Heritage Preservation in War: Proactive and Reactive Approaches Applied to the Old City in Sana’a, Yemen

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Abstract
The inherent nature of heritage as a symbol of a community’s identity – whether it be dependent on national, ethnic, or religious affiliations – has made it a frequent target during warfare despite heritage destruction being a war crime according to the 1954 Hague Convention. During war, the institutions responsible for preserving heritage spaces are often unable to offer support, making it the community’s responsibility to uphold preservation methods which can be secondary to the pressing issues of safety. The protection of heritage amid war depends on numerous variables ranging from community knowledge to the available resources and capacity to enforce preservation strategies.

The Old City in Sana’a, Yemen – a UNESCO World Heritage Site – has recently been at the center of a foreign-backed civil war. Since 2015, it has suffered damage from strategic bombing to its historic core. It is therefore an appropriate site for studying the relationship between architecture and war; for highlighting the toll of armed conflict upon a world heritage city; and for proposing both proactive and reactive approaches that can help mitigate further damage. By researching proposed and existing strategies for preserving heritage in war and applying them to the Old City of Sana’a, this thesis sheds light on the obstacles that heritage sites face in planning for war. Ultimately, it seeks to contribute to the continuing conversation around the protection of heritage in Sana’a and worldwide, with the hope that improvements will be made in Sana’a during a time of eventual peace. The lessons learned in Sana’a will have relevance for other World Heritage Sites, and specifically for developing cities with historic cores that are beginning to create management plans for their future.

Keywords
Sana’a, Yemen, war, emergency planning, heritage protection

Disciplines
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Comments
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This thesis is the culmination of the knowledge I have acquired in the past two years of study and, more importantly, is a body of work on a subject that I care about deeply.

Studying the effects of war daily can, however, wear away at the emotions and hopes of the human soul. To the Yemeni people who continue to write about eventual peace, and on the importance of protecting your heritage, thank you. I oftentimes found myself reading your blogs, or posts or news articles to inspire motivation and to refill my heart.

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# Table of Contents

Section 1. Introduction ...................................................................................................... 1  
   Literature Review........................................................................................................... 4  
   Methodology.................................................................................................................. 9

Section 2. Heritage and War.................................................................................................. 12  
   From Local to International.......................................................................................... 12  
   About Heritage............................................................................................................... 13  
   The Wagering of Heritage in War.................................................................................. 15

Section 3. International Laws and Organizations................................................................. 19  
   UNESCO 1954 Hague Convention .............................................................................. 20  
   ICOMOS 2017 Post Trauma Recovery and Reconstruction...................................... 21  
   United Nations 2016 New Urban Agenda ................................................................... 22

Section 4. Methods for Preserving Heritage ................................................................. 23  
   Strategies................................................................................................................... 24

Section 5. Architectural Preservation in the Context of Sana’a ........................................ 33  
   Building Types.......................................................................................................... 34  
   The War in Yemen....................................................................................................... 42  
   Preservation Before the War....................................................................................... 44  
   Destruction During the War....................................................................................... 45  
   Application of Approaches......................................................................................... 49

Section 6. Conclusion..................................................................................................... 84

Bibliography.................................................................................................................. 87

Index.............................................................................................................................. 93
List of Figures

Figure 1: Map of Yemen ................................................................. 2
Figure 2: "The house of the poet" .................................................. 36
Figure 3: The Great Mosque in Sana’a ........................................... 38
Figure 4: Suq al-Milh, date merchant ............................................ 40
Figure 5: Map of Ownership and Destruction in the Old City .......... 48
Figure 6: List of buildings referenced in the Application of Approaches ................................................. 49
Figure 7: Basic tenets of an emergency plan ................................ 60
Figure 8: Traditional alabaster and stained-glass window .............. 64
Figure 9: Graduated Conservation Taxonomy .................................. 66
Figure 10: Qibla wall in the Great Mosque ...................................... 67
Figure 11: Party wall between House 01 and 03 ............................. 70
Figure 12: Interior stabilization of House 01 ................................. 71
Figure 13: Al-Qasimi block before the 2015 bombing .................... 72
Figure 14: Destruction of Block01 in the al-Qasimi neighborhood .... 72
Figure 15: Block of bombed al-Qasimi street ............................... 73
Figure 16: Visual timeline of al-Qasimi following the 2015 bombing .. 74
Figure 17: Comparative photo of House 01 ................................. 75
Figure 18: Comparative photo of House 02 ................................. 77
1. Introduction

After the effects of armed conflict have been fully realized, those invested in architectural heritage often consider how to rebuild, reconstruct and memorialize the spaces that have endured man-made afflictions of power. During war, the historical fabric of a city does not take precedence over the livelihood of its residents, and to consider the stones of a building among the flesh of a human life appears cold and detached from reality. Yet, these remnants of the past carry forms of identity and memory so meaningfully ingrained within the human experience. Architecture as a symbol of heritage makes it a continuous target during warfare meant to humiliate and erase the history of the associated people, whether this intention is openly stated or not. Additionally, historic sites within proximity of bombings are susceptible to structural damage or complete demolition despite the objectives of military targets. Therefore, we should not think of protecting these spaces as an afterthought, but instead delineate how the values of these spaces shift between the extremities of peace and war and contemplate to what degree the responsibility of preserving the integrity of a people is placed on preserving the integrity of a place.

It is institutions, both local and international, that are oftentimes responsible for preserving these spaces, but in war political and financial implications reduce these institutions’ capability of protecting heritage. It then becomes the responsibility of the community to uphold preservation methods which are at odds with more pressing issues of safety. The question then is, how do we prepare architectural heritage for war? Just as governments, organizations, and communities collaborate to preserve historic spaces for the sake of economic development, or to protect them from the effects of climate change
and natural disasters, so too should that same intensity of problem-solving be applied to sites where heritage is threatened by the consequences of warfare.

Figure 1: Map of Yemen
Adapted from www.yemen.liveuamap.com

Sana’a is the capital of the Republic of Yemen, located on the southern tip of the Arabian Peninsula and bordered by Saudi Arabia and Oman. It is also one of the oldest continuously inhabited cities in the world, dating back 2500 years. The city sits seven thousand feet above sea level on a plateau between several mountain ranges and two dormant volcanic fields. The city proper is two thousand square miles and its current population is the largest in Yemen, estimated at a little under two million residents. The city
was listed as a UNESCO World Heritage Site under criteria (iv), (v), and (vi)\(^1\) in 1986, and was inscribed on the UNESCO List of World Heritage in Danger in 2015. It is currently at the center of a foreign-backed civil war and has experienced damaging strategic bombing to its historic core; however, a large amount of the city’s historic building stock, including a majority of its most important sites, has not yet experienced damage. It is therefore an ideal site for studying the relationship between architecture and war, highlighting the costs of armed conflict upon a world heritage city, as well as offering opportunities for fashioning policies that can help mitigate further damage. The lessons learned in Sana’a will have relevance for other World Heritage Sites, and specifically for developing cities with historic cores that are beginning to create management plans for their future.

My acquaintance with Sana’a began in 2013, when I had the opportunity to study Arabic at the Yemen College of Middle Eastern Studies. I was without technical knowledge of the city’s architecture at the time and was captivated by the distinct and inspiring form of the city. What became apparent to me was that the country’s isolation had influenced not only a continuity in the language, but also the cultural and architectural heritage of the city as well. Weeks before my planned return home, I was awakened in the early morning by an indescribable force, which I instinctively knew was a drone from previous news reports.


*Criterion (iv)*: Within its partially preserved wall, it offers an outstanding example of a homogeneous architectural ensemble, which design and detail translate an organization of space characteristic of the early centuries of Islam which has been respected over time.

*Criterion (v)*: The houses of Sana’a, which have become vulnerable as a result of contemporary social changes, are an outstanding example of an extraordinary masterpiece, traditional human settlement.

*Criterion (vi)*: Sana’a is directly and tangibly associated with the history of the spread of Islam in the early years of the Hegira. The Great mosque of Sana’a, built in year 6 of Hegira, is known as the first mosque built outside Mecca and Medina. The Old City of Sana’a has contributed to and played a major role in Yemeni, Arab and Islamic World history through the contributions of historical Yemeni figures including Al Hassan B. Ahmed Al Hamdany, Ahamed Al Razy and Al Shawkany.
about the U.S. drone attacks against al-Qaeda taking place in Yemen. This time, however, was different because never before had a drone flown over the capital city. That same day word spread that diplomats from the United States were being evacuated, with several western embassies closing their doors in the city.\textsuperscript{2} This came at a time when the country had expectations for improvement, as serious discussions were taking place to form a multidisciplinary plan for the future. After that day, however, the atmosphere of the city turned tense and somber, with everyone without knowledge of what would take place in the months ahead. I myself wondered what would happen to the city I had learned to love, and more importantly, what would happen to the friends I made. Since then I have had to watch and listen from afar as the devastating situation in Yemen worsens. Through this thesis, I hope to begin to give back to this city by offering recommendation for preserving its important, but at risk, built environment.

1.1 Literature Review

The past twenty years of scholarly research on the architectural heritage in Yemen includes a large array of topics and contains information ranging from the preservation campaign that restored the Old City to its current conflict. In the late 20\textsuperscript{th} century, the use of modern materials and insensitive construction in the Old City threatened the traditional architectural heritage of the area. The campaign to preserve the Old City is comprehensively covered in several publications, with the most extensive being, \textit{Building a World Heritage City} by Michele Lamprakos. In her book she delves into the complex process that abetted the architectural conservation of the city and its inclusion as a World Heritage Site

designated by UNESCO. In her work, she approaches topics that are centered on preserving cities with a living heritage and recalls the political developments that formed during the preservation process.³

For most of its history, the Old City of Sana’a remained relatively unchanged by western concepts of modern architecture. Although the city has modern infrastructure, such as telecommunication and electrical towers, it retained much of its architectural authenticity using traditional methods in maintaining its historic structures. Traditional materials, such as the clay and gypsum mixes used to construct buildings, continue to be in use in the Old City. Until the mid-twentieth century, local craftsmen performed virtually all architectural maintenance and construction in Sana’a. A more detailed account of the traditional methods of building in Yemen are found in the book, *Minaret Building and Apprenticeship in Yemen*. In this book, the author and Emeritus Professor gives a complete description of his experience working as a building laborer for craftsmen specialized in the art of minaret building. It provides insightful knowledge into the social and cultural aspects that are rooted in the country’s architecture and define Yemen as a country of advanced builders.⁴ In conjunction with an article advocating for a conservation-based development to the historic city, and an article that looks at the modern architecture in juxtaposition to traditional buildings, these sources are useful in demonstrating the past preservation of Sana’a before the war, when modernization and abandonment had been viewed as the primary threat to the city’s architectural heritage.⁵

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Trevor Marchand, the author of *Minaret Building and Apprenticeship in Yemen*, has most recently edited a publication that converges the preservation of Yemeni architectural heritage, its building techniques, and the threats to these achievements titled *Architectural Heritage in Yemen: Buildings that Fill my Eye*. Topics discussed throughout its pages capture the architectural and intangible heritage found in the country. It explores Yemeni architectural heritage from a wider scope and includes varied architectural styles and histories for an audience who may not be acquainted with Yemen. Each chapter highlights an architectural achievement in Yemen through photos and histories to strongly convey what was (or is threatened to be) lost in the current conflict. The list of contributors to the book includes the architect, conservator, and scholar Ronald Lewcock. In his chapter he succinctly describes what he oversaw as the UNESCO coordinator of the campaign to preserve the Old City.6 Much of the challenges that he mentions in his article, such as the restoration of social functions of old buildings, controlling vehicular traffic, and the legislation for the protection of old buildings and its enforcement have continued to plague the Old City into the current conflict.

Ronald Lewcock also authored the book that was published by UNESCO in 1986 following the conservation campaign titled, “The Old Walled City of Sana” which details the city’s history and the conservation of the architecture, “threatened by the irreparable decay that modern development inflicts on historic cities.”7 This work was preceded by a volume that he edited in collaboration with R.B. Serjeant and published in 1983 titled *Sana’: An Arabian Islamic City*. It contains arguably the most extensive collection of information on the

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city, with articles that provide in-depth descriptions on many topics including the history of Sana’a since ancient times, domestic and religious cultures of the people, and the various architectural styles and spaces that can be found within the city.⁸

Many publications address the topic of architecture and war and focus on subjects including the deliberate targeting of architecture during war, the evolution of international policies that cover the destruction of heritage, and why political violence against the built environment is equally atrocious to the targeting of human life during war. In his book, *The Destruction of Memory: Architecture at War*, Robert Bevan presents various cases where architecture has purposefully been targeted during war. The tactics for disarming a group of people through the destruction of their heritage, and the justification for these atrocities, are encapsulated in the instances outlined in this book. He argues that the warfare against architecture is a deliberate form of genocide meant to erase memory, destroy history, terrorize citizens, and segregate civilizations. The inclusion of events from the past fifty years demonstrates the current state of architecture and war and the socio-political atrocities that continue to plague the globe.⁹

Other publications that address the complicated relationship between war and architecture take on a more theoretical view that contemplates the relationship between heritage sites and the purposeful targeting of them during war. In the paper “Cultural Heritage and Armed Conflict: New Questions for an Old Relationship”, authors Dacia Viejo-

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Rose and Marie Louise Stig Sørensen argue that heritage sites are inherently “armed” spaces that convey political and social differences in the context of warring regions. This “old” relationship between war and heritage, and the deliberate targeting of cultural sites, is analyzed by covering international law and policies that indicate the historical changes surrounding the subject. These policies have yielded guidelines for the protection of cultural sites which have since extended into the realm of reconstruction and recovery. Finally, the authors beg the question of whether this new understanding of heritage and war allows us to “disarm” cultural sites, without providing a clear answer as to how.10

Another publication that focuses on the built environment as an agent of war includes the work by Martin Coward in his 2006 article “Against anthropocentrism: the destruction of the built environment as a distinct form of political violence.” The paper makes the argument that an anthropocentric bias, that prioritizes humans above all other considerations, has shaped the way that humans view war and the destruction of the built environment. This bias, which results in the belief that the destruction of architecture is only secondary to the targeting of human life, fails to consider that the built environment is fundamentally important to life or “Being”. Therefore, the author asserts, the built environment is not subordinate to the humans who live within them; and the destruction of these environments is a form of political violence equal to that of loss of human life. The article makes clear that, although critiques of anthropocentrism are often viewed as anti-human, the built environment is fundamental to humanity.11

The views expressed in these sources are referenced throughout this thesis and have helped to develop a framework that attests to contemporary knowledge addressing the Old City in Sana’a as well as architectural heritage and war. Various other sources are also addressed in these pages which converge around methods with which heritage is preserved before, during, and after war. This thesis joins these diverse approaches for preserving heritage amid war to discuss the topic from a holistic viewpoint. There are publications which discuss specific aspects of heritage and war, including the built environment, moveable heritage, and governmental laws, but there is no publication that considers the preservation of these aspects as a whole. Publications that provide information on preserving the various facets of the Old City in Sana’a do so in the context of it being a developing site, with issues relating to modernity, and not as a site exposed to war. This thesis acknowledges that heritage sites are comprised of multiple layers, including their tangible and intangible heritage, as well as their residents, workers, and governmental entities who make-up a city, and offers preservation strategies that pertain to these various assets. By applying these strategies to the Old City in Sana’a, a renewed understanding of the numerous threats to the heritage site emerges while initiating new considerations for preserving heritage amid war.

