

COMPOSITIONAL DEVELOPMENT OF SPACES RELATED TO THE FORTIFICATION OF CITIES FROM THE POINT OF VIEW OF GARDEN ART AND LANDSCAPE ARCHITECTURE

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Abstract

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The article deals with the specific urban and suburban spaces where landscape design and garden art were confronted with existing or later disappearing fortification system. It analyses structures related to the landscape architecture from the baroque and classical times to the era of the pseudohistorical style, from the end of the 17th century to the end of the 19th century, with special interest devoted to the less known historical forms of the 18th century and their development. Using detailed historical maps and plans, the research reveals elements of landscape architecture in smaller or larger scale of several types – gardens close to the city walls, tree plantings and gardens on the fortification bastions, gardens and promenade alleys under them on the glacis or private gardens on the surrounding grounds, that were still influenced by the existence of the fortification system.

Two historically important Moravian cities were used here as an example – Brno and Olomouc, where main types of green spaces (near the walls on their both sides) and several possible ways of their development were followed and analysed, and specific types of compositional and spatial development were defined. These could be understood as basic ‘evolution types’ specific for central European cities in general, and can be found in variations in other cities and towns in this region.

city walls, fortification, bastion, glacis, baroque garden, alley, city park

Baroque fortifications of cities in central Europe represent a specific phenomenon of the 18th century that could be perceived as both urban or landscape structures, or their borders. These huge structures divided strictly the city and the surrounding landscape, where private baroque gardens were the possible retreat of wealthy citizens.

The decrease of the city walls’ importance for the defence (together with the growing number of the citizens) resulted in considerations of their further existence. They began to be regarded as an obstacle of urban development and became a subject of discussions and negotiations between the city representatives and the military administration. These processes resulted in many cases in the re-arrangement of city walls in space and purpose

by layout of promenades, small city gardens, restaurants etc., or later the whole disposal of large fortification structures and inclusion of their grounds to the city expansion plans. In the second case, existing classicist (or early 19th century) tree alleys on glacis could become the compositional axes of future city parks; if not, they sometimes remained at least as alleys along the main roads in newly built-up quarters.

There still remain unknown structures (gardens, tree plantings, alleys) which existence was somehow related to the fortification system. They were either existing too close to it and later had to be liquidated for the reasons of defence or in opposite they were laid out on the fortification elements when the outdated fortification system provided them

suitable spaces; also these often disappeared in the time of urban growth in the 19th century. Many of these structures were until now known in literal sources only, without their precise localisation and visual support – their graphical documentation on historical maps and plans. These gaps were partly filled in by this research. It thematically follows the results of the dissertation thesis of the author (ŠAFÁŘOVÁ, 2010) that was aimed at 19th century parks of Olomouc and Vienna and several older unknown baroque gardens were found by chance. The further research was focused on the development of the green spaces in the 17th–19th century. For this text, the most important gardens and similar element of designed greenery were chosen to present the specific types of green spaces related to the fortification.

MATERIALS AND METHODS

The research was carried out in several stages. First, the elements related to garden art and landscape design within the city walls and the nearest countryside were defined as main issues of the interest. Their known development was already partly summed up in the author's dissertation (ŠAFÁŘOVÁ, 2010) which provided the basic information for the further research, where newly found graphical documents played the role of the main source. These included above all old maps in archive collections of the Austrian State Archive in Wien. The existence and development of green structures of the 17th–19th centuries were analysed in three main areas – inside the city walls, on the fortification elements and outside the walls in the countryside. Further division was according to the scale – larger units such as whole glacis and smaller units as particular gardens, parks etc.

In the second stage, the historical documents were completed in the following archive collections: the Austrian State Archive, subsidiary War Archive, Vienna (ÖStA – Österreichisches Staatsarchiv, KA – Kriegsarchiv, Wien); they were located in Collection of Maps and Plans (*Karten- und Plansammlung*), its two parts called Collection of Plans (*Kartensammlung*; from here the collection of *Städtepläne und Stadtumgebungskarten*), and Engineer- and Plan Archive (*Genie- und Planarchiv*, from here the collection of *Inland*). The graphical documentation for Olomouc related to the topic used several maps gained in the previous research, related above all to the 19th century, and completed them by the maps and plans of the earlier time (the 17th and the 18th century) – the oldest one dated in 1694 (see Fig. 1), the latest in 1824. The same archive source was used for searching for the graphical documentation for Brno. All the accessible maps and plans were browsed and analysed documents with depicted

green spaces. The most significant documents were gained in digitalized copies provided in the scale of 1:1. The oldest map of Brno was dated 1699 and the latest one 1909.

In a last phase of the research, these copies of maps and plans were analysed in detail; gardens, alleys and parks were examined as for their creation, development and existence during the time; if possible, they were identified according to written sources – legends on the maps or another texts. The development of the green structures was viewed together with the development of the fortification spaces, focused on the most specific or unknown elements of greenery. The results for these elements existing in the mentioned period (17th–19th century) were summed up and derived specific types, their usual spatial composition and ways of development.

RESULTS AND DISCUSSION

There are three main areas characterized by different starting conditions for possible existence of gardens and similar layouts of the greenery: the first are premises within the city walls, the second one fortification elements and the third one the glacis, blending into the landscape with village settlements. The development will be followed according to this division.

1. Green spaces on the premises within the city walls

Urban premises close to the fortification present the first type of space. Their usage as gardens or for similar purposes was relatively small in case of the both Moravian cities of Brno and Olomouc, represented above all by gardens and inner courtyards of monasteries located by the city walls (spare yards or gardens of private houses are here not researched). These monastery green spaces existed in medieval times as well, in the baroque epoch they continued at similar places (the yards), were arranged in contemporary style and the plans of the cities show even gardens extended to the city walls – sometimes with trees (orchard) or broderies (ornamental garden).

