Green Infrastructure in the Image of the Present Public Spaces. State of Knowledge

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Abstract

Greenery in the present metropolis, cities and villages plays a role of a strategic element, which decides in a great part about the sustainable way of the development. The subject is broadly analyzed in the books and articles and well known in a traditional way. Though, it is worthy of a new look considering the fresh literature, which indicates the inspiring approaches on time, in the field of nature and human environment.

Ecological aspects are connected with the public spaces in a direct way. We observe it in the everyday life, where markets, squares and streets are shown as "equipped" with trees, flowers, and grass. However, in the bibliographical sources there are examples of public places shaped under influence of nature as well. These states of knowledge will be presented by several science data from recent years.

The purpose of the paper is to find the literature about the role of green infrastructure in urban and rural public spaces. The results will disclose, that the creation of "green" places shall happen not only by the discovery of the basic indicators for its composition, but also by stating that the harmony or tension, static or dynamic character of "ecological squares" may be result of a spontaneous acting, not listening to the compulsory numbers.

Key words: *Green public spaces, nature, state of knowledge, indicators versus spontaneous acting, sustainable development.*

Introduction

The presented paper shows the kind of treatment of nature in the urban and rural environment, considering the subject of public open spaces. The analysis has a form of a state of knowledge, describing the problem of the green infrastructure related to the public open spaces, which we meet in the literature from the last years. Creation of new squares and streets, where trees, flowers, and other elements of nature are planned, is often connected with the land-use of the wasted empty spaces. This process is recognized not only in the large scale in metropolis and cities, but also in towns and countrysides. Therefore the size of the public spaces differs from huge, for example 200 hectares big, till the very small ones, like half hectare. Similarly, the property of the ground is various: In some cases the site is public (for example in rural areas), in other cases it is private and rented by the city's or metropolis' authorities.

The article mentions two possible and contrastive approaches towards planning of greenery in the public spaces. The one is the creation of indicators, which help by measuring the dimensions of places and its percentage participation in the city/village plan as well as the greenery participation. It seems a legal instrument and key for the master plans, indicating how to plan. Nevertheless, this instrument will not affect the beauty and suitable composition of the intended project. The other way to infuse the new life into abandoned greenfields and brownfields by means of making it accessible for people is the spontaneous acting. On the one hand, it lets the visitors observe the wild grass and trees growing in the planned revitalization but also before, during the degradation period. On the other hand, introducing the temporary functions is also the possible use of the space, which often suits so well, that inhabitants are demonstrating against stopping it and starting the long-term function. The positive example for it may be the beach bars along the Spree in Berlin-Kreuzberg in Germany, perfectly matching the surrounding of the urban river valley and fulfilling the needs of the young and middle-aged people.

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Method of the research

The method of the presented research is connected with the theoretical cognitive analysis of the literature discovering the subject of "green public spaces". The state of knowledge in this field is relatively rich and is based on books, projects, urban and landscape magazines from last years. The beginning of the research was the spatial interest of the author in the public space, surrounding us every day, where trees play significant role. This contributed to the wide in situ research in Western Europe since 2002 till now. Another fact is the practical methodological approach in form of participation in projects referring to the public places with greenery in cities and countrysides. These all aspects influenced the focus on the chosen literature presented in the paper.

Results

Concluding, green infrastructure shall be ordered in the urban and rural land-use plans with special rights, since it affects the better life conditions of the inhabitants. The appropriate criteria of the greenery composition in the public spaces and the keys for the very squares are necessary. It helps to create these areas and to keep them, to preserve them in the right form. We can find these arguments in the literature. However, these criteria are not everything. Legal instruments sometimes are not enough and it will not make the space beautiful by itself. In some cases the rule of the green public spaces is that it comes into being and is shaped without rules. Therefore, the presented wild nature in Germany, the free access for people to the neglected industrial areas or the greenfields in towns and countrysides in other parts of the Western Europe or opening of the closed urban and suburban infrastructure in USA for public use – these are examples of sustainable development. Present and future generations shall have the possibility to learn from the past and use freely the land and eco-heritage. This way creation of the public open spaces with trees and other elements of nature on different types of devastated sites (former: industry, airports, rail stations, quarries, military areas, exposition areas, housing areas, green wastelands or just empty spaces) in various forms shall become one of the main goals in the land-use plans in the world in both, regulated and spontaneous form. These two kinds of forms are like two types of squares with participation of flora, which complete each other and enrich the system of public spaces.

