

EVOLUTION OF GREEN AREAS IN KOLOZSVÁR (CLUJ NAPOCA, ROMANIA)

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When mentioning the system of green areas we refer to all the vegetated surfaces of a town. The system consists of town owned playgrounds, cemeteries, and sports fields; private owned gardens; and forests, orchards, and arable lands around the town. The advantages of these units are well known (improvement of town climate, disintegration of organic pollutants, filtration of contaminated waters, protection against noise). These green areas located in the matrix of built up environment, functioning as ecological islands and corridors for the elements of natural flora and fauna that colonise urban areas. The success of the populations of colonising species in finding proper habitats in the town to where they can settle is determined by the existence or absence of vegetated areas. The process is greatly advanced by ecological 'green' corridors, links, undisturbed refuges, and the lack of strong competition, that is a characteristic of urban environment (*Gallé 1997*). The adequate system of green elements may also involve narrow green strips on the edge of arable lands, slopes of dams, banks of rivers and canals, and grass covered roadsides. Thanked to these the enabled immigration from core territories may prevent the decrease of biodiversity and stability (*Kubes 1996*). Nevertheless, at the same time these green areas represent the most conflicted zones of a town, and the consequences of human load can be experienced on these territories the best.

The development of the green area system of Kolozsvár

The present species and formations in Kolozsvár are in an inevitable connection with the development of green areas, and the changes of land-use within the town. The first information on land-use change was from the Roman times (2nd-3rd centuries BC.) when in the vicinity of the antique Napoca vineyards were cultivated on the southern slopes of the Hója Mt. (*Ferenczi 1947*). It was a characteristic of Romans' land-use that they did not appreciate much untouched nature, and believed that the ideal sphere of farming is the well-ordered countryside around the town (*Montanari 1997*). The first change in the town's haemerobia level can be placed to this era when the transition from natural to semi-natural, then to human biologic stage occurred, parallel with this transition the increasing human impact left more and more marks on the environment. At this time there was no green zone in the town, and the ratio of built up land was 75-100 %.

The earliest written document that mentions the town is from 1213, when due to its renewed castle Kolozsvár became a centre of the Hungarian royal county system. Kolozsvár got its township from Charles Robert in 1316. On the basis of an 1405 act of Sigismund the settlement beside the River Szamos became a royal free township. During this period the castle and the borough, surrounded by a wall, melted into one body. In the previous centuries there was a village in the place of the borough, that became a fortification (Óvár),

strengthened by square-shaped battlements, after the Tartar invasion. At this point the territory of the protected borough was 7 ha (Gaál 1995).

