"... Focusing on one of the most interesting challenges faced by present-day cities, the papers published in this book cover a number of burning issues by comparing practices abroad with local cases, examining models and instruments of brownfield regeneration, but also proposing solutions to improve the situation and help cities increase their sustainability, attractiveness and overall quality of life... By equally treating theoretical fundamental and practice, the papers in the monograph are particularly focused on those issues faced locally – both in terms of the socio-economic context and the resulting challenges. Clearly recognising the problems and potentials which planners are confronted with and benefit from when dealing with brownfields, the authors emphasise the importance of an integrated approach to brownfield regeneration, which should always strive for the recovery of the local community and the improvement of environmental conditions."

[D.Sc. Aleksandra Stupar, University of Belgrade, Faculty of Architecture]

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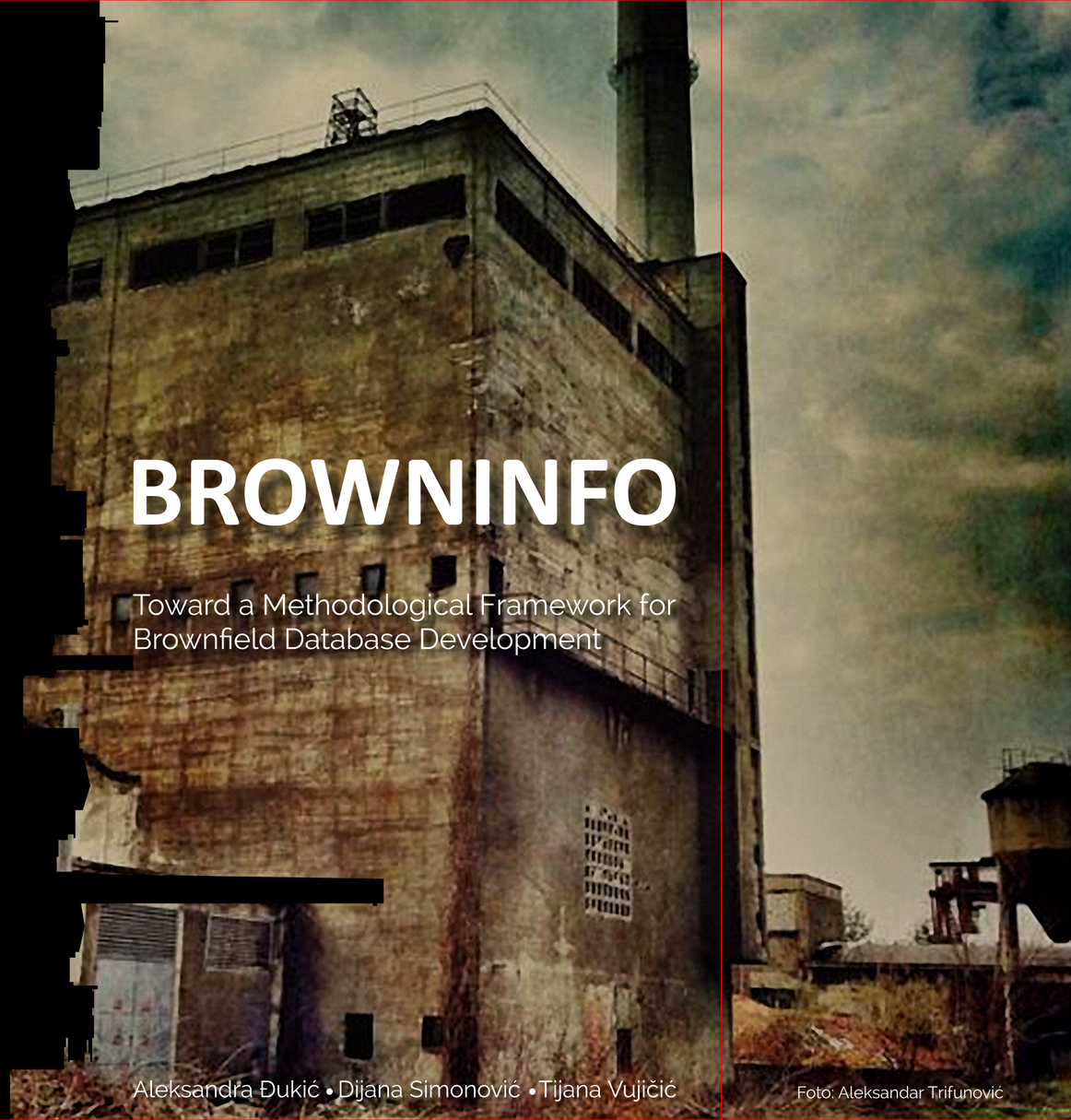
Toward a Methodological Framework for Brownfield Database Development



