

## "Augmented Sarajevo"

### Digitally Reconstructing War Heritage and the Sense of Place

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# **THE MEMORIAL MUSEUM IN THE DIGITAL AGE**



Edited by  
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# Chapter 5

## Augmented Sarajevo: *Digitally Reconstructing War Heritage and the Sense of Place*

Sabina Tanović

*The ruins left of our city still protected us from the cold and the burning sun.  
They protected us just enough to let us endure this somehow, I smugly thought.*  
(Karahasan 2010, p. 67)

*Culture may be digital, human stories will always be analogue.*  
[Het Nieuwe Warenhuis](#)

*To live is to leave traces*  
(Benjamin 1939)

## The Memorial Museum in the Digital Age

In August 1992, black snow was falling over Sarajevo, Bosnia and Herzegovina. Warm snowflakes were disappearing in citizens' palms. Eventually, no trace of the black snow was left, except for its source: the burning National and University Library, Vijećnica. Those who witnessed the destruction of the library by the incendiary shells coming from the surrounding hills, speak of flocks of black birds emerging from the building. The phantasmagoric birds were carried by the wind and then transformed into the black snow that "choked the city" (Simić 2005, p. 32) – the burnt pages of books, manuscripts and incunabula destroyed by this pyre of civilisation. Throughout the Siege of Sarajevo (1992-1995), organised by the joined forces of the Army of the Republic of Srpska (RS) and the Yugoslav People's Army (JNA), after Bosnia and Herzegovina declared independence from the Socialist Federal Republic of Yugoslavia in March 1992, most of the city's buildings suffered in the same way. The complete siege, generally considered the longest siege of a capital city in modern history (also successfully sustained by Sarajevo's geological position in a valley which allowed perpetrators to terrorise it from the surrounding hills), lasted for nearly four years, and resulted in thousands of civilian deaths and enormous structural damage to the urban fabric. During these years, Sarajevo's public space morphed into an interior of terror in which resilient citizenship left traces embeded in the city's ruins, as writer Dževad Karahasan explains in the quotation from *Exodus of a City* above.

Three decades since the beginning of the siege, the inevitable force of urban spatial expansion, determined by the fast dynamics of a growing society and consumerism in concert with the lack of collective memorialisation framework has led to a collective loss of war heritage. This chapter discusses how the possibilities of contemporary technologies could reinforce a discourse of collective remembering through the place-tailored digital reconstruction of endangered and demolished war heritage in the capital city, Sarajevo. After briefly exploring the importance of architectural war heritage in regard to national identity-building processes, this chapter focuses on the *Augmented Sarajevo* initiative which colleagues and I have been developing, to argue

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that the project's social, political and cultural frameworks deal with the complexities of collective remembrance by challenging competing values and established imperatives geared toward whitewashing palimpsests of the past. In doing this, the initiative posits that the relationship between human narratives and physical space is the cornerstone for digital representations, as succinctly put in the second quotation above, borrowed from a social wall in a coworking space.

The intense destruction of cultural heritage in Bosnia and Herzegovina that raged during the conflict from April 1992 until December 1995 is registered in documents that confirm the orchestrated targeting of architecture as a military objective during the siege.<sup>1</sup> A project that was initiated in October 1993 by the Association of Architects of Bosnia-Herzegovina (then known as DAS-SABIH), entitled "Warchitecture - Urbicide Sarajevo", was a project that *ad-hoc* documented the then ongoing unprecedented destruction of the city. It hoped to reach out to the outside world for help and support through a travelling exhibition that was, while the siege continued, installed in cities across Europe and also reached New York (Čurić et. al. 1993). Architects working on the Warchitecture project mapped the orchestrated destruction of the built environment in terms of targeting and the varying degrees of damage, which generated what was recognised as a "new architectural history of Sarajevo" (Herscher 2008). The term *urbicide* that was used in the Warchitecture catalogue was first mentioned in a report documenting heritage destruction in Mostar in 1992 where the notion of "urban genocide"

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<sup>1</sup> In 1995, the Institute for the Protection of the Cultural, Historical and Nature Heritage of the Canton of Sarajevo (Kantonalni Zavod za Zaštitu Kulturno-Historijskog i Prirodnog Naslijeđa) published an incomplete report that stated 2,771 cultural properties were damaged or destroyed during the war, 713 were totally destroyed and 554 were set on fire and are unusable. The report confirmed that out of 60 valuable urban nuclei, 49 were destroyed or very badly damaged within the territory of Bosnia and Herzegovina (Walasek 2015, p. 152). The Institute published a follow-up catalogue in 2000 and categorised cultural monuments' war damage (Čelić-Čemerlić 2000). Here, the profound damage to the urban nuclei of Sarajevo was mapped in more detail.



**Figure 1.** A ruin of the Austro-Hungarian Tobacco factory in Sarajevo's city center with a billboard announcing new developments. Photograph by the author, 2022.

designated the destruction of cities and urban culture during the war. From here, the term was appropriated by urban theorists focused on cities and conflict (Walasek 2015, p. 146). In relation to this, Robert Bevan also used the term *memoricide* to stress that societies are as fragile as their architecture (2006, p. 6).