Discussion

The factor of nature in the planning system and spatial land-use in the process of public space creation is visible in the cities of Western Europe. The historical revitalized district Zurich-West in the Industriequartier in Zurich, Switzerland, which is currently being transformed functionally, is a site, where the environmental recovery process takes place by means of, among the others, arranging the public space with meaningful participation of greenery. It results in the plans with "Concept of trees planting" for the district in the specialistic literature. This concept refers to the main squares, streets, and other public spaces of special meaning in the re-used post-industrial area - German: "Baumkonzept" [19]. Not only sport parks or city parks but also trees planted on squares and along streets in companion of various forms of water (fountains, drinking water-springs) are the elements of the every-day life in the urban environment. The plan of the neglected districts' revitalization foresees also the concept of the street space, places for trees, cross-sections of streets enriched by the natural elements. It is said, that five square meters of a public space shall serve to one work place and eight square meters answer the needs of one inhabitant, as sites related to nature [20]. The concepts of the spatial improvement of the district Zurich-West lean on plans of network and ecological compensation, inventory of the city nature and the elements of landscape protection and new greenery. The second significant indicator for the mentioned post-industrial zone in Zurich is the assigning of the order for keeping 30 percent of the public space, both, in the open-air spaces

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and often in the widely accessible buildings, which determine the necessary spatial compensation. However, the places with the view protection, mainly by the Zurich lake, Limmat river, Sihl river, and views from the surrounding hills (Hoenggerberg, Juetliberg, Kaeferberg), as well as the green areas for recreation in the total city have been assigned [25]. Streets, markets, and squares, as a part of the ecosystem of the historical inner-city of Zurich, where the car-traffic is being limited gradually, are friendly for pedestrians, where the avenues are planted with trees and accompanied by fountains and other street furniture [40].

Similarly, the "sites with special buildings and with big amount of green areas", "for common needs with big participation of greenery", "spaces with high participation of greenery", "for agricultural use", green areas, forests, and water surfaces have been set in the land-use plan of Berlin, Germany [31]. The vision of the sustainable development (German: nachhaltige Entwicklung) is popular in Switzerland since the beginning of the 21 century. This phenomenon is broadly described in Europe, also at the Swiss Federal Institute of Technology (ETH) in Zurich as connected with the spatial strategic planning, wherein ecology, as an environmental factor, plays the main role since that time [22].

Creativity, which needs and searches for the systematic methods, seems to be a strategy, next to building the scenarios, which are the important tools for forecasting the future. The mentioned creativity in planning demands also the statements about what shall be changed in the first line and what in the second line. The public space designed with greenery observed in the town of Hasselt in Belgium, as an example of spatial diversity in planning, is analyzed in this aspect as well [1].

The subject of mutation of the landscape architecture is presented by the scientists related to the mentioned ETH in Zurich. The development of the cityscapes dominated by nature is described as an approach in the landscape planning. Moreover, the post-industrial landscape and the wild plants' vegetation as the main potential of the recultivated areas appeared as the winning idea for the former industrial lands in Saabruecken in Germany in 1990 (the project group leaded by Peter Latz). Similarly, nature wins in the Landscape Park Duisburg Nord in Germany, where letting the wild greenery grow in the area of 200 hectares, devastated by the human work in the past, is the conscious planning acting, leading to its environmental cleaning. It serves as a "new public space" with greenery [4]. The water in the urban and rural spaces, as the necessary ecological element, fulfils the esthetical and functional task for the inhabitants since the historical times. "The Event-landscape" is the vision of connecting the river and the exotic French greenery on the public shore – the boulevard landscape (French: paysage) in Paris [18].

The matter of discussion seems also the mountains and lakes, as a part of "the landscape esthetics" and the urbanized areas between cities, the so-called "in-between city", which next to suburbs and villages is another kind of human settlement (German: "Zwischenstadt"). This esthetics is linked with the "power of the eye", which creates the landscape and changes this, what it sees, into "nature" [10]. The author mentions also nature, which follows after liquidation of the human activity, basing on two examples from England. In the north-west part of this land next to Ashton-in-Makersfield one can find the footpaths, which are accompanied by the secured dumps, wild grass and bushes "left without care". Nevertheless, the area of the former railroad junction by Wigan has been abandoned without any action in a planned way. Nature recultivates these areas "by itself", transforming it gradually into extensive fields, forests, and lakes, since 1960s. This studied effect indicates a big importance of nature for the recovery of the neglected and destroyed environment [11].

