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Abstract

Reconstruction and recovery of historic cities after destruction due to conflict or natural disasters have gained increasing relevance in the last decades. The investigation of international examples of recovery after war or natural catastrophic events can provide knowledge for improving guidance and strategies for sustainable reconstruction/ intervention in similar cases in the future. This paper aims to identify and analyze the legal, administrative, social, and economic factors that can favor the reconstruction and recovery processes of the historic city and its residential neighborhoods. An extensive review of international examples and literature on guidance has been conducted to provide insight into best practices and potential solutions. As a result, a set of lessons learned that can be used to address post-conflict and post-disaster recovery and reconstruction in similar situations is given.

1. Introduction

The process of post-crisis reconstruction presents an opportunity to revise existing planning regulations and ensure the development of building codes and regulations that promote sustainability and resilience in urban areas [1]. Cultural heritage transforms into a strong symbol and tool for rebuilding communities during times of recovery and is essential for building peace, dialogue, and sustainable development. Therefore, it is crucial to develop a vision for reconstruction, based on theoretical guidance, methodologies, and operational frameworks. This requires extensive research and multidisciplinary cooperation involving various actors [2]. For these reasons, there has been an acknowledged need to draw lessons from case studies. This need was highlighted in international conferences and meetings, prompting ICOMOS and ICCROM to launch a joint project called "Analysis of Case Studies in Recovery and Reconstruction" in 2019/2020 to discover effective approaches to gaining knowledge from past experiences to offer insights that might enhance guidance [3]. In a specific context, residential heritage, as tangible cultural heritage, plays a crucial role in the housing sector. Housing is a particularly vulnerable asset, with the demolition of houses or the loss due to displacement or dispossession as one of the most the maximum seen outcomes of conflict and natural disasters. Housing is at once influencing livelihoods, healthcare, education, security, and stability in social and familial structures.

Beyond functioning as a familial and social hub, housing serves as a symbol of cultural identity and pride, playing both a politically and economically significant role. Given these factors, the housing sector assumes a pivotal role in the reconstruction of cities post-crisis [4]. Housing reconstruction within post-conflict and post-disaster programming must consequently get excessive prominence. However, currently, there exists no dedicated agency for housing reconstruction, and only a very few major NGOs working in relief have specific expertise in this domain. Housing interventions are met with significant challenges that cannot simply be disregarded. Therefore, it is crucial to find guidelines for executing it more effectively.

This paper aims to identify and analyze the legal, administrative, social, and economic factors that can favor the reconstruction and recovery processes of historic cities and their residential neighborhoods. A detailed examination of the development of residential heritage reconstruction guidance (section 3) and their implementation through case studies (section 4) has been carried out. Based on the results, the legal, administrative, social, and economic factors that can favor the reconstruction and recovery processes of residential heritage are discussed (section 5).

2.   Research method

The methods used in this research consisted of analysis of official international guidance documents from UNESCO, ICOMOS, the Council of Europe, the World Heritage Cities organization, the United Nations, and the European Committee for Standardization. Documents dealing with one or more of the following subjects were considered: conservation of a heritage urban area, town, or city; post-war or conflict and/or post-disaster recovery/reconstruction; heritage and sustainable development and/or sustainability. To this scope, documents were screened using the following keywords "city", "house", "reconstruction", "recovery", "sustainability", "sustainable development", "documentation", "training", "craftsmanship", "need" "participation", and "financing" and then checking specific sections of the document.

With the focus laid specifically on the aspects of socially sustainable recovery of housing, case studies were selected based on several criteria among places of historical significance that have undergone reconstruction after civil war or conflict. The following criteria were used for the selection of the cases:

- Criterion 1 - **Region:** To capture a wide range of practical experience of post-conflict cultural heritage recovery, the selection covered different regions in i) Asia and the Middle East (Kabul, Beirut, Nablus, and Iraq) and ii) Europe mainly Eastern Europe (Dubrovnik and Mostar).

- Criterion 2 - **Divided City:** Priority was given to cities that have undergone division, either via physical separation or social fragmentation.

- Criterion 3 - **Housing:** The traditional housing types impacted by conflict and addressed during the following reconstruction were taken into consideration.

A review of the literature on the topic of international examples of post-conflict reconstruction was conducted; both primary and secondary sources, such as governments and international organizations' documents and websites, were examined. Additionally, contemporary publications e.g., academic papers, books, reports, and online newspapers in English and Arabic were consulted. This review supported the understanding of the specific local context.

Observations (in the case of Beirut) and interviews with experts (in the cases of Beirut and Mosul) were part of the data collection.

A comparative analysis of case studies was conducted to examine different strategies and how different variables interact within each case.

A theoretical framework to guide the analysis of the case studies was developed; in this several aspects have been considered: historical context, organizational structure, legal framework governing the reconstruction, financial support, social participation and impact, and monitoring and evaluation of the reconstruction process.

3. International guidance documents addressing residential heritage reconstruction

Sustainable reconstruction of (built) heritage after natural disasters and conflicts is the object of debate at the international level by UNESCO, ICOMOS, and other international organizations. Charters, declarations, conventions, and guidelines are being established and/or updated with specific focuses and goals. This section provides a short overview of the evolution of the aspects addressed in these documents in time (1964-present). It is worth mentioning that these documents include: 1) binding legal documents, which are intergovernmental agreements and conventions that obligate signatory countries to adhere to specific principles and regulations; 2) scientific/ guidance documents, which provide recommendations and best practices and serve as references for decision-makers. Table 1 reports the analyzed documents, while Table 2 summarizes the aspects considered.

Table 1. Overview of guidance documents analyzed

Reference number	Release year	International guidance documents	Organization	Scope
1	1964	International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)	ICOMOS	Scientific/guidance document
2	1972	Convention Concerning the Protection of the World Cultural and Natural Heritage	UNESCO	Binding legal document
3	1979	The Australia ICOMOS Guidelines for the Conservation of Places of Cultural Significance (The Burra Charter)	ICOMOS Australia	Scientific/guidance document
4	1982	The Declaration of Dresden	ICOMOS	Scientific/guidance document
5	1989	Recommendation on the Safeguarding of Traditional Culture and Folklore	UNESCO	Binding legal document
6	1996	The Declaration of San Antonio	ICOMOS	Scientific/guidance document
7	2000	The Charter of Krakow Principles for Conservation and Restoration of Built Heritage	Bureau Krakow	Scientific/guidance document
8	2007	INTBAU Venice Declaration on the Conservation of Monuments and Sites in the 21st Century	INTBAU	Scientific/guidance document
9	2009	ICOMOS World Heritage in Danger Compendium II	ICOMOS	Scientific/guidance document
10	2009	The Kit of the Convention for the Safeguarding of the Intangible Cultural Heritage	UNESCO	Scientific/guidance document
11	2010	ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value	ICOMOS New Zealand	Scientific/guidance document
12	2013	The Burra Charter The Australia ICOMOS Charter for Places of Cultural Significance	ICOMOS Australia	Scientific/guidance document
13	2015	Integration of a sustainable development perspective into the processes of the World Heritage Convention	UNESCO	Binding legal document
14	2017	Guidance on Post-trauma Recovery and Reconstruction for World Heritage Cultural Properties	ICOMOS	Scientific/guidance document
15	2018	Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage	UNESCO	Scientific/guidance document
16	2018	Culture in City Reconstruction and Recovery	UNESCO/ World Bank	Scientific/guidance document

Table 2. Overview of aspects considered in different guidance documents over time

