

Sustainable revitalization of brownfield lands – possibilities of interim utilization in the form of urban community gardens

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Manuscript received April 10, 2015; revised May 15, 2015; accepted June 20, 2015

Abstract: Our PhD researches include brownfield revitalization,¹ the application of the methods of interim utilizations on greeneries,² and the formation background and potential of community gardens.³ We compared our systems of criteria in hope of extensive research conclusions. In order to trace the urban development possibilities in Budapest, we analysed brownfield revitalizations where the interim utilizations included allotment gardens, too. We concluded that such developments are likely to create environmental and social added value. Early results of the valorization process are important by themselves, but the perpetuation of interim land utilization holds even greater values.

Keywords: brownfield, revitalization, interim utilization, urban allotment garden, landscape architecture

1. Introduction

The main aspect of the *successful* urban development and land use of today and the near future is *sustainability* and *reclamation*. This tendency can – and has

¹Adorján, A. Urban development aspects of the revitalisation of brownfields, ecological, economical and social sustainability

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to – be followed in land use by revitalizing “brown belts,” brownfield areas, and former industrial areas.

Reclamation

Brownfield sites present great development opportunities for cities as reclamation of sites; however, their revitalization meets significant difficulties. We use the term ‘brownfield’ as it is accepted in the Hungarian terminology:

“A brownfield is a less efficiently utilized (underused), sometimes exhausted ex-industrial area. But the badly utilized or abandoned railway and emptied military territories can be considered brownfields as well.” [1]

After the successful transition, these areas and their open spaces can once again become an organic part of the cultural and economic life of the city, the local identity, and the green surface system as well.

Success

We consider successful those brownfield renewal projects which have a positive effect on the users of the territory from an economic, social, and environmental point of view.

Brownfield redevelopment projects and especially its open spaces are in a serious disadvantage in comparison with greenfield developments since during their earlier utilization they were affected by different human activities which might call for a significant amount of damage control. Environmental decontamination and the elimination of hazards might account for 50–70% of the total budget, and this only results in a completely neutral, harmless area with no specific values of its own. This is why the reuse of such territories and the rehabilitation of its open spaces is an even greater achievement.

Due to the differences between the sites, the diversity of goals and available tools, it is difficult to formulate guidelines for their reuse that could be applied anywhere in order to be ‘successful’. Among the wide range of tools, there is the interim and temporary utilization, which may contribute to the success of the renewal of an area [2 b].

The key to a successful redevelopment is also the renewal of the image of the property, which can either be done quickly, and with large investments or by more subtle means but in a longer time period. Our opinion is that after the economic crisis the urban development needs a new approach in which the slower and more community-based renewals get a bigger role. Interim utilization is a part of that, and these can provide opportunities for community involvement and development as well.

Sustainability

“Europe needs cities and regions which are strong and good to live in.”, states the Leipzig Charter on Sustainable European Cities, which was presented at the time of the German presidency of the Council of the European Union, in May 2007, at the informal meeting of the ministers. The Charter emphasizes the fact that local governments should pay special attention to the cities’ efficiency, to the quality of the built environment, and to sustainability.

The sustainable redevelopment in the cases of brownfields or any other underused areas means land utilizations which improve the city from an ecological point of view, but its creation, maintenance, and operation do not burden the economy. In the case of open spaces, the degree of utilization of the property depends on the community forming capabilities of the functions and on a longer term on the presence of a layer with an adequate system of preferences.

The interim utilizations, and within those the functions of the allotment gardens, meet these criteria. In this article, we look at the roles of interim utilization and allotment gardens in the successful and sustainable revitalization of brownfields.

2. Materials and methods

We look at the methods of interim utilizations implemented within brownfield revitalizations, interpret the completed allotment gardens, and try to compose further research topics through relevant examples. Our aim is to compare our research areas in order to make further progress in our researches and to draw our own conclusions as well.

Interim utilization

The interim utilization presents temporary and quick solutions to the changed needs of the urban dwellers, adapting in the same time to the tough economic situation. This new form of planning and design gives alternative answers to the current questions of urban planning, bridging the difficult investment periods.