Since about 2000, the urban phenomenon, meaningful in the environmental, social, and economic way, is the so called temporary use in Berlin (German: "Zwischennutzung:). It suggests the spontaneous land development of the devastated sites for the users, having provisional character as proposed for the period of a few years. The elements of nature in and around these areas are rivers, trees, bushes, city meadows, wild sand beaches, as a composition of new public spaces [33]. The example of such land-use is the former Airport Tempelhof in Berlin. Here, since 2009 the

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public park "Tempelhof Freedom" (German: Tempelhofer Freiheit) exists. This is the symbol of the "new" centrally located public space in metropolis, where nature wins. The inhabitants are demonstrating against the possibility of closing the park, since the plans for building the space over with housing estates are proposed [16]. Similarly, the greenery in form of gardens, biotope, green islands, roofs and facades within the present Airport Tegel in Berlin, intended to be re-used as living-research space, plays significant role also in a sense of designing public spaces [34]. In this place it shall be reminded, that the idea of arrangement of public parks in German cities comes from the 19th century. In Berlin it was the time of the social concept of setting of open recreation areas for "simple inhabitants", in order to give them the place to rest [29]. The national parks (German: Volkspark) of different sizes (in the big scale, like Volkspark Wuhlheide and small scale, like Volkspark Prenzlauer Berg) are fulfilling these needs till today, which is the pride of the metropolis. Besides, the new Park is Gleisdreieck in the inner-city is connected strongly with the history of the Berliner Wall. The land of 32 hectares was left abandoned since 1950s. Only in 2011 it became a magnet for visitors, where the huge amount of railways is "mixed" with the spontaneous birches' forest growing in-between the old tracks. In 1960s there were plans for the traffic tunnels in the district. Though the idea of authorities was not realized thanks to the public protests and after decades the concept of an access for all people in form of a park won as the best solution desired by inhabitants [28]. By this way the Free Space Concept of Berlin shall be mentioned, which refers to the period of division of the city into the West and East Part. The political breakthrough in 1989 led to the spatial changes as well. The new challenge was the land-use of the abandoned areas placed close to the former land boarder. It gave the chance to open these wastelands for public, shaped as parks with respect to the traces of the history. Some of the young parks are: the Mauerpark, the Park am Nordbahnhof, the Landscape Park Rudow-Altglienicke or the already described Park auf dem Gleisdreieck [30].

Additionally, the squares in the center of Frankfurt am Main, in Germany are described in the landscape magazines. The Rossmarkt, Goetheplatz, and Rathenauplatz seem for the inhabitants too "naked and empty", since they are composed of large concrete surfaces or paved with stones, almost no natural elements. The designers discuss, what is the success factor for the perfect public space [9]. Is it trees and grass, which give the needed humid shadow in the hot summer? This aspect – greenery – is one of the positives by the mentioned Tempelhof green park in Berlin, which, next to central/interesting location and emotional history stands for the popularity of the space.

The process of enrichment of the inner-city parts with nature is perceivable especially in Berlin. It is to see in the smaller scale, on the streets, markets, playgrounds, by the restaurants, and squares for example in Prenzlauer Berg, north-east district and other living areas, mostly in the eastern part of the metropolis, since the political breakthrough in 1989 till now. One of basic arrangement elements are trees in the streets and small parks, which are making these areas alive, friendly, and ecological [27].

Another metropolis, Hamburg, where the green areas in the centre and around it, means "tradition and trend" – beginning with flowers in the gardens till the ecosystem of the total city, where the main role plays, just like in Berlin, also water in form of lake, rivers, and various types of water reservoirs and water forms, like for example the river landscape of Elbe River along with the National Park Hamburgisches Wattenmeer [2]. In this place we can not forget about the HafenCity in Hamburg in Germany. This post-industrial district went through the long way of the metamorphosis starting from the local industrial pioneers till "green urban heart" with, among the others, Lohsepark, as a typical central park for this surroundings [8]. Although, some inhabitants of the metropolis claim, that there are still too little of trees in these new public spaces and too much of concrete surfaces on the footpaths and squares.