Reference number	Addressing reconstruction	Attention to sustainability	Need of documentation	Attention to people's needs	Need of craftsmanship	Attention to people's participation	Need for funding instruments
1	•						
2					•	•	•
3	•		•				
4	•					•	
5					•	•	
6			•				
7	•	•			•	•	
8			•				
9					•		
10	•	•					
11			•				
12						•	
13						•	•
14	•	•	•			•	•
15	•	•	•		•	•	
16	•	•		•		•	•

3.1. Historical evolution of the sustainable reconstruction concept

The concept of "reconstruction" has evolved during the last decades, towards the broadening of the object addressed by reconstruction and considering reconstruction as a fundamental aspect of sustainable development. The International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter) of 1964 [5] is the first international document that addresses the reconstruction in the heritage context. In this charter, reconstruction is limited to the context of excavations; it states that reconstruction work should be ruled out, except in cases of anastylosis (the reassembling of existing but dismembered parts). About 15 years later, in 1979, the Australia ICOMOS Guidelines for the Conservation of Places of Cultural Significance (Burra Charter) [6] enlarged the concept of reconstruction to include all the physical material of the place. In this charter, reconstruction is defined as returning a place as closely as feasible to a previously recognized state; additions should be distinguished by the introduction of materials (new or old) into the fabric. In 1982, the Declaration of Dresden [7], which emerged from the experience of post-war reconstruction, changed many concepts in dealing with historical buildings. This charter underlines the link between the task of the reconstruction of towns and villages, the need for social development after the war, and the task of protecting monuments. With the beginning of the 21st century, the need for sustainable reconstruction is explicitly mentioned and addressed. The first example is given by the Principles for Conservation and Restoration of Built Heritage (the Charter of Krakow) dated from 2000 [8]. According to this charter, it is only permitted to reconstruct an entire building that has been completely destroyed by an armed conflict or a natural disaster if

there are exceptional social or cultural motives connected to the identity of the entire community. It enlarges the concept of reconstruction to include contemporary architecture and it considers the potential social and economic changes deriving from reconstruction for the community and the heritage site. In 2009, the concept of reconstruction was further broadened by the Kit of the Convention for the Safeguarding of the Intangible Cultural Heritage [9] to include intangible cultural heritage, important for maintaining cultural diversity and contributing to the sustainability of communities.

More recently, after the conflicts in the Middle East and North Africa, several guidance documents have been developed to guide reconstruction efforts with a focus on the sustainability and preservation of cultural heritage sites. For example, the Guidance on Post-trauma Recovery and Reconstruction for World Heritage Cultural Properties (2017) [10] states that the recovery of cultural heritage attributes ought to aid and power sustainable development and community well-being. In a wider context, the Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage from 2018 [11] states that people-centered approaches should be used when making decisions on recovery and reconstruction, and local communities should be fully engaged. A similar attention to social sustainability can be found in the People, Places, and Policies (3Ps) approach defined by the Culture in City Reconstruction and Recovery paper (2018) [1]. This document integrates cultural heritage and creativity as essential elements for sustainable urban development, social cohesion and resilience, and reconciliation. Finally, the definition of sustainable reconstruction reported by the United Nations International Strategy for Disaster Reduction (UNISDR) [12], underlines this attention to the sustainable reconstruction of heritage addressed in its broader sense. In this document, reconstruction is described as the medium- to long-term rebuilding and sustainable restoration of the infrastructure, services, housing, facilities, and livelihoods necessary for the complete functioning a community or society that has been impacted by a disaster.

3.2. Evolution of the documentation, education, training, people's needs, and participation concepts in guidance documents

Another aspect of the guidance on conservation and reconstruction which evolved over time is the relevance given to documentation and the broadness of the aspects to be documented. The Burra Charter of 1979 [6] sets the foundation for this evolution. It emphasizes the importance of thorough documentation of the existent, supported by professional supervision of the documentation process, and the need to make the collected documentation publicly available. Subsequently, other guidance and declarations have further developed this approach. The Declaration of San Antonio of 1996, for instance, highlighted the need for proper documentation, and the importance of using traditional techniques in reconstruction works [13]. Similarly, the INTBAU Venice Declaration on the Conservation of Monuments and Sites in the 21st Century [14] recognized the importance of scientific investigation and accurate documentation. The ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value from 2010 emphasizes the importance of research and documentation in the conservation process [15]; it underlines the importance of identifying and understanding all relevant cultural heritage values and of carrying out physical investigation and recording of a place. In 2017, the ICOMOS Guidance on Post-trauma Recovery and Reconstruction for World Heritage Cultural Properties enlarged the concept of documentation to include recording of the surviving and lost attributes of Outstanding Universal Value (OUV), both tangible and intangible [10]. In 2018, the Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage reported that documentation of building methods is essential for a successful cultural heritage reconstruction [11]. For effective site management, documentation must be updated regularly while utilizing the opportunities provided by new technologies. In the case of a disaster, records will then be available as a foundation for post-traumatic growth. It further states that in the lack of technical documentation, traditional knowledge and memories of the community could be used to direct reconstruction [16].

Another trend that can be identified in guidance documents, is the increasing importance given to education and training, as crucial aspects for the conservation and restoration of heritage. The Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972 is one of the first documents to address this need:

it emphasizes the importance of educational campaigns, research, and modern technologies in promoting appreciation and respect for heritage [17]. The Recommendation on the Safeguarding of Traditional Culture and Folklore from 1989 highlights the importance of specialized training for those involved in the preservation of folklore, from physical conservation to analytic work [18]. The Principles for Conservation and Restoration of Built Heritage (also known as the Charter of Krakow) from 2000 recognizes the significance of craftsmanship in restoration projects and recommends improving vocational training to enhance the quality of craft and technical work [8]. The Kit of the Convention for the Safeguarding of the Intangible Cultural Heritage emphasizes the transmission of knowledge and skills to future generations as well as the preservation of intangible cultural heritage [9]. More recently, the Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage from 2018, emphasizes the necessity for building long-term capacity in disaster risk management and conservation techniques, particularly for craftspeople, in order to guarantee that heritage places have a sustainable future [11]. Likewise, guidance has increasingly recognized the importance of addressing people's needs in the context of heritage preservation and recovery. While previously only a few guidance documents focused on this issue, recent reports emphasize the importance of prioritizing people's needs. For example, the Culture in City Reconstruction and Recovery paper from 2018 and its CURE framework [19] prioritize people's needs, values, and social practices.

This increased attention to people's needs, has led to a growing recognition of the importance of involving local communities and stakeholders in guidance related to heritage conservation and reconstruction. International guidance documents, such as the Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972, the Declaration of Dresden of 1982, the Washington Charter of 1987 [20], and the Recommendation on the Safeguarding of Traditional Culture and Folklore of 1989, all emphasize the want for people's participation [17], [7], [20], [18]. More recently, the Charter of Krakow (2000) advocates for the establishment of mechanisms to facilitate such participation [8]. The Burra Charter from 2013 highlights the importance of involving people who have significant associations with a place in the conservation, interpretation, and management of the place [21]. Similarly, the guidance document for the integration of a sustainable development perspective into the processes of the World Heritage Convention from 2015 and the Guidance on Post Trauma Recovery and Reconstruction for World Heritage Cultural Properties (2017) both emphasize the importance of involving local communities in the recovery and reconstruction process [22], [10]. The Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage (2018) advocates for people-centered approaches, that fully engage local communities and relevant stakeholders, while considering social justice and property titles too [11]. In a wider context, the Culture in City Reconstruction and Recovery report from 2018 emphasizes the importance of participatory approaches that ensure the full involvement of beneficiaries and stakeholders, including communities and local governments [19]. In particular, the Culture in City Reconstruction and Recovery report, including its CURE framework and its implementing document, emphasizes the importance of charrettes; a public meeting or workshop held as part of a coordinated attempt to address an issue or create a plan, interviews, focus group discussions, and community forums as tools to generate input and ensure that the community has a say in decision-making [19].

