MEANS OF LANDSCAPE ARCHITECTURE IN THE URBAN PUBLIC SPACE OF ROME PARIS AND PRAGUE

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Abstract

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The aim of the research was to identify the role of landscape architecture means in the creation of urban public spaces as well as the possible ways they can be used in. In this respect, public urban spaces of three European metropolises were explored: Rome, Paris and Prague. These were chosen based on their specific affinity as they are within a broad cultural range of western European civilization. We have specified basic types of urban public spaces as streets, squares, parks, roof terraces and gardens, waterfronts, and "spaces between houses". The basic means of landscape architecture used in urban public spaces are relief and paving, water, artwork, vegetation, furniture, minor constructions and light and time. Spatial and functional performance of the particular components was explored within the particular public spaces. As the functions of compositional principles are universal, their exploration can lead to some generalization. Naturally, the uniqueness of each place, its history and spatial context need to be taken into account. Only an exploration of public spaces in the largest possible scope and searching for mutual, often hidden or indirect parallels will yield new knowledge and understanding. The study has proven that these exist among the three selected European cities and they can serve as a guideline for further designs of public urban spaces.

urban public space, landscape architecture means, urban landscape, Paris, Rome, Prague, square, street, park, roof terraces, roof gardens and parks, waterfronts, spaces between houses, relief and paving, water, artwork, furniture, minor constructions, vegetation, light and time

The form of urban public spaces in towns is an issue that has always been topical in democratic societies. The approach applied to their formation is then an obvious picture of the state's relationship to its citizens and that is supposed to be as responsive as possible. Requirements for proper functioning of urban public spaces are met using means of landscape architecture. An urban public space is a complex system where all components have their own specific roles. Not only its definition and spatial organization but also details of paving or blossoms are important. Maybe a flower will be the element thanks to which a person may gain a personal relationship to the place. Supposing that citizens should take care of the environment they live in, we cannot assume they will be willing to take care of a place they have no personal relationship with. Therefore, the primary goal of the means of landscape architecture within an urban public space should be a creation of places with which people can identify based on the agreement of their specific components and their relations to human beings.

MATERIAL AND METHODS

The aim of the research was to identify the role of landscape architecture means in the creation of urban public spaces as well as the possible ways of they are used in. In this respect, urban public spaces of three European metropolises were explored: Rome, Paris and Prague. These were chosen based on their specific affinity as they fall within a broad cultural range of western European civilization.

We aimed to find some universality within the use of landscape architecture means for urban public spaces of each city, which could be considered a proper use of their potential. To meet our aims we investigated historical contexts related to the issue of urban public space creation using professional literature and visual resources. Current attitudes to the creation of urban public spaces using landscape architecture means were explored by our own empirical research into public spaces of Rome, Paris and Prague. Spatial and functional roles of individual components were examined based on universal function of compositional principles. Basic types of urban public spaces were defined: streets, squares, parks, roof terraces and gardens, waterfronts, and "spaces between houses". The basic means of landscape architecture used in urban public spaces are relief and paving, water, artwork, vegetation, furniture, minor constructions and light and time.

RESULTS

Types of urban public spaces, application of landscape architecture means in Rome, Paris and Prague

Kevin Lynch in The Image of the City[1] defined terms *"node (landmark), path, edge and district"* as elements forming a basis for human understanding of an urban space. A typical "node", place where events concentrate, is a square. A street is a "path", but can also be an "edge", just like a river or a terrain elevation clearly defining a change in the character of a specific space. A "district" within a city arises from the functional and visual unity of an area by contrast to the neighbouring area.

Streets

A street appears in a city plan like a line, artery, connection leading from a place to another. Human lives happen on a way from a place to another. People sell thing, and shop in streets or they just stay there for some time. There is no town without a street. Kopáčik in his Street Typology[2] defined basic urbanistic categories of streets: a street for living, a street for business and social activities, a city street, a city boulevard and a green street. These types reflect the predominant usage of the space of each street, the character and the function of its surroundings that defines its spatial role and function. From the perspective of composition, the most important feature of a street is its linearity. Thus the elements usable in a linear composition will find the best application – either supporting and emphasizing the linearity, or disrupting it.

Talking about a street in Paris, we probably imagine a boulevard. Large, with broad pavements on sides or in the centre, such as in Boulevard Richard Lenoir (Fig. 1). It is framed in an alley of trees and roofed with their crowns. Current modifications of spaces of Paris streets keep the continuity of used materials and designs, such as the newly reconstructed Avenue des Champs Elysées (Fig. 2). Thanks to buildings of the current architectonic star Jean Nouvel, there are several cases of an innovative element in a traditional street space, e.g. Fondation Cartier or Musée du Quai Branly (Fig. 3): a visual opening of a garden to the street, the continuity of the street front being maintained using a glass wall instead of a fence. The street is thus still a street but passers-by can see interiors of gardens in place of shopping windows.

Streets in Rome, just like the rest of Europe, got inspiration from boulevards of Paris at the end of the 19th century: the large span of streets contrasting to the development customs valid till that time as well as the integration of alleys. An example of a boulevard of Rome, newly rehabilitated in an innovative way, is Viale della Pyramide Cestia (Fig. 4). A typical street of Rome is a narrow shaded space like we can see in the original ancient street in Campus Martius (Fig. 5). The height of buildings and the narrowness of the street protect against the sun heat, accompanied by potted plants.

A medieval narrow and crooked street was also typical of Prague. Thanks to the massive constructions at the end of the 19th century concurrent with the Prague urban renewal, a wider straight street lined with a lime alley became typical. Examples would be streets Na příkopě (Fig. 6) and Národní třída, covered former moats, where, however, a different species was planted in the 1980s – *Tilia tomentosa*.

Squares

A square is the heart where all arteries go. It is the centre where social, political and cultural events take place. Like streets, squares also perform the business function or can be used just for staying there for some time; however, they provide more space for various happenings, both from social and compositional points of view. Based on the predominant function, we can differentiate squares for traffic, representative squares or business squares; most often, these blend in various ratios. The basic feature of a square is its size, which then gives the square specific atmosphere, from intimate to monumental. The means of landscape architecture are then applied in the space of a square in correspondence with its basic character.

