

PERENNIAL BORDER RECONSTRUCTION IN THE CASTLE PARK IN LEDNICE

T. Kuřková

Received: June, 29, 2011

Abstract

KUŘKOVÁ, T.: *Perennial border reconstruction in the castle park in Lednice*. Acta univ. agric. et silvic. Mendel. Brun., 2011, LIX, No. 6, pp. 209–216

The objective of the project was to make the design documentation for the reconstruction of the perennial border in the castle park in Lednice. The castle park is a part of Lednice-Valtice Cultural Landscape, which was inscribed in the World Heritage List of UNESCO for its unique value in 1996. The landscape architect of the original project was Markéta Roder-Müller (1898–1981). The result of this project is documenting the flower bed development in time and analysis of design basics, principles and approaches of Müller's work. The design documentation for perennial border renewal was made with Müller's landscape design style in mind and time schedule and technologies for perennial border renewal were recommended. Flower bed was reconstructed in autumn of 2010 according to the established design documentation and work schedule.

perennial border, reconstruction, Markéta Müller, castle park in Lednice

Castle park in Lednice na Moravě is the part of Lednice-Valtice Cultural Landscape, being formed as a cultural landscape by the Liechtenstein family since the 14th century. According to Government Regulation No. 262/1995 Coll., on the declaration and nullification of declaration of certain cultural monuments as national cultural monuments, the area of castle in Lednice, including the park, was declared as a national culture monument (Pejchal, Kuřková, 2003). In 1996 Lednice-Valtice Cultural Landscape was inscribed in the World Heritage List of UNESCO for its unique value.

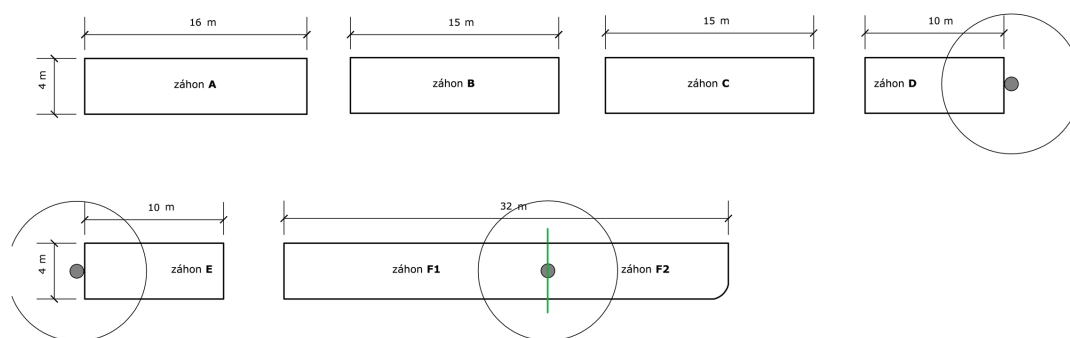
The perennial flower bed is part of a formal French style garden – the youngest part of the park being established in the late 19th century based on the design of Michelli of 1904 and being in the immediate vicinity of the Lednice castle. It is evident from historical sources that there was a rich floral decoration in forms of annual flower beds on parterre. Because of high cost and intensive maintenance, flower beds were continuously simplified and, nowadays, they are represented mainly by groundcover planting ornaments.

The original perennial bed, undeniably influenced by English perennial border being modern at that time, was newly redesigned by landscape architect Markéta Müller in 1963.

The objective of this work is to analyze the basics, principles and approach of the work Markéta Müller took while designing the flower bed, and to propose principles for its renewal at the level of design documentation for structure realization.

MATERIALS AND METHODS

Perennial border on parterre was designed by landscape architect Markéta Roder-Müller (1898–1981). It consists of 6 regular rectangular follow-up flower beds (flower beds A, B, C, D, E, F – Fig. 1), east-west orientated and closing the south lawn area of regular parterre. At present the beds are 4m wide and 16, 15, 15, 10, 10 and 32m long, respectively. While these flower beds follow with large grassy area with trimmed boxwood ornaments on the north side, they are accompanied by a gravel path on the south side, frequently used by visitors.



1: Perennial border in the castle park in Lednice. Flower beds A, B, C, D, E, F. Layout.