3.3. Evolution of the financial instruments concept in guidance documents

All the mentioned developments towards a more sustainable reconstruction process can hardly be feasible without adequate financial instruments. An increasing understanding of the significance of adequate funding and resources to support reconstruction efforts is evident in guidance documents. The first convention to highlight the necessity for financial measures, like tax concessions, grants, and loans, is the Convention Concerning the Protection of the World Cultural and Natural Heritage of 1972 [17]. In more recent guidance documents, such as the integration of a sustainable development perspective into the processes of the World Heritage Convention from 2015, the range of possible economic investment in and around heritage properties has been broadened to include e.g. the development of sustainable economic activities related to craftsmanship and the promotion of sustainable tourism [22]. In addition, the Guidance on Post-trauma Recovery and

Reconstruction for World Heritage Cultural Properties (2017) [10] emphasizes the importance of utilizing local resources in the recovery process and warns against the risk of imported labor. The Culture in City Reconstruction and Recovery report [1] and its CURE Framework offer a broad overview of financial models, able to balance short-term and long-term needs and consider the possible contributions of different stakeholders, including public and private funding sources and public-private partnerships. In conclusion, the process of developing guidelines for reconstructing built heritage after wars and natural disasters has been dynamic and continuous. In time, a clear shift towards a more holistic approach to reconstruction can be observed; attention to documentation, education, training, community well-being, and active participation of local communities have gained recognition as critical aspects for the successful reconstruction of cultural heritage. Besides, emphasis has been put on the importance of adequate financial instruments and sustainable economic activities.

4. International case studies addressing residential heritage recovery and reconstruction

In this section, some case studies of post-war reconstruction are analyzed, to get some lessons for future reconstruction processes. The analysis also assesses whether and how the aspects mentioned in the guidance documents (section 3) have been implemented in practice. An overview of the aspects and relative specific actions implemented in the case studies is given in Table 3.

4.1. Beirut, Lebanon (1975-1990)

Beirut, a coastal city with a history dating back to 5,000 years ago, underwent a wave of modernization during the late Ottoman (1900–1916) and French Mandate periods (1920s–1930s); this led to the partial destruction of the medieval urban fabric of Beirut Central District, the city's historic district, which covers about 150 hectares (Figure 1). The residential architecture of Beirut gradually shifted from the suburban bourgeois house, characterized by the triple-arched central-hall design and ornate mansions, to the peri-urban apartment house, characterized by being a multi-story residential building to accommodate a larger number of units, and ultimately to the speculative urban apartment building. In 1954, the implementation of a Zoning Law created ten concentric zones of diminishing floor-to-area ratio (FAR) extending from the center of the city outward. This law is still enforced and stipulates that the highest allowable densities must occur in the historic core and its immediate periphery [23].

From 1975 to 1990, the Beirut Central District was a site of fierce conflict during the Lebanese Civil War [24]. As a consequence, 83% of the district and its historical urban landmarks such as Khans and old markets were destroyed. A quarter of all residential properties were either damaged or completely destroyed, and half of the population was displaced from their homes, either temporarily or permanently [25].

In 1991, the Lebanese government appointed a private real estate holding company "Solidere" to reconstruct the Beirut Central District. The Master Plan for the reconstruction and development of the Beirut Central District was formulated by a large regional architecture and engineering consultancy. Although this plan was faced with harsh opposition from civil society and experts, the Council of Ministers officially ratified it in its final version in 1995. In this Master Plan, 37% of the area was allocated to "new developments", 31% to "infrastructure and highways", whereas 12% only was reserved for "heritage buildings". 42% of the facilities in the Beirut Central District were consecrated for high-end housing and 34% for offices for the "upper social layer". This Master Plan intended to transform the city center into an economic hub, supporting the interests of the banking sector. This phenomenon created an island for the rich in the middle of the Beirut Central District and caused further segregation. Consequently, the cost of 1sqm became equivalent to 10 times the minimum wage in Lebanon [26]. Thus, the Solidere project did not contribute to the reconciliation and reintegration of Lebanese society [27]. Regarding residential housing, the Master Plan aimed at the preservation of three residential neighborhoods (Saifi, Mar Maroun, and Zkak al Blat) including, the renovation and restoration of traditional Lebanese houses and the development of new projects and public areas, for improving the quality of life in these neighborhoods; [28]. Solidere used the facadism "historic exterior, modern interior" as a conservation strategy, i.e., the facades

of the buildings were kept, and the interiors were modernized. Particularly in the Saifi neighborhood, another strategy was used; a "neo-historical" structure that emulates surrounding buildings. For example, the symmetrical central hall elevation, characteristic of the traditional Beiruti house, was maintained, which however no longer corresponds to the building's cutting-edge plan; consequently, residual spaces resulted from this arrangement [23]. The company's reliance was on international finance and lack of public consultation. The Solidere project has type A stockholders and type B stockholders. The original proprietors of the residences in the Beirut Central District make up Type A stockholders. These received shares based on an evaluation of their property. Type B stockholders are recent investors who purchased equity in the company. The original owners were given the selection of recovering their houses through renovating the housing themselves. However, to avoid losing possession of their buildings, they had to adhere to a fixed completion timeline and strict plan standards. As a consequence, many residents were not able to fulfill these requirements and were forced to sell their property, and more than half of the apartments were sold to wealthy foreigners and expats, leaving the Beirut Central District empty for most of the year [26]. Solidere's focused on luxury stores and high-end restaurants, its focus being on attracting international investors and tourists, rather than catering to the original resident's needs. Because of this approach, the area became unaffordable for most Beirutis. Solidere's approach caused a lack of affordable housing, displacement of residents, and lack of representation and participation of local communities in the planning and development process.

Figure 1. Ground plan of the Beirut Central District. Source: Author – OpenStreetMap

4.2. Dubrovnik, Croatia (1991-1992)

Dubrovnik is a coastal city and a sought-after tourist destination with a rich history and well-preserved historical structures, dating back to the 13th century. The Old City has been listed as a World Heritage Site since 1979, appreciated for its essential elements of a medieval fortified town, including ramparts, street and square layout, churches, palaces, impressive public buildings, and private houses (Figure 2). Following its inscription as a World Heritage Site, the city was protected under the provisions of the Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict [29].

During the 1991-1992 war in Croatia, Dubrovnik was under siege and suffered significant damage affecting the Old City. Direct hits caused damage to roof structures, facades, and public monuments. Some 68% of the 824 buildings in the Old City sustained damage. Even throughout the seven-month siege, rehabilitation work started as soon as UNESCO listed Dubrovnik as a World Heritage in Danger [29]. UNESCO dispatched experts to help local preservation professionals in conducting a detailed survey of the damages and estimating the cost of reconstruction.

These operations took place during the war and required the development of a standard method for registering and estimating the destruction. Their work during the siege contributed greatly to the reconstruction of the city. So too did the existence of a valuable archive of architectural, textual, and photo documentation that had been created during the meticulous reconstruction that followed a devastating earthquake suffered by Dubrovnik in 1979 [30]. Local inhabitants, with the Institute for the Rehabilitation of Dubrovnik and the Institute for the Protection of Cultural Monuments, were actively involved in the reconstruction through the preparation of documentation and in carrying out the demanding works and through conservational supervision of the reconstruction works.

