

Brownfield redevelopment

Towards a comprehensive approach. French and Russian experience

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Abstract

Brownfield redevelopment is one of the major issues many developed cities have faced in the last decades. This type of urban action often requires its own operating models and regulations due to the complexity of land use, larger geographical scale as well as environmental challenges. To understand the specifics of the problem we take a comparative look at brownfield redevelopment in Russian and French cities.

Keywords

urban renewal, brownfield redevelopment, urban renewal, zoning rules, urban coordination, comprehensive approach, design-code

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INTRODUCTION: DEINDUSTRIALISATION ISSUES

The article proposes a comparative look at French and Russian practice of brownfield redevelopment through the examples of two redevelopment areas: the Massena sector, Paris Rive Gauche (Paris) and the Garden Quarters (Moscow). This choice is dictated by the author's research theme: the comparative study of the evolution of urban regulations across different countries.

Brownfield redevelopment is a rather recent phenomenon. In the Russian capital the process of deindustrialization started in the 1990s¹, while in the French capital both the relocation of active industrial facilities and decline of the existing industries started in the mid-1970s². In both cases, deindustrialisation resulted in hundreds of hectares of abandoned land that constitute an important land resource. In Moscow, the former industrial sites totalled about 17% of the city's overall area in its former boundaries³. Moscow government is prioritizing the redevelopment of these zones: new transport infrastructure helps to raise both their accessibility and investment attractiveness.

Brownfield areas often appear to be among the last available for the city's inner development. Many of them are located within urbanised areas. Because these zones are surrounded by the existing urban fabric, redevelopment ought to take this context into account. The goal is to "let the city inside" these areas that used to be literally terra incognita on the map: walled-off and inaccessible to the general public.

The specifics of brownfield redevelopment lie in its ecological issues and peculiarities of land division. First, soil pollution within these areas and necessity of clean-up hamper development. Secondly, the shape and arrangement of parcels in former industrial zones is often unsuitable for residential function: reparcelling appears to be as a necessary step. Furthermore, the re-development usually implies re-use and reconversion of existing urban fabric. Brownfields may comprise several remarkable buildings, valuable industrial heritage objects left as artefacts and as memory of former activity.

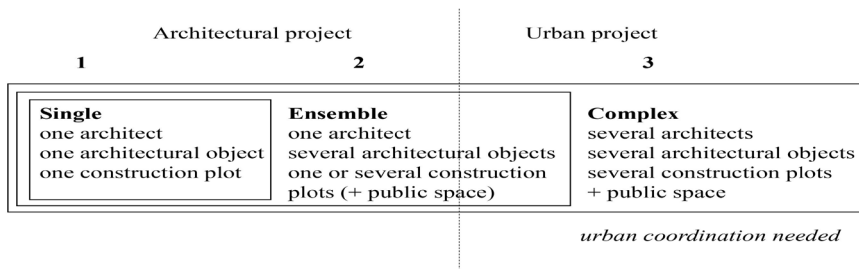


Fig. 1. Three types of real-estate development

On the other hand, the redevelopment of brownfields can be compared with the redevelopment of other types of urban wastelands: military, residential, commercial, etc. All of them belong either to ensemble or to complex type of development. We propose to distinguish three types of real-estate development, as illustrated on figure 1.

Single development means construction of one object on one plot and by one architect (infill development is one of examples). In Russia, the term *tochechnaya zastroika* (literally “one-plot development”) has an equivalent meaning. In French cities urban regulations within areas of single development (*le diffus*), are set by zoning rules that guarantee the insertion of new architectural projects into the existing urban fabric. The second and the third type should not be confused. The ensemble type concerns real-estate development led by one architect, on one or several plots. As this type of development usually follows one project, the problem of urban coherence appears to be easily solved. In this study, we focus on the third type, the complex development, which involves several architects and developers, including public space development. A complex development area usually comprises a patchwork of both developed and undeveloped, public and private spaces and therefore raises the question of urban coherence. The geographical scale of complex development is of little importance: its area can vary from two to thousands of hectares. The complexity is what matters most.

The method of the complex development consists in a sort of temporary “operational add-on” bringing together several development projects that are located within the same area. It usually supposes common boundaries and common operation name, common operator and common “game rules” and regulations. All these measures are applied while conception and realisation stage and can disappear after real estate and public spaces delivery: once this “common umbrella” disappears, the maintenance stage doesn’t differ from the rest of the city.

