

“Urban ruins” The strategical importance of abandoned buildings in the process of urban reanimation

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Abstract. Entire generations of people, separated by time, through history, are mentally connected through the memories stored in those buildings which had survived to become imposing reminiscences of our past, through which we are able to connect with our ancestors and, therefore, our history. Urban ruins are a natural urban phenomenon. They represent a consequence of time and space, and also the direct result of the rapid urban development of the city, shaped constantly by internal and external social, political and economic conditions. They are usually those abandoned buildings and constructions, who lost their physical integrity due to their advanced state of physical degradation, caused by the lack of periodic maintenance, due to the abandonment of their owners, mostly due to economic reasons. They are usually found in abandoned or contaminated sites, better known as Brownfields and Greyfields. These old abandoned industrial and large commercial urban sites had formed in time disused urban tissues which had caused morphological and technical problems to the entire existing urban fabric of the city. Their lack of activity and advanced state of decay parasitizes the space they occupy within the city, endangers the urban hygiene and the safety of citizens, and overall damages the urban image of the city. The current PhD thesis aims to document the presence of all urban ruins, by mapping all the abandoned buildings and constructions in Bucharest City and analyse their strategic value and importance, in order to establish applicable theoretical principles regarding the urban morphological peculiarities of other cities which also may constitute the subject of this global phenomenon.

1 Introduction

Design and build is realized with the purpose of responding efficiently and effectively to one of our most important and basics of human needs, the need for shelter and safety. As previously mentioned, a building is a construction which we usually define as being a quantity of space trapped inside a mass of solid matter differentiated by any other objects in space through its unique physical characteristics of mass, volume, shape, texture and colours. This definition is of course accurate but surely not complete, and this is true only if we were

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to define a construction exclusively through its physical dimension. Every building has a mnemonic capacity and it is the direct result of human biologically conditioned interactions with it. Our human brain stores and memorizes information regarding descriptive, distinctive and defining characteristics and factors of both the interior and exterior space of buildings, thus directly triggering our psycho-emotional connection to it at the neurochemical level. Due to this mnemonic attribute however, buildings possess extra two dimensions: a spiritual dimension and a social dimension. We live in our buildings and in time we inevitably develop an emotional connection with them in our human psyche. We spend the majority of our lives in buildings, we work in them, we eat and sleep in them, we raise our families in them and therefore this consequently creates a strong connection through the memories we store inside them. When a person spends time in a specific environment, that person shall inevitably develop a biological attachment to it. The more time we spend in a place, the stronger the attachment to that place becomes, and even if we eventually physically leave that place, we still remain connected to it through the memories we create in time. The physical dimension of a building allows us to interact with it and the spiritual dimension allows us to remain linked to it through memories. The social dimension is however even more important due to its urban scale. If the spiritual dimension represents our personal connection to a certain building, then the social dimension represents the collective connection a building has to an entire community of a city and what that certain building means culturally and historically for the collective consciousness of people and overall, for the city itself. Buildings house human activities, attest to the presence of the human species here on Earth and reflect the identity of the civilization which have built them. Under the same reasoning, the concept of ruins defines those very old constructions, or more precisely their remains, which by their mere presence attest to the existence of a civilization at a certain moment in history. These types of ruins however had gained their monumental status due to their age, architecture and historical value, and today they are protected by national laws and various organizations, of which the most known is The United Nations Educational, Scientific and Cultural Organization (UNESCO).

This research however does not concern itself with well known, established and state protected historical monuments, but rather its subject involves the study of abandoned buildings and the problems their presence causes to the urban fabric of the capital city of Romania, Bucharest. Unused and unmaintained, these buildings all together form inside the urban fabric of the city a disused and rapidly deteriorating urban tissue. This type of urban tissue in turn causes the following three main issues to the entire urban fabric of any city for that matter. First, these urban tissues do not contribute to the urban life of the city, due to their inactivity which ends up isolating them functionally from the rest of the urban fabric of the city. Also, physically, the lack of human presence and urban activity both inside and outside these abandoned buildings, makes them parasitize the very space they occupy, therefore increasing the density of the constructed tissue of the city through the need of constructing new buildings. Second, these urban tissues gravely endanger the urban hygiene of the city, due to the unfortunate yet predictable repopulation of abandoned buildings with homeless people and the illegal dumping of garbage and waste, which in turn opens the possibility of infestations with rodents and cockroaches, thus increasing the spreading of various diseases they bring with them, therefore endangering the health of citizens. And third, these urban tissues endanger the safety of citizens, which is especially dangerous due to the advanced state of material degradation that the technical condition of the abandoned buildings presents, which usually causes plaster falls and in some worse cases, even the falling of entire architectural and structural elements of buildings.