The potential of a tree application in a public space is undoubtedly used most efficiently in Paris, squares not being any exception. One of many examples is the royal square Place Dauphin (Fig. 7).

1   LYNCH, K. *Obraz města = The Image of the City*. 1st Czech ed. Praha: Polygon, 2004. 202 p. ISBN 80-7273-094-0.
2   KOPÁČIK, G. *Typologie ulice = Street Typology: shortened habilitation thesis*. Brno: VUTIUM, 2005. 30 p. ISBN 80-214-3078-8.

The pattern of tree crown roofing is repeated both within large areas and small corner places. Another typical feature of current Paris squares is the frequent presence of garage entrances which are so architectonically advanced that we can hardly see them. In fact, they allow us to perceive the space without parked cars. An example is Place Georges Pompidou (Fig. 8). The spatial composition of a Paris square often has a central accent, such as a monument or a column; fountains are often placed at some of the space axes, organized by geometrical patterns based on a French classical garden model. By contrast, accents of squares in Rome are often placed eccentrically. Mostly, they are fountains. Vegetation finds only limited use in Roman squares, most often there are potted or creeping plants, such bougainvillea in Piazza Rotonda (Fig. 9). Exceptionally, trees are used as free-standing. Stone pine stands have become an inseparable part of the remnants of the ancient history of the city, e.g. in square Largo di Torre Argentina (Fig. 10), where stone pines naturally frame the scene with ruins of four temples from the Republican era of ancient Rome. They have been used as a planned part of the composition of squares since the second half of the 19th century, e.g. Piazza Venezia and Piazza del Viminale (Fig. 11). A number of Roman squares are also characterized by the way of terrain levelling by terraces, e.g. Piazza Dante (Fig. 12) and Piazza del Quirinale.

As the tradition was interrupted in the 1950s, it is hard to find some universal compositional patterns in the squares of Prague. Due to the sentiments for "nature" at the end of the 19th century, there are a lot of squares in Prague that were designed as parks, reflecting the practices used in formal gardens of the time; examples are Karlovo náměstí (Fig. 13), Náměstí Míru and Karlínské náměstí. Historical fountains and watering places have disappeared from the city squares or the square space was degraded to mere car parks, e.g. Malostranské náměstí (Fig. 14). New reconstructions of Prague squares reflect the effort for current architectural expression, sometimes however at the expense of their practicality or functionality, such as the controversial rehabilitation of Řezáčovo náměstí (Fig. 15).

Parks

Within the organism of a city, a park is a contrast – it is "nature" within the city. It contains paths that connect to the city street network and take their function of connecting within the park (this corresponds to Kopáčik's definition of a "green street"[3]). Free park areas, either grassed or paved, represent "green squares" – providing opportunity to stop, relax, calm down, but also action, energy. The initial function of parks is inhabitants'

recreation. Therefore, where possible, parks include sports grounds, playgrounds for various age groups, restaurants, cafés, refreshments and also calm and secluded places. This all organized so that each activity has its own space and no disruptions or collisions occur. Also the accessibility of the park and its integration in the system of urban greenery are important.

Parks of Paris represent one of the most important centres of urban life, filled with activities and still providing space for relaxation. A privileged position is taken by the Tuileries Garden (Fig. 16), which lies on the main city axis. As such it is not unique within the system of urban greenery; there are more parks and gardens established on the same principle of organization along the longitudinal main axis – Jardin du Luxembourg, Jardin des Plantes, Parc du Champs de Mars or Esplanade des Invalides. Romantic landscape created within Haussman's Renovation of the city as an echo of the English landscape school is provided in Parc des Buttes Chaumont or Parc de Monceau. The tradition of a magnificent park, with program for the public, continued after 1950s by parks Parc André Citroën (Fig. 17), Parc de la Villette or Parc de Bercy and continues until today when the world is expecting the result of the restoration of Les Halles Park. The need for recreation of all age groups is met by numerous pocket parks, which use their small scope to perform all necessary functions: provide space for children, benches in the shade of trees, space for picnic or playing on the grass. The plant detail is represented by perennial plants and cultivated shrubs shielding the space from the noise of the street. All parks are watched, have public restrooms, are fenced and closed at night.

The character of the wide spaces between high-rise buildings of La Défense is somewhere between a street, a park and a square. Bois de Boulogne and Bois de Vincennes, called "green lungs" of the city, are former royal hunting territories and they have large areas of composed spaces for recreation that are available for all inhabitants of Paris.

While the most important park representing Paris is the classical park Tuileries, Rome is represented by its specific "park" – Fori Romani also known as Parco Archeologico (Fig. 18). The fascinating scene of remnants of Roman forums, testifying its ancient culture and its fall, provides space for a specific visit. It is not a typical park; still, it plays a role of a vast green enclave in the midst of Roman urban spaces.

The park on the Pincian Hill, called Villa Borghese after a renaissance villa with a garden around which it spreads, is a public park closer to the idea of this type of public space and its realization (Fig. 19). Its contrast lies on the other bank of the Tiber on the Janiculum Hill – botanical garden Orto Botanico. This is followed to the west by the largest public

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3   KOPÁČIK, G. see 2 p. 282

park of Rome, Villa Doria Pamphili. Besides the mentioned public parks, the image of the city contains the vegetation of several private gardens; well-known and significant is Villa Medici di Roma, neighbour of Villa Borghese on the Pincian Hill; also gardens of Vatican are famous. While the parks and gardens of Paris have a central position within the city organism, in Rome they are more like backgrounds, green horizons framing spaces in the valley along the river bend.