The complex nature of the brownfield redevelopment raises several problems of coordination. Which urban regulations help to reach the unity of architectural solutions inside the redevelopment zone? Which tools help to ensure a harmonious insertion of the zone in the built environment? How to consider all actors involved in the redevelopment process? One of possible answers is that complex development must rely on comprehensive approach including balance of interests and urban coherence.

COMPREHENSIVENESS AS BALANCE OF INTERESTS

The term “comprehensive” means “complete and including everything that is necessary” (Cambridge dictionary) or “of broad scope or content” (Collins dictionary). In this study we will understand this term not only as “all-inclusive”, but also as “coherent whole”, (the prefix “co-” meaning “together”, “mutually”, “jointly”). Speaking about complex urban development, comprehensiveness can be understood as a certain balance of public and private interests (“acting together”) and as a certain unity of projects (“being together”). The first is ensured by the role of manager (operator), the second- by the role of urban coordinator.

As mentioned earlier, complex redevelopment implies multitude of actors and multitude of

projects headed by public or private operators. We can distinguish three main operating models of brownfield redevelopment:

- Public-led brownfield redevelopment
- Brownfield led by semi-public society
- Private-led brownfield redevelopment

In Russian cities, the first and the third model appear most frequently. In Moscow, several recent projects of brownfield redevelopment follow the model of private-led development. Among the examples, the redevelopment of former car-factory ZIL into mixed-use area including high-class residential, commercial and cultural functions; the redevelopment of former resin plant Kauchuk into high-class residential area Sadovie kvartali, the redevelopment of former metallurgical plant Serp i Molot into mixed-use area including high-class residential, commercial and cultural functions, etc.

Public-led brownfield redevelopment in Moscow most often results in construction of affordable housing by the means of address investment program (*Adresnaya investicionnaya programma*) established by Moscow government. Architectural solutions are elaborated by semi-public or public project companies. One of examples, the redevelopment project of Krasnaya Presnya plant into residential area was realised by Mospromproekt, project institution integrated to municipal services.

However, it must be noted that in all the above-mentioned cases of private-led brownfield redevelopment as well as in many other cases the redevelopment area has a unique developer, thus the decision-making processes appear to be considerably simplified. As for public-led brownfield redevelopment, the presence of unique project institution solves the problems of urban coherence and so this model appears closer to the ensemble rather than to complex type of development.

THE KURT, AN ATTEMPT TO COPE WITH THE COMPLEX NATURE OF BROWNFIELD REDEVELOPMENT IN RUSSIA

But which model should be applied in case of complex development? In 2016 under the Federal act no. 373 a new operating model, the “Complex and sustainable urban development” (Kompleksnoe i ustoychivoe razvitie territorii, KURT further in text) makes its appearance in the Russian Town-Planning Code. First written specifically for brownfield redevelopment, the act finally concerned all complex development areas.

The Russian Town-planning code gives following definition of the Complex and sustainable urban development⁴: “Action of complex and sustainable urban development is an activity that aims to achieve the most efficient land use by preparation and approval of planning documents for residential, social, commercial and other real estate as well as for necessary objects of communal, transport and social infrastructure, and also concerning architectural project, construction and reconstruction of all above-mentioned objects”. According to the code, the

“complex and sustainable urban development” can be engaged either by public authority or by private landowner.

The KURT being a very recent operating model, it is not possible to draw any conclusions. We will take a short overview of a similar French model, the ZAC, whose history covers over half a century.

THE ZAC, KEY OPERATING MODEL FOR BROWNFIELD REDEVELOPMENT IN FRANCE

In French cities brownfield redevelopment usually follows the operating model called “*Zone d’aménagement concerté*”, (“Joint development zone” or “Comprehensive development area”, ZAC further in text). This model was introduced by the Land orientation act (*Loi d’orientation foncière*) in 1967 and came to replace the Zone of priority urbanization (*Zone à urbaniser par priorité*, ZUP further in text). For its part, the ZUP created in 1958 aimed to cope with a deep housing crisis by developing mostly public-led large-scale urban projects, among which the Grands ensembles, social residential units built massively in the outskirts of big cities. The changeover from the ZUP to the ZAC was a synonym of the changeover from public to public-private, from large-scale (the ZUP couldn’t contain less than 500 dwelling units⁵) to multiscale development, from new urbanisation to the reuse of urbanised areas and from ensemble to complex development models.