The interim utilization can be achieved in urban areas that are unused and can be occupied for a particular period of time and a particular purpose. This idea has become really topical by today for there have been more and more unused, mainly industrial and railway, areas since the end of the 20th century. Budapest is a real treasure chest from this point of view.

The tools of interim utilization help bridging the functional gaps found in the prolonged transformation of a city area. With their help, new and on-site happenings can be triggered, which are essential for the revival of the area. In order

to be successful, we need a functioning concept realized on the property, which can maintain interest for a sufficiently long period of time and which can create constant intense connection between the community and the site. Not only it creates a unique atmosphere, but it also gives time for the area to be incorporated into our own identity and can positively influence its perception. Although these utilizations are mostly temporary in the urban environment, they help the planning based on public participation and urge people to be more responsible for the shaping of their surroundings [3].

Definitions

According to the Hungarian terminology: “Interim utilization means the temporary utilization under special conditions of territories and inner areas which are in transition between abandonment and future utilization.” [4]

“Interim utilization falls between the original utilization of a particular territory (industrial, military, religious, etc.) and a new intended, in most of the cases yet to be determined use. Thus the interim utilization cannot be fully defined neither from the point of view of the activity or the time period of the utilization, nor from a legal perspective.” [4]

For the sake of interpretability of interim utilization, we introduced more new notions. So, henceforward, within interim utilization, we are going to differentiate between temporary and transitional utilization.

In our interpretation, the interim utilization refers to the use of an area which – after a not yet foreseeable period of time – will be followed by another type of utilization, typically a greater investment. The location of the interim utilization is usually an abandoned area and because of temporality the architectural design is characterized by specific materials.

Temporary utilization is a form of interim utilization when a territory is used for a shorter period of time regardless of its past or future. Temporary usage usually means point-like events and in most of the cases the architectural and programme elements are terminated completely after the end of the utilization; they are changed and not used at all for the subsequent investments.

Transitional utilization is a type of interim utilization in which the present usage of the area is trying to make contact with the future and maybe the past usage as well. The significance of this utilization lays in the fact that it brings the area into the public consciousness before the future investment, and prepares its greeneries for a later use. Transitional uses generally have an overall programme and because of its continuity some of its elements can span into the stages after the bigger investments [3].

Examples

I would like to illustrate the interim utilization through two projects, one of which has already been completed and the other one is yet to be implemented. In both cases, the brownfields (the airport of Berlin and spare territories of Nyugati Railway Station in Budapest) present an ideal area for the complex projects that include allotment gardens and recreational open spaces.

Berlin, Tempelhof

The interim utilization is at its peak in Germany and especially in Berlin. The number of completed projects is high, but their role within the city and their quality is even higher. The Tempelhof, the unused airport of Berlin, is an exemplary project of the city.

The interesting part of it is that the co-operation was so successful and the community's needs were fulfilled to such an extent that when the interim utilization ended civil protests began to continue the project. Eventually, the city administration gave in and approved the established functions to be permanent; thus, the highly used large allotment gardens on the site continued to function as well. It is very likely that the allotment gardens played an important role in the life of the community, who managed to keep the territory for themselves even against the powerful market players.



Figure 1. Berlin, Tempelhof

Budapest, Nyugati Grund

The interim utilization in Budapest is at its early stages; more complex projects only exist on the drawing table. There is a project devised for the 2-ha unused property of Nyugati Railway Station, which has become known as the Nyugati Grund.

This plan covers a span of eight years and is broken down to six stages. One of the most important elements of the design is the allotment gardens, which could generate a new community, thus creating new owners for the Grund.



Figure 2. Scheduling plan; Concept plan: Andrea Sipos: The temporary utilization of the Nyugati Grund

Community gardens

According to the summary of the American Community Garden Association, a community garden can simply be seen as “any piece of land gardened by a group of people” [5]. There is a wide scale of different forms of urban agriculture such as the allotment and worker’s gardens of the 19th century in Europe, the war- and crisis gardens during the World Wars, or the subsistence farming of the “reborn” urban food production in Cuba at the end of the 1980s – besides the creative urban farming projects of the last decade. Actions of guerrilla-gardeners and the opening of the Bowery Houston Farm, as the first community garden in New York in the 1970s, were milestones on the way of citizen engagement in the creation of new public spaces, focusing on the generation of communities and reuse of vacant plots [6].

