Reconstruction of Cities and its effects on Present day, on the example of Berlin and Warsaw

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Abstract

Due to the heavy damage that both Berlin and Warsaw suffered during the Second World War, reconstruction and redevelopment of both urban areas was needed. On the examples of three selected locations from both cities the study takes a closer look at how well Europe recovered from the most catastrophic event of the 20th century. Furthermore, this study examines how both capitals transformed and how solutions implemented in the past influenced current housing and quality of life for local residents. Success will be assessed on factors such as: access to hygiene, overcrowding, and cultural/historical value of given locations. All those factors were taken into consideration to evaluate how successful this recovery was. Data was collected through questionnaires, secondary data from literature and documentary review.

The results indicate that the reconstruction of both Berlin and Warsaw in the post-war era was successful. It was revealed that access to sanitary installations for local residents improved and overcrowding in households was systematically declining in the decades following the Second World War. Additionally, reconstructed areas done in the past are still in use today, proving that the techniques used were efficient and sustainable. Areas of interest are fully integrated into the rest of the urban fabric, and residents of both cities use them for various reasons, such as commuting, work, or for leisure activities.

1.0 Introduction
1.1 Research Background

The town square in most European cultures and cities is regarded as the symbolic center or heart of a given urban area. If we extend that metaphor to the bigger picture, it can be said that the capital is the center of the country in cultural, financial and academic terms (Czułowski, et al., 2021). Furthermore, capitals can be seen as an area that represents the country on the world stage. Similar cases are seen with the capitals of Poland and Germany, Warsaw and Berlin, respectively. Today, Warsaw can be viewed as an open city with large avenues and squares in the middle of the city and high skyscrapers in the city center (Czułowski, et al., 2021). These characteristics stand out compared to European capitals that are considered compact cities with a much older urban fabric and architecture. However, this has not always been the case. For a significant part of its history (particularly during the 18th and 19th centuries), Warsaw was geographically limited and had a high population density, which was crowded into densely built-up apartment buildings and adjacent narrow streets (Warsaw Data, 2018). This created a situation where living spaces, accessibility to infrastructure, and public transportation could be considered poor by today's standards. Nevertheless, there were some positive sides to pre-war Warsaw, such as a more compact city with historical and cultural value. A similar, yet different situation, could be observed in Berlin, where large portions of the city were damaged and destroyed, and later the city was divided into two different administrative zones (Pugh, 2014 & Ludwig at. el. 2020)). This not only impacted the ways in which the city was reconstructed but also how it was managed in the post-war years. Therefore, the both capitals create interesting case studies that represent the history of the reconstruction of cities in Europe.

One of the most impactful events that influenced present-day Warsaw was the grand reconstruction in the second half of the 20th century. The main reason for this redevelopment was the Second World War and the destruction that it caused to the urban fabric. The Warsaw Left Bank practically ceased to exist (Mika, 2017). Out of the 17,000 buildings, 58% could not be rebuilt. Another 3,000 structures could be renovated or only rebuilt partly. This only left less than 25% of the buildings undamaged or slightly damaged (Mika, 207, 2017). This destruction led to the breakup of the continuity of the city's existence, partly its spirit and status as the capital of Poland. Therefore, the National State Council (precursor of the communist party in Poland) in January 1945 in Lublin decided to rebuild Warsaw. In February 1945, the BOS (*Biuro Odbudowy Stolicy - Capital Reconstruction Office*) was established; it consisted of architects, monument conservators, sculptors, landscape architects, art historians and town planners. Its main task was to prepare detailed plans and projects for the new Polish capital. Destroyed by the war, Warsaw became a great challenge for town planners and architects who had to plan almost everything from scratch (Domaradzki, 73. 2016). However, this also gave BOS a great opportunity only seen once in a few generations to completely transform and improve the urban networks of Warsaw and tackle the challenges that the city faced before the war, such as overcrowding or lack of sanitation. One of the changes that was promoted and introduced was the idea of a modernist Warsaw, which would promote the new Poland that appeared after the war. It consisted of large avenues that ran through the city; a low density of housing; open spaces; and modernist architecture. The Athens Charter, published in 1933 (Le Corbusier),

which promoted functional and modernist cities as a solution to crowded and unsanitary urban settlements in the twentieth century, was one of the factors that influenced those ideas.

Berlin in the 1920's and in the early 1930's was one of the most influential cities not only in Europe but also in the world (Gill, 1995). It was not only an economic but also cultural and educational center that was positioned as one of the most important urban areas in the world (Gill, 1995). However, by 1945, on the 2nd of May, a few days before the end of the Second World War in Europe, the Berlin garrison that protected the city capitulated (Steinz, 2015). As a result of this great conflict, more than 600,000 apartments have been destroyed (Steinz, 2015 & Ludwig at. el. 2020). At the same time, out of 4.3 million people that lived in the city before 1939, only 2.8 million remained in the city after the war (Just, 1981 & Ludwig at. el. 2020). This only shows what destruction Berlin suffered as an outcome of the war. Furthermore, after the Potsdam conference (1945), Germany and its capital were divided into four zones of occupation that would be jointly administered by France, Great Britain, the Soviet Union and the United States of America (Winks & Talbott, 2005). Later, western parts of the country and the city were joined into one, creating a division between East and West Germany. This had a significant impact on the way both parts of the city were reconstructed and influenced by different ideologies. Furthermore, the logistics of reconstruction in both parts of the city were also different, which further increased the division between the Eastern and Western parts of Berlin. West Berlin was an administrative exclave entirely surrounded by East Germany, which made it harder to move goods and people from and to this exclave (Winks & Talbott, 2005).

There are many reasons why Berlin and Warsaw were chosen for this research. First of all, there are many similarities between the two cities, which can help to see the changes that happened in those urban areas in the post-war era. Berlin and Warsaw are both capitals of Central European countries that were severely affected by World War Two. Many areas of the city were heavily damaged or just ceased to exist. Moreover, both capitals were reconstructed after the war at the same time, which creates an additional parallel. Furthermore, selected cities are the biggest urban areas in their respective countries, with well developed cultural, economic, and educational infrastructure, which adds value to their importance. Nevertheless, there are also differences between them, such as the size of both cities in demographic and geographical terms (in both instances, Berlin is larger). Not to mention, the history of both capitals in the postwar era are also distinct. Berlin was divided into four and later into two parts (Winks & Talbott, 2005 & Ludwig at. el. 2020), while Warsaw stayed as one entity. This factor also influenced the process of reconstruction that happened after the war. All those aspects make it an interesting case to compare both urban areas. Additionally, those differences also influenced how the data for this research was collected and processed. The secondary data from each city, which is published by local authorities, differs from each other by focusing on other different factors of areas of interest. In the case of Berlin, there is also a contrast between the East and West parts of the city, as well as how authorities collected data, which adds uniqueness to the case studies.

This is the primary reason for this research: to evaluate and analyze the reconstruction and redevelopment of Warsaw and Berlin after the Second World War. It takes a closer look at the new plans and structures in the city and their positive impact on urban areas in terms of living spaces and quality of life. It analyzes the role of reconstruction and redevelopment in historical

patterns of districts and neighborhood fabric. Furthermore, the research presents concepts developed by Le Corbusier (1933) or Neighborhood Unit Concepts developed by Perry (1929) and their impact during reconstruction, as well as how those concepts influence today's Varsovians and Berliners. As it can be observed, there are many aspects regarding the topic of renewal and redevelopment of both cities, which makes it a complex process as a whole.

1.2 Research Problem

During the research for this study the set of questions arise connected to reconstruction and redevelopment of these European cities. However, it is very important to define those terms before the research is further conducted to avoid any misconceptions. According to the Oxford dictionary, *reconstruction* can be defined as "the process of changing, improving, or putting something back into the state it was in before". At the same time, the same dictionary defines *redevelopment* as "the act or process of transforming an area by building new apartments, factories, roads, etc.". Due to the fact that this topic is more complex than it seems. Therefore, to achieve a better understanding of this topic, the main research question supported by secondary research questions has been proposed. Additionally, a hypothesis for each individual research question is also provided to better study the topic. The research question that has been asked in relation to this study is as follows:

1. "*To what extent was the redevelopment and reconstruction of Warsaw and Berlin successful in terms of improving living standards in the post-war era?*".

In order to fully comprehend the historical changes that occurred in both capitals throughout the second half of the 20th century, the following secondary questions have also been posed:

2. "*Are solutions for solving housing and infrastructure problems created in the past still adequate in the present day?*"
3. "*To what extent did ideology and top-down approach influenced the process of reconstruction, in the case of the Muranów and Hansaviertel neighborhoods?*"

The questions focus on things such as housing, infrastructure, top-down approach in planning and problems concerning them. The answers to those questions create a holistic overview of the topic, which will help to interpret the transitions that both capitals have made in the past decades.

The hypothesis for each individual research question is also developed. This in turn helps to explain and discuss the findings of this research.

1. The quality of life for local residents in the selected cities has improved. Even with the large migration to the capitals that happened after the war, which led to an increase in the populations of these urban areas. Therefore, it is expected that the general reconstruction and redevelopment of the selected case studies were successful and that they created a positive impact for both Warsaw and Berlin.

This hypothesis will help to evaluate the efficiency with which selected cities developed after the Second World War. Notably, factors such as: access to hygiene, inhabitants per room, and cultural/historical value are examined and checked to see how living standards improved in the post-war decades. They are further discussed in the theoretical framework. Moreover, the rest of the hypothesis is as follows:

2. The housing and infrastructure projects that were built in the post-war era in selected capitals are still in use to this day. Which means that they are still adequate in the present day. Therefore the answer to this question is, yes. The solutions that were developed in the past are still needed and help cities function on a daily basis. Furthermore, they are still influencing the city to this day in terms of how the city functions, its urban fabric, and how it is portrayed.

3. The top-down approach had a significant impact not only on planning but also on the execution of plans for the reconstruction of selected capitals. Governments such as the PZPR (Polish Communist Party) were heavily involved in the reconstruction of the Polish capital at every stage. They saw it as a mission that would promote not only ideology but also Poland on the international scene. The same could be said of Berlin and its authorities.

To prove stated hypotheses a complete research is conducted based on collected data before approving or rejecting mentioned statements.

1.3 Scientific Relevance

This research takes a closer look at the reconstruction of Warsaw and Berlin after the Second World War and how this redevelopment influences projects (infrastructure, housing) that are currently in use by the public. The aim of this study is to evaluate the plans and projects during the reconstruction of both cities that are located in Central Europe. Furthermore, the study examines how successful plans and projects were in respected cities and if they are still successful in the present day or should they be changed. Additionally, the aim of this study is to inform and explain to the readers and future policy-makers the changes that took place in Warsaw and Berlin. This makes the research scientifically relevant due to the fact that there is limited information and literature that compares those two cities in terms of reconstruction and its effects on the present urban fabric of both cities. The answers found in this research can be used as a tool to expand knowledge that is relevant to urban planning and improvement of life in given areas. Which later can be used by the different city authorities to help them develop future projects and plans regarding urban settlements. As well as redeveloped and reconstructed urban settlements from catastrophic events such as armed or natural disasters.

1.4 Societal Relevance

The found answers and information during this research contribute to the expansion of knowledge in urban planning and help to improve both capitals of Poland and Germany. Moreover, they help readers and policymakers, from Europe and outside of it; understand the current situation in Warsaw and Berlin. Furthermore, the research presents difficulties that both cities used to face and how they managed them during the post-war reconstruction. Additionally, lessons from both case studies could improve the situation in other cities or perhaps influence their planning in areas such as infrastructure or housing and how different stakeholders should cooperate with each other. Thus, the study increases its relevance and adds value to this research; not only does it bring benefits to the given cities, but it will also bring benefits to the local communities on how to plan and what to focus on after a disaster event. That is why this study has social relevance and can contribute to current planning practices and change how the local residents perceive the cities that they are living in. It should be noted that the developed answers in this research could influence cities and other regions in their reconstruction from natural disasters or other armed conflicts. This increases the social relevance and makes the research more socially influential.

2.0 Theoretical Framework
2.1 Theories Used

Selected theories that have been used in this research paper are connected to general themes such as public space, health, modernist planning, or communal neighborhoods. The theories used in this study include the Neighborhood Unit concept developed by Clarence A. Perry (1929), the City of Tomorrow (Le Corbusier, 1929) and the Concentric Zone model theory designed by Ernest Burgess (1925). Those theories help to frame and envision the changes for the readers who are unfamiliar with this topic but want to know more about it and understand its context and history. Additionally, information gathered in this theoretical framework helps in the development of methods and factors that are used throughout this research.

The theory of the Neighborhood Unit, created by Clarence Perry, is an idea to bring all necessary amenities and services into a single living unit, in this case the neighborhood (Lawhon, 2009). The given neighborhood should support the needs of a single family according to several factors: 1. School should be in the center of the area, so a child won't have any problem accessing it, thus creating a sense of community. 2. Well defined borders of those neighborhoods with arterial streets along the perimeter help to reduce unwanted traffic from the area to distinguish the character and "place" of the neighborhood. 3. Well-planned internal streets that connect all parts of a given neighborhood help mobility within the selected area to become efficient. 4. The selected location should include shops, amenities, and other services within its borders to improve quality of life and exclude nonlocal traffic. 5. Part of the neighborhood land area should be dedicated to green spaces, such as parks or open space, to improve the quality of life and sense of community (Lawhon, 2009).

This concept helps to understand how specific neighborhoods were reconstructed, redeveloped and what principles they followed. Additionally, urban planners tackle problems connected to sanitation and overcrowding of living spaces in those areas using the Neighborhood Unit theory. Therefore, the concept can help to recognize how people in charge of redevelopment of given areas want to improve neighborhoods.

Similarly, Le Corbusier worked on his solutions to solve problems facing cities at the time, but he took a slightly different approach compared to Clarence Perry. In 1929, Le Corbusier together with Etchells published an academic essay titled "City of Tomorrow". In it, Le Corbusier promoted the idea of a completely new city which would radically transform and solve problems that the current urban areas are facing (1929). The author believes that the changes he has proposed may bring order that leads to stability and satisfaction for local residents. This shines a light on the topic of how exactly urban planners wanted to reconstruct cities such as Warsaw and improve them by completely transforming them and their urban fabric. According to Le Corbusier, the business center of a given city consists of high-rise buildings in close proximity to the railway station and airport, which would be well connected to other parts of the city. The whole complex would create the heart of the urban area. This creates an opportunity for the urban area to reduce congestion even in the most dense and busiest parts of the city, which are now open spaces letting in fresh air and sunlight (1929).

Additionally, one of the most significant parts of Le Corbusier's theory is the extensive use of open spaces, such as: gardens and parks planted with trees. With concentrated services and workplaces in already mentioned high-rise buildings, and a well developed network of roads, which increases mobility and communication. Le Corbusier and Etchells (1929) stated that once their vision for the "City of Tomorrow" was put into action, the general health of the neighborhood would improve and noise and air pollution would become issues of the past. Which would lead to the recovery of city life with elements of calmness. At the same time, tolerable working conditions have also been secured with better access to sanitation and a lower density of inhabitants per square meter (1929). This only leaves the question of leisure time and how it can be supplied to millions of people without any major difficulties. This theory can be categorized as a modernist concept that provides a new look on how cities should look like. As it can be observed, solutions and approaches proposed in "City of Tomorrow" are similar to ideas of the Neighborhood Unit (1929). At the core of both theories therefore is a desire to improve the lives of local citizens by creating a healthy community.

Another conceptual urban planning theory used in limited measure in this study is the Concentric Zone Model developed in 1923 by the E.W. Burgess. It is one of the earliest models explaining city social structures and their divisions. Burgess explains that the city has six basic zones which surround themselves in a circular pattern (Legates & Stout, 2016). In the center is the First Zone which is the Central Business District (CBD), which is a well communicated part of the city. Adjusted to it, is the Second Zone which can be seen as an industrial area of the city where work is generated for poorer workers. The Third Zone can be characterized as a living space/area where less well off workers are living, and later are commuting to the Second Zone. The Fourth Zone is still a residential area but it consists of middle-class homes. The last Zone which is the furthest from center (CBD) is a commuter zone which is also reserved for high-class homes on the outskirts of the given urban area (suburbs). The model created by Burgess (1923) is based on the example of Chicago (Legates & Stout, 2016), however, some parts of it can be also observed in pre-war European cities, notably Warsaw. This helps to understand how the post war city was reconstructed, with only parts of the city surviving the armed conflict.

To properly understand how past events influence future decisions, the path dependency theory needs to be discussed. According to the Dictionary of Geography (Mayhew, 1997), path dependence exists as an outcome of its past history as a sequence of decisions made by actors and other stakeholders that may influence current decision making. Therefore, ongoing decisions follow privileged paths, resulting in path dependence (Hein & Schubert, 2020). Thus, paths follow logical sequences that make course changes more difficult in the near future. Another way of looking at path dependency is by Hein & Schubert (2020). Authors argue that it is easier to rely on familiar, proven strategies that have been done in the past. Therefore, in the case of urban reconstruction and redevelopment, following and building based on already existing infrastructure such as roads or the network of the city is much easier than constructing completely new ones. Path dependency could also be observed in an academic paper written by Dziewulski and Jankowski (1957). Both authors discussed how the already existing layout of streets and fabrics of urban areas influenced the reconstruction of Warsaw in locations such as the Muranów neighborhood. This also connects to the cultural and historical value regarding

how reconstruction influenced the opinion of local residents on their perception of the selected areas in respective cities. This can help to assess if people value more areas that were reconstructed as they were before the war (Old City, Museum Island), or areas that gain completely new urban fabric and architecture (Hansaviertel, Muranów Neighborhood).