BROWNINFO

Toward a Methodological Framework for Brownfield Database Development

Aleksandra Đukić • Dijana Simonović • Tijana Vujičić

Foto: Aleksandar Trifunović

A SCIENTIFIC MONOGRAPH OF INTERNATIONAL SIGNIFICANCE

BROWNINFO. TOWARD A METHODOLOGICAL FRAMEWORK FOR BROWNFIELD DATABASE DEVELOPMENT

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D.Sc. Aleksandra Đukić, M.Sc. Dijana Simonović, Tijana Vujičić

BROWNINFO

TOWARD A METHODOLOGICAL FRAMEWORK FOR BROWNFIELD DATABASE DEVELOPMENT

Banjaluka, November, 2014.

URBAN VILLAGE MODEL AS A TOOL FOR BROWNFIELD REGENERATION

Aleksandra Djukić [1]
Branislav Antonić[2]

ABSTRACT

This paper aims to recognise and examine the possibility of putting into practice the idea of urban villages in the case of industrial brownfields in Banja Luka. Since the 1980s, this idea and its variations have risen to an urban planning discourse, both in theory and practice. Initially, its implementation concerned only the use of greenfield sites, i.e. previously undeveloped land. Such new developments were symbolically called 'greenvilles'. Later, the idea of the urban village was integrated with the principles of sustainable development and became applicable to brownfields. As such, it found application in brownfield regeneration and redevelopment, as well as vacant land development. This upgraded idea of the urban village has now become a strategic issue in the UK and worldwide, as well as a key element of the main strategic and urban planning documents for cities and towns.

Keywords: *brownfield, urban village, urban regeneration, industrial complex*

MODEL „URBANOG SELA" U FUNKCIJI REGENERACIJE BROWNFIELDA

REZIME

U radu će biti istražena mogućnost primene koncepta „urbanog sela" na napuštene i devastirane industrijske zone u Banjaluci. Od svog nastanka 1980-ih godina pa sve do danas, ovaj koncept je postao jedan od planerskih diskursa i doživeo je različite pojavne oblike, kako u teoretskom tako i u praktičnom obliku. U početnim fazama implementacije ovog koncepta, razmatrane su isključivo greenfield, tj. prethodno neizgrađene lokacije. Naselja su simbolički nazivana „greenville". U kasnijim fazama, ovaj koncept je prilagođen principima održivog razvoja i primenjiv je i na brownfield lokacije, kao i na lokacije koje je trebalo regenerisati ili dopuniti novom gradnjom ili sadržajima, uz mogućnost primene i na neizgrađenim lokacijama. Ovaj novi pristup konceptu „urbanog sela" pozicionirao ga je kao novi strateški pristup, a u Velikoj Britaniji je postao glavno strateško opredeljenje i deo glavnog vladinog dokumenta za planiranje gradova i naselja.

Ključne riječi: *brownfield, urbano selo, urbana regeneracija, industrijski kompleksi*

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1. INTRODUCTION

Most of the land in Europe, especially that within the boundaries of metropolitan areas, changes its use over time. This paper does not aim to define the term brownfield, which differs by countries, regions and continents, but to find a suitable model of brownfield planning and regeneration. The following definition of brownfield site regeneration best explains sustainable brownfield planning and management: "Sustainable brownfield regeneration is the management, rehabilitation and return to beneficial use of brownfields in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations in environmentally sensitive, economically viable, institutionally robust and socially acceptable ways within the particular regional context" [1].

Land is a limited resource. According to this statement, brownfield sites represent substantial reserves for the future development of cities and a resource for their regeneration, in a way adherent to principles of sustainable development. There was no law at the European level requiring sustainable use of land resources. The necessity for a significant reduction in land use has now been recognised at the EU level. In the framework of The Roadmap to a Resource Efficient Europe, a set of objectives was specified for no 'net land take' by 2050. However, brownfield re-use and regeneration is one of the most important strategies integrated with the EU's political objectives [2].