Definitions

To formulate the relevant characteristic of community gardens, we can use Christina Liesegang’s definition: “community gardens as public or semi-public green spaces create certain urban or place qualities for the neighbourhood and for

the city in general. Most of the time, empty, abandoned land is used and upgraded and community spaces as well as access to urban nature are created” [7]. As she outlines, most of the cities have problems with the maintenance of public spaces because of decreasing financial resources and the insufficient presence and quality of neighbourhood communities. “Community gardens bring a different type of green spaces into the city. They contribute to the overall diversity, not only in the sense of enhancing the variety of plant and animal species, but also by, for example, enriching leisure possibilities of the inhabitants of urbanized areas. They are small-scale, low-tech and bottom-up initiatives that may have the potential to make a change on a much wider scale than in the area of their own.” [8]

Examples

Berlin, Prinzessingärten

Prinzessingärten (Princess Gardens) is an example for the generated excellent urban quality at a pilot project started in the summer of 2009 at Moritzplatz in Berlin Kreuzberg, a site which had been a wasteland for over half a century. Along with friends, activists, and neighbours, the group cleared away rubbish, built transportable organic vegetable plots, and reaped the first fruits of their labour [9].



Figure 3. Berlin, Prinzessingärten before and after

Budapest, KerthatárKert community garden

“KerthatárKert” community garden was founded by the Contemporary Architectural Centre (KÉK)⁴ at the south of Pest, getting the firm-owned, unused, partially concrete-covered territory. Participants of the neighbourhood intend to grow vegetables and also develop an educational area on one hundred parcels, each of them being 8 square meters.

⁴The “Contemporary Architectural Centre” (KÉK) [10] and the “Urban Gardening Association” (VKE) [11] are the very active groups in the organization of community gardens in Budapest.



Figure 4. KerthatárKert community garden

3. Results

The land requirements of allotment gardens can vary. The garden communities in Budapest usually prepare 25–80 individual seedbeds and create a common spice garden, a resting area on a 700–1000-m² plot. As brownfield developments are of a larger scale and mostly involve buildings that need rehabilitation, it would be interesting to implement further urban agricultural functions, such as aquaponic farming, seedling growing, and in-door farms using artificial lights. The more and more fashionable agricultural park could be adequate as well combining several functions of open space land use.

The production in the urban allotment gardens is usually irrespective of the soil; raised or mobile seedbeds are the most common. Thus, should the interim utilization be replaced by a real estate development, the garden can be relocated and it can be used with as much efficiency on brownfields as well since it is not affected by soil pollution. In such cases, gardening makes possible the simultaneous use of sites, and in the case of brownfields the rehabilitation of the potentially contaminated soil is also possible with the method of phytoremediation.

Analysing the position of community gardens in Budapest, we can draw conclusions on the conditions of their formation. Based on currently existing comparisons, the most telltale aspect is the correspondence between the position of the gardens and the type of residential area, which unequivocally shows that the presence of downtown gardens in numbers is significantly small, while the number of gardens around housing estates is much higher (Fig. 5. Budapest – dwelling areas according to the way of building-in) [6].

The delineation of urban community gardens' potentially contaminated soil, to revitalize the brownfields, may lead to further areas of development; the mobile or lifted planting beds, widely used in urban gardens, could be sustainable

alternatives for the conversion of such territories to green by plantation (Fig. 6. Budapest – soil contamination in brownfield areas).

