The Landscape After: approach of Landesgartenschau to reconstruct postindustrial territories

Valeriy Nefedov, Saint Petersburg State University of Architecture and Civil Engineering

Abstract. Postindustrial territories landscape transformation on the example of Landesgartenschau 2012 in Bamberg, Germany organization are analyzed as approach to change the quality of space with positive ecological dynamic. Variety of mixed recreational functions, offered during landscape exhibition time, had been provided due to the landscape structural changes and successful natural resources regeneration. Making additional efforts to create new components in the landscape after industrial using had initiated important economic and social process on previously depressed territory.

Keywords: postindustrial territory, landscape transformation, Landesgartenschau, ecological reconstruction.

Introduction

Increasing role of postindustrial territories landscape-ecological reconstruction becomes more evident as urban development is going more quickly towards new spaces on the cities periphery cultivation. Situated between new expanded residential areas and historical centre zones, many industrial territories are occupying very convenient positions nearly to transport infrastructure and parts of potentially attractive landscape, for example, rivers and canals. After enterprises closing as technology became obsolete lost interest of developers to these territories is explained by additional expenses on the land reclamation and space rehabilitation. These reasons are of course economically understandable. But at the same time these often abandoned spaces in the cities have increasing importance on the way to solve many problems in the urban landscape, firstly, ecological and social.

Landscape of “gray” belt, where old industrial buildings are for a long time surrounded with ecologically non balanced, aesthetically non attractive and functionally non effective used open spaces, becomes the subject of required scientific researches to improve existing situation. The necessity to find and to substantiate the possibility for landscape design technologies using makes really topical different strategies analyzing, combining effective economic mechanisms and natural recultivation. Transformation of depressed territories in many cases not obligatory includes the industrial buildings demolition, that might take a big amount of financial resources. The aim to find the solution when consecutive changes in the landscape on these territories could go towards positive qualities achievement by resources of nature regeneration with future self regulation introduction might be the way to more sustainable development.

Already during several decades German experience to combine territories ecological reconstruction, economical development and social adaptation by regularly landscape events like Gartenschau (Federal Gardening Exhibition) arranging gives many reasons to think about this way as evident approach to change mostly negative image of postindustrial territories towards mainly positive situation. One of the most interesting aspects of such transformation is the approach of new landscape structure creation to provide social activities increasing in the friendly environment maintenance. Example of passed Landesgartenschau in Bamberg on 2012 [4], already became the history, has in scientific sense some important positions to be analyzed.

Methods and purposes

Traditionally the places for future Gartenschau organization in Germany are determined according to the national programs and are realized with necessary financial supporting [1]. The aim to transform postindustrial landscape from problematic situation towards sustainable developed territories usually includes a lot of technological, ecological, aesthetical, cultural, social, economical and even political aspects. Each case and each site has several peculiarities, as from the point of view of natural resources of the site, as well from the point of preserving or partly demolishing industrial buildings. In Bamberg on 2012 Bavarian Garden Show had been arranged on the territory of 18.5 hectares [2], where previously industrial functions had dominated.

During long time (started on 1856) of using for textile industry development by Bamberg Mechanical Cotton-Spinning and Weaving Company big part of territory was occupied by
factory buildings between two water spaces. From 1927 the Erlangen-Bamberg cotton mill (ERBA for short) had developed big amount of raw fabric production, that was successfully continued up to late 1992 and early 1993, when the factory had filed for bankruptcy [4]. From that moment the problems of territory using had started to grow, because occupying very attractive for new development site, surrounded by water and nearly to residential areas, industrial structures and ecological consequences became the braking factor on the way to involving this territory to new active life. Open spaces around the structures step by step, staying in rest, had received natural re-plantation (pioneer vegetation), but this quality of landscape did not gave too much occasions for effective using. In 2007 idea to arrange Landesgartenschau on the previously used by ERBA territories was offered by Stadt Bamberg and the works of landscape transformation had taken place from 2009 up to 2012. Total expenses for the program realization were 14.2 Million Euro [2]. Such important and really significant for the city postindustrial territories rehabilitation became possible because of correctly understood role of such regeneration, when the landscape is analyzed from many aspects and is modified on the vector of sustainability. For certain logic of postindustrial landscape transformation understanding, as Bamberg example might be taken for many others problematic sites positive changing, one of the first important research method is contextual analysis. In order to solve any problems of such territories several positions have to be analyzed, including:
1) the quality and location of main industrial buildings valuation for the possibility to be potentially used.
2) content, quality and placement of existing components of landscape.
3) surrounding functional priorities, directions and location of main links to postindustrial territory.
4) existing network of pedestrian communications and its relation to the structure of landscape.