Unfortunately, we live in a time of urban regeneration carried out to help achieve the goals and interests of individuals, contrary to professional conduct rules and principles of sustainable development. Complete neighborhoods have changed, and cities have lost their character. Brownfield regeneration projects are a consequence of political decisions and represent misfortunate cases of unsuccessful planning and development of neighbourhoods that compromise even the most basic principles of sustainable development (housing estate in Vojvode Stepe St. in Belgrade at the site of the former military complex; Belgrade Waterfront in the Sava Amphitheatre). The urban and architectural plans for those settlements were developed in short periods of time and behind the backs of concerned professionals. Most of all, they violate the applicable planning documents (Belgrade Master Plan, General and Detailed Regulatory Plans).

Principles of urban planning as found in new theory and practice (e.g. ideas of New Urbanism, concepts of the compact city, smart city, eco-city, zero-carbon city) are based on recommendations and postulates of sustainable development. Those concepts consider the plot as a significant resource. The idea of the urban village is one such idea that could be successfully implemented in brownfield regeneration. The term 'urban village' was first used by Herbert J. Gans in 1962 in his study of Boston's West End, in an attempt to characterise the quality of its social life. Like Ebenezer Howard, the creator of the concept of the garden city in the late 19th century, he also

tried to form a hybrid, combining the positive characteristics of rural and urban settlements. He simultaneously used the terms 'urban village' and 'urban jungle' to underline the differences inherent in his concept. According to his interpretation, an urban village is a place of adjustment, i.e. a settlement in which newcomers succeed in adapting to new patterns of life and culture, in contrast to an urban jungle, where the population remains a mismatch, always at a risk of falling into criminal behaviour. Along with the concept of the urban village, a set of other town planning ideas based on similar principles were created and developed. Some of these concepts are compact cities [3], urban neighborhoods [4], sustainable neighborhoods [5], eco-villages [6], TOD (transit-oriented development) and millennium villages [7].

2. CONCEPT OF URBAN VILLAGE

The term 'urban village' combines two words that essentially mean opposite things, urban and rural, and expresses conflicting emotions. Contrary to urban characteristics such as growth, artificial, complex, regulated, wholesale, there are terms like stagnation, natural, simple and small (Figure 1). Also, in contrast to solitaire, liberal and anonymous, there are the terms farmhouse, conservative and familiar [8]. It would be ideal to incorporate such rural qualities in the city and have unity in diversity, choice and independence of urban space, a feeling of intimacy and a community-oriented human environment across the same area and at the same time. The transposition of these qualities to the level of urban microelements – houses, streets, blocks and public space – is a challenging task for architects and urban planners implementing the urban village concept.

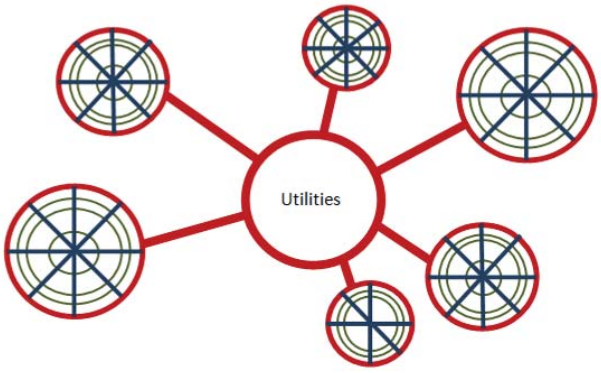

Figure 1. Schematic of the urban village concept

The concept of the urban village was first promoted in the late 1980s by Britain's Urban Villages Group, as an answer to the consequences of the recession and dropping real estate value. The concept arose at the time of the intensifying debate over the influence of modern architecture and

urbanism, which denied the value of traditional architecture and traditional cultural patterns of living. The promoters of the concept of the urban village were a small group of entrepreneurs, investors, architects and planners gathered around Prince Charles, who formed the Urban Villages Group (UVG). The basic postulates of the concept concerned the creation of environment-friendly compact settlements with mixed-use developments and well-designed space (neo-traditional) for short and long stays of residents and users.

The idea of the urban village grew into a distinct planning discourse. It has been variously interpreted both in theory and practice, initially across the UK, and later in Europe and beyond. The Urban Village report [9], which was published in the United Kingdom in 1992, defined the philosophy and principles underlying the concept of the urban village as a well-shaped sustainable settlement with mixed-used developments and a sense of place and identity, whose users and residents develop a commitment to common goals of settlement development (Figure 2). The following year, the Urban Village Forum was established to widen the level of involvement, in order to attract potential actors for the expansion and implementation of the concept.

