ADAPTIVE REUSE OF ZIL FACTORY
MOSCOW, RUSSIA
THE POTENTIAL OF INDUSTRIAL HERITAGE SITES
TO ATTRACT THE EMERGING RUSSIAN CREATIVE CLASS

By

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To my parents
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This thesis investigates the opportunities to attract the Emerging Russian Creative Class using the potential of revitalized industrial sites in Russia. The thesis addresses two severe consequences of Russia’s post-industrial transition which have been happening over the last 50 years in Russia. First, every year the number of abandoned industrial buildings in the country increases and creates voids in the urban structure and disconnects parts of the city. Second, there is an acute problem of a mass emigration of members of the Emerging Russian Creative Class which occurs because Russian living conditions cannot satisfy their needs. This is a significant threat for the future economic development of the country because the new economy is increasingly dependent on members of the Creative Class. Thus, this thesis proposes to revitalize industrial sites so they attract the Emerging Creative Class, and reduce emigration.

This thesis focuses on Moscow because it has a high population density, a significant concentration of abandoned industrial sites, and the highest concentration of the Emerging Creative Class in the country. The strategy for revitalization of an
industrial site was developed through investigation of the Creative Class values, analysis of Moscow’s historical development and analysis of case studies from Europe. The strategy proposes to focus on education and science as the core elements for revitalizing industrial sites. In order to test the proposed strategy, an urban design proposal for the revitalization of the ZIL factory industrial zone was developed, and an evaluation of the research results was accomplished based on precedent and critical reviews. Directions for future investigation were suggested.
CHAPTER 1
INTRODUCTION

Statement of Purpose and Objectives

In the last few decades, Russia, as one of the most heavily industrialized countries of Eurasia, has been going through the complicated process of transitioning to a post-industrial economy. This process has caused a number of serious problems. First, every year more industrial buildings are vacated, increasing the number of abandoned industrial buildings in the cities. This changes historic patterns of use by altering the underlying urban structure, by eliminating the unifying effect of the industrial zones causing the cities to become fragmented. Second, an increasing number of the Russian Creative Class\(^1\) (Florida, 2012) are leaving the country en masse because Russian urban conditions cannot accommodate their lifestyle. Because of changes in socio-economic conditions, the Russian economy is increasingly dependent on the Creative Class and the loss of its members is a significant threat for the future development of the country. This condition is most obvious in Moscow which is the focus area of this thesis. Moscow has a population of 11,979,529 people living primarily in high density conditions and has within the city limits more than 7.9 thousand acres of abandoned industrial buildings and, the country’s most significant concentration of members of the Creative Class.

Moscow government is developing policies to address these changes, in particular, redevelopment strategies to resolve the problems created by peripheral abandoned industrial zones. Current development of Moscow is an excellent example of the multi-nuclear model of the city when industrial zones are redeveloped as urban centers. Moscow is following the experiences of European cities, Paris in particular,
intending to develop the city linearly towards the periphery to create new business centers utilizing existing industrial facilities. Although this development plan causes multiple discussions and disagreements within the government and among specialists, it has already started with the extension of the city boundaries to the South-West direction towards the Kaluzgskaya Region. Along with improving the quality of life, it causes gentrification in those districts, a relatively new phenomenon in Russia, ultimately reducing one of the core values of the Creative Class.

This thesis explores the potential of redeveloped abandoned industrial sites to attract the Creative Class to Moscow. To accomplish this, first, the values and needs of the Creative Class are explored. Second, the structure of Moscow and its historical development is analysed and considered using its future strategic development concept. Third, abandoned industrial building sites are located within the city and a site for the project is selected. Fourth, the project concept for the selected industrial zone’s future revitalization is developed by applying the principles learned from examples of adaptive reuse of industrial heritage sites in Europe that attract the Creative Class. As the conclusion of the research, the strategy for the alternative development of the industrial site is developed and illustrated in the proposal for the redevelopment of the ZIL factory industrial zone.

**Background**

The process of deindustrialization has been actively happening all over the world for the last half century. This process is characterized by an increasing sector of human services and automation of industries. Although this shift leads to economic and lifestyle improvement, it has negative impacts on the urban environment. As industries are
being transferred to more profitable places in terms of human and natural resources, it leaves many abandoned industrial buildings behind.

**Post-Industrial Transition in Russia**

The challenge of transitioning to a post-industrial economy in Russia is a struggle for the existing political and administrative systems and is different from the transformation it caused in European and Western countries. It caused problems in the physical environment, disrupted the social order and the country was not culturally and politically ready for the changes.

**Industrial Heritage**

As Russia is considered to be a heavily industrialized country and its industrial heritage is largely present in the country. The term “industrial heritage” in the Russian context refers to all industrial buildings and equipment which were produced before 1950. Industrial heritage sites are classified according to the function of the buildings using by the following categories: *factories* (metallurgy; textile industry; coal, gas and petrol industry), *warehouses*, *energy*, *transportation*, and various *social functions* which include working-class settlements and commercial facilities. As a result of the transition to a post-industrial society, many abandoned industrial sites are appearing around the country.

In 1994 Russia became a member of The International Committee for the Conservation (TICCIH) of Industrial Heritage. Since then Russia has actively participated in all its activities and TICCIH local professionals are researching strategies for the preservation and future development of industrial heritage sites. Preservation specialists are collecting data and maintaining an archive that describes the atmosphere and distinctive character of abandoned industrial building complexes. It is a goal of
preservationists to maintain the sites as tourist attractions, however, If the buildings are reactivated and adapted for new uses they will have a positive impact on the economy of the cities.

The developers of the PromoProm program, that deals with the exploration of Industrial Heritage in Moscow and other regions are proposing concepts for the redevelopment of industrial heritage sites. The PromoProm program was introduced at the Moscow International Festival “ArchMoskva” and is dedicated to adaptive reuse of industrial heritage within the contemporary Russian context. At the 2007 festival the developers of the program organized a panel discussion under the slogan “Live, Work and Play at the factory” and organized 4 tours of former factories, presenting different strategies for adaptive reuse. Unfortunately, the program was discontinued due to the poor economic conditions in the country.

Social changes

Apart from the physical changes in the environment, the establishment of a new economy led to social changes and the formation of the Creative Class (Florida, 2012) before unknown in Russia. The newly established political system embraced capitalism , which caused changes in the means of production and, consequently there was a great demand for highly qualified intellectual workers who are responsible for the innovative and creative potential of the country. These people created a new Russian middle class, defined by Richard Florida as the Creative Class (2012). According to Florida’s data the Creative Class in Russia today is about 35% of workable population (The Creative Class 9). Only the USA has a greater percentage of the Creative Class workers. According to Vladimir Mau a sudden change in the Russian economy at the end of the 19th century has made it difficult for a Russian post-communist political and
social reality to catch up with the change (314). The changes caused a new wave of emigration because citizens who were not satisfied with the existing conditions left the country looking for better opportunities. In the last 10 years (2003-2013) over one million people left Russia for the developed countries of Europe primarily Finland, Germany, Italy, Czech Republic and Poland, as well as Canada and the USA. This emigration has negatively impacted the Russian economy because the emigrants are usually specialists, highly-qualified professionals, and the younger population – the members of the Creative Class. As Shkataryan stated, the new urban economy is expected to be increasingly dependent on the emerging Creative Class (11). As a result, the question of how to attract the members of the Creative Class back to the cities of Russia is an acute one.

**Adaptive Reuse of Industrial Heritage**

The process of deindustrialization which has been happening in multiple first world countries for decades created a serious problem of abandoned industrial buildings and sites by creating voids in the urban fabric, raising the question of how reintegrate industrial sites back into the urban structure? Although tearing down deteriorated buildings and replacing them is the fastest way to resolve the problem of their existence, recent studies have shown that in most cases it is more profitable to reuse an old building rather than demolish it and build a new one; indicating that adaptive reuse is the most effective strategy for revitalizing historic industrial sites (Austin et al, 1988, Clark and Wolkenberg, 2013, Zapary, 2000a and 2000b). In general, adaptive reuse is activating or filling an old building with a new function, different from the one for which it was initially constructed. According to Austin *et al* adaptive reuse is a “process by which structurally sound older buildings are developed for economically viable new uses” (49).
Apart from reclamation of older buildings, adaptive reuse has a positive effect on the environment – it helps to reduce urban sprawl, which is an acute problem of contemporary urban regions. In addition, adaptive reuse reduces the consumption of natural resources. From an economic perspective, integrating former industrial sites into the urban structure through different strategic approaches can increase the value of land. Considering these facts, the topic of adaptive reuse of industrial buildings has become very popular among researchers in recent years. There are generally four major options for adaptive reuse in Russia: 1) converting a building into a museum about its history by preserving it entirely and promoting it as an industrial archeological site (see Postekkis and Lapithis, 2012); 2) adapting a building for a new function while preserving its structure and architecture form; 3) adapting a buildings for a new function and preserving a portion of buildings as a museum; 4) demolishing deteriorated buildings and constructing new buildings to complement the adaptive reuse of other buildings. The last option of adaptive reuse refers to complexes of abandoned buildings where only some buildings are suitable for reuse and the entire zone is planned for reuse. Usually, the main challenge in adaptive reuse projects, as noted by Postekkis and Lapithis, is finding the balance between preserving the memories and character of an industrial building when new uses are brought into it (3). The answer is rarely apparent as it is more often an ethical question rather than a practical one, so a universal formula cannot be found. According to Hardy, there are three general factors to be considered in order to achieve success in an adaptive reuse project: “the nature of the reuse, the availability of funding; and the aesthetic approach taken” (32). In order to be successful, every adaptive reuse project must be developed based on a variety of
local factors such as: the history of the place, its role in the community, its special merit, its value for society, and more practical issues such as the condition of building, the level of its deterioration and the degree of contamination of the site. In addition, the context of the place plays an important role and factors like the economy of the city, the market of the place and its location within the city should not be neglected. Alexander Garvin defines planning as “public action that generates a sustained and widespread private market reaction” and suggests that an approach towards planning should be supported by collaborative public action and private market reaction (3). In his opinion, redevelopment projects can only be successful when not only planners are involved in the projects, but other players are involved in the process as well, such as: “civic leaders, interest groups, community organizations, property owners, developers, bankers, lawyers, architects, engineers, elected and appointed public officials – the list is endless” (8). This notion of collaborating to ensure the success of a redevelopment project is critical in adaptive reuse projects. Even if the physical environment is changed it requires social interaction to activate the place. The main restraints to adaptive reuse projects in Russia are outdated building codes and zoning regulations, which must revisited if the future development of an industrial site is to be successful.