These Croatian groups partnered with UNESCO to devise a strategy for the restoration; this included creating training programs to educate restorers in historical building and decorating techniques, from stonework to painting. The process was guided by an "Action Plan" that prioritized the use of traditional construction techniques and materials, preservation of original structures, strengthening of historical buildings with contemporary systems, and avoiding the use of new, reinforced concrete construction [30]. In 1993, the financial capacity of the government to reconstruct housing was very limited, and reconstruction with traditional materials was impossible. With the war still ongoing, the thorough reconstruction had to wait and the priority was to preserve the structure of the damaged buildings, to keep them safe and in use, and to maintain life in the city [30].

The reconstruction was overseen by the committee for the reconstruction of Dubrovnik and was funded mostly by government funds and loans, with some support from donations by former residents, admirers of the city, and international foundations. In the ten years following the siege, the Croatian government supplied about $2 million per year for restoration efforts; UNESCO gave a one-time payment of $300,000; and many other organizations helped raise money for the cause [31].

The reconstruction of the city's architectural heritage was completed in 2008. This reconstruction took place while simultaneously the country and its society were in transition to a market economy. While the reconstruction of national cultural and architectural heritage was conducted with great care and attention, with many experts taking part, some of those living in damaged houses in the Old Town wanted not only to reconstruct their homes but also to increase their market value and the rules of reconstruction respecting original construction methods and materials were, sometimes, bent [30]. The need for reconciliation was not recognized during the reconstruction phase. Although Dubrovnik had experienced reconciliation, it was only a public performance carried out for the benefit of economic and cultural stability through tourism [32].
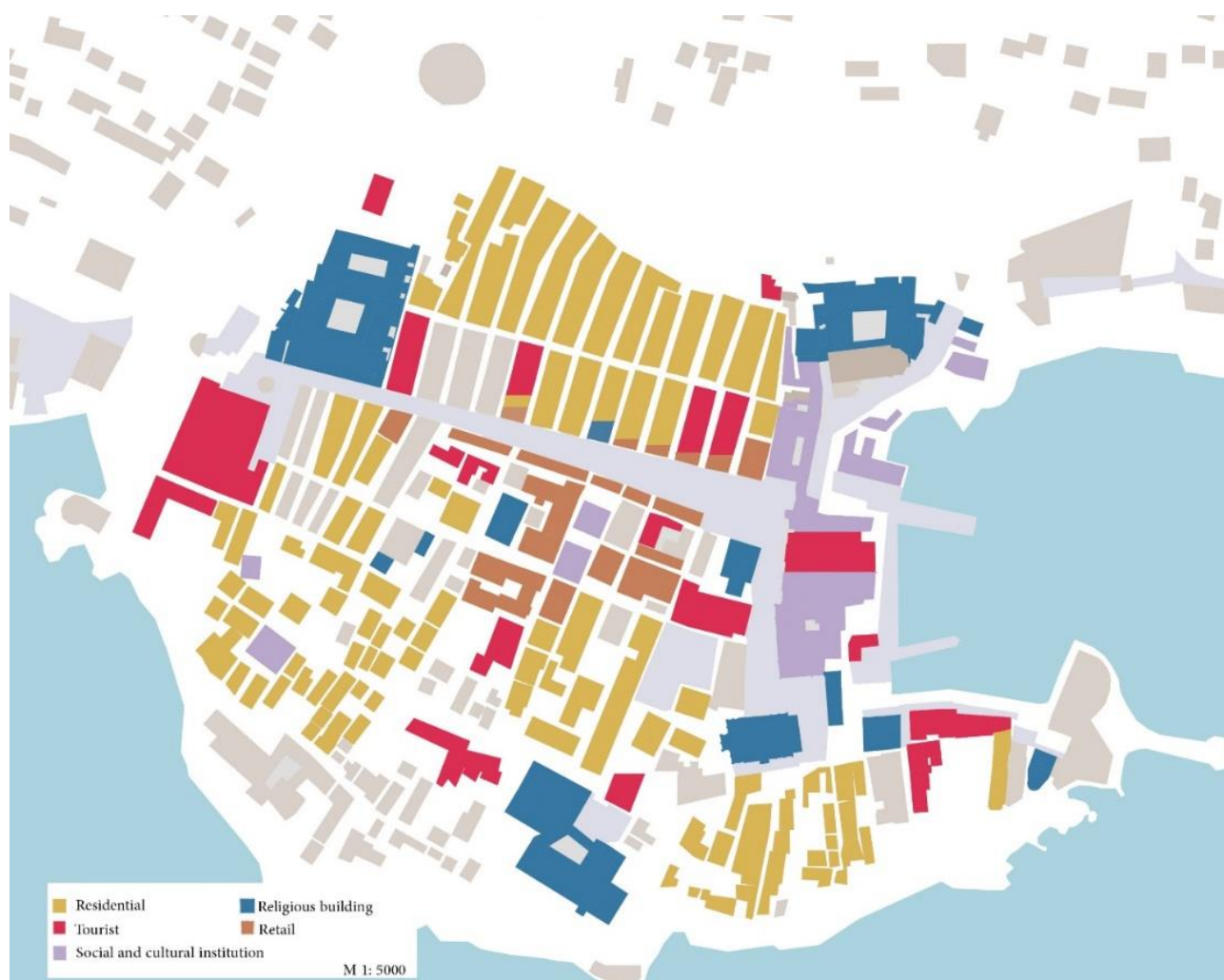
Figure 2. Ground plan of the Old City of Dubrovnik. Source: Author – OpenStreetMap

4.3. Mostar, Bosnia and Herzegovina (Bosnian War 1992-1995)

The historic city of Mostar in Bosnia-Herzegovina has a rich cultural and historical heritage, with strong influences from the Ottoman Empire and the Austro-Hungarian Empire (Figure 3). The old city has been protected by the 1985 Law on the Protection and Use of the Cultural, Historical, and Natural Heritage of Bosnia and Herzegovina. The old Turkish houses and the Old Bridge were the major attractions and symbols of the city [33].

Between the years 1992-1995, the city underwent two sieges resulting in widespread damage and destruction. 90% of the buildings in the city center were damaged, with a third of the historic buildings being completely destroyed. Thousands of inhabitants were killed, and many more were displaced from their homes. Religious, cultural, historical, and architectural landmarks were specifically targeted during the bombings and either badly damaged or completely destroyed. All of the historic core's buildings were significantly impacted. The Old Bridge, which had survived the first siege, was targeted and shelled point-blank for days during the second siege. For the international community many inhabitants, the destruction of the Old Bridge and the division of the city came to symbolize the war's threat to Bosnian multiculturalism [34].

After the war, various organizations, including the government, UNESCO, the World Bank, the European Union, the Aga Khan Trust for Culture (AKTC), and the World Monuments Fund (WMF), offered technical and financial aid for the reconstruction. In 1998, the Aga Khan Trust for Culture/ World Monuments Fund group formulated a "Conservation and Development Plan for the Old Town", which was officially adopted by the authorities in 2001. The plan's goal was to create a long-term program for rehabilitation and reconstruction that