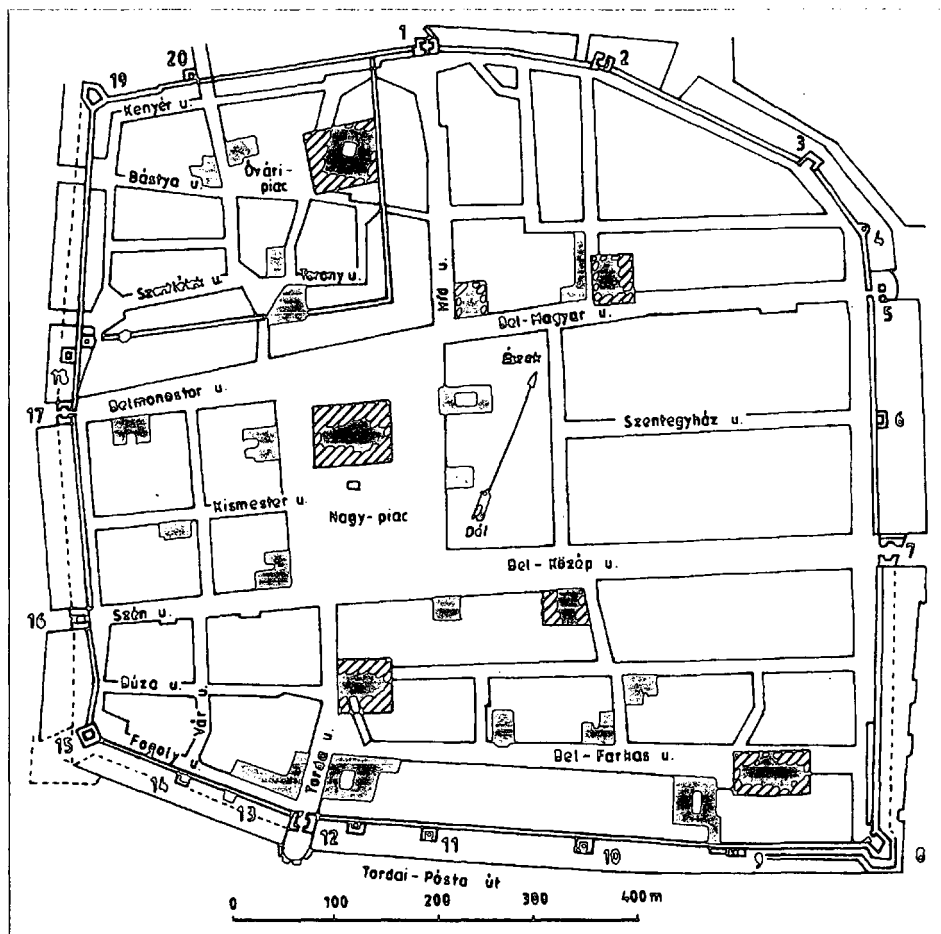


Figure 1 The ground-plan of Kolozsvár in the 16th century (numbers indicate town gates)

It is a question, why did a regular street network, that remained till the 20th century, evolve in the settlement out of the Óvár district during the second half of the 14th century. The orderliness of the German and Flemish citizens could have been one reason for this, since, the ground-plan of Beszterce, that was found by Saxons, is very similar to that of Kolozsvár. However, it is more probable that the role of geographic and economic conditions were stronger, because the Millrace [Malomárok] –beside which a main market road stretched–, that supplied the borough with water, with its W-E flow, and the slopes of the Házsongárd determined the northern and southern boundaries. At the beginning of the 15th century there was a demand for strengthening the new enlarged town centre of 47 ha with walls and battlements. As a result of this, a rectangular-shaped fortification was constructed, and its southern wall was parallel with the third terrace of the Szamos, and the south-eastern

battlement of which is still standing. At this time the length of the town wall exceeded 3 km, and it was protected by 20 gate towers and battlements. This was a prospering era of building bourgeois, renaissance, 15th century houses. The 16th century street network was roughly the same as now, the only exception was the presence of a surrounding street just inside the wall, that was demolished, with the street as well in the post-liberal era. The last gate towers were destroyed in 1868. The street structure inside was determined by the old castle walls, then by the Main Square. The existence of walls significantly limited town space. Similarly to other medieval and renaissance towns, there was hardly any green spaces inside the town wall (*Fig. 1*). On the copy of Georg Houfnagel's copper engraving, that was based on the 1617 drawing of Egidius van der Rhye, the Flemish painter, and depicts the town from the South, the forests on the hills out of the walls, and the vineyards on the southern slopes are illustrated (*Fig. 2*).