Examples of adaptive reuse of industrial buildings are widely spread around the world. Industrialization first came to Europe in the late 18th and 19th centuries. As a result the region has become a storehouse of industrial heritage sites, and has taken a lead in the adaptive reuse of abandoned industrial buildings and sites. Successful and economically sustainable projects can be found in Germany, England, Austria and other countries, where former industrial buildings over the last decades have become tourist
attractions for visitors from all around the world and assets for their communities. In this paper, examples of successful adaptive reuse projects that were chosen to be studied as exemplars are all located in Germany because there are examples of single building adaptive reuse as well as projects at the scale of a city. One of the most internationally famous projects is located in the Ruhr region, where several industrial sites around the area were tied one to another by a 400-mile road circuit and 700-mile bike path forming a united cultural site-seeing tourist route. Another example is located in Duisburg and is called Landschaftspark Duisburg-Nord designed by Latz+Partner in 1991. In this project an old coal mining and steel industry was turned into a park, in which the designers of the project managed to preserve the special character of the place and at the same time establish new cultural values. The HafenCity development in Hamburg, Germany is currently the largest rebuilding project in Europe and consists of turning old port warehouses of Hamburg into an office district. A big part of this project is going to be a future home of HafenCity University – a new architecture and urban planning school. These projects along with some others are going to be examined in greater depth in Chapter 4. In heavily industrialized countries such as Germany abandoned industrial buildings often form entire complexes which create voids in urban structure. In this case, adaptive reuse shifts from the scale of a single building to the scale of an entire industrial zone or multiple zones. Projects of such scale a careful planning strategy and appropriate funding in order to achieve a good result. More often than not project funding must be obtained from multiple sources rather than one. The strategies for redevelopment of large industrial zones have to be thoroughly thought through and sufficiently flexible to allow for possible future changes. At this scale, the primary
question is when it comes to a complex of abandoned industrial buildings, is the strategy of holistic renovation suitable for the industrial zone? What does it take to bring hundreds of acres of deteriorated land back to life? Rather than shifting an entire place from one use to another, industrial zones of larger scales should be redeveloped incrementally when the character allows perception of the place to change gradually while, preserving historical value. Postekkis and Lapithis suggest that incremental revitalization deals with preparation of the favorable ground for new uses which are to be brought in the site in the way they are not just practically feasible but also are connected to the special historical background of the site (3). He argues that such development should be implemented in stages so that “people can be part of this and finally accept it.” The crucial moment here is to explore and understand very carefully what kinds of experiences and memories a particular site brings to people which have to be preserved in the future, states Postekkis and Lapithis (3). Although, the method of incremental development of industrial zones has to be further examined and understood, it is the only feasible way to enliven entire industrial zone over years. The idea is to bring in incentives of new development, create nice environments around them so that they can grow, and over time will start to give life to other related structures covering more and more of the surrounding space.

Adaptive Reuse in Moscow

Moscow as part of Europe is following Germany’s lead and is working on the issue of abandoned industrial buildings that resulted in several implemented adaptive reuse projects in the last 10 years. Among the most famous projects are the transformation of the former confectionery factory “Krasny Octyabr” into a residential and business district, a former wine factory into an exhibition center and art gallery and
former wool-spinning factory into a business district named “Red Rose 1875”. These are successful examples for giving a new life to old historical buildings. However, in most examples of successful reuse are just a simple refilling of the inside space of the building with different types of workers, leaving the zones themselves isolated from the context. Therefore, there is considerable work that has to be done and many lessons to be learned in this sphere in order to make abandoned industrial buildings actively included in the urban structure along with preserved historical character and value.

Figure 1-1. Location of business district “Red Rose 1875”. A) Business district “Red Rose 1875”, B) Location in Moscow.

**Business District “Red Rose 1875”**. Business center “Red Rose 1875” is located on Lev Tolstoy Street (Fig. 1-1) and used to be a wool-spinning factory in the 19th century – one of the biggest in the country of the time. The factory was established in 1875 by a French citizen from Leon, a Moscow guild merchantman Klavdy Osipovich (Klod-Mary) Giro and was designed by architect Konstantin Tverskoy (Fig. 1-2(A)). In 1919 the factory was nationalized by the Russian government and given the name “Red Rose” after Rosa Luxemburg. After disintegration of the Soviet Union the factory was
used for non-industrial purposes. In 2003 “Atrium”, an architecture bureau, developed a strategy for the entire district redevelopment, creating business district “Red Rose 1875” under the leadership of Anton Nadtochy and Vera Butko (Fig. 1-2(B)).

Figure 1-2. Business center “Red Rose 1875”. Photos courtesy of Daria Petrova. A) Preserved facades, taken from the corner of Timura Frunze Street&Bolshoy Chudov Pereulok B) Inside space of the business district.

The area of the district is 14.1 acres which is planned to be occupied with office buildings. Businesses are occupying the district one by one, and in 2010 a major Russian Internet Company Yandex, which provides users with e-mail services and operates the largest search engine in the country, moved in. Today the main company office (Fig. 1-3(A)) is one of the most sensational offices in Moscow as it shifts the traditional idea of office place organization. The owners of the office tried to create as relaxed atmosphere for the work process as was possible. Everything inside this building is unconventional and unique: every floor has its own name depending on its number (7th Heaven, Five Angles for instance); the employees are not required to work at their desk, but anywhere they feel comfortable; offices are equipped with small gym spaces, billiard and other activities to switch off your brain (Fig. 1-3(B)).
The Business Center “Red Rose 1875” in general, and the Yandex Office in particular, are good examples of adaptive reuse when only facades of the buildings are preserved while interior spaces and new uses have nothing to do with the history of the buildings. Though the district has a contemporary appearance and is established as one of the lead contemporary developments of the city, the historic atmosphere of the place was totally destroyed and doesn’t give the visitor a hint of what it was used for before. Even materials used on the facades were renewed, which caused them to lose their historical significance and charm.

Figure 1-3. Yandex office. Photos courtesy of Daria Petrova. A) Taken from the corner of Lev Tolstoy Str&Pugovisnikov Pereulok, B) Gym/billiard area of the office.

“Krasny Octyabr”. “Krasny Oktyabr” (Fig. 1-4) used to be a confectionary factory located on 12.4 acres of Bolotny Island in the center of Moscow. The factory was established in 1851 and is one of the oldest confectionary factories in the country. Initially, it was named after its owner Teodor Ferdinand fon Einem and acquired its name “Krasny Octyabr” after nationalization in 1922. It was designed by architects A.V. Flodin and A.M. Kalmyukov and eventually formed a complex of 23 buildings on Beresnevskaya Naberezgnaya (Fig. 1-5). In 2007 all industrial facilities of the factory
were moved from the city center and the factory became an art-cluster under the leadership of “GUTA-Development” company, one of the leading developers companies in the country.

Figure 1- 4. “Krasny Oktyabr”. View from Kryumsky Most.

Figure 1- 5. Location of “Krasny Oktyabr” factory. A) “Krasny Oktyabr”⁴, B) Location in Moscow⁵.
Today “Krasny Oktyabr” is one of the most popular places in Moscow with multiple cafes and restaurants, art and exhibition centers, workshops and studios for the Moscow Art-Industrial Institute (MAI). Along with MAI the place attracted another educational institution “Strelka” – Institute of Media, Architecture and Design located right next to “Krasny Octyabr”. This Institute is one of the most recent educational developments in the city and promotes a new vision that focuses on educational processes. The idea of the institute was to attract human capital and become a concentration of creative energy that will change the physical and social image of Russia. All the programs in the institute are focused on contemporary problems of Moscow and engage students to develop creative approaches to resolve them. This is a good example of incremental development. The conceptual vision of the development has changed gradually and now there is a tendency for new age educational institutions to be attracted to the site. The success of “Krasny Oktyabr” is dependent to a high degree on its location. The site of the former factory is located in the historical center of the city, on a picturesque river embankment and is on the most popular tourist routes in the city which goes through the most visited places in the historic district. The existing tourist traffic stimulated the development of the place and attracted small businesses and investors. The scale of the factory also played a big role in its success. It is compact and occupies one urban block making it possible to create enough density to activate the place. “Krasny Oktyabr” is a good example of adaptive reuse which preserves the architecture of the buildings and accommodates new uses. It opened in 1994 with only a small museum about the history of the place. Since then the facility has grown incorporating a variety of uses. An important positive aspect of this project is the
fact that the buildings in the complex are starting to be integrated in the context of the city by activating the perimeter of the site with small cafes, bars, shops, clubs, terraces and etc. (Fig. 1-6). Unfortunately, the interior space of the “factory” is not well populated. A major reason for this is that there are not enough positive outside spaces where people can interact and socialize. Existing outdoor space is primarily used for parking, which makes the place look empty, closed and unwelcoming for visitors (Fig. 1-7).

Figure 1- 6. Outside activity. Photos courtesy of Daria Petrova. A) Outside café, taken from southwest corner of the complex, B) Design center, C) Mobil cafe, taken from the east side of MAI building, D) Mizandari cafe, inside space of the complex.
Wine Factory. The wine factory is one of the most visited modern art venues in Moscow. It is located next to the Kursk Railway Station on 4th Syuromyatnichesky Pereulok (Fig. 1-8).