would preserve the area's identity and prevent further damage. The plan also included regulations for traditional land use, recommendations for building rehabilitation, and measures to discourage conflicting land uses; for example, in any situation where the original use was residential, the renovation of buildings for use as housing is advised. While restricting certain land uses, notably those that introduce activities that conflict with or that will lead to the significant transformation of the character and environmental quality of the historic neighborhoods. The plan provided guidelines and proposals for safeguarding and restoring the historic core of Mostar, as well as adaptive reuse plans for the most important historic buildings and measures to manage the city [35]. The Stari Grad Agency was established to oversee these projects, which worked according to the approach developed by the Aga Khan Trust for Culture/ World Monuments Fund team. The city administration and the World Bank further refined and agreed upon this approach. Despite being under the city administration's authority, the Stari Grad Agency was given more integrated, direct, flexible, and community-oriented powers, enabling it to address issues arising when reconstructing historic areas. In parallel, the Mostar Municipal Council made decisions regarding the rehabilitation and conservation of buildings in the protected area of the city. They prohibited unauthorized interventions and focused on conserving the Old Bridge and the surrounding historic neighborhood. It is worth mentioning that the reconstruction of the Old Bridge is a symbol of reconciliation and the rebuilding of metaphoric bridges among Bosnia's divided people [34].
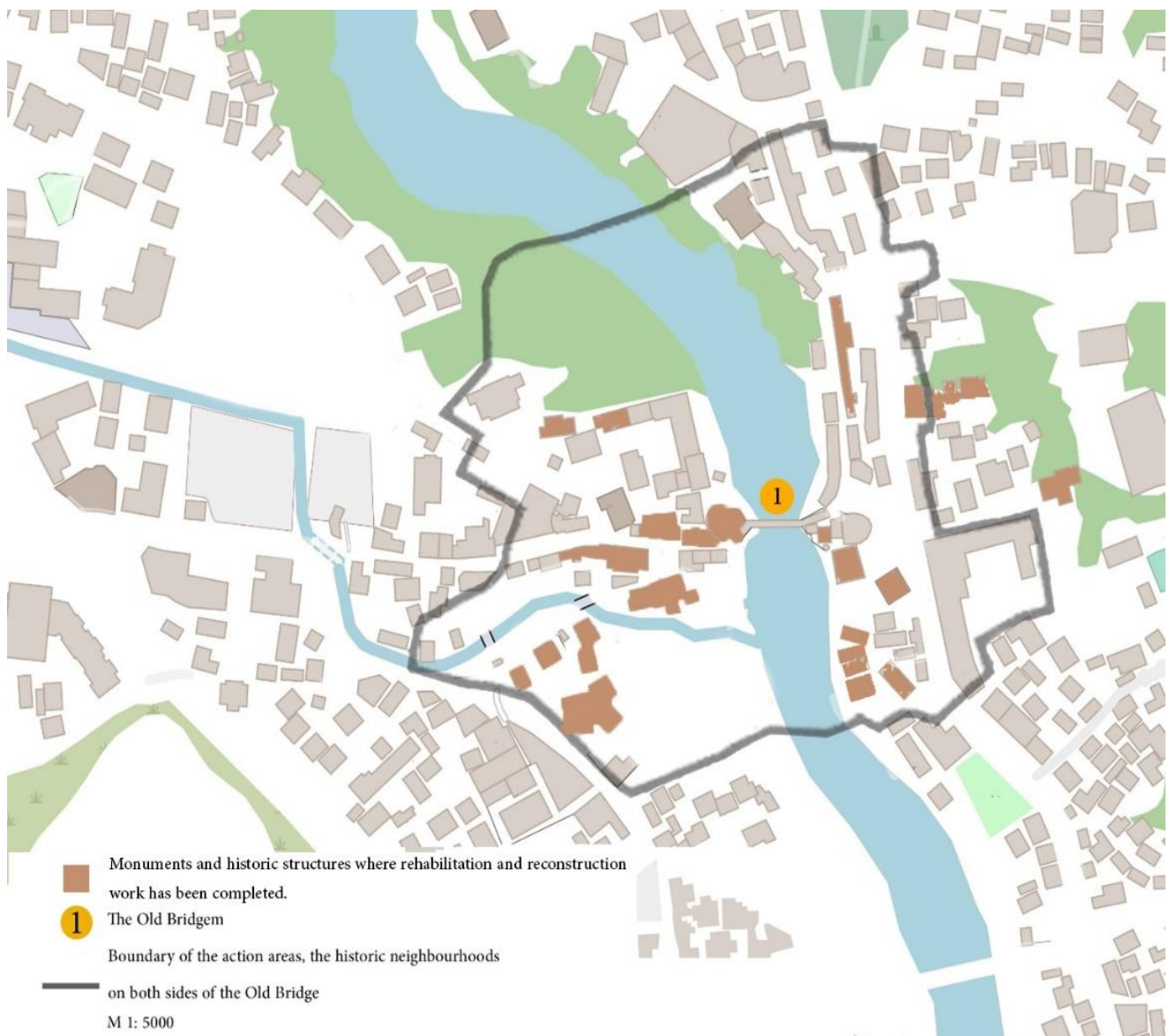

Figure 3. Ground plan of the historic city of Mostar. Source: Author - OpenStreetMap

The restoration efforts concentrated on selected Action Areas, which are the historic neighborhoods on both sides of the Old Bridge. The criteria for intervention on individual buildings and plots were determined through plot-by-plot assessments and detailed surveys. Building permits were issued based on compliance with established norms and guidelines, and incentives and support were offered to aid compliance. Knowledge of traditional construction methods was disseminated among residents, building professionals, and tradespeople, through training and apprenticeship programs. The Agency put the money made from the buildings' commercial re-use back into the historic district, either to pay for other restoration projects or to keep its properties in good repair. Soft loans provided to owners who were willing to invest in the improvement of their properties were used to fund the repair of residential and commercial constructions. For urgent repairs and interventions, the Aga Khan Trust for Culture/ World Monuments Fund also provided design assistance and minor grants [35].

4.4. Kabul, Afghanistan (1992-1996)

The old city of Kabul, Afghanistan, has a long history dating back to its existence as a Buddhist settlement in the 1st to 5th century AD. There are three different sorts of houses: classic, mixed, and modern. The majority are traditional houses and have a central courtyard with summer and winter quarters (Figure 4).

Three master plans for Kabul's urban planning were created between 1960 and 1978. The third master plan dates back to 1978 and proposes to replace the majority of Kabul's residential and commercial sectors with public use like parks and factories. However, due to ongoing warfare until 1996, the plans were not effectively carried out; 80% of Kabul Old City was destroyed and many of the historic buildings were damaged during the civil war that lasted from 1992 to 1996 [36] [37].

The Aga Khan Historic Cities Programme (AKTCP), was introduced in 2002 through the Aga Khan Trust for Culture (AKTC), which is an organization of the Aga Khan Development Network (AKDN). It focuses on the physical, social, cultural, and economic regeneration of Muslim communities, especially in Asia and Africa. The Aga Khan Historic Cities Programme was established in 1988 and is officially recognized as a private non-denominational philanthropic foundation in Geneva, Switzerland. The Aga Khan Historic Cities Programme chose three areas for the conservation of historic sites in Kabul, one of which was the historic residential area of the Asheqan wa Arefan neighborhood. In 2002, the Aga Khan Historic Cities Programme carried out detailed documentation of the neighborhood's historic fabric, mapping land use, infrastructure, and services. They also conducted surveys of key historic buildings and consulted with residents, community leaders, and municipal staff to determine rehabilitation priorities.

Intensive participatory planning exercises were then held with municipal staff and community representatives to identify priorities and needs for the ensuing five years, extensive participatory planning exercises were then performed with municipal officials and community representatives. Despite being well-received by the ministry and municipality, the planning framework's efficacy as a tool to direct and control neighborhood development has been severely hindered by the government institutions' severe lack of planning capacity.

To address these problems, in 2004 the Aga Khan Historic Cities Programme extended its direct support by establishing a historic cities department within the Ministry of Urban Development. Together with departmental workers, joint data gathering and analysis projects were carried out, including an effort to create a community environmental action plan. Several houses were identified for conservation, based on their architectural value and vulnerability. In the Asheqan wa Arefan neighborhood, the Aga Khan Historic Cities Programme repaired 15 traditional houses between 2003 and 2009 and helped 50 other houses get fixed with small-scale grants. Conservation work was done while families were in residence, providing opportunities to record oral histories. The Aga Khan Historic Cities Programme also made use of skilled craftsmen, who trained more than 50 apprentices. Young Afghan professionals and apprentices were trained in documentation, site supervision, and project management. A small household grant system was established to assist owners in completing repairs, with on-site building advice being offered [38].