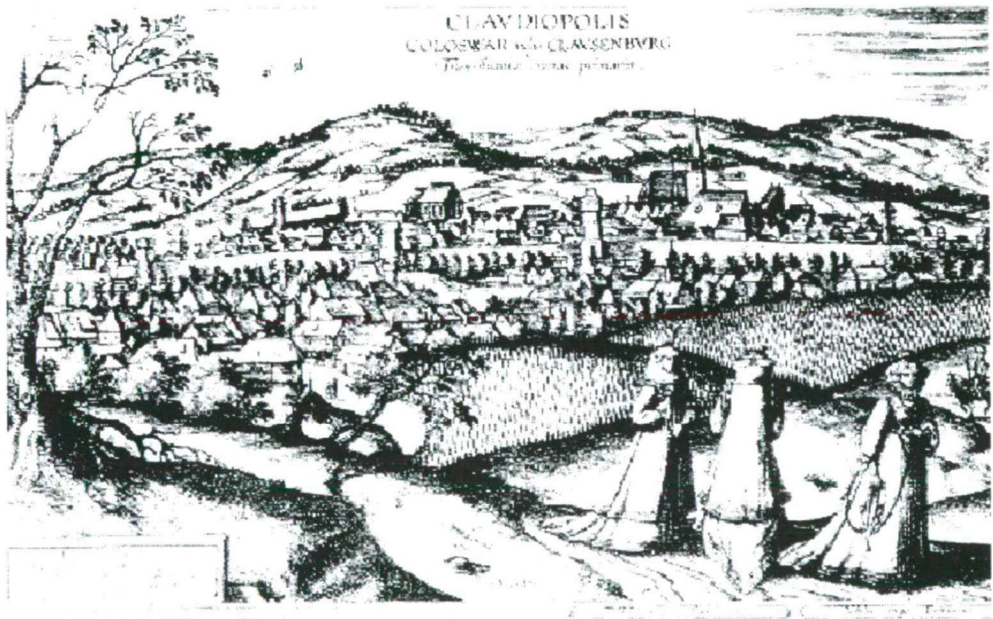


Figure 2 The vegetation around the town (Houfnagel's copper engraving)

The existence of hidro- and higrophyllous vegetation on the floodplain is proved by an order of the town council that forbade the cutting down of willows in order to protect the very small-sized green areas. There could be vegetable gardens and orchards outside of the wall, since, a 1552 order of the town leadership declared that those who damage private orchards must be punished exemplary.

The method of use of lands outside the town walls can be illustrated by a 1610 town meeting regulation that due to strategic reasons prohibited landowners from establishing houses or any other buildings, from planting any kind of trees, and allowed only the cultivation of vegetable gardens in the place of previously demolished farms located in front of a town gate (*Jakab 1888*). The main reason for this act was to prevent the enemy to find shelter in the buildings.

This might explain why the agricultural type settlement evolving in the 16th and 17th centuries outside the walls was at least 200 m far from the borough (Fig 3). The spatial fusion of the two zones of the town (the industrial, commercial, urban zone and the stock holding - agricultural zone), i.e. the districts inside and outside the wall was started from the end of the 18th century, when the significance of town walls completely ceased.