The factory begins its history in 1810 when a manor-house belonging to Ekaterina Volkonskaya was turned into a brewery by Nikofor Prokofiev, a merchant. Later it evolved into a wine factory and became the third largest in the country. Over its long history the factory has seen many owners, and each of them enriched the complex
of buildings by constructing new buildings or introducing new uses. During the years of the 19th century, part of the factory became a home for homeless people within a charitable program started by Khludovs, the owners, at that time. Also, part of the factory was used to accommodate a four-grade city school. Unfortunately, the factory was not able to cope with competitors and was closed by the 21st century, however, in the beginning of the 21st century the wine factory was turned into a modern art center under the management of businessman Roman Trozenko and was designed by architect Alexander Brodsky. The art center consists of seven buildings from the 19th century (Fig. 1-9).

Figure 1-9. Wine factory art center. Photos courtesy of Daria Petrova. A) View from the main entrance, B) Corpus with preserved wine production shops, C) Main entrance plaza of the complex, D) Back yard historical building.
Part of the complex is dedicated to the history of the factory and consists of four workshops where visitors can taste genuine wine from the factory and observe the process of their production. The rest of the buildings are used primarily for exhibition and merchandising purposes such as art-galleries, exhibition centers, book shops, vinyl disk shops, souvenir and gift shops, cafes and recreational facilities (Fig. 1-10).

![Figure 1-10. Multiple art shops at wine factory. Photos courtesy of Daria Petrova. A) Arts & architecture book store, B) Creative souvenir shop, C) Vinyl disk shop, D) Shopping corner.](image)

Exhibitions inside the art center are constantly changing as well as exterior elements of the place. The wine factory is a good example of the transformation of an industrial complex into an art center. The basis of the redevelopment is a museum about the place and both facades and the interiors of the buildings are preserved. Developers of the project involved various art-groups to revitalize the place. Their work
contributes to the new life that has emerged from rusty industrial elements of the buildings. The walls, heating units, chimneys and pipes, all were used by the artist and creates a beautiful harmony between the past and present (Fig. 1-11).

Figure 1-11. Wine factory art center, artists’ contribution. Photos courtesy of Daria Petrova. A) Artistic wall, B) Artistically completed heating unit, C) Painted chimney.

Interior spaces in the buildings were barely transformed, which created a contrast and at the same time balance, between old and new. The only disadvantage of the wine factory is its location. It is literally hidden among a complicated structure of surrounding residential blocks, and is not opened to the context of the city, which makes it difficult to find. Although multiple directional signs help to some extent, in general the art center is pretty much isolated from the context.
Moscow Context

Moscow is the capital of the Russian Federation which is located in the European part of the country. It is the most populated city in the country and is among the 10 most populated cities in the world. According to census data the population of Moscow in January 2013 was 11,979,529 people. Due to its packed high-rise environment the density of Moscow is one of the highest in the world – more than 10,588 people per sq km.

In 2013 Moscow turned 866. The official date of the city’s establishment is considered to be the 4th of April 1147 when it was first mentioned in the chronicles, although a settlement existed on the site since the Stone Age. During its long and complicated history Moscow developed into a city which is totally different from any other city in Russia. Due to its economically favorable location at the intersection of commercial routes, Moscow always had an important status within the country and grew rapidly. At the beginning of the 16th century under the government of the duke Vasily III, Moscow became the capital of Russia which stimulated its economic and cultural development. In 1712 Moscow lost its status as the capital city for twenty years when it was moved by the czar Peter I to Saint-Petersburg. In 1732 the status was returned to the city. In 1920 the Bolshevik’s party took over the leadership of the country and a completely different period in the development of the city begins. Moscow again became the center of the country and its international political importance increased significantly. The city was expanding rapidly and many historic buildings were destroyed including many churches and monasteries. At the beginning of the 20th century, in the years of industrialization, multiple universities were built in the city and since then Moscow has become the center of education for the country. After the Soviet Union fell
apart in 1991 Moscow experienced drastic changes. The churches which were ruined by Bolsheviks began to be recovered. Moscow has experienced multiple destructions and devastations due to revolts, civil wars and wars with other countries that caused its constant structural and architectural change. The beginning of 21st century is marked by fundamental architectural redevelopment. The city is being widely rebuilt and multiple business centers, elite housing and contemporary infrastructure systems are being developed. Although this process is necessary and important for the further development of the city it also destroys the city’s unique historical character.

Today Moscow is the largest financial center of Russia and its international business center influences a major part of the Russian economy. The city retains a large industrial center (mechanical engineering and metallurgy mainly), though recently steps have been taken to relocate industries outside the city. Tourism plays a major role in the economics of the city hosting 4,000,000 tourists a year and significantly increases economic activity in the service sector. In addition, Moscow, the main educational center of the country, is also a major scientific center in the world. The first university was established in Moscow in 1755 by Shuvalov and Lomonosov. In the 19th century the universities attracted various scientific communities focused on the history of Russia, medicine, Russian language and other sciences. In the 20th century the network of educational institutions and academia started to be actively formed in Moscow. Today the city has 264 educational institutions: 109 governmental and 155 private. According to official statistics in 2009 there were 1,281,100 students in the city (Retrieved from <http://www.moscow-faq.ru/all_question/2007/December/3190 2 November 2013). Today Moscow government pays a lot of attention to the educational
system and student community because students were defined by Richard Florida as
the future members of the Creative Class in Russia. Unfortunately, a big percentage of
young specialists migrate from the country after graduation. Among all the issues with
which the Russian educational environment is struggling today is student housing.
Recently, this has become a big issue for Moscow, where thousands of students are
arriving yearly from different regions of the country and other countries. The Moscow
government started to discuss the need for a major reorganization of the university
structure by turning it into something similar to a traditional university campus. Even
though the government is talking about the development of student campuses in the
country, basically, the discussions are focused mostly on building more housing for
students. However it is unlikely that solving the problem of housing will solve the
problem of continuous migration of young specialists from the country.

Apart from housing, one of the most serious problems Moscow is facing today is
an existing road system which cannot support the rapid growth of the city and the
increasing number of private which are creating traffic jams and the collapse of public
transportation. Due to this fact, one of the fastest and most frequently used methods for
moving around the city is the Moscow Underground, though other public transportation
systems are very well developed (buses, trolleys, trams and minibuses). Consequently
the value of land increases when it is located close to a Metro Station. Also, it is
important to take into account that due to the scale of the city (60,000 approximately
acres) and long distances, the Metro system cannot always directly connect citizens to
their destination point. Due to this fact, and the traffic issues Moscow citizens are used
to walking a lot. Apart from ground transportation, Moscow has a very well developed
river transportation system which connects the city to five seas: the Baltic Sea, the White Sea, the Caspian Sea, the Sea of Azov and the Black Sea.

One other serious problem for the city today is immigration. Moscow has become a center for massive immigration of workers from Middle Asia, China, North Caucasus Republic and Transcaucasia. This immigration caused an increase in criminal activity in the city, infrastructure congestion, social segregation and etc. Unfortunately, the Moscow government is not taking any measures to deal with this.

Notes

1. Creative Class is capitalized as is done in Richard Florida's writing
CHAPTER 2
CREATIVE CLASS

As Richard Florida stated in his book *The Rise of the Creative Class, Revisited* (2012) creativity is the driving force for contemporary economic development and has spawned the formation of new social class, which he calls the Creative Class. Florida defines the Creative Class as “people in science and engineering, architecture and design, arts, music, and entertainment whose economic function is to create new ideas, new technology, and new creative content” (*The Rise*, ch. 1). According to Florida, our post-industrial society has changed the nature of social class and mobility and is no longer under control of older patterns (Florida, 2012). He believes that society should strive towards building “new forms of social cohesion appropriate to the new Creative Age” (*The Rise*, preface). Contemporary economics in the first world are based on the human capital and means of production located within the Creative Class. Unlike the industrial age, the means of production is vested in the individual not a physical location and is mobile. Consequently, quality of life is the main factor that attracts human resources and economic centers are located where there is a high quality of life. Thus, in order to be able to create an environment which will be appealing to the members of the Creative Class it is extremely important to understand their needs and values.

**Creative Class Values**

According to Richard Florida there are two main values for the Creative Class: *diversity* and *social interaction* (*The Rise*, ch. 3). Since the means of production within this class is knowledge the members of the Creative Class value an environment which is opened to diverse opinions and ideas by all people “no matter their gender, race, nationality, sexual orientation, or just plain geekiness” (*The Rise*, preface). Only this
kind of environment will stimulate the creative process and generation of new ideas and concepts. That is why it is important to make any Creative Class venue welcoming to the community. As Florida stated “every human being is creative” (*The Rise*, Preface). That means that every opinion has value. Thus, it is necessary to attract various groups of people when proposing a Creative Class venue and create as many opportunities for those groups to interact as is possible.

*Authenticity* is the primary factor when considering the criteria for a place to attract for the Creative Class (*The Rise*, ch. 14). The place must have a unique historical background and special character. It must have a place and value in the history of the city. At the same time, there should be innovative developments within the place which will coexist in harmony with the old, adding even more value to it (*The Rise*, ch. 14).

Three fundamental factors are characteristic to venues which attract the Creative Class, whether it is a place to live or an office environment, an entire community or their neighbors. The first factor is *authenticity*. A Creative Class venue must have a unique character and its special place in the history of the city to attract the Creative Class. In addition, the place must combine both – new and old – to attract the Creative Class. The second factor is *diversity*. A Creative Class venue must be open to all groups of people, without regard to gender, sexual orientation, age, income or profession. It also implies that there cannot be any boundaries around a Creative Class venue – neither physical, nor mental. Thus, the third factor is *connectivity*. A Creative Class venue cannot be a self-contained element and be completely separated from the urban
context. To be attractive the elements which compose the venue must be open to each other and interconnected so they form one united and vibrant interactive environment.