Figure 4. Ground plan of the historic city of Kabul. Source: Author - OpenStreetMap

4.5. Nablus, Palestine (2002-2004)

The Old City of Nablus has a rich history returned to the third millennium B.C. The city is known for its traditional architecture, narrow alleyways, and unique residential buildings, which are composed of multi- and split levels, small rooms, stairs, and courtyards (Figure 5). The city´s economy has been built on traditional handicrafts [39].

Since 1966, the buildings constructed before 1700 have been protected by Antiquities Law No. 51. However, the challenging political and economic conditions in Palestine resulted in insufficient attention being given to architectural preservation. Following the signing of the Oslo Accords in 1993, civil society associations and projects were established to restore significant buildings, supported by funding from donor countries and executed with local involvement. Unfortunately, with the outbreak of the Al-Aqsa Intifada in 2000, the progress in architectural rehabilitation projects experienced a decline once again [40].

In 2002, the Israeli military conducted an 18-day air and ground bombardment of Nablus, resulting in significant damage and destruction for the city. The historic core area in central Nablus, which was home to 16,000 residents and numerous economically viable businesses, was particularly affected [39]. The majority of destroyed buildings in Nablus were residential (70%), followed by religious buildings (8%), traditional industrial buildings (7%), commercial buildings (3%), educational buildings (3%), mixed-use buildings (18%), recreational buildings (1%), and vacant buildings (5.2%) [41].

A preliminary damage assessment report was prepared with the help of a steering committee consisting of representatives from Nablus Municipality, UNDP, Annajah University, the Palestinian Engineers Association, and the Palestinian Contractors Union. The data was collected through questionnaire surveys, interviews with residents, and on-site observations. The plan for the city's restoration initially seemed unachievable. Relief

efforts and the reconstruction of what had been destroyed were the main priorities. Except for one project that attempted to raise awareness of the value of old techniques and materials, works were restricted to building-related issues alone. The Municipality projects mainly intend to employ the jobless, without caring about providing the workers with sustainable skills. Besides, in reconstruction works, often building elements were replaced by modern, sometimes imported, products. The Repair of the Houses of the Poor project was established by the National Committee for the Governorate of Nablus, in cooperation with the Ministry of Social Affairs and with funding from the Arab Fund for Economic and Social Development in Kuwait. This project aimed to make houses of poor families in Nablus safer and healthier, e.g., by removing humidity. In this project an evaluation methodology was adopted to select the recipient households, giving priority to families in need, such as those who lost their breadwinner or had members who were ill or disabled. The work was to be performed by the beneficiaries themselves in different stages. Beneficiaries received the initial payments through a check. The owner of the house started working upon receiving this first installment. The second installment was only released following a site visit to assess the project's progress; the third installment was paid upon successful completion of the work [42]. The project also took into consideration the financial limitations of the beneficiaries and encouraged contributions from well-to-do relatives. The housing needs of disabled persons were addressed by improving accessibility with wheelchairs provided by the Governorate of Nablus. The project also provided educational opportunities for high-achieving children. However, poverty in Nablus still remains a problematic issue, with a high number of unemployed young people and a need for financial management and family planning education for low-income households. Because of the limited financial resources, the priorities of the government have shifted from the protection of cultural heritage to more pressing issues, such as providing shelter for the homeless and rebuilding the infrastructure [42].

Figure 5. Ground plan of the Old City of Nablus. Source: Author – OpenStreetMap

4.6. Mosul, Iraq (ISIL/Da'esh occupation 2014-2017)

Mosul is located in the Nineveh Governorate and is regarded as one of Iraq's most culturally diverse cities, with a history dating back to several centuries BC. The historic structures in the city are renowned for their decorative

carvings, which combine elements of Egyptian Fatimid and regional Christian Nestorian architectural styles. The city still has its markets, courtyard houses, and narrow alleyways from the Ottoman era. The city has been protected by the National Antiquities and Heritage Law No. 55 (2002) [43].

From 2014 to 2017, the city was occupied by ISIL/Da'esh, causing significant damage to its cultural heritage. During the occupation and subsequent liberation of West Mosul, cultural heritage sites were intentionally destroyed, leading to the destruction of more than 80% of the buildings in the old city, with a significant loss of integrity of constructions within the historic core along the Tigris River [44].

After the war, in 2018, UNESCO introduced the "Revive the Spirit of Mosul" initiative, which aimed to support the city's rebuilding and foster social cohesion by empowering residents. This initiative has the opportunity to engage residents and owners in constructive dialogue about their past and shared values, which is the cornerstone of peacebuilding and reconciliation [45]. UNESCO with the United Arab Emirates, in partnership with 13 donors from the European Union, is working to bring the Old City back to life by restoring and rebuilding historic houses [46]. At the moment of writing, in 2023, the reconstruction of the first group of selected heritage houses is nearly completed, allowing 67 families to return to their houses. The second phase of the project aims to reconstruct double the number of houses from the first phase. The primary focus of the initiative is to revive the educational and cultural domains, creating employment prospects and imparting skills to the youth, encouraging them to join an apprenticeship program, to favor rebuilding of prominent landmarks in Mosul's historic center [47].

However, the governorate of Nineveh has expressed concern that the reconstruction of the city without a comprehensive plan could lead to negative long-term effects on sustainable development. To address this, the governorate proposes:

- Cleaning the city of debris and explosive remnants of war (implementing a debris management plan that provides economic and social benefits to the population as proposed by the United Nations Environment Program in integrating explosive hazard management and recycling work).
- adopt a private licensing process (evaluation of building applications is carried out through the "standard track" by a committee that includes representatives from the municipality, the Urban Planning Directorate, and the provincial council. For buildings with minor damage, a "fast track" can be used which involves submitting a simple application followed by approval or rejection directly from the municipality).

As for the rehabilitation of buildings of high architectural and heritage value, the "heritage path" must be followed, which requires approval of the application by a committee similar to the Standard Path Committee, which also includes representatives from UNESCO and the State Council of Antiquities and Heritage. The guiding principles are:

- Support the ongoing self-reconstruction process (i) establishing a warehouse for building materials using traditional building bricks and recycled materials, ii) establish a self-contained rebuilding facility that can provide technical support and advice and expedite the licensing process, iii) develop and deliver on-the-job training modules in self-construction techniques, iiii) develop extensive recruitment plans).
- Support the inhabitants of the old city with property (i) creation of a special quasi-judicial/administrative body dedicated to resolving property disputes through mediation, conciliation, and negotiation, ii) coordination and exchange of information with the Land Registry Office, iii) compare ownership boundaries with a pre-existing documentation.
- A block-based approach, a recovery strategy tailored to the specific context of the old city.

It is the division of areas through a group of residential blocks legally stipulated by the municipality. The outlines of each urban "block" are defined by several criteria including the maximum number of homes, the current layout of roads, and the recognition of legislative boundaries. The stakeholders involved in this plan

include the Old City Working Group, the United Nations Development Programme (UNDP), and the Mosul Self-Relief Fund (MSRF), as well as the local government and United Nations agencies.