There were several gardens by monasteries close to the city walls in **Olomouc** as well. They are depicted on a plan of the city dated 1833–1834.¹ The gardens are by the Monastery close to today's Kateřinská Street in the south of the city – *Urschuliner Kloster* and by the Dominican Monastery in the north of the city. Further gardens we can see between the canonical houses and medieval walls (today's by Křížkovského Street) and by the Jesuit Convict (today's Univerzitní Street). These monastery and other gardens are depicted also on later city plans; one of them dated 1842² shows also a garden by

1 Plan of Olomouc in 1833–1834. ÖStA, KA Wien, KPS, Inland, C IV α) Olmütz No. 13.

2 Plan of Olomouc in 1842. ÖStA, KA Wien, KPS, Inland, C IV α) Olmütz No. 41.

the Capuchin Monastery (*Kapuziner Kloster*) in the southeast end of the city, by the theological school – *Seminarium* (today by the theological faculty next to the Michael's Church), by the bishop's residence (by Křížkovského Street), and by the Dome Church of St. Wenceslas (*Domkirche*). The same gardens are drawn on the map dated by years 1846–1866³ and later; most of them stayed in their places until today. They have the same size or were just partly reduced in space; the inner composition has changed.

As for **Brno**, garden and two inner yards with plants were located by the Jesuit Monastery (northeast of the city centre, today between the streets of Jesuitská and Dvořákova). The yards and the garden, located between the monastery and medieval walls, are depicted on the town planes dated 1729⁴ (see Fig. 3) and 1754⁵ (see Fig. 4). Both yards are laid out regularly, divided by two axes to four fields and a central circle. On the eastern yard, there were trees planted on the edges of the green fields. This block of buildings exists until today but was several times rebuilt during the 19th century, changed in disposition and the garden quite disappeared – were in place of today's Municipal Court building.

The green stripe hinting on existence of gardens by the bishop's residence in Brno, close to the fortification of the Petrov hill, is depicted on the less detailed plan of the city from 1741⁶. The larger Capuchin Gardens occur on the later plans – a plan from 1824⁷ and a detailed plan from 1827⁸ that shows the garden situated on two levels (terraces), with nearly symmetrical composition impressed by the central axes and similar ornamental fields on her sides. The Capuchin Gardens stayed on their place until today but changed in composition and purpose – they were changed to a public park connected by the terraces around the hill of Petrov.

The composition of the gardens by monasteries and other important buildings by the city walls influenced the shape of the green space quite strictly; if these gardens were preserved, the changes were possible in their inner disposition – in vegetation and architectural elements. The gardens were usually affected by inadequate maintenance and especially in case of monastery yards, changes in their usage since the end of the 18th century (transfer to military purposes, hospitals) as well as during the 19th and 20th centuries.

2. Green spaces on fortification elements

These spaces were limited by the city walls of medieval to baroque origin. They were usually of a linear shape, often between the parallel walls

(inner and outer), or of a pentagon shape if located on the baroque bastion. The whole layout of these gardens (their shape, size, division in field) was more than in other places strongly impressed by these specific conditions.

Gardens and similar green spaces existed on fortification elements of Brno in various forms, as we can see on many newly found historical plans of this city, whereas they are spare by Olomouc where the military defence interests prevailed.

As for **Olomouc**, there were several promenade alleys along the older city wall by the northern gate called *Franzen-Thor* (next to the Dominican gardens), shown on the above mentioned plan dated 1833–1834. These first city alleys and later a public park of Olomouc were built up during the 20th century; only a small piece with several trees stayed there close to the cross of streets of Na Střelnici and Studentská.

On the 17th–18th century plans of **Brno** we can find many interesting drawings of less known or quite unknown gardens that existed between the medieval (inner) and baroque (outer) city walls, or on baroque bastions. These green spaces seem to origin in baroque times (or at least, there were not found older maps depicting them by the author of this text). For a better orientation, there is a list of bastions of the Brno's fortification circle from the northwest clockwise, with their most usual names and numbers (both may be slightly different on various maps and plans):

- I. *Frölicher Bastion* or *Frölicher Bastei* (Cheerful of Merry Bastion), to the northwest;
- II. *St. Thomas Bastion*, to the north;
- III. *Iesuiter Bastion* (Jesuit Bastion), to the north-east;
- IV. *Mayntzer Bastion* (Maintzer Bastion), to the east;
- V. *Lermen Bastion*, to the southeast;
- VI. *Iuden Bastion* (Jewish B.), to the southeast;
- VII. *Lampel Bastion*; to the south;
- VIII. *Brünner Bastion*; to the (south-) east.

Between the bastions number I. and VIII., there are slopes and fortification walls of the Spielberg Fortress.

We can find gardens connected with a certain building or standing separately. On the northern outskirts of the city of Brno, by the bastion called *Frölicher Bastei* there was a small garden of the apartment building of the local military commander, on the map described as '*Des Kaijserl. Stuckhaubtmanns quartier*'. Towards the east, there are depicted walled free spaces by the small houses with flats of the imperial engineers. These were accompanied by gardens as well but are shown yet as free space on

3 *Plan of Olomouc in 1846 (1866–1879)*. ÖStA, KA Wien, KPS, Inland, C IV α) Olmütz Nr. 62.

4 *Plan of Brno, 1729*. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 12.

5 *Plan of Brno and Fortress Spielberg, 1754*. ÖStA, KA Wien, KPS, GIh 0043.

6 *Plan of Brno, 1741*. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 13.

7 *Plan of Brno, 1824*. ÖStA, KA Wien, KPS, GIh 0048.

8 *Plan of Brno, 1827*. ÖStA, KA Wien, KPS, GIh 0050.

this plan.⁹ These small houses were located in space between today's Solniční and Joštova Street. A green stripe indicating the existence of gardens is drawn by them already on the plan of Brno from 1699¹⁰; formal baroque gardens with more complicated composition are captured in detail on the map of Brno dated in 1754¹¹ (another plan than the previous one from the same year), especially on the detailed plans of the fortification from 1766¹² (see Fig. 5), where also the house (with a garden) of General and Field Marshal *de Rochepin* is named, and then on the plan from 1782¹³ (see Fig. 6), that shows their symmetrical composition and ornamental character.