The visual effect of the green horizon is similar in Prague (Fig. 20). The central position within the perception of the Prague horizon is taken by the gardens of the Prague Castle, especially garden Na valech, together with the architecture of the system of palace gardens terracing the southern Hradčany slope. An inseparable part of the panorama is also the green hill of Petřín. The green panorama then continues to the north by Vojanovy sady gardens and the horizon of Letná. Leaving aside spaces related to the river like Vltava islands, waterfronts and Kampa Park, public gardens and parks are kind of hidden, they are closed "green rooms". This is an outcome of their history as private palace or monastery gardens, gradually opening to the public. This group contains the Valdštejn Garden, Vojanovy sady gardens and Franciscan Garden on the right river bank (Fig. 21). Large open park areas such as Riegrovy sady gardens or Havlíčkovy sady gardens with Gröbovka villa are located beyond the border created by cancelled city walls and their origins are related to former wine-making farms. Another important part of the Prague system of greenery, especially from the point of view of city inhabitants' perception and use, is Stromovka – a former royal game enclosure.

Roof terraces and gardens

The potential of roofs as public spaces has not yet been used fully. There are large areas of flat roofs in cities and these are often located in attractive parts of city centres. A roof garden means also a more attractive view from the surrounding buildings, which can be an important economic factor for their sale. A roof garden provides an attractive view of the adjacent urban area from above.

Paris is quite open to the potential of using roof spaces, as is proved by spaces like Viaduc des Arts (Fig. 22) – a park on the construction of a former railway bridge – or Jardin Atlantique on the roof of railway station Gare Montparnasse. The garden of the French National Library (Fig. 23) is a "roof garden upside down". The enclosed space of the garden, designed as a section of an authentic pine stand, has been made to be viewed from the roof terrace. Another type of a progressive form of a roof garden is represented by Parc Serge Gainsbourg, which is a roof for the busy road Boulevard Péripherique.

Roman roofs provide space for both relaxation and vegetation. Although they are predominantly private, they are visually important for the image of the city (Fig. 24).

The trend of roof gardens or terraces has been appearing in Prague recently, mainly in newly built blocks of flats, private corporate headquarters or administrative buildings. However, there is no public roof park in Prague yet.

Waterfronts

A waterfront, just like a street, is a linear space; most often it is a body of water limited by a street from one side. This gives waterfronts their unique character of openness, the broad view of the river valley, over the surface of a lake or sea. It is usually the most attractive urban scenery, discovered for promenades and recreation during the 19th century. A waterfront can also be a part of a park, which is then more attractive.

Prague waterfronts, mainly the right-bank ones, are undoubtedly the most attractive spaces of the city (Fig. 25). The reason is not their landscape architecture, but mainly the panorama framing them. It is the specific physiognomy of the place which enables the Vltava waterfronts to apply this impressive dramaturgy. The river islands are also unique as they have remained enclaves of park areas with significant recreation and cultural functions.

On the other hand, Paris islands Île de la Cité and Île Saint Louis are filled with buildings and constructions resulting from their historic role as the cores of settlement. The prominent feature of Paris waterfront promenades is one of the symbols of the city: Notre Dame Cathedral on Île de la Cité. Starting from the Tuileries Garden and heading to the west, the prominent feature is the Eiffel Tower. Paris waterfronts are good examples of the maximum use of the recreation potential with the form fully corresponding to the performance of this function (Fig. 26).

In Paris we can see remarkable activities in the field of visual access to the river and spanning of its banks by footbridges, which have become another proof of the progressive incorporation of new architectonic features in the historical framework of the city. Out of these we can name Passerelle Simone-de-Beauvoir (Fig. 27) or Passerelle Solferino, the oldest footbridge is Pont des Arts from the early 19th century.

Talking about Paris waterfronts, the Seine River is not the only water current in question. There are also urban canals, e.g. Canal Saint Martin (Fig. 28), whose waterfront forms a long and variable promenade from Bassin de l'Arsenal at the Seine to north over the Bastilla square to Bassin de la Villette; the following Canal de l'Ourcq forms the spine of Parc de la Villette.

By contrast, Rome still shows its back to its river. Since the demolition of the Baroque Porto di Ripetta at the end of the 19th century, together with flood prevention measures and construction of roads on both banks of the Tiber, the river has lost the access points as well as a solid connection with the city. The river–city relationship has become more symbolic than physical.

"Space between houses"

The remaining space, "space between houses", comprises private and semi-private spaces whose realization enters the public spaces at least by affecting their character and appearance. The city space is an interconnected system and each of its components is in a physical and visual relation to the neighbouring space. We can also include private courtyards that we perceive as views when walking along a street or a square.

Roman courtyards are natural successors of the original atrium and peristyle of an ancient house. They were components of classical architecture and thus appear also in Paris and Prague. The ancient Roman court was first a garden and that is also what it has remained. Roman courtyards contain water elements, various forms of vegetation including potted plants, sculptures and they represent a valuable expansion of the urban public space, at least visually. Courtyards in Paris and Rome often remain private spaces; in Prague they were made accessible and connected in the form of shopping arcades. However, the commercial purposes have degraded many of them. Thanks to the ongoing renovation of the public space in Prague, the potential of courtyards as hidden private gardens is being gradually realized.

Means of landscape architecture and the ways of their application in urban public spaces of Rome, Paris and Prague

Relief and paving

The terrain configuration is one of the essential substances of each place, strongly connected to its identity. This is also valid for urban public spaces, where the local relief has a great effect on their physical and mental perception. It is the most comfortable and natural to move on a flat terrain, so a human being creates flat terrains both in the interior and the exterior. The terrain differences are then spanned by staircases and steps, ramps, terraces and slopes. Terrain variability allows for the creation of dominant features of the urban scenery, brings height gradation and plasticity, peaks provide views of the city and are often very popular with inhabitants and users of the urban public space.

May the local relief be variable or flat, the essential role in its perception is the form its surface takes as one of the most important components of landscape architectural composition. Paving (or other solid surface) provides the surface, the matrix, the basic platform for events. Landscape architectural composition can be based on the paving, its pattern and colours. On the other hand, paving can be nearly "invisible" in the interaction with other compositional elements.

The form of the public space surface can be one of powerful means to create or help create its image. Paving can have a dominant role in a street, mainly a street designed for walking, such as a pedestrian area and a promenade. The conditions for other landscape architecture means are often considerably limited here and the compositional idea is expressed in the surface.