Looking at the site of Landesgartenschau in Bamberg from the contextual aspect it was quite evident, that location of big area with main industrial buildings in the south-western part along the canal, technologically required for previous use, had complicated the links with nearly existing residential areas, and the territory development had to include additional link and entrance in the eastern part, providing wider possibilities for visitors. Quite important factor in contextual sense was existed for long time and well cultivated area of collective gardens in the north-western part of island. Such important natural and socially required resource of territory became one of the strongest factors for the future landscape functional transformation. Some of existed previously buildings because of their height dimensions and location were carefully analyzed from the position of potentially dominated visual symbols of the site as the memory of previous using.

Continuing of research methods applying on the postindustrial territories could be done on the way of open spaces landscape structural analysis, that it is necessary to make in order to understand such positions, as:
1) structure of riverside spaces with existing (or non existing) trees and bushes vegetation.
2) location and dimensions of open green spaces, that might be used for any activities planning.
3) variety of vegetation, existing natural accents and their location on the territory.
4) resistant green spaces with ability to carry additional recreational loading.
5) existing (or non existing) relief, plastic and dimensions of its profile.

For territory in Bamberg northern water boundary had more natural resources, as the destructive influence of industry on this part had less pressure. Riverside landscape there during long time had not visible planning organization, but big trees had created effect of natural green space adoptable for stay and movement. Territory of ERBA enterprise itself had up to 2009 year minimal landscape green components (except line of high trees along canal) and with priority of plane relief, representing the area with very required landscape transformations and nature elements integration. Buffer spaces in the southern-eastern part, between enterprise and residential areas were originally more green, offering additional potential for open green spaces equipment and different recreational functions introduction. The structure of landscape in the northern part, occupied by collective gardens, was quite monotonous, subdivided in private small gardens with narrow pedestrian paths and ecologically balanced environment.

**Landscape transformation as the object of research**

Idea to arrange Landesgartenschau on the territory of former ERBA enterprise for the theoretical researches is quite interesting from the point of view how by means structural and functional landscape optimization to provide for the territory possibility on sustainable development, spending money less to season decorations, flower exhibitions or temporary expensive construction, but mostly on long time providing for the people to have adopted nature with the structure of spaces and accessibility on very attractive level. In this case solution to arrange Gartenschau is analyzed as certain scientific approach to create landscape with minimal decorative temporary qualities, but basing
on natural resources to achieve new quality of landscape with big resource for social activities development and culture of space raising.

Using the concept of postindustrial landscape as the process of single-minded qualitative changes and analyzing Bamberg Landesgartenschau 2012 experience as one of latest examples it is possible to offer certain positions, that might be applied for analyzing similar problematic areas after long industrial using.