Industrial heritage sites in these terms have great redevelopment potential to attract the Creative Class since such buildings usually have a unique character and a history. This is illustrated by Richard Florida in his book when he indicates that the Creative Class members very often choose historical loft-style buildings for their offices or residences for the reason that they are flexible from the inside, easily transformable and do not require much remodeling. It is a perfect solution for a “small firm which is bursting with ideas but no money” (*The Rise*, ch. 6). Therefore, the abandoned industrial buildings in Russia are perfect for these purposes considering their enormous interior open spaces and flexibility. However, a major problem that has to be solved in order to turn an industrial heritage zone into a Creative Class venue is their separation from the urban context. This is a result of their original purpose because industrial zones initially developed to be separate from the urban context because they had limited access. That why one of the main things to accomplish when developing a Creative Class venue is to look at the opportunities to perforate the boundaries, activate the perimeter and integrate the industrial zone into the city structure.

**Diversity and Gentrification**

The term “gentrification was established by sociologist Ruth Glass in the 1960s in order to describe the process of middle-class people moving into working-class urban neighborhoods, causing an increase in property values. Eventually, this process leads to displacement of existing residents who cannot afford to live there anymore. While gentrification has a positive effect for city budgets because of increased property values and taxes, it has a negative impact on the existing residents who have to move. This
means that while improving one neighborhood, gentrification may lead to the
deterioration of others where displaced residents move. It all together causes the
accumulation of negative energy and problems around such neighborhoods. In terms of
attraction of the Creative Class, gentrification presents a serious issue because it is the
opposite of diversity, which is one of the main values of the Creative Class.
Gentrification means setting aside the entire community along with important historical
values, opinions and ideas it represents. Richard Florida refers to the members of the
Creative Class as a “creative elite” and “dominant in terms of wealth and income”, there
is a possibility that attracting of the Creative Class will cause a gentrification effect (*The
Rise*, ch. 1). So, when developing a Creative Class venue the possibility of gentrification
should be taken into account and measures for decreasing the negative effect of it
should be proposed.

The term gentrification is translated in Russian as dzgentrificazia
(джентрификация) and in Russia refers to a process of reconstruction and renovation
of buildings in the slums according to the planned city reconstruction program or to the
decisions made by professionals and administrations. In this paper gentrification refers
to the process described by Ruth Glass and not to the one described by the Russian
term.

**Educational Environment and the Creative Class**

According to Richard Florida, education, training and library occupations are
among the categories which compose the “super-creative core” of the Creative Class
(*The Rise*, appendix). The concept of creativity is based on constant research, analyze,
experiments, assumptions, theories and etc. This means that the work process of the
Creative Class is like a life time of studying. Therefore, the conclusion can be made that
the Creative Class and educational environment are closely interrelated and are strongly attracted to each other. An educational environment is usually vibrant with different types of social interaction among students, which makes it appealing to the Creative Class. Also, educational environments attract diversity such as cultural, ethnical, social, age and etc. In addition, education gives people the opportunity to grow professionally and improve the quality of their lives. This leads to the assumption that attracting an educational environment to the Creative Class venue can reduce the gentrification effect. In the Chapter *The University as Creative Hub* Florida states that University is “indeed a key institution of the Creative Economy”, but in order to be effective “it has to play three interrelated roles that reflect the 3T’s of creative communities” (*The Rise*, ch. 15). Just having a university is not enough. It must be part of the structure and needs to be accompanied by an economic infrastructure and quality of place in order to be able to retain the Creative Class (*The Rise*, ch. 15).

In Russia, the main group of people, which Richard Florida met, were students, whom he addressed as the primarily future members of the Creative Class in the country. This means that educational environment is one of the main industries which have to be affected by any Creative Class venue proposed in Russia.

**Creative Class in Russia**

There is not a particular definition for the Creative Class in Russia at the moment since it is just starting to form and it causes various discussions among specialists and the general population about the topic of what groups of people actually compose the Creative Class in the country. In the Russian edition of the book *The Rise of the Creative Class, Revisited* Richard Florida addresses the Russian audience with the proposal to analyze American experience and think about the ways it can be applied in
Russia (Florida, 2007). He states that even according to his most severe criteria, Russia takes the second place after the USA in the number of members of the Creative Class within the country. However, in his World creativity index – a combination of technology, talent and creativity indexes, Russia takes the 25th position among the other countries. That means, Florida states, that “there are reasons to be optimistic, but there is plenty of work to do” (The Creative Class 7). This drastic difference in the indexes exists because the rise of the Creative Class in Russia must struggle with the existing political, administrative, and social structures. Also, it is important to acknowledge that members of the future Creative Class in Russia are not the same as in the USA in terms of yearly income. Today, there basically is no middle class in Russia, because the population is generally divided into two groups – wealthy (2% of the population with average income of about $35,000 per year) and poor (80% of the population with average income of about $10,000 per year) (Retrieved from http://www.online812.ru/2010/11/13/017/ 18 October 2013). The middle class or so called “wealthy among poor” class is just being formed and is 7% of the population with average income of about $15,000 per year.

The members of this new class are the Russian Creative Class. As Florida stated, the population of Russia is going to decrease by 18% in the next 50 years due to the waves of emigration. Thus, attracting of the Creative Class is a critical factor in the future economic development of the country.

**Conclusion**

In order to attract the Creative Class to an industrial heritage venue, multiple components must be generated within the site of industrial zone to accommodate the needs of the Creative Class. The most important component is the presence of a University and Science research facility to attract research, specialists, and create
diversity and creativity. However, the products of academia cannot only be contained within education and scientific research facilities. They must be exposed to the community and the community must have open access to them and be welcomed for active participation and discussion. Moreover, exchange and interaction must become key components of the structure of the place.
CHAPTER 3
METHODOLOGY

This research paper was developed in order to explore the opportunities of using the potential of abandoned industrial zones in order to attract Creative Class back to the city of Moscow (or any other Russian city where applied). Investigation of this issue is very important for Moscow in particular, because two main problems – abandoned industrial buildings and emigration of the Creative Class, - are both results of post-industrial transition and coexist at the moment. The research questions of this paper are:

1. If we can use the potential of industrial heritage sites in Russia to attract the Creative Class?
2. What are the strategies for revitalization if an industrial site to attract the Creative Class?
3. How does the scale of sites determine a revitalization strategy?

In order to answer the research questions an experimental urban design proposal was developed. The project is based on the idea of incremental revitalization of abandoned industrial buildings to create a vibrant environment which will transform over time. The proposal is a product of simultaneous adaptation and intervention. As fresh sprouts on a seemingly dead stem those interventions enliven the environment around them and attract activities which will start to gradually change and recycle old fabric according to their needs. The project focus was to create an environment which satisfied the primary needs of the Creative Class and allowed all the categories defined by Richard Florida: “artists and cultural creatives, professionals and students,” to actively interact and share experiences (The Rise, preface). The main strategy of the projects is to use science and education as a driving force for the revitalization of the industrial site. As one of the main interventions the creation of an architecture school on
the site was used in order to attract multicultural diversity and use student energy to activate the place. The school has a special focus on the industrial zones and adaptive reuse, and other acute problems of Moscow as well. The most important feature of the environment which was created as a result of the project is variety of interdisciplinary interaction taking different shapes around the site.

The preparatory studies for the project were executed using multiple methods. The site for the project was selected by qualitative assessment of each potential site which was identified and visited at the start of the study. The data for the design proposal were collected during on-site visits and urban context analysis. The strategy for the revitalization of the chosen site was developed from an analysis of case studies, historical background studies and literature review. Also, the historical background of Moscow was studied to gain a better understanding of the city’s patterns. In order to estimate the results of the research critical judgment was applied.
CHAPTER 4
CASE STUDIES

There are many examples of adaptive reuse of abandoned industrial buildings all around the world, especially in Europe. Germany managed to become a leader in inventive and conceptual approach towards adaptive reuse due to its historical background as a heavily industrialized country and has numerous industries spread around the country. The projects which are reviewed in this chapter are related to the adaptive reuse of a large-scale industrial sites and develop the idea of incremental revitalization of industrial zones which is the focus of this paper.

Ruhr Region, Germany

In 1989 a public-private coalition in Germany called the International Building Exhibition Emscher Park initiated the revitalization of industrial zones in the Ruhr region, including the cities of Duisburg, Essen, Gelsenkirchen and Dortmund (Fig. 4-1). In the past this region was highly industrialized, packed with coal mining and heavy industries for more than a century. In 1989 the German state of North Rhine Westphalia proposed an International Building Exhibition which focused on the development of concepts for revitalization and adaptive reuse of industrial sites around the region at different scales – regional and local, municipal and private. As a result, multiple adaptive reuse projects (over 100) have been developed recently in the region which has established an innovative approach towards adaptive reuse (Fig. 4-2). Rather than getting rid of old facilities, the developers focused on the preservation of the historic value of industrial sites and used the potential of existing buildings involving the creativity of architects and innovative solutions in order to transform old structures into the working industrial monuments (Dungca). In order to maintain a sustainable development for each of the
projects, different levels of organizations needed to be involved such as governmental structures, local companies and local communities. This approach is supported by the work of Alexander Garvin who states that redevelopment projects can only be successful when not only planners are involved in the projects, but specialists from different fields as well (8).

Figure 4-1. Ruhr region location, Germany.
The principal approach towards all the projects was to revitalize them in their entirety, and at the scale of an entire region. One of the main strategies to reclaim the whole industrial region was to create a network of adaptively reused industrial zones turning them into recreational areas and green spaces with a strong ecological focus (Dungca). All the industrial sites are connected by a bicycle trail and the project is called a “Route of Industrial Culture”. This approach has become a totally new and fresh vision of abandoned industrial buildings and a new level of understanding of their potential and value. Instead of trying to eliminate the past, the memories of the industrial sites are exposed to the society in order to promote a highly personalized discovery process and shift the perception of the deteriorating and seemingly useless industrial zones. Among the guidelines established by the Emscherpark was to integrate new housing, businesses and manufacturing with the former industrial sites. Some of the main venues of the park are Landschaftspark Duisburg-Nord (Duisburg), Nordsternpark (Gelsenkirchen), Zollverein (Essen) and Stadtpark (West Bochum) (Dungca). As Ariel
Dungca stated, the most positive influence from this development is a new life given to an entire region and establishment of a new cultural identity.