At the same time, a similar neo-traditional town planning movement called New Urbanism appeared in the USA, promoting similar planning and design postulates.

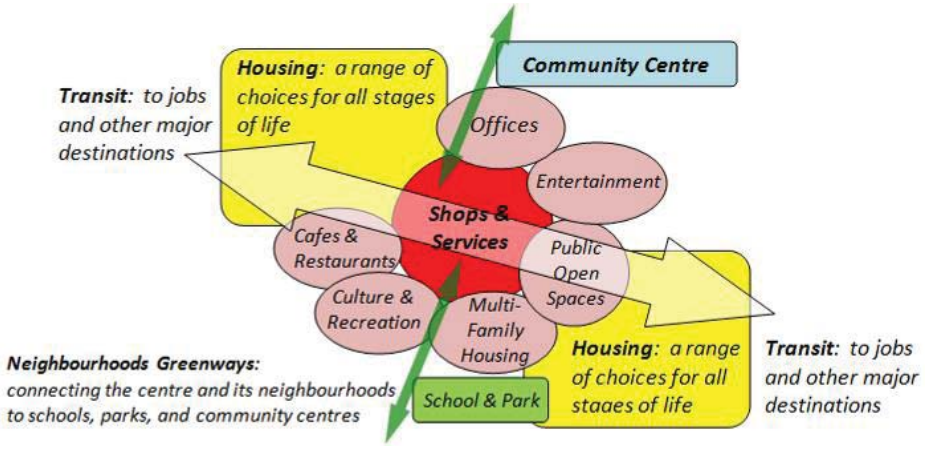

Figure 2. Schematic of functions in an urban village

In the initial stages of the implementation of the concept only greenfield locations were considered. The new developments were symbolically called 'Greenvilles'. In the later stages, the concept incorporated the principles of sustainable development and was applied to brownfield sites (there are many examples of this kind of intervention, such as the regeneration of a former steel processing plant in northeast Wales), infill sites and carefully chosen vacant land [10].

This new variation of the urban village concept positioned it as a major strategic issue, turning it into a major planning tool for the urban development and regeneration of cities and villages. English Partnerships, England's regeneration agency, provided the financial support for the implementation of the concept and the building of urban villages. The Urban Village Forum and English Partnerships jointly wrote a set of guidelines entitled *Making Places* [11]. However, in the early 21st century, preference is given to the concept of the millennium village, and experimental activities aiming for regeneration according to this model have already begun [7].

The main characteristics of an urban village are [12]:

- number of citizens: 3000 - 5000;
- high degree of self-sustainability;
- existence of main hubs, usually squares, in the village;
- walkability – all activities take place within walking distances;
- different types of housing, mixed uses and mixed population structure;
- mixed-use developments and places for rent;
- developed network of open spaces;
- connection of urban matrix with more open circulation patterns;
- 'calm' sustainable traffic;
- prevailing local architectural style;
- architectural focal points, accentuated street corners, regulation, perspective, closure;
- mixed-use development at all levels – from houses and plots to blocks to districts and settlements;
- civic engagement – participation and ongoing consultation with users and residents;
- adaptability of built environment and open spaces;
- livable and vibrant open spaces.

Urban villages were devised as self-sustaining communities, with all activities taking place within walking distances.

Residence is the main function, combined with services, commercial, leisure and business activities. The identity of each village is unique, with a focus on community commitment. According to the original concept, urban villages were devised as having the same urban form, with similar physical characteristics (modern, neo-traditional), but gradually this attitude changed and came closer to the neo-traditional modernist one, which gives greater prominence to urban codes and relationships between urban elements [13].

WALKING DISTANCE – Walking distance is a key characteristic of urban villages, and it is determined on the basis of the accessibility and intensification of functions – land use efficiency. The sustainable urban form of an urban village must be on a scale appropriate for walking, cycling and good public transport. Walking distance allows a number of advantages such as: accessibility, environmental quality, cost savings on an individual basis, as well as savings of the public sector, the possibility of rational and efficient use of construction land, the vitality of the community, achieving a healthy and desirable quality of life, economic development. On the other hand, the most significant benefits of walking distances within these are: social interaction of users and reduction of exhaust gases. The increment of the frequency of pedestrian trips provides the users of open space with a feeling of safety, security and neighborhood liveability.