As an herbaceous vegetation element, the effect of perennial borders in the composition is according to plant vitality time-limited, in comparison with trees and shrubs. But they significantly contribute to the authenticity of the space of the First Republic with their location in the park, composition of heights, colours and inner bed plant composition. From what was mentioned above, in Preservation of the reconstruction of Chateau Park in Lednice (Kolektiv, 1999) it is recommended to “preserve perennial border on the south side of parterre in style of Markéta Müller”. Most recent reconstruction of the flower bed took place in 1985. After more than 20 years, the flower bed was deprived of species and in bad growing state and so his appearance was not in compliance with the representative area. In 2009 began the preparation of the design documentation for the flower bed reconstruction with the following objectives:

- to document the development of the flower bed in time;
- to analyze basics, principles and approaches of the work of Markéta Müller;
- to make the design documentation for the realization of perennial border renewal in style of Markéta Müller;
- to recommend the time schedule for renewal work and technologies.

RESULTS AND DISCUSSION

The development of flower beds in time

It would seem the current location of the flower bed on the south border of parterre is a reflection of the late renaissance influence, but it is mainly associated with French classical gardens. It is known that some kinds of parterres (e.g. Parterre de compartiment, Parterre à l'Anglaise) were lined with blooming flower beds called “plate-bandes” (Hobhouse, 1992; Tailor, 2006). According to Olsan (1997 in Kuřková, Šimek, 2000), we may assume that their role was to line and brighten up the area of parterre with colours, but also to prevent people from entering this highly representative part of garden. Flower beds, dimensionally and

spatially defined and located this way, were later called “perennial border” or “rabato” (from French expression “rabattre” – to summarize or “rabattre les bordes” – to line).

The flower beds on the parterre of the castle park in Lednice, however, originally did not border the parterre directly, as it follows from the historical research:

- 1847–1887 – modification of the formal gardens;
- 1904 – design by the architect Michelli to formal modification of the parterre. The flower bed is defined as a narrow strip between two paths with the characteristic of double-sided perennial border. The realization is documented by the photograph of the early 20th century. The exact time scale of the realization failed to find. The flower bed was composed as double-sided, but its composition and assortment of used plants failed to find.
- The period of the First Republic.

It is known that Michelli's parterre proposal was demanding and began to be simplified already during its realization and even more simplistic after 1945 (Pejchal and Kuřková, 2003). The paved area between the flower bed and parterre was turned into a lawn and the bed itself, originally designed for views from both sides, was instead characterized by a one-sided view (postcards from 1923, aerial photograph of 1938 in Pejchal and



2: Localization of the flower bed on the right side of the road. Probably early 20th century.



3: Flower bed made by Markéta Müller, 1964

Kučková, 2003). The flower bed composition and assortment of used plants failed to find.

- Post-war period.

The war period did not influence the localization of the flower beds (aerial photograph of 1947 in Pejchal and Kučková, 2003).

1963 – the extant proposal of the planting plan including plant material, designed by landscape architect Markéta Müller,

1993, 2009 – the reconstruction of the perennial border based on principles of work done by Markéta Müller and designed by landscape architect Tatiana Kučková.

Basics, principles and approach of the work of Markéta Müller

A closer study of the flower beds designed by Markéta Müller reveals several principles she applied when creating the flower beds:

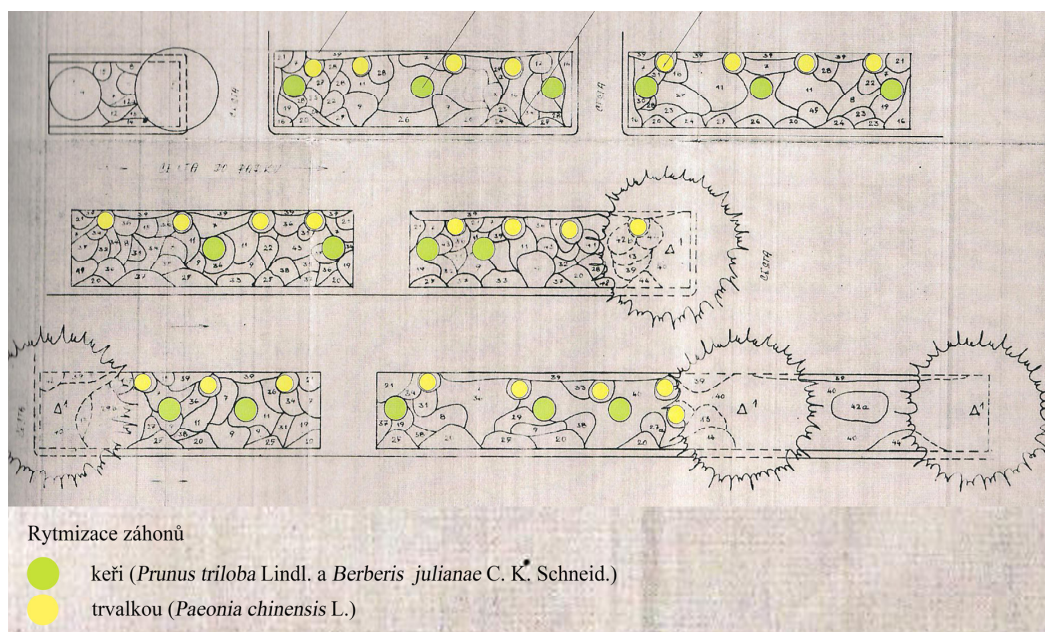
- inner composition corresponds to a design of dynamic colourful perennial border with maximum effect all year round;
- to reach the maximum effect she used the perennials blooming gradually from spring to autumn, woody species blooming in early spring (*Prunus triloba* Lindl. trunk form, to provide the flowerbed with rhythm), evergreen shrubs (*Berberis julianae* C. K. Schneid., *Prunus laurocerasus* L., *Vinca major* L., *Iberis sempervirens* L., *Helianthemum* Mill. species), and other evergreen perennials (*Bergenia cordifolia* (Haw.) Sternb., *Yucca filamentosa* L., *Armeria maritima* (Mill.) Willd.), and bulbs (*Lycoris sanguinea* Maxim., *Fritillaria imperialis* L.);
- as regards to inner spatial composition of taxa, she added the rhythm to the flower beds through the use of shrubs (*Prunus triloba* Lindl. trunk form, *Berberis julianae* C. K. Schneid. in the middle part of the flower bed) and perennials (*Paeonia chinensis* L. located in the back of the bed from the perspective of the observer). Early spring blooming species in front of the lower bed, in the middle and back part of the flower bed are located middle high and higher, later blooming species. Most of the corners were accented with *Papaver orientale* L., which dies in summer;
- composition of colours and plant height levels in bed: flower bed was designed to be observed from

one side. The highest perennials (100–120 cm) are concentrated in the second third of the flower bed, from the perspective of the observer. The lowest perennials (20 cm) are located mainly along the border of the bed, following the accompanying path. The flower bed was not purposely designed with dominance of certain colours; various colours of flowers and leaves were used instead;

- use of short living perennials were to support the appearance of the beds in the early years before the long living perennials catch on. Examples: *Viola cornuta* L., *Papaver nudicaule* L., *Chamaemelum nobile* (L.) All. (syn. *Anthemis nobilis* L.), *Aquilegia x haylodgensis*, *Aquilegia vulgaris* L.;
- located in the north part of beds closer to grassy parterre, flower beds are lined with irregular shaped narrow stripes of *Iris x barbata* Hort.

Reconstruction of perennial border

Design documentation for structure realization respects the location and bed shape from the First Republic period. Inner flower bed composition respects the proposal Markéta Müller first designed, even though it is not an exact copy of her design of 1963. Based on the conversation with the head gardener of the castle park who personally knew Markéta Müller and based on the author's excellent knowledge of perennials, the placement and use of some plants was modified. For example, the placement of *Papaver orientale* L. in the corners of the beds with its yellowing and wilting leaves after blooming caused unappealing appearance and holes in the layout until new sprouting. Most of the plant material used is identical with the one proposed by Markéta Müller except purposely modified plantings such as short living species, which was originally placed along the path, needed the frequent replacement and raised the cost of maintenance (e.g. *Viola cornuta* L.). Additional species (*Armeria maritima* (Mill.) Willd., *Anthemis nobilis* L.), not suitable for the nutrient substrate of an intensively maintained bed, were likewise modified. Some short living species (e.g. *Digitalis purpurea* L., *Aquilegia vulgaris* L., *Papaver nudicaule* L.) were used further from the path according to original plans, assuming their own seed production would encourage spreading in the bed. Their location in the bed is



4: Planting plan of perennial border on parterre in the castle park of chateau Lednice. Explanation: rhythm beds shrubs (*Prunus triloba* Lindl. and *Berberis julianae* C. K. Schneid.) and perennial (*Paeonia chinensis* L.). Markéta Müller, 1963.