In addition to the strategy of redeveloping the region from an industrial to an ecological focus using the system of parks to drive the development, the Ruhr Region is being promoted as a region with a high concentration of research and science facilities. Within this strategy many former industrial sites are becoming home for new universities, colleges, scientific and research centers. Today, the Ruhr region has five universities, one art college, fifteen other higher education institutions and multiple smaller educational centers and facilities (Fig. 4-3). Some of the main universities of the region are Duisburg-Essen University, Dortmund University, Bochum University, Folkwang University of the Arts and many others.

Figure 4-3. The scientific landscape of Ruhr region

3
The research and educational environment is being organized so it is highly international, open to anybody who is willing to contribute to the research and academic pursuits that are focused on interdisciplinary collaboration and closely related to practice. These aspects make the region extremely attractive to researchers, specialists and scientists from around the world. At this time, the research is focused on a variety of fields, including engineering, logistics, environmental sustainability, energy, innovative technologies, architecture and etc. Also, the region is developing a system to encourage collaboration and exchange between different universities, which breaks the conventional boundaries around each educational institution and makes them more open to student collaboration and the exchange of knowledge. This system is called “The Ruhr Campus Online” and students from the three universities involved in the project access to lectures and courses online. Apart from education and science, the region is developing a network of art and cultural centers, museums, theaters, exhibition centers and galleries. Educational and research facilities are also open to community participation. These aspects create the environment which contains all the factors that appeal to the Creative Class, and hypothetically is extremely attractive to its members. This development has and continues to attract economic prosperity to the region. As the rector of the University of Duisburg-Essen Dr. Ulrich Radtke stated, “a successfully developing university can become a driving force for entire region” ("Development of Science in the Ruhr Metropolis: Innovative by Tradition"). This strategy is a completely new notion for revitalization of abandoned industrial zones.
Lessons Learned:

- An entire industrial region can be revitalized through a strong development strategy and concept, but different layers of society, organizations and specialists have to be collaboratively involved in the process;

- Industrial sites being cohesively reused within the overall concept bring a strong cultural value to the community;

- Development of industrial zones into green spaces and recreational facilities has positive impact on environmental sustainability and helps to reduce environmental contamination over time;

- Education and science can become a driving force for the revitalization of an industrial region.

**Landschaftspark Duisburg Nord, Germany**

Landschaftpark Duisburg Nord is just one of the multiple projects of a different scale developed within the Ruhr Region (Fig. 4-4). In 1990 Latz+Partner, the architects of the project, managed to create one of the most progressive adaptive reuse projects of the time which has become a great example of the way to adapt old industrial facilities for new uses while preserving their history and connecting the memories of the past to the present. The main concept of this project was to preserve the memories of the place and use those memories to regenerate the vision of the place through the lens of the present. By doing so, the architects managed to stimulate visitors to interact with existing industrial facilities in their own way and that improved the societal understanding of the importance of the place (Fig. 4-5(A)). In this project old facilities were adapted for new uses in a way that didn’t require massive reconstruction but allowed deteriorating elements to continue their life cycle on their own and at the same time to be useful for people.
Figure 4-4. Landschaftspark Duisburg Nord area\textsuperscript{4}.

Now old gas tanks are pools for scuba divers, half-ruined buildings and structures are places for rock-climbing (Fig. 4-5(B)), old channels became an educational tool, and old constructions and deteriorating elements are utilized to create public spaces while continuing to decay. The former coal mining and steel factory has become a “park” which consists of different parts and each of them has its own character and meaning, while at the same time the parts of the “park” are united with each other by a variety of paths which allow visitors to create their own adventure and experience of the place.
The important feature of this project is the fact that due to its large scale (568 acres) the site is being recovered gradually and slowly, which allows the architectural aspects of the place to change incrementally along with the environment (Hardy 35). The project of Landschaftspark Duisburg Nord has received multiple international awards including Green Good Design Award 2009 and EDRA Places Award 2005.

Lessons learned:

- Adaptive reuse projects have more value and positive impact on the society when accomplished using memories of the place to emphasize the significance of it and make those memories a part of a discovery process around the site, while adapting the structure for new uses;
- Creativity is a key factor in successful adaptive reuse projects;
- Gradual revitalization of a large scale an industrial site following a master plan concept prompts incremental development and has a positive impact on the future development of the site.

**Universities of Architecture and Urban Design**

Recently, there is a tendency for the schools of architecture and urban design to be located adjacent to adaptively reused industrial facilities or to be a part of them. It
happens due to the fact that open interior spaces and the heights of industrial buildings allow them to be transformed easily into workshops, laboratories, student work stations and studio spaces (Fig. 4-6). This factor is especially valuable for architecture studies, because the education process usually requires a lot of space in order to create a comfortable environment for students to work.

Figure 4- 6. University of Tasmania, school of architecture and urban design, Australia. Adaptively reused diesel workshop. Photos courtesy of Patrick Rodriguez⁷.

A new university which is located next to a former industrial building stimulates an active transformation of the outside area of the site and it becomes animated by students’ activities. Also, the focuses of such schools are very often directly connected to the existing problems and issues of the city and the area where the school is located. So, during their program of study students investigate possible solutions for prosperous and sustainable development of the region. Thus, such developments are beneficial for the city and the community, and stimulate revitalization of industrial zones.

**HafenCity University, Hamburg.** HafenCity, or Hafen Harbour, is one of the largest rebuilding projects in Europe (approximately 550 acres) and is part of the reconstruction of a former harbor in Hambur, Germany. Although, most of the old warehouses on the site have been removed, this adaptive reuse project is focused on assigning new uses to a former industrial warehouse site. Currently, the area is being constructed with residential units, recreational and public space, and also, educational
facilities. HafenCity University – the University of the Built Environment and Metropolitan Development (Fig. 4-7) - has become an important and innovative part of the rebuilding project, as it is focusing particularly on the problems of metropolitan areas and their future. This University is the only one of its kind in Europe.

Figure 4-7. HafenCity University, Hamburg. A) Aerial view, competition rendition, Dresden architecture firm\(^8\), B) Competition rendition, Dresden architecture firm\(^9\), C) On site photo, implemented project\(^10\).

“Strelka” Institute, Moscow, Russia. The Institute of Media, Architecture and Design “Strelka” was established by developers Alexander Mamut and Ilia Oskolkov-Zenciper in 2010 in Moscow, adjacent to the former factory “Krasny Oktyabr” which was reviewed in the introduction of this paper (Fig. 4-8 (A)). As Anna Bokova stated, the
community of talented and creative students has become an effective driving force of gentrification. The main target of placing such an innovative architecture school next to the recovering industrial site was to use the energy of students to revitalize and animate the place. The educational environment presented in the institute is completely different from the way it is usually organized in Russia. It is very relaxed and based on the creative process of cooperation, discussion, exchange and observation, rather than formal study process (Fig. 4-8 (B)). The students of the institute are focusing on innovative approaches to resolve the acute problems that exist in post-soviet Moscow within five main spheres: Energy, Preservation, Public Spaces, Design and Consumption. This development has become a revolution in the educational environment of Russia.

Lessons learned:

- Integration of an architecture school with a specific innovative focus can stimulate the revitalization of an industrial zone;
- Loft interior spaces of industrial buildings are suitable for conversion into classrooms, workshops, studios and auditoriums.
Figure 4-8. “Strelka” institute. A) Location of the institute, B) Outside lecture and conference hall.
Notes

1. Adapted from map generated by SAS.Planet 13 October 2013. Edited with Photoshop
4. Adapted from map generated by SAS.Planet 15 October 2013. Edited with Photoshop
11. Here the term is used in Russian meaning as described in Chapter 2 of this paper (see p. 38)
CHAPTER 5
THE SITE OF THE PROJECT

The site which was chosen for the research project of this thesis is an abandoned industrial site of an automotive factory Zavod Imeni Likhachova, more commonly called ZIL. The site was chosen as a result of analysis of five potential sites which were visited during a trip to Russia in the summer 2013. The potential sites were selected from the industrial heritage sites located around Moscow. The selection criteria were their scale, location and presence of educational institutions within the nearby context. Because the project focuses on the revitalization of large-scale industrial zones in particular, single free-standing abandoned buildings or small-scale sites were not considered to be appropriate for the proposed adaptive reuse strategy.

Spatial Distribution of Industrial Heritage Sites in Moscow

Historically, major industrial zones in Moscow developed based on their access and proximity to the main ground and river transportation routes of the city, especially to the railroad system encircling the city. In 1902 the development of Minor Circular Moscow Railroad (MCMR) began in order to provide connections among the nine major radial railroad routes which connect Moscow with other regions of the country and Europe. The MCMR was opened in 1908 and was mainly used for cargo purposes. Consequently, when industrialization in the Soviet Union intensified in 1930, the first industrial zones started to form along the MCMR because it provided easy access to material supply and export of products to other regions and Europe. At the time the city limits of Moscow were basically formed by the railroad. Thus, at that time the industrial zones were created beyond the city limits, but with the rapid growth of Moscow these industrial zones became imbedded in the urban fabric. As time passed, the industries
which formed the industrial ring started to close and relocated outside the city as the buildings became outdated and were no longer suitable to be retrofitted for contemporary technologies and equipment. Today the main concentration of abandoned industrial heritage sites is located within the ring zone along the MCMR (Fig. 5-1). Current plans are to pen the MCMR to passenger trains which provides a brilliant opportunity to create an Industrial Heritage Route around the city connecting revitalized industrial sites together into a network as is being done in Ruhr Region.