Unfortunately, the material evidence of this destruction that was so important during the siege, both in terms of targeting and protection, is today considered difficult heritage or, more precisely, ambiguous heritage. Concerning the current memory-politics in relation to all tangible heritage (i.e. cultural,

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industrial and symbolic war heritage), we can argue that the weaponised aggressive destruction of 1992-95 morphed into an ambiguous post-siege destruction of material war evidence with different intensity and means. Processes of reconstruction that obliterated (and still obliterate) physical layers inflicted during the siege are but just one example.

Compared to the immediate post-siege state, today's built environment and public spaces of Sarajevo show only scarce authentic traces of the destruction. In most cases, damaged and destroyed architecture is either restored or completely reconstructed without consideration for the symbolic and historical value of this particular past. More prominent traces of war such as larger ruins do exist but are, for the most part, on properties stuck in limbo due to ownership issues. For example, Karl Parik's building, an old Tobacco factory from the Austro-Hungarian period in the very centre of Sarajevo, still stands as it was documented in the *Warchitecture 1993* catalogue. Importantly, as valuable industrial heritage that was ignored as such even before the siege, the building was used as the example to bring forward an argument that the siege destruction amplified importance (and lack of preservation) of historical layers and created the possibility to reassess its value as "architectural testimony" of the past (Jakšić 1993).

Notwithstanding, a lack of strategic planning in city development, and specifically in architectural reconstructions of designated cultural heritage, arguably worsened since the war (Lamphere-Englund 2015). The case of Vijećnica as a cultural heritage reconstruction also attests to this: In a process that has lasted more than two decades ([in two phases of reconstruction](#)), the building was restored to what was assessed as its original state to accommodate governmental offices. The reconstruction process produced a replica of a building - as it was upon its inauguration in the nineteenth century. There are no physical traces of its ageing visible to the public eye nor a meaningful memorial to the destruction of the library - the patina of its more than a century long existence was lost to fire in 1992 and then the physical





**Figure 2.**  
Warchitecture  
catalogue 1994 –  
cover page.  
Credit:  
[Association of  
Architects in Bosnia  
and Herzegovina](#)

evidence of this destruction vanished in a lengthy process of renovation and reconstruction after the siege.

In terms of its architectural archaeological value when we discuss the building's authenticity, we can speak of what has been dubbed "fake heritage" (Darlington 2020). In terms of its symbolic value and memorialisation of the former library's destruction, civilian protest and resistance, we can

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speak of a slow *memoricide*. One example of such resistance was the heroic collective effort of citizens to save books from the fire that are now only briefly mentioned in a modest exhibition inside the no longer public building with a problematic memorial board at its entrance that instead of reinforcing collective remembrance hints at collective guilt of the “other” (Petrović – Ziemer 2015). This form of *memoricide* presupposes collective indifference that arises as a consequence of multiple factors – eliminating palimpsests of physical space is one of them. As a consequence of a lengthy and politicised reconstruction process, the present Vijećnica is a contested site of memory, a missed opportunity to encourage remembrance discourses based on commonalities (Hartmann 2016). The collective remembrance of what happened is preserved mostly through online platforms (also on the official [Vijećnica website](#)) that contain photographs, archive footage and documents such as the Warchitecture project that featured Vijećnica’s burned interior on its exhibition catalogue cover for the 1994 Centre George Pompidou exhibition.

To be sure, reconstruction and revitalisation are important in post-war recovery and, if planned and executed sustainably, they aid communities and kinships in a psycho-social process of restoring their sense of belonging and identity (Hadžimuhamedović 2019; Markowitz 2012). At the same time, large structural renovations and urban developments that erased common evidence of difficult pasts dramatically influence collective identities. This was already recognised during the siege when architects stressed the importance of war-damage preservation (Perišić 1993). Next to the iconic Vijećnica, the erasure can clearly be seen in other buildings such as the “Holiday” hotel (formerly known as [Holiday Inn](#)) – a siege time hub for foreign reporters that was profoundly damaged, and the “Momo & Uzeir” skyscrapers that burned in 1993, inspiring American architect Lebbeus Woods to declare “the end of an age of reason” (Woods 1993, p. 3). These buildings are now reduced to facsimiles of their inaugural states, more representative of what Jean Baudrillard (1993) criticised as a staged reality. However, they also go further than this since restorations did



**Figure 3.** Momo & Uzeir twin towers, Sarajevo 1993. Credit: Yorck Maecke / Sniper Alley project.

not always consult original designers and heritage experts. For example, the restoration procedure of Momo & Uzeir (today known as Unitic) ended up in court due to a disagreement between the renowned architect of the original buildings, Ivan Štraus, and the investor who was primarily focused on financial aspects of the restoration. Štraus, who argued for a proper use of materials and the symbolic value of his architecture, lost the legal battle (Bajrović 2017).

If we understand authenticity as historical layering, reducing authentic war heritage while producing new official monuments and memorials results in a reduction of space for other narratives (Stig Sørensen and Viejo-Rose 2015).

In the context of Sarajevo and its multifaceted society, the solidification of remembrance through new architecture without consideration for the existing palimpsests of the built environment is unhelpful in finding ways toward meaningful mediation of traumatic memory on a collective level. Ironically, it was precisely the diversity of its social structure that was recognised as one of the motives for the severe destruction (Pirnat-Spahić 1992). The ending of an “age of reason” as proclaimed by Woods thirty years ago, extended into an unreasonable effacement of the past today.