The French Town-Planning Code gives following definition of the *Zone d’aménagement concerté*: “The Zones d’aménagement concerté are zones, inside which a public authority or specialized public institution decides to intervene in order to realize or to make realize the development and equipment of plots of land, particularly that acquired or planned to be acquired by this public authority or institution in order to transfer or to concede them lately to public or private users”⁶.

As mentioned, the ZAC are led either by public authority (“*aménagement en régie*” as a form of direct development) or most often by a semi-public society (*Société d’économie mixte*, SEM further in text) delegated by public authority by means of concession contract. The SEM becomes the key actor of redevelopment process: it has a responsibility of land management, expropriation, selection of developers and public consultation. The land management- acquisition of land by the SEM and its following sale to private developers with detailed specifications- appears to be an efficient tool for controlling and phasing of the redevelopment process⁷.

The balance of public and private interests is achieved by the financial model of the ZAC: schematically, the benefits from land sale, building rights and other private developer’s contributions must be equal to the expenditures for the development of public space, transport and social infrastructure⁸.

COMPREHENSIVENESS AS URBAN COHERENCE

As mentioned earlier, complex development implies multitude of architectural projects that logically raises the question of urban coherence and common urban rules. Olivier Chadoin distinguishes two solutions : “Schematically, the alternative is the following : either let the isolated actors in the minimal legal frame and let them express different styles risking collision between different aesthetic registers and rationalities ; or impose strong common constraints to make the urban space reach a certain aesthetic coherence”⁹.

One of the major reasons for setting common constraints and common urban rules is the individualisation of contemporary architecture. The diversification of styles, construction methods and materials doesn't allow to speak about the existence of any “urban consensus”¹⁰ as it used to exist for the nineteenth century architecture based on academic education. The architecture of the Modern Movement deeply transformed the urban fabric by reviewing plot dimensions, road alignments, heights and forms. Industrialisation introduced new types of construction methods. The spread of architectural competitions in the 70s contributed to individualise architectural solutions and the off-plan property sales (Vente en état future d'achèvement, VEFA) integrated in 1967 contributed to raise the importance of the architectural image: selling unique atmosphere, unique image has progressively become a commercial strategy.

The attempt to “reconcile the architectures” was undertaken in the 1980s with the “urban architecture” or “urban milieu” approach. The article of Bernard Huet, one of its key protagonists, called “Architecture against the city” highlights the contradiction between the collective character of the city and the individual character of architecture, pleading for the dominance of the first above the second. The “urban architecture” generating coherent urban fabric was supposed to be the solution against the excessive individualism of architectural projects: “Architecture is not capable to substitute the city for producing a new context where it doesn't yet exist. The first function of urban project is to define a context before the architecture”¹¹.

The project methods of “urban architecture” approach entered the field of urban regulations as well. It is no coincidence that the first cases of urban coordination inside the ZAC date back to the 1980s and become a common practice in the 1990s¹². This urban coordination is ensured by the architect-coordinator, another key figure in complex development projects. Chosen by the public authority or by the SEM by means of urban design consultation, the architect-coordinator becomes its partner in setting the overall program and the spatial organisation of the redevelopment area. Yves Lafoucrière, director of the SEMAEST in the 1990s, (Parisian semi-public society of the Eastern district development) gives a following overview of the necessary qualities of coordinator: “We consider him as our partner, and it is necessary to be on the same wavelength. Furthermore, we must be sure that the chosen person will be capable to be involved in a very long-time operation, five, ten years, or even more. It supposes that the person should be determined and have a certain experience behind his back (...). The coordinator must also have a certain charisma to be able to face up to the tensions with diplomacy”.

Project seminars with architect-coordinator are held in workshop format with the SEM representatives, project architects, developers and municipality employees. Schematically the process of urban coordination within the ZAC is illustrated on figure 2.