Additionally, one of the main reasons why those theories were selected for this research is their universal use and how they perceived cities in the 20th century. Most of the selected theories were developed before the Second World War, therefore city planners and administrators that worked on reconstruction were familiar with them. Furthermore, selected theories help to visualize how architects, urban planners, and people in power were influenced by theories at the time. They present how cities were planned and constructed in the decades following them. At the first site, the theories seem to be disconnected when taking into consideration different case studies. However, theories complement each other in the sense that they explain how future cities should look in order to improve the quality of life of local citizens (Le Corbusier, 1929; Perry, 1929). They take a holistic view of the city, and this is one of the primary reasons why they were chosen for this study. That is why theories help to define what factors are going to be studied and taken into consideration when answering research questions. Furthermore, they help to explain the transition in the urban planning process that took place in Central Europe after the Second World War. At the same time, path dependence as defined by Hein & Schubert (2020) or Dictionary of Geography (Mayhew, 1997) explains why some decisions were made and what led to their realization during the renovation of cities after the war in the modernist style; and how it impacted perception of local residents on selected areas in terms of historical value.

2.2 Selected Factors

To answer research questions, pre-selected factors are used in the study. The following factors were chosen: hygiene access, number of inhabitants per room, and cultural/historical value. As can be seen, they are related to and connected to the theories developed by Le Corbusier (1929) and Perry (1929). This can aid in the development and analysis of discovered answers. Furthermore, there are several other reasons why those specific factors were chosen.

Access to hygiene and the number of inhabitants per room in a given household directly influences the quality of life for the given area (WHO, 2018 & WHO, 2019). Local residents are able to recover much more quickly and return to their daily lives in areas impacted by catastrophic events such as natural disasters or armed conflicts when these two factors are improved and invested in (WHO, 2019). Furthermore, as those factors improve, the likelihood of developing additional negative side effects such as: transmission of diarrhoeal diseases (2019), sleep disturbance, and overall poorer health decreases (2018). As a result, this is one of the primary reasons why access to hygiene and the number of inhabitants per room are being investigated in this study.

At the same time, cultural and historical value is analyzed in this study due to the significant impact that reconstruction had on the selected capitals and their historical, cultural structures. Whole sections of cities were transformed and changed, affecting the urban fabric, where the historical buildings were replaced with newer ones. Newly developed areas followed theories of

how modernist cities should look developed by Clarence Perry (1929) or Le Corbusier & Etchells (1929). As a result, it is critical to know and understand the opinion of current residents of Berlin and Warsaw, as well as how exactly they value specific areas of interests in their respective cities. With this knowledge, it is much easier to discuss and answer research questions.

Pre-selected factors help to assess the success of the reconstruction and redevelopment of post-war European cities. Without those aspects, it is hard to envision the whole picture of the transformation that Berlin and Warsaw underwent in the 20th century, and what struggles they faced.

2.3 Conceptual Model

A conceptual model is developed to better understand the theoretical framework and information found in selected literature regarding the development of Berlin and Warsaw after World War II. The main objective of this research is to properly envision and understand the factors that are taken into consideration in this research. Furthermore, it helps to visualize the time frame of how some concepts that were developed pre-Second World War influenced post-war reconstruction and how they impacted planning at the time.

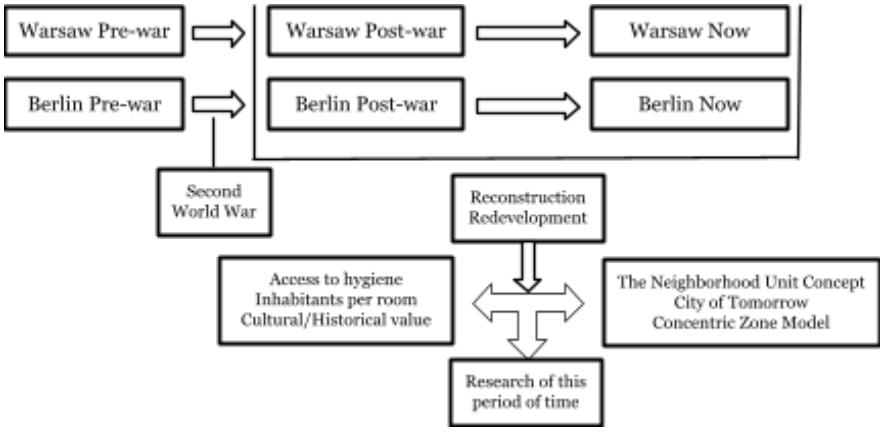


Figure 1. Conceptual Model

The conceptual model shows how the selected factors used in this study influenced the reconstruction of Warsaw and Berlin; these factors could be divided into a few general groups. The first group represents the physical aspect that contributed to the planning and redevelopment of selected cities. Notably, factors such as the existing housing network and urban fabric, as well as how it influenced and predetermined the process of rebuilding the two central European capitals, as Dziewulski & Jankowski (1957) mentioned. With complete destruction of parts of the city (in the case of Warsaw Downtown, the Old City and the Jewish Ghetto), the adjacent areas and neighborhoods influenced the plans for the reconstruction. It could be said that this is one of the examples of path dependencies that past choices predetermined present day decisions (Mayhew, 1997). Post-war cities were also impacted by

other elements mentioned by Denis Bocquet (2019) in his academic paper, such as differences in financing reconstruction (Marshall Plan - European Recovery Program) or even the significant influence of ideologies that were restricted to particular spheres of influence of individual regions (West and East Germany) (Ludwig at. el. 2020).

At the same time, the second group of factors can be categorized and framed as theories or concepts that have been developed by prominent architects and urban planners, which also influenced the shape of post war cities in Europe. One of the prominent concepts in this study was proposed by Le Corbusier in the 1920's. "City of Tomorrow", the new style of planning and constructing cities of the future (Le Corbusier & Etchells, 1929). The idea of using open spaces to let in fresh air and sunlight to improve the quality of life for the local residents and workers was very innovative and popular among architects of the 1940's and 50's around the world. It was seen as a solution to problems that certain cities faced at the time, such as overcrowding and poor hygiene. In the same group, the "Neighborhood Unit" concept developed by Perry (1929) could also be put in. The main idea behind this concept was to make each neighborhood "self-sufficient" in terms of amenities and services needed and used by the local residents. This would create a sense of "place" that individual residents would feel connected to within well-defined borders. This in turn would make the area better for living and raising future generations by minimizing dangerous elements such as traffic and all its negative side effects, such as noise and air pollution.

Cities leveled to the ground gave the perfect opportunity to implement new theories and ideas proposed by Le Corbusier and Perry (or at least to some extent). Those concepts were partly used by urban planners and architects to rebuild selected areas of the Polish and German capitals. Examples of Muranów or Hansaviertel neighborhoods are a good representation of the "Neighborhood Unit" and "City of Tomorrow" theories that were realized in post-war Central Europe. However, even if the neighborhoods follow similar ideas, they look completely different. Additionally, it was a monumental change of the area from pre-war to post-war in terms of architecture, urban network, and access to basic amenities in selected areas, all of which were promoted by Perry and Le Corbusier (1929).

3.0 Methodology
3.1 Research Design

The research Design of this study is based on information from two Central European Capitals, Berlin and Warsaw (Figure 2.). Furthermore, the selected case studies from both European capitals are chosen and studied more in depth to better indicate how successful the reconstruction was and how it improved quality of life for local residents. In the following chapters the explanation of methods, what specific factors are used and their general limitations are discussed and explained in detail.

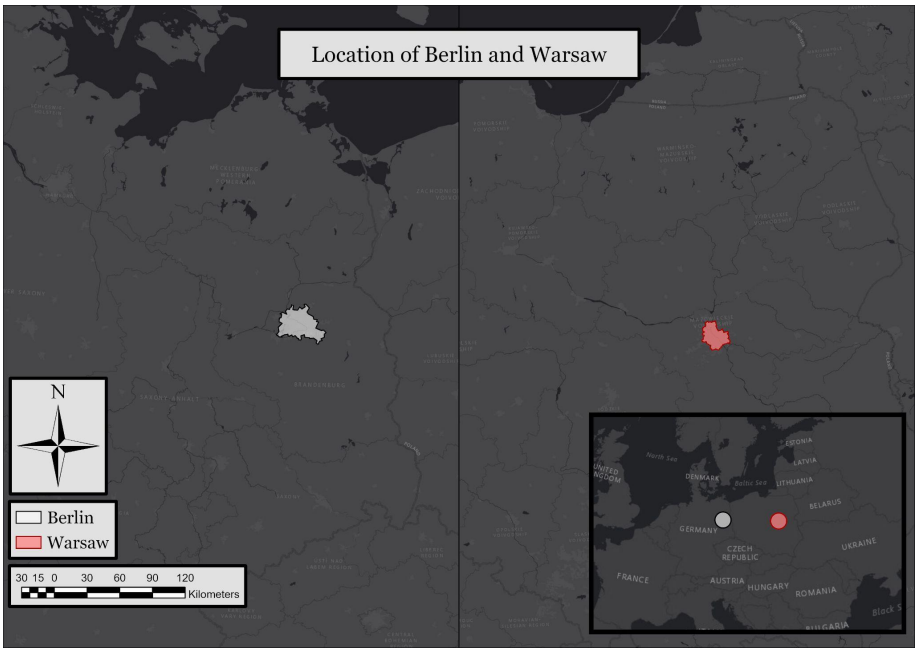


Figure 2. Location of Berlin and Warsaw on the European Continent. Source: author

Due to the significance that Berlin and Warsaw have (capitals and biggest cities of their respective countries), there is a lot of information regarding their rich history and development throughout time. This helped in gathering information, as well as understanding the problems that those cities faced in the past and are still facing today. As a result, this research takes a holistic approach regarding the problem. Therefore, the collection of secondary data, which is used in this research, can be considered an effective way to answer research questions.

3.2 Methods

The research presents the collected data in a chronological chain of evidence. The main idea is to present data and sources to the readers in a more understandable way. This also gives an opportunity to see how historical events and other factors influenced the data and choices of people that were in power at the time. Furthermore, this report uses multiple methods of collecting data, such as: evaluation of secondary data, presentation of case studies in Geo Information Systems (GIS) and data collected from questionnaires. This helps the researcher to

discover and understand the lessons learned from programs, plans and activities during the redevelopment of two cities by individuals, institutions, and organizations.

The main method used during this research was analysis of secondary data collected from scientific journals and data provided by governmental institutions. The secondary data allows researchers to present the plans, programs and other factors that changed throughout the time period. It allows us to create a coherent time frame and not only a snapshot of the change that took place in the past. As a result, readers may gain a better understanding of the histories of Berlin and Warsaw, as well as the transitions that both cities underwent during the postwar decades.

This research uses Geo Information Systems (GIS) to assist readers in visualizing areas of interest in Warsaw and Berlin. It is very crucial for units of analysis to define the spatial boundaries for each of the case studies (Yin, 2003). Maps from literature and maps created in programs such as ArcGis Pro are used to properly present the locations and boundaries of the cities, and what case studies are actually studied in this research. By comparing modern maps of selected areas in European capitals to historical maps, we can see how areas of interest changed and developed throughout time.

The questionnaire is made and uploaded throughout social media (websites such as Reddit and Facebook) to properly analyze both cities' current situation, difficulties that they are facing, and what the local residents think about them. Several factors contribute to the use of online questionnaires rather than in-person data collection, including spatial boundaries, physical distances between interviewer and interviewees, and the presence of active COVID-19 regulations (at the time of the research). Furthermore, due to modern technology, it is possible to conduct questionnaires online in an efficient way and without any major difficulties. Therefore, the questionnaire is an example of convenience sampling. The main objective of the questionnaire is to quickly and efficiently collect data about the topic and understand the attitude towards selected cities and the case studies located in them. With information acquired that way, it is relatively easy to check if the reconstruction and redevelopment of both cities were successful or not.

The result of using those types of methods of collecting data allows researcher to take a holistic view of the study problem and effectively answer research questions along with secondary questions. The data collected that way also shows progress that researched cities have made since major historical events such as the WW2 and current opinion of the local population on areas of interest. This helps to accept or reject hypotheses that were stated at the beginning of this research, which solidifies the question of the success of the reconstruction of German and Polish capitals.

3.3 Literature Review

This report uses several books, academic papers and other articles that are very useful in acquiring secondary data and understanding the situation that took place both in Warsaw and Berlin. Furthermore, the literature can be divided into a few major groups. The books and

papers which describe the situation in Warsaw and how it was developed. There is literature analyzing the situation in Berlin and how the city was reconstructed and rebuilt after the war. Furthermore, there are also academic papers and articles that explain concepts, theories, and situations in both cities. All of them add value regarding the topic in a more holistic way and explain the context of cities. In the end, this helps the researcher to analyze and evaluate selected case studies from Warsaw and Berlin. To start with, the most important sources that were used to write this research for the Polish capital and understand its history throughout the 20th century are as follows:

Book titled „Najlepsze miasto świata. Warszawa w odbudowie 1944-1949" (*The Best City in the World. Warsaw under reconstruction 1944-1949)* which was written by Grzegorz Piątek (2020). As well as an academic paper titled "The Reconstruction of Warsaw", written by Dziewulski and Jankowski (1957), which tells the story of Warsaw, its historical, geographical features, and most importantly, the reconstruction of the city in the first years after the war.

To properly understand the situation that happened in Warsaw in the post-war era and the period of reconstruction, it's good to know the city's history and its context. The pre-war urban fabric was largely created during Warsaw's rapid development in the nineteenth century (Piątek, 2020). Warsaw changed and transformed during that time, when the city was under Russian Empire control. This statement is reinforced by an article written by Dziewulski and Jankowski (1957). Authors described the 19th century period in Warsaw as a rapid growth in the industrial age and how the city transformed itself to be the center of Poland in economic, educational, and cultural terms (Czułowski, et al., 2021). Just by looking at the population growth between the years 1864 and 1914, it can be seen how influential this period of time was for Warsaw. The city's population grew from 223,000 to 885,000 in just 50 years (1957). This had positive and, unfortunately, negative effects, such as limited access to sanitary installations or growing overcrowding in apartments.

The next significant period is the twenty years between the Great Wars (1918–1939). It's a very important phase for Warsaw and how it developed. According to Dziewulski and Jankowski (1957), the city developed "without any planned control". The tenement houses, socially and architecturally, were below standards and were hastily put up to accommodate a growing population. Concurrently, suburbs extended along the railway lines (this somewhat resembles model created by Burgess (1923)). However, due to land speculation, the vast suburban areas became without water and sanitary infrastructure, which limited the hygiene of the general public. At the same time, Piątek (2020) brings international examples of urban areas transformations that happened at a similar period of time or slightly before it. Such as: Rome under the Mussolini regime or in Haussmann's renovation of Paris (1853 to 1870). The large urban structural changes that happened in those cities were the sum or radical but also planned and spread over time improvements by internal decisions. Therefore,important structures and buildings could be saved. Nevertheless, the process of outer development of Warsaw was harshly stopped due to the eruption of the Second World War (Dziewulski and Jankowski, 1957).

Dziewulski and Jankowski dedicate a large part of their article to a detailed description of the destruction that Warsaw suffered during the Second World War (1939–1945). Its effects on the

city's structure and fabric The authors point out that many cities suffered destruction as a direct or indirect result of the war. However, Warsaw was one of the cities that was deliberately planned to be destroyed along with its economic, cultural and historic value (1957). According to the authors, this systematic destruction resulted in a situation where almost 75% of the city lay in ruins. This created the opportunity for a complete restructuring of the city and a change in its urban fabric to accommodate its future needs. This opinion is supported by a book written by Grzegorz Piątek (2020) where the author also argues that structures that urban planners and restorers would like to keep for future generations have not necessarily survived in the best condition. At the same time, areas such as Praga district (district on the right bank of Vistula), which was/is considered a less desirable area for living, survived without any major destruction. Thus, districts that survived the armed conflict deeply impacted how reconstruction developed throughout the city. The prime example of such a reconstructed area could be the so-called central business district (mentioned by Burgess, 1923),

Before and during the war, the city center of Warsaw was a densely built up area where part of the Jewish Ghetto was located, after the war, it was mostly destroyed. With the post-war reconstruction and modernization of the city, which was deliberately planned by Polish experts in BOS (Capital Reconstruction Office), such as: architects, town planners, restorers, artists, engineers, publicists and community workers. A new urban fabric was introduced to the city but heavily influenced by surrounding districts and neighborhoods (Piątek, 2020) such as the Praga district. Similarly, Dziewulski and Jankowski (1957) argue that despite the large damage that the city suffered during the war, the reconstruction plans, to a great extent, have been "predetermined by the existing layout of the individual areas, the communications, and the main services". They point out that this layout was influenced by the pre-war Warsaw suburbs, which were located, similarly to all other major cities in Europe, near and along railway lines and highways. This is an example of path dependence in urban areas as defined by Hein & Schubert (2020) or how it is explained by the Dictionary of Geography (Mayhew, 1997). In the end, it can be stated that the plan of reconstruction and redevelopment of Warsaw has undergone a noticeable evolution (1957).