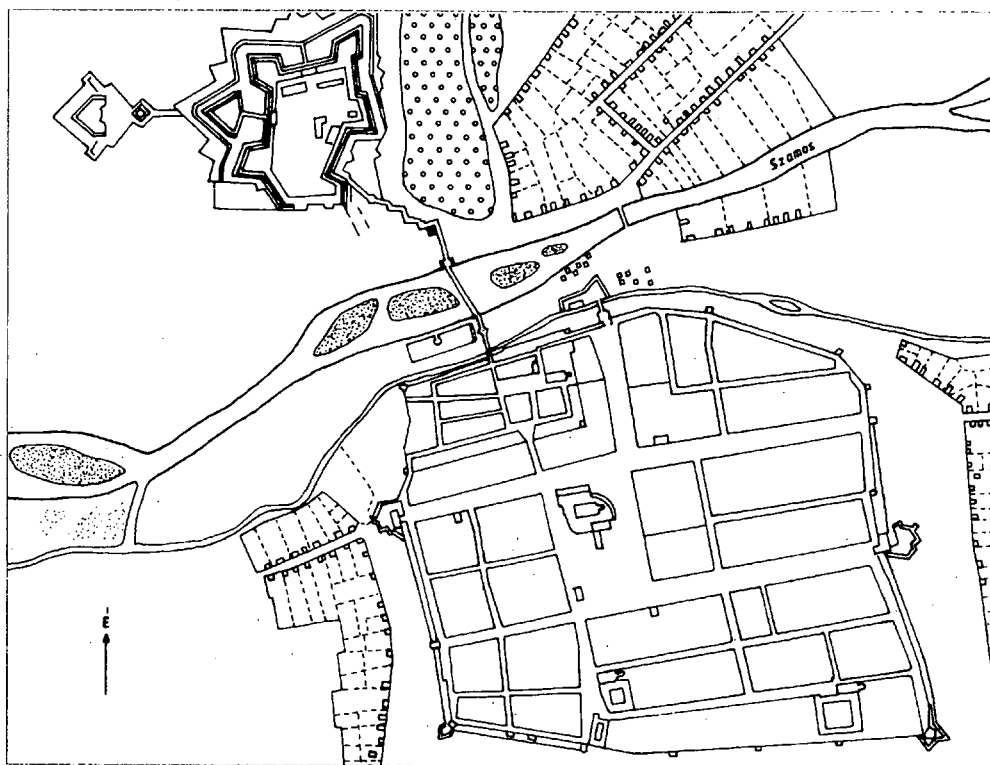


Figure 3 The ground-plan of Kolozsvár in the 18th century

In the 16th century the cemeteries of the churches became overcrowded within the town, therefore, in 1586 the "outer great hedge-garden" was ordered to transform into a graveyard, that later became the famous cemetery of Házsongárd. The transformation implies a rational town planning, since another act ordered that from then on everybody must be buried into the new graveyard. Among others it was also determined that the graves must be placed in a certain order, because the scattered and unsystematically dug tombs "have already started to fill up the huge area" (Gaál 1992). To maintain the order, on the basis of a judiciary decision an inspector was appointed, who got the power to point the place of new graves. Thus in the 16th century Kolozsvár there was an existing town management concept, which by establishing a systematically parcelled out cemetery with a path network determined the townscape and influenced the structure of the town.

The 18th century brought a new prospering period for the town, and as a result of this new orders were passed regarding green spaces and the way of land-use: the Citadel was

completed in 1723, and to serve it, the first bridge of Kolozsvár, named as the "Germans' plank" was built, as well. The territory that lay South of the River Szamos, between the town wall and the citadel, and formerly gave place for vineyards started to be built up at this time. In 1789 a regulation orders the burghers to build pavements beside their houses, and eventually in 1790 the territories outside of the wall were parcelled out and sold. In the same year the idea of demolishing the houses around the church of the Main Square arouse, since "the church was a national heritage" (Lázár - Kusztkó - Dobál 1906). In 1820 the destruction of the town wall started, because the rational thinking of the era claimed them invaluable and useless, and in addition it could be recycled as a building material. At the same time the streets were paved, and the major streets were lightened with oil lamps.

On the basis of contemporary photographs, in the middle of the 19th century the planting of trees on streets and other public places became a generally accepted action. In 1839 the streets of the downtown were broadened, and trees were planted on the Main Square. A photograph, taken in 1870, shows an enclosed group of trees South of the church on the Main Square. Based on a 1879 decision of the town council, tree plantation began on the streets and public squares.

The united town embellishment concept was worked out during the first mayorship of Károly Haller (1884-1886). The plantation of trees on the formerly pitted, muddy Trencsin Square, that is on the 2nd terrace, was also started at this time. Later the square became a popular walking place of the uplifting uptown (Lázár - Kusztkó - Dobál 1906). The afforestation of the "citadel's treeless, grassy plateau", the establishment of the watermains of the town, the launching of tree plantation on streets and squares, the creation of the plans of a slaughter-house, and the annexation of the adjacent village, Kolozsmonostor to the town are all can be connected to the name of mayor Haller. During this period the remaining natural vegetation in the town was replaced by conifers and thermophilous trees, which were to satisfy the aesthetic, and recreational demands of the developing bourgeoisie. At Kolozsvár the highest green space/head ratio occurred at the end of the 19th century, when 47 % of the town of 2849 ha was covered by vegetation (Jakab 1888).

Besides, the decoration of the Main Square, the extension of tree plantation, the demolition of town walls, the embellishment of the newly gained squares, the opening of new streets, and the transformation of the citadel into a walking place that is worthy of the town were also decided (Köváry 1886). In 1895 the Main Square gains its present face. Until 1898 pavements of 5 m width and granite cart-roads of 12 m width were constructed, a gothic iron railing of 85 cm height was built around the church, and the first still present species of: *Picea excelsa*, *Abies alba*, *Abies concolor*, *Taxus baccata*, *Picea pungens* var. *argentea*, and *Thuja orientalis* were planted.