Paving, solid running surface, is the interconnecting element of urban areas that supports the perceptions of the complexity of a city organism, if used properly. It is (often without people being even aware) a strong identification factor of each city. In the past, public areas were paved with easily available material, often from local provenance. The material that proved reliable was then used for most surfaced areas. While in Prague streets are paved with granite cubes or marble mosaic, Paris has had grey porphyry tiles since the Haussman's Renovation and Rome's typical surface of public areas is pavement from basalt cubes.

The terrain configuration of Prague has the essential role in the perception of the image of the city – the unique panorama is highly important for a person's identification with the place. The most important within the panorama is Hradčany with green hill Petřín and Letná terrace, which are vantage points for views of the valley as well as unique frames for views from right-bank waterfronts and bridges.

A typical feature of Paris is its local relief, or rather its 'nonexistence'. The city is located in a broad shallow valley of the Seine and its areas are characterized by their flatness, except for artificial terrain modifications such as Place Georges Pompidou (Fig. 29) or Buttes Chaumont Park.

The terrain situation of Rome is in stark contrast: the very origin of the city is related to seven Roman hills and most of its public spaces are at least gently sloping, such as Piazza della Rotonda (Fig. 9), Piazza di Montecitorio or Piazza Barberini. Sometimes the terrain has been levelled using terraces, as in Piazza del Campidoglio, Piazza del Quirinale, Piazza Dante (Fig. 12). One of forms overcoming the different elevations is steps, for example the famous Spanish Steps (Fig. 30).

As regards surfaces of public spaces, the highest variability out of the three explored cities has been found in Prague. The paving tradition was disrupted during the Socialist era and besides the granite cubes and mosaics other materials were used, mainly concrete and asphalt. After the change in the system of government, there was the elation coming from suddenly available new forms of paving. And finally, the high variability of the traditional paving was discovered, especially the Prague mosaic, to which the public space of Prague has been coming back recently. An example of a novel usage of traditional material is the renovation of Svatojiřské square (Fig. 31).

By contrast, Paris and Rome manifest continuity in their public space surfacing. At the same time, these cities, mainly Rome, are able to avoid false 'historicism' – traditional material used in modern forms. Examples of public spaces representing this approach are the pedestrian area Trevi – Pantheon

(Fig. 32), Viale della Pyramide Cestia or Piazza di San Cosimato.

Water

A spring, a stream, a river or a lake as its natural forms, as well as human-made reservoirs, canals, fountains and wells. Water, either in its dynamic or static forms, natural or artificial, always stands as a central compositional element in urban scenery – it is unique for its "otherness". Water has always fascinated people: it brings reflections, movement, and glitter to cities; views of water relieve human minds from everyday worries. Water carries the mysterious, elusive and volatile. It invites us to see and touch or brings calming sounds to the space. Water is a source of life, essential for all living organisms. Its relation to the origins of our very existence is contained within and perceived unconsciously, but strongly. Presence of water has aesthetic effects but also changes the microclimate and thus affects physical feelings. Thanks to its ability to lead a human mind from practicalities and elevate it towards the heaven it reflects, it is an important element of mental hygiene within the urban space. Its exceptional potential to gain dominant position in the composition of an urban space is realized in large spaces of squares or parks where it can impress us by the great scope of a static water surface or astounding dynamics of flowing water, as well as in limited interiors of streets or piazzettas where it can have a refreshing effect of smaller scope. The direct proportion of the space and the water element located within is not dogmatic – a small space can be 'filled' with water, such as in Piazza di Trevi, Rome (Fig. 33). The effect of such a space, which does not allow any distance from the water element and forces us into contact, is great.

Talking about water and water element within a city organism, first of all we have to mention a river as the initiating factor of settlement and a spine of a city. From this point of view, a river is the essential element present in each of the tree explored European cities. Its exclusive position within the urban landscape of Prague is dictated by its terrain configuration as well as the location of the main city spaces, such the Hradčanské square (Fig. 34).

The position of the Seine within Paris is also powerful and could be compared to a role of Grand canal – water mirror – within the composition of French classicist garden – it leads the view to infinity (Fig. 35).

The position of the river in Rome is a bit suppressed. As if it could not get free from the ancient history of the city when its swampy waters were a source of malaria and Cloaca Maxima emptied here. Still, the element of water is present in the Roman public space considerably. Roman marble fountains and watering places belong to the image of the city and many of them are its unmistakable symbols.

Also numerous spaces of Paris have their own spectacular fountains, accenting the classicist urban composition. In contrast to exaltation and spirituality of Roman Baroque, the atmosphere Paris fountains spread is more rational. On the other hand, one cannot find the water mirror, a typical phenomenon of classicist garden or city, in Rome; in Paris, they bring heaven to the ground in the Tuileries Garden, Trocadero, André Citroën Park or in the composition of the pyramid in the Louvre court.

Prague fountains unfortunately nearly disappeared from public spaces during the 20th century and new designs are usually limited to small watering places at most. The potential of an application of water with everything it can offer to a public space is currently largely neglected.

Artwork

A work of art is not an accessory, decoration or a detail of a garden design. It is the bearing full-fledged component of the garden space, the mirror of the era, its aesthetic canon, bearer of ideas and philosophy of the society, a sign of its spiritual wealth.[4] If we understand a garden in a broad sense as an open space under the sky, created by means of landscape architecture, by a human being for a human being, the definition comprises any urban public space. So even here this principle is valid: a work of art, either a sculpture, a painting or even modern multimedia art, has an essential role. There are some public spaces that are unthinkable without their artwork: Piazza Signoria in Florence is unthinkable without Michelangelo's David and other sculptures, placed in Loggia dei Lanzi and outside.