1.2 Methodology

The scope of this paper moves from the macro to the micro, beginning with looking at broad topics surrounding the subject of heritage and war and moving into this issue in the case of the Old City in Sana’a. The first section, Heritage and War, demonstrates my working assumptions when addressing heritage and war. Topics covered include why heritage may be targeted during war, and examples of how heritage is used as a tactic in war. In studying these tactics, I looked to Palestine where numerous examples of these
tactics are actively used, displaying the range of ways in which heritage is wagered during war. Following these overarching issues, I look to international organizations and laws and their approach to protecting heritage amid war. These examples are those specifically formed following WWII. Following the end of WWII, heritage increasingly became an issue of international interest in partnership with the local community as we see with the creation of UNESCO and the World Heritage List. The decision to begin my study at the outset of World War II comes from the belief that the scale and scope of mass destruction that occurred during WWII brought about a change in paradigm that continues to influence the preservation practice until the present, albeit applied largely in “Western” countries. By looking at specific lessons from each example in correspondence with the situation in Sana’a, I hope to contribute to the continuing conversation of protecting heritage in Sana’a and the globe, with the hope that improvements will be made in Sana’a during a time of eventual peace.

A substantial portion of my research focused on defining the various methods that are used before, during, and after war through consulting various secondary sources from wartime cities around the world. The types of methods that were chosen for this paper are contingent on the belief that the preservation of heritage depends on various tangible and intangible aspects of a site. Including approaches that protect built heritage is only one side of the multifaceted solution to preserving a city. Other considerations, such as the community, relationship between participants, and the aftermath of warfare, were necessary to address in a paper that sought solutions for protecting heritage. By looking at various case studies where architectural heritage was destroyed during war, and the problems and solutions that arose from each, I was able to assemble these approaches according to the lessons each case study provided.
While this paper generally surveys approaches to preserving spaces experiencing armed conflict, it specifically considers this topic within the context of Sana’a, Yemen. Once I determined each approach, I considered their application in the Old City. The application of these approaches sought to be enacted as they were applied to the corresponding case study. If the approach could not be applied similarly, I reformatted it to fit into the context of the Old City. Studying the history of conservation work in Sana’a, and the various issues that the city experienced, contributed in framing this context, along with the assessment of these issues in conjuncturer with hypothesizing any future risks to the area which helped form my suggestions. This method hoped to find whether other successful approaches could work in the Old City and highlights the complexities of the Old City that have not yet been considered in lieu of recent events. It also intends to bring attention to the obstacles that are confronted when planning for war and the harsh realities of applying methods to overcome them.

When applying the various approaches to the Old City, I consulted with residents and professionals who have lived, or continue to live, in Sana’a. Interviews were conducted with architects who worked in the Old City during the campaign that restored the Old City, former government workers for the General Organization for the Protection of Historic Cities in Yemen (GOPHCY), and scholars who have published articles that I reference in my paper. I also spoke with residents who continue to live in the Old City, some more traditional than others, to gain a better understanding of how the community views the current war, and its effect on their heritage. These interviews provided insight that news sources cannot or do not address.
2. Heritage and War

2.1 From Local to International

The scope of heritage management and its supporters has, beginning in the 19th century, shifted from being solely accountable to local populations into largely an international affair. In Europe, the Industrial Revolution altered the means of production and threatened the traditional buildings in England; in turn, the rebuttal from William Morris and the Arts and Crafts Movement’s manifesto sparked one of the first guidelines towards actively preserving buildings which went beyond the daily patrons or a continued usage. In the 1930’s, the First International Congress of Architects and Technicians of Historic Monuments met in Athens to design a charter that advocated for the preservation of historic monuments and their settings.12 These early examples of international support for preservation culminated in the creation of the United Nations Educational Scientific and Cultural Organization (UNESCO), a subset of the United Nations which formed in response to the devastation that occurred during World War II.13 These international cultural organizations have, in many ways, heralded the recognition of “world heritage” by placing on pedestals the historic areas in almost every country. While UNESCO and other UN members face much criticism for their inactions and bureaucratic policies, they are also representative of the learned concepts and ideologies in the preservation field.

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2.2 About Heritage

As an inheritance from the past, heritage is preserved so that future generations can learn from and enjoy these resources. Yet, heritage is not dormant and instead is an ever-changing composition with facets from the past combined with the present. This applies to tangible spaces and the buildings and open spaces that occupy them, but also to the intangible assets, including their function and traditions, crafts, and smells and sounds associated with them. The Suq al-Milh in Sana’a, which will be discussed in more length in section V, is an example of the complex changes that take place within an historical space while retaining much of its tangible and intangible characteristics. The position of the suq, its social and economic function and even many of the crafts sold by the vendors, have continued for centuries. Yet, the change in building materials and the influx of foreign goods and modern appliances sold in the market have created an additional layer in how locals observe and use the area that differs from customs of the past. The outdated belief that heritage should be preserved in toto leaves little room for heritage to adapt and transform with incoming generations and draws the risk of becoming a space that is no longer representative of the people who live and work in the area.

Paradoxically, although international cultural organizations advocate for “world heritage,” heritage is fundamentally demonstrative of a single set of inheritance groups. “The very notion of a universal legacy is problematic, for confining possession to some while excluding other is the raison d’être of most heritage.”14 It is a sense of ownership that allows people to gain a personal attachment to a place, and like a family recipe or your grandparent’s clock, a feeling of attachment does not apply to every item with which you

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come into contact. I postulate that World Heritage, if given the benefit of the doubt, attempts to extend these rights of ownership over important cultural sites to include everyone. This position is in opposition to the inherent nature of ‘otherness’ that occurs in heritage. The inclusion of terms by UNESCO that refer to “universal values” are not necessarily applicable during war, because the deliberate targeting of heritage is “because of its significance and representative meaning for one particular group, not because of its universality.”

The creation of boundaries between nation-states and nationalistic patriotism has only furthered the problems that arise over ownership of heritage sites. Because heritage sites can represent how one group differs from the ‘other’, they are distinctive candidates to spread nationalistic or chauvinistic propaganda that seeks to heighten one group’s ‘otherness’ from outsiders while creating an elite ‘club’ of which only people of the nation-state are members. Of course, nationalism is only one identity group with which individuals orient themselves, and within the nation are numerous other groups tied to ethnicity, religion, class, etc. that can serve to create a collectivity between members. Individuals seek to legitimize their beliefs, and therefore, any monument or heritage site that serves to justify a group’s existence will, on the other hand, characteristically delegitimize a dissimilar identity. The older and thus more ‘historic’ a space is, only further legitimizes a group’s identity by creating a sense of longevity and resilience, suggesting a stability that cannot be offered through many other means.15 It is for these reasons that cultural heritage has become an overt target during war. As a representative of an identifying group that

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articulates itself through its disparate qualities, the value of heritage hinges on the recognition of an ‘us,’ or those who hold ownership over the site, and a ‘them’ who do not.

### 2.3 The Wagering of Heritage in War

Throughout history, heritage has been placed on the frontlines of wars, where military tactics condone the wagering of heritage as a means to destabilize a group and its legitimacy. Heritage as a cultural asset provides socio-economic power to a group, and the wagering of heritage refers to the act of putting at stake these assets on a risked behavior. In warfare many actors can wager heritage, including those whose heritage is most at risk, as a part of an offensive or defensive war tactic. The tactics used are reflective of larger objectives that are repeatable in varying scenarios. These tactics that wager heritage, specifically by an opposing group in retaliation against another, can stand alone but are often used in conjunction with other demeaning devices. As one of the longest standing wars following WWII, the ongoing Arab-Israeli conflict contains many examples of how heritage is wagered during war. These examples are beyond the physical destruction of buildings and can reflect the psychological cost of losing the rights over ownership of tangible and intangible heritage. This section is not meant to be a conclusive assembly of the devices used in war, but it does convey some of the most controversial tactics that governments use in war. In the case of Sana’a, many of these tactics are not currently in use, but as this paper serves as an exercise in considering approaches to protecting heritage at war, including these tactics provides a larger scope that should be mentioned in the process.16

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16 Iconoclasm is not mentioned in this section but is discussed by many authors who have written about the consequences of heritage at war. Further reading can be done on this subject of iconoclasm:
2.3.1 Road blocks to Heritage

In contrast to heritage that has been destroyed, access to heritage is blocked through the construction of infrastructure with the intention of disconnecting a community. The construction of Israeli settlements within Palestinian territory has created road blocks that divide Palestinian communities and prevent passage to familial, religious, and communal heritage sites. Heritage sites, in this context, are not merely historic but include the intangible characteristics of a place. In his poem, “ علي هذه الأرض” (On this Land),” Palestinian poet Mahmoud Darwish eloquently describes this connection between a people, their intangible association to a place, and “the invader's fear of memories.” The construction of Israeli settlements on Palestinian territory has led to the construction of roads to connect the settlements, only furthering the difficulty with which Palestinians can live. In Jabal al-Mukaber in East Jerusalem, the construction of an 'Israeli-only' road which connects settlements in the area has detached Palestinians from places they once considered apart of their community. In lieu of construction, Israel confiscated 300 acres of Palestinian territory, which forced Palestinians from their homes and left approximately 500 people homeless. The construction of the “American Road” and other roads inaccessible to Palestinians has divided Palestinian neighborhoods and has created islands of Palestinian territory that are surrounded entirely by Israeli infrastructure. A larger and more notable

example of the Israeli government using road blocks to heritage is demonstrated in the West Bank Barrier wall and the multiple Israeli guard posts that hinder Palestinian Muslims, Jews and Christians from visiting the Temple Mount in Jerusalem. This loss of place, by alienating and removing a people, detaches them from their heritage through the use of construction rather than destruction.

2.3.2 Falsifying History

The removal of people from their history is a sentiment of erasure that can have lasting effects on future generations. The Holy City of Jerusalem, a contentious site within the Arab-Israeli conflict, contains more than thirty archaeological sites dating back to ancient times. These sites are associated with Palestinian and Israeli heritage and have caused disputes related to the Israeli restructuring of historical context in favor of Israeli heritage and the association of the Holy City with the Jewish state and identity. The appropriation and removal of Palestinian heritage within Jerusalem attempts to rewrite the city’s context and history. Since 2007, Israel has endorsed several underground tunnel projects in Jerusalem’s Old City. One of these projects uncovered a 2,000-year-old Herodian Road beneath the Palestinian neighborhood of Silwan in East Jerusalem. The excavations were carried out by the Ir David Foundation (Elad). This company is a private Israeli settlement company, who works with the Israel Nature and Parks Authority and the Israel Antiquities Authority to build settlements and other businesses within the occupied Palestinian territory. For years, Elad has appropriated both land and heritage in East Jerusalem, even referencing the city by its biblical name, “The City of David.”

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Tours are carried out by Elad in East Jerusalem and are contextualized towards the Israeli narrative.\textsuperscript{21} Years before tunnel excavations took place in Silwan, Palestinians were removed from their homes and replaced with Israeli settlers. The spokesman from Elad commented on the illegal seizure of property, saying, “Our aim is to Judaize East Jerusalem. The City of David is the most ancient core of Jerusalem, and we want it to become a Jewish neighborhood.”\textsuperscript{22} This narrative has been held by Israeli government officials as well. At the inauguration of the Silwan tunnel in 2016, Israeli Minister of Culture Miri Regev remarked, “The opening of the tunnel today is a message for the US President Obama that both East and West Jerusalem are unified for the Jews.”\textsuperscript{23}

\subsection*{2.3.3 Destruction of Heritage}

In 2005, Rabbi Marvin Hier announced plans to build a “Museum of Tolerance” in Jerusalem, set to be completed by Israel’s “70\textsuperscript{th} Independence Day” in 2018.\textsuperscript{24} The plot of land that Rabbi Hier, the founder of the Simon Wiesenthal Center in Los Angeles, chose is also the location of Mamilla cemetery. The Mamilla cemetery is a historic Muslim cemetery that dates to the 7\textsuperscript{th} century and remained in use for 1,300 years. The cemetery housed the remains of over 70,000 Muslim soldiers of Salah al-Din’s army, as well as Islamic \textit{emirs} and religious leaders. When news broke of the planned location of the museum, Palestinians with ancestors buried in the cemetery pleaded with Rabbi Hier to choose a new location,

\begin{itemize}
\end{itemize}
but the Rabbi refused, "It’s not about the experience of the Palestinian people. When they have a state, they’ll have their own museum."25 Throughout the process, the project was placed on hold several times: first when the bodily remains were excavated; and then when the original architect, Frank Gehry, withdrew from the project because of financial disagreements with Hier. The controversy surrounding the project has caused many organizations to speak out against its construction, citing the illegal damage it has done to the historic cemetery. In 2011, a letter signed by 84 archaeologists from around the world urged the Board Members of the Simon Wiesenthal Center and the Israeli Antiquities Authority to halt construction of the Museum of Tolerance on the cemetery.26 They cite international and Israeli laws that prohibit excavations in burial grounds.