District of Muranów in 1939	Proposed concept for district of Muranów for 1965
	

Figure 3. District of Muranów in 1939 and Proposed concept of it for 1965 Source: Dziewulski at. el. (1957)

Dziewulski and Jankowski point out that the mass return of refugees to the city happened just after the liberation of the city in January 1945 - 162,000; February-174,000; March-241,000; April-318,000; May-366,000. In January 1946, Warsaw had 473,000 inhabitants, and in January 1947-538,000 (Figure 4.). This migration put great pressure on the authorities that were supposed to organize the flow of the people. Furthermore, by the end of 1947 the population density amounted to 2.3 inhabitants per room. The authors mention that not only the lack of residential housing with proper sanitary installations was the problem, but also the lack of educational centers such as schools created logistical difficulties. Up to 75,000 schoolchildren didn't have the proper facilities to get an education. As it can be observed, the situation in Warsaw was dire and complex due to the fact that all types of infrastructure were in catastrophic conditions. Piątek (2020), in his book, argues similarly that the quality of life in Warsaw just after the war was dreadful and tremendous, one of the reasons for that was the growing population.

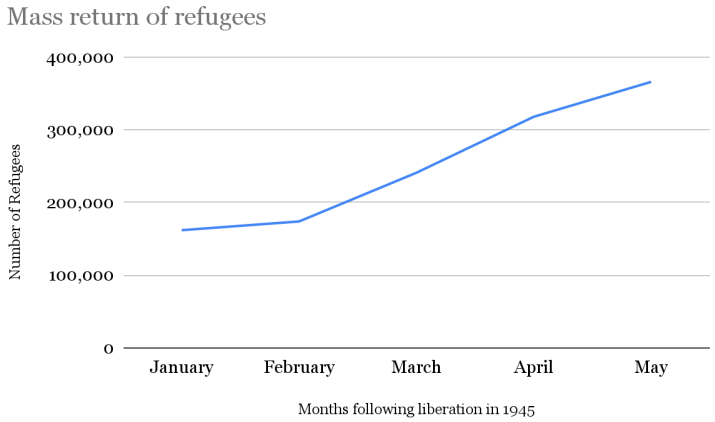


Figure 4. Mass return of refugees after the liberation of Warsaw. Source: Dziewulski & Jankowski (1957)

Finally, the authors argue that in order to completely rebuild Warsaw, a complex reform and improvement of existing building methods, as well as the introduction of new building methods and strategies, such as a large-scale application of prefabricated housing (Dziewulski & Jankowski, 1957 & Uchowicz, 2014), should be implemented. Which would use standardization of materials and reduce costs due to economies of scale. Similar views could be observed with theories promoted by Le Corbusier (1929) and The Neighborhood Unit Concept created by Perry (1929). Both authors not only wanted to provide housing for the local population but also improve the standards of life by limiting air, noise pollution and having access to more green areas. Prefabrication housing would rapidly increase the supply of housing for local residents as well as newcomers to the city. At the same time, standardization with a combination of economies of scale would reduce the cost of construction. As it can be noted, information in Dziewulski and Jankowski's article can help in answering the research question regarding housing problems and improving living conditions. Moreover, this paper shows how the approach of governments and urban planners changed during and after the reconstruction. Which further supports claims made in a book by Piątek (2020). Where he states that the Polish government, which was imposed by the Soviet Union, supported Polish experts and in the first few years, national authorities did not dictate solutions for reconstruction planned by BOS.

However, as time passed, the Polish government became more controllable and influential regarding the renovation and what Warsaw should look like (Piątek, 2020).

As it can be observed, both sources can help in answering the main and secondary research questions. Regarding to what extent the governments of a given country influence or not the process of reconstruction and how successful it is in terms of improving the city as a whole. Furthermore, the stages of support that changed throughout time from the national government can also be analyzed in these sources, which helps this study in portraying how successful post-war reconstruction was.

At the same time, to explain the history and current situation in Berlin, several books, academic papers, and other articles were used. They helped to understand how different parts of the city were planned, viewed, and transformed throughout the time period. Furthermore, they help to compare and contrast Berlin and Warsaw with each other. The most commonly used academic sources to analyze Berlin, written by Denis Bocquet (2019) is titled "Urban reconstruction as a complex process: reflections on post-1945 Berlin". Which traces the transition that happened in Berlin during the reconstruction in the post Second World War era to the present day. As well as a pamphlet issued by Schwedler Rolf, who was the Senator for Building and Housing, published in September 1962, titled: "The reconstruction of Berlin from 1949 to 1963".

Bocquet (2019) not only puts emphasis on planning and urbanism in Berlin but also looks at how architecture was shaped by reconstruction in different parts of the city (mainly differences between East and West Berlin). Bocquet states that Berlin as a city suffered not only from aerial bombing but also from ground fighting, which also caused enormous damage to the city. As a result, up to 10% of all the buildings in Berlin were completely destroyed. Concurrently, 8% were severely damaged and another 10% of the structures were so significantly damaged that without heavy restoration they were unusable by the public. 20% of buildings, after light to medium repairs, were in a state that they could be re-used by the local population. Overall, this only shows how destructive the war was for this Central European city and how much there should be done to renovate it to its former state. To put this into perspective, 75% of buildings in Warsaw suffered total destruction or were heavily destroyed (Dziewulski and Jankowski, 1957), leaving only 25% of the buildings undamaged or slightly damaged (Mika. 2017).

Similarly, as Dziewulski and Jankowski (1957) stated for Warsaw, Bocquet talks about the movement of people out of and to Berlin. First of all, by the end of the war, the German capital hosted thousands of displaced Germans fleeing the eastern front and the Red Army. By the end of the conflict, people started to leave the city, and later, when the dust of war settled, they started coming back. This back and forth movement of people caused consternation and complications for local authorities in determining how to meet their basic needs (Bocquet, 2019). With this factor in mind, the redevelopment and reconstruction of the city began, which could be defined as a long, complicated, and complex process with multiple actors and moving parts. New methods of housing construction should be implemented to satisfy the growing demand of the rising population of selected cities. At the same time, the pamphlet "The Reconstruction of Berlin from 1949 to 1963" does not mention anything about migration during and after the war. The only thing it mentions in that regard is the great demand for housing due

to a lack of it. However, this problem was systematically solved as time passed and more apartments were built.

Denis Bocquet points out that the process of reconstruction cannot be considered a short-term event; it's a long and complicated process. During this process, plans, demographics, economic conditions, and social needs are constantly changing. There is no time-bound, static, and horizon-limited vision of reconstruction. This process of reconstruction is reinforced by information located in a pamphlet issued by Schwedler (1962). The pamphlet provides necessary information to grasp how Berlin was rebuilt between the years 1949 and 1963. It provides valuable data that shows the number of apartments built under the publicly subsidized housing scheme for each year of a selected time frame.

It should be remembered that plans and decisions that have been implemented early in the project influence decisions that have been made later in the project. Therefore, the example of path dependency can be seen during the redevelopment of the German capital, which helps us understand the historical context of the city and the context of how the city was rebuilt. This information is very important for this research due to the fact that it helps to understand what people at the time lived through and why they made the decisions they made. As stated before, path dependency could also be observed in the reconstruction of Warsaw and was mentioned in an academic paper written by Dziewulski and Jankowski (1957). In it, both authors explain how pre existing urban fabrics and the layout of streets influenced the reconstruction of Warsaw in locations such as the Muranów neighborhood.

Relevant information pertains to the data connected to the "size of the flats built under the Social Housing Scheme" (Schwedler, 1962) a distribution of how many flats were built, which is expressed in percentages; and where they are located. The pamphlet also provides information about Berlin's transformation connected to the number of facilities that were with and without running hot water at the time. Furthermore, the source also includes information about the types of heating that those houses and apartments are using and shows how access to hygiene changed in the city throughout the years after the war. The Urban Motorway Scheme is also discussed and explains how the infrastructure was developed and planned throughout Berlin. The same goes for the expansion of the underground railway system. It could be observed that both systems were mostly invested in the western part of the city, which reinforces information provided by Bocquet (2019) in his article that talks about the division of the city into two sides and how it affected the capital.

The financing of reconstruction is also an important factor when discussing this topic. Denis Bocquet (2019) mentioned that a few months after the war, Berlin became one of the most important stages between two competing ideologies during the Cold War. Western Berlin, which was part of the Allied occupation zone, took part in the Marshall Plan, formally the European Recovery Program (ERP) of 1947. Due to this program, extensive funds were allocated to the reconstruction of Western Berlin and Germany. This information is indirectly reinforced by Schwedler (1962), who focused on the publicly Subsidized Housing Scheme that could not properly function without the support of the European Recovery Program (1947).

At the same time, the Soviet occupation zone refused this financial help on the grounds of ideological differences, it represented and implemented technologies and plans influenced by the USSR. This affected not only the transfer of technologies and ideas but also the transfer of materials. Therefore, due to the mentioned differences, the style and quality of buildings, such as housing, vary between the different parts of the city. This shows that the decisions made by the national government and the top-down approach had an influence on the style of reconstruction. Overall, Bocquet (2019) put a lot of emphasis on explaining factors that influenced the architecture that was used in post-war Berlin. Information in the article can support and help in answering research questions that have been asked at the beginning of this research paper. How successful was reconstruction in given cities, to what extent did it improve the standard of living for local residents and the influence of top-down approach.

In the end, the provided data in a pamphlet issued by Schwedler (1962) makes itself very useful due to the fact that it fits well with information from other sources, notably with an article written by Denis Bocquet (2019). It shows the progress that Berlin made in the post war era and how it transformed in areas such as the number, size, and access to proper sanitation of apartments and the investment that the city made for infrastructure development. The pamphlet highlights the difficulties that the city faced and encountered during transformation in the post-war period, similarly to the Bocquet (2019) article. Moreover, there are several similarities to Warsaw when it was under reconstruction. All the collected sources can help to evaluate and answer questions that were asked at the beginning of the study.

Several other books, academic papers and journals also had an influence on this report. They help to answer the already mentioned questions and expand the knowledge regarding urban planning, reconstruction and the development of cities. Moreover, they take a closer look at the transition and implementation of different concepts and theories in given cities and why those concepts were used by authorities in the first place. They are closely related to the selected theories, such as The Neighborhood Unit Concept or ideas in Le Corbusier's "City of Tomorrow." One of the most important sources used in this study is "Urbanism" (Swoboda, 2015) and a paper titled "Urban Reconstruction in Europe After World War II" (Diefendorf, 1989).

Le Corbusier’s Urbanism (translated by Tomasz Swoboda, 2015) explains and defines the concept of modernism in rural and urban planning at the beginning of the 20th century. It also clarifies the extent to which Le Corbusier's ideas about modern cities were influential at the time. One of his key contributions to urban planning was the Athens Charter, published in 1933 (Le Corbusier), that promoted functional cities as a solution for overcrowded and poorly hygienic urban settlements in the 20th century. He promoted the idea of the redevelopment of old European city centers with more open spaces and specially designated work areas. This would also include large avenues which would connect various parts of the city and regions with each other, so the citizens with their automobiles could freely and efficiently commute around. This would improve not only the mobility but also the accessibility of a given city, which would significantly save time for local residents. When it comes to housing, Le Corbusier proposed and promoted the idea of communal housing, where all the necessary services, amenities, and living areas would be provided in one location. In his eyes, not only would his ideas tackle difficulties that the cities faced in the past, but they would push urban planning into the new era of

improving the standard of living for common people. One of the good examples of Le Corbusier's idea which is presented in the book is Plan Voisin (Figure 5.). He proposed the redevelopment of Paris in the second half of the 1920's to face the problems connected to overcrowdedness, poor hygiene, and the uncomfortableness of the city as a result of the Industrial Revolution that happened in the 19th century. The plan was based on Le Corbusier's theory and ideas of "City of Tomorrow" (1929) and what model cities of the future should look like and function to sustain the needs of their population without creating negative side effects. The Plan Voisin could be described as a utopian idea where the local residents would live in a series of massive skyscrapers. Nevertheless, the plan seemed too radical for the local authorities to allow it to be implemented on the scale that Le Corbusier wanted.

Nevertheless, Le Corbusier's vision of shared living spaces in a factual and orderly way had a great impact on future urban planners in the next decades that followed the pre and post World War era. The prime example of his influence could be seen in how Biuro Odbudowy Stolicy (BOS) envisioned a new capital for communist Poland after its reconstruction after the war. Where the unwanted and damaged buildings that represented the old system would be replaced with modernist style housing that would create a new image of reconstructed Warsaw (Muranów neighborhood). Similar ideas were also promoted in post-war Germany, mainly in Eastern Berlin, where high communal housing would be constructed. The Karl-Marx-Allee is a prime example of the modernist way of reconstruction in Berlin and how it represented the East German capital on the international stage. This shows that Polish and East German architects were influenced by the vision and ideas proposed by Le Corbusier a few decades earlier. The Neighborhood Unit Concept can also be seen in both examples as an innovative way to solve problems connected to hygiene and air pollution. At the same time, in Western Berlin, architects and urban planners also used the ideas of the Neighborhood Unit and City of Tomorrow, but interpreted theories and ideas in different ways. An example of such a project could be the Hansaviertel neighborhood in Western Berlin, which drastically differs from Karl-Marx-Allee.

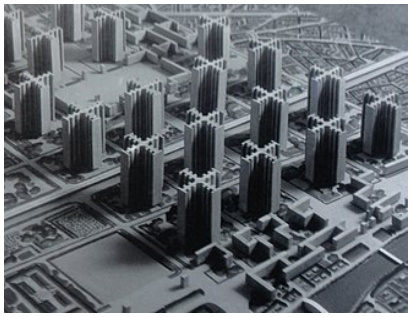


Figure 5. Model of the Plan Voisin

Jeffry Diefendorf's paper, titled "Urban Reconstruction in Europe After World War II" (1989), explains the situation of European urban and rural areas and their difficulties that they faced during and after the Second World War. Not only does Diefendorf state that European cities were victims of the effects of years of bombings, but also that the cities after the war suffered from logistical difficulties and enormous complexities related to it. This opinion is shared with information stated in a book written by Grzegorz Piątek (2020) where he states how city

reconstruction authorities such as BOS (Mika, 2017) were struggling during the planning and development of post-war Warsaw.

Diefendorf (1989) states that the urban reconstruction in Europe that happened after the war was one of the greatest duties and responsibilities that "town planners, town authorities, and regional and national politicians, private citizens" as well as property owners, renters, workers, and architects faced. All those stakeholders create uncertainties and increase complexity regarding management and logistics of the whole endeavor of city reconstruction. This is why a holistic approach should be taken while redeveloping whole cities that were affected by destructive events. Therefore, all the factors and outcomes should be analyzed. This also helps to answer the question of how much the national government was involved in reconstruction and how it affected the post-war reconstruction of the city.

Diefendorf follows in his explanations by describing different styles of reconstruction in different European countries. He focused primarily on East and West Germany and their cities, respectively. He concluded that the styles were influenced by the fact that the towns in Eastern Germany (GDR) were on average less damaged and bombed compared to towns in Western Germany, which were more densely populated and urbanized. At the same time, prewar housing in the GDR was in poorer condition than its counterparts in the west (Diefendorf, 1989). Which later affected the process of reconstruction and redevelopment postwar. The author also points out that the migration of people also happened between and within the countries, which further had an impact on the redevelopment of urban and rural areas. A similar situation is described by Dziewulski and Jankowski (1957) in post-war Warsaw. As a result, Eastern Germany and Berlin (GDR) suffered population losses (Just, 1981) from migration between 1945 and 1961 to West Germany (till the construction of the so-called Berlin Wall). Information provided in this academic paper helps to analyze the transformation that took place in cities after the war in Central Europe. It also shows how interdependent international links and the transfer of ideas and technologies are when it comes to city planning. The paper written by Diefendorf helps to answer not only the main research question but also questions regarding how the ideology and top-down approach influenced the process of reconstruction as well as lessons learned by governments and urban planners.

In the end, the mentioned literature helps to understand the situation that European cities faced in the post-war era, with a focus on Warsaw and Berlin. Information gathered from selected sources can complement each other or provide different perspectives. This helps to generate a holistic picture of the topic of this study. This allows researcher to effectively answer research questions and accept or reject hypotheses regarding the reconstruction's success, whether previous solutions are still adequate in the present day, and the influence of top-down approach.

It should be noted that during the reconstruction of both cities, the International Union of Architects (*Union internationale des architectes*, UIA) took place. UIA is an international non-governmental organization that represents architects from more than 124 countries (UIA, 2022). It set a resolution on IV congress in Hague (1955) regarding requirements for modern residential construction based on XXV point of the Universal Declaration of Human Rights "*Everyone has the right to a standard of living adequate for the health and well-being of*

himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." (Kubiak, 2005). All the new buildings constructed for the needs of INTERBAU (Hansaviertel for example) fully complied with the recommendations of the Hague congress (Kubiak, 2005):

1. *In each apartment there should be a space for storage (minimum 5 m2)*
2. *It is assumed that the washing of clothes will be carried out in the kitchen or bathroom, provided that appropriate equipment and devices for drying is provided*
3. *In flats occupied by more than 3 people, a separate toilet should be provided*
4. *Internal bathrooms and kitchenettes are allowed provided that there is adequate ventilation*
5. *Fixed installations, especially fluid piping, should be allowed to be extended or changed as necessary*
6. *Standardization of kitchen and sanitary equipment should be accelerated*

3.4 Case Studies

To properly assess and compare the reconstruction that took place after the war in both Berlin and Warsaw (Figure 2.) and the impact it had on the current state of both cities, a set of selected case studies from each city is chosen and analyzed. In total, three case studies are chosen from each city.