In the science literature one can also meet the words "wildness" or "prairie", which refer to the "hybrid" landscape, as the way of development of the wastelands by means of greenery. There is the appeal to find and to leave the unknown as unknown [6] looking for spontaneous acting. By this

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occasion, the concept of the land-use of the German city Essen is presented, where the public space with big green zones creates the city. Here the radiation concept is introduced, where each empty space is included into the open spaces system creating a kind of a network (German: "Strahlenkonzept" ibid p. 212). Moreover, the ruderal greenery appears in the post-industrial areas, where it is an important ecological factor of the new spontaneous public spaces. Trees and wild grass soften the dramatic character of the esthetical changes in the structure on the brownfields in the intermediate period in the Western Europe. Here we say about the new image of the spatial destructions, recognized during the mentioned intended "temporary-use" or the unplanned time of degradation [41]. The significant problem in the spatial planning of the revitalized city areas, comes out in form of dilemmas by setting next to each other the requirements for the economic growth of the post-industrial districts in Switzerland and their necessary biological renewal. This ecological aspect is meant here as a creation of the space for living of fauna and flora in towns, cities, and metropolis, as well as in some cases creation of conditions for the compensation of its habitats, which is strictly connected with the design of public spaces [24,42]

Furthermore, the answer to the question about the possibilities of the return to the original natural values of the post-industrial areas in Pittsburg, Pennsylvania/USA, are the scientific methods for the ecological revitalization. It means the creation of the park in the Nine Mile Run Valley in the area of the former steel production. It is the symbol of the renaturization and renewed public access to areas, which had been closed in the past [3]. Besides, in New York, USA, the public promenade High Line attained fame in last years. The "new" footpath is created on the old railway bridge arranged with grass, bushes, esthetic pedestrian surface and attractive street furniture [5]. In contrary to the mentioned "wild" nature in cities, we meet also the green elements, which are carefully planned today. They are put into the flower-pots, they have geometric or more free shapes, though good matching to the given square or avenue. At present, such examples exist in Eindhoven, in Holland, or in Madrid and Bilbao in Spain [13].

The ideas for the land-use of the post-industrial excavation (among the other quarries), where the beauty of the nature in form of water (new lakes) and natural greenery have priority, have been presented in the landscape-urban competition in Germany "Landschaftskunstpreis Neuland 2005" (Landscape-art Award New Land 2005). This competition is to become an inspiration for the development of the cultural landscapes, surrounding the new public spaces in the chosen Regions of the Lower Saxony in Germany. The protection of the landscape is shown as the fineness of an emotional character for the inhabitants – the beauty of the native nature. Its protection shall become the preference in the spatial planning and land-use [36].

Further scale of the problem is the functional and esthetical transformation process of the neglected areas in the periphery of cities and metropolis. The green infrastructure in this case is to be planted in the new squares and boulevards in the former steel production area in the suburbs of Milan, in Italy. The challenges in the project of the adaptation of the former 130 hectares big Falck Area are the negative associations of the inhabitants with the difficult past of the region, which has been empty since 1990s. One of methods to revive the space with a positive image, softening the dramatic existing situation, is the intended park of 100 hectares and the valuable trees along the avenues and main landscape axis. This natural composition is meaningful next to the mix of function, like, among the others, commerce, culture, apartments, and offices. The significant value of the concept is the consideration of the past. The present urban tissue and its characteristic features will be re-used, re-interpreted and re-integrated with the city in the future. It is the matter of keeping the scale and the genius loci of the site. The new buildings will be equipped with "hanging gardens" and green roofs, just like in the project for the Torre Sanpaolo in Turin, Italy [17, 44]. The spatial sensitivity shows that these historical landmarks shall be preserved, since it is stamped and well located in the site, and people are used to the existing elements in the district.

Similarly, the outskirts of towns are analyzed by the other author [21], where the landmarks and system of orientation are needed facing the dramatic reality of anonymous pedestrian areas

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playing the transitional role only, "supporting movement from car to mall or office". The example of Middlesex suburbs in USA is given with a suggestion of improvement of the existing state. One of possibilities would be reclaiming of the huge streets of the unused spaces by building the embankment, including partially the suburban infrastructure and partially it may be a landscape element. The greenery planted there would mitigate noise from the highway and make the unwanted district more attractive, also for walking and cycling.