The establishment of a "Kolozsvarian walking place", the present Walking Square, was brought up at the beginning of the 19th century. Already in 1837 it was decided that a "park of French or English style" would be established on the floodplain of the Szamos in the place of a marshy field (Hangyásberek) that connected the river with the Millrace. On the territory several channels, lakes, and swampy areas were located, that eventually disappeared during the establishment of the Walking Square. From the natural vegetation (probably a *Salcetum-Populetum-Alnetum* association was dominant) of the marsh a few pieces of *Tilia cordata*, *Populus tremula*, and *Alnus glutinosa* were kept. The main axis of the Walking Square was formed by a promenade, bordered with four rows of *Aesculus hyppocastanum*. Usually, the vegetation of parks and walking squares were planned by architects, and as a result the

planted trees often did not find the adequate conditions, and died. The same happened in the case of the Walking Square, since the 300 *Picea excelsa*, planted in 1873, could not bare the high level of ground water (2-3 m). Based on contemporary documents, "flower-, georgina-, and rose-groups" decorated the Walking Square (Köváry 1886).

In the 19th century a general water regulation plan was worked out, on the basis of which the Millrace was established. Its water was used, among others, to supply the brooks running along the promenades of the Walking Square.

An important part of the green area system of Kolozsvár was the ornamental gardens of the aristocracy. It was not a baseless claim that "Kolozsvár is the town of gardens" (Köváry 1886). Some of these were: the Mikó Garden and the Jósika Park that still function as green areas, the gardens of Baron Kemény at the eastern part of the town, the Veress Garden at the corner of the Walking Square and the Fürdő Street, the Haller and Nemes Gardens on the Monostori Road, the Bánffy Garden near the Walking Square, and the garden of Earl Kendeffy on the Külmonostor Street, and besides, the Ábrahám, the Apor, the Balla, the Bernáth, the Székely, and the Barátok Gardens (Szabó 1946). Till 1837 the largest public garden of Kolozsvár was the "royal garden" that was functioning as a game reserve and walking square, at the eastern, south-eastern part of the town, just outside of the town wall, from the 18th century (Gaál 1992) (Fig. 4).

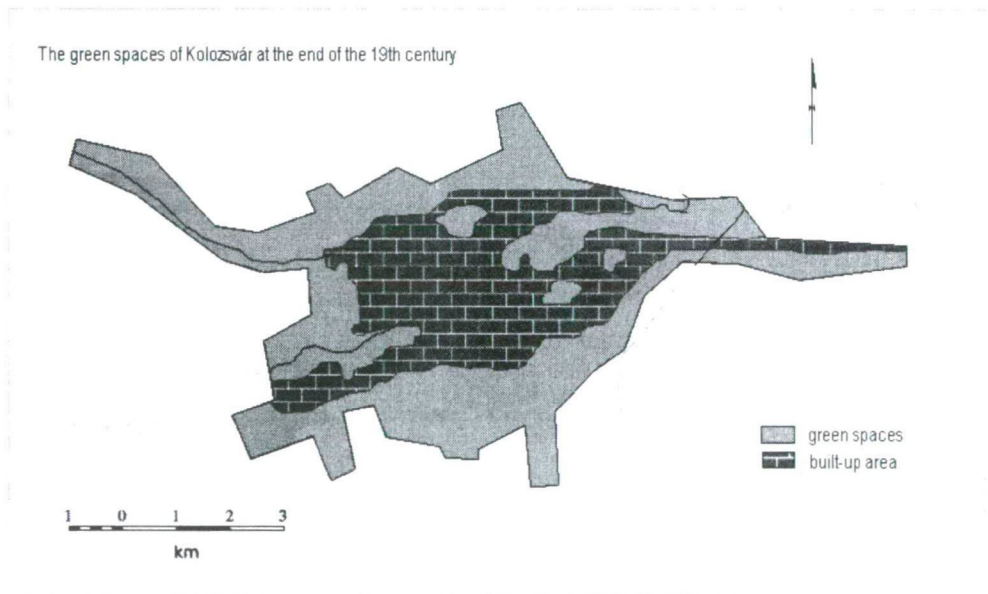


Figure 4 The green spaces of Kolozsvár at the end of the 19th century

The most famous garden was the Mikó Park, the area of which was 8 ha, and that became a botanical garden later. Now it gives place to the students' quarter, the buildings of the Geographic Faculty and the Zoological Museum. The remnants of the natural vegetation (*Robinia pseudoacacia*, *Acer platanoides*, *Acer negundo*, *Abies alba*, *Gleditschia triacanthos*) can be found on its present territory. In 1869, West of the Mikó Garden, also on

the III. terrace, the park of the Agricultural Academy was established. In the Northeast, on the upper most terrace of the Szamos, a tree nursery was opened, that is functioning at the present still as a green area, its name is Palocsay Garden. In 1881 on the territory of the Óvár Market (Karolina Square) another small garden was established, though, by now only a few ten m² has remained from it. Considering the fulfilled plantation programme, we can state that the town of Kolozsvár had large vegetated areas of recreational function at the turn of the last century.