The plan outlines the following steps: i) developing and implementing a rebuilding and recovery plan based on the "large residential blocks" in the old city; ii) coordinating the rebuilding and recovery activities of government and international agencies in the old city, iii) starting the rebuilding and recovery process based on a pilot "large residential block." The "large residential blocks" refer to a group of urban housing blocks defined by the municipality in the old city, based on criteria such as the maximum number of homes, road planning, and legal boundaries. 48 large residential blocks, each with a capacity of between 150 to 450 land plots and a maximum of 3,500 inhabitants, have been identified. The plan highlights the benefits of the "large residential blocks" approach, such as the opportunity to clean up organized rubble and war debris, form community organizations and resources, and receive support from international donors due to the high cultural heritage value of the areas [45].
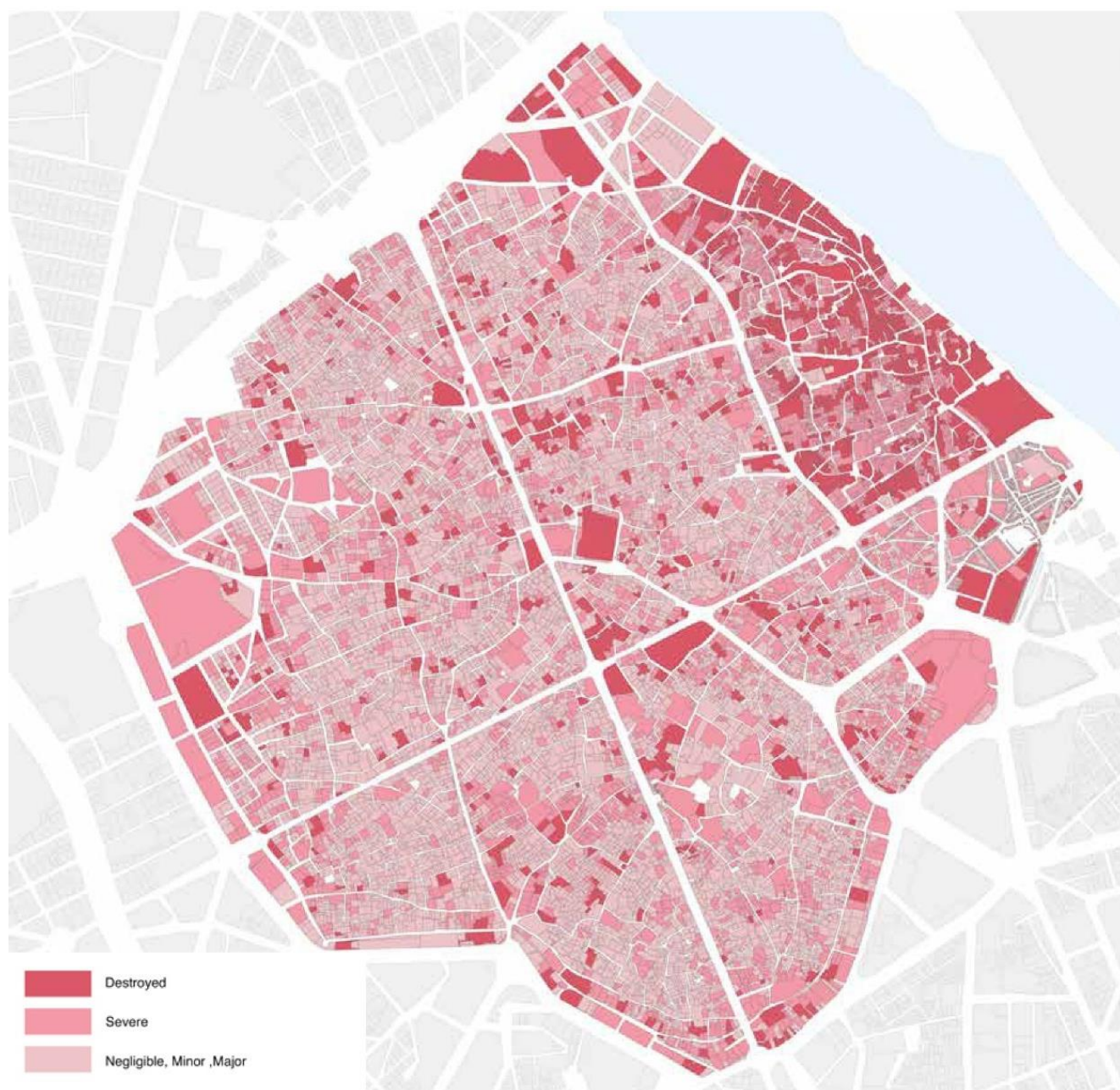

Figure 6. Level of destruction in the Old City of Mosul. Source: (UNHABITAT, 2018)

Table 3. Summary of the implemented actions in reconstruction approaches in the analyzed case studies

Implemented actions	Beirut	Dubrovnik	Mostar	Kabul	Nablus	Mosul
Planning process	Long-term planning; Focus on economic considerations	Short to medium-term goals; Focus on preservation	Multiple projects aimed at achieving specific long-term objectives; Focus on preservation	Short to medium-term goals; Focus on community	No plan	Long-term planning; Focus on multiple aspects
Documentation	No documentation efforts; Imposing a new city landscape	Detailed surveys of damage; Availability of archive of architectural, textual, and photos of situations before the war	Plot-by-plot conditions assessment; Detailed surveys	Mapping and recorded oral histories	Questionnaire surveys, interviews, and on-site observations	So far, not enough documentation efforts
Attention to people's needs	Neglecting people's needs	Limited consideration of people's needs	Consideration of people's needs via community-oriented powers agency	Consideration of people's needs via consultation with residents	Consideration of people's needs via implementation of the project - Repair of the Houses of the Poor	Consideration of people's needs via proposing solutions that consider urgent issues such (e.g. bureaucratic procedures and property disputes)
Involvement of population	No people involvement	Involvement of local inhabitants via joint preparation of documentation	Involvement of local inhabitants via training program	Involvement of community representatives via joint analysis exercises and skilled craftsmen via a training program	Active direct involvement of local inhabitants via execution of construction work	Involvement via local inhabitants' on-the-job training modules
Involvement of international	Solidere (private company)	UNESCO	Aga Khan Trust for Culture	Aga Khan Trust for Culture	United Nations Agency	UNESCO
Financial instruments for support	Private financing; International investment	International and local financing; Donations; Loans	International financing; Grants; Loans	Grants	National financing	International financing; Donations

5. Discussion

The analysis of the case studies has highlighted that, in post-war reconstruction, several types of plans have been used, based on each city's capacity and organizational structure. These include a master plan for the reconstruction and development, an action plan, a conservation and development plan, a land use plan, and a reconstruction and recovery plan based on "large residential blocks". The choice of the most suitable plan depends on the specific context and needs of each city. Some plans are sound choices for long-term urban revitalization; others address specific considerations related to heritage preservation and sustainability, as in the cases of Beirut, Dubrovnik, Mostar, Kabul, and Mosul. The review suggests that a well-devised plan needs to consider cultural identity as a significant asset for city development, highlighting the significance of the city's historical center and the pressing need to maintain its spatial elements. Such a plan needs to offer a comprehensive and long-term approach to urban revitalization. This means that it should consider multiple aspects, such as infrastructure, housing, and public spaces. Examples that have been able to do so (e.g. Dubrovnik and Mostar) have resulted in being more successful than others (e.g. Beirut). Approaches that reduce heritage conservation to facadism, as in the case of Beirut, have clearly shown their limitations.

Good documentation of the damage has shown to be crucial for the success of the reconstruction process (e.g. Dubrovnik). Creating an archive of architectural, textual, and photo documentation provides a useful historical record that can serve as a reference for the reconstruction efforts, as in the case of Dubrovnik. The use of plot-by-plot assessments and detailed documentation including mapping land use, infrastructure, services, and surveys of key historic buildings, can be a valid support to intervention criteria for individual buildings and plots (e.g. Mostar). Consulting with residents, community leaders, and municipal staff has enhanced the accuracy and relevance of the documentation. The execution of conservation work while families were in residence has provided opportunities to record oral histories, preserving thereby valuable intangible heritage, as in the case of Kabul. In fact, in the absence of technical documentation, traditional knowledge and communal memories associated with the site could also be used to guide reconstruction, as happened in the case of Kabul.