Overall, these three main issues all together damage the urban image of the city and complicate the coherent urban development process of the entire city. Up to this point, urban development plans had taken into consideration only the expansion of the city through the

development of its outskirts and the protection of the established historical monuments, ignoring the presence of urban ruins and the threat they pose to the city's existing urban tissues. Needless to say, future special urban development plans are imperatively necessary in order to reintegrate these existing, disused and deteriorating urban tissues into the whole urban fabric of the city with the aim of reanimating them back to the urban life of Bucharest.

2 How did urban ruins come to be?

Bucharest City is currently the biggest city in Romania. With a resident population of about 1.71 million people, a total area of 240 sq km and with a metropolitan zone covering a total area of 1811 sq km, the city is administratively divided into 6 sectors, all led by 6 different Local Public Administrative Authorities (LPA), all under the direct coordination and supervision of the Central Public Authority (CPA) which manages the administration and the economy of the entire city [1]. From its first attestation back in 1459, the city began as a modest and yet prosperous commercial city, which since then has found itself in an extensive and continuous process of urban development. Living all through its entire existence under several different historical occupations, today the city has turned into a vast cultural, financial, entertainment, and media center, filled with history and architecture depicting various periods and important events of its history and different architectural styles, all found in one place. The city's most important historical landmark is located in its center and it is its oldest urban tissue, and also the heart of the city which today citizens refer to it as The Old Centre.

Since its inception, the urban fabric of Bucharest City has always developed in a radial direction, with its urban rays and rings expanding, not always homogeneously and synchronously, but always from the center and following all the way to the edge [2]. This gradual stratification had imposed onto the very urban morphology of the city a hierarchy of its urban tissues, causing the homogeneous development of these urban tissues to become more and more difficult to manage over time. In the last 10 years, the city had rapidly developed its urban constructed tissue by extending its occupation towards the edges of the city [3]. This urban development had seen the construction of a huge number of neighbourhoods composed of apartment buildings, especially in the southern, western and eastern parts of the city, as can be seen in Fig. 1-4. The following two main factors were the reasons behind the urban development on the edges of the city:

1. The first main reason concerns strictly economic motivations. Beside the administrative division mentioned before, the city of Bucharest is also divided from an economic point of view into fiscal zones, whose taxation differs from one to another. This structure is organized so that the degree of taxation decreases from the center of the city to its periphery. Naturally, land prices also follow the same course, thus the low price of land on the outskirts of the city was one of the main reasons that encouraged real estate development in those areas.
2. The second main reason concerns motivations related to efficiency investments, specifically regarding the advantages and disadvantages of real estate lands and their urban positioning within the city, which in itself may also hide a degree of economical reasoning. However, from an urban legislative point of view, in Romania it is considerably more difficult to build in existing urban tissues, due to the already established local urban regulations and urban planning rules they follow and also generate. Needless to say, building in unoccupied sites is considerably easier due the lack of neighbouring buildings. In old urban constructed tissues, new buildings must conform to their respectively existing urban morphology in order to ensure a homogenous and harmonious urban development. The architecture in these

cases is therefore restricted to the existing morphological and technical urban requirements, to which it needs to adapt in order to build legally.



Fig. 1. Google satellite image depicting the urban development on the southern city edge of Bucharest. The image on the left dates from October 2012 and the one on the right dates from October 2022.



Fig. 2. Google satellite image depicting the urban development on the south-western city edge of Bucharest. The image on the left dates from October 2012 and the one on the right dates from October 2022.