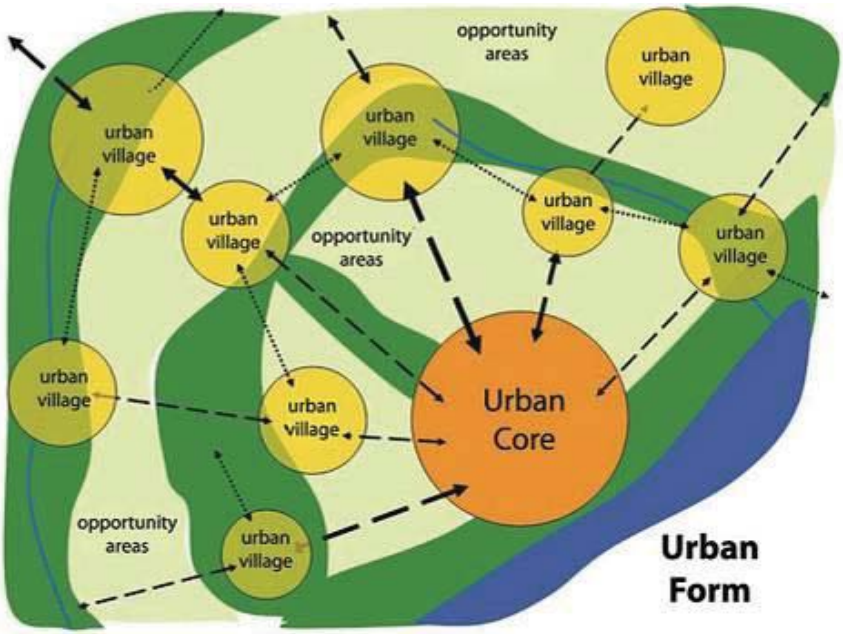

Figure 3. Proposed scheme of a network of urban villages

DENSITY – The concept of the urban village encourages the development of medium and high-density settlements. The concentration of users and residents allows the space between the settlements to remain free and unbuilt (Figure 3). High density and integrated land use provide compactness and encourage social interaction in the urban village. A dense population can support business, commercial, infrastructure, leisure activities and better public services.

MIXED-USE DEVELOPMENT - Mixed land use ensures vitality and vibrancy in settlements during different seasons, as well as around the clock, on weekdays and weekends (Figure 4). Multiple uses are also important.

It is essential that each community monitors the changes in the market and constantly adapts to new circumstances. At the same time, mixed functions imply different forms and types of housing and different architecture, although the emphasis is almost always on the elite forms, as well as those that enable the achievement of higher density. The integration of different functions and activities results in richness, which also determines the character and identity of a place.

Creating identity and individuality of a place as well as emotional connections between the users, population and the physical environment is the key to developing a sense of belonging to and identifying with a place. Building an image or brand is just one stage in this process.

PUBLIC TRANSPORT – Good public transport is an inevitable prerequisite for the success of this concept. Public transport must enable access to facilities and services while minimising external costs and protecting the environment.

ANCHORS are an important factor of development of urban villages. Anchors may include institutions, business systems, universities, medical centres, community organisations, retail districts. They are the promoters of the success and sustainability of urban villages, as well as important factors for long-term goal implementation and longevity of investments.

LEISURE ACTIVITIES – The character, variety and types of leisure activities are very important for the vitality and attractiveness of urban villages since they can attract visitors from outside the settlement. These activities are not fixed and they can vary from season to season as well as depending on time of the day, but also in time (some activities are more popular than others at one time). Every settlement should incorporate a unique combination of these activities, and some of them are supposed to be exclusive to one type of urban village (e.g. golf, tennis, movies and galleries). It could help them to develop a specific identity and image.

SOCIAL CONTEXT – A sense of community, mixed income within the urban village, community involvement and participation.

A sense of place is a powerful psychological tool and it is related to the social characteristics of users and citizens. In neighborhoods where the sense of place is stressed, residents and users will care more about the state of open public spaces and environment.

Mixed income is an important factor for the successful functioning of a settlement. Otherwise, the shutting down of a business system, companies or production could completely extinguish life in the village.

