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Identifying lost cultural heritage assets from historic town planning maps—The case of Thessaloniki, Greece

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Summary: Thessaloniki, Greece, has a long and uninterrupted history as a major urban center. The city has been a place of residence and trade for a variety of different cultural and ethnic populations, namely Greek, Muslim, and Sephardic Jews, following the millet system, i.e. each religious community was located in distinct neighborhoods and had its own societal and economic infrastructure. A map reproduction of 1906 based on a tax census report performed by the Ottomans reveals the organizational structure of the city and depicts the location of several urban heritage sites. Additional historic town planning maps of 1937–1939 retrieved and scanned from the Municipal Constructions and Urban Planning Directorate will be used to provide insight into the city’s heritage at the time. Finally, a spatially enabled web application and a geographic dataset containing all the currently listed heritage monuments will be used to verify the location and existence of these heritage assets at present.

The goal of this research is to focus on the use of historic town plan maps to identify and geolocate places of heritage (cultural, industrial, religious, etc) in the city of Thessaloniki, Greece. By comparing the data extracted from the map sheets of 1906 and 1937-1939, we can identify the CH assets that have been lost or destroyed over the past 100 years and retrieve their location in the present urban fabric. The study of these maps is also correlated with important dates in the city’s recent history that triggered major changes in its form and population composition.

Introduction

UNESCO (2014) defines cultural heritage (CH) as “product and process that provides societies with a wealth of resources that are inherited from the past, created in the present, and bestowed for the benefit of future generations”. The protection of Cultural Heritage has been prioritized both directly and indirectly in several of UNESCO’s Sustainable Development Goals (SDGs), with Target 11.4 “Strengthen efforts to protect and safeguard the world’s cultural and natural heritage” of the SDG 11 “Make cities inclusive, safe, resilient, and sustainable” setting the main framework (UNESCO, 2015). It has also been a recurring theme of global and local policymaking debates over the past decade as it

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is sensitive to a variety of risks, including armed conflicts and terrorism (Weiss and Connelly, 2017), climate change impacts (Bonazza et al., 2021), and geological and seismic activities (Pecchioli et al., 2020), etc.

Cultural heritage is divided into two main categories, namely (a) tangible cultural heritage assets, either movable (e.g. paintings, sculptures, manuscripts, etc), immovable (e.g monuments, archaeological sites, listed buildings, etc), or underwater (e.g shipwrecks, ruins even cities), and (b) intangible cultural heritage, which indicates “the practices, representations, expressions, knowledge, skills - as well as the instruments, objects, artifacts, and cultural spaces associated therewith - that communities, groups, and, in some cases, individuals recognize as part of their Cultural Heritage (UNESCO, 2003). The division between these two categories has become more blurred over the years, because they seem to present a theoretical overlap. In that sense, a historic manuscript can be classified as a tangible CH asset because of its age, uniqueness, etc. However, its content can also assist in documenting a former historic period of an area, thus assisting in reproducing part of its intangible heritage. Furthermore, one would argue that a documented historic building that bore witness to the presence of another empire, civilization, or simply of a different historic period or architectural trend but no longer exists is now part of the intangible cultural heritage of this location. As the Burra Charter states, “Places means a geographically defined area. It may include elements, objects, spaces, and views. Place may have tangible and intangible dimensions” (ICOMOS, 2013,p.2). For any of the above to be true, however, people need to know about the cultural heritage of a place, visually identify it around them -if possible- and, to some extent, accept it as part of their identity. This notion is also referred to as historic or collective memory, which is the only way to preserve our unique heritage instead of moving to historic oblivion.