On the bastions of the baroque fortress of Brno we can find first gardens or similar green spaces already on the plan from 1729¹⁴ mentioned before. These are situated on the eastern side of the fortification, on the Jesuit Bastion (in the legend '*Jesuitter Pastey*') and the Maintzer Bastion ('*Majntzer Pastey*'). Both are divided by longitudinal and transverse axis, in one part with central circle as green fields. Several trees are drawn also above the inner (medieval) wall near the Jesuit bastion.

These two formal gardens are depicted on the map dated in 1754¹⁵, together with following ones: formal garden on the bastion by the Brno Gate (*Brünner Thor*; without the name of the bastion here), a small garden with trees on Jewish Bastion and a formal garden and freely planted trees between the *Laermen (Larmen) Bastion* and its lower side wall. Trees without a distinct formal composition are here also between two inner medieval walls by the *Lampel Bastion* in the south.

Strictly regularly and symmetrically composed garden with a small building, probably a summerhouse, called '*Graff Althansches Gartl*', fills the whole space of the Jesuit bastion on the plan of Brno's fortification from 1766.¹⁶ The garden still exists on the plan from 1770.¹⁷ The garden is not depicted on the above mentioned plan of fortification from 1782; the small building stayed here only.

Great spatial development as well as social use of the green spaces on the bastions of the city of Brno are evident on two plans of the city fortification dated 1835¹⁸ (see Fig. 7). The composition became more irregular and new buildings enhanced the

space, bringing new functions – a small circle pavilion inspired by and antiques temple on the *Mayntzer Bastion* and even an amphitheatre on the *Lermen Bastion*, both buildings surrounded by poplars (*Populus nigra* '*Italica*'). The plans shows a small garden with irregular composition situated on the Jesuit Bastion; there is also the building depicted on the map from 1766, probably a preserved summerhouse of the *Graff Althansches Gartl*.

Green spaces on the premises within the city walls of Brno present the smallest areas and most of them were later subject of building up. If survived for a longer time, their further compositional development was relatively limited. Most of them disappeared during the expansion of the city in the 2nd half of the 19th century when the fortification was removed.

3. Gardens and alleys on the glacis and following spaces

There were plenty of gardens on the glacis and especially in countryside settlements surrounding Brno and Olomouc. A few maps allow distinguishing those of more ornamental character from the majority of utility (vegetable) gardens. It is also not quite clear how much precise are the drawings of their spatial division and details.

In general, the largest and most important gardens are depicted more likely than smaller ones, sometimes in more detail, with specific architectural elements, and occur on maps dated in different years. It is possible to find **ornamental gardens by monasteries** – such as the St. Ann's Monastery by Brno, or the Hradisko Monastery by Olomouc (see Fig. 2).¹⁹ Then there are several '**individually situated private gardens**' that are easy to be seen on the contrasting surrounding of the glacis – such as the *Gianini Garden*, the *Domherrn Garden*²⁰ or later gardens and alleys by the burgher shooting gallery²¹ in Olomouc. Other various **private gardens as part of continuous settlements** (streets, villages) are usually not named on the analysed maps. If they are surrounded by other greenery, their borders are not quite evident. We can at least distinguish areas with ornamental garden by certain streets or watercourses.

9 Plan of Brno and Fortress Spielberg, 1754. ÖStA, KA Wien, KPS, GIh 0043.

10 Plan of Brno, 1699 (1727). ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 11.

11 Plan of Brno, 1754. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 27.

12 Plan of Brno, 1766. ÖStA, KA Wien, KPS, Inland, C IV α) No. 17.

13 Plan of Brno, 1782. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 02.

14 Plan of Brno, 1827. ÖStA, KA Wien, KPS, GIh 0050.

15 Plan of Brno, 1754. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 27.

16 Plan of Brno, 1766. ÖStA, KA Wien, KPS, Inland, C IV α) No. 17.

17 Plan of Brno, 1770. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 28.

18 Plan of Brno, 1835. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn Nr. 04 and No. 05.

19 Plan of Olomouc in 1755–1756. ÖStA, KA Wien, KPS, Inland, C IV α) Olmütz No. 28.

20 Olomouc – Glacis, Hradisko Monastery and Domherrn Garden, 1694. ÖStA, KA Wien, KPS, GIh 0451-50; ŠAFÁŘOVÁ, 2010, p. 117–118.

21 ŠAFÁŘOVÁ, 2010, p. 124 and 252.

In all mentioned situations, the gardens are less limited in size and shape by the fortification elements; they are sometimes attached to a fortification line (wall, watercourse) by one side. They are rather influenced by surrounding settlements and landscape structures.

The layout of the gardens stays formal. They are divided into less or more regular orthogonal green fields, with circles at the crossings of the axes (ways), and can be on the plans depicted in details (trees, fountains, broderies, etc.). They are often accompanied by a summerhouse situated on the central axes or follow a disposition of a building to which they are related (residential house, monastery, etc.).

Many baroque gardens near the city are depicted on the 17th and 18th century plans and maps of Brno and its surroundings, whereas a few gardens on the maps of Olomouc.

Monastery gardens of St. Ann in **Brno** are depicted on many maps. They are situated south from today's Pekařská Street ('*Grosse Becken Gassen*', or '*Untere*' and '*Obere Becken Gasse*'). The whole area (grounds) belonging to the monastery is not quite evident on the analysed documents. However, the ornamental character of its several parts is well seen on the maps dated 1754.²²

Individually situated private gardens can be found both by Brno and Olomouc. As for Brno, we can see remnants of '*Meixnerischen Garten*' – a large ornamental garden with a small summerhouse on the main axes and an orchard at a plan dated 1729.²³ The garden was located in place of today's Komenského Square and was in this time (1729) already cut by a wide communication line connecting the walls and the Spielberg Fortress.