3. International Laws and Organizations

The overwhelming amount of destruction that took place during the second World War made it a priority to create formal international agencies to ensure that such devastation be avoided in the future. The formation of the United Nations (formerly the League of Nations) paved the way for establishing subset organizations to oversee international affairs related to heritage and warfare. Under the umbrella of the U.N., however, UNESCO protocols associated with the destruction of cultural property only began in 1954- nine years after the second World War had ended. Since then, many more publications have emerged concerning the protection of world heritage in crisis. Here, an outline of the widely dispersed guidelines issued by UNESCO and ICOMOS highlight the

25 Ibid
different methods that international organizations apply when approaching heritage in conflict.

3.1 UNESCO 1954 Hague Convention\textsuperscript{27}

The 1954 Hague convention is the first-ever international treaty dedicated exclusively to the protection of cultural heritage during armed conflict. It was preceded by a Pan-American treatise known as the Roerich Pact signed in 1935.\textsuperscript{28} The Roerich Pact set similar guidelines to those outlined by the 1954 Hague Convention, including what is today known as the Blue Shield. While the overall agreement is that nation-states respect the cultural heritage of another country in the event of war, Chapter 1, Article 3 states:

The High Contracting Parties undertake to prepare in time of peace for the safeguarding of cultural property situated within their own territory against the foreseeable effects of an armed conflict, by taking such measures as they consider appropriate.

The principle that heritage sites should be safeguarded during conflict put in motion the creation of establishments like the Blue Shield. The Blue Shield is a symbol that is to be placed on buildings of significant cultural importance in agreement that these sites will remain safe in the event of war. The treaty also stipulates that, should the treaty be infringed upon, sanctions and persecution by the International Criminal Court would be taken against violating parties. It wasn’t until 60 years after the treaty was signed, in 2016,


that the first individual, Ahmad al-Faqi al-Mahdi, became indicted by the ICC for the destruction of ten monuments in Mali and placed in jail.29

In addition to the 1954 Hague Convention, two supporting documents are used as instruments in humanitarian law. These include the First Protocol from 1977 and the Second Protocol of 1999. The Second Protocol is the ratified version of the 1954 Hague Convention, while the 1977 First Protocol is meant to support the 1949 Geneva Conventions.

3.2 ICOMOS 2017 Post Trauma Recovery and Reconstruction30

The document created by ICOMOS at the request by the World Heritage Committee in 2016 provides guidance in the restoration process for World Heritage Sites affected by war and other disasters. The document stresses the importance of Outstanding Universal Value (OUV) in enlisted WHS and reflects on how restoration work is not limited to the physical attributes of a building. Instead, restoration work should extend to fostering the community and associations that convey the site’s OUV. The guideline provides actions for WHS managers that address means to protect and restore their city based on the site’s OUV. These actions include the need to first identify the assets of the site that reflect the OUV as defined by UNESCO. Once these have been identified, action plans for responding to conflict should be put in place and, when necessary, implemented. At the forefront of the action plan is the need to collect evidence and document sites that have been damaged. Other means of action include plans that define protective measures that can support areas that embody the

OUV of a site. Other considerations that are outlined in the document include the need to identify the various participants in the community and clarifying their roles in the case of an emergency. Finally, it also includes the need for affected sites to create a restoration management plan in consultation with the World Heritage Center that will address the approaches that will recover and reconstruct the tangible and intangible attributes.

3.3 United Nations 2016 New Urban Agenda

The New Urban Agenda, signed in 2016, is a resolution by members of the United Nations to focus on the development, equity, and sustainability in cities. The document lists 175 standards and principles for the management, development, and overall improvement of cities. Of the 175 principles included in the document, four of them focus on the implications that conflict has on cities. These standards address the need to prioritize

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32 The four statements that address conflict in the New Urban Agenda are as follows:
19. We acknowledge that in implementing the New Urban Agenda particular attention should be given to addressing the unique and emerging urban development challenges facing all countries, in particular developing countries, including African countries, least developed countries, landlocked developing countries and small island developing States, as well as the specific challenges facing middle-income countries. Special attention should also be given to countries in situations of conflict, as well as countries and territories under foreign occupation, post-conflict countries and countries affected by natural and human-made disasters.
30. We acknowledge the need for Governments and civil society to further support resilient urban services during armed conflicts. We also acknowledge the need to reaffirm full respect for international humanitarian law.
78. We commit ourselves to supporting moving from reactive to more proactive risk-based, all-hazards and all-of-society approaches, such as raising public awareness of risks and promoting ex-ante investments to prevent risks and build resilience, while also ensuring timely and effective local responses to address the immediate needs of inhabitants affected by natural and human-made disasters and conflicts. This should include the integration of the “build back better” principles into the post-disaster recovery process to integrate resilience-building, environmental and spatial measures and lessons from past disasters, as well as awareness of new risks, into future planning.
109. We will consider increased allocations of financial and human resources, as appropriate, for the upgrading and, to the extent possible, prevention of slums and informal settlements, with strategies that go beyond physical and environmental improvements to ensure that slums and informal settlements are integrated into the social, economic, cultural and political dimensions of cities. These strategies should include, as applicable, access to sustainable, adequate, safe
cities facing armed conflict, especially in regions that are facing other challenges in their urban development. The Agenda also explicitly states that cities should support “...moving from reactive to more proactive risk-based, all-hazards and all-of-society approaches, such as raising public awareness of risks and promoting ex-ante investments to prevent risks and build resilience, while also ensuring timely and effective local responses to address the immediate needs of inhabitants affected by natural and human-made disasters and conflicts.” As signatories of the New Urban Agenda, the Yemeni government should commit itself to addressing these standards going forward following the war.

4. Methods for Preserving Heritage

Heritage management in the context of warfare can occur, in relation to a conflict, before, during, or after using proactive or reactive approaches. Although time passes linearly, history runs in circles. And so, a “before” strategy in relation to a war that has not happened may in fact be taken in the period following a war. It could even be argued that the time to begin preparations in preserving the built heritage for war is following a war, when the memory of destruction is still retrievable and therefore an impetus for the local population and international organizations to take action. These “before” strategies are defined here as being proactive approaches to preservation. They can entail creating an emergency plan that outlines the measures heritage managers should take in the case of an armed conflict, extensive documentation during times of peace, or pre-emptive stabilization given to buildings to ensure they have increased support in the case of an emergency.

Reactionary approaches are those measures that are taken as a result of a war and without

and affordable housing, basic and social services, and safe, inclusive, accessible, green and quality public spaces, and they should promote security of tenure and its regularization, as well as measures for conflict prevention and mediation.
consideration in the time preceding a war. Here we see overlap between approaches, but the context through which it's applied differs. For example, the stabilization of a building during a war, but without former planning, is a reactionary approach to preservation. Similarly, the documentation of a damaged area after a war would also be a necessary reactive approach taken.

4.1 Strategies

The strategies in this section demonstrate how different proactive and reactive preservation approaches have functioned in the context of an emergency. Because there are few readily available examples of a site that has proactively planned for an armed conflict in terms of architectural preservation, some of the examples here were applied either in the context of a natural disaster or economic development. A further look at how these strategies can and cannot be applied in the context of Sana’a will be discussed in the following section. These examples were chosen for the larger lessons they provide and are meant to encapsulate a varied scope of strategies when preserving heritage amidst war. These strategies are seen as being either proactive or reactive approaches, but can also be assigned before, during, and after war.

| Proactive       | -Emergency Planning  
|                 | -Community Training  |
| Reactive        | -Reclaiming Spaces   
|                 | -Rebuilding          
|                 | -Protection of Architectural Details  
|                 | -Building Stabilization |
| Both            | -Documentation       
|                 | -Domains of Restoration |
4.1.1 Domains of Restoration

The Domains of Restoration refer to the various stakeholders who are responsible for, or benefit from, the preservation of a heritage site. Domains may be attributed to innumerous associations which include political, religious, or ethnic identities, the residents and business owners located in a site, and the local and international governments working with a site. Understanding the relationship between the actors who make up the Domains of Restoration is, arguably, the most imperative and complex factor to consider when addressing heritage preservation amid war. This is because the peaceability of a site is heavily influenced by these actors where the oppression or negligence of a group can have negative consequences and impede the success of a site. These domains and their dynamics are susceptible to transformation before, during, and after a war as events take place on the ground. Before a war, applying approaches to the Domains of Restoration should include establishing means of fair communication between actors and protecting heritage in a way that seeks to include the various actors and their values. Following a war, the process of restoration, reconstruction, and recovery should develop a strategy that similarly advocates for cooperation between domains to ensure that peace is maintained. This framework can be both proactive and reactive, depending on the political situation of a state following a war.

In the case of the Bosnian War, the Domains of Restoration were reactive. Following the Bosnian War, governmental and international agencies were tasked with examining who the actors were during the war, and how they interacted with other groups in order to define how ethnic heritage sites would be restored. These 'domains of restoration' sought to ensure continued peace and a sensitive reunification of the state. Due to the political and religious implications surrounding the restoration of iconic, religious, or contentious sites,
donors were wary about undertaking too many restoration projects associated with only one ethnic group. In turn, areas that did not experience ethnic cleansing or expelled populations were considered “neutral” and these projects were largely undertaken by international organizations. Similarly, mosques were largely restored by Islamic donors.

Iconic sites, like the Vijećnica, faced disputes over the building’s ownership and function. This disagreement lasted for almost ten years following the war, with only small contributions coming in from libraries, individual donors, and international organizations, and appeared as a large failure for the Bosnian and international parties. It was only in 2008, when the World Monuments Fund placed the building on its most endangered historic sites list, that major fundraising initiatives were taken. This resulted in the restoration being funded by Bosnian sources, and jointly owned by the City of Sarajevo, a National Library, and a museum. Once ownership and function had been agreed upon, the European Union contributed the remaining necessary funding to restore the building.33

4.1.2 Documentation

The documentation of a heritage site can be both a proactive and reactive approach to preservation. The RIWAQ organization in Palestine, which specializes in historic vernacular architecture of the state, has used this strategy to preserve their heritage for both present and future residents. Their largest project lasted from 1994 to 2007, when they documented houses in 420 villages in the West Bank, Jerusalem and Gaza. Their work resulted in a three-volume publication and led to their current project, called the 50 Villages Rehabilitation Project, which aims to engage the community with their history while

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preserving the historic fabric of the houses. They obtained funding through the contributions of international and Palestinian providers, including the Bank of Palestine. The group also prepares reports and management assessments for future preservation laws in Palestine. In focusing on the present, the group has revived whole communities by restoring heritage sites, whether through adaptive reuse, or by recording a building’s history before it is too late.34

4.1.3 Emergency Planning

Emergency planning is a proactive approach that takes place before a war begins, and which outlines a set of standards that will be followed in the case of an emergency. In the Philippines, two examples demonstrate the importance of Emergency Planning before an event takes place. The first example is at the National Museum which oversees all activities related to the restoration, reconstruction, and preservation of historic and archaeological sites in the Philippines. In 2005, the director of the National Museum created a National Museum Emergency Preparedness Committee, in which they created instructions in the case of an emergency, namely natural disasters, and outlined an array of responses including conservation guidelines, security and welfare for employees, and protective services and building maintenance. A year later a typhoon engaged the plan, and workers were prepared to install protective sheathing on the building, contain the Museum’s collection, and get to safety. In addition, because they had a repair plan in place in case of emergencies they were able to apply for grants to begin restoration immediately.

Emergency planning for steps to take to restore damaged buildings after an emergency reduces the time needed to implement the restoration of buildings so that they

can function faster. An example of this is from the Philippines in the province of Batanes. The area contains roughly 1,200 examples of indigenous vernacular housing and construction methods dating back to at least the 18th century. In 2000, an earthquake damaged 500 of these houses. Like the example of the National Museum, the National Commission for Indigenous Peoples, which protects the rights of Indigenous heritage in the Philippines, had already established, prior to the earthquake, procedures in the event of an emergency. These procedures included temporary solutions for initial living conditions and long-term repair guidelines as well as structural changes that would help increase the durability of the buildings in the future. These guidelines provided enforceable procedures for building maintenance that could be applied by residents as well as international and local organizations and aimed for an approach to preservation that strengthened the vernacular architecture.\footnote{Arnulfo Fajardo Dado, “Building Maintenance and Disaster Response Strategies: The Philippine Architectural Heritage,” in Cultural Emergency in Conflict and Disaster (Rotterdam: NaI Publishers, 2011), 266–83.}

\section*{4.1.4 Community Training}

The example of Shibam in Yemen highlights the importance of community training in preservation practices. Shibam is a UNESCO World Heritage Site and, like Sana’a, the opening of Yemen’s borders in the mid-twentieth century caused rapid migration from the historic city into more modern areas, resulting in the deterioration of its mud-brick houses. In order to conserve the Old City in Shibam, the city’s preservation organization, called GOPHCY Shibam, partnered with the GIZ consultation group from Germany.\footnote{General Organization for the Preservation of Historic Cities in Yemen. “National Strategy for the Preservation of the Historic Cities, Sites and Monuments (2016 -2020),” 2014.} The aim of the project was to encourage movement of residents back into the city, restore the historic
houses, and promote future tourism. The approach these two organizations took was to increase construction and restoration of historic houses to provide jobs and housing to incoming residents. They also taught residents how to restore their own homes using traditional methods. The restoration of buildings and life within the city were the basic tenets in creating a viable tourist economy. The start of the war forced the GIZ to remove its employees from the country, despite there being no immediate threat in the area. But the result had been favorable, with four times as many construction jobs created in the city, and a ten-year maintenance plan put in place. Shibam remains in communication with the GIZ overseas, while residents continue to help restore and maintain the historic buildings.37