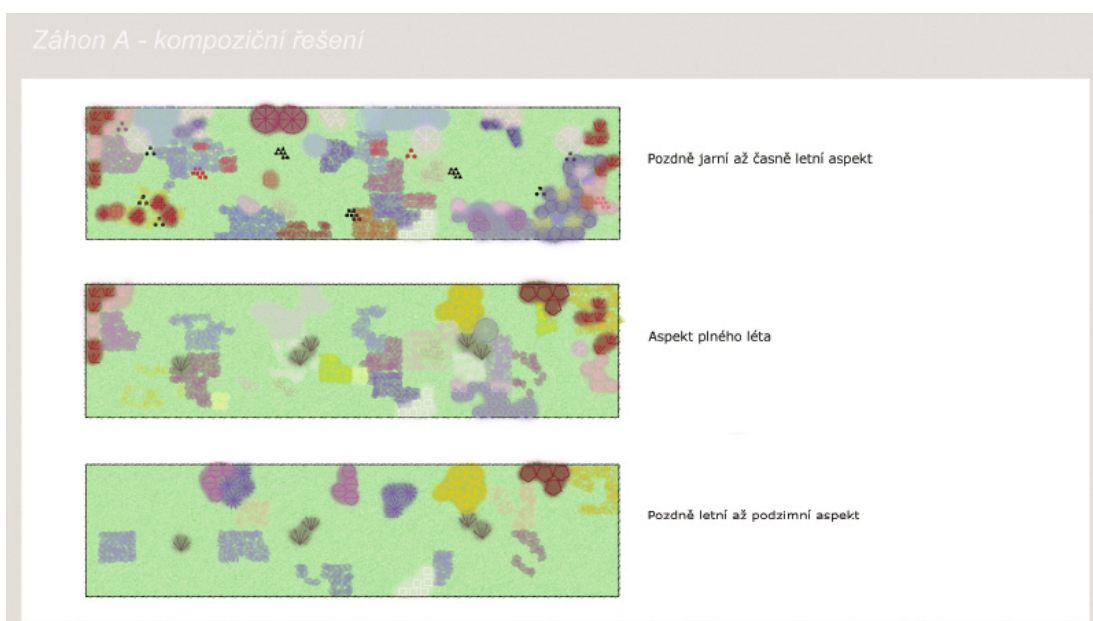
proposed in small clusters in a way that would not cause unappealing appearance after they die out at the tips of their foliage. Dead parts would be overlaid by other spreading plants.

The main emphasis of the reconstruction was put on:

- the creation of colourful perennial border blooming from early spring until late autumn;

- the creation of composition rhythm using trunk form of *Prunus triloba* Lindl., *Berberis julianae* C. K. Schneid. and *Paeonia chinensis* L.;
- the respect of the height levels of plants in the bed according to the proposal of 1963, that means for the observation from the path;
- the significant representation of evergreen species.