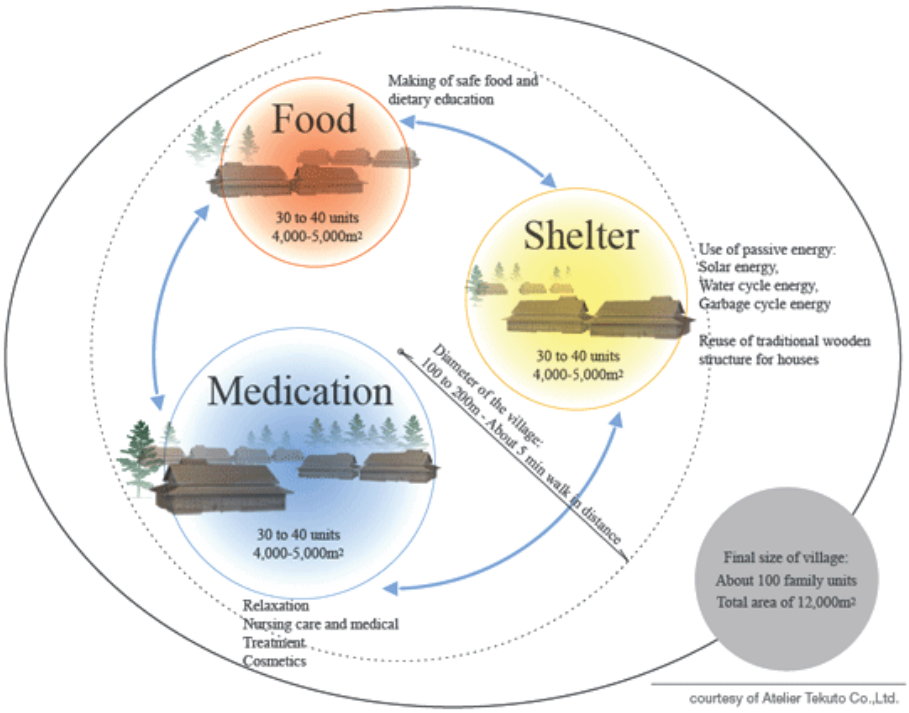

Figure 4. Schematic presentation of relationships within an urban village

3. CASE STUDIES

The concept of the urban village has been implemented in numerous cases. Due to the general character of the principles underlying the concept, the created villages vary greatly [14:92]. Thus, the case studies of urban villages presented below were selected based on two main criteria, which are strongly related to the first part of the paper:

- Character of the urban village evident at a glance (middle-density development, mixed uses, mixture of building types, etc.);
- Location of the housing estate – a brownfield at the edge of an urban-type settlement area.

The three selected case studies are:

1. Officers Field, Weymouth, the United Kingdom,
2. Brymbo village, Wrexham, the United Kingdom,
3. Seestadt Aspern, Vienna, Austria.

Aiming for a diversity of the case studies to be presented, villages were selected which all have different brownfield backgrounds, i.e. they are sites previously used in different ways.

The first is a former navy ground, the second grew in the stead of steel mill, and the area of the last one used to be an airport.

3.1. CASE STUDY 1 – OFFICERS FIELD, THE UNITED KINGDOM

The village of Officers Field was chosen to be presented in this paper because it is representative of the best practice of housing development on brownfield land. The village was the winner of a prestigious British housing design award competition in 2012, organised by eminent public and professional bodies in the United Kingdom.[3] Furthermore, this housing estate was used as an Olympic village for the nearby sailing events during the Olympic Games 2012 in London [15].

Table 1. Officers Field, the United Kingdom – general information [15]

Official name	Officers Field
Location	Weymouth, Dorset, the United Kingdom
Time of construction	2002-2006
Architect	HTA Architects
Developer	ZeroC
Contractor	Acheson Construction
Planning authority	Weymouth & Portland Borough Council

The site of the Officers Field village was used by the Royal Navy until 1998 as the HMS Osprey naval base [16]. The exact use of the site was manoeuvre space for technical vehicles. After the abandonment of the previous function there was a lot of debate between the locals and national authorities about the future use of the site. The local community tried to get the land for new recreation areas, but the national bodies succeeded in their plans for an Olympic village [16].

The Officers Field village is a sustainable housing estate, which is organised in the form of three neighborhoods. The village comprises 58 homes [17]. The southern and northern neighborhoods are in the form of wide streets, unlike the central neighborhood, which occupies the area around an internal square. Open spaces have been built for a rich social life of the village dwellers.

Although the only urban function in the village is housing with basic open spaces, there are plenty of other urban functions in the vicinity (local centre with retail and service facilities, recreation facilities, seaside quay with marina). Additionally, a new primary school and nursery, which are under construction, will be within a few minutes' walking distance [18].