Another aspect of historical development of the city, the system of universities and scientific-research centers were located around Moscow in response to the developing industries. This relationship was an important and indispensable part of the industrialization process because universities provided specialists for the industries and research-centers that focused on innovations and progressive technologies for production processes. Together, this relationship stimulated efficient industrial development of the country. Therefore, industrial sites and educational institutions in Moscow are historically interrelated. These geographical relations are illustrated on Map 2 (Fig. 5-2). These historical relationships can be further developed within future adaptive reuse projects as an incremental and consequent evolution of the site.
Figure 5-1. Minor Circular Railroad in Moscow (Map 1).
Figure 5-2. Spatial distribution of industrial heritage sites and educational institutions in Moscow (Map 2)².
Potential Future Development Sites

The first industrial zones in Moscow were located in the South-East sector of the city taking advantage of the North-West prevalent wind direction. As the first region to be developed many abandoned industrial sites have appeared here. As a result, this zone has become the main focus of the city government’s redevelopment strategies for the industrial sites. The Industrial sites which the author visited and analyzed are located within this zone (Fig. 5-3).

Figure 5-3. Enlarged portion of the Map 2, showing the site of the project and adjacent potential sites (Map 3).
The sites shown on the Map 3 are ZIL factory (1), Serp and Molot Factory (2), AZLK Factory (3), Molniya Factory (4) and Kotelsky Factory (5).

**ZIL Factory.** ZIL factory is the oldest vehicle-construction company in Russia. The full name is “Zavod imeni I.A. Likhacheva” (ZIL). It is located on the Moscow River on the “Nagatinskaya Poyma” peninsula adjoining the 3d Transportation Ring of the city (Fig. 5-3, index 1). It occupies a site area of approximately 700 acres. Today almost the entire complex is abandoned with several shops still working. The ZIL factory redevelopment has become the main focus of the city government and professional's discussions over the last 10 years and several projects have been proposed by different architectural firms and the redevelopment proposal by the architecture firm “Meganom” was selected as the strategy for reconstruction. Despite the fact, that there are many historically and architecturally valuable buildings in good condition on the site (Fig. 5-4) the development proposal includes the demolition of all the buildings which are to be replaced with apartment housing, commercial development and public centers. However, the existing buildings of the industrial zone have potential to be reused for the purposes of attracting the Russian Creative Class.

This site was chosen for investigation due its large scale, easy access, and the context. The site is located on one of the main transportation routes of the city (the 3d Transportation Ring) and has two Metro stations located within walking distance – Avtozavodskaya and Tulska stations. The site of the project itself is picturesque and attractive for new development due to its location on the river bank and mature vegetation. Unfortunately, the level of contamination on the site is high with severe air
and the water pollution, and remediation measures need to be taken along with the start of redevelopment.

Figure 5-4. ZIL factory existing buildings. A) Assembly⁴, B) View from the top of ZIL administration building⁵, C) ZIL administration⁶, D) Press shop. Photo courtesy of Daria Petrova.

The context of the site contains a variety of functions, including residential districts, business districts, commercial development, entertainment, recreation and education. Among the most important are the Moscow University of Vitte and Moscow Marine Transportation Academy educational institutions which are located next to the site.

**Serp and Molot Factory.** Serp and Molot is one of the oldest and biggest metallurgy factories in Central Russia (Fig. 5-3, index 2). It was established in 1883 by a French industrialist July Guzgon. The factory was selected to be visited on site because of a large-scale, proximity to transportation junctions of the city and existing educational
institutions Moscow State Metallurgy Institute and National Institute of Catherine the Great. On-site analysis identified positive factors of the site such as proximity to a high-quality residential district and recreational park. Among the negative conditions are unsafe environment in particular hours of the day and noise from the highway. The character of the buildings is various and valuable from architectural prospective (Fig. 5).

Figure 5. Serp and Molot factory. Photo courtesy of Daria Petrova. A) Fragment of the façade of the main shop, B) The main shop, C) Administration building, D) North-East entrance.

**AZLK Factory.** This is a site of automobile factory which was built in the honor of Lenin Komsomol (Fig. 5-3, index 3). Today almost all of the shops are abandoned and
some of them are being sublet for offices (Fig. 5-6). The site was chosen to investigate because of the large-scale, easy access and proximity to existing educational institutions Moscow Spiritual Academy, Moscow Institute of Advertisement, Tourism and Show Business, and Financial Humanitarian Academy. On site visit identified friendly comfortable environment and proximity to residential districts and recreational zones as the most positive factors of the place. The buildings are made of brick and have a special character and good conditions.

![AZLK factory](image)

Figure 5- 6. AZLK factory. Photo courtesy of Daria Petrova. A) Cargo crane, B) One of the shops, C) Abandoned shop, D) The façade of the South shop.

**Molniya Factory.** This is a site of a machinery factory which was almost entirely abandoned over the last years (Fig. 5-3, index 4). The site of the project was chosen because of its large-scale but the on-site visit identified high inconvenience in accessing the site. It is located far from Metro exits and it is a serious negative factor of the place.
In terms of environment, this was one of the most comfortable places visited and has many interesting features in the context such as churches and other historical buildings. The educational institutions which are located next to the site are Moscow State Humanitarian Institute of Sholokhov, Design Institute and Institute of Innovations. The buildings located on the site have many interesting features and structural details from architectural perspective (Fig. 5-7).

**Figure 5-7.** Molniya factory. Photo courtesy of Daria Petrova. A) Cargo crane, B) East shop, C) Administration building, view 1, D) Administration building, view 2.

**Kotelsky Factory.** Kotelsky Factory is an abandoned brick industry located on the South of Moscow (Fig. 5-3, index 5). It is a relatively small scale factory and has a very nice location in terms of the environment. The factory is located next to nice residential districts on the North and an entertainment venue Ski Club. In addition, the
buildings which are made of brick are in a good condition and have interesting character (Fig. 5-8). However, no educational institutions were found on the site and that is why this factory was not chosen as a site for the project.

**Figure 5-8.** Kotelsky factory. Photo courtesy of Daria Petrova. A) Main entrance, B) Abandoned shop, C) View from the East side, D) Warehouses.

**The Site of the Project**

After an analysis of each of the potential sites the most appropriate location for the project is the site of the ZIL factory due to its physical characteristics, importance of its location in the city, presence of valuable factors for attracting the Creative Class and the fact that among all the proposed reconstruction projects of industrial zones this factory is planned to be redeveloped first. The site of the project is located in the North-West Part of the factory bounded by the Moscow River on the West, the 3d
Transportation Ring on the North and the Minor Circular Moscow Railroad on the South-East. The research was focused on this particular area because most of the workshops which are still active are located to the South of the railroad where new industry is planned to be moved in the future (Fig. 5-9). Therefore, it is important to concentrate on the development of the chosen area as it became the main focus of the city government over the last years.

Figure 5-9. The site of the project.

**Historical Background**

ZIL factory was built in 1916 and replaced a historical site called Tyufeleva Roshya (Tyufel Grove) (Fig. 5-10 (A)). It was a relic fir and pine forest which was part of the summer residence of the czar’s family for many years. Such important figures of Russian history as Aleksey Mikhailovich and Peter I used to stay here. The site was
mostly occupied by meadows and gardens which belonged to the Simonov monastery located nearby. The forest Tyufeleva Grove used to be an entertainment site where the aristocracy came for hunting and other activities. Later the site was built with villas where citizens of the city used to come for vacations and holidays to relax. At the end of the 19th century in a period of industrialization the was improved with the construction of industrial developments such as tanneries and chemical plants.

At the beginning of 20th century the MCMR cut through the forest (Fig. 5-10 (B)), and the woods started to be used for fuel and building. That was the crucial moment in the development of the site as it created favorable conditions for heavy industry to appear resulting in the development of the ZIL factory, first Russian automotive industry, the plant. By 1937 the whole area of the peninsula was occupied by the ZIL factory (Fig. 5-10 (C)).

ZIL factory was designed by the architectural firm “Kuznezov, Ryabushinskje I K” within the governmental program of automobile industry development in Russia. Initially, the factory was built to produce trucks under a license of the Italian company “FIAT”. However, due to war, revolution and low development of the machine industry at that time, the factory was never completed as a factory which would assemble its own cars. Instead of that it was turned into large shops for automobiles and machinery repair. In 1924 the factory received a governmental order for production of the first Soviet trucks. Later the ZIL factory specialized in producing trucks, autobuses and custom-built private cars (Fig. 5-11).

After the Soviet Union fell apart the factory started to degrade rapidly, and by 2011 it was almost entirely abandoned.
Figure 5-10. Evolution of the site. A) 1818-1823, B) 1912, C) 1916-1937.
Urban Analysis

Urban analysis of the site was accomplished in order to understand the context and the content of the place, identify the type of environment, investigate how the site is connected to other parts of the city and the city center and estimate the potential for future revitalization and development.

Land Use

Land Use Analysis of the site identified that most of the buildings which occupy the site of the ZIL factory are industrial shops and warehouses, except for several administrative buildings located in the North-West part of the site. Currently several warehouses are being sublet for offices and storage. Also, a land use analysis of the surrounding areas of the site was conducted in order to understand the context of the
site (Fig. 5-12). The analysis identified that the context basically has four major components: education, business, commercial and recreation. Educational institutions which are located next to the site are Moscow University of Vitte (on the East), Moscow Marine Transportation Academy (on the North-West, Fig. 5-13 (A)) and Moscow State Industrial University (on the North). Also, the Russian Thermal Engineering Scientific-Research Institute is located on the North part of the site next to the Moscow State Industrial University. Commercial development is mainly concentrated on the North portion of the site, on the bank of Moscow River. There is a concentration of business centers of different scales on the West bank of Moscow River and creates a business district (Fig. 5-13 (B)). This district is actively developing, and more business centers are planned to be built along the River in the future.

Figure 5-12. Land use analysis\textsuperscript{14}.
Residential districts are mainly located on the North-East of the site and belong to Danilovsky and Nagatinsky Zaton administrative districts of Moscow. Average income of residents in these districts varies from $1000-3000 per month according to the statistics of 2009.

The site is also surrounded by industrial zones to the North and to the South, which create obvious boundaries to its further development. In addition, a recreation facility Nagatinskaya Poyma Park is located to the south-east of the project site.