**Conditions for the landscape changes**

Looking at many years German experience in Gartenschau "technologies" using for the landscape transformation one of principal position, that makes possible to do any steps towards postindustrial territories regeneration, is providing coordinated program on the base of centralized and local budget combining, permanently private and state investments using to create conditions for consecutive recoupment of investments. The factor of payback becomes more important in the process of postindustrial territories transformation as possibilities for it are contained in the variety of functions, that might be included in former industrial buildings, and in the new approaches to arrange the system of small pavilions for different kinds of services (including small cafe), based on small business interests (Fig.1). Commercial sense of landscape transformation becomes more widely integrated, involving visitors to participate in the economical supporting of such changes. To solve ecological problems of postindustrial landscape more often means to find non standard solutions of economical questions, as the possibilities of centralized financial supporting are traditionally limited. And this condition requires to look for landscape solution how step by step return invested money, creating necessary spaces and centers. Of course the occasion to return part of money by sailing the entrance tickets existed during Gartenschau period, but the aim is to give later for the visitors chance to use equipped spaces without any payment.

Another important condition to provide successful transformation of postindustrial landscape from problematic to positively solved situation is contained in the additional improvement and equipment of transport effective system. Thinking about regenerated space means to answer many questions, including take into account increasing number of private cars potentially arrived to the areas of improved landscape and not always providing for people possibility to use bicycle for coming there. Solution, taken in Bamberg, was quite adequate to the limited spaces for big car parking planning nearly to the entrances. Location of the sites for future landscape regeneration in the industrial zones has some additional spatial resources to arrange parking areas aside from entrances location and to use convenient shuttle-bus as very effective transport. Thousands of Bamberg Gartenschau visitors had used every day...
this way for arrival to new areas and this solution was quite positive as well for ecology of exhibition area. Especially for children-visitors the offer of small carts was offered near main entrances, and for the parents it was not the problem to spend some hours with little kids, moving on long distance.

The third condition to provide effective use of positively transformed postindustrial landscape is enough density and attractive network of the paths creation to main recreational facilities. In the case of Bamberg Landesgartenschau territories one of the most important solutions included new pedestrian paths network creation, including path along the river in the concept of ERBA-park. Spatial interpretation of these pedestrian ways was coordinated with the main idea of the territory - not only to see, but to interact with landscape. In order to avoid monotones space quality of long pedestrian ways planted vegetation along them was supplied with small textual information and benches to provide in the space scenario certain accents, possibility for short rest and attention attraction (Fig. 2). Such “interactive” character of transit spaces psychologically allowed to reduce the feeling of distance on the way and gave the chance to alternate visual communication with transformed landscape. The same aim was achieved by making new elegant bridge along and over the river embankment, that as well provided long distance visual interruption (Fig. 3).

**Required qualities of the new landscape**

In various parts of postindustrial territories different opportunities to offer for the visitors many activities scenarios usually exist, and the aim of landscape design in this case includes certain qualities of space providing, that might give the chance to use the spaces as possible effectively. One of basic qualities on such territories is attractiveness for interaction and recreation all ages groups of visitors. Functional alternation and structural organization could follow totally flexible way in the planning interpretation, but certain concentration of spaces for small children with parents closely to main entrances has evident reason. For this part of visitors really depending on as possible shorter distance to move in Bamberg Landesgartenschau big variety of playgrounds and interactive structures were offered. Combining of entertaining and developing spaces for children was successfully realized there on examples of small educational gardens with insects sculptures made of wood, as well as for more elder kids in the area of urban farm the knowledge of milk taking from cow on the rubber imitator was clearly demonstrated (Fig. 4, 5). Environment for adventures becomes more required.
in contemporary recreational landscape organization, and not only for children and teenagers. As the answer for this trend in Bamberg ERBA-park along new artificial canal it was possible to find several extreme zones with special equipment for different age potential users (Fig. 6). For young generation visitors different sport areas might give real feeling of required dynamical way of rest, and for this aim open spaces with necessary equipment could be the solution to provide their sustainable interest. For elder people, again combining entertaining and developing versions of rest, spaces like urban farm and urban vegetable-garden in the structure of postindustrial territory could provide attraction another group of visitors, giving permanently new information and involving in the interaction with exhibition space (Fig. 7).