Besides, the rural areas in Europe possess an impressive spatial potential considering the possibility to create new public spaces with accompanying trees, flowers, and meadows. The authorities of the villages in the Opole Region, in the south-west of Poland, appointed the abandoned greenfields, half till one and half hectares big, of communal property, in order to design it in form of public open spaces. The immense importance has there the participation of local people in the project process [26]. This idea of rural spatial revitalization began in 1990s in Western Europe. At present, since about 2000 this process takes place in Poland. Here we are witnesses of the another idea of the governor of the Opole region, who constructs with experts the "Network of most interesting countrysides". Creation of public spaces in these areas is one of means for the revival of the rural sites facing the spatial and demographic problems, looking at the need of a new life [39].

As far as the method of the paper is concerned, the presented state of knowledge is referring to the way of creation of scientific works in Germany, which mention, among the others, the green infrastructure as a problem in a spatial planning. Here, the validity of the governance concept for the research about the city development and spatial planning is discussed [12]. Moreover, the subject of importance of the evaluation method in environmental and landscape planning basing, among the others, on the digital land model [7] and on the method of the planning work, as the indicators for landscape analysis, high-quality spatial satellite systems, actualization of data, or the methods of data use, as qualification and many-time-level analysis [38] is relevant for the scientists at the Technical University of Berlin, Germany. However, concerning the essential meaning, they present the general concept of the city and the elements of its composition in the urban scale of the given area, as Chicago, Paris, Brasil, Mumbai, Moscow, or Shanghai, where the accompanying element is the city greenery [35]. The scientific books in Berlin debate on new technologies and the present industry. The evolution of the modern industry is assumed as the starting point for the new ways in terms of spatial solutions, where place for green areas shall be foreseen [23].

Besides, the deliberation on ecological land- and nature protection, as well as on the alternative sources of the progressive landscape- and public open space design is taking place in Europe. By this way the wildness of the nature in German cities is treated as an expression of the democratic society. The process of the nature protection is described in this case as the realization of the idea of bigger naturalness in cities [15]. Additionally, the spatial-structural concepts in the city planning are observed from the ecological point of view, analyzing the new planning culture in the spatial planning and the strategic orientation of this planning in the city- and metropolitan regions [37].

Last but not least, the concept of the "green city" shall be mentioned. This idea describes the "fanatic" version of human settlements, regardless if it is metropolis, city, or village, which is green in a big and small scale. Here we see not traditional parks or typical squares with trees, but rather flowers standing out of the suitcase, futuristic design of flower pots, creepers on the wall inside of a room, projects of tower blocks used for food production, food markets in the streets, animal and vegetables farming in the city (on the roofs of scrapers), recreation gardens on the top of houses, facades painted green, flowers and vegetables growing out of the walls or out of various kinds of the street furniture – postboxes, newspaper boxes, parking automats, or even out of asphalt on the street. This vision is literally presenting the sense of the green infrastructure and urban farming in the public spaces, where spontaneity seems to be planned [14]. It recalls the idealistic vision of the Upper Silesian Ecological Park designed in 1990s for the heavily industrial region in the south of

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Poland [43]. In this urban concept the green infrastructure in all the possible forms, from the micro scale like flowers in pots by the widows, through gardens in the workers housing estates, till the macro scale concerning squares, green parks, and spatial compositions in the Silesian industrial cities, had been presented. In that case, trees, grass, and flowers had isolating, recreation, ecological, sanitary, and esthetical function, which is crucial for the improvement of the difficult and unhealthy living conditions in the Upper Silesia.