A work of art as imago mundi helps a person live.[5] Art also helps people understand who they are, what culture and history they are related to. And that only people are capable of artistic expression. Art in the public space is supposed to bring associations and questions. It does not need to be fully 'understood', in the sense of 'what it is', especially if the artwork is abstract or conceptual. Its placement in a public space of a square or a street is driven by principles similar to the placement of water elements (which are often considered artwork too, for their artistic value). However, a sculpture or a painting have a wider range of means of expression at their disposal, thanks to which they are able to tell a story and thus give their message and fill spaces with a meaning, materialize their spirits. The immense potential artwork in a public space carries seems

4   DAMEC, J., *Kompoziční potenciál zahradního umění*. Proceedings of SZKT. Praha, 2001. pp. 20–21.
5   NORBERG-SCHULZ, CH. Genius loci: k fenomenologii architektury. 1st Czech ed. Praha: Odeon, 1994. 224 p. ISBN 80-207-0241-5.

to be ignored more and more. Formerly natural presence of a sculpture or another work of art seems to be exceptional in modern modifications of public spaces. This may be caused by the society's orientation to consumerism and unwillingness to make 'redundant' investments. However, what else than an inspirational artistic expression could have the power to free people from the undesirable civilization effects and help them realize their position in the world, where their significance seems to be reduced to a role of a mere consumer. And art can use the same means as the current media. Public space is able to house various multimedia projections, installations or performances supporting its individuality. Thus, a work of art can help people see the uniqueness of each place, and in the case of an artistic happening also the uniqueness of each moment of human life.

The public spaces of all the three explored cities have works of art, mainly sculptures of historic value. Modern art installations as natural parts of the public space are numerous mainly in Paris. Progress in this field has recently been manifested also in Prague, where mainly seasonal installations of current art are frequent. The potential of a public place is often revealed by a work of art, for example Jaume Plensa's light installation in Palachovo square or Čestmír Suška's Rusty Flowers in the Royal Garden of the Prague Castle (Fig. 36). However, new landscape architectural designs of public spaces usually remain without art.

By contrast, the Roman public space, usually unthinkable without an opulent sculptural fountain, has no place for current artistic additions. Thus the city's modern face can only be seen outside the historical centre, mainly in the northern district Flaminio, where the set of concert halls Parco della Musica by the architect Renzo Piano was followed by the centre of modern arts Maxxi based on Zaha Hadid's design. The building itself is a modern sculpture and its surroundings provide space for outside art installations (Fig. 37).

Vegetation

'More greenery' is a probable requirement an average respondent will mention as one of the main prerequisites for a better quality of urban public spaces. However, there is usually the mistaken idea of quantity instead of quality, which should be the main indicator, from the quality of the design, i.e. a functional utilization of potentials various forms of vegetation offer for each specific place, to the quality of vegetation maintenance, which considerably affects its appearance and condition and thus the overall impression of the landscape architectural composition.

Vegetation has an exclusive position among the means of landscape architecture entering urban public spaces. Elements of vegetation are changeable in temporal cycles and along a temporal line, they are living organisms with initial and final life stages, which are thus witnessed by public space users. Vegetation is 'different' from other architectural elements and therefore it is a bearer of contrast. At the same time, it has the unique ability to unite environments that are different from the perspective of architecture. Elements of vegetation have a valuable potential in their variability – the range of forms, colours and shapes the creator is provided with. They also affect the climatic and hygienic conditions of a city: the moisture and temperature of air, dustiness and noise. Another important function is the mental hygiene – properly used and maintained vegetation suits both the eye and the mind.

These specific potentials of vegetation are often overlooked even by professionals, who reduce them to mere 'decoration' of the space instead of assigning it its real potential equal to other landscape architecture means.

Trees

The earth and the sky unite in a tree. Not only spatially because it goes up from the earth, but also because it grows and is 'alive'.[6] A tree has an exclusive position among vegetation elements. Thanks to its extraordinary dimensions (dependent on the species and age), it usually leaves an unforgettable impression. Its anatomy makes associations with basic architecture elements: a column and an arc. As such, a tree should be mainly used to create the 'interiority' of a space. Using a tree, the space can be spanned or divided, rhythmized or united; the tree can be a dominant feature, the centre of the composition. Remarkable individual trees, alleys or groups of trees can also be strong elements of the city identification as they are unique in their anatomy and atmosphere around them. Due to its longevity, a tree is a link to history and future of the place we inhabit. Some species are traditional for and typical of specific places as significant attributes of their identity.

The potential of clipped tree crowns, creating geometric structures of 'green architecture' is not often used in the Czech Republic. Czech towns have rather seen a rise of a different trend recently, planting of small-crown trees. The possible effect of columns and arcs is largely reduced then; due to their small dimensions they look disproportionate in the vicinity of multi-storey urban buildings. Due to their small stems, alleys of these trees block views through streets and they are more decorations than architectural elements; moreover, their aesthetic value is doubtful. Seemingly, they take less space; but in fact, they take the valuable space of the city. Other reasons for their use are that they do not shade house facades and fewer leaves fall down. However,

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6   NORBERG-SCHULZ, see 5 p. 286

a clipped tree crown with a sufficient height of stem could meet these requirements as well.

Looking for a symbol of Paris among trees, we would probably settle on the plane (*Platanus*) as the most frequent company of a typical city boulevard. Colonnades of stems and arcs of crowns are perceived here as completely natural elements of the public space; in Paris they have even become integral parts of the city physiognomy. Clipped crowns of the planes help create the architecture of the most famous Paris boulevard Avenue de Champs Elysées (Fig. 2). Besides the plane, we often meet alleys of the common hackberry (*Celtis occidentalis*), *Sophoras*, or *Paulownias*, especially impressive in spring. Another significant element of the Paris urban landscape is clipped crowns of limes (*Tilia* spp.) mainly, typical of e.g. the Tuileries Garden.

The silhouette of Rome is unthinkable without the typical umbrella crowns of pines (*Pinus pinea*) forming its image mainly around the Roman forums (Fig.18), in Piazza Venezia, the Pincio Hill and the Janiculum, where they are supplemented by slim cones of the cypress (*Cupressus*).

The distinctive image of the Prague panorama is characterized by horse chestnuts (*Aesculum hippocastanum*), which lights up the islands of Prague during the blossoming period (Fig. 38) as well as the banks of Kampa and the Petřín hill. The most frequent alley trees are limes (*Tilia* spp.), black locusts (*Robinia pseudoacacia*) and maples (*Acer* spp.). However, tree alleys that are parts of the space of streets are disappearing, as they are felled without replacement, or degrading due to unsuitable changes in the traditional range of species.