Thinking about important qualities of transformed postindustrial territories it is necessary to mark such quality as color variety and alternation of nature accented zones. Especially after industrial using, when in the memory of several generations the main, key image of territory was mostly in gray color with minimal differences, due to variety of colors it could be possible to offer another space without negative psychological references. It does not means the necessity to use big quality of flowers in the open spaces landscape design, but supposes different colors in all components of landscape using, including several active parts of ground surface covering, small architectural forms, sculptural accents, some natural accents by colorful plants and special means of artificial relief shaping. Among interesting solutions in this sense in Bamberg Landesgartenschau such bright colors compositions as painted metal supporting walls of small high rows in vegetable-garden and contrast alternated colors in series garden (pharmacy garden, roses garden, Web garden, VIP garden, Radio garden, under water garden) were used (Fig. 8). To provide comfort and enjoyment - this aim is important in different colors using, mixing possibilities of natural materials with resources of artificial ones.

Accessibility for handicap people has to be guaranteed, and this quality put adequate requirements for all transformed territories organization. Located not far from residential areas, open spaces on postindustrial territories could have many actively or passively used zones, independent on people possible health troubles. Coming to such territories, this group of visitors is looking for wide variety of actions scenarios and is interested in the different events participation. Concentration of main points and zones of activities along equipped paths with hard and flat ground surface covering potentially is answering to the principal requirement of accessibility providing. Thinking about big amount of elder age visitors, the organizers of Landesgartenschau in Bamberg had arranged special Red Cross service on bicycle version, moving around mostly intensively visited places.
Humanity of postindustrial territories landscape organization supposes many people different interests integration with professional responsibility to arrange environment without any barriers.

Methods of landscape transformation

Looking at example of Bamberg Landesgartenschau as approach to transform territories with certain problems towards more actively used space and ecologically balanced environment some of methods could be marked as potential for application. One of resources for such methods using is related with converted industrial buildings. Functional changing of interior spaces and adaptation to new using means in this case looking for such functions combining, that might have the most effective answer for the visitors interests, including arranging of small cafe, technical exhibitions with preserved mechanisms or interactive installations including, souvenirs shops or products exhibitions organization. Several industrial structures, that were included in the new landscape in Bamberg, had less technological sense, but more addressed to the memory of site and previous using remembering. Tall tower, that visually dominated over transformed landscape, together with factory chimney had created very resistant vertical accent, and for the future using, especially tower, might give additional sense for the panorama site location.

The structure of former controller centre was included in scenario of entrance space, keeping atmosphere of previous industrial enterprise.

Next method of postindustrial territories landscape transformation is connected with such positions as new spatial and structural components introduction, involving additional natural resource. Method of structural landscape change using is especially required after long time domination in the factories territories such characteristics as monotones, flat ground level surfaces and minimal variety of nature components. Answering to the aim of attractive spatial content providing not only for picturesque forms to look at but really different spaces creation to be used for various activities, Bamberg Landesgartenschau authors had operated with new artificial relief and new artificial canal construction. Plastically reach and silhouette active relief was done by using of waves and hills with grass surface by covering recultivated soil in the bottom (Fig. 9). Such technological solution became possible as previous territory using, especially profile of textile production, had not created ecological problems to the ground pollution, and big amount of replaced soil became convenient material for sculptural interpretation and significant transformation of open spaces relief. Structuring artificial hills by small supporting walls, that might be used as the seats, and putting flexibly and spontaneously many colored benches on the slopes, the spaces of new hills were included in the landscape scenario as the best and very intensively used parts of transformed landscape. This position is quite important to mark that in postindustrial territories in not mostly required a big amount of new vegetation planting, but creation in the image of space something radically new and really opposite to previous situation. In this sense new fish-canal, length 1200 meters (expenses for construction 2 Million Euro), done in the centre of ERBA-park from July 2009 up to March 2010 [3], really radically changed landscape situation in quite big part of territory. Crossed by several pedestrian bridges and filled with water vegetation along sloped embankments, the canal with very curved valley like streamer, with dimensions of water mirror pulsation and equipment for extreme games became very intensively used by visitors (Fig. 10).