List of literature

1. Albrechts L. Creativity in and for Planning. In: *disP 162, 3/2005, NSL – Netzwerk Stadt und Landschaft ETH Zuerich*. Zurich. P.14–25.
4. Arch-Urbs Architectonical-Urban Design-Research Office. Upper Silesian Ecological Park. Arch-Urbs. Katowice, 1992.
1. Behoerde fuer Stadtentwicklung und Umwelt: Hamburg's Green Spaces – Tradition and Trends. Exploring Parks and Countryside. *Behoerde fuer Stadtentwicklung und Umwelt*. Hamburg 2009.
5. Collins T. Postindustrielle Landschaft – Nine Mile Run: Intervention in the Rust Belt. The art and ecology of Post-industrial Public Space (Post-industrial Landscape). In: *Die Brache als Chance. Ein transdisziplinaerer Dialog ueber verbrauchte Flaechen* (The wastelands as a chance. A interdisciplinary dialogue on greenfields and brownfields). Genske D, Hauser S. Springer Verlag. Berlin, 2003. P. 103–116.
6. Dettmar J. Nature-dominated Development in Urban Landscapes. In: *Landscape Architecture in Mutation – essays on urban landscape*. Institute for Landscape Architecture ETH Zuerich, gta Verlag. Zurich, 2005. P.79–97.
7. Feireiss L., Feireiss K. *Architecture of Change 2. Sustainability and Humanity in the Built Environment. Gestalten*. Berlin, 2009.
8. Giseke U. Und auf einmal ist Platz. Freie Raeume und beilaeufige Landschaften in der gelichteten Stadt (*And suddenly there is a free space. Open spaces and accompanying landscapes in the decimated city*). In: Giseke U., Spiegel E. Stadtlichtungen. Irritationen, Perspektiven, Strategien *(Empty city spaces, perspectives, strategies*). Birkhaeuser Verlag. Berlin, 2007. P. 187–217.
9. Gruehn D.: Zur Validitaet von Bewertungsmethoden in der Landschafts- und Umweltplanung *(About the importance of the evaluating methods in the landscape- and environmental planning).* Mensch und Buch Verlag. Berlin, 2005.
10. HafenCity Hamburg GmbH. HafenCity Hamburg. Projects. Insights into Current Developments. Hafen City Hamburg GmbH. Hamburg, 2010.
11. Harting M. Steinwueste versus urbaner Platz *(Stone desert versus urban square).* In: Garten und Landschaft. Zeitschrift fuer Landschaftsarchitektur. Plaetze und Parks *(Garden and Landscape. Magazine for landscape architecture. Squares and parks)*. Callwey Verlag, Muenchen, 2010.
12. Hauser S. Aesthetics of Urbanised Landscapes. In: *Landscape Architecture in Mutation – essays on urban landscape*. Institute for Landscape Architecture ETH Zuerich, gta Verlag, Zurich, 2005. P. 35–47.
13. Hauser S. Metamorphose des Abfalls. Konzepte fuer alte *Industriеareale (Metamorphoses of the wastes. Concepts for the former industrial areas).* Campus Verlag, Frankfurt/Main, 2001.
14. Heinrichs D. Vom Konzept zur Anwendung: Potenziale des 'Governance-Konzepts' fuer die Analyse staedtischer Entwicklung und raeumlicher Planung *(From the concept till the application: The potential of the 'Governance-Concept' for the analysis of the urban development and spatial planning).* Habilitationsschrift an der Fakultaet VI – Planen Bauen Umwelt der Technischen Universitaet Berlin, Berlin, 2011.
15. Klanten R., Ehmann S., Bolhoefer K. *My Green City. Back to Nature with Attitude and Style*. Gestalten Verlag, Berlin, 2011.
16. Klanten R., Ehmann S., Borges S. et al (ed.). *Going Public. Public Architecture, Urbanism and Interventions*. Gestalten, Berlin, 2012.
17. Koerner S. Landschaftsentwicklung als kulturelle Aufgabe. Zur Rehabilitation und Neubegruendung der Landschaftsgestaltung *(Landscape development as a cultural task. Work on rehabilitation and re-motivation of the landscape forming).* Habilitationsschrift an der Fakultaet VII Architektur Umwelt Gesellschaft der TU-Berlin. Berlin, 2010.
18. Luescher-Gmuer R., Pola N. Entwicklungsplanung Zuerich-West. Leitlinien fuer die Planerische Umsetzung *(Development planning Zurich-West. Guidelines for the planning transformation).* Amt fuer Staedtebau Stadt Zuerich. Zurich, 2006.
19. Lukez P. *Suburban Transformations*. Princeton Architectural Press, New York, 2007.
20. Meiners A. Tempelhof. Gestern heute morgen *(Tempelhof Airport. Yesterday, today, and tomorrow)*. Nicolaische Verlagsbuchhandlung, Berlin, 2011.