Private gardens as part of continuous settlements are evident on the maps of Brno and surrounding. Large ornamental gardens with depicted broderie parterres, bassins and summerhouses can be seen on the same map (1729) between today's streets of Křenová and Cejl ('*Die Kreena*', '*Die Ziele*') and more to the south by the canal of the Svitava River ('*Canal aus der Schwartze*'); this canal was bringing water to the mill by today's Vodní Street and exists no more. Another large ornamental garden with a central summerhouse²⁴ existed in the inner settlement northeast of the city, between today's streets of Třída Milady Horákové and Bratislavská. The garden stayed in the same composition still in 1824.²⁵ All the mentioned private gardens occur on later maps but disappeared

under new buildings during the 2nd half of the 19th century.

Another way of green space development was on the **hill of Spielberg**. Slopes of the hill were in periods without threatening war conflicts covered by vineyards and orchards; plantings of vine and trees are depicted on the above mentioned maps of Brno from 1699 and 1729, the hill is without vegetation on the plan dated in 1741. The public park laid out in the 19th century included many fortification elements, above all remnants of ravelins and the fortress walls.

Promenade alleys laid out on the glacis present the most important linear structures and later the axes of the 19th city parks. The development of the parks on the glacis of Brno and Olomouc is relatively known so they will be mentioned here only in short.

The oldest alley on the glacis of **Olomouc** was in space called '*Enveloppe*', by today's street 'Třída 17. listopadu'. Two and later three lines of trees by the older road are depicted already on the plans from the end of the 18th and the beginning of the 19th century; today we can find here alleys from later times. More known Rudolf's Alley and Johann's Alley come from 1820s and 1830s and became the axes for the largest city parks of Olomouc – *Stadtpark* (today Smetanovy sady) and *Johannens-Allée* (Čechovy sady). The last promenade alley was created in space lying under the medieval city walls on the south-eastern side, in place called *Michaeler Ausfall* – later extended to the city park called *Michaelerpark* (today Bezručovy sady). The alleys stayed the most stabile part of the composition of the parks; the other elements (above all spatial and taxonomical structure of the vegetation) have changed.

In case of **Brno**, the wide range of the glacis from today's Moravian Square (Moravské náměstí) towards the east and southeast (from the city gate called *Frölischer Thor* (Cheerful gate; Veselá brána) to the *Iuden Thor* (Jewish Gate; Židovská brána) were arranged with **promenade alleys**, dated back to the end of the 18th century. As first alley trees, limes were planted here in 1793 and are depicted on the map of Brno from 1799²⁶; later (since 1818) also maples (*Acer* sp.) and black locust (*Robinia pseudoaccacia*) were used for this purpose.²⁷ In 1806, a gloriote called Kiosk was built in the north part of the glacis at the beginning of the alleys, near the Cheerful Gate. The building of the gloriote was initiated by the archduke Ferdinand.²⁸ The **city parks** (public parks) were laid out around the alleys after 1845, when the fortress of Brno was abolished and the walls removed.²⁹

22 *Plan of Brno, 1754*. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 27.

23 *Plan of Brno, 1729*. ÖStA, KA Wien, KPS, Inland, C IV α) Brünn No. 12.

24 *Plan of Brno and Spielberg Fortress, 1799*. ÖStA, KA Wien, KPS, GIh 0046.

25 *Plan of Brno, 1824*. ÖStA, KA Wien, KPS, GIh 0048.

26 *Plan of Brno and Spielberg Fortress, 1799*. ÖStA, KA Wien, KPS, GIh 0046.

27 PACÁKOVÁ-HOŠŤÁLKOVÁ, 1999, p. 69.

28 ZATLOUKAL, 1997, p. 14.

29 PACÁKOVÁ-HOŠŤÁLKOVÁ, 1999, p. 69.

In the case of Brno, there was a city park laid out in the beginning of the 19th century in specific terrain conditions – on a rocky slope of Petrov. Its oldest part was situated just on the city wall and was called *Franzens-Platz*³⁰ (Františkov, today Denisovy sady); it was situated on a higher plateau (a flat terrace), enhanced by the Memorial of Peace (*Friedens-Denkmal*) and provided long views to the country. Lower on the slope was the park around natural spring of water, later completed by architectural element, called The Fountain Park (Park Studánka). In 1941 the whole area was divided by a communication line – a busy road.³¹

CONCLUSIONS

The most important result of the research can be seen in collection of new information indicating the existence and composition of the gardens situated directly on the fortification elements of the city of Brno during the 18th and the first half of the 19th century, especially on the **baroque bastions**. Since the research of the bastion gardens is in the beginning, it would be useful to support the graphical documents by those of written character to reveal their precise origins, time of existence, compositional development, and social functions. Following the results of the mentioned author's thesis from 2010, it is possible to assume that these green spaces were used most likely by the citizens as public gardens (in similar way as in Vienna) and preceded, together with the promenade alleys on glacis, the large city parks created during the 2nd half of the 19th century. These gardens were dependent

in their existence and influenced in forms by the fortification elements and disappeared with the removal of the city walls.

These bastion gardens existed parallel to the first **promenade alleys** on the glacis. If the further urban development allowed a free space around them, they became the central promenade spaces of the 19th century parks – this happened on the western part of the glacis by Olomouc and on its eastern part by Brno. Some of the other alleys stayed just by the roads, others had to be removed as a result of the city growth.

The issue of **private baroque gardens** situated either individually or in continuous settlement near the city walls is partly known from the texts; in the surrounding of Brno the second type prevailed and can be found in the northeast, east, southeast and southwest directions from the city walls. During the time of their existence, their composition remained more formal and changes were relatively small; however, there are not enough graphical documents to prove this assumption. Most of the gardens disappeared – were replaced by buildings during the 2nd half of the 19th century; the preserved one is represented by the Kinsky Summerhouse Garden that is well known and is located farther from the Brno's city walls. As for Olomouc, among the gardens out of the city walls prevail those situated individually on the glacis or in the close countryside and are presented by the gardens connected with the ecclesiastical circles. The gardens of the Hradisko Monastery are their only remnant.