New functional and compositional axe as curved canal and green valley had totally destroyed previous monotones image of space adding at the same time a lot of dynamic activities for different ages people.
The method of open spaces wide functional filling on postindustrial territories is very important to introduce better recreational offer, including contacts with the nature, cultural development, sport activities and knowledge broadening. Following to this version of open spaces functional transformation in Bamberg Landesgartenschau areas sport sites were alternated with thematic gardens, playgrounds for kids connected with sites for the rest on the hills, many cafe zones combined with sites for games and rest, vegetable gardens included together with urban farm. Existed previously areas of collective gardens were developed and arranged simultaneously as exhibition space. For additional people attraction in the area of collective gardens small living houses for renting were constructed with new agricultural sites. This important agricultural functions integration was one of main ideas to provide permanent territory using and to follow concept of sustainable development. Between the functions, that not often are included in contemporary park landscape, it is necessary to mark fragment of space, looks like cemetery. On small site with conditional graves the landscape possibilities to compose such spaces with plants, flowers, sculpture of glass, stone or metal were arranged. Making developed paths network crossing different functions zones the authors of concept - Berlin, Tragwerksplanung (Brückenbauwerke, Leitfaden): Grad Ingenieurplanungen, Ingolstadt [2] were realized the system of rest points with seats and tents between plants, composed in different ways and vegetation assortment. Such functional alternation of places to move and to sit, to play and to see was reflected on the structure of landscape and fixed in the nature infrastructure, giving total impression on flexible used spaces for wide diapason users interests.

Between the methods of landscape visual transformation one it is significant to mark - the method of semantic environment modeling, following the spirit of postindustrial territories. It was reflected in several sites and objects interpretation in order to make certain symbolical 'bridges' with the history and peculiarities of previous industrial use. For example, some playground structural interpretation was arranged as wooden long sloped ribbon very similar visually to long fabric ribbon and equipped for different ages children games. Space for modern using with such thematically accented memories on previous use has evident resource for identification and gives additional task for making landscape in another way. One of structure looked like loom for fabric production but instead fabric the ribbon of cascaded flowers had remained the character textile industry (Fig. 11).
This aspect of landscape design is related to additional efforts to fix certain part of space history and at the same time to provide for the future, even under radical functional changes, consequent nature components widening as necessary condition on sustainable development.

**The means of landscape design for territory transformation**

Making the collating analysis of landscape situation on postindustrial territories before and after transformation it is possible to understand the role of landscape design means, firstly such as role of green infrastructure construction. The aim to change significantly ecological situation on such territories can be achieved mostly not only by increasing of vegetation density and quantity, but in very important scale by choosing of the most resistant local plants for new structure of spaces creation and making of assortment variety in certain parts with required identity. Biodiversity as very important quality of green infrastructure creation and the mechanism of constructed ecosystem future self-regulation it is necessary to put special attention.

Perennial plants using and minimal requirement for the future artificial supporting, priority of natural growing with long time sustainable image keeping and following to the peculiarity of each functional zones content give more sense to the territory rehabilitation. Landscape structure as the answer to mostly required kinds of activities could become flexible enough by placing principal components of green infrastructure along main communicative paths and around different dimensions open spaces. Answering to the economic reasons creation of postindustrial landscape as the park supposes minimal expenses on temporary compositions and putting maximal efforts to construct resistant ecosystem with natural structure, including canal or river valley for future self-balanced development.

Open spaces equipment with small architectural forms as special means to provide comfortable stay for visitors has in such areas wide sense and visible importance. Together with the vegetation small forms help to transform open spaces into adopted and scaled “green rooms” for different users groups with variety of staying scenarios. New design and technologies are required to make these “rooms” equipment more flexibly used and better integrated in the landscape. At the same time in the interpretation of these forms special design or artistic resource exists, meaning combination, for example, the place to sit with the occasion to see some actions or to contact with integrated sculpture, as well “sitting” nearly (Fig. 12). Making place from the point of view priority of action and interaction with equipped environment supposes to offer more small forms that allow to move and to change position or have kinetic character. Visible possibility to move or replace several seats on the green hills and using of traditional for private gardens hammock nearly to small cafe and kids playground might have influence on better social adaptation in postindustrial territories.