3 The most eminent professional bodies were the RTPI and RIBA. Government bodies were also included; National Department for Communities, Homes & Communities Agency, etc.

The village is near the town centre and its thoroughfares, so there is little need for public transport. The internal streets are calm and suited to pedestrian and bicycle traffic. Next, the majority of homes have a garage and a bicycle store. Thus, the village can be considered as eco-friendly when it comes to transport.

Figure 5 and 6. The site of the Officers Field village prior to (2001) and after its construction (2012) (source: Google Earth)

The village consists of 77 two-, three- and four-bedroom units, which are organised in 58 houses [19]. There are three housing types: detached houses, semi-detached houses and terraced houses. The internal zoning of all houses is family-oriented; the ground floor of each house is organised for daily life and connected to an inner garden, and the upper floors are divided into bedrooms.

The Officers Field village is at Level 4 of the Code of Sustainable Homes, which means very environmentally-friendly construction, even for the high British standards. "Their carbon footprints are 44% smaller than similar homes" [19:10]. This was achieved through the use of numerous measures (biomass boilers, rain-water collection, eco-materials, excellent thermal insulation, etc.).

Figure 7 and 8. Model of the village; typical detached houses in the central part of the village (source: British Housing Design Awards)

3.2. CASE STUDY 2 – BRYMBO VILLAGE, THE UNITED KINGDOM

The Brymbo village is actually a great middle-density housing development in north-western Wrexham, devised as an amalgam of several urban-village-like neighborhoods with circa 600 housing units. Given this fact, it is understandable there have been several phases of construction since 2006; the southern neighborhoods are finished, the central ones are under construction, and the northern ones are still in the planning stage [20].

Table 2. Brymbo Developments, the United Kingdom – general information [20]

Official name	Brymbo Developments
Location	Wrexham, Wales, the United Kingdom
Time of construction	2006-
Developer	Brymbo Developments
Planning authority	Wrexham County Borough Council

The new Brymbo village is being developed at the site of the Brymbo Steelworks, closed in 1990 [21]. According to the council plan, it was decided to reclaim the land of the steelworks [22], [23]. Although most of the land was cleared from the previous industrial buildings, the oldest buildings at the northern edge of the site have been preserved as industrial heritage.

Figure 9 and 10. Model of the village; typical detached houses in the central part of the village (source: British Housing Design Awards)

Similar to the previous case study, the redevelopment of the Brymbo Steelworks site caused sparked off an intense debates between the local community and higher authorities. The local people unsuccessfully tried to keep the area as a "green barrier" [20]. The authorities permitted the building of an urban-village-like housing estate. The land reclamation phase lasted between 2003 and 2006, with actual construction taking place since then [24].

The southern neighborhoods were completed in 2006. They mainly consist of housing units. There are plans for a business park, an office complex, a supermarket and a shopping centre, but they still haven't been built [24]. The Brymbo estate still lacks some basic services and retail facilities, which downgrades the current position of this Wrexham neighbourhood [25].

Figure 11 and 12. The site of Brymbo village prior to (2006) and after first (south-eastern) phase of construction (2010) (source: Google Earth)

In accordance with the size of the site (50 acres), the housing estate is organised into several neighborhoods. The competition requirements insisted on neighborhood openness, green areas and countryside development [23], quite similar to the urban-village concept.

Figure 13 and 14. New Brymbo neighbourhood – an aerial view (source: Mabon ap Gwynfor) and a satellite view (source: Google Earth)

The neighborhoods are organised around small public places, which are linked by curvy and village-like streets. There are several types of housing units. A few multi- storey apartment buildings (2-3 floors) are situated in central locations. The majority of the units are detached, semi-detached and terraced family houses.

3.3. CASE STUDY 3 – SEESTADT ASPERN, AUSTRIA

The Seestadt Aspern area is a brownfield development in eastern Vienna. The whole area was devised as a huge mixed-use quarter, with a stress on new housing.45 This is related to the lack of new housing in Vienna, which is

4 Speaking about Aspern, Mr Dr. Michael Häupl, Mayor of the City of Vienna, said that "urbanity and high quality of life – these will be the hallmarks of the new, multifunctional city quarter" [27].

5 Aspern Seestadt was planned as a community for 20 thousand inhabitants + 20 thousand employees, on a total area of 2.4 million m2 [28].

considered as one of the world's most citizen-friendly cities [26], which makes the project extremely important for the future of the city.