SUMMARY

The article presents the most important results of the research of green structures of the 17th–19th century related to the city fortifications. Their existence and development are followed on examples of two Moravian cities – Olomouc and Brno, which were enclosed by circles of both medieval and later baroque fortifications. The main **aim of the research** was to fill in the missing or less known facts and issues from the landscape architecture history concerning the origins and development of baroque gardens close to the fortification elements.

The chapter **Materials and methods** explains the ways of research that took place above all in the Austrian State Archive in Wien to gain unknown or less known plans and maps as graphical documents for the analysis of the space composition and development of the gardens, alleys and parks.

The chapter **Results and discussion** is thematically divided into three main parts – the first one deals with green spaces on the premises within the city walls (above all by the monasteries of the both cities). The second part deals with green spaces on fortification elements, inside the walls (gardens by apartment houses in north of Brno's fortification, ornamental gardens and tree plantings on the baroque bastions of Brno, alleys by *Franzen Thor* in Olomouc). The third part is devoted to the survey of gardens and alleys on the glacis and following spaces (individually situated ornamental gardens by monasteries, private gardens on the glacis and in their close surroundings by Olomouc and Brno, ornamental gardens as part of continuous village settlement by Brno, vineyards and orchards on the Spielberg Hill in Brno, promenade alleys on the glacis of both cities).

30 *Plan of Brno, 1827*. ÖStA, KA Wien, KPS, GIh 0050.

31 PACÁKOVÁ-HOŠTÁLKOVÁ, 1999, p. 68.

The chapter **Conclusions** sums up characteristic types of gardens, alleys and parks, their relationship to the city fortification as for placement, time of existence, and space composition development. Most significant **maps and plans** of Brno and Olomouc that illustrate the text are included at the end.