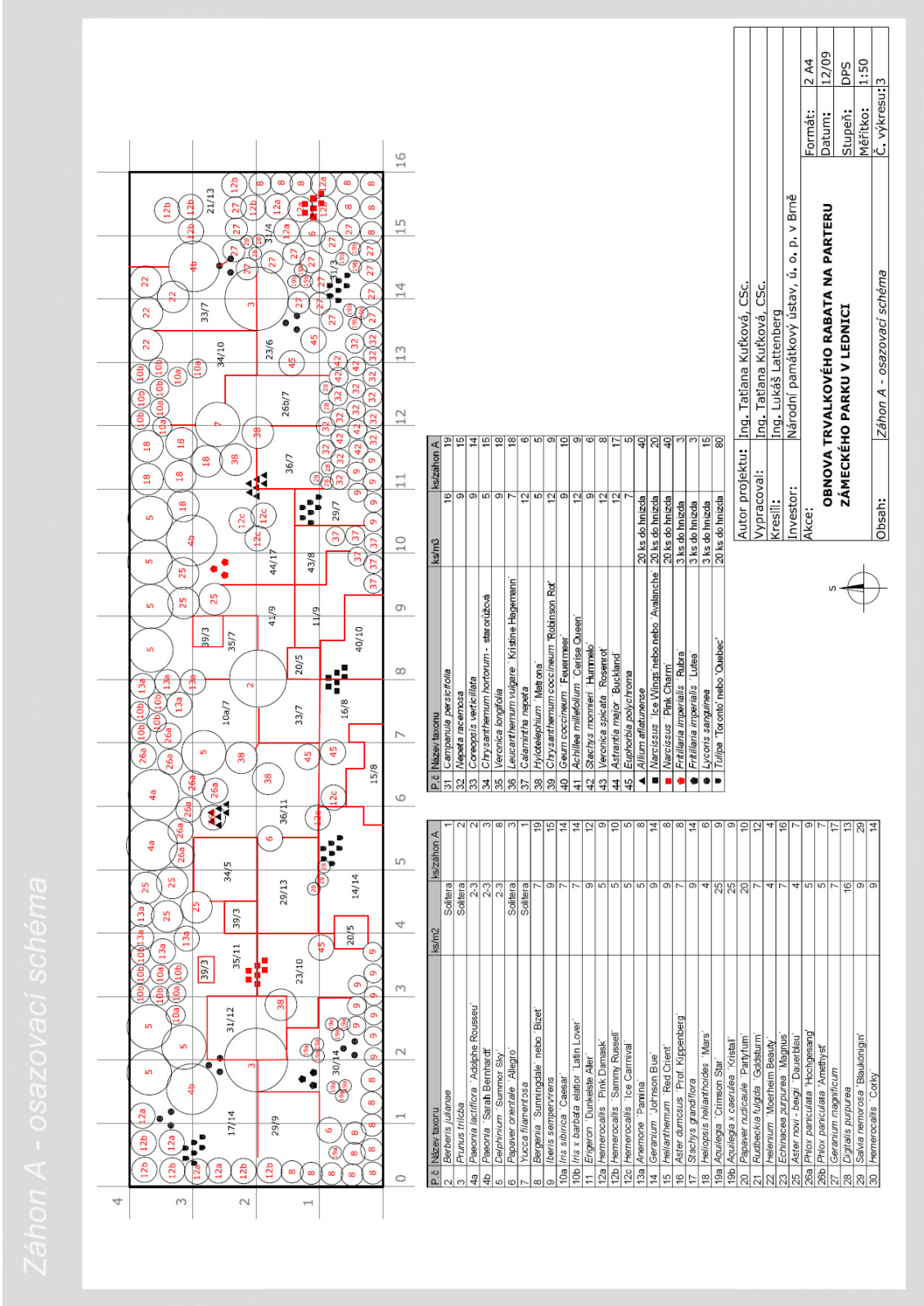
Wider selection of plant species was used to support a rich variety and attractiveness of the flower bed. To strengthen the spring effect, more



5: Example of design documentation for the realization of flower bed, blooming aspect. Explanation: late spring to early summer aspect; full summer aspect; late summer to early autumn aspect. Kuťková, 2009.

bulbs were used in comparison with the original plan (*Tulipa* L., *Narcissus* L., *Allium* L.). Along with the colour of perennial blossoms, contrasts of shapes, textures, structures and leaf colours were worked into the reconstruction design (*Cimicifuga* L. ex

Wernisch., *Hosta* Tratt., *Penstemon digitalis* Nutt. ex Sims). In accordance with original plan, evergreen plants were incorporated in the reconstruction design (e. g. *Bergenia cordifolia* (Haw.) Sternb., *Yucca filamentosa* L., *Helianthemum* Mill. hybrids, *Iberis*



6: Example of design documentation for the realization of flower bed, planting detail, Kufková, 2009

sempervirens L.), *Epimedium pinnatum* subsp. *colchicum* Boiss. was used in dry, shady areas under *Thuja plicata* Donn ex D. Don. tree top).

