⁵⁰ Still, in his book he was not very specific on the woods with paths laid out in a diagonal cross. He particularly emphasized the artful detailing of the parterres. Fifty-eight years after Mollets publication Dézallier did pay attention to these radial paths and sketched a whole range of varieties.

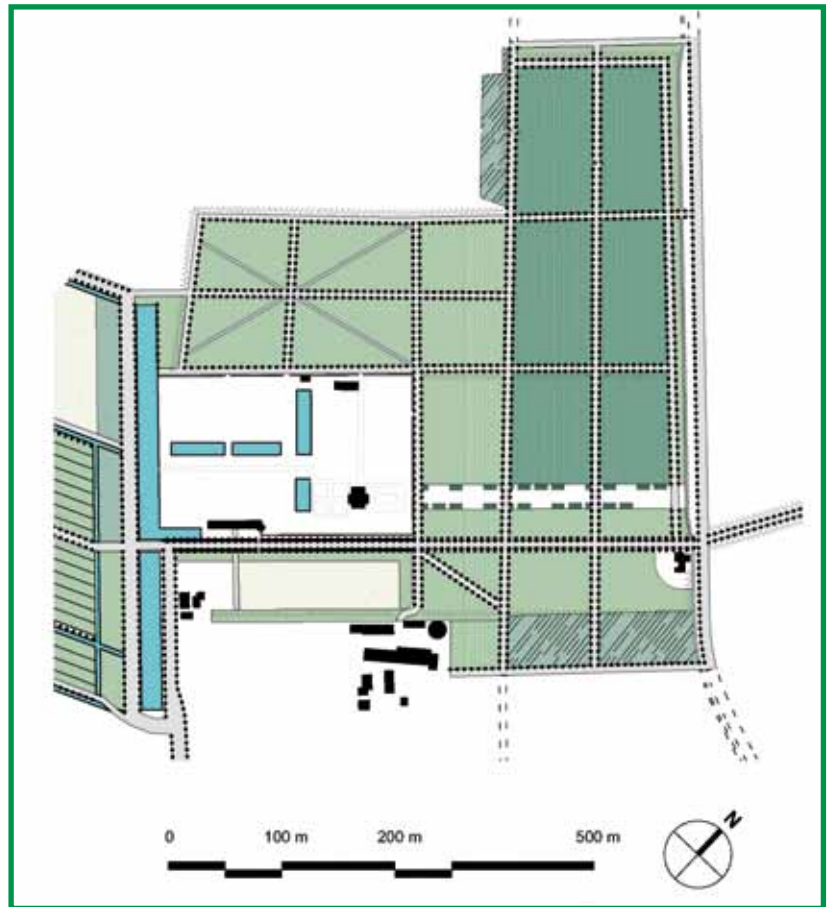
In 1672 Frederiks grandson, Willem van Nassau Zuylestein (1649–1708), became the new owner of Zuylestein. During his ownership the groves on the ridge (Heuvelrug) were expanded up to thirty compartments altogether, nine of which are arranged with diagonal paths. The entire plan was laid out with five main avenues that connected the castle and the forest with the surrounding landscape. Willem van Nassau Zuylestein also had the manor house modernised by the French architect Daniël Marot.⁵¹ Marot will certainly have seen the *sterrenbossen* at Zuylestein, both the three sections that were planted in front of the castle in 1639 and the ones added to the north of the castle about 1646 (see fig. 16). He designed twenty-four garden models, of which six were published in 1702 and eighteen in 1712. One of them was designed specifically for a bosquet, four were commissioned by clients, among whom Baron d'Obdam of Twickel estate in the province of Overijssel. The designs were influenced strongly by the traditional style of the Dutch Renaissance.⁵² The French garden architect Le Nôtre too was focussed on the secure detailing of parterres, which is demonstrated by the arrangement of the bosquets at Versailles. Dézallier incorporated these examples in his book.

Following the example of prince Frederik Hendrik, country seats with *sterrenbossen* were built on the “Utrechtse Heuvelrug” and further to the east. A few of many examples are Amerongen Castle (1696), the castles of Renswoude (1705) and De Slagenburg in Doetinchem (1679). This brought a new dimension into Dutch gardens, that were not only situated on flat land and polders, but on higher grounds as well. The latter were preferred because of the existent height differences, which could be used in the design.

⁵⁰ Hopper 1983 (see note 2), pp. 109–110 and 112.

⁵¹ Daniël Marot redecoreated parts of the interior of the manor house at the end of the 17th century. Van Groningen 1999 (see note 42), p. 225.

⁵² F. Hopper, “Daniel Marot: A French Garden Designer in Holland”, in: J. D. Hunt (ed.): *The Dutch Garden in the Seventeenth Century*, volume 12, Washington 1990, pp. 138–138.