### Private and Collective versus Official Remembrance

As the temporal distance from the siege grows, the general interest in this past, its impact and consequences seem to increase. There is a visible proliferation of private memorial museums and guided tours focused on the siege period that are oriented toward a growing audience of tourists. The tours are tailored to offer a representation of the city under the siege in a nutshell and normally follow urban morphology, at selected locations, to illustrate the juxtaposition of mechanisms of terror and survival in Sarajevo. However, memorialisation in public space is scarce. For example, the infamous so-called Sniper Alley is marked by a small monument to a seven-year old boy murdered by a sniper, *Sarajevske ruže* ([Sarajevo Roses](#))<sup>2</sup> and remaining bullet-holes on the facades of the surrounding buildings (soon to be refurbished).<sup>3</sup>

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2 During the siege, it is estimated that on average, more than 300 shells hit the city every day with a devastating crescendo of 3,777 shells hitting the city on July 22nd 1993. Several of the explosive craters left behind by the shelling were filled with red resin and designated as “Sarajevo Roses”. They emerged in the immediate post-siege period and were conceptualised by the architect and architectural historian Nedžad Kurto, who perceived them as documentary memorials marking places where more than three people were murdered by a mortar shell. There is only a small number still existing, the rest were eradicated with the reconstruction of the city.

3 The [History Museum of Bosnia and Herzegovina](#) (formerly known as the Museum of the Revolution), also situated on the former Sniper Alley, houses a permanent exhibition entitled “[Sarajevo Under Siege](#)”

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Primarily focused on erecting monuments, memorials and memorial museums as symbolic spatial narratives, official efforts to preserve physical layers of the siege are modest and more often than not, dubious. A relatively recent example is the housing block called *Pancirka* (body armour) that earned its name due to its highly strategic position in a neighbourhood close to the siege front line ([1984 winter Olympics Village](#)). The block was completely renovated in 2019 and a large poster displaying a small selection of photographs of its ruined state was hung on a rare facade with a title reading “Pancirka Dobrinja: War destruction that occurred during the aggression on Bosnia and Herzegovina in the period between 1992-1995”. Shortly after it was installed, the already deteriorating poster illustrates stages of *memoricide*, in anticipation of its future non-existence.

Official commemoration of murdered civilians is exemplified with two poignant permanent memorials: the Memorial to Children Killed during the Siege of Sarajevo and the Markale market massacre memorial. However, there is still no official memorial to all of Sarajevo’s murdered civilians. Up until now, the only official commemoration of all civilian victims happened in 2012 on the twentieth anniversary of the beginning of the siege when a controversial art performance entitled “[Sarajevo Red Line](#)” (*Sarajevska Crvena Linija*), was created in a top-down approach with the ambition to be “without precedence in the history of art.”<sup>4</sup>

In reality, however, the performance did not live up to expectations. Citizens who did not identify with the result used social media platforms to argue against such commemorative projects that disregarded the potential psychological and emotional effects on the community. Some proposed collectively planting 11,541 trees, one for each victim, instead of installing red plastic chairs purchased in Serbia, as the performance had. This example attests to the argument that commemoration in Sarajevo causes controversy

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<sup>4</sup> Haris Pašović, quoted on the [East West Theatre Company website](#).



**Figure 4.** Memorial poster on Pancirka building, 2021. Credit: Samra Tanović.

and is often hijacked by various parties to serve questionable objectives. Even when memorial spaces attempt to consider psychological processes of public and private mourning (this was, for example, claimed by organisers of the “Sarajevo Red Line” project), they can easily reinforce the martyredscape narrative (Naef 2016) that in Sarajevo’s context, more often than not, fuels commemorative projects that produce short-term effects driven by strong emotions and spectacle. Additionally, recent observations stress that Sarajevo’s “urban space is contested and appropriated through memorialisation and reconstruction, with architecture and memorials embodying the discourse

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of conflict through symbolic violence” (Bădescu 2017, p. 28). In this sense, memorial initiatives that focus primarily on symbolic representation whilst disregarding collective participation are likely unhelpful in dealing with traumatic memory (inviting citizens to install their own chairs for the twentieth commemoration could potentially have been a more meaningful approach).

As a result of the lack of meaningful institutionalised official commemoration on the collective level, private remembrance initiatives are taking place across both physical and digital spaces. Importantly, a number of these initiatives are geared towards becoming collective platforms (and can be interpreted as a demonstration of a vigorous presence of unprocessed trauma). For example, a project entitled [Sniper Alley](#) was conceived by a man, whose older brother (16-years old at the time) was murdered by a sniper in 1995. Initially, the author’s mission was to collect siege-time photographs of foreign reporters with a hope to find his brother in them – a way to build an archive of photographs about their life under the siege before the murder. From this poignant personal quest, the project grew into an extensive (and growing) digital archive thanks to the massive response of war photographers who generously offered their Sarajevo-related collections. The website now also invites citizens to share their stories to become part of the project since more people have started to inquire about siege-time experiences and relationships.

A predecessor to this approach is another private initiative, *Muzej Ratnog Djetinjstva* ([War Childhood Museum](#)), that originated from a successful public call in 2010 that invited contributions from all those who lived through the siege as children. Initially, these contributions consisted of a couple of lines describing individual childhood memories (some 1000 personal memories were collected and [published as a book](#)). From here, the initiative developed into a physical museum that continues to collect narratives and valuable possessions donated by the children survivors of the siege but also children caught up in ongoing conflicts. These archives offer a space for private remembrance in service of collective remembrance and co-remembrance.