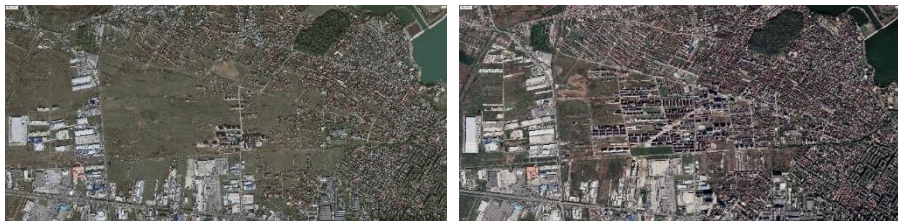


Fig. 3. Google satellite image depicting the urban development on the western city edge of Bucharest. The image on the left dates from October 2012 and the one on the right dates from October 2022.

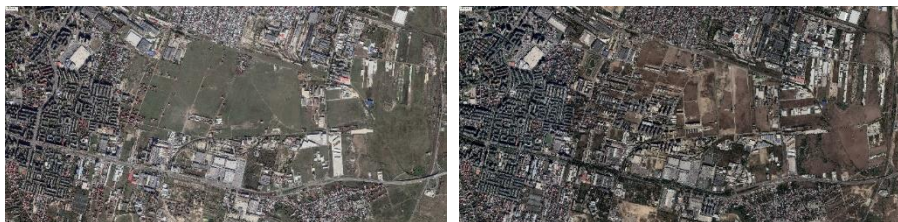


Fig. 4. Google satellite image depicting the urban development on the eastern city edge of Bucharest. The image on the left dates from October 2012 and the one on the right dates from October 2022.

It can be therefore concluded that current urban rules, regulations and plans, present in the Romanian urban legislation, had encouraged the rapid expansion of the city towards its periphery by creating new urban constructed tissues, especially in the past 10 years. This expansion had seen however certain advantages, as well as disadvantages, one of which is the contamination of old existing urban tissues, usually located in the center of the city or in its proximity. As a direct result of asymmetrical urban development, a considerable number

of sites had been left abandoned by their owners, thus generating underdeveloped urban morphological gaps in the urban fabric of the city, some located on old historical streets with high cultural value. These decaying urban tissues have great potential, both economically and culturally, due to their strategical positioning within the city. Therefore, the urban reanimation strategy must include the reintegration of these dead urban tissues, which mostly consist of contaminated urban sites [4], better known as Brownfields or Greyfields. This aspect is, therefore, a key element in properly understanding this urban phenomenon, especially in the current European context, and it is also a vital aspect for the coherent and efficient urban development of the entire city.

3 How and why did buildings turn to ruins?

Urban ruins are easily recognizable due their advanced state of material degradation. During their entire exploitation period, buildings are facing a lifetime process of physical degradation, due to their matter being continuously attacked by both internal and external factors. In order to conclude precisely when a degraded building becomes a ruin, certain technical parameters must be measured, so that an accurate description of the construction's technical condition can be determined. Therefore, the most important parameter will be the material degradation degree (MDD). Buildings are exposed to environmental factors which from a certain point causes them to lose their physical integrity. The loss of physical integrity shall be understood as a accumulation of both internal and external factors, which causes the physical perforation of the building's shell, which in turn causes in technical terms the discontinuation of the building's thermal insulation layer. Needless to say, this physical discontinuation in itself leads to a variety of other technical problems, by inviting the external agents to easily penetrate the building's physical protective layer into its interior spaces, thus accelerating the material degradation process of the building.

Although abandoned and contaminated urban sites are a complex and currently difficult-to-solve urban phenomenon, regarding the case of Bucharest city, this research had concluded the following two main causes for why and how these ruins came to be. The first cause is a direct one and it refers to the physical abandonment of buildings by their legal owners. Through the physical abandonment, the buildings are deprived of their necessary periodic technical maintenance, which therefore in turn accelerates the process of its own material degradation. The second cause is a contextual one and it refers to the previously mentioned asymmetrical urban development of the city. This type of urban development came to be mainly due to an economical reasoning, motivated by the pressure of the rapid gain of profit. Another reasoning however would be the need of expansion in itself, due to the increase in population density of the city in recent years.