4.1.5 Protection of Architectural Details

The temporary removal or construction of a support system around architectural details attempts to protect these assets from complete destruction in the event of bombings during war. During World War II, measures to protect the Strasbourg Cathedral in France included the removal and fortification of its architectural details. The measures that were taken included dismantling the medieval stained glass and evacuating them to places in Dordogne. The moving parts of the astronomical clock were also disassembled and moved to safety. Finally, all of the portals to the Cathedral and the adorned pillars were protected using steel tubing and sandbags. Although staff members attempted to camouflage the copper roof of the cathedral so that they were not visible to air forces, aerial bombardment in 1944 damaged several areas of the Cathedral. The next year, following the end of the war,

37 Abdullah Zaid Ayssa, Phone Conversation, April 12, 2018.
the stained glass was returned to the Cathedral and restoration work began to recover the damaged building.38

4.1.6 Building Stabilization

During an armed conflict, buildings that are susceptible to destruction due to direct hits or proximity to high energy impacts can be protected using emergency stabilization. The Safeguarding the Heritage of Syria and Iraq Project (SHOSI) began in 2013 under the guidance of the Smithsonian Institution and in collaboration with several organizations, including the Penn Cultural Heritage Center. Originally, the intent of the project was to help establish governmental ordinances pertaining to the cultural sector within Syria and Iraq, but their scope changed when ISIS advanced into Iraq in 2014. After, they focused their attention to implementing on-the-ground activities to actively protect heritage in the face of destruction. Through the funding of UNESCO, SHOSI was able to conduct classes with heritage specialists within the regions that focused on four major forms of protection, one of which they called the Emergency Stabilization of Built Heritage. One site that the Syrian specialists identified as of utmost importance was the Ma’arra Museum, which was built in the 16th century featuring walls which were adorned with mosaics. These trained specialists quickly stabilized the museum, using methods that included inserting holes into the walls and filling them with metal bars and cement, and restoring archways using local stones. They applied a layer of water-soluble glue and cotton cloth over the mosaics and stacked hundreds of sandbags along the walls. The next year, the Assad regime dropped an explosive barrel onto the museum, and the cupola and one wall of the museum were

destroyed. The mosaic wall remained intact however, and the rubble from damaged areas was able to be restored according to the marked grid system created before the bombing.39

4.1.7 Rebuilding

The act of rebuilding damaged heritage areas is a reactive approach to preservation which is dependent on many of the other strategies listed. A tragic but well-known example of a historic city being rebuilt after its destruction is the city of Warsaw in Poland. In 1944, Nazi troops destroyed more than 94% of Warsaw’s historical buildings. The next year the New Polish Communist Government created the Directorate/General of Museums and Monument Protection. Preservation of the city began immediately: soldiers guarded the gutted buildings and signs were posted that deemed the sites as national monuments. These actions helped to keep rubble in place for use in rebuilding the capital city. Throughout the 1940s and 50s, restoration and reconstruction used the paintings done by Bernardo Bellotto almost 200 years prior to replicate a vision of the city. Reconstruction also referenced other documentation resources, such as a prewar inventory and student measured drawings of the Old Town. In this instance, Poland was able to take the destruction of their city and use it to restore their image of the Age of Polish Enlightenment, using the remnants of the past to revive important sites.40

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4.1.8 Reclaiming Spaces

The reclamation of spaces addresses heritage sites that either acquire a negative connotation due to the war or where their functions change to reflect new communal aspirations. In the Basque region of Spain in 1937, Italian and German forces targeted Gernika's Foru Plaza. The Plaza was a historical center dating back to the 14th century and associated with many political and social activities in the area. At the end of the Spanish Civil War, plans to restore the Plaza resulted in nationalistic designs that supported the Franco regime’s ideology for a “New Spain.” Plans submitted by a Spanish architect show a plaza designed in a traditional Basque regionalist style, but what was actually built was in a style similar to other devastated towns throughout Spain. A coat of arms was designed by Franco to represent the New Spain, which were embedded into the new and old buildings around the Plaza. Reconstruction plans reduced the urban fabric of the area to its town hall, one of its churches, and a memorial to “the glorious fallen.” This attention to civic buildings failed to create new housing for residents. The town square became a symbol of the Franco regime and people no longer gathered there like they had for many centuries.

After the death of Franco in 1975, Basque artists attempted to “reclaim” Gernika Square. In 1977 Basque artists participated in a reinterpretation of the famous Picasso painting “Guernica.” Similar events followed, including murals that referenced the bombing of the town and other art exhibits. The functions of the buildings around the plaza were transformed into various uses for the community. Buildings that once housed civic affairs became art schools and museums. Other transformations included venues for meetings,
concerts, film screenings, and libraries. The reclaiming of the heritage site reinvigorated the area that reflects its former uses while adapting to the values of its current residents.41

5. Architectural Preservation in the Context of Sana’a

Several building typologies and public spaces define the cultural landscape of Sana’a. The significance of Sana’ani architecture as defined by UNESCO limits the site to its houses and mosques which reflect it as historically one of the first cities to embrace Islam. It should be noted, however, that Sana’a is highly regarded by locals and travelers alike for its homogenous architecture, which is defined not only by its tall, slender tower houses, but also by the materiality and design of the building façades.42 Although the tower houses and mosques are an important facet of the city’s heritage, an expanded understanding of the city’s important cultural sites and typologies would include its hammams, suqs, minarets (in contribution to the mosque, but deserving of their own recognition as they dominate many views of the city), bustans (community gardens), and the walls and gates that continue to surround the Old City. The city of Sana’a, as it is presently, is the largest city in Yemen, but the Old Walled City is only a fraction of that size. The legal boundaries of the Old City have not been officially defined, and historically significant architecture is not limited to the Old City, and throughout centuries the population and prosperity of the city grew beyond the borders of the Old City’s walls.

In Sana’a the idea of going to university to study architecture is a fairly modern phenomenon; the system of master builder and architect, where workers tend to start out

as apprentices and then become specialized in certain techniques, remains until this day. In the traditional method, the designs found on the façade of Sana’ani architecture are crafted by the *usta*, or master builder, without consultation of the client although the other master builders (*asatiyyah*) may make creative critiques before the design is carried out. The second in ranking to the usta are the *thana’a* (journeymen) who are, in practice, also considered to be training under the command of the *asatiyyah* but are given greater tasks and independence than the apprentices who rank below them. The hierarchy within the building craft can therefore be quite competitive, with lower ranking workers attempting to earn the approval of the usta in order to gain a higher position. However, the construction of a building can function somewhat like an assembly line; it requires teamwork through which each individual is responsible for a particular element that contributes to the finished product.\(^43\) Sana’a and other parts of Yemen also use a unique waterproofing material called qudad which is an expensive and time-consuming material to apply. It consists of lime plaster, volcanic ash, lime mortar and animal fats. The entire process — from mining the lime up until the plaster has dried — can sometimes take months depending on weather and climate, but the final product, if done correctly, can subsist for hundreds of years. Today, the traditional material is only used when restoring significant monuments or mosques, due to the cost and time that the process entails.\(^44\)

### 5.1 Building Types

An historical overview of three fundamental building types found in the Old City will describe the private and public spaces found in the city and which will often be mentioned

\(^43\) Marchand, *Minaret Building and Apprenticeship in Yemen*.  
throughout the section that applies the strategies for preserving heritage in Sana’a. The Sana’a Tower Houses are a common building typology found in the Old City and traditionally functioned as living spaces for the residents in the Old City. Another common building typology are the various mosques located in the Old City, with the most prominent being the Jamia’ al-Kabir (Great Mosque). A brief history of the Great Mosque is provided to better acquaint the reader with the many alterations that have been done to this important site by various empires throughout its long history. The last site that is described is the Suq al-Milh, which is the largest market in the Old City and contains a central commercial hub for residents to buy a large array of goods. These building types are representative of the private, public, and awaqf entities that hold most of the building ownership in the Old City which will be described in greater detail in the Domains of Restoration in the Application of Approaches section. Reference to these building types will also be found in sections that discuss Building Stabilization, Architectural Details, and Rebuilding. Therefore, it is important to understand the heritage of these sites and how they can be preserved amid war.
5.1.1 Sana’a Tower Houses

The tall Tower Houses are believed to reference the verticality of the Ghamdan Palace, and can range from five to nine stories tall. The foundation for Tower Houses are generally made up of basalt rock, used for its impermeability by water and salts. Laid on top of the basalt, the first through third stories tend to be made from habash and cut stone, while the remaining stories consist of baked clay bricks, which are used to create decorated

45 Lewcock and Serjeant, San‘ā: An Arabian Islamic City, 436.
46 Marchand, Minaret Building and Apprenticeship in Yemen, 78.
friezes between stories. The windows of tower houses have relatively lower sills and are infilled with alabaster, known as moon stone. When cut into thin strips it becomes translucent. Along with alabaster, windows tend to be infilled with stained glass, set in gypsum plaster.

The delineation between public and private spaces in Sana’a are conveyed by its throughways, where wider streets are found in public spaces and become narrower as they enter residential areas. The architecture is also considerate of private space, traditionally for female family members, where several generations and branches of a family lived in one building on separate floors, while sharing communal spaces. Street entrances into houses are positioned so that they do not open opposite another entrance and windows tend not to open towards any courtyards of adjacent houses.47

The lintel above the main entrance way, or inscribed into the door, will oftentimes be adorned with the phrase (بِسْمِ ِاللهِ َ‪ا‬‪الرَّحْمَن‬ ﺃَ‪ا‬‪رَحْمِي‬) “In the Name of God the Merciful and Compassionate” - to demarcate the separation of public and private space. The verticality of the tower houses of Sana’a contribute to the division of interior space, with each floor possessing a separate purpose. First floors traditionally housed livestock, food products, a water well, as well as the kitchen.48 The upper most floor typically contains the mafraj- or reception room- which is the most prominent room of the house. It consists of tall ceilings, large windows and ornate plaster decorations and is used as the principle social space for hosting guests and chewing qat (a locally grown plant, whose leaves are placed in the cheek

48 Ibid, 4-5.
and used as a mild stimulant). The orientation of the house is therefore decorated and oriented according to private and public space.

5.1.2 The Great Mosque

In Sana’a there are over one hundred mosques, varying in age and architectural style. Many are humble neighborhood mosques, unadorned with ornamentation and lacking a minaret, the likes of which an unknowing pedestrian could walk past without any obvious hints of the building’s function. Of the many mosques in Sana’a, the Great Mosque is the most renowned and one of the most historically significant sites in the city. It is one of the earliest mosques in the world, and perhaps the oldest in Arabia outside of present-day

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According to Yemeni tradition, The Great Mosque is said to have been constructed under the orders of the Prophet himself around the year 630 C.E. Although the date and builder of this first mosque are unknown, the location of the original mosque is clear. The first mosque was built in the gardens of Badhan, the former Persian governor to Sana’a who had retained his position when Islam came to Yemen. The mosque was to be built between the al-Mulamlamah rock, which is located outside of the western wall of the Great Mosque. The mosque was then expanded beginning in 705 C.E., by the Umayyad Caliph al-Walid I, incorporating repurposed material from the church, the Ghamdan Palace, and other material from throughout the region. Similarly, any remnants of the mosque constructed during the time of the Prophet may only be found within fragments in the ornamentation in the ceiling and arcades found in the mosque, of which there are various examples of repurposed materials ranging in date.

Although the Great Mosque went through periods of restoration and damage, the floorplan of the mosque still retains a layout similar to that of the design by al-Walid. The Great Mosque in the 8th century had a flat roof, and it is believed that large portions of the northern, western, and southern sides of the mosque date to this early period. The façades of these walls are constructed in the Abyssinian Axumite building style, with stepped stonework associated with the ancient empire whose influence in Yemen had occurred only a century before, while similar stonework is found in another, perhaps earlier, mosque.

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51 Lewcock, *The Old Walled City of Ṣan‘ā’*, 85.
52 Lewcock and Serjeant, Ṣan‘ā: An Arabian Islamic City, 323.
53 Lewcock, *The Old Walled City of Ṣan‘ā’*, 85.
constructed by Farwah ibn Musayk in Sana’a. The extension of the courtyard by al-Walid was done by extending the northern qiblah wall which had made the qiblah a cubit and half off the true direction to the east.\textsuperscript{55} Al-Razi wrote that a mihrab was included in the new northern wall which, if true, would make it one of the earliest mihrabs built into a mosque.\textsuperscript{56} The Great Mosque was the only mosque in Sana’a to have incorporated a courtyard during this period, although the courtyard was not entirely unknown in other parts of Yemen.\textsuperscript{57} During the Abbasid period, the mosque underwent little to no changes save for the introduction of doors to the mosque that were inscribed with the instructions from the Abbasid Caliph al-Mahdi to carry out repairs to the mosques in Sana’a.\textsuperscript{58}

5.1.3 Suq al-Milh

Figure 4: Suq al-Milh, date merchant. Source: Khamis A. Al Riyami, www.kriyamiphotography.com, 2007.

\textsuperscript{55} Lewcock, The Old Walled City of San’ā’, 85-88.
\textsuperscript{56} Lewcock and Serjeant, San’ā: An Arabian Islamic City, 323.
\textsuperscript{58} Lewcock and Serjeant, San’ā: An Arabian Islamic City, 324.
Sana’a has several markets, or *suqs*, located within the Old City and the peripheral neighborhoods. The city has, throughout history, been closely linked with trade which has in part contributed to the former prosperity of the city. Near the Great Mosque is the ancient *suq al-Milh*, or Salt Market. In the pre-Islamic period of Sana’a, the *suq* was located on the periphery of the city; following the construction of the Great Mosque in the walled city however, the *suq* relocated to a position closer to the mosque in order to take advantage of the safety afforded to holy spaces.59 The *suq* was traditionally organized according to merchant or trade, the practice of which is still carried out today in the division of areas; some trades have retained their location for centuries.60 The projected influx of tourism in the country in the 20th century has affected the goods that are sold in the *suq*, where Yemeni ‘trinkets’ are often found in the stalls of merchants. Similarly, the opening of Yemen’s borders to foreign trade brought along less-expensive imported products that are modern in function, such as iPhone accessories, watches, or sunglasses.