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The materiality of the War Child Museum highlights the question of losing authentic traces precisely because urban war heritage is not only a testimony to carnage, but a spatial museum of extraordinary human stories and resilience – a proof against the verdict of a “dying city” (Burns 1992), as it was proclaimed a few months into the siege and the overwhelming *urbicide*. To preserve where possible or reconstruct where needed Sarajevo’s post-siege landscape implies safeguarding narratives of humanity and resilience. Initiatives such as the [FAMA collection](#) which set to record personal experiences (during the war) and memories for the purpose of reinforcing collective remembrance, are recognised in their importance but without an institutional framework for remembrance and co-remembrance their impact and existence is fragile. Notwithstanding, in our so-called “culture of connectivity” (Lagerkvist 2016), media seems to sustain collective remembrance as memorial websites, social media platforms, and web-based archives mushroom in a seemingly open space of remembering.

### **Sense of place and space versus Tabula Rasa**

Apart from the contemporary technological advancements that are instrumental in the process of developing architectural projects, how and why can technologies, such as augmented reality (AR), virtual reality (VR), and mixed reality (MR) be meaningful in actual sites of memory and memorialisation processes? In understanding how digital remembrance can corroborate remembrance in physical space, memorial architecture is a useful subject. As acts of representation, memorial architecture touches upon the essence of architectural creation and the question of how designed space mediates knowledge and feelings. Here, architecture is the primary tool for presenting a view of reality – forcing us to notice it. At the same time, human interaction with that space is what defines the meaning. Generally speaking, this applies to all human-space relationships. People invest places with meaning, both social and cultural, and the importance of place in the process of learning has been underlined (Ellsworth 2005; Lansiquot and



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MacDonald 2018). Through cultural context and daily life, people transform places and create specific biographies of them. Cultural practice within culturally defined spaces forms and constantly reinforces social identities. Next to official designations of importance, public places can attain a sacred position through social interactions, for example spontaneous mourning at places of tragic events. Edward Casey talks about “place memory”, which he describes as “the stabilizing persistence of place as a container of experiences that contributes so powerfully to its intrinsic memorability” (Casey 1987, pp. 186-187). This embodied quality of a place can inform practice and produce particular expressions of place. The biographies that places have acquired are more tangible if they are augmented through architectural space, which can be visited and experienced. Geographer Yi-Fu Tuan stressed the causal relationship between a place and space arguing that:

The ideas ‘space’ and ‘place’ require each other for definition. From the security and stability of place we are aware of the openness, freedom, and threat of space, and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place.

(Tuan 1977, p. 6).

Indeed, physical memorial spaces are often referred to as “healing environments”, assumed to be capable of helping victims and survivors cope, by offering a material framework that is expected to positively influence the processes of mourning and recovering (Sodaro and Apsel 2020). The importance of materiality in the process of mourning has been stressed time and again – spatial environments feature prominently in processes of trauma recovery, and transitions from anger to acceptance (Newby and Toulson 2019). Those who lived under the siege witnessed a need for memorial spaces; commemoration and remembrance existed in the midst of carnage regardless of the immediate danger and high prospects of dying while mourning.



**Figure 5.** *Jungle Gym – A Holy Shrine of Iron (a personal story of Haris Barimac, born 1978), exhibited at the War Childhood Museum, 2021. Credit: War Childhood Museum.*

The question is then, what happens if the biographies of place and space are violently erased and then plastered over? In many of the narratives in the War Childhood Museum, physical locations and buildings feature prominently in exhibition narratives accompanied by private possessions in the ever-expanding collection of the museum. Specific city locations and micro-locations mentioned in personal memories serve as memory-anchors and demonstrate a rich variety of siege experiences which were in great part conditioned by place and space. A survivor of the deadly 1992 single-mortar attack on a local playground in which four children were murdered and four were wounded, preserved segments of a playground jungle gym framework when these were removed after the siege to make place for an official monument on the site. These segments are now exhibited as artefacts of his memory preserved in the War Childhood Museum.

At the actual location of the event, there is a newly designed signifier of this tragic event while the authentic materials of the past are musealised

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elsewhere. This untroubled top-down approach to memorialisation only demonstrates the discrepancy between the official and private perception of authentic materiality as anchor of remembrance. The first sees the material remains as unnecessary rubble whereas the latter invests it with authentic value. Hence, the conventional official commemoration creates a sort of on-site *tabula rasa*. In such cases, digital remembrance could offer a promise to reverse and re-create the authentic sense of place through an assembly of individual space-memories. The digital can provide props for reflection, contemplation, and devotion: that is, designed configurations which viewers can engage with on-site, in direct and purposeful ways through objects of sustained attention. And vice-versa, the authentic site becomes a portal for a tailored digital site constructed from site-specific audio-visual archive material, digital reconstruction of place, and personal accounts. Together, the physical and digital generate potential for a seamless territory for remembering and co-remembering.