It is important to understand these causes in order to find a solution to this urban problem. And only after realizing the strategical importance of urban ruins and abandoned buildings in the future urban development of the city, the first steps into plotting the theoretical principles of a coherent and efficient urban reanimation strategy, can be initiated. However, the aforementioned causes merely reflect the general aspect of the problem. The specifics of the problem concern the following two important aspects. The first aspect is one of legal nature and it strictly concerns the status of the current Romanian legislation regarding constructions and urban development. More precisely, the vagueness of the legal requirements, as well as the state's institutions weak law enforcement regarding the prevention and the solution of this urban issue. In other words, the current laws are not effective enough and the law enforcers do not have enough legal means to prevent both building abandonment and neglect. The current urban image of some parts of the town in itself is a sufficient proof for this conclusion. The second aspect is one of social nature and it concerns mainly the mentality and education of the population regarding building

maintenance. Generally speaking, most citizens are not educated into understanding and appreciating the cultural value of buildings. And combined with the aforementioned weak law enforcement, together they only socially encourage this type of unengaged and destructive attitude towards the city itself.

A considerable number of these buildings are also historical monuments and they are recorded by the Romanian Ministry of Culture in the official List of Historical Monuments. Many of these monuments are very old buildings of great historical and architectural importance, which often happen to be owned legally by private citizens. Due to its cultural significance, by law, the owner of a historical monument is required to preserve and to maintain the building's physical matter. However, unfortunately many owners are purposely not investing in preservation and maintenance, thus accelerating the process of their material degradation, so that the monuments will eventually collapse on themselves, thus liberating the once occupied land for future real estate investments. It is considerably much cheaper to demolish a monument and build a new construction in its place, rather than invest in the material conservation of the building, and later in the architectural conversion of its space. Therefore, it may be so that the immoral practice of building abandonment may hide an economical motivation.

A notorious example of such a case is the issue of the Old Bragadiru Brewery Assembly. Located in the southern-western side of Bucharest city, not too far from the center, there is an assembly of eight buildings founded in 1882 and standing on a land of approximately 60,000 square meters, which once housed one of the greatest Brewery in all of Europe at the time, and also one of the most important industries of what was once The Kingdom of Romania. Today out of a total of eight remaining buildings, only three are active and the other five are abandoned, with a currently high level of material degradation degree. Together with their instable structure, gravely affected by time, sets them, unfortunately, as perfect example for the urban ruin phenomenon [5]. Initially the property was state owned, but after 1989 it became a private property, and since then only one of the buildings has been renovated and five of them have been left to further deteriorate. Initially the state legally obliged the current owner to take the necessary steps in order to protect the buildings from further deterioration, especially due to the fact that these buildings are historical monuments protected by state law. It can be noticed however that such steps had not been taken till this day and also the current owner is nowhere to be found as it seems.

4 What is the solution?

The future Urban Reanimation Development Strategy (URDS) must analyze and determine the strategical importance of each of its ruins and abandoned constructions. The URDS will be applied using an Urban Reanimation Plan (URP). This urban plan will consist of a multilayer development plan through which each urban ruin will be identified and analyzed in order to establish the strategical value and propose a direct solution, in connection to the entire urban morphology of the city. After the establishment of value and importance, each of these buildings will become an objective (as can be seen in Fig. 5), for each of which a decision will be made, choosing only from the following three available strategical options:

1. Demolition - to demolish the ruin;
2. Conservation - to conserve the ruin through the protection of its matter by using technical and chemical solutions;
3. Reanimation - to reactivate the ruin through structural consolidation and architectural conversion.