The merchant buildings in the *suq* are also comparatively lower in height than those in the rest of the city; however, the warehouse buildings and *samsarahs* tend to be the tallest. *Samsarah* is the Yemeni term for caravanserai, which would be used to house merchants often travelling between cities. Travel time between these cities is said to have been calculated based on the animal being used, and travelers who did not arrive to the city before dusk were to be closed out until the morning.61 The *samsarahs* in Sana’a are also

60 Lewcock, *The Old Walled City of Ṣan‘ā’,* 90.
61 Lewcock and Serjeant, *Ṣan‘ā: An Arabian Islamic City,* 276-77.
waqf property and the profits from some are used to support physical maintenance of the Great Mosque.

Although these sites and typologies only offer a glimpse of the many heritage spaces found in the Old City, they are examples of living heritage spaces that are threatened by the current conflict.

5.2 The War in Yemen

Yemen has experienced waves of political instability since its establishment as a nation, and the recent armed conflict with Saudi Arabia has only further weakened the state. In 1990, North and South Yemen unified under the leadership of the northern President ‘Ali Abdullah Saleh. He formally resigned his position in 2012 after a year of violent protests during the Arab Spring. The accepted acting president was Mansoor Hadi, the former Vice President of Yemen, who created a National Dialogue Conference (NDC) meant to broker the terms of the nation’s transitional period and to create a long-term sustainability plan for the country.62 Although the NDC was considered a success by the international community, the assassination of the Houthi representative to the NDC resulted in the Shi’ite Houthi party rejecting the outcomes in their entirety, while claiming the plan divided the country between poor and rich regions. In September 2014, a coup led by the Houthis, and backed by the previous president Saleh, overtook the Presidential Palace in Sana’a and acting president Hadi fled to Saudi Arabia. The Houthi claimed control of the region, and in March 2015 Saudi Arabia intervened and sent airstrikes against Houthi-held military bases near Sana’a. Since 2015, the war has continued, with Houthi rebels expanding within the

northern region, and in December 2017 assassinating their former ally ‘Ali Abdullah Saleh, which placed Sana’a in lockdown and furthered the ambiguity of Yemen’s future.63

The architectural heritage within Sana’a lacked priority during the political instability within the country. Although the conservation campaigns in the Old City displayed massive amounts of investment placed in restoring the defining features and buildings of the city, much work remains. The former president of GOPHCY’s suggestion that the city’s architectural heritage be included in the agenda of the National Dialogue was not met, and now plans are being drafted amid war.64 Presently, the Yemeni government is expected to draw up a conservation plan for Sana’a under UNESCO policy.65 Considering the Saudi-led war against Houthi activists in the region, however, all preservation work has stopped and GOPHCY no longer has the resources to implement any preservation work in the Old City. Similarly, international preservation organizations have halted their projects and forced their workers to flee the country. Although heritage organizations have condemned the destruction of Sana’a and its valuable cultural sites, significant intervention has yet to be established to aid in the diminution of further destruction.66

5.3 Preservation Before the War

In the late-mid twentieth century, Sana’a experienced changes that threatened the traditional methods of building. Following the fall of Zaidi rule in Yemen in 1962 and the civil war in 1969, North Yemen opened its borders to foreign investment and trade. The demolition of important structures, such as the Imam’s palace where Tahrir Square is today, was a condition of modern reform by the newly established governate. The construction of main roads leading into Sana’a significantly improved connections between the capital city and the rest of the country. The opening of Yemen’s borders to foreign trade, however, created an influx of modern building materials, specifically cement and steel, which threatened the authenticity of the city’s architecture and the survival of traditional methods of building. New buildings using foreign materials began to spring up on the outskirts of the Old City, causing a rapid migration from the historic core; and the abandoned houses in the Old City, devoid of maintenance, experienced significant deterioration.

In 1976, at the request of the Yemeni government, UNESCO surveyed the situation in Sana’a and began an ambitious preservation campaign that lasted between 1985 and 1994 that largely restored the Old City and subsequently won the Aga Khan Award in 1995. UNESCO, in consultation with GOPHCY and other Yemeni government agencies, focused on the restoration of the Old City in order to increase the well-being of residents and decrease movement out of the area. These efforts included projects that repaved the streets to address the issue of dust and mud accumulating in the Old City as well as to

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68 Yoshida, “Conservation-Based Development of Historic Cities: The Case of the Old City of Sana’a in Yemen.”
improve water drainage. They also restored many houses dating to the fourteenth through twentieth century. The repurposing of these buildings provided spaces for newly established organizations such as GOPHCY, or other institutions that provided services to the community such as a women’s technical school and an art gallery. They also restored hotels and private residences. Craftsmen carried out the restoration work in the Old City using traditional methods and materials. Although foreign experts helped manage on-the-ground work, they worked alongside local craftsmen who ensured that the projects were carried out correctly. Larger projects such as the restoration of the city wall and the sole surviving gate, Bab al-Yemen, by various international sponsors contained the Old City limits from modern infrastructure developing on the outskirts of the historic core.

For three years beginning in 2003, UNESCO’s World Heritage Centre and GOPHCY prepared an extensive survey of the Old City and surrounding neighborhoods. The aim of the survey was an initial step in establishing appropriate conservation measures for the Old City and to eventually prepare a Rehabilitation Plan that would extend protection beyond the monumental to include the preservation of the urban pattern of the city.

5.4 Destruction During the War

The current conflict has affected a relatively small number of buildings in the Old City when compared with other losses in areas such as Syria and Iraq. That is still too many. Architectural damage to historic sites in Yemen, such as the Marib Dam and the al-Qahira  

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70 “Conservation of Old Sana’a” (The Aga Khan Award for Architecture, 1995); Lamprakos, Building a World Heritage City.
71 Lamprakos, Building a World Heritage City, 101. The 1971 film “Le Mura Di Sana’a” (The Walls of Sana’a) by Italian director Pier Paolo Pasolini shows the walls of the Old City as they were before restoration. In the film, Pasolini urges UNESCO to intervene in preserving the Old City. The film is currently available online at: https://youtu.be/ocKUTpQZVco.
Castle in Taiz, make evident that these sites are not off-limits as military targets.\textsuperscript{72} The creation of a “no-strike list” in Yemen has been implemented by the embassy in Saudi Arabia with the aid of United States’ consultation. The list contains up to 33,000 sites in Yemen, but the name and location of the sites has not been disclosed for interpretation at this time.\textsuperscript{73} Similarly, UNESCO has advocated for a “no-strike list” that focuses on historical sites in the region, but whether they have actively worked towards creating this list and forwarding it to the Saudi Arabian military forces is unknown to the author.\textsuperscript{74} To date, at least 37 out of over 6,000 buildings have been damaged by airstrikes, with most of the buildings being only moderately damaged.\textsuperscript{75} [Figure 5] Three buildings have been severely damaged by the war, and six have been completely destroyed. Most of these damages took place in the northern portion of the Old City, with five of the destroyed buildings being in this area. The denser area of the Old City, which includes important sites such as the Great Mosque, the Bab al-Yemen, and the Suq al-Milh, are all located in the south of the Old City. In this southern area, the destruction is at seven sites, with two completely destroyed buildings located mere blocks from the Great Mosque. These buildings are located on al-Qasimi street, adjacent to the garden which is a well-known \textit{bustan} in the city. They are typical of the tower house typology in the city previously discussed, and their demolition


\textsuperscript{75} Centre, “Old City of Sana’a.”
has negative repercussions for the cultural landscape of the area, and the buildings that are located next to it.

The bombings that have taken place in the Old City are changing the views and dynamics of its residents. Since the beginning of the war, almost all the buildings that have been fully or partially destroyed in the Old City have been privately owned except for one building. The reasoning behind these attacks on private residences have not been provided by members of the Saudi coalition, but because precision-guided munitions were used in these airstrikes it is likely that these houses were the intended targets.76 Residents in Sana’a view these attacks as being in retaliation to the Houthi missiles that have infiltrated Saudi Arabia.77 Residents of the Old City now live in paranoia because of these residential targets, and there are many who no longer trust foreigners or cameras. The cultural heritage of the Old City is also integrated into recruitment strategies used by the Houthis. The Houthis have confiscated buildings in the Old City in order to support their claim to “cultural originality” - a phrase they use to increase support for their movement. The bombing of the Old City indirectly serves to bolster this recruitment strategy by enforcing the belief that the Saudi coalition fears Yemen’s cultural superiority and architectural heritage.

77 Aziz Morfeq, E-mail, April 20, 2018.
Figure 5: Map of Ownership and Destruction in the Old City
Source: Altered from Map in the Inventory of the Historic City of Sana’a (2008);
and strike information obtained from UNOSTAT YEMEN “Sana’a City - Old City District: Scale of Building Damage - As of December 2016” (2017)
5.5 Application of Approaches

In this section, the eight strategies for preserving heritage amid war will be considered in the context of the Old City in Sana’a. Each section addresses these approaches separately, but the complexity of heritage preservation amid war means that many topics discussed throughout will overlap and reference one another. Beginning with the Domains of Restoration provides an overview of the various actors affected by the war in Yemen. Strategies are then organized beginning with the proactive approach of emergency planning before a war and ends with the reactive approach of reclaiming spaces following a war.

<table>
<thead>
<tr>
<th>Name</th>
<th>Building Type</th>
<th>Coordinates</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Mosque</td>
<td>Mosque</td>
<td>Lat: 15°21'11.15&quot;N, Long: 44°12'53.79&quot;E</td>
<td>Built in the 7th century, and the largest mosque in the Old City</td>
</tr>
<tr>
<td>Suq al-Milh</td>
<td>Market</td>
<td>Lat: 15°21'10.32&quot;N, Long: 44°12'58.04&quot;E</td>
<td>Ancient market that sells various modern and traditional goods. Central economic hub in the Old City</td>
</tr>
<tr>
<td>House 01</td>
<td>Tower House</td>
<td>Lat: 15°21'5.89&quot;N, Long: 44°12'41.70&quot;E</td>
<td>Example of restored building following the loss of House 03</td>
</tr>
<tr>
<td>House 02</td>
<td>Tower House</td>
<td>Lat: 15°21'5.64&quot;N, Long: 44°12'40.46&quot;E</td>
<td>Example of rebuilt building. Partially destroyed in the 2015 bombing and collapsed sometime afterwards</td>
</tr>
<tr>
<td>House 03</td>
<td>Tower House</td>
<td>Lat: 15°21'5.78&quot;N, Long: 44°12'41.47&quot;E</td>
<td>Building lost its western party wall in the 2015 bombing. The building collapsed sometime afterwards, and no work has been done to rebuild it</td>
</tr>
<tr>
<td>House 04</td>
<td>Tower House</td>
<td>Lat: 15°21'5.60&quot;N, Long: 44°12'40.34&quot;E</td>
<td>Building attached to House 02. Currently shows no urgent signs of damage but at risk due to the collapse of House 02</td>
</tr>
<tr>
<td>Block 01</td>
<td>Tower Houses</td>
<td>Lat: 15°21'5.71&quot;N, Long: 44°12'41.01&quot;E</td>
<td>Four buildings destroyed during the 2015 bombing</td>
</tr>
</tbody>
</table>

Figure 6: List of the buildings and their locations referenced in the Application of Approaches
The tower houses referenced here are located in the al-Qasimi neighborhood bombed in 2015. These buildings are referenced in the following Building Stabilization and Rebuilding sections.
5.5.1 Domains of Restoration

This section will define several participants and their associated sites in the Old City, analyze interactions between these participants before the war, and put forward questions that should be addressed after the war. Past disagreements among participants that impeded the preservation process in the Old City are explored so that a range of post-war suggestions may be offered. A substantial portion of this section is conjectural and will address only a limited number of participants. Also, although the war in Yemen is largely contingent on political power and foreign influence, these actors are given little agency in this paper, with most consideration applied to Yemeni participants.

Three building typologies previously discussed- the Tower Houses, Mosques, and Suqs- are associated with residential, religious, and economic domains, and are joined here with the governmental agencies, preservation organizations, and Houthi members to make up the Domains of Restoration. While the term “restoration” implies a reactive approach to preservation, approaches that consider the future cooperation between these domains beyond the context of war can be defined as proactive approaches to preservation. The interaction that takes place between the Domains of Restoration are entirely dependent on the governmental structure that forms following the war. Here they will be discussed with the supposition that a period of diplomacy will follow the war and that the governmental agencies who contributed to the preservation of the Old City before the war will be reinstated. These agencies include the Ministry of Culture and GOPHCY, the Ministry of Finance, and the Ministry of Awaqf.78 Throughout the 1980s and even leading into the war,

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78 The definition of Waqf (Pl. Awaqf): Pious endowments used in Yemen and throughout the Islamic world over the centuries to support religious activities in particular and to fund public institutions in general, such as mosques, schools, libraries, fountains, and orphanages. A main attraction of the device has been that it allows accumulators of wealth and property to keep their acquisitions intact and to minimize the
threats to the preservation of the Old City included a lack of cooperation between invested agencies and organizations in Yemen, including residents and business owners. This political disparity created tension between these participants, and preservation organizations had little room to implement or enforce preservation in the Old City. Because GOPHCY is under the Ministry of Culture as a technical organization specializing in the historic built environment, they are dependent on the government to ensure that violations in the Old City can be prevented. Enforcing violation penalties may include the cooperation of the police force or issuing citations that will be imposed in court, but none of this was applicable to Sana’a before the war. There was minimal support from the government in terms of preservation enforcement and now that the city is facing economic struggles during the war, residents are not prone to apply any thought to preservation because they have not been urged to.79

In the future, inter-governmental agencies will need to cooperate in preserving the Old City. Technicians are employed in many sectors of the government specializing in architecture and engineering, specifically at local levels and in the Ministry of Awaqf. During the initial stages of surveying done for the 2008 Inventory of the Old City, specialists from these sectors were employed to help identify violations throughout the Old City. This example of cooperation between agencies exemplifies that steps were being taken to create dialogue between members. This should continue in the future and so, by looking at instances of past divergences between the Ministry of Awaqf and GOPHCY, approaches

fragmenting effects of Islamic inheritance laws. The fact that Yemeni governments always include a minister of waqfs and the that Ministry of Awaqf is important are indicative of the continuing magnitude and significance of these endowments.