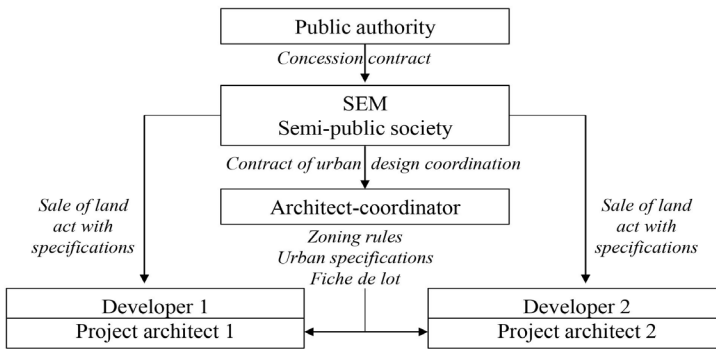


Fig. 2. Urban coordination within the ZAC

The architect-coordinator is responsible for the redevelopment area masterplan as well as for number of regulating documents. Zoning rules are among the most important. It must be noted that until 2000 urban regulations within the ZAC were set by a specific document, the Area development plan (*Plan d'aménagement de zone, PAZ*). Separated from the zoning rules, this document indicated the position of construction plots, spatial constraints (visual axes, pedestrian walkways, etc.), cultural heritage objects, etc. Only in 2000, under the Urban Solidarity and Renewal Act (*Loi relative à la solidarité et au renouvellement urbains, loi SRU*) urban regulations within the ZAC were included into the zoning rules, even if the redevelopment areas still benefit from special zones on the map that enable them to set specific rules and conditions. In this way, the ZAC have become the “open-air urban design laboratories” in which experimental and innovating urban rules can be tested.

Besides masterplan and zoning rules, architect-coordinator also establishes architectural and urban specifications (*Cahier des prescriptions architecturales, urbaines et paysagères, CPAUP*) as well as specific lot prescriptions, the *fiche de lot*. As zoning rules usually concern urban morphology, the specifications concern certain aesthetic characteristics of architecture and public spaces (materials, colours, stylistic features, landscape design prescriptions, etc.) and specific lot prescriptions detail more finely the volumes within each construction plot as well as floor height, position of parking entries, infrastructure connections, etc. The ensemble of these documents provides a clear and detailed framework for project architects and set up a “common denominator” in order to reach a coherent urban fabric. The Massena Nord project is one of examples for this kind of approach.

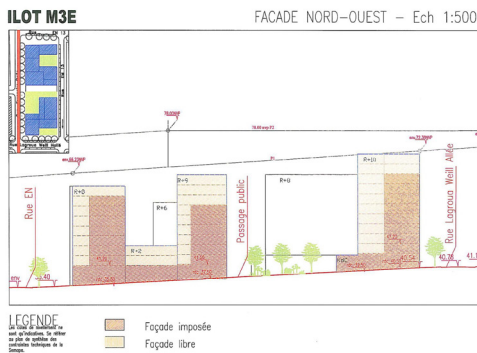


Fig. 3. Masséna Nord Sector, Paris Rive Gauche, 1995. Specific lot prescriptions and architectural realisation. Architects: Atelier Philtre (Christophe Massin, Hervé Dubois)

UNITY IN DIVERSITY: THE MASSÉNA NORD SECTOR IN PARIS

The brownfield redevelopment of the ZAC Paris Rive Gauche launched in 1991 illustrate one of the first¹³ and the most methodical approaches to urban coordination in Paris. The redevelopment the area covering about 130 hectares and previously occupied by various industrial and storage facilities (cold storage, railway infrastructure, compressed air plant, etc) was headed by a semi-public operator, the SEMAPA (Parisian semi-public society of urban development).

Four years after the program start, the SEMAPA organised an urban design consultation for the second stage of the ZAC, the Masséna Nord sector. The redevelopment program included residential (both social and private), office, commercial and higher education buildings as well as social infrastructure and public spaces. Christian de Portzamparc was selected as architect-coordinator with “the open block” concept¹⁴, a model that has been widely theorized since the Masséna Nord operation. Christian de Portzamparc rejected the classical idea of resemblance and introduced the idea of diversity. The still-life and the zoo serve as references for this city vision¹⁵. Residential buildings differ by materials and colours, but their sculptural features interact to form a coherent whole.

The diversity by Christian de Portzamparc is not spontaneous but orchestrated. Specific lot prescriptions determine the imposed and the free volume envelope for each construction plot (figure 3 a). Realised architectural objects illustrate the research of verticality and porosity in the frame of classical road alignment (figure 3 b).

In the case of Masséna Nord sector, we can easily speak of “author’s urbanism” (*urbanisme d’auteur*). In some way, the architect-coordinator projects his author’s city vision to the whole area setting game rules other architects must accept.