Land use analysis of the site and the context showed that the site has a multifunctional surrounding with the functions important to attract the Creative Class and to generate density. However, the site is a self-contained element as it was initially developed like this, and is totally isolated from the context. This, it is very important to integrate the site with the surrounding context of it.
**Existing Buildings Analysis**

Existing Buildings Analysis was conducted in order to estimate the condition of the buildings and their historical and architectural value (Fig. 5-14). After that was accomplished, the buildings which have to be preserved were identified according to those criteria. The selected buildings are mainly all the main shops of the factory exist on the site. The conditions of all the buildings and constructions are good and strong enough to be reused in the future rather than demolished. Also, many buildings have specific architectural style which characterize the era of industrialization in Russia. Thus, it is important to preserve them and their elements as a memory and heritage of the important period in the development of the country.

![Figure 5-14. Existing buildings analysis](image)

Figure 5-14. Existing buildings analysis\(^5\).
A brief description of the selected buildings is given below.

**NPO Gelimash.** The Gelimash facility was built for the production of equipment and storage for liquefied gases and was located within the ZIL factory site. The buildings, shops and warehouses are mostly concrete and brick (Fig. 5-15), and are in good condition and can accommodate educational halls and classrooms.

![Figure 5-15. Existing buildings. Part 1. A) NPO Gelimash, B) OAO Sapsan. Photo courtesy of Daria Petrova, C) ZIL administration, D) First assembly.](image)

**OAO Sapsan.** This is a seven-story office building for OAO Sapsan which is made of brick and is in good condition (Fig. 5-15 (B)). It has the potential to be reused for educational purposes and accommodate classrooms or can be transformed into dormitories.
**ZIL Administration.** This is a thirteen-story office building made of concrete which accommodated ZIL administration and offices (Fig. 5-15 (C)). Currently it accommodates automobile dealer and exhibition. This building can be adapted for dormitories and parking on the lower levels.

**First Assembly Shop.** This is an eleven-story building (approximately 120’) made of brick with an open space inside (Fig. 5-15 (D)). The building is in good condition and has a distinctive character due to its size, ribbon windows and blue pipes which are exposed outside on the building.

**Second Assembly Shop.** This is a concrete building approximately 190’ height and is the longest and the tallest building on the site (Fig. 5-16 (A)). It is also one of the most appealing buildings from an architectural perspective and it is important to preserve its original appearance.

![Existing buildings. Part 2. A) Second assembly Shop, B) Second instrument shop, C) ZIL Museum, D) Abandoned shop.](image)

Figure 5-16. Existing buildings. Part 2. A) Second assembly Shop, B) Second instrument shop, C) ZIL Museum, D) Abandoned shop.
This building has ribbon windows which create a rhythm on the façade and vertical emphasis is developed by the exposed elevator shafts.

**Second Instrument Shop.** This is a series of gallery-type buildings located facing the 3rd Transportation Ring (Fig. 5-16 (B)). The buildings are made of brick and are structurally sound, but almost all the windows are broken or missing. The main feature of the buildings is their similarity with gallery-type buildings which them ideal for reuse as galleries and exhibition places.

**ZIL Museum.** This building is located along the 3rd Transportation Ring, and is made of brick and has a dome (Fig. 5-16 (C)) which is its dominant architecture feature. It was used as a museum about the factory, but today it is closed and the building is abandoned.

**Abandoned Shop.** This is a three-span former shop which is totally abandoned and in very poor condition (Fig. 5-16 (D)). Despite this fact, the building is structurally sound and has a picturesque atmosphere inside because this building is characteristic of the industrial era, it should be preserved in its current condition and is suitable to accommodate art exhibition, forums or gallery functions.

**Press Shop.** This building is approximately 70’ high with glass facades and concrete fascia (Fig. 5-17 (A)). The appearance of this building is duplicated many times in other shops around the site. The building has a large open space inside (Fig. 5-17 (B)) and may be reused for a variety of functions.
Foundry #2. This building is made of concrete and brick and has a complicated and chaotic appearance as a result of the combination of the architectural forms (Fig. 5-17 (C)). Variable floor levels, an organic combination of forms, and existing vegetation around the immediate site suggests that this building would make a picturesque vertical and horizontal garden.

Spring Shops. This is the series of buildings located along the river. They are about 40-50' high with a characteristic modernist period design (Fig. 5-17 (D)). Proximity to the river and well insulated opened interior spaces make these building suitable for residential functions.

An Existing Buildings Analysis showed many buildings on the site are still in good condition and are structurally sound. That is why it is important to reuse these buildings.
for appropriate and sustainable uses rather than demolishing them. Moreover, many buildings have a distinctive architectural character and should be preserved as a memory of an era. Below is an aerial view of the site in order to give a better understanding of how these buildings work together (Fig. 5-18).

Figure 5-18. View on the first and second assembly shops from the ZIL administration building.²⁶

**Transportation Analysis and Access Roads**

A transportation analysis of the site and surrounding area identified that public transportation systems such as buses, trams and metro are well developed within the area and provide the site with easy access for citizens and visitors (Fig. 5-19). Also, highways are extensively developed within the site and its context providing easy access for private transportation as well. However, Metro stations are not located within easy walking distance of the site. Because of the Russian climate it is important for the
site to be located adjacent to a Metro station in order to attract more visitors during all seasons and weather conditions. Therefore, new metro stations or exits need to be placed within the site. In addition to ground and underground transportation the Moscow River is also navigable. Since tourist routes on the river are very popular in Moscow, there is a potential to connect this site and the other potential development sites in a network through river transportation. An access roads analysis showed that although the area has a well-developed system of roads, the streets within the site are limited by its boundaries isolating it from the context (Fig. 5-20), requiring extensions of the streets and roads to reconnect to the urban fabric.

Figure 5-19. Transportation analysis.²⁷
Figure 5-20. Access roads.

Notes
7. Adapted from map generated by SAS.Planet 17 October 2013. Edited with Photoshop
13. Retrieved from <http://belretro.com/wp-content/uploads/2010/04/%D0%9C%D0%BE%D0%B4%D0%B5%D0%BB%D1%8C%D0%BD%D1%8B%D0%B9-%D1%80%D1%8F%D0%B4-%D0%97%D0%B8%D0%BB.jpg>
14. Adapted from map generated by SAS.Planet 17 October 2013. Edited by hand and with Photoshop
15. Adapted from map generated by SAS.Planet 17 October 2013. Edited by hand and with Photoshop
22. Retrieved from <http://photos.wikimapia.org/p/00/02/44/30/60_full.jpg>
27. Adapted from map generated by SAS.Planet 17 October 2013. Edited by hand and with Photoshop
28. Adapted from map generated by SAS.Planet 17 October 2013. Edited by hand and with Photoshop
CHAPTER 6
THE CONCEPT

Strategy

The concept for revitalization of the ZIL factory industrial zone was developed based on case studies, urban analysis of the site, and the literature about the Creative Class. The analysis of Moscow is historical background, the context of the site, and the propensity of the Creative Class to be attracted to educational environments the general strategy for revitalization is to redevelop the site with a focus on education, exploration, observation, and research. The site is to become a place where knowledge will be generated and spread, shared and discussed, using the place for education. The site will attract various groups of people: students, researchers, scientists, specialists, entrepreneurs, businessman, artists, performers, younger generation and elderly, citizens of the city and tourists, international guests and visitors from other parts of the country. The main idea is to provide all these groups places where they can share the results of their work, their activities, their investigations, observations and knowledge. Unlimited interdisciplinary exchange and collaboration is the key factor for attracting the Creative Class to visit the site. The site also should provide affordable housing so that the members of the Creative Class can actually reside and live on the site rather than just visiting temporarily. The buildings are proposed to be turned into “working industrial monuments” and grounds for exploration and industrial adventure. The history of the site should be visible and exposed for study by visitors and future residents of the site. The environment should be flexible and transformable over time so that future residents can adjust it to their needs, and rearrange it through their creativity. In this way the site will develop incrementally through the years. The proposal places incentives and brings
activities to the site which will start to transform it. The perimeter of the site should be opened and integrated into the city context. Since the Metro is one of the most popular ways of moving around the city in Moscow, it is important to move the existing Metro exits closer to the site and place a new station within the site.

The main components of the site are:

1. School of Architecture and Urban Design with a focus on Adaptive Reuse and development in Moscow

2. Entrepreneur Incubation

3. Science Center

4. Interdisciplinary Forums and Conference Halls

5. Exploratorium

6. Dance Hub

7. Art District

8. Art Galleries and Exhibition Halls

9. Student Exhibition

10. Science Exhibition

11. Industrial Playgrounds

12. Community Garden

13. Residential District

A Community Garden is proposed to be placed in the historical location of the forest Tyufeleva Roshya, and vertical gardening would become a reincarnation of it.

The site is proposed to be revitalized through simultaneous adaptation and intervention.
Adaptation

Most of the buildings on the site are basically big boxes which were used to accommodate automotive industry equipment. The equipment can be removed and the interior space filled in with “smaller boxes” – offices, classrooms and residential units, which are going to create a new structure inside the building. Redevelopment should take advantage of the large open interior spaces which can become enclosed gardens, atriums and public places, with new development arranged around them.

Proposed new uses are assigned as following:

- First Assembly Shop - Entrepreneur Incubation space
- Second Assembly Shop - Science Center,
- Instrument Shop and former ZIL Museum - exhibitions, galleries, art and study supply shops
- ZIL Administration building – dormitories
- OAO Sapsan building – classrooms
- Press Shop – Exploratorium
- Foundry #2 – Industrial playground
- Foundry #3 – Community Garden,
- Shops next to the Press Shop – Art District and Galleries

The equipment which is to be removed from the shops is proposed to be used as elements outside of the buildings, or placed on the roof top, to activate and interrupt monotonous industrial facades.