Berlin	Warsaw
Museum Island	Old City
Berlin-Hansaviertel	Muranów Neighborhood
Karl-Marx-Allee	Jerusalem Avenue

Figure 6. List of areas of interests that are chosen to be analyzed from both cities

The case studies selected in Warsaw are as follows:
The Old City (Stare Miasto) was once the bedrock and oldest part of Warsaw; it could be said that the city began here (Dziewulski & Jankowski, 1957). However, as a result of the armed conflict, the Old City suffered 90% of its human and material resources (TVP, 2021). Due to the destruction, the area required complete reconstruction and renovation, which began in the 1950s (TVP, 2021), making the Old City (Stare Miasto) one of Warsaw's newer areas at the time. Stare Miasto is currently the only UNESCO site (as a whole area) in Warsaw (Center, U.W.H. b) where the Royal Castle can be found. This makes the location popular not only among local residents but also among tourists that want to visit the area. Moreover, with its historical and cultural value, it is important in this research to take a closer look at how reconstruction and renovation influenced the area in post-war Warsaw.

Before the war, the Muranów neighborhood was one of Warsaw's most densely populated areas (Chomątowska, 2016). Furthermore, it was once a Jewish neighborhood that was later transformed into the Warsaw Ghetto during the German occupation (Chomątowska, 2016).

However, following the Ghetto uprising in 1943 and the Warsaw uprising in 1944, this entire section of the city lay in ruins. Following the war, urban planners chose the area as a model neighborhood for postwar Warsaw and Poland. One of the reasons for this was the proximity to the Old City and the city center, as well as the fact that the entire area could be considered a "carte blanche" for planners. Currently, the neighborhood is located near the city center and is well connected and developed in terms of housing and public transportation such as metro, bus and tram (Chomątowska, 2016).

The Jerusalem Avenue (Aleje Jerozolimskie) is one of Warsaw's most iconic streets, running from west to east. The avenue is 10.82 km long (OpenStreetMap, 2022) and connects several neighborhoods and districts, including Wola and Downtown. It is not only an important communication link that runs through the city, but it is also a commercial and cultural area with many shops and museums. Furthermore, the Avenue houses many important institutions for the Polish state, including the Bank Gospodarstwa Krajowego building, Centrum Bankowo-Finansowe (former seat of the Central Committee of the Polish United Workers' Party), Warsaw Central railway station, and several important hotels and shops. Additionally, following WWII, the new communist government demolished surviving buildings in the city center on the northside of Jerusalem Avenue to make way for the Palace of Culture and Science and the Warsaw Central Railway Station, which are now fully integrated into the city landscape. All those factors make Jerusalem Avenue an interesting case study in this research due to the fact that it was renovated and redeveloped throughout the 20th century.

Figure 7. Selected case studies located in Warsaw. Source: author

At the same time the case studies in Berlin that are studied and analyzed in this research, like those in Warsaw, are extremely valuable to the overall fabric and image of the city. They are important in terms of culture, living, and communication for local residents. The case studies are as follows:

Museum Island is located in central Berlin and is considered the city's heart. It is best known for its world-renowned museums. It is popular not only among tourists but also among local residents due to its leisurely nature, which contributes significantly to the city's image. The entire area was designated as a UNESCO World Heritage Site in 1999 (Center, U.W.H.), which increased the area's popularity. Museum Island is surrounded by prominent cultural structures such as the Neues Museum, Bode Museum, Altes Museum, Pergamonmuseum, Alte Nationalgalerie, and many more (Center, U.W.H.). As one of the city's most representative areas, this makes the area very appealing and valuable to Berliners (Center, U.W.H.). Moreover, Museum Island, like the Old City in Warsaw, is considered a starting point for Berlin (Zhang, 2020), but the area was spared the consequences of armed conflict, making it even more unique and valuable. This is one of the reasons why this location was chosen for this study and compared to its counterparts.

Hansaviertel is a neighborhood in western Berlin that is well connected to the City Center as well as the rest of Berlin by S-Bahn, subway, and bus lines (Berlin Wall Map, 2019). Moreover, the location is close to the center, green areas, and other bodies of water, such as the most representative Berlin park, Tiergarten and the Spree River. This makes the area very appealing to Berlin residents who want to live there (Carlson, 2020). It should be noted that the area experienced extensive redevelopment following WWII (Schwedler, 1962), allowing it to create a new image of itself for the following decades. With the new type of housing, which can be characterized as a high-rise residential buildings with each apartment equipped with a kitchen and bathroom, city authorities were able to provide a large number of apartments with all the necessary amenities (Schwedler, 1962) for local residents in close proximity to the city center and other attractions such as Tiergarten (Berlin Wall Map, 2019). The new Hansaviertel image solidified Berlin's image as a "modern" city (Pugh, 2014).

Karl-Marx-Allee is a street that connects the city center to Eastern Berlin. It is one of the major segments of the 'central axis', which connects to Schloßplatz (formerly Marx-Engels-Platz) (Flierl, 1985). It is a monumental socialist boulevard that was built after the war in the 1950s and early 1960s. It was regarded as one of the most important postwar reconstruction projects in the German Democratic Republic. It is 2 kilometers long and 89 meters wide (Figure 9), and it contains restaurants, cafés, shops, a cinema, as well as apartments and housing for local workers (Flierl, 1985). Furthermore, the avenue served as a location for many governmental and political institutions, representing their powers, in terms of both architectural and spatial arrangements (Flierl, 1985). This followed the concept of the avenue as a political hub that is the city's dominant urban and architectural feature. The Avenue was designed by a group of architects and urban planners known for their work in postwar Eastern Germany, including Egon Hartmann and Hermann Henselmann (Bocquet, 2019). Karl-Marx-Allee can be described as a ship's hull with monumental eight-story buildings on both sides that have socialist

classicism design (Bocquet, 2019), making it one of the most representative streets in Eastern Berlin at the time. There are also wide sidewalks for pedestrians to help them commute and finish their jobs. Furthermore, as one of the most important streets/avenues in the former German Democratic Republic, it was used by the national government for annual parades to legitimize their power (Flierl, 1985).

Figure 8. Selected case studies located in Berlin. Source: author

As can be seen, the selected case studies are clustered near each other in their respective cities, which aids in their analysis. Besides that, the structures chosen are used in a variety of ways and can be classified as living neighborhoods, cultural areas, and transportation nodes, adding variety to the research and making it more interesting overall. Such a selection provides a great and, to some extent, holistic overview of both cities and their reconstruction processes, including how they were planned and how they were ultimately carried out.

3.5 Multi-Criteria Analysis

To efficiently answer the research questions that have been asked at the beginning of this study, mixed methods of data collection and mixed methods of analysis are used. One of the ways to combine the methods and collected data is Multi-Criteria Analysis (MCA) (IPBES, 2017). This type of analysis is used to effectively compare different plans, projects and to check their impacts, effects and performance. Furthermore, the goal of Multi-Criteria Analysis is to provide readers with simple data that supports or contradicts given statements. (IPBES, 2017).

Therefore, to analyze the reconstruction of Berlin and Warsaw in the post-war era, three case studies are chosen from each European capital based on their importance as living neighborhoods, cultural areas, and transportation nodes. Later they are assessed by three preselected criterias: access to hygiene (WHO, 2019), overcrowding (WHO, 2018) and cultural/historical value (de la Torre, 2002). This allows the Multi-Criteria Analysis to provide a complete view of the subject. This in turn can be categorized as a combination of "recontextualisation" and "categorisation" of data (Bengtsson, 2016). The secondary data from various sources are used to determine how access to hygiene and overcrowding changed in both cities. At the same time, information gathered from the questionnaire allows researcher to observe how the local population views selected case studies from today's point of view. Such an approach allows one to determine if the reconstruction and redevelopment of Central European capitals were successful or not. This means assessing the historical/cultural value of selected locations. Additionally, this can help to understand how cities have developed throughout the past decades and how they are influencing the daily lives of the local residents. All these factors not only help to show the transition that the given urban area made throughout the time, but also help to evaluate the success of the reconstruction that the cities made. The factors that are measured in this research are explained in detail in the table below (Figure 9.) in the explanatory factors part, to better understand the reasoning behind picking and analyzing them.

Furthermore, it is decided that the weight of all the criteria analyzed for this multi-criteria -analysis have the same weight and are treated the same way. The reason behind this decision is the fact that all the factors are equally important for improving and later accessing the quality of life in the given area. Therefore, it would be wrong if one factor is undervalued or overvalued when compared to other criteria. Another argument for that decision is that categories are integrated in one way or another with each other. Thus, it would be impractical and illogical to give individual criterias different weights, which could lead to unnecessary confusion. It is essential to keep the research as clear as possible for readers and avoid complications (Bengtsson, 2016).

After all case studies in each capital are analyzed, it is easier to determine if the hypothesis connected to the research questions should be accepted or rejected. This part can be seen as a "compilation" of the study (Bengtsson, 2016). This in turn helps to understand how successful the reconsideration was and what current residents think about it. Due to the complex nature of this research, the primary and secondary data are discussed throughout the study in great detail.

3.6 Explanatory Factors

Factor	Description	Source
Access to hygiene	With the poor sanitation there is reduction of human well-being, economic and social development	World Health Organization (2019). *Sanitation*
Inhabitants per room	Household crowding can be explain as a condition "where the number of occupants exceeds the capacity" of a available space of a given dwelling	World Health Organization (2018). *Household crowding*
Cultural/Historical value	Historical and Cultural values change over time. They are strongly influenced by contextual factors such as cultural trends, economic opportunities and social forces	de la Torre M. (2002). *Assessing the Values of Cultural Heritage*

Figure 9. List of factors that will be taken into consideration in this research

This part explains why factors such as access to hygiene, inhabitants per room, and cultural/historical value were chosen to be researched when finding answers to the research and secondary questions. With better access to good quality sanitation, there are better chances for greater social and economic development as well as improved human well-being (WHO, 2019). The main reason behind this is that people in good health due to access to safe hygiene can focus on other important things, for example, educating themselves by attending schools or improving the environment around them (WHO, 2019). Additionally, with improved access to hygiene, local city authorities can focus on other important aspects that are crucial for city functioning. As it can be seen, access to hygiene is an important indicator of how a given city is developing in a given period of time. As the World Health Organization (2019) stated, with better sanitation, there is improvement in human well-being and further social economic development, which slowly creates a spiral of positive change. As a result, this factor is critical in determining how the standard of living improves in specific cities.

Household crowding plays an important role in city development and how it influences policy making and project realization in a given urban area. It is confirmed that due to overcrowding, there is a negative impact on quality of life, which includes the increase of physical contact, poor hygiene practices, lack of privacy and lack of sleep (Gray, 2001). The United Nations identifies overcrowding as one of the five deprivations that characterize informal settlements, or in other words, slums. Additionally, it should be noted that overcrowding is often connected to social deprivation and poverty (Gray, 2001). The post-war cities in Central Europe, such as Berlin and Warsaw, with destroyed infrastructure and housing, suffered significantly from changes in this factor in the first few years after the war (Diefendorf, 1989). Therefore, focusing on this factor in the research helps to understand the transition that both cities made in the decades following the war. Additionally, it helps answer the research question that was asked at the beginning.

Assessing the values of cultural and historical heritage is very important (de la Torre, 2002). Not only does it create a frame on how we look at the city as an individual, but it also helps to create a much needed image for the city on the international stage. A paper written by de la Torre (2002) also points out problems with assessing the value of a given heritage. Factors such as "social, cultural, economic, geographical, administrative" (2002) should be taken into consideration while accessing and remembering the context of where the heritage is located. Moreover, they are also influenced by different stakeholders that are currently in charge of the given project, which makes the process more complex. Therefore, it is very hard to fully or sufficiently assess the value of a given structure/heritage with only a single discipline or method. That is why the combination of methods from a variety of disciplines should be considered while assessing the values of a given heritage site (de la Torre, 2002). Thus, to properly assess the cultural and historical value of heritage, data is collected through the questionnaires. However, it should be remembered that cultural and historical values change over time, and some historical structures can be less valuable in one decade and more valuable in another (de la Torre, 2002). A good representation of such a case could be seen in parts of the Old City in Warsaw (Popiołek, 2012). The reconstruction of the Old City area was completed in 1953 as one of the symbols of Warsaw, but at the same time, works on the Royal Castle (that is also located there) didn't start until 1971 and only finished in 1984 (PAP, 2017). One of the reasons for such a delay were people in power that didn't want to reconstruct a heritage site, which was considered as one of the symbols of the Polish Kingdom and royalty (PAP, 2017) which didn't have a place in communistic Poland. Nevertheless, today, Royal Castle is one of the most representative structures in Warsaw and a popular destination among tourists.

3.7 Limitations

The information used in this report was collected from several sources to allow the researcher to have a comprehensive view on the topic. Looking at the problems connected to reconstruction from several points of view. This allows the researcher to more deeply analyze the problems that the city administration and urban planners faced at the time of planning and what the consequences of their decisions are in the present day. Nevertheless, the secondary data may be incomplete, which may create a skewed frame of the study. For example, there was more information and data about one case study in a given city compared to the other selected case studies from different cities. This can disrupt the study and research process. Therefore, the secondary data is collected from multiple sources to mitigate this problem as much as possible. Moreover, the secondary data will be selected and chosen beforehand to balance out the case studies and to create a complete picture of the given area and case study.

Selected factors that are going to be checked for both cities may seem to be limited in portraying the reconstruction of a city. However, they are one of the most important indicators to assess how successfully cities have recovered from catastrophic events such as natural disasters or, in the case of this research, armed conflict. More factors could not be studied due to time limitation, and partial lack of sufficient information for selected case studies. Additionally, focusing only on selected factors gives the opportunity to study them more in depth, which benefits this research. Similar situations can be said with questionnaires which are posted on social media (such as Facebook and Reddit). The questionnaire is completely voluntary and anonymous, which means that the number of answers and data collected in this way may not represent the actual situation of the present day. There may be, for example, more answered questionnaires that relate to Berlin and not Warsaw (or the other way around), which creates an imbalance and a wrong representation of the world. However, to challenge this limitation, some actions are implemented to minimize the variability of the research.

It shouldn't be forgotten that geographical distance also plays a role in limiting the data collection phase of this research. The main reasons behind this limitation are Covid-19 regulations (that are/were still in place during the time of this study) and limited time to arrange on-site research. Another limitation could be that the researcher comes from Warsaw. Such a situation can raise questions if the researcher has biases regarding one of the cities selected for this study. The solution to this dilemma is that the majority of this study will be based on questionnaires and secondary data. This helps to stay objective on the topic without taking any stance to assess the success of reconstruction.

4.0 Results
4.1 Research Data
4.1.1. Case Studies in Warsaw

Before the war Warsaw was one of the most overcrowded cities in Europe at the time (Warsaw Data, 2018). One of the reasons why this was the case is that Warsaw was considered a fortress in the times of the Russian Empire and it had to develop within many forts and fortresses that surrounded the city (Piątek, 2020). With limited space, the buildings had to be built side by side without consideration for leisure areas such as parks (Figure 10.) or access to hygiene. Nevertheless, the situation rapidly changed after the Great War and later the Second World War. At first, there was a lack of housing as a result of the purposeful destruction of the city during the armed conflict, secondly, there was a large demand for housing due to the growing population caused by migration returning to the city, as seen in Figure 4. (Dziewulski & Jankowski, 1957). However, the situation is slowly changing with new apartments being built according to new designs. It should be noted here that the reconstruction of Warsaw was not a faithful reconstruction of the pre-war buildings and urban fabric, but rather a "creative reconstruction" in some parts of the city, as Professor Andrzej Tomaszewski put it (Popiołek, 2012).