Shrubs

Shrubs or shrubberies are used in a city space mainly for volume, as filling, an element that can divide, frame or unite a space. Dependent on their height, shrubs can prevent undesirable views or direct them. Recently there have been discussions of shrubberies, mainly in relation to safety of public spaces.

Public spaces have seen a 'renaissance' of clipped shrubs and clipped hedges in the last years, as proven by the best world implementations of landscape architecture reconstructions.

Shrubs and shrubberies in Prague are most often applied in a role of an indifferent filling; there are mainly lilacs and yews. Their compositions often show signs of degradation, with relics growing on without any considerable compositional or growth-related interventions. By contrast, the potential of clipped hedges and impressive blooming shrubberies (especially hortensias) is fully used in Paris city spaces. In Rome, shrubs, especially laurels and oleanders are used as typical potted plants.

Creeping plants, green walls, and ground-covering plants

Creeping plants and green walls mediate the presence of vegetation attractively where other forms would not be possible for space reasons. Yet, they are not only a way out of trouble; especially expensive green walls can be typical features of a building's architecture. Creeping plants, mainly those able to climb without support, are a cheap and efficient solution to make empty gable walls or facades green. While green walls can be considered a current trend in landscape architecture of public spaces, surprisingly the potential of creeping plants is not fully recognized.

Some species of creeping plants are also used as ground-covering plants, sometimes as a replacement of lawn. They are mainly used for their small demands and ability to spread where lawn maintenance would be too expensive or where grass would not grow due to lack of light.

A view of a facade covered in a creeping plant, usually *Parthenocissus* or colourful *Bougainvillea*, is very frequent in the narrow streets of Rome. Creeping plants in Paris mainly grow on trellises and pergolas; wisteria is typical of city parks and gardens. Patrick Blanc, a Paris designer of green walls that enter the public spaces as parts of facades of cultural institutions such as Fondation Cartier or Musée du Quai Branly (Fig. 39) and commercial buildings such as BVH Homme department store, has become world famous. As regards the public spaces of Prague, creeping plants are a sporadic phenomenon; moreover, Prague is still waiting for its first 'vertical garden'.

Lawns

A lawn is one of the fundamental means of landscape architecture – a matrix, a foundation on which the designer's compositional game is played. It can be a representative carpet or a ground for lingering, where an impressive play of light and shadow takes place. It is a necessary surface for each park recreation area where games are played, people relax or have picnics. The current trend is terrain shaping designs creating attractive 'draperies'. These lawns are artificial systems demanding expensive maintenance. That is why many public spaces that are not supposed to be under heavy load use 'meadow lawns' – meadows where flowers grow, are scythed only a few times and are thus mainly to be looked at.

A lawn that is supposed to be stayed on is typical of Paris. Lawns there are used both by Parisians and tourists without any hesitation (Fig. 40). Lawns are present in all Paris parks and pocket parks and the load imposed on them dictates the way of their maintenance. The absence of grassy areas in Prague public space used to such an extent is probably a result of restrictions on entering lawns as well as their unattractiveness caused by their insufficient maintenance. Lawns in Rome only occur to a negligible extent due to the climate in the city and are always provided with irrigation systems.

Flowers

Annuals and perennials and their mixtures with woody plants and grasses are usually the most attractive parts of landscape architectural composition. They bring colour, variability, scents and plant details into the urban space. It is recommendable to use them in places exposed to views and in places where people stay so that they can be properly perceived. Due to the expense of their establishment and maintenance, they are a luxurious element, a jewel, which should be used adequately. In contrast to past years, the range of flowers is significantly wider; relicts from the 19th century in the form of annual carpets are being replaced with forms of less regular flower designs, which allow for more variability and impressiveness of flowerbeds and mobile pots.

The Prague public space does not utilise the potential of flowerbeds fully, concerning both annuals and perennials. Beds of perennial flowers appear sporadically in parks. Beds of annual flowers occur as parts of historical park spaces and have usually the carpet form based on patterns from the 19th century. However, the examples of annual flower beds in historical spaces of Paris, for example in Rond Point or the Tuileries Garden (Fig. 42) prove that a more progressive approach directed to more irregular planting is possible and suitable even here. The most frequent flower used in Prague public spaces is the rose (Fig. 41), a typical feature of representative city space in the Czech Republic; unfortunately, a bit profaned by its use for monuments of Red Army soldiers and Communist leaders during the past era.

Potted plants

Potted plants, or mobile greenery, are a special chapter that can contain trees, shrubs, annuals and perennials as well as lawns. The typical feature is that the vegetation is potted. In dependence on the climate, it can be a seasonal element, which is a part of the composition during the growing season only, or it can be a permanent part. In both cases, the vegetation should accord with (or contrast if necessary) the whole, both by the pot design and its content.

The great potential of potted plants is not usually realized in the urban public space. The pots may also be parts of pergolas and trellises, or can be connected with sitting furniture or serve as a prevention of vehicle entrance.

Traditionally, the Rome public space uses potted plants abundantly. They often serve for space division, for example for a restaurant to be separated from the pavement or the traffic, or they just accompany a street space (Fig. 5). The pots are usually classical, based on historical forms; the same occurs in Paris, where potted plants are parts of the classicist garden and parks reflecting them, such as Parc André Citroën. Potted plants are also quite abundantly used in the public space of Prague, the

most frequently in architectural forms typical of the 1980s. They are usually planted with annuals (*Tagetes* or *Salvia*) or resistant woody plants (*Juniperus*). However, they are often relicts from the past as the same design is renewed every year, rather from habit than a practical or aesthetic intention. This element often completely avoids new designs.

Furniture

Furniture – equipment of the outside space. First of all, it serves us to be comfortable in the urban space, to be able to relax there. Where people need to stay for more than a few minutes, they need to sit down. The basic principle of sitting furniture design is its adaptation to a human body. However, the comfort of sitting is currently making way for designers' intentions in which the sitting elements are used as separating or rhythmizing elements and their primary purpose is less considered. Their lack of comfort then forces the inhabitants away and they stay only a short time. The practicality of the furniture is an expression of responsiveness to space users. A typical representative of urban furniture is a bench; the current urban space also houses various hybrid multifunctional forms of furniture that border on sculptural art. Both the form and the placement of furniture are important so that inhabitants in streets or squares can watch what is happening from the best possible angle.