Acknowledgement

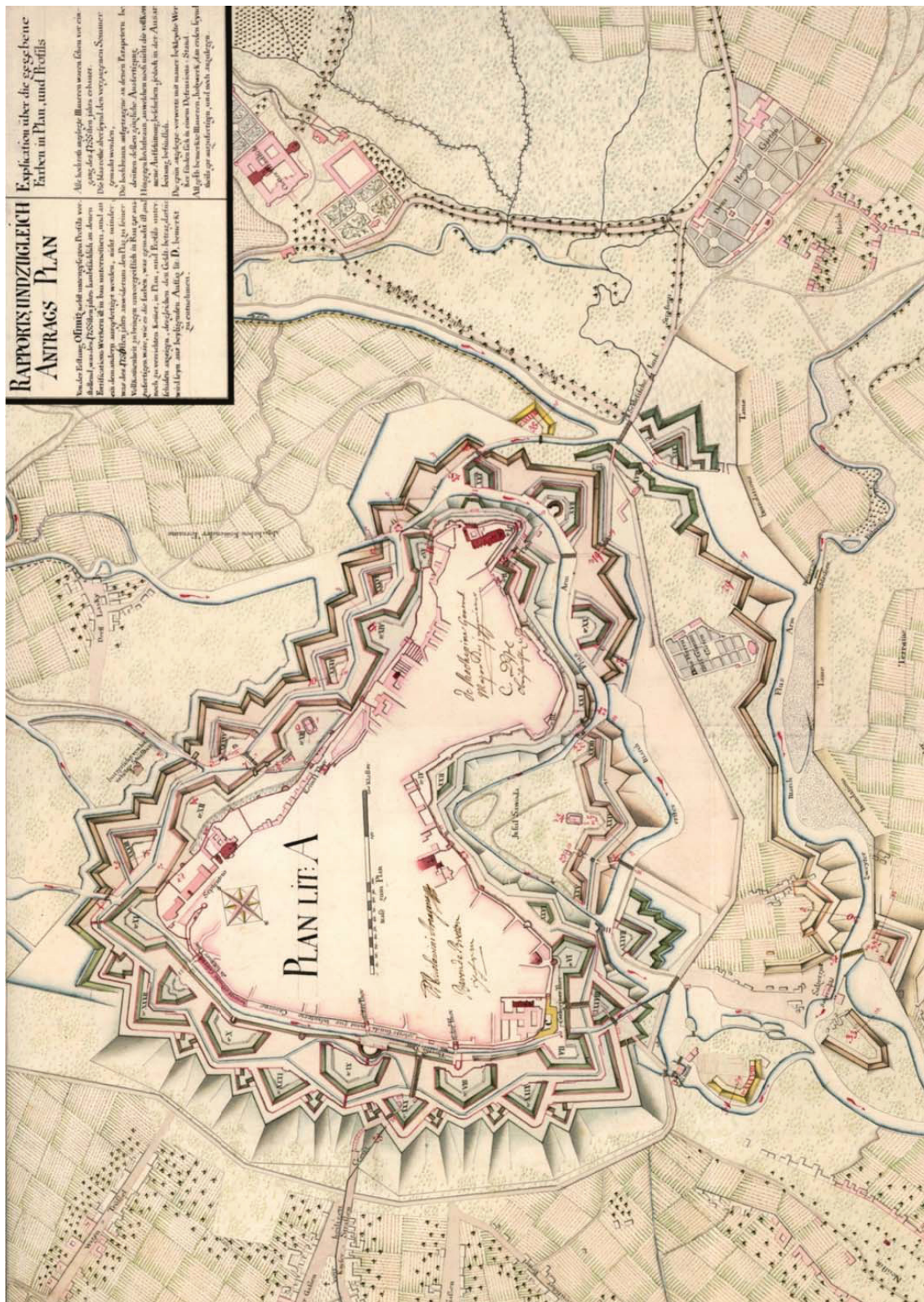
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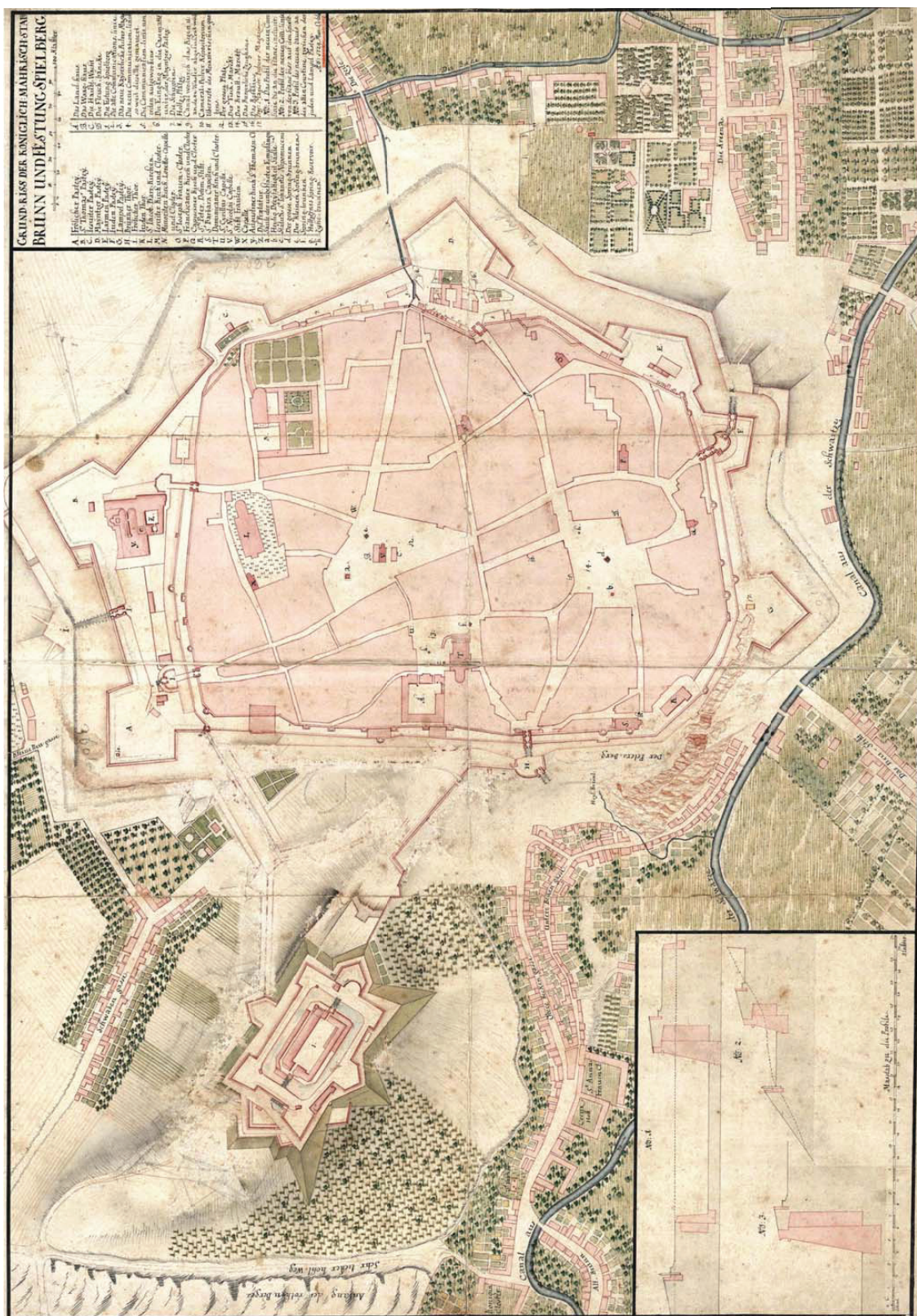
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- Maps and plans of Olomouc:
- Olomouc – Glacis, Hradisko Monastery and Domherrn Garden, 1694*. ÖStA, KA Wien, KPS, Kartensammlung, GIh 0451-50.
- Plan of Olomouc in 1755–1756*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Olmütz No. 28.
- Plan of Olomouc in 1833–1834*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Olmütz No. 13.
- Plan of Olomouc in 1842*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Olmütz No. 41.
- Plan of Olomouc in 1846 (1866–79)*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Olmütz No. 62 Teil II, IV, V.
- Maps and plans of Brno:
- Plan of Brno, 1699 (1727)*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 11.
- Plan of Brno, 1729*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 12.
- Plan of Brno, 1741*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 13.
- Plan of Brno and Fortress Spielberg, 1754*. ÖStA, KA Wien, KPS, Kartensammlung, GIh 0043.
- Plan of Brno, 1754*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 27.
- Plan of Brno, 1766*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) No. 17.
- Plan of Brno, 1770*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 28.
- Plan of Brno, 1782*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 02.
- Plan of Brno and Spielberg Fortress, 1799*. ÖStA, KA Wien, KPS, Kartensammlung, GIh 0046.
- Plan of Brno, 1824*. ÖStA, KA Wien, KPS, Kartensammlung, GIh 0048.
- Plan of Brno, 1827*. ÖStA, KA Wien, KPS, Kartensammlung, GIh 0050.
- Plan of Brno, 1835*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 04.
- Plan of Brno, 1835*. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 05.