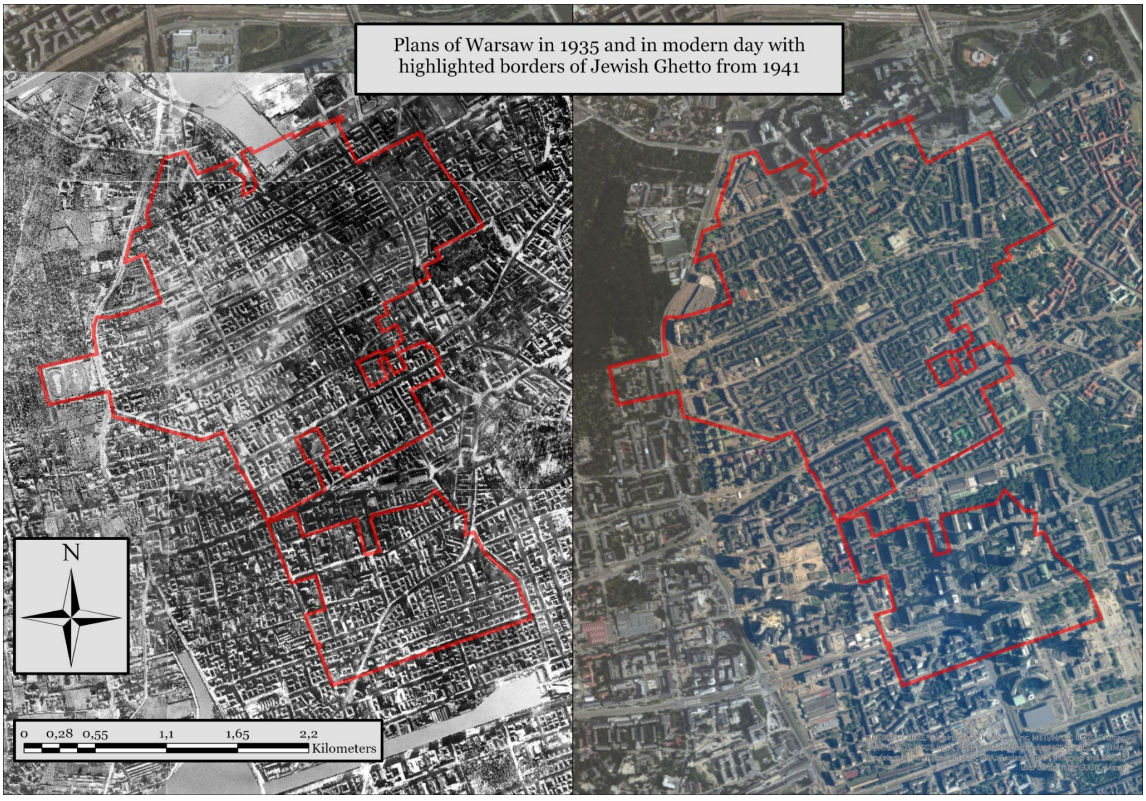


Figure 10. From Left to Right, map of Warsaw from 1935 and map of modern day Warsaw with highlighted borders of the Ghetto from 1941. Source: author

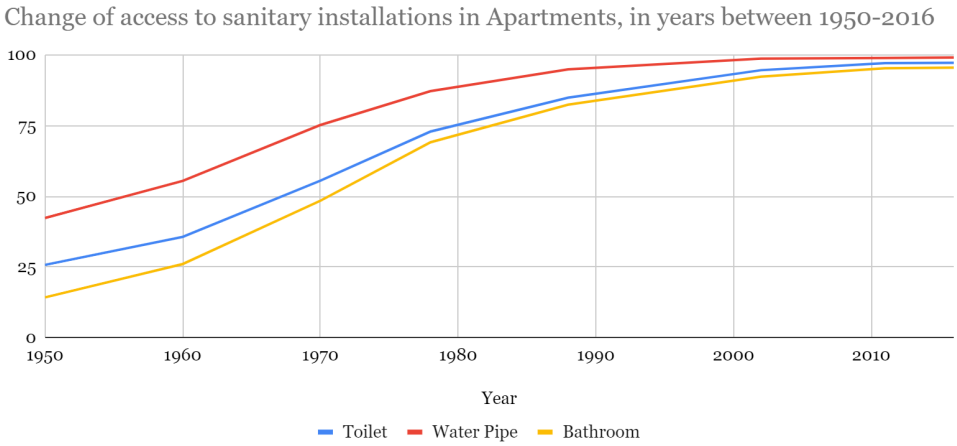


Figure 11. Apartments equipped with sanitary installations, change between 1950-2016, represented in percentages of total dwellings. Source: History of Poland in Numbers, Poland 1918–2018

All the newly built apartments and redeveloped flats were built according to new standards. This meant that buildings had to follow the set of rules to meet all the requirements based on the IV Congress in Hague (1955). This obligated the construction firms to include the sanitary installations as well as providing more and better quality apartments and other living units. Due to those requirements, the percentage of apartments equipped with toilets steadily increased from 25,7% in 1950 to 72,9% in 1978 and 97,2% in 2016 (Kubiczek, 2018), as seen in Figure 11. This improvement in sanitation could be observed in multiple locations, such as the Old City (Stare Miasto) or Muranów Neighborhood (Chomątowska, 2016). A similar situation occurred with access to water pipes: in 1950, only 42.3% were connected to water pipes; in 1978, it increased to 87.2%; and in 2016, it was 99.1% (Kubiczek, 2018). The steady progress of improvement could be seen throughout Warsaw's urban network. The success could be attributed to the consistent construction of new apartments that were an improvement compared to the pre-war buildings in terms of access to hygiene and other sanitary installations for the wider population.

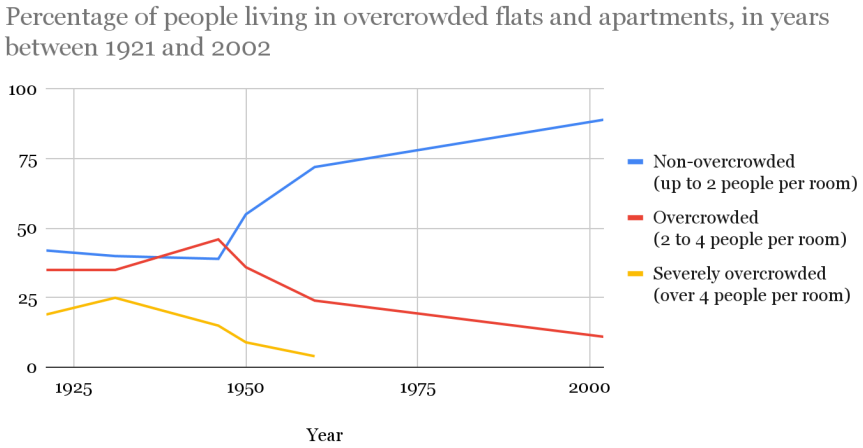


Figure 12. Percentage of people living in flats and apartments, scale and categories set by Warsaw Museum Source: Warsaw Data (2018)

As illustrated in Figure 12, overcrowding is gradually decreasing throughout the city in the coming years (Warsaw Data, 2018). Severely overcrowded apartments that accommodate more than 4 people per room decreased from 15% in 1946 to 9% in 1950, followed by 4% in 1960, to 0% in early 2000. A similar situation applies to overcrowded flats and apartments (Warsaw Data, 2018). The number systematically decreased between 1921 and 2002 by 24%. The exception to this trend is the year 1946, just after the Second World War, when the majority of the city lay in ruins. Only less than 25% of the buildings were undamaged or slightly damaged (Mika. 207, 2017). At the same time, the number of non-overcrowded apartments increased with each decade. These statistics are also the result of the loosening up of the urban fabric (Figure 10.). With larger numbers of modern and prefabricated apartments (Uchowicz, 2014), the overcrowding in areas such as Muranów is slowly declining.

Therefore, plans, policies and investments introduced by BOS (Biuro Odbudowy Stolicy) (Domaradzki, 2016) during the reconstruction of Warsaw culminated in the reduction of overcrowding in the city, which led to an improvement in quality of life for the local residents and improved their physical and mental health (WHO, 2018). Moreover, planners of the Muranów neighborhood followed the theories of the Neighborhood Unit Concept and the City of Tomorrow. The neighborhood has clear boundaries (Figure 7. & Figure 10.) which helps to segregate internal traffic from traffic from outside of the selected area. This helps to reduce noise and air pollution and also makes space to provide easy access to amenities and services in the area (Chomątowska, 2016), which creates a sense of the community (Perry, 1929).

When it comes to urban fabric, all areas that used to be part of the Jewish Ghetto in Warsaw became less congested and densely built (Figure 10.); The reconstructed areas integrated modernist ideas such as wide streets for easier commuting for vehicle users and pedestrians (Le Corbusier, 1933). The main reason for that was the Ghetto Uprising that happened in 1943 (Chomątowska, 2016), and the distraction of the area by occupiers that followed this event. This gave BOS a great opportunity to build a completely new neighborhood from scratch after the war. This allowed them to include more green spaces so that the local residents would have better accessibility. Furthermore, it can be clearly observed that planners and architects from BOS widened the roads (Figure 10.) and introduced standardized and prefabricated housing styles (Uchowicz, 2014) to accommodate the growing population of Warsaw. The urban area was slowly becoming a model city in Communist Poland (Dziewulski & Jankowski, 1957).

4.1.2. Case Studies in Berlin

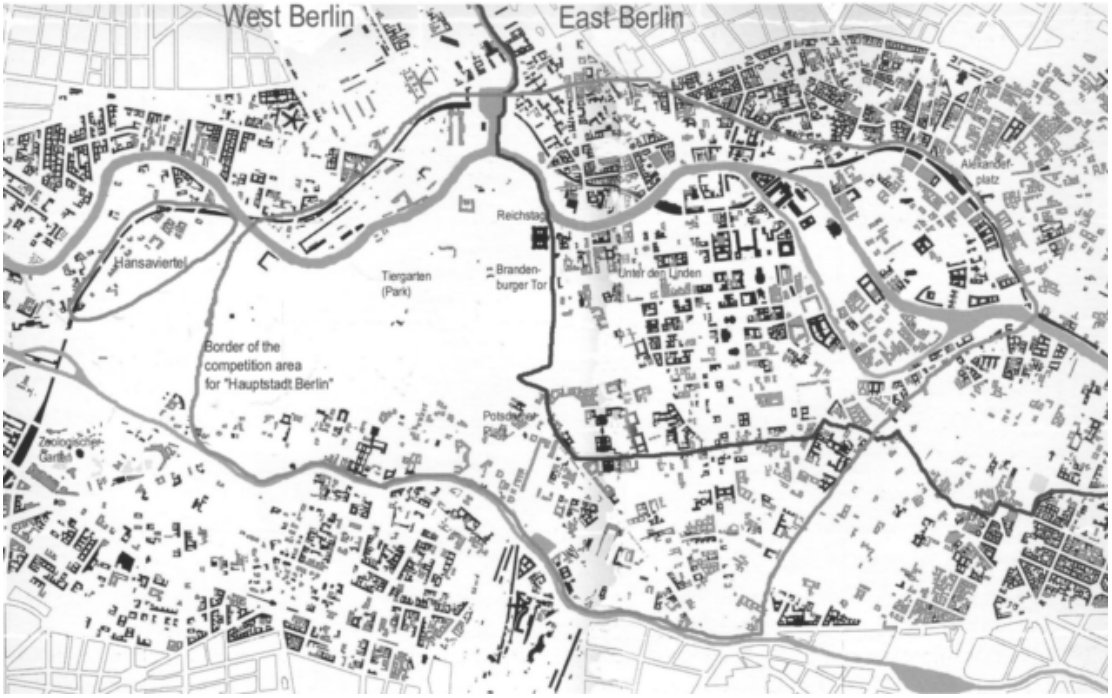


Figure 13. Berlin Downtown. Black areas indicates pre war buildings that have been preserved. Gray areas indicate structures that survived WW2 but were demolished between 1953 and 1989. Source: Urban (2004)

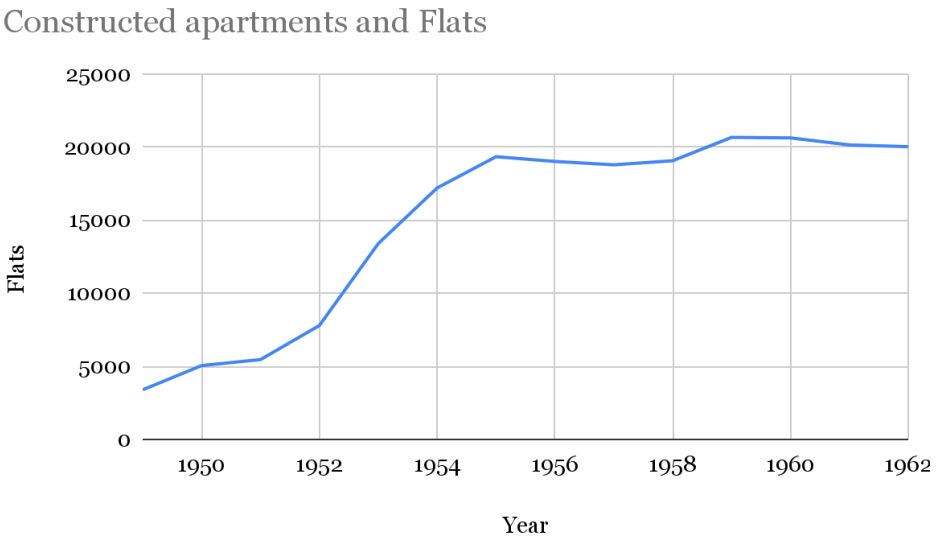
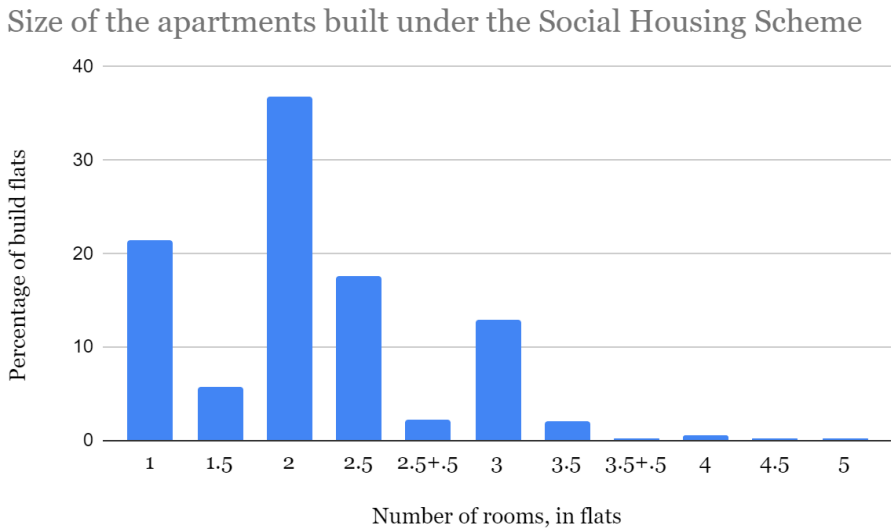


Figure 14. Completed apartments built under the publicly subsidized Social Housing Scheme Source: Schwedler (1962). The reconstruction of Berlin from 1949 to 1963

With large parts of the city destroyed (Figure 13.), Berlin faced a major demand and supply problem connected to housing as a result of irregular population change (Just, 1981). Moreover, after the war, there were structures and other buildings that survived the armed conflict but were torn down in the post-war era to make space for newer investments in housing or other

infrastructure (Urban, 2004). A similar situation could be observed in Warsaw, where some buildings were also destroyed in the post-war era to make space for new investments, such as the Palace of Culture and Science in the city center (Figure 10.). In West Berlin, where the Hansaviertel is located, the Social Housing Scheme was implemented to rebuild the city from the ruins according to a resolution created by the International Union of Architects at the IV Congress in Hague (1955). When the program started, 3394 apartments were built in 1949; five years later, 17206; in 1959, more than 20666 newly constructed apartments were on the market; and 20031 in 1962, Schwedler (1962) (Figure 14.). This shows how rapidly the reconstruction was proceeding in West Berlin. It should be kept in mind that each of the new flats had access to a toilet and water system as this was required by law (Kubiak, 2005). Therefore, the accessibility to hygiene also increased simultaneously as the apartments were built under the publicly subsidized Social Housing Scheme.



**It should be remembered that under Berlin Social Housing Scheme the kitchen is not counted as a room*
Figure 15. Size of the apartments built under the Social Housing Scheme
Source: Schwedler (1962). The reconstruction of Berlin from 1949 to 1963

Schwedler (1962) divided apartments into fractional and whole-room apartments. This is why there is a specific distribution and division of the size of rooms that have been constructed in the Social Housing Scheme. Moreover, those "fraction rooms" are compliant with recommendations set by the IV Congress in Hague (Kubiak, 2005). In Figure 15., we can observe numbers such as "2.5". "2.5+.5". This translates to a 2 room apartment with one "½ room" and a 2 room apartment with two "½ room". At the same time, "3.5+.5" means that there is a 3-room apartment with two "½ rooms". Overall, the majority of the constructed apartments in the Housing Scheme consisted of 2 room flats (36.8%). Concurrently, 21.5% of the flats had one room, and 17.6% of the apartments consisted of 2 rooms with one "½ room". The least popular sizes of flats which were constructed are apartments with 4 and 5 rooms, at 0.5% and 0.2%, respectively. One of the main reasons for such a distribution of the sizes of the apartments was the use of new building methods on a large scale that were popular at the time. Prefabrication and standardization of housing was one of the reasons why it happened, which promoted smaller dwellings compared to bigger and more expensive ones. Authors such as Dziewulski &

Jankowski (1957) or Le Corbusier (1929) also mention these methods as one of the solutions to improve the standards of living of local residents in cities affected by air, noise pollution, as well as the side effects of armed conflicts. This is a relatively quick solution that can help authorities reduce overcrowding and increase access to hygienic facilities.

Figure 16. The final urban composition of the Hansaviertel - plan of the INTERBAU exhibition, 1957 ("Die Innenarchitektur" No. 2, August 1957) Source: Kubiak S.P. (2005).