Besides sitting, other human activities need to take place and these demand other elements: poster areas, information boards, columns or other elements separating pedestrian areas from the traffic, waste bins, tables, bicycle stands.

Furniture is usually in the role of a more or less significant accessory within a landscape architectural composition; however, it is essential for proper functioning of the space. Both its function and its accord with the whole are important. Considering its close contact with a user, there is potential to use detail in its design.

A specific feature of the furniture used in Paris public space is mobile metal chairs that are freely available in Paris gardens: the Tuileries Garden and the Luxembourg Gardens (Fig. 43). In this respect, Paris shows high responsiveness to the users of the gardens: the comfortable sitting furniture is provided in sufficient numbers and adequate forms where it corresponds to the space function. Seldom, also beds are provided in the public space, for example in the Paris roof garden Jardin Atlantique, where a sloping area of a long wooden slatted platform is adapted for lying.

A bench is a natural part of Prague public space. In some new adaptations of public spaces, e.g. Řezáčovo square, Flemingovo square or the residential complex Nový Karlín (Fig. 44), we can find the undesirable tendency of design being superior to comfort.

When walking along streets and squares of Rome, we will find hardly any benches or other sitting furniture. This is probably caused by the Italians'

nature. Italians like to sit and have a cup of coffee or a glass of wine in the omnipresent cafes and restaurants. Tourists then use the typical steps of numerous Roman churches or in some spaces, such as Piazza Navona (Fig. 45) or Piazza del Popolo, the separating metal fences adapted for occasional sitting.

Minor constructions

Minor constructions, such as gazebos, vending kiosks, pergolas or phone booths, perform the functions of business, communication, need for roof or shadow. At the same time, new spatial relations arise as a consequence and these constructions are other artistic and architectural expressions.

The symbols of Paris public space and also representatives of architectural art nouveau are Guimard's Paris metro entrances (Fig. 46). Neither of the other explored cities have such a strong identification sign among minor constructions that would be so prolific in the city and world known. Their modern followers, similarly unique, are pavilions – follies in the Parc de la Villette (Fig. 47). As in an English landscape park, which these seemingly purposeless constructions refer to, they accent the space of the park, offer vantage points and mediate views of the park from a different perspective; moreover, there is the experience stemming from their architectural design.

Light and time

Two variables with specific effect on the perception of the external spaces of a city. Light: natural, changing independent of our wish, and artificial, which we can control. It changes the atmosphere, the mood, contributes to the multi-layer character of a work of architecture. Without the visitors being aware, light affects their positive or negative acceptance of the surrounding world. Natural light changes during the day and the year; the designers work with light and shadow using structures they place in the space. The dusk and the dark of the night enable designers to create effects using artificial lights. Light needs to be considered another element whose design will appear in the public space and thus it deserves some thinking.

In contrast to light, which can be controlled, nobody can control the time. It needs to be taken into account and its cycles and flow have to be considered when designing landscape architectural composition. *Practical components of the urban scene always indicate their temporal dimension: the new modern city x the old historical centre; the durability of a building x evanescence of a temporal facility; the gradual depth of the past x one-time origin; end x openness to further development.*[7]

However, life and direction of a human being, as well as life and direction of a city (as that is in human hands) are to a great extent (however we try) unpredictable and time brings the unexpected, sometimes even unwanted, as well as the beautiful and the valuable.

Roman light, as we perceive it in its streets and squares, is most often sharp and clear; the contrast between light and shadow is deep, the skies are blue. The heat is tolerable in the shade of narrow streets and in squares people dwell under cafe parasols or around fountains.

The sun of Paris and Prague is not so scorching; it often hides behind Baroque white clouds in the blue sky. Nowadays, scenic lighting of architectural dominant features is frequent; new implementations also use lighting of tree crowns.

Time runs in all the three European metropolises, but not at the same speed everywhere. In the public spaces of Rome and Paris, its continuity, link of the present to the past, is more obvious, as well as the certainty of cultural background for the future, so important for people's identification with the place they inhabit.

DISCUSSION

The selection of the spaces explored within the research was nearly totally limited to the historical centres of the cities. Although one can argue that these areas have been stabilized as regards the landscape architecture means and issues arising in relation to new urban developments are more topical, the spaces of historical centres are currently under a lot of pressure that has to be responded to. Moreover, these spaces are limited in space and for historical reasons, and yet they need to meet the requirements of the modern society and convene with the current lifestyle. Thus the tension between the forms and functions imposes high demands on sensible, efficient and knowledgeable use of landscape architecture means. This, as some examples show, cannot be taken for granted. Historical centres of cities are representative areas as they truly represent the culture of the country. The sequences of human lives that take place here, may it be for tourists or inhabitants, should be unforgettable and filled with valuable perceptions.

With regard to the usage of landscape architecture means in urban public spaces, town planners tend to have negative attitudes following from superficial or lay perspective of the issue. The disrespect to 'greenery' stemming from the bad condition of the vegetation in urban spaces lowers the status of its potentials that cannot be replaced by other means. Moreover, it neglects the essence of a city and its spaces as a multi-layer, complex unit, where unity and contrasts, noise and quiet play their roles, each in its unique place, together sharing in the perceptions of the city identity. The potentials of

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7   HALÍK, P., KRATOCHVÍL, P., NOVÝ, O., Architektura a město. Praha: Academia, 1998. 204 p. ISBN 80-200-0665-6.

landscape architecture means for the perception of an urban public space are searched for and identified in this research, showing examples of their usage, both positive and negative.

CONCLUSION

The designer – landscape architect, whose work enters the urban public space, needs to be aware of and knowledgeable about the means he or she uses and the potentials they provide to meet his or her objectives. One of the sources of this knowledge is research into real situations with wider contexts and ability to compare and review them. Through this research, some generalizations can be made, with respect to the uniqueness of each place, its history and spatial context. The research should comprise a wide exploration of public spaces and search for mutual, often hidden or indirect parallels. The study shows that these exist among the chosen European cities and can serve as a guideline for further designs of urban public spaces.