In contrast to the physical lived reality, digital reality is assembled and needs to be designed as heuristic to invite introspection and contemplation from visitors. The technology can complement the lived experience by introducing different perspectives or augmenting sensory aspects. To do this in a meaningful way, the content has to be of the space itself – its material, acoustic and tactile characteristics. It needs to integrate personal memories, official memories, and the genealogy of the site, and show their interdependencies. This kind of punctuated town-mapping in a close relationship between physical and digital realities can represent an imaginative way to preserve and convey the unique bond citizens have created with the besieged Sarajevo. In this way, their “primal landscape” (Bixler 2002), defined by extreme destruction and violence, can be semi-anchored to our present-day built environment. Hypothetically, the augmentation of space through archival and living remembrance can present a model for psychosocial support and a way to deal with the seeming placelessness of tangible and intangible war heritage.

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In conclusion, the obvious disparity in approaches towards collective remembrance between official and private remembrance invites a convergence of both physical and digital space. Our proposal to reconstruct evidence of the destruction of Sarajevo in augmented reality (AR) and with public participation resonates with possibility: technology can redefine processes of creating permanent memorials by allowing more space for individual contributions. In terms of the effect, immersive technology can offer a way to merge personal narratives with space and thereby reinforce their relationships. For the generations that did not live through the siege but learn about it through narrated experiences of their elders, the possibility to have access to this past (from which they often feel excluded) via contemporary technology can potentially create a path for these younger people to engage with collective remembrance on their own terms. By now, we know that memory transmission through monuments and memorials depends on how meaningful spaces of remembrance are for visitors. For example, James E. Young advocates for more effective and action-provoking memorial spaces as opposed to traditional community commemorative monuments that tend to “assume the polished, finished veneer of a death mask, unreflective of a current memory, unresponsive to contemporary issues” (2003, p. 245).

However, this remains a challenge, especially in dense urban environments where various practical, legal, or social restrictions dictate a program of demands. Moreover, creating a physical structure, whether at an authentic site or not, directly influences its surroundings and people’s lives. Inevitably, passersby or those living in close vicinity will be continuously confronted with the symbolic and aesthetic presence of a memorial project. In 2019, a group of Amsterdam citizens protested the national Holocaust memorial, designed by the renowned architect Daniel Libeskind. The memorial commemorates 102,000 names of Jewish people who were deported from the Netherlands during the Second World War with victims’ names inscribed on bricks. 102,000 bricks were used to ‘fill’ the absence with material presence.

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Alongside their protest against the non-inclusive designing process, a group of local residents turned to court to stop the large-scale memorial occupying their shared public space. Their criticism and protest were not directed toward the importance of having this memorial in public space, but toward the largeness of the design, their exclusion from decision-making in the commissioning process, and a non-transparent design procedure. In fact, the commissioner's online project – individual purchasing of bricks for the future memorial as a way to make it possible – was a successful process that was not followed through with citizens of the actual building location. This relatively recent example confirms once again that erecting official monuments and memorials needs to be a collective process. The vote of *politeia* needs to be embedded in the process of creation for it to be meaningful to its local community. Digital tools can help here too.

### Parallel Realities and Symbolic Heritage: Oslobodjenje

Belonging to a generation that lived through the Siege of Sarajevo as a teenage soldier who witnessed a mortar shell tearing to pieces close family members, documentary filmmaker Kenan Kulenović observed how the rawness of the destroyed cityscape as he experienced it was rapidly disappearing. The traumatic memory, however, remained. Aware of the irreversible process of losing physical traces of the siege – a process that implies that the lived experience is shifting into history – Kulenović contended that the loss of tangible war traces inevitably leads to the loss of intangible war heritage: events and specific living rituals that developed during the siege will become placeless without their physical reference points and thereby, arguably, more susceptible to modifications. With a sense of urgency, he initiated a proposal to use available technologies to digitally occupy the city with personal memories of people and spaces. The idea originated when Kulenović was using an AR application entitled "SkyView" that provided data about constellations and their relationship to his location on Earth. By using his mobile phone, he was able to see precise and well-illustrated



**Figure 6.**  
 Oslobođenje  
 destruction mapping,  
 Warchitecture  
 catalogue 1993.  
 Credit:  
[Association of  
 Architects in Bosnia  
 and Herzegovina](#)

information. Kulenović recognised the potential of this type of app to deal with the ubiquity of traumatic memory that shaped his life and environment. Because he envisioned a project that will reconstruct lost war heritage by using augmented reality, he also turned to me, knowing my interest in physical spaces for remembrance.

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For a designer interested in how architectural interventions (public monuments, memorials and authentic sites of memory) influence transmission of individual memory and collective remembrance, the invitation to consider augmented reality as a way to memorialise difficult pasts in physical space is inviting as a way to empower participatory culture and allow non-expert users to voice their views about what is officially considered valuable heritage. This is also discussed in research focused on cultural heritage preservation and digital technologies (Giaccardi 2012). At the same time, scholars looking at examples in practice, stress that the idea of heritage-making from below is still pursued within the established paternalistic cultural policies based on the expert-view on heritage (Aigner 2016). Thus, the real challenge is to offer a truly democratic space for remembering that will use available technology to create an inclusive approach, but how does this relate to creating a space for remembering traumatic events?