The area where Hansaviertel is currently located was completely destroyed by the war (Figure 19.). However, due to the 1957 International Building Exhibition (Interbau), several residential buildings were constructed that could hold up to 5000 people each, and they were provided with the necessary infrastructure to accommodate local residents. As Schwedler (1962) stated, most of the apartments were finished with the help of subsidy programs for social housing and had to follow the latest housing requirements to improve living conditions. At the time, the newly constructed Hansaviertel was seen as a Western alternative to Karl-Marx-Allee (at the time called Stalinallee). One of the main differences between those two areas was that the GDR was planning mass housing construction, which was influenced by Soviet Union monumental architecture, which is characterized by a long straight boulevard with commercial and residential buildings on the sides (Zubovich, 2021). Hansaviertel from top view can be seen as a loosely built-up urban area in post-war modernism (Figure 9). This is the result of dozens of architects from more than ten countries, including distinguished people such as Walter Gropius, Egon Eiermann, Oscar Niemeyer and Alvar Aalto (Kubiak, 2005), who worked on this project. They took part in designing low and high-rise buildings that are placed between numerous green spaces such as Tiergarten park and the river Spree (Kubiak, 2005). This loosely built-up urban area corresponds to theories and concepts proposed by Le Corbusier with the "City of Tomorrow" (1929) as well as his Plan Voisin (Figure 5.) that he proposed for Paris and Perry's "The Neighborhood Unit Concept" (1929). Where the selected area is isolated from external factors such as traffic and surrounded by green areas where the local residents could spend their leisure time.

As it can be observed the final Hansaviertel plan (Figure 16.) corresponds with the current distribution of the area (Figure 8.).

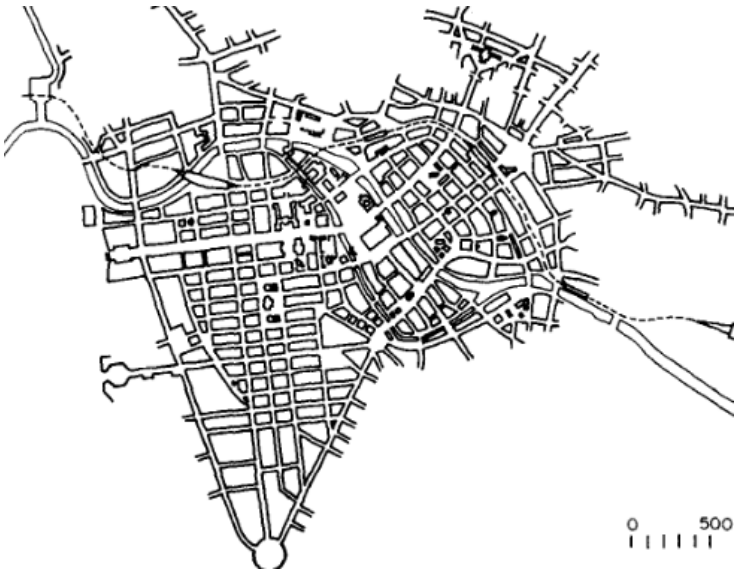


Figure 17. Plan of the city center before the War. Source: (Flierl, 1985)

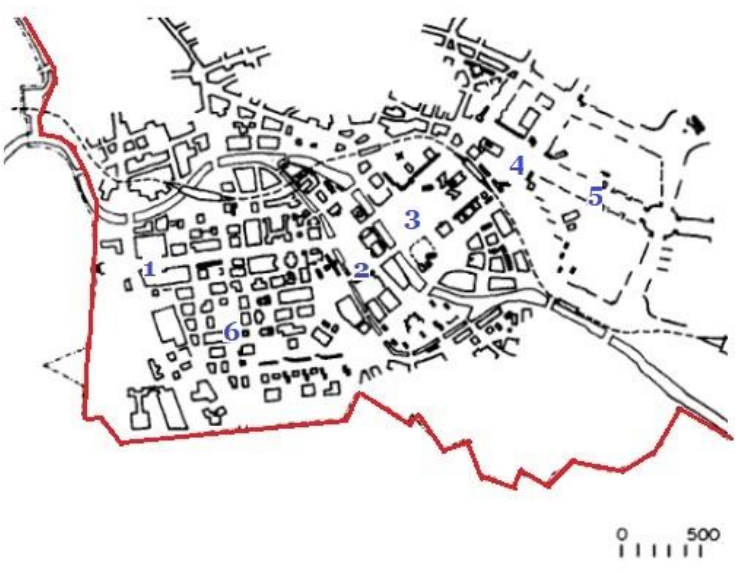


Figure 18. Plan of the city center in 1985, **1.** Straße Unter der Linden **2**. Marx-Engels Platz **3**. Berliner Fernsehturm **4**. Alexanderplatz **5**. Karl-Marx-Allee **6**. Friedrichstraße, Red line- Berlin Wall. Source: (Flierl, 1985)

The situation in the east was slightly different from the situation that took place in West Berlin. In the German Democratic Republic (GDR), the housing construction program between 1956 to 1970 was managed and influenced by the state (Baléo, 2019). Karl-Marx-Allee was one of the most representative avenues in East Berlin (Flierl, 1985) supposed to represent its nation to the outside world. That is why all the needed amenities and new technologies such as standardized and prefabricated housing were introduced in the area, similarly to how it took place in Warsaw (Dziewulski & Jankowski, 1957 & Uchowicz, 2014). It could be said that it was constructed with the highest standards of the time (Baléo, 2019) that East Germany could afford. Furthermore, due to the important role that the avenue played in creating the image of East Berlin, the state-run housing market was selectively favoring specific groups of people (Baléo, 2019). Young families with children were receiving preferential treatment (Baléo, 2019) and were helped in receiving much needed apartments. Therefore, there was a larger than average concentration of those specific groups in the inner-city. Meanwhile, older citizens, single people, and political outsiders received less favorable treatment (Baléo, 2019). This policy helped to create a positive image of the local community at the time.

When it comes to the physical structure of the area of Karl-Marx-Allee, the damage caused by the war gave a great opportunity to redevelop urban fabric and introduce new ideas and concepts proposed, for example, by Le Corbusier. The modernization of squares (e.g., Alexanderplatz) and redevelopment of streets helped to change the image of the city (Figure 17. and 18.). The case of Museum Island is a little bit different from other areas of interest in Berlin due to the fact that the area wasn't that affected by the armed conflict and was spared to a large

extent from destruction (Figure 13.). Additionally, the area wasn't used as a living quarters but as a cultural and historic center of the city (Center, U.W.H.). Therefore, the island was left alone for the most part and only recovered by the city authorities. This helped to keep the traditional and historic look of this part of the city. Which is opposite of what happened to the Old City in Warsaw, where the whole area was negatively affected by the armed conflict (TVP, 2021) and practically everything had to be reconstructed.

All of the changes implemented in postwar Berlin are now fully integrated into the urban fabric, and from a distance, they appear to have always been there; however, this is not the case. This demonstrates that city planners took their time and considered how to incorporate modernist planning methods into the city's already existing structure.

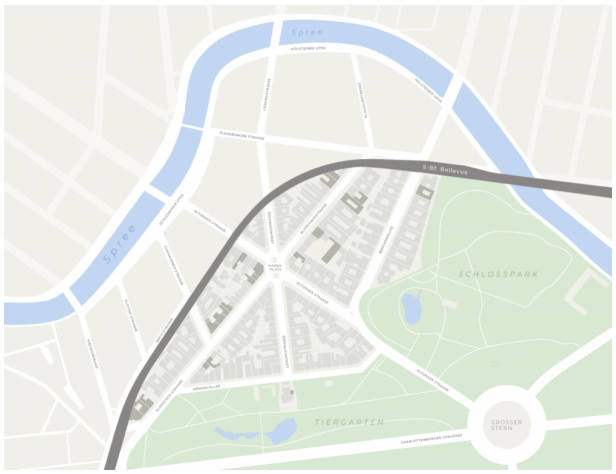
Hansaviertel before 1943 bombing	Hansaviertel after 1943 bombing
	

Figure 19. The southern Hansaviertel before and after November 1943 bombing Source: hansaviertel.berlin (2022)

4.2 Questionnaire Data

To properly conduct this research and assess the degree of success of reconstruction and redevelopment in terms of cultural/historical value, the questionnaires (appendix) were made and uploaded through social media (e.g., reddit and Facebook), to gain qualitative and quantitative information about the topic which makes it a convenience sampling. In total, 81 respondents answered the questionnaire and provided much needed information about their opinion on areas of interest both in Warsaw and Berlin on a scale between 1 and 10. Two versions of the questionnaire were made that asked the same questions but referred to different case studies. The Polish & English version (appendix) asked about the Old City (Stare Miasto), Muranów Neighborhood and Jerusalem Avenue. At the same time, the German & English version (appendix) asks about: Museum Island, Hansaviertel and Karl Marx Allee.

4.2.1. Case Studies in Warsaw

There were 53 responses for the Polish, English version of the questionnaire. The age of respondents varies between 16 to 53, but the majority were in their early and mid twenties. This factor is important to note due to the fact that interviewees are much younger than the reconstructed areas of interest. Therefore, the interviewees do not have first-hand experience of what the areas looked like pre-war, they only experienced the transition of the city decades after the war.

61.5% of interviewees come from Warsaw itself, 25% from other parts of Poland, and the rest of the respondents come from outside of Poland. This creates a very hegemonic research group that has experienced first-hand living in Warsaw. Their opinion on the Old City in cultural/historical terms was very positive; up to 81.1% of respondents rated the area "Positively" and they "think it's a very important part of the city" that creates a good image of the city (8 and above on the scale of 10). At the same time, there were no negative views or statements about the Old City. However, when it comes to the amount of time that people spend there per month, it is quite limited. A large portion of respondents (50.9%) said that they "Rarely, almost never visit the area" (1 to 3 on the scale of 10). Only 7.6% of people said that they visit the Old City multiple times per month. At the same time, 92.5% of people go there for leisure activities (seeing friends, museums, or other cultural activities). 18.9% of respondents said that they were using the area for transit and commuting to other parts of the city. According to the respondents, the reconstruction of the area was completed successfully, and it adds value to the city by being a popular destination not only for tourists that visit the city but also for the Varsovians themselves. They see the Old City as one of the most representative areas in Warsaw and is further promoted by being a UNESCO world heritage site (Center, U.W.H. b).

The Muranów neighborhood has a less positive opinion in terms of culture and history compared to the Old City. The opinions are more balanced here, with 18.9% of respondents rating the area as a 5, and another 13.2% rating it as an 8 out of 10. Similarly to the Old City, asked people, rarely spend time in Muranów, 32.1% of people pointed out that they "almost never visit the area" in a month's time. Nevertheless, there is a significant group of people (28.2%) that are spending time there (8 and above on the scale of 10). The main reason people visit this neighborhood is because it has important transportation nodes (69.8%) (nodes such as metro, bus, and tram stops are located in the area) and important city arteries crossing "Solidarności" avenue and Gen. Władysława Andersa Street. The second, important, reason why people are visiting the area is due to the leisure time they spend there. 49.1% of people pointed to this factor. One of the reasons why this is the case is due to the well developed amenities, services, and easy access to green areas in the neighborhood, which make the area attractive for local residents. However, it is not as popular as the Old City. The main reason behind it is that the area is not that well promoted and representative of Warsaw. At the same time, 9.4% of respondents work in the area, this large percentage could be connected with the fact that many services and other companies are located in the area.

The last area that was researched in Warsaw was Jerusalem Avenue. The distribution of how local residents view the area in cultural/historical terms is more balanced compared to the two previous areas of interest. The highest part, 24.5% of respondents rated the area as a 6, followed

by 17% rating it as a 5. Scores such as 3, 4 and 7 out of 10 received 11.3%, respectively. The amount of time that interviewees spend there is also more balanced compared to the two previous case studies. Where 32% of interviewees spend their equitable amount of time (between 4 and 6 out of 10 on the scale), at the same time, 28.3% of respondents stated that they are there "multiple times per month" (10 out of 10 on the scale). Similarly to the Muranów neighborhood, the main activity that people do there is transit, 94.3% of respondents pointed to this option. The second most popular choice was leisure activities, which got 43.4% and activities related to work got 22.6%, of the answers. Those results make Jerusalem Avenue unique compared to two other areas of interest. Where a large percentage of people spend significant time here but they value the area in a more balanced manner. Such a number may be influenced by the fact that Jerusalem Avenue is one of the most important and biggest streets in Warsaw where a lot of institutions and businesses are located.

4.2.2. Case Studies in Berlin

In total, 28 people responded to the German, English version of the questionnaire, asking about Museum Island, Hansaviertel and Karl Marx Allee. The age group is very similar to the group that answered the questionnaire asking about Warsaw. The age varied between 18 and 47, with a large representation of young and mid twenty-year-olds. Therefore, respondents' age is very similar to interviewees that answer questionnaires about Warsaw. Interviewees come mostly from Germany and Berlin itself, but there are also some international cases where respondents are coming from outside of Germany. Museum Island in cultural/historical terms received very positive responses. 32.1% of interviewees rated it as 10 out of 10 as a "very important part of the city". 9 and 8 out of 10 were also popular answers, and they received 39.3% and 10.7%, respectively. When it comes to time spent there, the vast majority of respondents stated "Rarely, almost never visit the area" (42.9%) (1 on the scale of 10). Only 3.6% of respondents declared that they are "there multiple times per month" (10 on a scale of 10). This may be caused by the fact that the area consists only of museums or other cultural institutions, and there are no residential (which is not the case in the Old City) or other services in the area. It's mostly seen as a touristic area, similar to the Old City in Warsaw. The most popular activities in the area, according to collected data, are leisure activities (82.1%), Transit, Commuting (46.4%) and education (42.9%).

When it comes to Hansaviertel, people view the area in a more neutral way compared to Museum Island. Respondents don't have a positive or negative opinion about this area. 46.4% rated it as 5 out of 10, which was the most popular answer. The other choices are equally distributed among the rest of the scale. However, when it comes to the amount of time respondents spend in Hansaviertel per month, 71.4% stated that they almost never visit. The second most popular answer was 2 out of 10 on the scale. As a result of the responses, the neighborhood is not particularly popular or visited by Berlin residents. The most popular activities that are done in the Hansaviertel are transit and commuting (57.1%), leisure activities (21.4%), and education (7.1%). The high percentage of answers that pointed to leisure activities could be explained by the fact that Hansaviertel is very close to the Tiergarten park and the river Spree. At the same time, transit and commuting are popular due to the good connection to other parts of the city and the central location of Hansaviertel in Berlin (Berlin Wall Map, 2019).

Karl Marx Avenue, which is a very important part of the East Berlin urban fabric, received mixed opinions from interviewees. 7.1% of respondents said that the avenue doesn't add any value to the city (1 on a scale of 10). At the same time, the same percentage said that it's a very important part of the city in cultural/historical terms (7.1%) (10 on the scale of 10). Nevertheless, the biggest group was slightly positive (6 out of 10) about the area, and they represented 25% of respondents. Karl Marx Avenue, similarly to Hansaviertel, isn't a very popular destination to spend time there. A large part of the population (57.1%) stated that they "Rarely, almost never visit the area" (1 and 2 on the scale of 10). Only 7.1% check the option that they are "there multiple times per month" which can be seen as a surprising number, considering the fact that 78.6% of people are using the area for transit and commuting purposes. The second most popular option are activities connected to leisure (32.1%). As discussed before Avenue contains restaurants, cafés, shops, as well as a cinema, for local residents (Flierl, 1985)

As it can be observed, each case study from both countries has a unique opinion among the respondents. The areas that are the most positively viewed and receive the highest ratings are the Old City in Warsaw and Museum Island in Berlin. Nevertheless, people don't spend that much time there, they mostly use the area for leisure activities like going to the museums or commuting to different parts of the city. Both groups see the selected locations as representative areas of the respective capitals due to the fact that they perceive that they have the most value in historic and cultural terms (de la Torre, 2002). When it comes to the neighborhoods of Muranów and Hansaviertel, the opinions of respondents are mixed and more balanced compared to the historical centers of the chosen cities. In general, people have neutral or neutral negative stances on the areas, although Muranów scored higher compared to Hansaviertel in cultural/historical terms. Another difference between the areas is that Hansaviertel is a loosely built-up building surrounded by green spaces (Figure 16.), while Muranów was more planned to fit what was left of the fabric of the city (Figure 10.) and was also influenced by Soviet monumental architecture. Both areas are not that well visited by the interviewees, and they don't spend that much time there. They mostly use the area for commuting and recreation due to its proximity to green areas, cultural attractions (e.g., Cinema Muranów) and both areas are examples of post-war modernism that have been differently interpreted. Jerusalem Avenue in Warsaw and Karl Marx Avenue in Berlin are both important streets for the respective capitals. This opinion is also representative of the answers that the interviewees provided, where the respondents had a positive image of both avenues. However, Karl Marx Avenue, with its uniformal monumental architecture, received on average a slightly more positive response compared to Jerusalem Avenue in Warsaw. When it comes to how much time respondents spend in a given area per month, Jerusalem Avenue takes the upper hand. One of the explanations for this answer could be the fact that the Avenue in Warsaw is much longer than Karl Marx Avenue (10.82 versus 2 kilometers long) and more offices, apartments, and cultural structures are located there. This is also reflected in the types of activities respondents do there. On Jerusalem Avenue, people mostly commute, work, have free time or do administrative activities, while on Karl Marx Avenue, people usually commute and do leisure activities.