SUMMARY

The aim of the research was to find the role of landscape architecture means in the creation of urban public spaces and identify the possible ways of its usage. Public urban spaces of three European metropolises were explored: Rome, Paris and Prague. These were chosen based on their specific affinity within a broad cultural range of western European civilization. The study attempts to find some universality that could be considered proper use of their potential within the usage of the means of landscape architecture for designs of urban public spaces.

To meet our aims we investigated historical contexts related to the issue of urban public space creation using professional literature and visual resources. The current attitudes to the creation of urban public spaces using landscape architecture means were explored by our own empirical research into public spaces of Rome, Paris and Prague. Spatial and functional roles of individual components were examined based on the universal function of compositional principles.

The following basic types of urban public spaces were specified: streets, squares, parks, roof terraces and gardens, waterfronts, and "spaces between houses". The basic means of landscape architecture used in urban public spaces are relief and paving, water, artwork, vegetation, furniture, minor constructions and light and time. Spatial and functional performance of the particular components was explored within the particular public spaces. As the functions of compositional principles are universal, their exploration can lead to some generalization. Naturally, the uniqueness of each place, its history and spatial context need to be taken into account. Only an exploration of public spaces in the largest possible scope and searching for mutual, often hidden or indirect parallels will yield new knowledge and understanding. The study has proven that these exist among the three selected European cities and they can serve as a guideline for further designs of public urban spaces.

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Appendix

Photos 1–47, taken by the author

1. Paris - Boulevard Richard Lenoir

2. Paris - Avenue des Champs Élysées

3. Paris - Musée du Quai Branly

5. Rome - the Street of Campus Martius

4. Rome - Viale della Pyramide Cestia

6. Prague - Na příkopě Street

7. Paris - Place Dauphin

8. Paris - Place Georges Pompidou

9. Rome - Piazza Rotonda

10. Rome - Largo di Torre Argentina

11. Rome - Piazza del Viminale

12. Rome - Piazza Dante

13. Prague - Karlovo Square

14. Prague - Malostranské Square

15. Prague - Řezáčovo Square

16. Paris - the Garden of Tuileries

17. Paris - Parc André Citroën

19. Rome - Villa Borghese
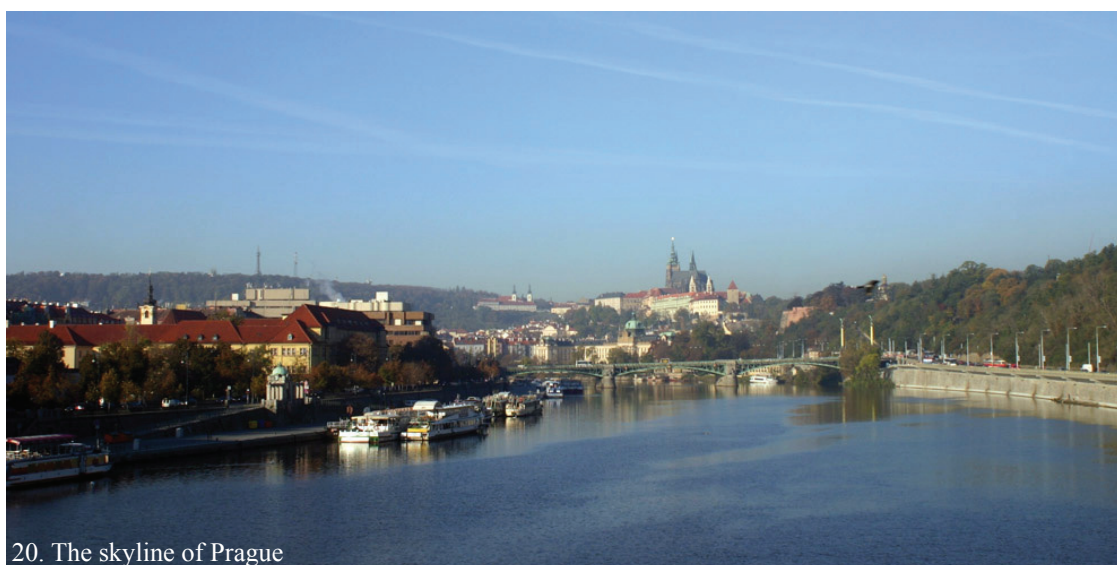

18. Rome - Parco Archeologico

21. Prague - the Franciscan Garden

20. The skyline of Prague

22. Paris -Viaduc des Arts

23. Paris - French National Library

24. Rome - private roof gardens

27. Paris -Passerelle Simone-de-Beauvoir

25. Prague - Alšovo Watefront

26. Paris - Île de la Cité

28. Paris - Waterfront of the Canal Saint Martin

29. Paris - Place Georges Pompidou

32. Rome - the pedestrian zone Trevi – Pantheon

31. Prague - Svatojiřské Square
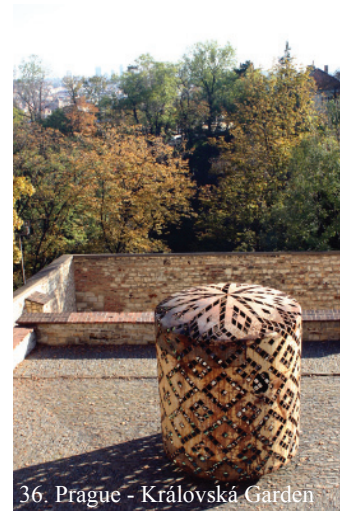

30. Rome - Piazza di Spagna

34 . Prague - Hradčanské Square

33. Rome - Piazza di Trevi

35. Paris - Seine

36. Prague - Královská Garden

38. Prague- Slovanský Island

37. Rome - MAXXI

39. Paris - Musée du Quai Branly

40. Paris -Jardin du Luxembourg

41. Prague- Alšovo Waterfont

42. Paris - Tuileries Garden

46. Paris metro entrances

43. Paris - Luxembourg Gardens

47. Paris - Follies in the Parc de la Villette

45. Rome - Piazza Navona

44. Prague - Nový Karlín

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