The *Augmented Sarajevo* initiative aims to test precisely that: create points for remembering and co-remembering by integrating physical places and collectively created digital content. From an architectural point of view, a starting point to do this is the Warchitecture project as a bottom-up registering and mapping of the then ongoing destructive transformation of Sarajevo. It was an active process of symbolic re-construction under extreme and life-threatening conditions against *urbicide*, pursued by professionals and civilians with dedication and creativity (needed to assure even basic materials such as paper and pencils). Andrew Hersher derived the term “warchitectural theory” to argue that Warchitecture “suggests that architecture-as-destruction works analogously, producing new sorts of subjects in the course of producing, through violence, new sorts of objects”. He continues:

Warchitecture is a reminder that what are posed in legitimizing accounts of violence as disembodied and abstract ‘targets’ are, simultaneously, architecture: objects and spaces for living, for the living. Framed as

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warchitecture, the violence that these accounts neutralize can be reconstituted, an essential preliminary to responding to and opposing this violence.

(Herscher 2008, p. 42)

Hence as a gateway to biographies of places, a first layer toward an augmented space of remembrance are the buildings and public spaces. A second layer is the living archive of personal and place-related memories. One iconic building in particular, Oslobodjenje ('Liberation'), holds the potential to integrate the two layers to become an anchor of multifaceted collective remembrance for its condensed symbolic value. The Oslobodjenje building in Sarajevo is one of many valuable examples of war heritage subjected to memory politics uninterested in commemorative efforts outside the official straight jacket of commemoration that is tailored for religious memorial cemeteries, public memorial plaques dedicated to soldiers, and battlefield monuments on the surrounding hills. Similarly to Pancirka, the Oslobodjenje building is seemingly too complicated to be categorised and treated as valuable war heritage. Home to Sarajevo's daily newspaper, the building was one of the first to be shelled at the beginning of the siege and suffered multiple attacks thereafter – Warchitecture documented the dynamics and the scale of the destruction. (See reportage of [the shelling of Oslobodjenje](#) on 21st June 1992, timecode: 19-26.44 minutes, TV BiH).

When Serbian architect Bogdan Bogdanović published an article entitled "The Ritual Murder of the City" (1992) that condemned the destruction simultaneously taking place in Dubrovnik, journalists of Oslobodjenje took to Sarajevo's burning streets to disseminate newspapers to citizens. Despite the loss of infrastructure, they continued working in an improvised studio in the atomic bomb shelter underneath the building. In fact, the newspaper appeared the following day and continued to appear throughout the siege as an act of resistance against the aggressive terror, a remarkable fact





**Figure 7.** *Remains of Oslobođenje, 1992. Credit: Emil Grebenar.*

considering the level of danger and lack of resources (Kurspahić 2003). At the opening of the 2018 exhibition dedicated to the 75th anniversary of the Oslobođenje newspaper, war reporter and photographer Miquel Ruiz Avilés recalled the overwhelming “chaos that occurred every fifteen minutes” and hour-long waits to obtain telephone connections that the employees of Oslobođenje patiently pursued, acting as if the circumstances were absolutely “normal” (Krajišnik 2018). The name “Oslobođenje” (Liberation) was not only a symbolic title, but a common denominator for the collective resistance against the siege that, soon enough, reduced Sarajevo to a landscape of ruins dotted with tall piles of concrete and reinforcement protruding from what once were skyscrapers. In the immediate post-siege years, there were

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official plans to conserve a ruin of the two collapsed towers of Oslobođenje as a memorial to both destruction and resilience (Čusto 2013, p. 118).

This, however, was never followed through and Oslobođenje was eventually cleared to make way for another newspaper house and its new building. These interventions transformed the site. Again, there are no clues nor memorials that indicate why this particular location is of any significance. Only a portion of the building still exists in the shadow of a new tower. The existing remains of the building (due for renovation) are unchanged and seem locked in an ambiguous historical time – an authentic memorial in its own right. The fact that there is no strong political or institutional interest



**Figure 8.** Oslobođenje current situation, 2019. Credits: Samra Tanović.



**Figure 9.**  
*Oslobođenje current  
situation – interior, 2019.*  
Credits: Samra Tanović.

in the building as war heritage is not surprising since its ruins hover in the capitalist space as ghosts of an alienated time.

The *Augmented Sarajevo* model relies on the concept of what Michael Rothberg calls “multidirectional memory” (2009). Siege memories proliferate in a range of specific urban contexts that shaped different reactions to the forced mechanisms of terror and destruction. To understand the multidirectionality of remembrance, the city is observed as an existing,

unorganised memorial museum of community participation. Collecting and geo-tagging these diverse (at times conflicting) memories to space can, arguably, supersede the immediate contextualisation by socio-political contingencies of a given location simply by opening up a democratic space of remembrance in a parallel reality to re-present the past (web-based projects such as [“It Happened Here”](#) exemplify how to approach social histories of places). The architectural space and a space of collective relationships, open up a third space – that of engagement. The forensic exploration of Oslobođenje’s architectural remains through Mixed Reality (MR) will allow visitors to engage with the biography of the place and understand its symbolic value through personal accounts and digital reconstruction of its existence before, during and after the siege. The aim is to create a place of continuous, unbroken, and yet multifaceted remembrance (an alternative to the conventional and highly selective remembrance in public space).