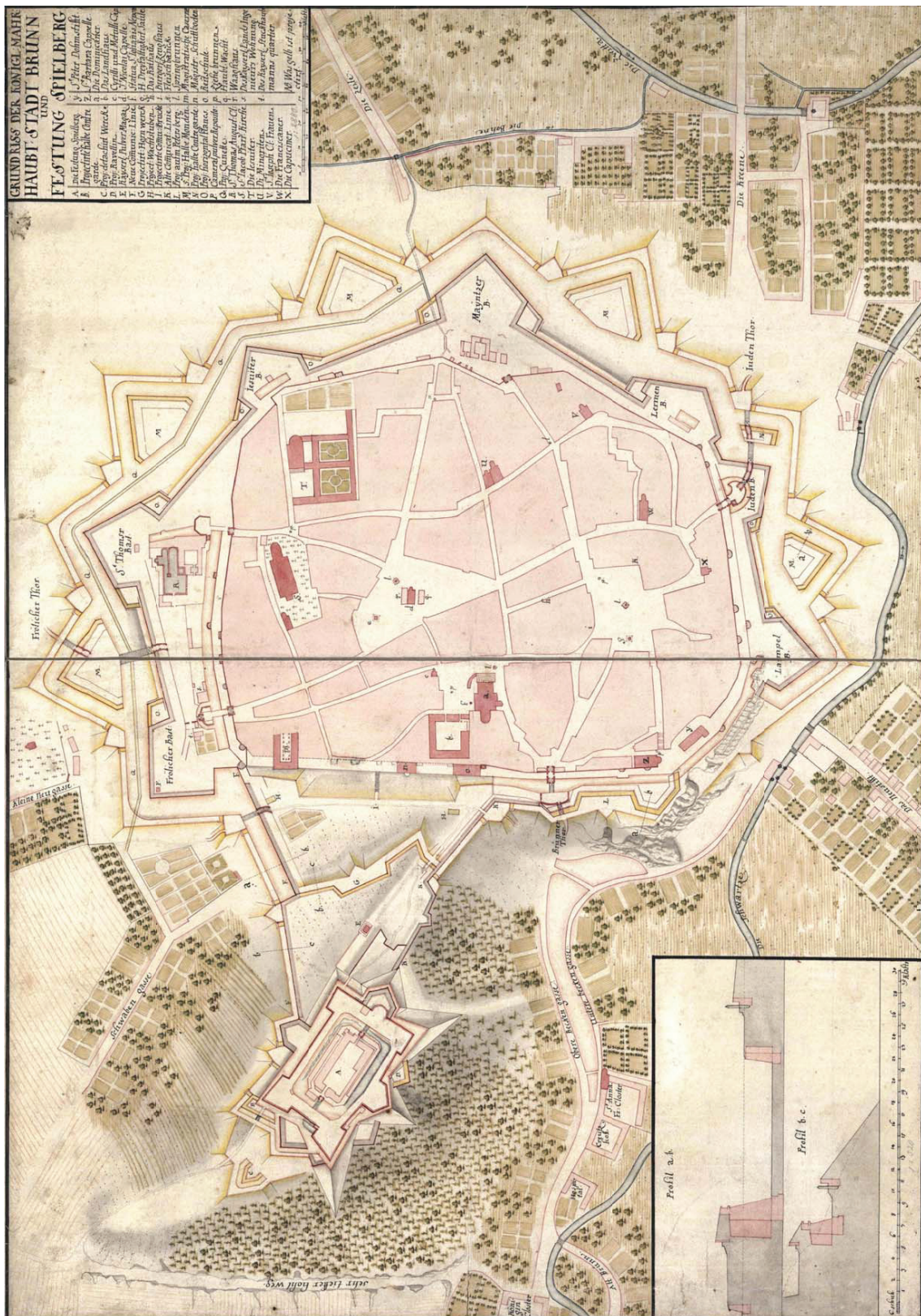
1: Olomouc - Glacis, Hradisko Monastery and Domherrn Garden, 1694. ÖStA, KA Wien, KPS, Kartensammlung G1h 0451-5.



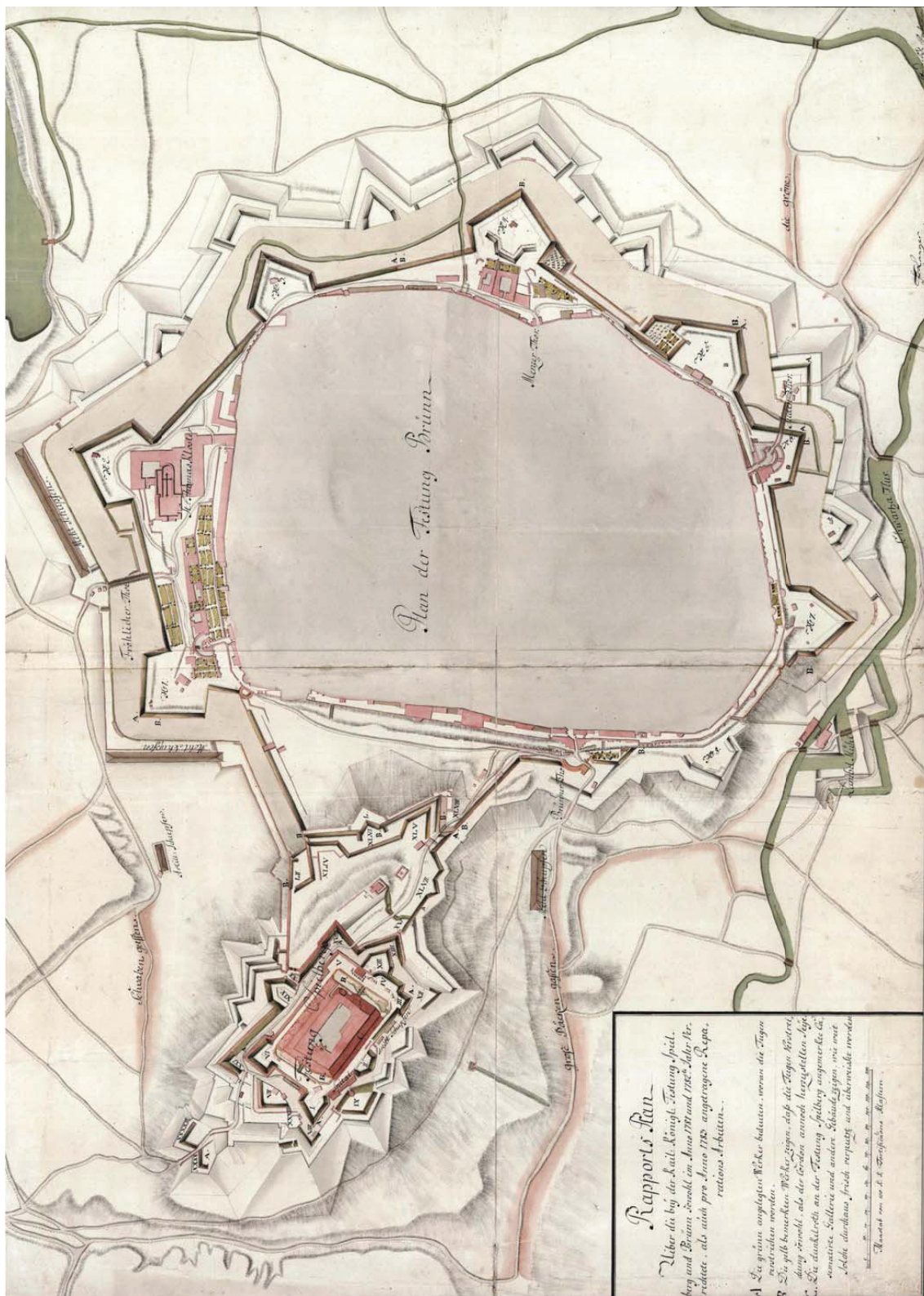
2: *Plan of Olomouc in 1755-1756. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, CIV^{ca} Olmütz No. 28; cut of the plan – upper part.*