79 Ayssa, interview.
should be subscribed that will emphasize further cooperation. Points of contention in the past have been the preservation of mosques and awaqf property. The implementation of preservation to historic mosques and suggestions that consider “adaptive reuse” of mosques have been topics of debate. Although the restructuring of a building’s traditional functions is viewed as a sustainable development plan in many cities across the globe, this method can have a negative impact if not done with adequate consultation. The intangibles associated with a mosque— for example, the calls to prayer that ring through the city— are not replicable, and the reuse of a mosque can disrupt association values that are inherently found in religious mores. The Old City is not, however, a museum. It is a living city with an evolving heritage whose population is experiencing growing needs not attainable through unyielding traditional views.80

The residents and business owners who live and work in the Old City are important members to consult when considering the Domains of Restoration. In the Old City, building ownership almost always falls under private, public, or waqf possession, with 93% of the buildings being privately owned.81 Within these buildings, 72% function as residential buildings only (as opposed to a multi-purpose building which may have another function on the ground level and residential homes on the upper stories).82 The fact that the Old City is largely residential means that residents are the ones who are not only those most affected by the damage done in the Old City, but that any restoration projects after the war should be largely supported by these constituents.

80 This statement has been reiterated in almost every interview that I conducted with Sana’ani residents.
82 Pini, 52.
Following the war, there are some scenarios that could blur the lines between the Domains of Restoration. The outcome of the war and the political beliefs of the instated government will have a large effect on what buildings will be restored and the purposes of the buildings. In the Old City of Sana’a, governmental buildings and mosques have been claimed by Houthi groups and are no longer providing services to the people. Many residents of the city, in and outside of the boundaries of the Old City, blame the Houthis for the war almost as much as they fault the Saudi coalition. Feelings of abandonment toward the international community have created foreign distrust. These feelings of resentment and memories of fatal neglect will need to be addressed following the war. The question of who should be allowed to restore these buildings will weigh heavily on the country and international community following the war. Many programs in the city will need funding along with a preservation plan. This invokes several questions, such as:

- **Who will oversee the project funding and implementation of the restoration of the Old City?** Should the new government be in charge of this, despite the problems that have occurred in the past during the National Dialogue?

- **Where will the money come from?** International organizations and countries tend to be wary about funding large projects in unstable countries.

- **What role the Saudi coalition and Iran assume in restoration process?** Should they be required to put funding into other humanitarian efforts and relinquish their right to overseeing the funds?

- **Are sites returned to their previous owners?** For example, should The Great Mosque be returned to the Ministry of Awaqf who will then oversee its restoration. Or, should a new governmental agency be created that will be in charge of all sites, despite their former ownership status?
• **How will the Houthis be included in the decision making?** Depending on the outcome of the war, Houthis may be viewed as either heroes or insurgents.

• **How will the residents and shop owners be included in the decision making?**

Preservation and restoration will likely not be a governmental priority following the war, where food, health, and restoring incomes will need urgent attention. How can input be encouraged so that decisions will reflect the community and not only those few involved in the restoration of the Old City?

These questions are only a select few that will need to be addressed following the war. Using the past as an indicator of the future, we can analyze workable solutions to some of these questions, specifically who should oversee restoration projects, who should be consulted during the restoration process, and the means for consulting members of a society recovering from war.

Following the war, the newly formed government should not take complete control over restoration funding and implementation in the Old City. In the case of Bosnia, which was described in the strategies section, the Domains of Restoration contained complex actors who distrusted one another following the war. The signing of the Dayton Peace Agreement by these actors established that a Commission to Preserve National Monuments be created that would fall under the aegis of UNESCO for the first five years, after which control would be passed to the state of Bosnia-Herzegovina. A similar approach is suggested for the Old City of Sana’a for several reasons. Recalling the 2013 Yemen National Dialogue Conference previously mentioned in this paper, the short-comings of the Dialogue included its failure to

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consult GOPHCY and preservation groups throughout the process, as well as overlooking concerns raised by the Houthis that subsequently contributed to the events leading to the current war. The faults of the NDC should be avoided in the future and the creation of a special commission under the control of UNESCO will lessen the likelihood of these mistakes being repeated.

Forming a special commission made up of Yemeni experts will ensure that preservation is on the table during the redevelopment process and should guarantee that all voices from the local, regional, and international community are consulted. Unlike the commission that was created following the Bosnian War, however, the commission should not be limited to the preservation of national monuments. Instead, its focus should be on historic cities that were under direct control of the Houthis during the war. The limited scope of such a commission will therefore only manage cities located in the western Yemeni region where restoration will face similar needs in differing degrees. The local and regional benefit of having a special commission for these historic cities is that by limiting the scope of reference, a complex situation can be simplified. Participants will have the opportunity to be included in the restoration process without having to compete with louder voices that are not focused on building restoration or preservation of a particular city. In the context of the Old City of Sana’a, these local and regional voices are of utmost concern as the site is located in the capital of the country and is beloved among people throughout the country.

84 The phrasing of this sentence suggests that following the war the Houthis will no longer maintain control over areas in Yemen. This conjecture is not based on any evidence that anticipates the political outcomes of the war but relies on the authors belief that in the event the Houthis were to win control over Yemen, the questions posed here would have very different answers. Because this paper assumes that the Government of Yemen will return to being led by a political party centered on nationalist platforms as opposed to religious ideals, a Houthi victory will not be considered and instead refers to them as participants in the Domains of Restoration.
It must not be forgotten, however, that the Old City of Sana’a is also a World Heritage City as listed by UNESCO and is internationally recognized for its historical significance to humankind. The creation of a special commission supervised by UNESCO will create confidence in the restoration process of the Old City for the community abroad who respect the Old City and its residents, and hope for its continued preservation. Similarly, by creating a special commission led by UNESCO, international donors will be more likely to invest funds for restoration projects.

The creation of a special commission responsible for restoring the Old City will help to guide a recovery process that includes the various participants of the city. Creating an equitable restoration plan for the city would address immediate participant concerns as well as scenarios that will likely affect the city in the future. To discern how to do this, immediate threats to the health and safety of those in the Old City should be assessed. These threats include the structural instability of buildings, local access to clean drinking water and food, and the financial stability of residents and business owners.

5.5.2 Documentation

The surveying and documenting of architectural heritage is important to maintain before, during, and after an armed conflict. During times of peace, surveyors of historic cities can record extensive information that includes information important for development, city planning, and preservation. The capacity to document historic sites during an armed conflict, however, is oftentimes limited due to security and financial hardships. After an armed conflict, the choice of what to document is then again changed according to priorities and availability of funds. How documenting has been done in the Old
City is under the supervision of GOPHCY and offers insight into the various ways that preservation organizations choose to document historic sites before and during war.

The Old City has been documented several times over the last forty years, as mentioned previously. The UNESCO conservation campaign that restored many historic structures provides a snapshot of the Old City as a developing city facing the threat of deterioration, while also lacking modern infrastructure such as running water or electricity. Although the campaign did much more than document the site, it has material relating to the state of preservation in the Old City until the final year of its intervention in 1994. Fourteen years later, the first formal survey was done of the Old City. It provided updated information on the state of preservation in the Old City for creating preservation planning guidelines. Information included in the survey pertained to many aspects of the Old City and ranged from the various building typologies, to their ownership and function. It also included numerous maps that recorded the number of residents, the number of stories, and construction materials for each building, as well as suggestions based on the team’s observations.

Since the war, GOPHCY’s capabilities in preserving the Old City are limited, but efforts have been made to document bombed sites in the Old City. In 2015, the bombing of the al-Qasimi and al-Folihi neighborhoods in the Old City resulted in the destruction of eight buildings and damage to 100 other buildings in the area. GOPHCY began a survey in 2016 that included technical studies and documentation of the damage incurred at the sites.85 These documents have not been made available, so the logistics of the survey are

unknowable at this time. The need for further documentation in other affected areas, however, is suggested in several sources. These state that a core team of experts, formed by GOPHCY, are ready to make ambulatory surveys of affected areas when sufficient funding becomes available. The efforts that GOPHCY has made to continue documenting the Old City is further exemplified in its bid for funding from the World Heritage Committee in 2014. They requested $29,300 USD from the committee to update the 2008 Inventory that would include new construction in the Old City as well as open areas. A contract was signed between GOPHCY and the Doha UNESCO office to conduct the survey, but the funds were never issued to GOPHCY as of 2016. In 2017, GOPHCY and UNESCO Doha signed two new contracts for projects that would survey the Old City. The first project, which should have been completed in April 2017, specifies funding for a damage assessment to be conducted in areas that were bombed; the second contract stipulates financial support for a rapid assessment of affected buildings in the Old City but did not provide a start date for the project.86

Although GOPHCY has made tremendous efforts to document the Old City, before the war and despite complications during the war, suggestions for further methods to conduct documentation should be considered. Currently, the opportunity for GOPHCY to collaborate with Sana’a University appears to have not been considered, despite the school offering architectural and engineering degrees. The formation of a program that would offer students the chance to continue their education on the field in exchange for college credits would provide additional support in the documentation process without needing additional funding. Even if the program resulted in only a handful of student applicants, the benefits

86 Centre, “State of Conservation (SOC 2017) Old City of Sana’a (Yemen).”
would still be at almost no cost to GOPHCY. There are also groups who are currently working with innovative technology to record heritage areas in conflict. The company Iconem currently works in creating vivid 3-D models of historical landmarks that are being destroyed by war. Current technology can take large pieces of rubble and map out where they were located in a building in order to help restore buildings. Communication should be extended to these groups so that monumental buildings in the Old City have proper documentation in the event that a missile destroys one of these properties.87

The documentation that will take place in the Old City following the end of the war will rely on the prior work. A thorough assessment of the Old City will help GOPHCY prioritize and plan for reconstruction. The Inventory is already viewed as a model example that should be updated, and any documentation that took place during the war will give a timeline of the changes throughout the Old City. The conservation campaign that restored many historic structures may also be useful in analyzing the different methods of restoration by various international organizations. Large scale international conservation projects are, in the context of war, normally applied following the war. Sana’a is an exceptional case of international preservation organizations applying their methods before a war, within a span of twenty years. Surveys done after the war in contrast with these different methods may provide architects and engineers information not readily available in other cities.

5.5.3 Emergency Planning

The creation of an emergency plan is the first step towards offering immediate support for preserving heritage in a city amid war. The concept of emergency planning is

dependent on a state’s ability to govern, provide funding, and organize groups who can
define guidelines and seek international support. The emergency plan should coordinate
between organizations and present clearly their role in the event of war. Four fundamental
definitions that an emergency plan should outline are the who, what, where, and how in the
instance of an emergency. [Figure 7]

![Figure 7: Clarification of basic tenets to be covered in an emergency plan](image)


For instance, in the case of enacting protective measures of architectural details in
the Great Mosque amid armed conflict, key details may look something like:

**What and Why:** In the event of immediate threat to the Great Mosque, the qiblah wall
should be barricaded using sandbags. Sandbags act as an energy shock absorber in the case
of high impact. The use of this protective measure will support the wall in the case of an
explosion and shield details (such as the mihrab) from complete destruction.

**Who:** In cooperation with the Ministry of Awaqf who oversee the Great Mosque, GOPHCY
will appoint a team of skilled community workers to gather and carefully place the
protective shield along the qiblah wall.
**Where:** As a subsidiary of the government, GOPHCY will make immediate requests for sandbags to be provided by military personnel. If sandbags cannot be obtained through a governmental channel, other means for obtaining burlap, or similar material, bags should be sought through local merchants and herders. Food supply bags used for animals, and the foodstuff sold in the Suq al-Milh will be an alternative should military or governmental ties break down in the event of war. Sand or earth should be acquired outside of the domain of the Old City, where smaller grain is abundant.

**How:** This section would include vital details that outline the proper ways to handle the placement of sandbags along the wall. Details that would be described here include how to fill a sandbag, the proper amount of sand to put in each bag, how to close the bag, how to stagger the bag along the wall, how to finish the placement of the shield, etc. In this case, step-by-step instructions cannot be too detailed so that untrained volunteers are able to carry out the plan if necessary.

Although only a simplified variation of what a detailed emergency plan should aspire to, having a plan benefits the process of protecting important heritage sites. It serves to reduce response time and clarify conflicting information in a chaotic situation. As the change in warfare has shifted throughout the years with advanced technology, time is now a commodity that needs to be prioritized. Having an emergency plan means that time can be allotted to taking action instead of preparing an action plan.

In 2016, the state party for Yemen requested from UNESCO training for their heritage managers in risk management. The next year, GOPHCY members attended a regional course on risk management – four years after the start of the war. Action Plans for the conservation of the Old City are annually requested by UNESCO, while resources
continue to be depleted as the situation in Yemen worsens. While the attendance of risk management training by GOPHCY is a success, these steps should have already taken place before the war. Heritage managers should be trained in risk management, action plans preemptively drawn up and then, once war has begun, will emergency plans need alterations to concede to circumstances.

Along with the creation of an emergency plan, proper heritage management training should be allotted to the cultural sites that are in the Old City. There are various house museums and cultural centers which are staffed by highly informed individuals, but who are lacking in any form of preservation education. As sites are reopened following the war, consideration should be given to appoint residents, both male and female, to improve the interpretation of these sites and provide proper training in current preservation studies. The formation of workshops will integrate the heritage managers as members of a collective organization seeking to preserve the cultural integrity of their city. Preservation inherently depends on a peaceful and well-organized city, but it also serves to create peaceful environments when members are educated and prepared to handle emergencies.

5.5.4 Community Training

Preservation in the Old City relies on its community members acknowledging the need to continue traditional building practices. Training in the traditional methods of building appears unnecessary because these methods are still relatively known to members of the community; but in the Old City, convincing residents and business owners that these traditional methods are important has deterred preservation organizations in the past. The desire for land owners to have their buildings function and look the way they like can contradict preservation standards for maintaining the historical characteristics in the area.
Newer materials and modern looking structures are acceptable requests for home owners to want, but in the case of the Old City there must be ways to prevent these actions from taking place. The cultural heritage of the Old City is arguably the most important asset that the city has, and in order to emphasize this to current residents, community training must take shape in the form of heritage recognition. Undoubtedly, the people of Sana’a understand the value of their architectural heritage, yet they simultaneously neglect to apply the guidelines set by GOPHCY in maintaining the historic fabric of the area.\(^8\) This negligence results in residents being unaware of how to properly maintain their properties, and during war GOPHCY does not have adequate resources for interfering in improper building maintenance. The responsibility to continue proper preservation practices is then in the hands of residents and home owners.