Time schedule for reconstruction work and reconstruction technologies

Appropriate site preparation and ensuing maintenance is a prerequisite for successful function of the flower bed. Perennials used for the flower beds are of two categories, “bed perennials” and “wild perennials with bed character” (Kuřková, Šimek, 2000). For successful growing, these perennials need pervious soil with good absorption capacity and neutral to slightly acid pH, lots of nutrients, and bereft of persistent weeds. Due to the high level of existing persistent weeds and soil fatigue (years of planting perennials in the flower bed), a complete soil exchange in 20 cm deep was proposed. To prevent intergrowth of the lawn into the bed and perennials into the lawn, the L-profile steel strip (dimensions 50 × 50 × 3 mm, or thicker) separate the flower beds from the lawn. The L-profile was used to avoid stretching and bending of curb in summer months in the longitudinal axis.

Despite complete soil exchange, it was recommended to repeatedly apply the herbicide

(Roundup) in the last growing season before the abolition of the beds.

Perennial seedlings in containers may be planted during the whole year, ideally in spring or autumn. Bulbs need to be planted in autumn so they have enough time to root and pull into optimal depth before the first frost. Therefore the planting date was proposed in autumn 2010 with the following working process:

- herbicide application;
- complete abolition of existing planting (perennials and woody species);
- excavation and soil removal in 20 cm profile;
- steel strip installation;
- placement, spreading and settlement of the new substrate;
- installation of stake grid (100×100 cm), setting out beds (with sand);
- digging holes and planting woody species, perennials and bulbs, including the installation of the piles for *Prunus triloba* L.; to irrigate bed after planting and winterizing sensitive species (*Berberis julianae* C. K. Schneid., *Helianthemum* Mill.).



7: Situation of bed before the reconstruction 20. 9. 2010



8: Flower bed after the application of Roundup 6. 10. 2010



9–10: Flower bed installation 2. 11. 2010





11: Early spring aspect of flower bed 19. 4. 2011



12: Early summer aspect of flower bed 28. 6. 2011

CONCLUSION

The reconstruction of vegetation elements in areas with cultural and historical values is an important professional field of garden and landscape design. Even though these herbaceous vegetation elements have limited spatial effect in the given area, they are

irreplaceable because of the authenticity, aesthetical values and respect for original composition. Perennial border reconstruction mentioned above is based on preserved historical documents and personal professional experience. It fully respects the original intention of designer Markéta Müller and it preserves the authenticity of chosen design.

SUMMARY

Perennial border on the parterre in the castle park in Lednice is an important compositional element in the formal part of the garden, made in the late 19th century in the spirit of French classicism. The quality of flower bed in 2009 did not correspond to the representativeness of this area, so it proceeded to the proposed renewal of the original bed designed by significant garden architect Markéta Müller. Prior to design documentation for the reconstruction of the flower bed, site analysis was made with the following results: location and shape of the bed is from the early 20th century, the internal composition corresponds to a dynamic colourful solution of "rabato – English type of flower bed" with maximum effect all year round. To achieve this effect, the project works with the trunk form of flowering bushes, the evergreen shrubs, perennials and bulbs. The bed was designed as a one-sided, colour variety was diverse. The emphasis was putted on creating colourful flower bed blooming from early spring to late autumn, creating the composition rhythm of bed using trunk form of *Prunus triloba* Lindl., with *Berberis julianae* C. K. Schneid. and *Paeonia chinensis* L. The plant heights in the bed more or less respected the design of 1963; that means for the observation from the path. Evergreen species were significantly represented in bed composition. To increase the attractiveness in the early years after reconstruction, it was worked with rapidly evolving, but short living perennials (e.g. *Digitalis purpurea* L., *Aquilegia vulgaris* L., *Papaver nudicaule* L.). The part of the project was recommendation about time schedule and technologies for perennial border renewal. Flower bed was reconstructed in autumn of 2010 according to the established design documentation and work schedule.

The article was based on the support of the project No. DF11P01OVV019 – Landscape architecture's methods and tools for spatial development, that meets the thematic priority TP 1.4 of the Programme of Applied Research and Development of the National and Cultural Identity (in short, "NAKI"), funded by the Ministry of Culture of the Czech Republic.

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Address

Ing. Tatiana Kuťková, CSc., Ústav biotechniky zeleně, Mendelova univerzita v Brně, Valtická 337, 691 44 Lednice, Česká republika, e-mail: kutkova@zf.mendelu.cz