At the beginning of the 20th century a new district, an industrial quarter began to develop in the eastern part of the town. First the Renner leather factory and the Reitler match factory were established. The location of the industrial quarter refers to a rational decision, since the dominating westerly winds and the Szamos, that flows eastward, are capable of clearing away pollution from the town. Parallel with this on the III. and the upper most terrace, the officials colony was started to build up. This quarter has preserved its suburban character up till now.

The next larger green space was established in 1934, when another marshy field (Fásberek) on the floodplain of the Szamos was converted to a sports park. In the park of 30 ha *Thuja*, *Picea*, *Liriodendron*, *Abies*, *Aesculus* tree species, and *Salvia*, *Coleus*, *Canna*, *Dahlia*, *Narcissus* herbs were planted beside the native vegetation (*Ligustrum vulgare*, *Euonymus verrucosus*, *Lonicera xylosteum*, *Sorbus torminalis*, *Fagus sylvatica*, *Acer campestre*, *Acer pseudoplatanus* etc.). However, according to the opinions of experts, the sports park's plant composition "is not satisfactory, the sport fields in the park are placed irregularly, the size of promenades is not adequate" (Fekete 1995). The territory, functioning as a green zone and recreational park, is beneficial concerning climatic effects, since, the dominating westerly mountain and valley winds can transport fresh, clean air toward the centre of the town. The small park that is wedging between the Óvár and the Millrace was established in the 1960s. The park has strongly deteriorated, its almost non existing grass land community is complemented with some very endangered (due to household pollutants) urbanophiton tree species (*Acer negundo*, *Aesculus carnea*, *Salix babilonica*, *Prunus pissardi*), and some shrubs that are the elements of the spontaneous flora (*Sambucus nigra*, *Viburnum lantana*), as well. The Walking Square and the above mentioned park to some extent equalise the urbanisation and industrialisation processes characterising the eastern floodplain of the town.

Till the 1940s and 1950s, in the eastern part of the town on the territory of the formerly called Tököz swamps and lakes were located. The area that was occupied by industry was functioning in the 1950s as a dump, in order to fill the hollow, thus, the swamp and the lake disappeared completely. According to Nyárádi, the sometimes-natural area was „one of the swamps of the freshest vegetation that was a lake until peat formation began. Its western end is covered with a little water” (Nyárádi 1944).

Due to the nationalisation in 1948, the architects could plan according to their own pleasure, often they did not consider the demands of transportation and commerce, therefore, a poor and short term spatial planning was accomplished. The situation of green areas was the same, since, with the exception of the sports park that was established in the place of a floodplain forest in 1955, the total size of vegetated territories has constantly decreased.

At present, the size of urban area/head does not even reach the half of the recommended 220 m² EU value either, while in case of the green areas instead of the accepted 40 m², the values in 1998 and 1999 were 8 and 7 m², respectively.

Concerning the development of the green spaces of Kolozsvár, the following conclusions can be drawn:

- In the medieval town, that was extending mainly over the floodplain and the so called town terrace, and was surrounded by a town wall, there was nothing like a vegetated area, moreover, even single trees were missing. Outside of the walls, beside the native vegetation, represented mainly by deciduous trees, gardens and vineyards were existing.
- A planned and careful green space maintenance was carried out in the 19th century. The green spaces reached their greatest extension. The 50-60 m² green area/head ratio can be explained with the high number of „aristocratic gardens”.
- After World War II. these gardens and the forests around the town were eliminated, and orchards and urban environment took over their places.
- From the 1960s and 1970s, but after the privatisation more significantly, the extension of green areas has decreased. The areas inside and outside of the town have become built up lands, what have brought several further conflicts.
- The number of neglected small-sized areas is increasing. At present, the area of waste territories occupied by ruderal vegetation is 798 ha (*Fekete 1995*).

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