Although only tangentially related to war, GOPHCY and other city planning organizations should involve residents in heritage maintenance by focusing on programs that educate and involve young members of the community. Educational programs in schools and community centers can focus on various topics that will teach the values of continuing traditional methods, and the implications of being a World Heritage Site. In Philadelphia, PA, USA, the Philadelphia World Heritage Education Working Group created a program that taught students between the ages of 10 and 17 about World Heritage Sites around the globe. The program sought to teach geographical regions and, as a World Heritage City, prompt students to take interest in their own local heritage.\(^9\) As the Old City of Sana’a is a World Heritage Site, the comparison of other prolific sites around the world

\(^8\) Ayssa, interview.
\(^9\) Monika Göttler and Matthias Ripp, “Community Involvement in Heritage Management Guidebook” (City of Regensburg, June 2017), 46.
can help valorize the architectural heritage that is a prominent place for people all over the world. Education should also include a more local scope of heritage preservation.

As previously mentioned, the traditional craftsmanship that goes into the buildings in the Old City are still well known to many members of the community. There are, however, some methods and materials that are not as commonly used anymore in the Old City due to expense and lack of knowledge. One such example is the inclusion of alabaster that is predominately found in the ornamental ellipse frames and inlaid in gypsum. This craft is slowly disappearing, and very few craftsmen survive that still work with the material. The craftsmen that continue to sell works of their trade will sometimes make special windows but generally create smaller objects for souvenirs. If these trades are to continue to survive, apprenticeships and educational programs need to be administered to a younger generation. Programs that teach how alabaster is made, how it is inserted into the gypsum, and other aspects that effect the durability of the material should be implemented.
5.5.5 Protection of Architectural Details

The removal of architectural details in the Old City is a limited approach that should be applied sparingly in extreme circumstances. This is mainly due to the value of the city as a homogenous style. When asked about the difficult decision in determining what heritage sites to protect, a resident in the Old City said, “We want to protect the whole city, not just parts of it. Everything and every part in this city tells a beautiful story and it has history not just for Yemen but for the world too.”90 This response mirrors the view that Sana’a is comparable to Venice in that it is remarkable precisely for the impression it makes as a whole. There is, however, a Yemeni proverb that says, “A little that lasts is better than a great deal that is ended,” and so some consideration should be placed into determining architectural details that should be preserved.91

A graduated conservation taxonomy will help to define the most significant sites in an historic area. In the case of the Old City, where the city as a whole is considered its most important asset, creating a graduated conservation taxonomy will frame the current conditions of a building in contrast to the whole city, and therefore defining which sites are most exemplary of the area. The matrix [Table 2] outlines the various classifications of spaces that are found in historic cities. In conjunction with this matrix, a clear understanding of the current state of the building will determine a hierarchy among buildings to consider for protection. The suggested preservation approaches are here included to aid in future use and are intended for consideration when restoration in the Old City is viable.

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90 Nasr Rizq, E-mail, April 23, 2018.
91 Lewcock, The Old Walled City of Ṣan‘ā’, 103.
<table>
<thead>
<tr>
<th>Classification</th>
<th>Full Preservation</th>
<th>Rigorous Preservation</th>
<th>Typological Preservation</th>
<th>Contextual Preservation</th>
<th>Contextual New Buildings*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Monuments and symbolic spaces</td>
<td>Monuments and emblematic buildings</td>
<td>Buildings and public spaces representative of typologies</td>
<td>Contributes to historic core</td>
<td>Deteriorated or destroyed lots that house residents</td>
</tr>
</tbody>
</table>

**Suggested approaches**

|                | Full preservation of all details, applying all strategies necessary to protecting entire structure | Rigorous preservation of traditional materials and styles, stabilizing building, protecting architectural details | Protection of typological details, such as mafraj windows or viewsheds | Document building and monitor conditions | Replace with contemporary construction sensitive to traditional materials and styles in the neighborhood |

**Example**

|                | The Great Mosque | Beit Sari | Bustan of Talha | Historic tower houses | Irreparable deteriorated house |

Table 2: Graduated Conservation Taxonomy
Adapted from lecture courses led by Professor Eduardo Rojas, University of Pennsylvania (2018) and typologies described in the Inventory of the Historic City of Sana’a (2008)
*See “Rebuilding” section for current examples of contemporary construction in the Old City
The Great Mosque is one of the most important sites in the Old City, for the many reasons described in a previous section. Here will be considered what to protect in The Great Mosque, and focus on four defining features: the minarets, the domed ablaq structure in the center of the courtyard, the painted coffered wood ceilings, and the qibla wall. Each of these characteristics continues to be preserved by the Social Fund for Development to the best of their ability. Of these features, the most recent addition is the mihrab in the qibla wall which was done sometime in the 20th century before the UNESCO campaign arrived. It is plastered with qudad lime plaster and Quranic verses are carved into the plaster surrounding the wall and cornice. The mihrab is also decorated with various metallic paint in gold, silver, and bronze.

Figure 10: Qibla wall in the Great Mosque
Photo Source: Murat Germen, 1990

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92 The qibla is the direction that should be faced during prayer. The qibla wall orients worshippers and will demarcate the direction with the mihrab, which is an often-decorated niche in the wall. The minbar is the platform from where the Sheikh will lead the prayer and is located near the mihrab.

Similar to the mosaics in the Ma’arra Museum in Syria, the qibla wall could be protected through the use of packaged sandbags placed along the wall. Unlike the museum, however, the Great Mosque continues to remain in use at all hours of the day and protective measures would therefore need to be enacted in gradual increments to not disturb prayer. Protecting the exterior characteristics of the building involves large-scale approaches that depend on time, money, and a workforce not readily available to the Old City in its current condition. The protection of the ablaq structure in the center, which dates back to the 17th century, could theoretically be protected by constructing a larger masonry exterior that engulfs most of the structure as was done with the Cibeles statue in Spain during the Spanish Civil War.94

In other architectural details found in the Old City, attention should be given to smaller ornamentations that residents may recognize as being special to Sana’a. Protective measures may be more manageable because of their small-scale interference in comparison with previous approaches. For instance, the dove sculptures that are found in several mosques in the Old City, where a crescent is generally found; the small (unusable) Ottoman watering fountains that are found throughout the city; and the covering of the stained-glass windows found in the tower houses that create colored arrangements on the floor but don’t provide direct sunlight into a room are all examples of exceptional architectural details found within the Old City that should be protected. Similar to the approaches taken by museums before times of conflict, these details can be removed using a careful process. ICCROM provides a handbook that outlines steps for protecting moveable heritage. These

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94 Lewcock, *The Old Walled City of San’ā’,* 87;
steps include the prioritization of objects, preparing objects for relocation, documenting, and moving objects. Similar guidelines should be applied if the threat to architectural details is deemed urgent. To consider which architectural details to protect, consideration of the above matrix will help prioritize a list for removal.

5.5.6 Building Stabilization

In the Old City, stabilization of damaged tower houses can deter a building from collapsing and causing further damage to adjacent buildings. The tower houses in the Old City share party walls, and so the destruction of one building will eventually cause the adjacent building to also collapse, thus creating a domino effect. The destruction of Block 01 in the al-Qasimi neighborhood in 2015 shows an empty space where the buildings once stood, and the rubble of the collapsed material. [Figure 11] The loss of a party wall in House 03 eventually led to it collapsing, causing damage to House 01. There are two strategies that were used for stabilizing House 01 and 03 in the aftermath. Infilling the foundation of a bearing wall, as was done for House 03, is a temporary solution that, if done correctly, can delay the remaining bearing walls from pulling away from the center of the building. This solution, however, will come with further problems in the future, specifically after several rainfalls that will wear away at the clay mortar between bricks and exposed ground surrounding the buildings. Because Sana’a has a relatively dry climate, this method can create issues during the rainy season in the summer months of July and August. Although

96 Ayssa, interview.
97 Saba Al-Suleihi, Phone Conversation, April 9, 2018.
attempts were made to stabilize House 03 using infill, the method did not work, issues of safety prevented work on the building, or the time between damage and restoration exceeded what was necessary to save the building. In House 01, builders installed a temporary interior shoring method. Pieces of timber were vertically placed on each floor that distributed the load to reduce stress on the remaining three load bearing walls. Builders were then able to restore the damaged party wall before the building collapsed.

Figure 11: Party wall between House 01 and 03 shows obvious signs of destabilization. Cracks are visible between the two structures and provides a construction timeline for the two houses.

Photo Source: Legal Center for Rights and Development (2015)
Figure 12: Interior stabilization of House 01
Photo Source: www.alhagigah.net (2016)
Figure 13: Al-Qasimi block before the 2015 bombing
Photo Source: A. Demotes

Figure 14: Destruction of Block01 in the al-Qasimi neighborhood
Photo Source: Yahya Arhab, 2015
5.5.7 Rebuilding

During armed conflict, the immediate need to reconstruct or restore damaged buildings means that traditional methods are likely to be cast aside for resourceful solutions. The problem with these immediate solutions occurs when they take on a long-term placement, or when they have irreversible consequences to the remaining fabric. In the Old City, the 2015 bombing of the al-Qasimi neighborhood tower houses destroyed four structures (Block 1) and left four buildings partially damaged.\(^9\) Since then, the collapse of one partially damaged building (House 03) resulted in the damage to an adjacent building (House 01), and an additional partially damaged building has since fallen and been rebuilt (House 02). These two buildings offer insight into current methods for restoration and rebuilding work for structures in the Old City. [Figure 11] Before looking at the reconstruction and restoration of these two houses, a timeline of the various stages of the al-Qasimi neighborhood block is illustrated below and is derived from satellite imagery and online news sources.

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June 11, 2015
Layout of al-Qasimi before bombing

June 12, 2015
Complete destruction of Block 1 and partial damage to Houses 02 and 03

November 2015
Partial collapse of House 03

February 2016
Full collapse of House 03 and partial damage to House 01

November 2017
Full collapse of House 02

May 2018
Restoration of House 01 and reconstruction of House 02

Figure 16: Visual timeline of Al-Qasimi following the 2015
House 01, located to the east of the block, is an example of restoration work in the Old City. The picture taken in 2015 following the missile attack on Block 01 shows us the former state of the building, while the picture from 2018 shows the present state following restoration.

![Figure 17: House 01 shown in 2015 (left) and 2018 (right)](image)
*Photo Source: Abdulbaset Alnoa (left) and Nasr Riaq (right)*

**Damage:** Restoration was needed primarily in the western wall, along with areas along the southern façade on the third and fifth level of the house. It is likely that the façades were damaged during the restoration phase; the southern wall on the third level was clearly out of plumb since the collapse of House 03.
**Materials and Construction:** Restoration work looks to be done with brick, and some attention was given to replicate diagonal brick patterning that appears in the belt course and frieze on the southern façade. Work has not been done to place any glass or alabaster in the new window frame, and other windows have either been infilled with brick or strategically removed if not restored. There are also signs of areas on the façade that have been plastered with mud. The builders have also considered the likelihood of a new building being constructed on the former site of House 03, where the corners of the brick work in House 01 have prepared joints for a new building.

**Style:** The builders who did the restoration prepared a window frame on the fifth level that is a replica of the design that was formerly there, with double arched brick work being done above the new window frame. There are also several architectural details that have been lost on the façade, especially on the second, third, and fifth floors where gypsum ornamentation has detached and fallen.
House 02, located to the west, is an example of rebuilding in the Old City. The picture taken in 2015 following the missile attack on Block 01 shows the former state of the building, while the picture from 2018 shows the present state following restoration.

![Figure 18: House 02 shown in 2015 (left) and 2018 (right)](image)

*Photo Source: Yahya Arhab (left) and Nasr Rizq (right)*

**Damage:** The entire structure appears to have been removed sometime between September 2017 and November 2017. It is unknown if the building fell due to structural instability, or if the owners purposefully bulldozed it for reasons of safety.

**Materials and Construction:** The house appears to be rebuilt with the same type of brick that was found in House 01. The building, which formerly stood at four stories, is now standing at two stories. Although the building could be extended to its original four-story height, the large openings in the brick design on the parapet, and similarly found on many other...
parapets in the neighborhood, suggests that no extensions are currently being considered. The first level is constructed using cement blocks, which are possibly repurposed from the former building or nearby debris, as we see piles of discarded masonry within the bustan. The corners of House 02 do not have prepared joints for any adjacent buildings as they were for House 01, but the exposed beam openings and lack of decoration on the eastern wall suggests that the builders assume it will not be exposed in the future.

Style: There have been some attempts to recreate similar architectural details in the openings of the new structure. On the first floor, the window and entranceway are positioned with similar dimensions to the former structure. The lintel above the door may have been repurposed, but it's impossible to know from the current evidence. On the second floor, many details have been changed although the rhythm of the design resembles what was there before. The belt courses on the façade are in similar positions but with new patterning. Traditional details that have been continued in the building include the ellipse gypsum detail above the windows on the second floor that would have traditionally been filled with alabaster. Also, the extruding box on the second floor is a traditional form of security. When a visitor announces their arrival through a pulley system that connects bells on each floor inside, the box on the second floor allows members of the household (typically women) to look through to see who their guest is without letting the visitor see them. Other details that are found on the façade do not replicate the details that adorned the former building and are creations from the unknown builder who designed the new structure.