* Kontaktinis asmuo / Corresponding author

21. Pfammater U. Bauen im Kultur- und Klimawandel. *Green traditions – clean future*. Vdf Hochschulverlag AG an der ETH Zuerich, Zurich, 2012.
22. Picon A. Constructing Landscape by Engineering Water. In: *Landscape Architecture in Mutation – essays on urban landscape*. Institute for Landscape Architecture ETH Zuerich, gta Verlag, Zurich, 2005. P. 99–115.
23. Pola N., Luescher-Gmuer R., Bayer B. Entwicklungsplanung Zuerich-West. Materialien zum Planungsprozess: 1996–2001 *(Development planning Zurich-West. Materials for the planning process).* Hochbaudepartement der Stadt Zuerich Amt fuer Staedtebau. Zurich, 2004.
24. Sartorio F. S. Strategic Spatial Planning. A Historical Review of Approaches, its Recent Revival, and an Overview of the State of the Art in Italy. In: *disP 162, 3/2005, NSL – Netzwerk Stadt und Landschaft ETH Zurich*. Zurich, 2005. P. 26–40.
25. Schoenherr M. Integrierte Unternehmensarchitekturen. Terminologie, Methoden, Technologien und Muster (*Integrated enterprise architecture. Terminology, method, and pattern).* Habilitationsschrift an der Fakultaet fuer Elektrotechnik und Informatik der TU-Berlin. Berlin, 2011.
26. Senatsverwaltung fuer Stadtentwciklung und Umwelt, Nagel R., Thierfelder H., et al (red.): Strategie Stadtlandschaft Berlin. Natuerlich, urban, produktiv *(Landscape Strategy for Berlin. Naturally, in urban way, and productively)*. Senatsverwaltung fuer Stadtentwciklung und Umwelt. Berlin, 2012.
27. Senatsverwaltung fuer Stadtentwciklung und Umwelt, Profe B., Renker U. et al (red.). Stadtgruen in Berlin. Urban Green Spaces in Berlin. Raum fuer Freizeit und Naturleben. Recreation and encounters with nature. Senatsverwaltung fuer Stadtentwicklung und Umwelt. Berlin, 2012.
28. Senatsverwaltung fuer Stadtentwciklung und Umwelt: Der Park am Gleisdreieck. Idee, Geschichte, Entwicklung und Umsetzung *(The Park by the Gleisdreieck. The idea, history, development, and Implementation).* Senatsverwaltung fuer Stadtentwciklung und Umwelt. Berlin, 2013.
29. Senatsverwaltung fuer Stadtentwicklung und Umwelt: Parklandschaft Tempelhof. Das Konzept *(Landscape Park Tempelhof. The concept).* Senatsverwaltung fuer Stadtentwicklung und Umwelt. Berlin, 2012.
30. Senatsverwaltung fuer Stadtentwicklung. Berlin schafft Frei-Raeume. Beitraege zur Aufwertung des oeffentlichen Raumes in den Sanierungsgebieten. Projekte 1995–2003 *(Berlin creates free spaces. Papers on revitalization of the public spaces in the renovated areas)*. Senatsverwaltung fuer Stadtentwicklung. Berlin,2004.
31. Senatsverwaltung fuer Stadtentwicklung. Flaechennutzungsplan Berlin *(Master plan of Berlin),* Berlin, 2012.
32. Senatsverwaltung fuer Stadtentwicklung. Urban Pioneers. Berlin: Stadtentwicklung durch Zwischennutzung *(Urban Pioneers. Berlin: Urban development by means of temporary use).* Jovis Verlag. Berlin, 2007.
33. Senatsverwaltung fuer Stadtentwicklung. Zukunftsraum Flughafen Tegel. Der Werkstattprozess *(Future space Tegel Airport. The workshop process).* Senatsverwaltung fuer Stadtentwicklung. Berlin, 2011.
34. Stadt Zuerich/FST. Nachhaltige Entwicklung Zuerich-West. Statusbericht 2004 aus Sicht der Stadt Zuerich *(Sustainable development Zurich-West. Statusreport 2004 from the point of view of the Zurich City Authorities).* Stadt Zuerich/FST. Zurich, 2004.
35. Stadt Zuerich: Zonenplan. Bau und Zonenordnung *(Master plan. Building and areal law)*. Zurich, 2004.
36. Strabel W., Włodarczyk A. M. Krajobraz wsi opolskich formowany przez jej mieszkańców *(The landscape of the Opole countrysides shaped by its inhabitants).* In: *Managing the knowledge in the region, University of Applied Sciences in Nysa*, 2012. P. 102–136.
37. Urban F.: Tower and Slab – A Global Architecture in a Local Context. Habilitationsschrift an der Fakultaet VI – Planen Bauen Umwelt der TU-Berlin. Berlin, 2009.
38. Von Dziembowski B., Von Koenig D., Weilacher U. Neuland. Bildende Kunst und Landschaftsarchitektur *(New Land. Art and landscape architecture).* Birkhaeuser Verlag, Berlin, 2007.
39. Weiland U.: Zukunftsfaehige und dauerhaft-umweltgerechte Entwicklung von Stadtregionen. Handlungs- und Forschungsfelder – Herausforderungen fuer die Umweltplanung *(Future-orientated and long-term environmental friendly development of the city regions. Action and research fields – challenges for the environmental planning).* Habilitationsschrift am Fachbereich 7 Umwelt und Gesellschaft der TU-Berlin. Berlin, 2001.
40. Werner C. Einsatzmoeglichkeiten raeumlich hochaufloesender Sattelitenbilder fuer Landschaftsplanung und Naturschutz *(Use possibilities of the high-resolution spatial satelite pictures for the landscape planning and nature protection).* Habilitationsschrift an der Fakultaet VI – Architektur Umwelt Gesellschaft – an der TU-Berlin. Berlin, 2002.
41. Wilczyński, R. (ed.). Sieć Najpiękniejszych Wsi. Opracowanie eksperckie projektu – możliwości utworzenia sieci *(The Network of the Most Beautiful Countrysides. The expert project – the possibilities of creating a network)* http:// http://www.odnowawsi.eu/serwis/index.php?id=542 (15/11/2013).
42. Włodarczyk A. M. Pedestrian Friendly Streets: A Case Study in Zurych. In: TU-International. Zeitschrift fuer internationale Absolventen der Technischen Universitaet Berlin, P.16–167, No. 67/2011.
43. Włodarczyk A. M. Znaczenie Elementów Odnowy Biologicznej Byłych Terenów Przemysłowych wobec Intensyfikacji Zainwestowania. Dylematy Procesów Rewitalizacji w Zurychu, Szwajcaria *(The meaning of the elements of the biological renewal in the former industrial areas versus intensification of the investment.*