5.0 Discussion

After gathering and analyzing data from various sources and applying various theories. It is possible to answer and discuss research questions that have been asked at the beginning of this study. When it comes to the main research question: "*To what extent was the redevelopment and reconstruction of Warsaw and Berlin successful in terms of improving living standards in the post-war era?*"
It could be said that the reconstruction and redevelopment of both Warsaw and Berlin improved living standards for local residents in terms of access to hygiene, reducing the number of inhabitants per room and keeping significant cultural/historical value of areas of interest. Access to hygiene was improved as a result of new regulations influenced by the IV Congress in Hague (1955) regarding requirements for modern residential construction based on the XXV point of the Universal Declaration of Human Rights. This regulation provided universal standards which promoted bigger apartments and wide access to bathrooms with connection to water pipes. This had a significant impact on how the people functioned in both cities. Furthermore, the overcrowding of living spaces was systematically decreasing in the post-war decades in both cities (Schwedler, 1962 & Warsaw Data, 2018). With the construction of living neighborhoods such as Muranów or Hansaviertel, it provided much needed apartments for the growing populations of both cities. The cultural value was kept only for selected locations such as the Old City or Museum Island, where the respondents of questionnaires highly valued the area. For example, areas that were completely transformed after the war, later gained their own value were, for example, Muranów neighborhood or partly Karl Marx Avenue; both locations followed the concepts and theories proposed by Perry (1929) in "The Neighborhood Unit Concept" and theories published by Le Corbusier in "City of Tomorrow" (1929) to create a new image of the city which fixes problems of the past connected to access to hygiene and overcrowding. However, it should be remembered that the reconstruction of Warsaw was not a faithful reconstruction of pre-war buildings but a "creative reconstruction" (Popiołek, 2012). A similar situation can be seen in Berlin's reconstruction, as not everything was reconstructed as it was before the military conflict..

Another question that was asked at the beginning of this research, which is very important to answer on how successful was reconstruction of capitals is: "*Are solutions for solving housing and infrastructure problems created in the past still adequate in the present day?*"
In some areas, such as the Muranów or Hansaviertel neighborhoods, the urban fabric was completely transformed. From densely constructed buildings, it was transformed into more spacious new neighborhoods (Figures 10. and 20.). This allowed authorities not only to fix challenges that the cities faced pre-war, but also it allowed cities to implement more proactive solutions that would mitigate future problems such as air or noise pollution, increase access to sanitary installations (Figure 11.), increase accessibility to much needed amenities, and reduce overcrowding (Figure 12.). It was a long process that took decades to be completed. However, due to the consistent work of multiple organizations, institutions, and individuals, it was achieved. Today, the areas of interest both in Berlin and Warsaw are fully integrated into the current urban fabric of selected cities. This is a clear example of a theory connected to path dependency where past decisions influence present day dilemmas and choices and in this case previous urban fabric influencing the new (reconstructed) one. Moreover, the improvement of

already existing building methods (at the time) and the introduction of new building methods and regulations were used throughout the reconstruction of Berlin and Warsaw. This allowed authorities to provide quality housing to the growing populations of both capitals. Additionally, The housing and infrastructure projects that were constructed after the war in selected capitals are still in use to this day. Which means that they are still adequate in the present day. Therefore hypotheses to this question can be accepted.

Solutions such as standardized and prefabricated housing are still adequate in the present day and help cities provide much needed amenities to their citizens. Furthermore, access to parks was also improved with the integration of green spaces into the urban fabric. This helped to create a new image of the city not only in Warsaw but also in Berlin, where areas of interest became model examples of Modernist architecture that followed theories both of Le Corbusier (1929) and Clarence Perry's Neighborhood Unit Concept. The hypothesis is reinforced with data collected from questionnaires where people indicate wide use of selected case studies for things such as transit, work, education, other leisure activities and how many times they visit the area.

To check how the local and national authorities influenced the reconstruction of the selected capital the secondary research question was asked: "*To what extent did ideology and top-down approach influenced the process of reconstruction, in the case of the Muranów and Hansaviertel neighborhoods?*"
Due to authoritarian governments in power, the idea of a top-down approach having a large influence in the reconstruction and redevelopment of Muranów and Hansaviertel neighborhoods can be misleading. This is not the case, and the government's approach varied depending on the case study. The Muranów neighborhood, which was considered as one of the flagship projects during the reconstruction of Warsaw, had influence from governmental institutions. The BOS (Capital Reconstruction Office), which was established by the National Council (precursor of the communist party in Poland), employed architects, monument conservators, sculptors, landscape architects, art historians and town planners that had leading roles in planning, designing, and implementing the housing and infrastructure projects (Piątek, 2020). Therefore, the top-down approach was prominent in this case study. The case of the Hansaviertel neighborhood is different. It was part of the Berlin International Building Exhibition of 1957 (Interbau), where architects from several countries contributed with their designs and projects to fully reconstruct and redevelop the selected area. At the same time, the construction of apartments was subsidized by programs such as the Social Housing Scheme (Schwedler, 1962) but had to follow the latest housing requirements. Last but not least, the Hansaviertel is located in Western Berlin, where the city authorities are more democratic. Therefore, the governmental top-down approach wasn't that prominent, but it still influenced how apartments looked like in the Hansaviertel neighborhood as a part of the Berlin International Building Exhibition. Therefore, the hypothesis for this question could be partly accepted and rejected depending on the case study.

6.0 Conclusion

Complete reconstruction of cities creates a once-in-a lifetime opportunity for architects and urban planners to solve the problems that the given urban settlement has faced in the past years. Therefore, they should take a proactive approach and also prepare cities for challenges that will arise in the coming decades and to mitigate their effects.

Based on observations regarding selected case studies from both European capitals, there are a few similarities between Berlin and Warsaw when it comes to reconstruction and redevelopment. Reconstruction of both cities was successful on many levels, such as improving quality of life by providing better and easier access to sanitary installations and reducing overcrowding. A main reason for this is that both cities were destroyed to a large extent which resulted in a lack of basic goods, amenities and services. Therefore, any well planned reconstruction and redevelopment automatically results in an improvement in the standard of living for the local residents.

Residential neighborhoods such as Hansaviertel in Berlin or Muranów in Warsaw were completely changed after the war. Not only has the urban fabric transformed to be less dense and follow the ideas of the Neighborhood Unit Concept (Perry, 1929) and City of Tomorrow (Le Corbusier, 1933), But also, selected areas provide much-needed amenities and services to local residents while also becoming fully integrated parts of the city with vital transportation links. This claim is supported by data gathered from questionnaires where the majority of interviewees use the area as a transit and commuting node. When it comes to Museum Island and the Old City, both areas are considered the heart of the city and one of the most representative areas of their capitals. Moreover, both areas of interest were severely affected by the war. Museum Island did not sustain the same level of damage and destruction as Warsaw's Old City. However, it still required extensive renovation before it could be widely used by the general public. Currently, both areas are most positively rated and valued by respondents in their respective capitals. This shows that both reconstruction and redevelopment were successful, and it positively impacted the Cultural/historical value of the area. This opinion is further supported by the fact that both areas of interest are categorized as UNESCO world heritage sites (Center, U.W.H.), which further promotes the areas on the international stage. Karl Marx Avenue and Jerusalem Avenue both play important roles in their cities. When reconstructing, both avenues were made as representative streets, which would promote both capitals. Additionally, due to the destruction caused by the war, it gave urban planners the opportunity to widen some parts of both streets and implement up-to-date technologies and regulations connected to housing and transportation to improve the standard of living for local residents. Furthermore, during the reconstruction of the areas, the authorities of both countries moved many institutions (in the case of Warsaw, the National Museum, the Headquarters of the communist party and many more) to highlight the importance of the area. This importance is further proved by answers collected from questionnaires. Respondents highly value both areas in cultural/ historical terms, but not as highly as Museum Island or the Old City. Both avenues are used as a commuting, transit node, and for leisure activities due to the many cultural institutions located there.

Nevertheless, there are also many differences between the reconstruction and redevelopment of Warsaw and Berlin that influence the current functions and urban fabric of the selected capital's. One of the most important factors that influenced the differences in reconstruction was the scale of destruction caused by armed conflict. Warsaw suffered much more (Mika, 2017) compared to Berlin (Bocquet, 2019), which not only lost whole segments of buildings but it lost whole districts that have to be rebuilt or redeveloped. For example, in areas where the Jewish ghetto was located (Figure 10.), only ruins were left after the war. This gave Warsaw reconstruction authorities (BOS) 'carte blanche' to plan and design a new city from scratch and implement the newest concepts, ideas, technologies, and theories regarding urban planning, such as the Neighborhood Unit Concept and City of Tomorrow. Berlin, on the other hand, was also heavily destroyed but not to the same extent as Warsaw. In Warsaw, 75% of buildings were destroyed or severely damaged (Dziewulski and Jankowski, 1957), leaving only 25% of the buildings usable by the public after restoration (Mika. 2017). According to Bocquet (2019), in Berlin up to 10% of all buildings were completely destroyed, 8% were severely damaged, 10% of the structures were significantly damaged that they were unusable by the public without extensive restoration, and 20% of buildings could be re-used by the local population after small repairs. Furthermore, destruction varied from location to location within the selected cities. For example, Museum Island was severely damaged but the buildings and urban structure survived, and in the case of Hansaviertel, the majority of the area was destroyed (Figure 19.). This later influenced how the city planners redeveloped and reconstructed the city, which can be seen as an example of path dependency. Another difference that had one of the major influences on how Berlin looks today was the division of the city into two by the Berlin Wall. The Wall not only divided the city physically, but also divided it ideologically. This led to the usage of different technologies, materials, architectural styles, and structures of urban fabric. The Berlin Wall fell more than 30 years ago, but it still has an effect on the German capital. A prime example could be the difference between neighborhoods that were built in post-war era Berlin. The Karl-Marx-Allee and its surrounding buildings and the Hansaviertel neighborhood are separated from each other only by a few kilometers. They follow the same theories of modernist architecture, but their urban fabric and structure are completely different. Furthermore, their function is also different. Karl-Marx-Allee was one of the most representative streets in East Berlin that was supposed to promote the German capital on the world stage when Germany was still divided. While the Hansaviertel neighborhood is expected to provide much-needed apartments in response to rising population demands. Warsaw did not experience such a division; the whole city was under one authority, which helped in decision making and implementation of holistic solutions to the city's problems at the time. Therefore, when we look at architectural styles in Warsaw, it could be said they're more uniformal.

However, the reconstruction of Warsaw cannot be seen as a faithful reconstruction of pre-war buildings, but rather, as professor Andrzej Tomaszewski put it, "creative reconstruction" (Popiołek, 2012). All the selected areas in Warsaw that were analyzed in this study have gone through a transformation that is not a complete representation of pre-war Warsaw. Nevertheless, this "creative reconstruction" served its purpose not only to improve the standards of living of local residents by increasing accessibility to sanitary installations and reducing overcrowding. Furthermore, Varsovians feel attached to areas of interest and they positively value case studies in cultural and historical terms. Berlin shares many similarities: Reconstructed buildings in areas of interest are not exact replicas of pre-war structures, but they serve their purpose by providing much-needed amenities and services to the local communities.

7.0 Reflection
7.1 Concluding Observations

Observations were made connected to what went well and what didn't. Based on those observations, several lessons could be learned about what to do in future research and data collections. The collection of secondary data was done with relative ease due to the multiple sources that were used for this research. This allowed the researcher to keep a holistic and objective view while considering this study. Furthermore, due to the extensive literature regarding the topic, multiple perspectives were analyzed, which kept the research refreshing. Last but not least, making and acquiring visuals for this study, such as maps and tables, was both entertaining and very educational. All the mentioned factors allowed researcher to compare and contrast two European cities without great setbacks.

On the other hand, there are some aspects that could be improved. Time management and schedules were kept. However, they were too general. One way to improve this aspect could be the introduction of internal (smaller) deadlines that would be met within a certain time frame. This would ensure constant progress without major delays and setbacks. Furthermore, for some areas of interest, it was hard to collect data, in particular in areas located in Berlin. The main reason for this was the language barrier, which limited effective data collection; English sources on the subject were/are scarce. Moreover, due to Berlin's division, some data was missing or was inaccessible. This was one of the reasons why specific time frames were chosen to represent the transformation that happened in Berlin. Lastly, the chosen factors and time frame of this study regarding the reconstruction of European cities are only a snapshot of the whole field of research. The researcher discovered throughout the data collection that the topic of reconstruction is considerably more complex and that it is impossible to offer all the information in a single research study. As a result, some presented information may seem scarce or not complete, but they are not. When it comes to questionnaires used in this research, it should be noted that they are examples of convenience sampling. Which can affect the research and end results. The prime example of that is that the majority of respondents of questionnaires were people of working age (aged 15 to 64) who had not experienced selected cities before the war, which deprives them of clear comparison. This fact can negatively or positively influence their perception and opinion of the current state of Berlin and Warsaw.

To gain better overview all observations are summarized in the table below:

What went well	What didn't go well
Choosing interesting topic which make it easier to research and write about	Time management could be better planned. Sometimes, it seemed little chaotic
Collection of secondary data from multiple sources	Collection of data sometimes was difficult or missing (particularly for Berlin parts)
Making and aqaering supporting visuals for this study	This is only a snapshot of the history of the both cities. There are still many unknowns regarding the topic

Figure 20. Concluding Observations of what went well and not during the research

7.2 Recommendation for future research

There are a few things that could be done differently to improve the research as a whole. The data gathered from the survey mainly represents the opinions of people that have access to the internet and are members of specific social media groups. Furthermore, the age of the respondents varied between 18 and 50 years old, and the majority of interviewees were males in their mid 20's. All those factors skew the collected answers to the asked questions. Therefore, to fix those obstacles, more answers to questionnaires should be collected online as well as on site. This way, the answers could be more balanced and reflect more accurately the attitude of the respondents regarding selected areas of interest. Second, provide greater specificity to some of the questions' content and possible responses. Use predetermined categories rather than a scale of "from 1 to 10" as an example when providing an answer. Respondents could therefore be more detailed as a result. Additionally, it would facilitate a more effective analysis of the data by the researcher. Thus, research with those solutions would be simpler and easier to evaluate. The main reason for this mishandling is that, after the questionnaires were sent to different social media platforms, it was hard or even impossible to correct them. Thirdly, researcher should not be afraid to ask for help in the collection of data. This point refers to the collection of secondary data for areas of interest located in Berlin. Due to the language barrier, it was difficult to collect information about them. Moreover, the data for certain years for some areas of interest was missing. Therefore, only the snapshots of selected years could be used, which only partly explains the process of reconstruction. It is recommended to use different or more case studies or factors when researching how successful the reconstruction of European capitals was to have a better grasp of this historic process.

7.3 Quality of Outcomes

In the end, the outcome and the answers to the research questions appear to be convincing. All the data indicates that the reconstruction of both capitals was successful when considering the preselected criterias that have been analyzed. Furthermore, the hypotheses for the research questions that have been stated at the beginning of this study are also proven right and accepted. This only reinforced the conviction that the reconstruction of Berlin and Warsaw was successful, and that solutions introduced in the past are still adequate to this day. Furthermore, according to the answers from the questionnaires, residents of both capitals have positive impressions regarding most of the selected case studies, and they are still using them as a transit node, work place or area for leisure activities. It should be remembered that there are exceptions, but they are marginal if we look at it from a broader perspective.