The restoration and rebuilding work that have been shown in these two buildings offer substantial insight into the methods that are applied in the Old City. It is unclear whether these projects were approved by GOPHCY or were done without supervision by
master builders in the area. In 2016, GOPHCY provided UNESCO with a restoration plan for
the site which UNESCO supported on an exceptional basis.100 A 2017 document received by
UNESCO from GOPHCY, however, referred to new construction and restoration work being
done in the Old City without the consultation of the preservation organization. This same
document made it clear that adequate funds were not available for GOPHCY to undertake
construction projects. In reference to the al-Qasimi neighborhood, it was reported that
“emergency interventions could not be completed due to lack of funds. There are serious
conscerns that two major buildings in this area are unstable and could collapse at any time
following last year’s heavy rainy season, unless urgent intervention occurs.”101 It is possible
that the two buildings mentioned here are House 01 and 02. The timeline of the two
interventions shows that the two sites were constructed in the same period, and therefore
could have been done in collaboration with GOPHCY. The buildings show signs that some
attempts were made to construct using sensitive methods especially in the architectural
details which are consistent with the former buildings. The prepared joints found in House
01 also show impressive forethought that considers the site as a whole. The insufficient
construction methods that are found in the two buildings, especially in House 02, are likely
due to a lack of funding as well as the urgency to rebuild occupied houses, rather than
inadequate knowledge in preservation practices.

5.5.8 Reclaiming Spaces102

The act of "reclaiming" heritage spaces can occur either formally or informally during or
after a war through various outlets. Examples of reclamation are the creation of formal

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100 Centre, “State of Conservation (SOC 2016) Old City of Sana’a (Yemen).”
101 Centre, “State of Conservation (SOC 2017) Old City of Sana’a (Yemen).”
102 The subject of memorial spaces is undoubtedly complex, and its intricacies have not been discussed in
this paper. The topic is deserving of its own thesis, and there are many others who have tackled the issue
monuments and informal memorials that honor events or individuals attached to the war which invoke memories or emotions experienced by a community. Monuments as discussed here are the large-scale planned spaces commissioned through a formal group with a “top-down” approach of planning. Here memorials are defined as the small-scale unplanned spaces that are created through an organic process that stems from the community. Another consideration to take into account is the return of site ownership following the war. This will occur in sites that were previously owned by awaqf, the government, and private entities and which are currently under the ownership of Houthi members. Similarly, a look at what happens to spaces that have been bombed, or highly controversial sites in the Old City are central to understanding how these spaces can be reclaimed. This leads us to three main questions:

- **Should monuments be constructed in the Old City?** Although this will not be an immediate consideration following the war, architecture is regularly used to memorialize national tragedies. Currently there are many empty lots where built

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at length. Provided here are a list of publications that reference the larger discussion of monuments, memory, value, and interpretation of sites, which are helpful when considering the approach of reclaiming spaces after war:


heritage previously stood before the bombing of the city. Is the creation of a monument in these spaces to honor the loss of the city appropriate?

- **What will happen with the informal memorials that have sprung up in the Old City?** These spaces tend to hold pictures of loved ones who have been lost to the war and are often not durable in the long-term.

- **Will sites that Houthi members claimed during the war be returned to previous owners?** What about sites that are now viewed as “negative” for their involvement in the war?

Although the creation of a monument as a reminder of the devastation overcome during a war would be appropriate in a capital city, a national monument within the Old City would not be suitable. While the creation of monuments meant to memorialize the Yemenis and allies lost during past wars can be found within Sana’a, there are none within the Old City. Al-Sabeen Square, which is located south of the Old City near the Saleh Mosque, is one such example of a national monument. It memorializes the siege of 1967 that established the creation of the Yemen Republican Government and is used to host large events, with the most recent being a massive protest against the Saudi war in the region.103 The stadium that sits opposite the building was bombed in 2016 as evident from satellite imagery. Although the creation of formal monuments meant to commemorate the challenges overcome by the state are found in Sana’a, a modern monument in the Old City could make it susceptible to future targeting and would do more damage to the historic core than good. A monument, whether it be a museum or a statue, that is to represent all of Yemen could produce

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increased visitation into the Old City, while the building’s size would need to reflect the importance of a national tragedy. Neither of these consequences would benefit the Old City if the space is to continue to reflect the traditional lifestyles of the community and remain a primarily residential area. While the construction of a national monument in the Old City could theoretically be compatible with the architectural composition of the area, increased traffic to the area would disrupt the local population and threaten the authenticity of the area.

A local memorial, with an appropriate scaling, would more aptly reflect the community who live and work in the city while discreetly interrupting the architectural layout. Informal memorials in the city currently consist primarily of pictures of lost martyrs that are hung along the walls in the historic core. There is currently no evidence to show that the residents in the Old City have created informal spaces to memorialize family or friends lost to the war in a central space that the community can visit. Instead it is the Houthis who are actively creating memorials for their deceased members in both large and small scales, none of which are located within the walls of the Old City. That community members are not outwardly grieving together may be an issue of safety at home where the creation of informal memorials may attract attention to the silent resistance taking place against the Houthi campaign. It may also be a form of self-preservation, and to continue their lives without constant reminders of the painful events taking place. Looking forward, however, community healing through the creation of a memorial to commemorate the war, and the civilians lost, should be considered. As we’ve seen with space like Guernica Square, healing can take place through art and community events, not only statues or plaques. As Sana’a is home to many forms of intangible heritage, such as music and poetry in the Sana’aani dialect, providing a space for healing may likely involve these artistic contributions and
such a space can only be claimed by the people and should be supported by the local government.

Sites that have been seized by Houthi members will have to be given new ownership status following the war, and whether these are to private, government, or awaqf entities will depend on the site and its former ownership status. A legal channel with a formal tribunal will need to be established in order to ensure that all cases are given a fair outlet, especially for those spaces that will face contention. High profile spaces, such as the Great Mosque and governmental buildings which are currently under the Houthi control, can theoretically be returned to their previous status as awaqf and public domains. Such is also the case for residential buildings with private owners not associated with Houthi members. The likely chance that Houthi members will stand trial for treason following the war will dispose them of legal ownership over any houses they possess, but family members who reside in these spaces should be given the legal means to reclaim ownership and prove their innocence. Other contentious spaces that will need special attention will be places that are associated with the Houthis and where their former ownership is unable to be clearly defined. One such space is the Shaikh Abdulla ben Hussein Al-Ahmar Mansion located in the Al-Abhar quarter of the Old City. The building is currently in use as a Houthi office and was previously owned by a politician from which the building gets its name. The mansion is historically emblematic for the residents in Sana’a but has acquired a “negative” connotation for its association with the Houthis. Spaces like this have the opportunity to host activities that will benefit the community. Rather than return to its previous use as a residential home or office, this example may serve better as a museum or center that will reinvigorate the mental health of the community.
6. Conclusion

The targeting of heritage sites is continually used as a tactic in war. The inherent nature of heritage characterizes the traditions of a people and their associated sites that delineate them from other groups, whether it be dependent on national, ethnic, or religious affiliations. Tactics that use heritage as a conduit of warfare do not rely solely on the destruction of heritage but can also construct roadblocks to prevent passage to heritage sites or falsify the history of a site in an attempt to erase the memory of a people. International laws that criminalize the destruction of culture during war began with the 1954 Hague Convention, and advocates for the proactive protection of heritage sites before a war. Since then, supplementary documents by UNESCO and ICOMOS have provided guidelines for restoring heritage sites following a war and the necessity for all cities to create management plans in the event of an armed conflict.

Issues relating to the preservation of heritage amid war are explored through eight strategies which may be applied before, during or after a conflict. These strategies approach heritage from a holistic viewpoint, where the preservation of heritage is dependent on factors that relate to the tangible and intangible assets of a site, as well as the community that is responsible for, and benefits from, the preservation of a heritage site. The eight strategies explored throughout this paper represent proactive and reactive approaches that were applied to various sites throughout the globe, and indicate the problems, and their solutions, surrounding heritage preservation amid war. By gathering these lessons from war-torn sites, and applying them to the Old City in Sana’a, a more complete understanding of the differing threats to the site emerged.
Issues currently affecting the preservation of the Old City have surfaced through the exercise presented in this paper. Several of these issues relate to the state of preservation before the war, including the Yemeni government’s failure to consult with GOPHCY members during the National Dialogue which resulted in the negligence of heritage sites, further demonstrating the lack of cooperation between the various agencies responsible for overseeing the preservation of the Old City. Lack of resources and legal enforcement were not extended to GOPHCY before the war, which resulted in a devaluation of traditional construction materials and styles by residents and debilitates acceptable preservation methods during war when residents are largely responsible for the upkeep of the Old City. Furthermore, the lack of resources extended to GOPHCY meant that emergency planning and proper training in risk management were not available to heritage managers, and only years after the war had begun were these channels starting to be explored. Without any emergency planning for the protection of heritage sites, the Old City is vulnerable to the wills of the Saudi coalition. In areas where airstrikes have taken place, the failure to properly stabilize damaged buildings resulted in the collapse of adjacent buildings, causing further damage in the surrounding area.

The result of this paper offers substantial information and suggestions, but further research needs to be done about the effect war has on heritage and ways to protect heritage amid war. The benefits of applying proactive approaches to protect a heritage site before a conflict needs to be further emphasized with complementary research. Little is known about how proactive approaches respond to war because sites are not taking the precautionary steps that actively attempt to prepare for war. While the uncertainty of war may deter heritage managers from creating action plans, it is likely that financial resources necessary for maintaining a site are allotted elsewhere with emergency planning.
overlooked. In order to advocate for proactive emergency planning of a site, an economic study of the benefits of preplanning should be done. This can be applied from a very local standpoint, for example a for-profit museum, or at the national level, governmental spending on restoring sites in a city. If there is a monetary profit or savings to be made from creating an emergency plan, city planners and heritage site managers are more likely to consider investing in procuring one. Other areas of research that this paper does not mention is the protection of smaller heritage sites not listed by UNESCO. These sites, of which there are many in Yemen, are oftentimes overlooked but are equally worthy of preserving. How war affects the heritage sites found in villages or small cities should be researched, as they may offer substantial insight that larger, more familiar, cities could not.

In conclusion, the preservation efforts found in the Old City in Sana’a are largely reactionary strategies carried out at the mercy of international funding. This is in part due to the negligence by the government to provide any support to the entities overseeing the preservation of the Old City before the war, and who are now slowly obtaining training abroad. The Old City is vulnerable to destruction and deterioration while GOPHCY and other preservation organizations make any attempt they can to procure funding for tasks related to documentation and monitoring, without offering substantial support to significant heritage sites or buildings. Other heritage sites should look to the fate of the Old City as a warning that administering protocols for best practices in the event of an armed conflict should not wait to be prepared during war and are instead best formed during times of peace when resources and stability are still available. Following the war in Yemen, it is hoped that the Yemeni government and preservation organizations for the Old City will learn from these faults as well.
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Index

‘Ali Abdullah Saleh ................................. 42
2015 bombing ................................. 49, 72, 73
alabaster ........................................ 36, 64, 76, 78
al-Qasimi .................................... 46, 49, 57, 69, 72, 73, 74, 79
anthropocentrism ............................ 8
awaqf
waqf ............................................. 35, 52, 80, 82
Bosnia ............................................. 26, 54, 91
Bosnian War ................................. 25, 55
Building Stabilization .................... 24, 30, 35, 49, 69
bustan ........................................... 46, 77
City of David .................................. 17
Community Training ....................... 24, 28, 62
documentation ................................ 23, 26, 31, 57, 58, 59, 86
Domains of Restoration ................... 24, 25, 26, 35, 49, 50, 52, 53, 54, 55, 91
emergency plan .................. 23, 59, 60, 61, 62, 85
Emergency planning ....................... 27
GIZ ................................................. 28
GOPHCY ........................................ 11, 28, 43, 44, 45, 50, 51, 55, 57, 58, 60, 61, 63, 78, 84, 86
Great Mosque ............................... 35, 38, 39, 40, 41, 46, 49, 53, 60, 66, 67, 68, 82
gypsum ......................................... 5, 36, 64, 76, 78
Heritage management ...................... 23
Houthi .............................................. 42, 43, 47, 50, 53, 55, 80, 82
Iconem ........................................ 59, 89
Industrial Revolution ..................... 12
intangible heritage ......................... 6, 9, 15, 82
Inventory of the Old City .................. 51
Israel ............................................. 16, 17, 18
Jerusalem .................................... 16, 17, 18, 26, 87, 88
Mansoor Hadi ................................. 42
memorials .................................... 79, 80, 81
Michele Lamprakos ......................... 4, 5, 43
minaret ......................................... 5, 38
Ministry of Awaqf ...................... 50, 51, 53, 60
Ministry of Culture ......................... 50
monuments .................................... 12, 21, 31, 34, 55, 79, 80, 91
mosque ..................................... 3, 33, 38, 39, 40, 49, 52
Museum of Tolerance ..................... 18, 19, 87, 88
National Dialogue Conference ........... NDC
Palestinian ................................. 16, 17, 19, 27, 89
Philadelphia World Heritage Education
Working Group ............................... 63
Philippines ................................ 27, 28
Protection of Architectural Details .. 24, 29, 65
qibla ................................................. 67, 68
qudad ............................................. 34, 67, 87
Rebuilding .................................... 24, 31, 35, 49, 66, 73
Reclaiming Spaces ......................... 24, 32, 79
Ronald Lewcock .............................. 6, 7
Saudi Arabia ................................. 2, 38, 42, 45, 47, 91
Shibam ........................................... 28
Spanish Civil War ......................... 32, 68
Strasbourg Cathedral ...................... 29
Suq al-Milh ................................. 13, 35, 40, 46, 49, 61
Syria and Iraq ............................... 30, 31, 45, 90
tower house ................................. 34, 38, 46, 52, 69, 72, 77
Trevor Marchand ............................ 6
UNESCO 3, 5, 6, 7, 10, 12, 14, 19, 20, 21, 28, 30, 33, 38, 43, 44, 45, 46, 54, 56, 57, 58, 61, 67, 69, 73, 78, 83, 85, 87, 88, 89, 90, 91
Warsaw ........................................ 31
World Heritage ................................ 3, 4, 5, 10, 14, 21, 28, 38, 43, 44, 45, 56, 57, 58, 63, 87, 88, 89
WWII ......................................... 10, 15
Yemeni government .................... 23, 43, 44, 84, 86