Intervention

Interventions in this project proposal are incentives which are supposed to accumulate activities around them and stimulate active exchange and interaction. They
are School of Architecture, Interdisciplinary Forum, Scientific-Research Forum, Student Exhibitions, Art Galleries and Pavilions, Vertical Gardening and Affordable Housing. From an architectural perspective interventions should contrast with the old buildings. The School of Architecture will bring in international diversity and creativity. Student energy will activate the place and also prompt existing educational institutions to renovate and develop. The Interdisciplinary Forum and Scientific-Research Forum will generate research activity, knowledge exchange and generation of innovative ideas. Exhibition places, Art Galleries and Pavilions will serve future residents and users of the site as a place to share their experience and results of their work. Vertical Gardening will purify the air and provide protection from the noise and pollution from the adjacent industrial zone and railroad. Also, it will attract residents from surrounding districts to the site for interaction with the future residents. Affordable Housing will allow the rising Russian Creative Class to reside on the site right next to the place of their work and everyday activities. It will also provide accommodation for students from different educational institutions, which will stimulate exchange and interaction between them. Implementation of the concept is communicated through an urban design resolution below.

Conceptual Diagram (Fig. 6-1) identifies the main outside connections which are proposed to be developed within the project as well as sites of interventions, additional infrastructure and proposed new uses for existing buildings.
Figure 6- 1. Conceptual diagram.
Figure 6-2. Master Plan 1:10 000\(^1\).

Master Plan shows implementation of the conceptual idea to create a multifunctional environment through adaptive reuse and intervention. The site was connected with the other parts of the city by new bridges and pedestrian routes as well as new Metro stations. Thus the boundary between the site and the context was broken. The variety of major functions created within the site are illustrated in the Site section (Fig. 6-3).
The section also illustrates the main concept of transformation of inside spaces of industrial buildings by creating levels which create an opened flexible structure within the buildings and are arranged around a public space. There is gradual development of functions and building scale along the main pedestrian route from a small-scale campus environment to a large-scale public space, Exploratorium and an art center. The created environment is a vibrant, multi-layer environment with industrial buildings turned into working monuments and the site is a ground for exploration, investigation, observation and interaction among variable groups of people. One of the main components of the site are science and education which create diversity and stimulate active interdisciplinary research and collaboration (Fig. 6-4, Fig. 6-5).
Figure 6-4. Science. A) Enlarged portion of the Master Plan 1, B) Location of the portion, C) View 1. Science center.
Figure 6-5. Education. A) Enlarged portion of the Master Plan 2, B) Location of the portion, C) View 2. School of architecture.

One of the other important components of the site is an art district where it is proposed to adapt the inside space of the buildings for studios and workshops as well as accommodations for artists. The essential components of the district are galleries
which are created in the spaces between the buildings and become places where artists share results of their work with the community (Fig. 6-6, Fig. 6-7).

The essential component of the site are residential unit created out of existing industrial facilities which are affordable housing and convenient for workers of the site to actually reside on the site and have a housing right next to their work. With time the more residents will appear the more residential units are supposed to grow as they are arranged in the way they can be moved around and transformed over time, adding new, removing old. Dormitories for students are created out of ZIL administration and new built units (Fig. 6-8). In addition, an interaction between the residents of the site and the residents of the surrounding areas is stimulated through a Community Garden which is places in the historical location of Tyufeleva Grove and is a vertical gardening and new forest as a natural component of the site and green generator (Fig. 6-9).

The interaction between all the groups of people attracted to the site is promoted though development of public exhibition spaces where professionals, students, researchers, artists and community can interact and share ideas (Fig. 6-10).
Figure 6-6. Art district. A) Enlarged portion of the Master Plan 3, B) Location of the portion, C) View 3. Art district.
Figure 6-7. Art gallery section. A) Section location, B) Section through the gallery.
Figure 6- 8. Dormitory. A) Enlarged portion of the Master Plan 4, B) Location of the portion, C) Dormitory. View 4.
Figure 6-9. Community garden. A) Enlarged portion of the Master Plan 5, B) Location of the portion, C) Community garden. View 5.
Figure 6-10. Exhibition plaza. A) Enlarged portion of the Master Plan 6, B) Location of the portion, C) Exhibition plaza. View 6.

Notes

1. Adapted from map generated by SAS.Planet 17 October 2013. Overlaid by hand drawing
CHAPTER 7
ANALYSIS OF RESULTS

Evaluation

The research resulting in an urban design project for this thesis was developed from precedent studies that demonstrate the potential of abandoned industrial sites to attract of the emerging Creative Class in Moscow. Despite the fact that adaptive reuse of each industrial site will be different, there are several common components which are necessary. First, the environment should be flexible and transformable over time in order to provide the opportunity for future residents to readjust it according to their need. Second, existing boundaries of a site reconnected to the city through multiple transportation systems. Third, adaptive reuse should preserve the history of the place and redevelop the buildings into working industrial monuments. New functions must have some connection to the history of the site. Also, adaptively reused industrial sites should include enough residential units in order to attract the emerging Creative Class to reside on the site. Fourth, the environment should be multifunctional and dynamic, providing multiple options for visitors and residents, and even redeveloped buildings should contain multiple functions. Interdisciplinary collaborative exchange should be one of the main components of the environment. In addition, the site should be promoted as an interactive educational playground in order to stimulate education and research. Finally, the site should attract diverse groups of people to promote and stimulate active interaction.

A research question this project answers is to determine if this type of environment will decrease the gentrification effect. Since affordable housing can be developed in old industrial facilities, and since the educational environment in Russia is
public and welcoming to all social groups, the effect of gentrification can be minimized by an adaptive reuse of this kind.

Considering the ZIL factory, there are four important measures which should be taken in order to stimulate the attraction of the Creative Class:

1. A New Metro Station should be placed inside the site and the nearby existing Metro exits should be moved closer to the site.
2. A Pedestrian bridge should be built across the river from the location of Marine Transportation Academy to the site.
3. The site should be connected with residential districts on the North and the business district on the West by additional bridges across the river.
4. The site should be connected with the Nagatinsky Techno park by a pedestrian route.
5. Industrial sites which were explored in this research as well as the site which will be developed in the future have a potential to be connected into a network of adaptively reused industrial sites by river transportation for the summer season and by the Minor Circular Moscow Railroad.

There were three main suggestions which were discussed at the critical reviews.

First, according to the critics, residential units should become the main part of the project to create enough density to activate the place of this scale. However, it is important to keep in mind that the project is an illustrative one and was developed for Russian conditions only. The project contains residential units which are suggested to be an affordable housing for students or other potential residents (emerging Russian Creative Class), who, as it was mentioned in this paper, are not wealthy people. So, building more expensive high-rise apartment buildings, which already exist adjacent to the site, is not the right way to attract desired groups of people to the site. The approach proposed is to adapt part of the industrial buildings for low cost residential units. In addition, the project suggests creating enough places for work and housing while
providing multiple options for entertainment and attraction of different groups of people. This will bring enough density to the site and not only from the residential units. As a matter of fact, Moscow, as an overcrowded city needs places to let out stressed city energy rather than attracting more and more density. So, residential units planned by the project are lower density but sufficient to give a start for incremental revitalization of the area.

Second, according to the critics’ opinion, there should be more public spaces to implement the conceptual idea. The project suggests having public spaces inside and outside the buildings so that the site can be populated in different weather conditions and different seasons, which is important in the Russian context. The project contains multiple outside public spaces around the site such as an exhibition plaza, industrial heritage park, industrial playgrounds and exploited roof parks and public areas. Thus, public spaces are planned to be the main source for interaction and exchange, within the project.

Third, for the critics, the drawings provided for the project seemed to communicate a total reconstruction of the place rather than adaptive reuse of buildings. However, the project is a conceptual urban design project, where none of the illustrations suggests a finalized design solution, but all of them communicate a sense of a vibrant, multilayered and multilevel, active and diverse environment, created within the site. New development shown on the drawings is intended to be incremental, implemented by the collaborative creative process of future residents. In this case, the project suggests injection of incentives and development of favorable environment for new uses and further development of the site. Transformations of the site are meant to
happen incrementally as the time goes, which is the main strategy for revitalization of a large scale industrial site suggested by this paper.

Limitations

Since this project was developed according to the particular conditions in Russia, the concept will not be directly applicable if applied in a different country. Moreover, the concept also cannot be directly applied in another region of Russia without preliminary studies of the local conditions and revisiting the strategy. This project was developed based on the waking environment which exists in Russia and the concept will be different depending on the main type of transportation used in a particular place. Also, this concept cannot be applied to small-scale sites or buildings because it will not be able to generate enough density and functional diversity.

Future Studies

Further research in the area of this thesis should deal with several issues. First, how interior spaces of industrial buildings can be transformed and reused needs further investigation and analysis. Second, strategies for reconnecting the city to the perimeter of an industrial zone, by eliminating boundaries between the site and the context require research and experimentation. Because bicycles are becoming very popular in Russia, examining how industrial sites could be connected by a bicycle trail should be explored.
LIST OF REFERENCES


BIOGRAPHICAL SKETCH

Daria Petrova is a Fulbright Scholar from Russia who graduated from Yaroslavl State Technical University (Yaroslavl, Russia) in 2011 with a Bachelor Degree in Architecture with a Diploma of Honor. During her undergraduate education she was an active participant of annual Architecture of Movement Festival held in Yaroslavl and also took part in organization of charitable exhibition “The Territory of Childhood” in 2009. As one of the best students of her cohort she was offered a job at the Urban Planning Department at the “Spezstroiproject” Institute as an architect-technician in 2008 where she worked until her graduation. She specialized in Master Plan projects of rural settlements and participated in development of several Master Plan Projects in the Yaroslavl and Smolensk Regions of Russia. After graduation she was invited as an architect to work at the Urban Planning Department of the Scientific Research and Project Institute of Urban Planning of Moscow Region, one of the major urban planning institutions in the Moscow Region. During that employment she collaborated in the development of Master Plan Projects for several urban and town settlements in the Moscow Region. In the fall of 2011 she became a finalist for the Fulbright Program and in the summer of 2012 she moved to the USA to begin her Master of Science in Architectural Studies Degree at the University of Florida, School of Architecture, CityLab-Orlando program.