Conclusion

Dutch stadholders influenced the development of garden art by introducing a rectangular grid in the layout of forests. They were edged with tree avenues and water, elements that eventually became characteristic components in the layout of country seats. Not all the grid-compartments were executed with star shaped forests. This was depending on size and use. The rectangular grid however was always characteristic for the parkdesigns of the stadholders. The Dutch term “*sterrebos*” represents in Holland therefore a park set out in geometric gridpattern, weather or not it exists of cross-woods of star shaped forests.

The harsh and windy Dutch climate demanded densely planted windbreaks to shelter the garden from wind and sun, to fence it off and to demarcate it in the landscape. However, the ample use of trees was not just functional, it defined the aesthetic qualities of the architectural design of house and garden. Besides that wood was a profitable export product and represented quite a capital. Because of these advantages of cultivating forests, the French love for wide views never became very popular in

Fig. 17 Layout of the situation in 2021. The grid arrangement of Zuylestein has barely changed. In the 20th century some compartments have been merged and lined with several beech avenues. From the original twenty-eight rectangular sections twenty-three sections have been preserved, but almost all diagonal paths have disappeared. The only diagonal path with treelanes that still exists, is a 1895 reconstruction at another location of the garden architect Hugo Poortman (1858–1953). After the research in 2012 the westside has partly been restored.

The Netherlands. Instead, the old and long Dutch tradition emanated from classical Italian architectural principles, which were adapted to local ingenuity and taste. Or, like garden architect Springer wrote in 1896: “De oud Hollandsche tuinkunst van die dagen, [...] heeft door plaatselijke omstandigheden, enz. een eigenaardig [Hollands] cachet gekregen, dat wij in werken van zuiver Franschen oorsprong missen”.⁵³ (“Due to local circumstances etc., the old Dutch garden art of those days gained a particular [Dutch] cachet, that we miss in works of purely French origin”).

In literature on Dutch country seats the grid layout of *sterrenbossen* hasn't been discussed properly. The relatively plain execution of these forests must be interpreted as characteristic for the Low Countries, where it spread from the stadholders court. In France this was further developed by well-known authors as Mollet or D ezallier d'Argenville. Different French, English and Dutch garden treatises generally repeat the basic principles that the stadholders applied to the design of *sterrenbossen*. These principles were put into practice in France at a large scale, where they led to a conspicuous change of style towards French Classicism. The enclosed Dutch garden was opened up with carefully directed views into the surrounding landscape and transformed into a collection of richly decorated groves.

Considering the way it spread, the *sterrenbos*-fashion can be traced back to the basic principles of prince Frederik Hendrik and the first little grove at Zuylestein, called “Wercken van Plaisantie” (Pleasure Grove). Despite the involvement of several French garden architects, their “modern” style did not affect major changes to the plain and closed grid layout of the Zuylestein *sterrenbos*.

Credits

- 1 Print collection, map 184 20038627BKD (c), Delft University of Technology
- 2 National Archives (NA), Hingman Collection, inv.nr. 3039-10
- 3 Plan of 1633, Caerte vande jurisdictie van de Ridderhoff-stee van Zuylensteyn ende het dorp Leersum, by surveyor Hendrick Vers-tralen. NA, Hingman Collection, inv.nr. 3035
- 4 Het Utrechts Archief, archive of the hunting court 1749–1795, inv.no. 3.2.27-32.28-2
- 5 S. Stevin, Vande Oirdeningh der Steden, Leiden 1649
- 6 S. Stevin, Castrametatio, dat is legermeting, Rotterdam 1617, p. 44–45
- 7 A. Mollet, Le Jardin de Plaisir, Stockholm 1651, p. 58
- 8 Nationaal Archief, Hingman Collection, inv. nr. 3039
- 9 Private Collection, New York. BGC image no. 200434. Courtesy of Catena Historic Gardens and Landscapes Archive, Bard Graduate Center, New York
- 10 Rijksdienst voor Cultuurhistorisch Erfgoed, Beeldbank nr. 2023373
- 11 Rijksdienst voor Cultureel Erfgoed, beeldbank nr. 223367
- 12 D ezallier d'Argenville, La th orie et La pratique du jardinage, Paris 1709, no page nr. Plate 4th C
- 13 R. Strong, The Renaissance Garden in England, London 1979, p. 19
- 14 Romeyn de Hooghe, Gesichten op Paleis Het Loo, Rijksmuseum RP-P-OB-102.033
- 15 House archive Zuylestein and Het Utrechts Archief X67676 – 136028
- 16 Huisarchief Zuylestein and Rijksmuseum RP-P-1899-A-21492
- 17 Debie & Verkuijl Renswoude.

53 L. Springer: “De waarschijnlijke ontwerper van het koninklijk stadhouderlijk park ‘Het Loo’ te Apeldoorn”, in: Tijdschrift voor tuinbouw, 1 (1895), p. 115.