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Appendix
Maps:

Figure 2. Location of Berlin and Warsaw on the European Continent. Source: author

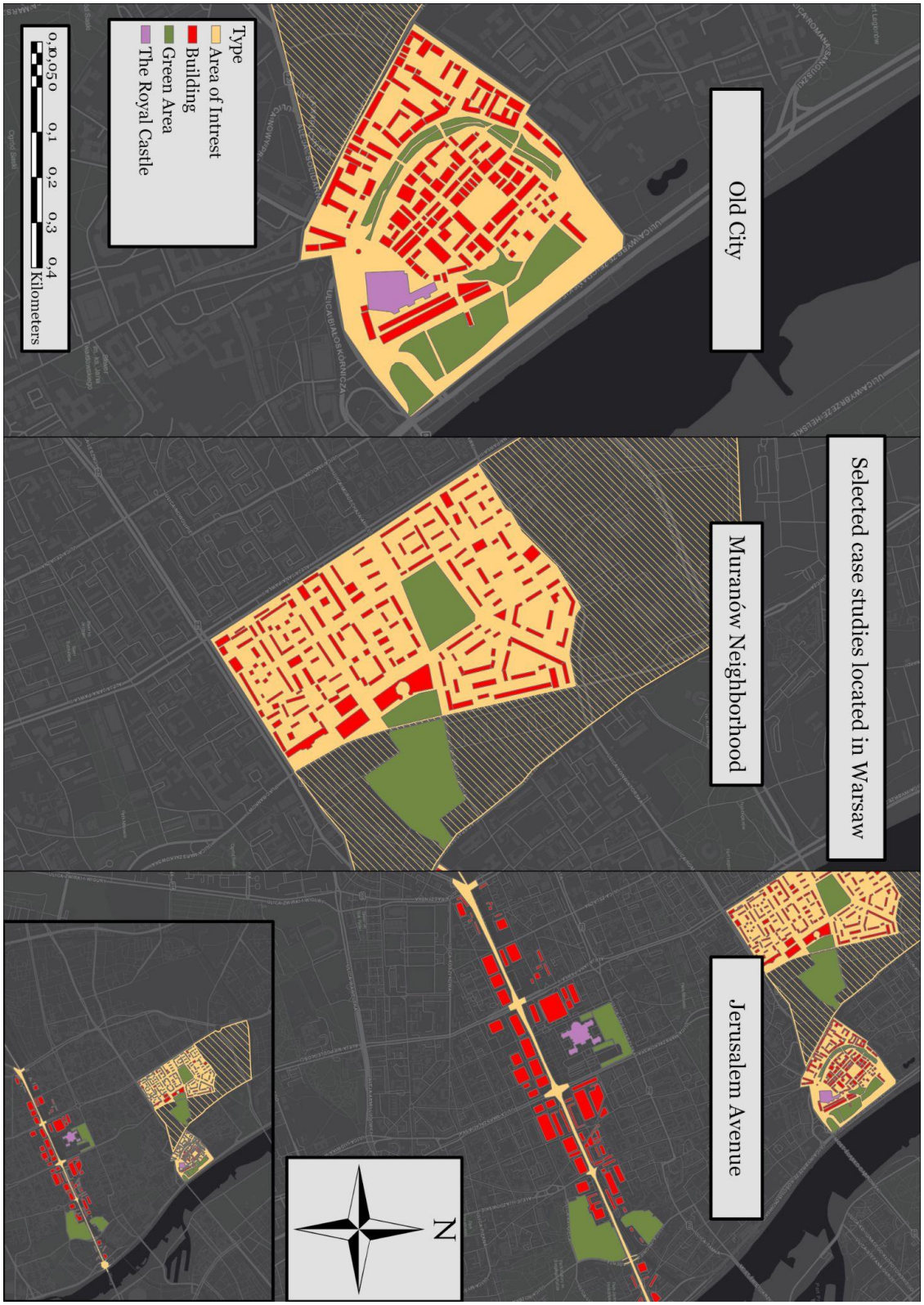

Figure 7. Selected case studies located in Warsaw. Source: author

Figure 8. Selected case studies located in Berlin. Source: author

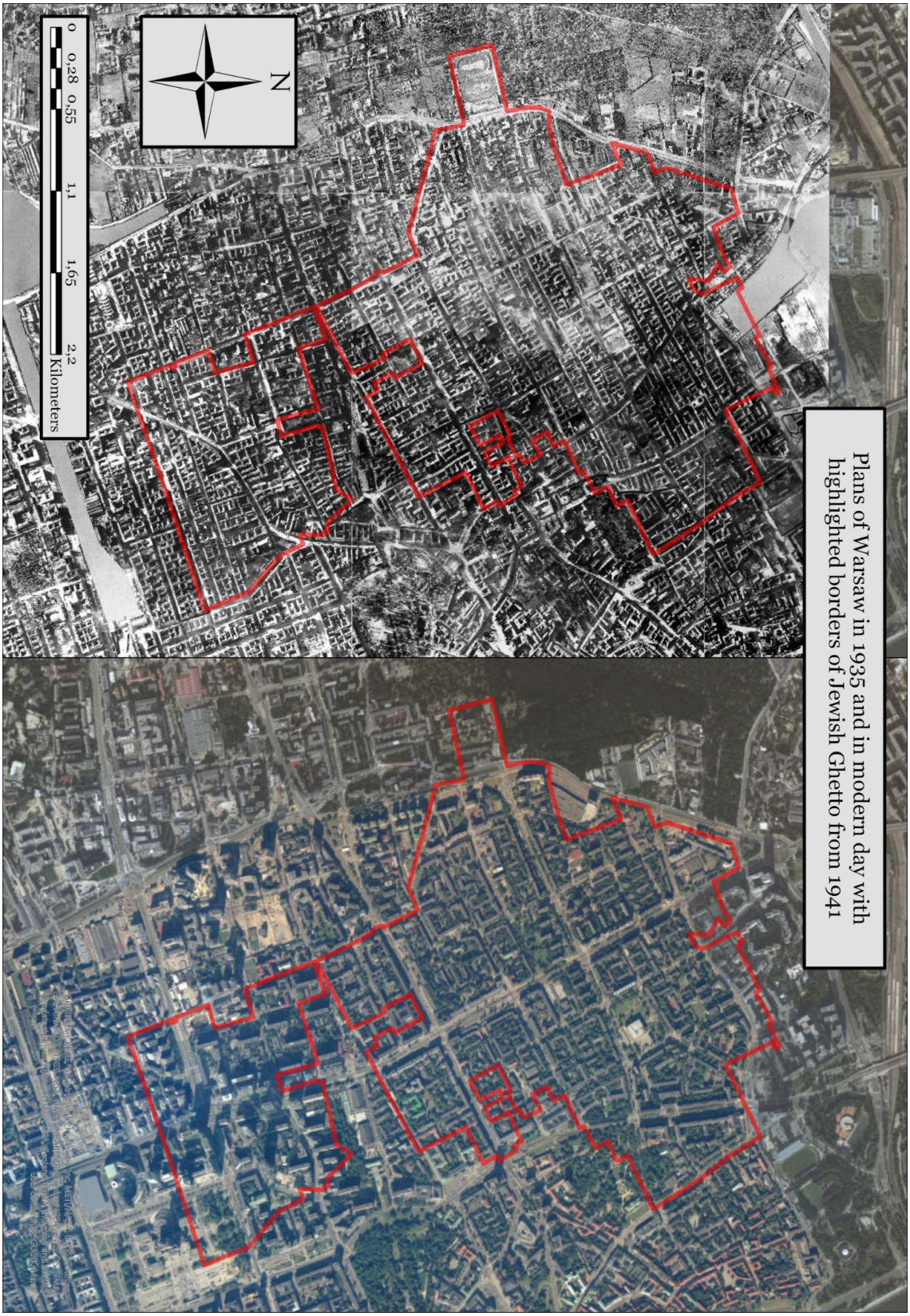

Figure 10. From Left to Right, map of Warsaw from 1935 and map of modern day Warsaw with highlighted borders of the Ghetto from 1941. Source: author

Tables containing raw data:

Year	1950	1960	1970	1978	1988	2002	2011	2016
Toilet	25,7	35,6	55,5	72,9	84,9	94,6	97,1	97,2
Water Pipe	42,3	55,4	75,2	87,2	94,9	98,7	98,9	99,1
Bathroom	14,2	26,0	48,4	69,1	82,4	92,3	95,3	95,5

Figure 11. Apartments equipped with sanitary installations, change between 1950-2016 in percentages of total dwellings. Source: History of Poland in Numbers, Poland 1918–2018

Year	1921	1931	1946	1950	1960	2002
Non-overcrowded (up to 2 people per room)	42	40	39	55	72	89
Overcrowded (2 to 4 people per room)	35	35	46	36	24	11
Severely overcrowded (over 4 people per room)	19	25	15	9	4	—

Figure 12. Percentage of people living in flats and apartments, scale set by Warsaw Museum
Source: Warsaw Data (2018)

Year	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
Flats	3394	5051	5460	7793	13399	17206	19344	19019	18789	19066	20666	20631	20151	20031

Figure 14. Completed apartments built under the publicly subsidized Social Housing Scheme
Source: Schwedler (1962). The reconstruction of Berlin from 1949 to 1963

Number of rooms	1	1.5	2	2.5	2.5+.5	3	3.5	3.5+.5	4	4.5	5
Percentage of build flats	21.5	5.8	36.8	17.6	2.3	12.9	2.0	0.2	0.5	0.2	0.2

**It should be remembered that under Berlin Social Housing Scheme the kitchen is not counted as a room*

Figure 15. Size of the apartments built under the Social Housing Scheme
Source: Schwedler (1962). The reconstruction of Berlin from 1949 to 1963

Questionnaire:

English/Polish Version

It should be remembered that this questionnaire focus on Reconstruction of Cities on the example of Warsaw in the post war era. This questionnaire will be used for academic purposes only and all responses are anonymous. Thank you for your time and patience in filling this questionnaire.

P.S. Cultural/historical value can be understood as how individuals see area of interest and how do they rate it in Historical, Symbolic, Social, Spiritual & Aesthetic terms

*Należy pamiętać, że niniejsza ankieta koncentruje się na Odbudowie Miast na przykładzie Warszawa w okresie powojennym. Ankieta będzie używany wyłącznie do celów akademickich, a wszystkie odpowiedzi będą anonimowe. Dziękuję za poświęcony czas i cierpliwość w wypełnieniu kwestionariusza.

*P.S. Wartość kulturowa/historyczna może być rozumiana jako sposób, w jaki ludzie widzą obszar zainteresowania i jak oceniają go pod względem historycznym, symbolicznym, społecznym, duchowym i estetycznym oraz jak wpływa on na otaczające budynki lub inne miejsca

---

What is your sex? / Jaka jest twoja płeć?

- Female / Kobieta
- Male / Mężczyzna
- Other:

What is your age? / W jakim jesteś wieku?

Where are you from? / Skąd pochodzisz?

What do you think about Old City, Why? / Co sądzisz o Stare Miasto, Dlaczego?

How do you value Old City in cultural/historical terms? / Jak oceniasz Stare Miasto w kategoriach kulturowych/historycznych?

- Negatively, I think it doesn't add any value to the city / Negatywnie, myślę, że to nie dodaje miastu żadnej wartości

Scale 1 to 10

- Positively, I think it's very important part of the city / Pozytywnie uważam, że to bardzo ważna część miasta

---

How much time do you spend in Old City Per week? Ile czasu spędzasz na Starym Mieście miesięcznie?

- Rarely, I almost never visit the area / Rzadko prawie nigdy nie bywam w okolicy

Scale 1 to 10

- A lot, I am there multiple times per week / Dużo, jestem tam kilka razy w miesiącu

---

What activities do you do there? / Jakie czynności tam wykonujesz?

- ☐ Leisure / Wypoczynek
- ☐ Work / Praca
- ☐ Transit, Commuting / Tranzyt, dojazdy
- ☐ Education / Edukacja
- ☐ Administration activities / Czynności administracyjne
- ☐ Other:

What do you think about Muranów Neighborhood, Why? / Co sądzisz o Muranowie, Dlaczego?

How do you value Muranów Neighborhood in cultural/historical terms? / Jak oceniasz Muranów w kategoriach kulturowych/historycznych?

- Negatively, I think it doesn't add any value to the city / Negatywnie, myślę, że to nie dodaje miastu żadnej wartości

Scale 1 to 10

- Positively, I think it's very important part of the city / Pozytywnie uważam, że to bardzo ważna część miasta

---

How much time do you spend in Muranów Neighborhood Per month? Ile czasu spędzasz na Muranowie miesięcznie?

- Rarely, I almost never visit the area / Rzadko prawie nigdy nie bywam w okolicy

Scale 1 to 10

- A lot, I am there multiple times per month/ Dużo, jestem tam kilka razy w miesiącu

---

What activities do you do there? / Jakie czynności tam wykonujesz?

- ☐ Leisure / Wypoczynek
- ☐ Work / Praca
- ☐ Transit, Commuting / Tranzyt, dojazdy
- ☐ Education / Edukacja
- ☐ Administration activities / Czynności administracyjne
- ☐ Other:

What do you think about Jerusalem Avenue, Why? / Co sądzisz o Alejach Jerozolimskich, Dlaczego?

How do you value Jerusalem Avenue in cultural/historical terms? / Jak oceniasz Aleje Jerozolimskie w kategoriach kulturowych/historycznych?

- Negatively, I think it doesn't add any value to the city / Negatywnie, myślę, że to nie dodaje miastu żadnej wartości

Scale 1 to 10

- Positively, I think it's very important part of the city / Pozytywnie uważam, że to bardzo ważna część miasta

---

How much time do you spend in Jerusalem Avenue Per month? Ile czasu spędzasz na Alejach Jerozolimskich miesięcznie?

- Rarely, I almost never visit the area / Rzadko prawie nigdy nie bywam w okolicy

Scale 1 to 10

- A lot, I am there multiple times per month/ Dużo, jestem tam kilka razy w miesiącu

---

What activities do you do there? / Jakie czynności tam wykonujesz?

- ☐ Leisure / Wypoczynek
- ☐ Work / Praca
- ☐ Transit, Commuting / Tranzyt, dojazdy
- ☐ Education / Edukacja
- ☐ Administration activities / Czynności administracyjne
- ☐ Other:

If you are willing to help more in the research, please fill in your contact details (Phone number or e-mail) so that we may contact you for an in-depth interview. / Jeśli chcesz bardziej pomóc w badaniach, podaj swoje dane kontaktowe (numer telefonu lub e-mail), abyśmy mogli skontaktować się z Tobą w celu przeprowadzenia szczegółowej rozmowy.

English/German Version

It should be remembered that this questionnaire focus on Reconstruction of Cities on the example of Berlin in the post war era. This questionnaire will be used for academic purposes only and all responses are anonymous. Thank you for your time and patience in filling this questionnaire.

P.S. Cultural/historical value can be understood as how individuals see area of interest and how do they rate it in Historical, Symbolic, Social, Spiritual & Aesthetic terms

*Es sei daran erinnert, dass sich dieser Fragebogen auf den Wiederaufbau von Städten am Beispiel Berlins in der Nachkriegszeit konzentriert. Dieser Fragebogen wird nur für akademische Zwecke verwendet und alle Antworten sind anonym. Vielen Dank für Ihre Zeit und Geduld beim Ausfüllen dieses Fragebogens.

*P.S. Kultureller oder historischer Wert zeigt sich in der Art und Weise, wie Menschen Orte in der Stadt wahrnehmen und wie sie diese einordnen. Dabei spielen historische, soziale, spirituelle und ästhetische Elemente eine Rolle

---

What is your sex? / Was ist dein Geschlecht?*

- Female / Frau
- Male / Mann
- Other:

What is your age? / Wie alt bist du?*

Where are you from? / Woher kommst du?

What do you think about Museum Island, Why? / Was halten Sie von der Museumsinsel, warum?*

How do you value Museum Island in cultural/historical terms? / Wie schätzen Sie die Museumsinsel kulturell/historisch ein?*

- Negatively, I think it doesn't add any value to the city / Negativ denke ich, dass es der Stadt keinen Mehrwert bringt

Scale 1 to 10

- Positively, I think it's very important part of the city / Positiv finde ich, dass es ein sehr wichtiger Teil der Stadt ist

---

How much time do you spend in Museum Island Per month? / Wie viel Zeit verbringen Sie pro Monat auf der Museumsinsel?*

- Rarely, I almost never visit the area / Selten, ich besuche die Gegend fast nie

Scale 1 to 10

- A lot, I am there multiple times per week / Sehr, ich bin mehrmals pro Monat dort

---

What activities do you do there? / Aus welchen Gründen bist du dort?*

- ☐ Leisure / Freizeit
- ☐ Work / Arbeit
- ☐ Transit, Commuting / Transit, Pendeln
- ☐ Education / Bildungszwecke
- ☐ Administration activities / Organisatorisches und Nutzung öffentlicher Dienstleistungen
- ☐ Other:

What do you think about Berlin-Hansaviertel, Why? / Was halten Sie von der Berlin-Hansaviertel, warum?*

How do you value Berlin-Hansaviertel in cultural/historical terms? / Wie schätzen Sie die Berlin-Hansaviertel kulturell/historisch ein?*

- Negatively, I think it doesn't add any value to the city / Negativ denke ich, dass es der Stadt keinen Mehrwert bringt

Scale 1 to 10

- Positively, I think it's very important part of the city / Positiv finde ich, dass es ein sehr wichtiger Teil der Stadt ist

---

How much time do you spend in Berlin-Hansaviertel Per month? / Wie viel Zeit verbringen Sie pro Monat auf der Berlin-Hansaviertel?*

- Rarely, I almost never visit the area / Selten, ich besuche die Gegend fast nie

Scale 1 to 10

- A lot, I am there multiple times per week / Sehr, ich bin mehrmals pro Monat dort

---

What activities do you do there? / Aus welchen Gründen bist du dort?*

- ☐ Leisure / Freizeit
- ☐ Work / Arbeit
- ☐ Transit, Commuting / Transit, Pendeln
- ☐ Education / Bildungszwecke
- ☐ Administration activities / Organisatorisches und Nutzung öffentlicher Dienstleistungen
- ☐ Other:

What do you think about Karl Marx Avenue, Why? / Was halten Sie von der Karl-Marx-Allee, warum?*

How do you value Karl Marx Avenue in cultural/historical terms? / Wie schätzen Sie die Karl-Marx-Allee kulturell/historisch ein?*

- Negatively, I think it doesn't add any value to the city / Negativ denke ich, dass es der Stadt keinen Mehrwert bringt

Scale 1 to 10

- Positively, I think it's very important part of the city / Positiv finde ich, dass es ein sehr wichtiger Teil der Stadt ist

---

How much time do you spend in Karl Marx Avenue Per month? / Wie viel Zeit verbringen Sie pro Monat auf der Karl-Marx-Allee?*

- Rarely, I almost never visit the area / Selten, ich besuche die Gegend fast nie

Scale 1 to 10

- A lot, I am there multiple times per week / Sehr, ich bin mehrmals pro Monat dort

---

What activities do you do there? / Aus welchen Gründen bist du dort?*

- ☐ Leisure / Freizeit
- ☐ Work / Arbeit
- ☐ Transit, Commuting / Transit, Pendeln
- ☐ Education / Bildungszwecke
- ☐ Administration activities / Organisatorisches und Nutzung öffentlicher Dienstleistungen
- ☐ Other:

If you are willing to help more in the research, please fill in your contact details (Phone number or e-mail) so that we may contact you for an in-depth interview.