Table 3. Seestadt Aspern, Austria – general information [27]

Official name	Seestadt Aspern
Location	Vienna, Austria
Time of construction	2008-
Developer	City of Vienna
Planning authority	City of Vienna Authority

This urban project was named after the old village of Aspern. The first Vienna airfield was built in Aspern in the early 20th century, and it remained the city's main airfield until 1954, when the new airport in Schwechat was inaugurated. "Opel" opened its factory here in 1982. Finally, the company donated the land to the city authorities in 2004. The Aspern metro station was inaugurated in 2010 as the backbone of the new project. The whole area is now under intensive construction.

The complex history of the site (rural residential/transport/industry) makes the whole brownfield development more triggering. As an illustration, environmental impact assessment was carried out in 2008/09 [27]. Most of the previous building stock was removed, although some elements of the runways served as an inspiration for the concept of the new quarter.

Figure 15 and 16. Seestadt Aspern prior to (2001) and after the 1st phase of construction (2012) (source: Google Earth)

As an important city development project, Aspern was devised as a mixed-use quarter. Most of it is housing, and the majority of the buildings are high rises, because of the need of the city for housing. The only middle-density housing development will be located in the south-western part of Aspern[6] [27], and it will be particularly rich in green areas.

6 This area is coloured yellow in the functional plan of the quarter.

This part of the quarter will be an extension to a nearby neighbourhood. It was devised as a group of courtyard and half-courtyard buildings, with plenty of inner open space or quadrangles, meeting 'the urban-village standards'. The building density in this part will be a bit higher than is commonly found in urban villages. Also, the blocks will feature buildings with developed street fronts. The presented typology indicates the construction of different types of housing, ranging from individual houses to multi-floor residential buildings.

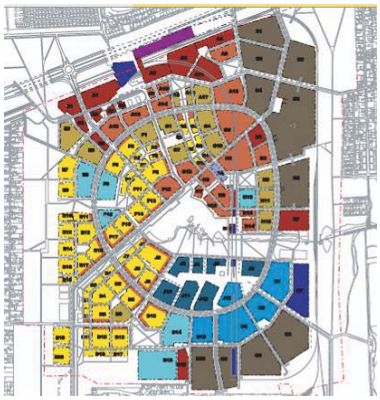

Figure 17 and 18. Functional plan of the quarter, with middle-density housing blocks coloured yellow; 3D presentation of the middle-density housing area (source: Aspern Airfield Master Plan)

Figure 19 and 20. Middle-density housing projects in Aspern, Austria (source: Kirsch ZT; Detail Press)

4. CONCLUSION

This article examines the urban village discourse and presents the best practices of brownfield regeneration using the principles of construction of urban villages. Some of the results can be used as recommendations and instructions for the regeneration and revitalisation of brownfield sites in Banja Luka. To achieve its goal, this paper links two well-known and still topical theoretical 'backgrounds' – the concept of the urban village as the basic theoretical concept, and brownfield regeneration as a tool for the implementation of the concept in situ.

First, a theoretical explanation is used to link these two theories, which are both oriented toward sustainable urban design and sustainable communities. The proof is the elaboration of the main principles of the concept of the urban village, by accenting the elements usable for brownfields. This elaboration includes functional, physical, institutional and branding elements of the concept, with a focus on livable, safe, energy-efficient, ecological and community-oriented human environments.

Second, the presented cases were selected based on criteria strongly related to the previously given theoretical background. This means that all the selected cases represent real examples of brownfield sites where elements of the concept of the urban village were incorporated.

Third, the selection reflects the diversity of brownfields which can be used for the urban-village-like regeneration. This confirms that all major types of brownfields can be used as testing ground for new urban villages.[7]

Next, the character of the previous function of brownfields has a major influence on the possibility of regeneration. Because the old buildings found at these sites are usually huge, they can rarely be redeveloped into middle-density housing, as adequate for urban villages. Some elements, such as paths and roads, can be used, but the majority of them are obstacles rather than benefits. Still, their existence has not been a setback for the application of the concept at such places.

Finally, the presented theory and cases lead to the valid conclusion that the concept of the urban village can be successfully used for different brownfields. An old infrastructure and other disadvantages are recognised as possible obstacles to brownfield regeneration, but they can certainly be surmounted through the use of the concept.

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