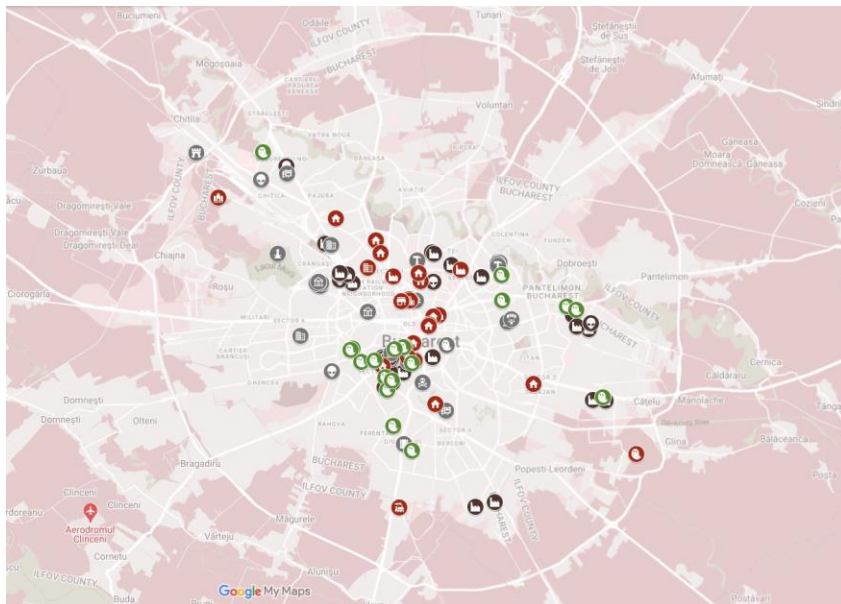


Fig. 5. Prototype map of currently identified urban ruins and abandoned/unmaintained constructions/buildings [6].

In order to gain access to these options, the establishment of a Ruin Evaluation System model (RES) is necessary, so proper decisions can be made regarding each of these strategic objectives. This system will constitute one of the Urban Reanimation Development Strategy's (URDS) most important strategic operative instrument, due to its objective evaluation of both technical condition and cultural value of each of its objective. The current Romanian legislation already has a standard building technical condition evaluation system model, which is used for carrying out the technical expertise of old buildings and other existing constructions. Therefore, this research will analyze, adopt and adapt the aforementioned model in order to better establish the Ruin Evaluation System model (RES) model. The following criteria will be used in establishing the parameters of the Ruin Evaluation System model (RES):

1. Analysing the material degradation degree of the ruin's architectural-structural elements (e.g., columns, beams, slabs, diaphragms, structural walls, roofs, staircases, etc.);
2. Analysing the material degradation degree of the ruin's architectural-sealing and insulation elements (e.g., exterior walls, partition walls, doors, windows, etc.);
3. Determining the ruin's age and historical value (e.g., historical relevance);
4. Determining the ruin's architectural value (e.g., architectural style);
5. Establishing the ruin's urban strategic and technical indicators (e.g., mass, height, location importance, etc.).

The current research aims to establish the basis for a national program regarding the urban reanimation of all the disused urban tissues, through the efficient management of urban ruins. The proposed program will be structured on the following three different synchronized sections:

The LEGISLATIVE layer, which will promote the establishment of a new separate law regarding the special approach towards these ruins. A favourable legislative framework will significantly improve the efficiency of these buildings management by prioritizing them through a coherent set of legislative articles.

The URBAN layer – This section will focus primarily on the previously mentioned set of parameters, which will be used for ruin evaluation in order to access the urban reanimation options (demolish, conserve or reactivate). This set of three main operative options will serve as the main urban strategic instrument through which the Urban Reanimation Plan will be applied.

The TECHNICAL layer – This section will consist of the usage of a variety of technical solutions regarding construction materials and technical interventions recommended for the material conservation and the structural consolidation of these ruins. These solutions will include both traditional and innovative techniques in the field of construction, depending of course on the particular requirements of each urban ruin.

5 Conclusion

Urban ruins are a proposed term used to properly describe abandoned buildings and constructions that lost their physical integrity, due to their advanced state of physical degradation. The urban pot of lands they occupy form contaminated sites known as Greyfields, which all together represent a dysfunctional urban tissue that does not contribute economically nor socially to the both the urban and social fabric of the city. The current legislative context significantly complicates and slows down the legal process of solving these problems, therefore a new urban development strategy must be applied through the empowerment of new laws, in order to efficiently solve the problems that these constructions impose on the urban morphological fabric of the city. The goal of this research is to serve as the theoretical basis of an Urban Reanimation Plan, which must be implemented into the current legislation in order to apply the urban and technical solutions to the established objectives.

The following research will be structured using eight recurring questions which shall serve as conceptual guidelines in order to maintain a full control over the elaboration and writing of the current PhD thesis. These questions can be viewed as parallel chapters of the current research and are specifically designed to precisely control the expansion of the thesis content and are as follows:

1. How is the research subject defined?
2. How does the research subject fit into a global theme?
3. What are the general characteristics of the problems?
4. What are the specifics of the problem?
5. How will the problem be addressed and what will be the structure of the solution?
6. What innovations will be brought?
7. What is the purpose of the research?
8. What will the research results be used for?

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