### Layers of engagement

During one of the first meetings of the [Association of Architects of Bosnia and Herzegovina](#) in Sarajevo, Kulenović even proposed to retrace the siege line with QR-coded red led lights to be lit every night together with the street lighting – a proposal which instantly met resistance from a young architect arguing that mechanisms of destruction must not (and cannot) be reconstructed. To digitally reimagine the line of the siege and destroyed cityscape as it was mapped in *Warchitecture*, however, is a way of creating a documentary platform that will allow individuals to revisit this traumatic period by choice and on their own terms. This means that there will be no outstanding physical memorials to memorialise the siege, but an online, place-related app-based space of collective remembrance collecting the existing online material (i.e. web-based archives, documentaries, and personal recollections on social media) and with an evolving construction from digital reconstructions and personal narratives. There are five categories

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that create the general framework of the project: 1) architectural place, 2) augmented reality; 3) archive; 4) personal memories; 5) interaction.

Physical locations (as a start, buildings mapped in Warchitecture) will be presented to include their states before and after the destruction to introduce a sense of rootedness by highlighting the evolution of the built space and not only the *urbicide*. Documenting, digitally reconstructing, and recording citizen's narratives, and embedding this content on-site will re-present biographies of places and reinforce human-place attachments. This kind of place-making is imagined to augment a sense of historical and spatial continuity that the siege interrupted. Potentially, focusing on aspects of continuity will challenge the top-down commemorative initiatives and projects that are primarily dealing with destruction and violence as isolated historical events. Additionally, the project will highlight the issue of systematic neglect of different categories of heritage such as the above mentioned industrial and war heritage of the Old Tobacco factory.

The idea to use Augmented Reality (AR) to visualise the evolution of a city has been pursued in earlier initiatives elsewhere, for example in 2010, the Urban Augmented Reality app (UAR) was used to show the development of Rotterdam, in the Netherlands. By means of 3D models, UAR could present the city as it once was, was not yet, and as it might have been, through scale models. The app envisioned the city of the future – by showing artists' impressions of buildings under construction or in the planning stage. The [application](#) was not developed further, but instead archived in 2013, possibly due to an incongruent relationship between human expectations and technological possibilities at the time. Today, however, AR applications, such as Google Lens and others, are becoming more available and used for the purposes of better informing and orienting oneself in a city. Since 2017, there have been significant advancements in terms of innovation and availability. Museums use AR and VR applications as well as holograms to enhance their exhibits and create visitor-friendly experiences. Ambitious projects such as the

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European Union's [\*Time Machine\*](#), with a goal to use digital breakthroughs to create a living resource that allows people to “travel through time” are emerging as concepts that still need to be tested and implemented in reality. In memorial museums and memorial sites of difficult heritage, the use of digital technology is still in its infancy due to the sensitivity of the contents. This concern is shared by most memorial institutions who aim to be up-to-date and integrate cutting-edge technology, for example at concentration camp memorial sites at Bergen-Belsen in Germany, Westerbork in the Netherlands, and Falstad in Norway. How technological tools may offer a possibility to travel through time (as the EU project suggests) to a specific traumatic past and how this might impact memory transmission, is yet to be fully understood.

While digital commemoration is becoming ubiquitous as it appears to offer novel solutions to preservation of difficult pasts, the relevance of physical space is not decreasing. For example, in [\*Westerbork\*](#) a VR model of the transit camp, based on GPS coordinates, is now used to help visitors shape an idea of how large the camp really was. Since there is little left of the original architecture of the camp, digital technology allows visitors to zoom into the camp's facilities and see details of barracks and watch towers. While the digital reconstruction offers historical data, the memorial narrative also features personal stories of the camp's victims. These remain a significant part of guided tours and memorial exhibitions. Hence, the digital rendition of the site is but one of a host of different ways to preserve and tell the story of the Holocaust at this particular site – and this is significant.

Whether resorting to bricks or pixels, or working toward a spatial hybrid of the two, the human-space relationship is at the core of remembrance. It is about the form and the content: the content of personal remembrance is more meaningful if the form in which personal accounts can be situated, explained, and re-experienced, is convincing. The form alone, such as the architecture of contemporary memorials and memorial museums that employ narrative architecture to create a sense of terror or accentuate

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absence, for example, is ambiguous without a meaningful process. In this sense, a memorial project that starts as a bottom-up collective effort, open to the inclusion of all survivors and post-war generations, based on an existing place of memory, aims to strengthen the notion of community by emphasising the values of their relationships. The intention is not to point to the absence, as the Libeskind's project does (a common trait of most memorials dedicated to traumatic pasts), but to re-activate the status quo by remembering that the existing absence is a significant part of a broken evolution and a history of human-space interactions.

For Kulenović, who imagined the whole city as an Augmented Reality (AR) museum – a digital reconstruction of the siege line as the border from which the destruction was orchestrated and Sarajevo as a collection of places of resistance – a symbolic beginning was to make a teaser that will communicate the emotional and symbolical importance of the forgotten Oslobođenje remains as a first case-study. While the teaser conveys one personal connection to the building, it only vaguely demonstrates (or rather does not demonstrate) the technological portrait of the idea.



**Video:** [“Sense of Place”](#) teaser, 2018.  
**Credits:** Kenan Kulenović.

Conceptually, the *Augmented Sarajevo* initiative is a bottom-up work in progress and because of its novelty in the given context it will take time and investment to shape Mixed Reality (MR) content that will satisfy both citizens and professionals. In reality, this means that this long-term project has to be promoted, public calls organised, historical research has to take place, architectural drawings of the destroyed building need to be made, 3D models created and terrestrial laser scans performed, personal accounts of the employees of the Oslobođenje and others need to be filmed and

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artists invited to respond to these narratives within the psychological and educational framework of the project. Those already involved in the project also hope to bring urgency to the issue of how post-conflict urban and architectural interventions can be an effective way of erasing the record of trauma if performed haphazardly or intentionally as was the case in Aleppo, Syria (Slade 2018).