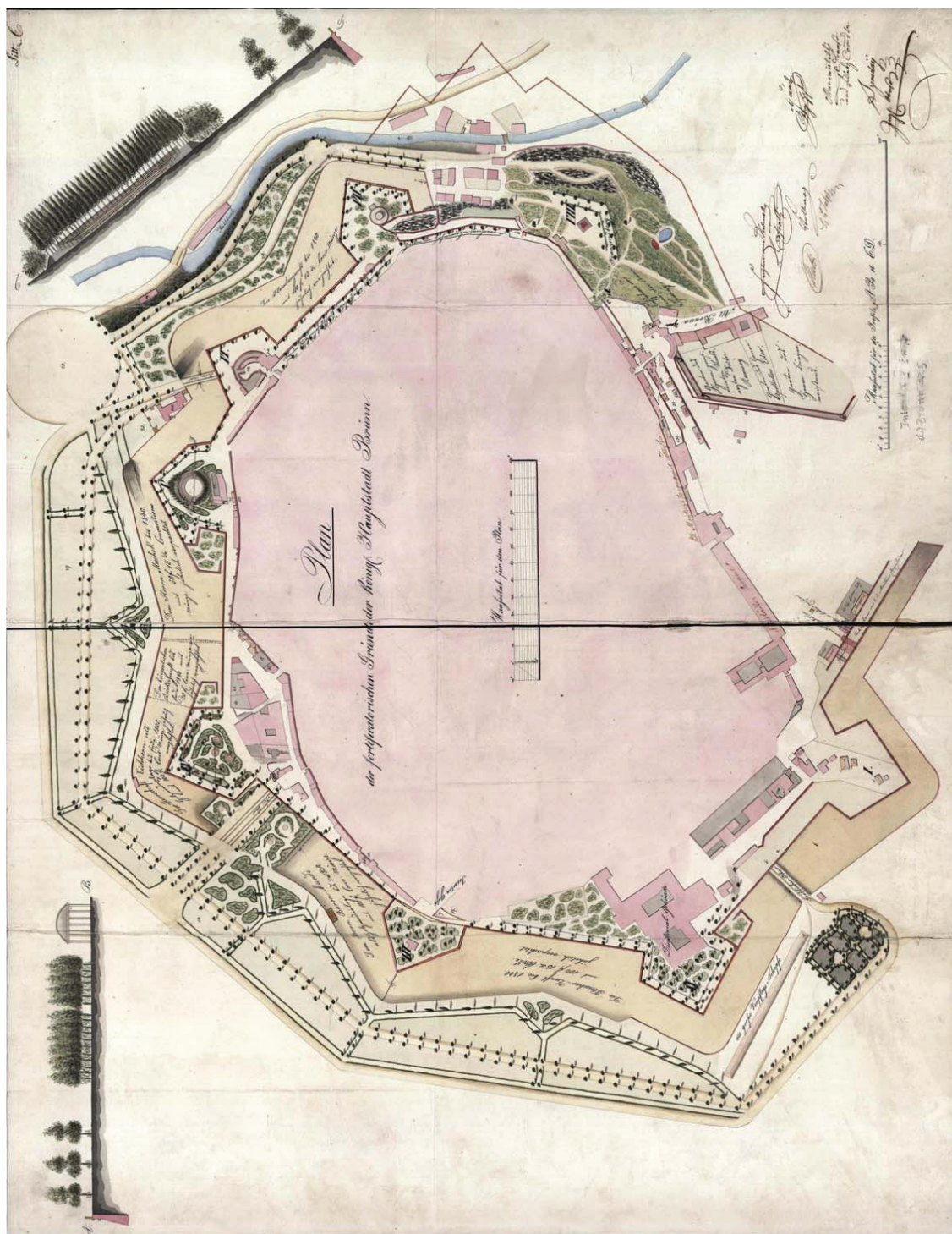


3: Plan of Brno, 1729. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV α) Brünn No. 12.



4: Plan of Brno and Fortress Spielberg, 1754. ÖStA, KA Wien, KPS, Kartensammlung, GfH 0043.





7: Plan of the fortification grounds of Brno. Plan of Brno, 1835. ÖStA, KA Wien, KPS, Genie- und Planarchiv, Inland, C IV a) Brunn Nr.05.

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