A detailed survey of damages has allowed for the estimation of the cost of reconstruction (e.g. Dubrovnik). In summary, comprehensive documentation, mapping, surveys, participatory planning exercises, and data collection are initial, crucial steps for a sustainable reconstruction.

Other aspects that proved to be of paramount importance for sustainable reconstruction are the attention to people's needs and the involvement of people in decision-making. Reconstruction focused on luxury stores and high-end restaurants, such as in the case of Beirut, failed to address the local community's priorities. On the contrary, attention to people's needs, for example through the establishment of the agency with integrated, direct, flexible, and community-oriented powers, as in the case of Mostar, had a positive impact on problem-solving and decision-making during the reconstruction process. Similarly, participatory planning exercises with municipal staff and community representatives have shown to be an effective way of identifying priority issues, as in the case of Kabul. Also, data collection through questionnaires, interviews, and on-site observations can contribute to a comprehensive understanding of residents' needs and preferences, as in the case of Nablus. In conclusion, a balanced consideration of the needs and interests of multiple stakeholders favors a sustainable reconstruction process.

Involvement of the population, also through training programs, has shown to be particularly effective. For example, the partnership between local groups and international organizations, as done in Dubrovnik, has ensured that restorers possess the necessary knowledge and skills to undertake restoration work. Similarly, in the case of Mostar, the establishment of the community-oriented agency had a positive role in the dissemination of knowledge of traditional construction methods among residents and professionals through training and helped to preserve the traditional building techniques and materials. In the case of Kabul, the appointment of skilled craftsmen for the training of young professionals has resulted in the successful transfer of traditional knowledge to younger generations. This can also have a positive economic impact, by creating employment prospects, as in the case of Mosul. A suitable and participatory training program is crucial for conserving and passing through

knowledge of traditional construction methods, enabling to proper application of traditional materials and techniques during reconstruction.

For the reconstruction, consistent funding and effective instruments for planning and distributing funds, are required. When this is missing, the risk exists that owners are forced to sell their properties as they cannot fulfill the strict time and budget requirements, as in the case of Beirut. In some cases, property disputes may arise; in these cases, the establishment of a special quasi-judicial/administrative body dedicated to resolving property disputes through not only the use of documentation, but also of mediation, conciliation, and negotiation, can be of help, as demonstrated by the case of Mosul.

In general, the limited financial capacity of the government to reconstruct housing is one of the most relevant challenges in the reconstruction processes, leading to delays or limiting the extension of reconstruction. External support, such as loans, donations, and participation of international foundations, may offer a solution, as in the case of Dubrovnik. However, the case of Beirut underlines that the reliance only on international finance by a private company can lead to a lack of local control and ownership over the reconstruction process. A financial instrument that was shown to be able to encourage community participation and empower property owners consists of the provision of soft loans to homeowners willing to invest in property improvement. These loans were financed through government funds and loans, with some support from donations by former residents, and international foundations. Similarly, design assistance and small household grant systems have been proven to enhance the effectiveness of rehabilitation efforts and community participation. The case of Kabul is an example of how small-scale interventions can lead to significant improvements in a neighborhood's condition. In some cases, as in Mosul, the reinvestment of funds generated by the commercial reuse of buildings in historic areas has created a self-sustaining mechanism, where revenue generated from commercial activities supported other rehabilitation work or property maintenance.

In summary, financing post-war reconstruction remains a crucial issue; a combination of public and private funds, with the use of financial instruments involving as much as possible residents and owners, was shown to effectively support sustainable reconstruction.

The discussed cases reflect the increasing focus of guidance on education and training in heritage conservation. The investment in specialized training programs, distribution of traditional technique knowledge, and capacity building corresponds with the goal, mentioned in the international documents, of preserving cultural heritage through skill and expertise transmission. These initiatives contribute to the sustainability of heritage conservation efforts and the promotion of traditional practices.

Although some cases align with the guidance, prioritizing the needs of the people and engaging communities, there are occurrences where guidance recommendations were not fully implemented, leading to contradictory actions against the guidance's principles as in the case of Beirut.

The guidance's information on documentation and the broader aspects of conservation and reconstruction are closely related to the practices followed in the discussed cases. The investigated cases demonstrate efforts for conducting detailed surveys, assessments, and documentation, including the participation of professionals, experts, and local stakeholders. They correspond with guidance focus on comprehensive documentation, public availability, norm adherence, and involvement of relevant parties in decision-making.

The executed strategies in the highlighted cases display varying alignment levels with sustainable reconstruction principles and cultural heritage preservation. The Dubrovnik and Mostar cases indicate robust ties to sustainable practices and community well-being, whereas the case of Beirut indicates potential authenticity compromise. The block-based approach in Mosul reflects a strategy that considers both the physical aspects and legislation of the historic city.

Although some cases, like Kabul, reflect favorable alignment with the guidance's focus on public participation, there have been actions, such as the failure to formally endorse the planning framework, that do not fully comply

with recommended approaches. This underscores the importance of contemplating the unique context and challenges each case presents, and emphasizes the need for stronger local community collaboration in decision-making for heritage conservation and reconstruction.

The guidance and cases share common aims and principles, highlighting the importance of adequate funding, diversified financial sources, stakeholder involvement, and the promotion of sustainable reconstruction approaches. The provided cases illustrate practical real-world applications of these principles.

6. Conclusions

The international debate and the development of guidance related to the sustainable reconstruction of built heritage after natural disasters and conflicts reflect an evolution towards a more comprehensive approach, that considers multiple dimensions, including sustainability, documentation, education and training, community involvement, and financial instruments. The investigated case studies of reconstruction after conflicts and disasters have shown that this guidance has been considered in the implementation of reconstruction, although in varying degrees and aspects.

The restoration and reconstruction strategies employed in Beirut, Dubrovnik, and Mostar varied significantly. Beirut prioritized modernization and development, resulting in gentrification, displacement, and a lack of public consultation. In contrast, Dubrovnik and Mostar prioritized the preservation of historical structures and traditional construction techniques, involving local communities and international organizations to preserve the cities' identities and cultural heritage while promoting sustainable development. The still ongoing restoration and reconstruction of Kabul, Nablus, and Mosul made use of a combination of efforts and strategies, involving multiple stakeholders, including governments, international organizations, NGOs, and local communities. Limited financial resources, security concerns, and political instability were identified as factors often hindering the reconstruction progress.

Overall, these cases emphasize the significance of safeguarding cultural heritage during times of conflict and the need for comprehensive post-conflict reconstruction and recovery plans. The involvement of local communities, government, international organizations, and funding bodies is critical to ensure the success and sustainability of these efforts.

Author contribution

The approach was jointly developed by the authors, who also chose the paper's main goal and structure: conceptualization, Christine Kousa; methodology, Christine Kousa, Barbara Lubelli, and Uta Pottgiesser; software, Christine Kousa; validation, Christine Kousa, Barbara Lubelli, and Uta Pottgiesser; formal analysis, Christine Kousa and Barbara Lubelli; investigation, Christine Kousa; resources, Christine Kousa; data curation, Christine Kousa and Barbara Lubelli; writing—original draft preparation, Christine Kousa; writing—review and editing, Barbara Lubelli; visualization, Christine Kousa; supervision, Barbara Lubelli and Uta Pottgiesser; project administration, Christine Kousa; funding acquisition, Christine Kousa. The final version of the work was approved by all authors.

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