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Dilemmas of the revitalization processes in Zurich, Switzerland). In: Innowacyjne Rozwiązania Rewitalizacji Terenów Zdegradowanych. Instytut Ekologii Terenów Uprzemysłowionych, red. Jan Skowronek. Katowice, 2010. P. 189–195.
44. Włodarczyk A.M. The Adaptive Re-use and Re-integration of Urban Industrial Areas. Case Studies in Covilha (P), Zurich (CH), and Berlin (D). Wissenschaftlicher Verlag Berlin. Berlin, 2009.
45. [03/01/2014]. Internet link: http://www.rpbw.com/project/77/masterplan-for-the-ex-falck-area/

Зеленая инфраструктура в савременных общественных пространствах. Изложение знаний

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Краткое изложение

Проектирование общественных мест в связи с природой оказывает воздействие на устойчивое развитие мегаполиса, городов и сельских районов. Во-первых, площади, пешеходные дорожки и велосипедные дорожки, расположены среди деревьев, вносят свой вклад в экологию среды обитания человека (борьба с загрязнением воздуха автомобилями). Во-вторых, ходьба, езда на велосипеде, и физические упражнения на свежем воздухе улучшают здоровье жителей. И, в-третьих, посадка деревьев, цветов и травы, которые дают тень летом, влияет на оптимальное качество воздуха, его влажность, улучшает условия жизни, работы и отдыха. Объединение мест общественного пользования с природой является одним из лучших способов сохранить баланс между ростом технологического развития цивилизации и потребностью людей в гармонии и отдыхе, принимая в расчёт будущие поколения.

В докладе упоминаются две идеи (городская и сельская): проекты озеленения общественных мест, а также композиции дикорастущих растений в парках и в перестроенных ранее заброшенных районах. Современная литература, относящаяся к данной области ссылается на растущее число земельных участков, как неиспользовавшихся ранее для строительства, так и участков с заброшенными объектами промышленной застройки в городских и сельских окрестностях. Эти пустоши могут представлять потенциальную возможность для создания новых открытых общественных пространств, что характеризует их значимую роль в зеленой инфраструктуре.

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