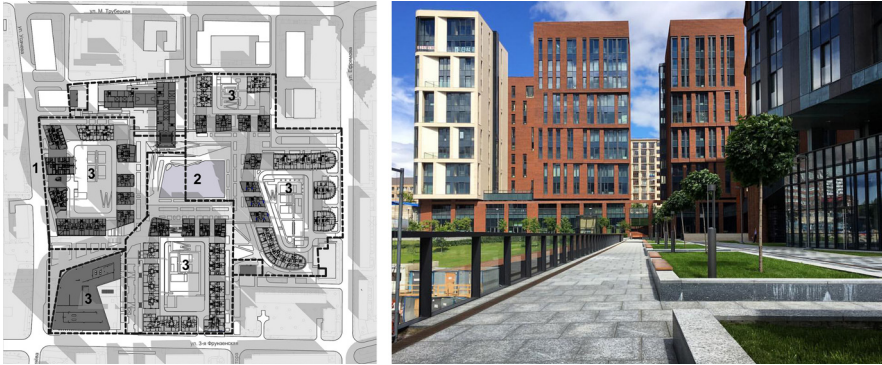


Fig. 4. Garden quarters, Moscow. 1- existing building (1915), 2- central open space, 3- residential and office plots.

ARCHITECTURAL ROUND DANCE : THE GARDEN QUARTERS IN MOSCOW

There are few examples of brownfield redevelopment with similar architectural coordination in Moscow. And if there are some, they usually concern high-class real estate. The urban project Sadovie Kvartali (Garden quarters) is one of the first examples of urban and architectural coordination initiated by private developer. The redevelopment area previously occupied by rubber plant Kauchuk totalises around 11 hectares in the historical Hamovniki district of central Moscow. The redevelopment program includes mainly residential and office buildings arranged in four blocks surrounding a rectangular square (figure 4 a). Sergey Skuratov, both architect-coordinator and author of the major part of residential buildings within the area, set a design-code prescribing heights, volumes as well as the use of brick referring to the existing building of the early 20th century (figure 4 b). In his interview the architect gives following vision of urban coherence:

“The integrity and the expressiveness of “Garden quarters” urban milieu is of major importance for me. I tried to include all the buildings of the area into an “architectural round dance” – for the spectator, at least an experienced one, it has to be clear without words in which relations the volumes are arranged one to another, for which reason one or another material and one or another form are used. The urban milieu should speak for itself”¹⁶.

In comparison with the Massena sector, the Garden quarters design-code didn't have the same juridical force: it was a convention all parties accepted to follow. As Sergey Skuratov notices, project architects were selected for their capacity to dialogue¹⁷. The lighter juridical value of the design-code permitted one of project architects not to follow the prescriptions: a curved glass volume contrasts with the regularity of the surrounding brick fabric.

Few years after the Garden quarters project, another private-led complex redevelopment project proposed a similar model of architectural coordination: the brownfield redevelopment of

the former plant-factory ZIL. At the same time this type of approach remains an exception: in Russian cities the process of complex brownfield redevelopment with architectural and urban coordination is only just starting.

CONCLUSION

The specificity of brownfield redevelopment lies in its complex nature: it is related not to only one plot, but to the whole part of the city. The comprehensive approach is about setting a certain number of common operational, urban and architectural rules within the redevelopment area. Flexible or strict, detailed or general, they all aim to ensure the balance between public and private interests and to reach a coherent urban landscape.

ENDNOTES

1. "Renovaciya promzon."
2. Fontaine, Vigna, "La désindustrialisation, une histoire en cours," 5
3. "Renovaciya promzon."
4. Russian Town-planning code, art. 1.34.
5. Décret no. 58-1464 du 31 décembre 1958 relatif aux zones à urbaniser par priorité, article 1.
6. French Town-planning code, art. L311-1.
7. Demeure, Martin, Ricard, "La ZAC", 199.
8. Demeure, Martin, Ricard, "La ZAC", 147.
9. Chadoin, "L'architecte coordonnateur, entre originalité et ordre," 70.
10. "Aventures architecturales", 26.
11. Huet, "L'architecture contre la ville," 11.
12. "Un coordonnateur: où, comment, pourquoi?", 54
13. Among other ZAC as Reuilly-Diderot and Bercy
14. Portzamparc, *L'îlot ouvert*, 152.
15. Idem, 161.
16. "Antikrizisniy aggreid."
17. "Eksperiment vo imya goroda."

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IMAGE SOURCES

Fig. 1. Image by author

Fig. 2. Image by author

Fig. 3 a. SEMAPA, <http://semapa.fr>

Fig. 3 b. Christophe Massin architects, <http://christophemassin.fr>

Fig. 4 a & b. Sergei Skuratov architects, <https://www.skuratov-arch.ru>

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