Depending on the success of the Oslobodenje case study, the future of the project will be shaped, namely by social and financial sustainability and technological development. Risks involved are great due to the complexity of the topic and the ambiguous memory fatigue related to the siege (in part caused by the aforementioned political indifference and censorship). As imagined, the initiative is set to become a form of resistance to the well-established 'us versus them' ethical model of remembrance. It aims to invigorate existing (mostly digital) remembrance projects based on collecting individual narratives (e.g. FAMA and the War Childhood Museum). In this way, the aim is to achieve a substantial multitude of narratives to demystify forced narratives (and identities) of victimhood and open up space for more inclusive ethical models of remembering. At this point, the [Association of Architects](#), is a key institution navigating the project and a gatekeeper of the content. Primarily focused on preserving built environment, they have the responsibility to explain to potential participants why their input is valuable. Citizens need to agree that their narrative is one in the multitude. This also implies educating participants about the value of war heritage and digital interpretative frameworks as an alternative or important addition to conventional modes of remembrance in physical space – an approach informed by best practices in the so-called Culture 3.0 in which there is no clear distinction between producers and users, and culture and heritage are based on collective (community) "sense-making" (Report of the OMC 2018).

In line with the Warchitecture bottom-up approach, the *Augmented Sarajevo* project has the same motivation and relies on individual efforts



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to set a general framework in motion. When possible, the initiators are recording all the important steps that are already taking place to document the whole process from below in order to follow how the initiative, combining expert and lay views on common heritage, will develop. By documenting the process, details that might be overlooked as they happen but could be valuable in the future, are captured with a goal to raise awareness of possible ways to preserve, reconstruct, and renovate war heritage in post-conflict situations, the multilayered and multidirectional character of both individual and collective remembrance, and the importance of the physical layers of the built environment. Allowing these potentially conflicting perspectives to be represented next to each other, will not only display the variety of remembered everyday lived experience in the besieged Sarajevo, but it will also create a model for a more inclusive approach to both cultural and war heritage.

Unlike the memorialisation of the Second World War, which is transitioning into a phase of different dynamics determined by the absence of witnesses, the *Augmented Sarajevo* project has been conceptualised and created by direct witnesses. This audio-visual, spatial and narrative approach to memorialisation of a specific place is an innovative way to convey difficult heritage together with survivors. Without interfering with the authenticity of the actual space, a layer of immaterial authenticity can be added: instead of turning the site into a physical memorial museum (which would inevitably change the original setting), viewers will be able to add to the authenticity of this space (using the app on-site as a point of reference). Consequently, and echoing Ariella Azoulay's (2019) notion of "potential histories", the digital reconstruction of Warchitecture addresses the question of perpetratorship while future legal and justice-seeking initiatives will be able to use the project's content as a document, as was the case with the digital reconstruction of Auschwitz-Birkenau to determine in court the culpability of the camp's guards (Cieslak 2016).

### Conclusion

Augmented reality on authentic sites of difficult heritage urges us to consciously consider the fact that each building not only tells a story but has the potential to open up new relationships and meanings. For this reason, the app directly connects human narratives to their built environment in an interactive way. A city is a palimpsest of human-spatial narratives, a landscape coded with personal experiences in space and of space. Immersive technologies have the potential to augment experiences within cities. To digitalise and memorialise these in Mixed Reality (MR) within their physical space is to enliven the sense of place of a historical location within collective remembrance. In contrast to most physical memorials and monuments, by inducing present space with its past through Mixed Reality (MR) available via mobile technology, we can recreate a sense of place and enable those willing to engage with it to have meaningful experiences.

Both the daily newspaper and the building of Oslobođenje played important roles in supporting and maintaining collective identity in times of terror. This site and numerous other examples, such as the Vijećnica building, testify to the fact that wars are pursued through architecture and, at the same time, that architecture was the weapon of people. While architectural reconstructions of cultural and war heritage tend to falsely communicate a sense of unbroken continuum while excluding local society, *Augmented Sarajevo* is set to unearth meaningful layerings of the built environment. With an aim to bring forward both architectural and symbolical values of war heritage, the initiative aims to address the complexity of collective remembrance on the siege itself and create a multi-vocal representation of the past. Collecting a multitude of experiences related to specific locations in Sarajevo, will hopefully create a new dynamic in remembering the siege through meaningful interactions with space. The Warchitecture project was an important project that was made possible with the help of institutions and individuals across the world. It not only drew attention to the uricide of Sarajevo, but initiated more global

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discussions about Warchitecture as a concept of action and agency in civil societies. *Augmented Sarajevo* shares the same ambition, aiming to include individuals and institutions worldwide. If destruction of cities in wars is how “modern barbarians” feed their latent hatred toward cities, as Bogdanović put it (Vuković 2011), then embedding a memorial augmented reality grid over Sarajevo’s cityscape offers one way to preserve its landscape as a counter-act to such warfare. If Sarajevans can remember collective efforts in a familiar landscape, they can avoid the impediments of top-down memorialisations.

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