**Conclusion**

Territories previously used for industrial production are representing big spatial resource for urban landscape transformation by means consecutive ecological reconstruction with more balanced situation receiving. Different approaches already used in the international practice for this aim have wide diapason of methods and planning solutions, demonstrating mostly positive results for depressed territories rehabilitation. Development instead closed industrial functions new residential areas or business and trade centers construction, answering economic reasons, only partly might solve the problem of ecological reconstruction. German experience to use for this purpose Landesgartenschau as approach to transform former industrial areas into ecologically balanced areas by arranging such event as big landscape technologies exhibitions has certain priorities from the point of view green infrastructure growth and gives a lot of subjects for analysis.

Evident necessity to change the quality of depressed spaces in this way has main answers on the direction to arrange sustainable landscape with wide variety of users activities, operating in economic and cultural aspects. For the landscape organization this way represents wide possibility for experimental spaces modeling, combining changes of relief and water components, introducing means of vegetation distribution following mostly new functional logic of space.

As evident effectiveness of this approach it is possible to mark the opportunity to receive as result of transformation the landscape that is not similar to traditional park or only landscape exhibition. Landscape in this way gives for visitors as additional education and opportunity for active movement, as well as relax in natural surrounding and social contact between different generations. This concentration of different functions with adequate landscape interpretation helps to think about another structure of spaces, where choice to do something very different, often radically opposite, is reflected in certain “cell” or “pixel” spatial subdivision, and they are integrated by developed paths network. From the strategy view point of postindustrial territory development first step
like *Landesgartenschau* quite often gives powerful impulse for next steps of the space redevelopment and these following stages of landscape transformation, for example, as residential construction in the part of depressed territories, become successful continuation due to already done ecological changes. Advanced process of positive landscape transformation allows to overcome as well certain psychological rejection, related to postindustrial situation, in the public imagination and to change to more attractive space qualitative index. To make such landscape sustainable means starting from the using of mixed (ecologic, economic, social) processes activation step by step to find compromise between dynamic changes of spaces structure, providing active recreational opportunities, arranging temporary events and profitable actions in regenerated green infrastructure to receive enough resources of landscape stability for long time using, and additional functions integrating. Experience of Landesgartenschau during several decades gives some positive answers to this concept of postindustrial territories transformation and might be considered as one of effective approaches of contemporary urban landscape creation instead existed problems.

**References**


INFORMATION ABOUT AUTHOR:

**Valeriy Nefedov**, Dr. arch., Professor at the Faculty of Architecture, Department of Urban Planning, Saint Petersburg State University of Architecture and Civil Engineering, 2-nd Krasnoarmeiskaya street, 4, Saint Petersburg, Russia, 190005. E-mail: valerynefedov@yahoo.com

**Kopsavilkums.** Postindustriālo teritoriju ekoloģiskā rekonstrukcija ievērojami pieaug. Šāda veida teritorijas bieži vien tiek nodefinētas starp vēsturiskām un perifērijas zonām, tuvumā pie transporta infrastruktūras un pie upēm vai kanāliem.


Rakstā tiek analizēti ainavu dizaina līdzekļi, kas palīdz pārveidot postindustriālo teritoriju, iespējot daudz līdzsvarotāku ekoloģisko situāciju. Šāda veida pieeja veido efektīvu rezultātu ainavas transformācijas procesos un rezultātā tiek iegūtas izglītojošas teritorijas, kur ir iespējams aktīvi atpūsties un baudīt dabas apkārtvi, veidot sociālos kontaktajus starp dažādām paaudzēm un tās nav līdzīgas tradicionālajiem parkiem.