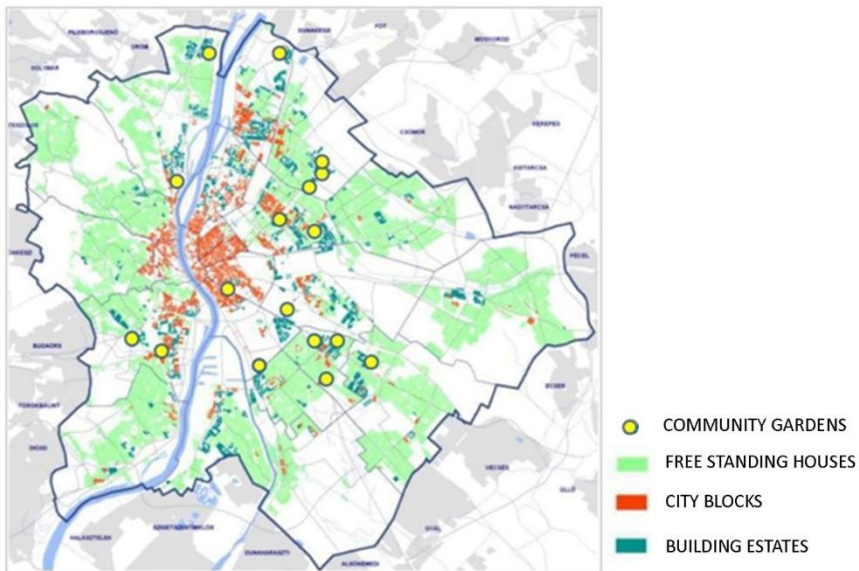


Figure 5. Budapest – dwelling areas according to the way of building-in

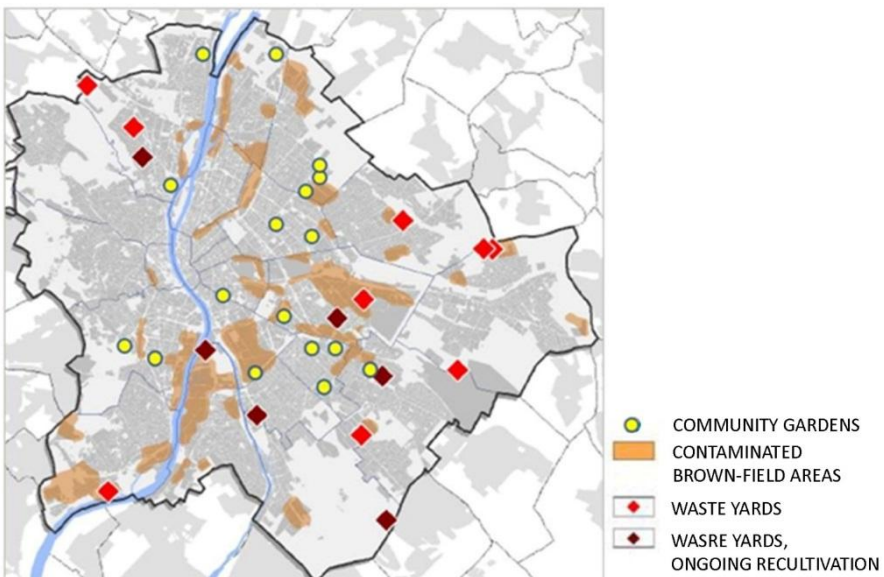


Figure 6. Budapest – soil contamination in brownfield areas

4. Discussion and conclusions

The presented territories can confirm that the brownfield areas present a great potential in development, their new position in the city enables new functions for them. Besides the buildings' function shift, the open spaces need transformation as well. One of the tools for their renewal as part of interim utilization can be the allotment gardens.

The advantages of the interim utilization and the function of the allotment gardens in the brownfield revitalizations is the strong community-building effect requiring low expenses while also improving the environmental quality of the area and the intensity of the greeneries.

Based on the examples examined, we can say that the community gardens demanding everyday presence will require more functions to be implemented, which can be recreational, cultural, and educational as well. A remarkable example is the agricultural park. Newly emerging needs during usage can give new directions to the brownfield redevelopments.

Based on the current research, our future aim is to examine which functions can be implemented in Budapest and which territories are suitable for these. It is also important, however, for the receptive social layer to be present besides the right territorial characteristics. Our research shows that the population density, social composition, and the underused brownfield areas together present the best potential for creating community gardens.

The research on the utilization of underused railway areas of Budapest could also be helpful [12]. Other temporarily utilized brownfield areas can be also connected to the radial-ringed greenery system formed on such railway territories. It would be worthwhile to examine that in the case of a project implementation which of the previously isolated areas become accessible again and thus usable for agricultural parks.

There are many possibilities and there is much to do. This article forms the basis of a common research that asks for a new system of criteria for the brownfield developments of Budapest.

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Figures

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- Figure 6. Budapest. Soil contamination in brownfield areas, source: ITS Budapest stratégia 2020 (2014).