In the case of urban areas, CH assets create important landmarks and assist in linking together the city’s different historic periods. The Charter for the Conservation of Historic Towns and Urban Areas (Washington Charter ICOMOS, 1987) identified that urban areas can provide a snapshot of historic events and temporal socioeconomic diversity that have led to their current form and shape. Historic cities are essentially an in-vivo representation of the past and several aspects should be documented e.g the urban patterns defined by lots and streets, the relationship between buildings and open spaces, and the formal appearance of buildings as defined by scale, size, style, construction materials, architectural decoration, etc. New technologies, such as Virtual Reality (VR) and Augmented Reality (AR), have also assisted in superimposing information and content of different forms (e.g images, video, audio, text) and nature (e.g historic context, tourist information) on archaeological or architectural heritage sites without interfering with the monuments themselves but acting only in the visual dimension (Brusaporci and Maiezza, 2021, Efkleidou et al., 2022). These applications promote the idea of “smart heritage” which essentially refers to the use of smart devices, such as tablets or phones, to browse through historic urban landscapes and identify existing or even former heritage locations. For such a heritage application to be effective and intriguing for each target audience, extensive documentation of the CH assets is necessary, including 3D mesh drawings, historic images, manuscripts, etc.

The goal of the present research is to focus on the use of historic town plan maps to identify and geolocate places of heritage (cultural, industrial, religious, etc) in the city of Thessaloniki, Greece. Thessaloniki is the second-largest city in the country and has a long and, perhaps more importantly, uninterrupted history since its founding in 315 B.C. Three sets of maps will be used referring to different historic periods. The first one can be dated to the early 20th century (circa 1906) and is a cartographic representation of a census report performed by the Ottomans for tax purposes. The second
set includes a collection of maps on a scale of 1:500 produced in 1937-1939 depicting the new urban form as well as the eastern and western extensions of the city. The final set refers to the present time and is a web map produced by the authors as part of previous research showing and documenting all the listed cultural heritage sites (Chalkidou et al., 2021). Through the comparison of the data extracted from these maps, we can identify a part of the CH assets that have been lost or destroyed over the past 100 years, and also retrieve their location in the present urban fabric. Besides the maps, the research is organized around some key dates and events that triggered major changes in Thessaloniki’s form and population composition, namely its liberation from the Ottoman Empire in 1912, the great fire of 1917, the exchange of population between Greece and Turkey in 1922-1923 and World War II.

**Thessaloniki in the first quarter of the 20th century**

Thessaloniki, Greece, has been a major urban center throughout its long history. The city was occupied from 1430 to 1912 by the Ottoman Empire and was considered by many to be the second most significant city behind the capital Istanbul. Its population consisted mainly of Ottoman (Muslim) citizens, Greeks, and a considerable Sephardic Jewish population. The majority of the Jewish community was installed in the city in 1492 after fleeing Spain, denying conversion to Christianity under King Ferdinand and Queen Isabella’s Alhambra Decree (Saltiel, 2017). Other ethnicities included Bulgarians, Serbs, and religious missionaries from France and England (Figure 1).

**Figure 1:** Composition of Population in 1913, by Ethnicity (data source: Traintafyllides, I. (1966))

A detailed documentation of the city was conducted by the Ottomans in 1906, mainly for tax purposes, who recorded the boundaries of each neighborhood and the major religious and administrative buildings located in each neighborhood. At that time, the city was confined between its Byzantine Walls and the seafront, occupying an area of approximately 2,770 sq. km and having a population of 158,000 residents. On the eastern part of the city – right outside its walls- were the great Cemeteries of the three majority religious doctrines. Further away in the east, the District of “Exochai” was established as early as 1885 initially as a place of non-permanent residence but eventually evolved to become the more
wealthy district of the city. On the other hand, scattered settlements in the western part of the city provided housing to the poor population in ghetto-like conditions. These outside-the-gate districts were not considered a structural part of the city at the time. Dimitriades (2008) used the information found in these documents (the so-called Esas and Hulâsa Defter) to reconstruct a map of the city at the time based on an existing town planning map of the city on a scale of 1:2,000. This map was georeferenced to the Greek Grid (EPSG:2100) to be further used in this research (Figure 2). During its Ottoman Occupation, Thessaloniki was organized following the millet administrative system i.e each religious community was independent of the others, had its own institutions, religious/educational facilities, lingual autonomy, and lived in spatially discrete areas of the city (Saltiel, 2017). The millet system was never practically implemented in the more wealthy parts of the city (i.e the district of Exochai), where people of different faiths co-existed in the same area.

As can be seen in Figure 2b, the Muslim communities occupied the northern part of the city (over Egnatia Street) except for four districts (Akce Mescid, Dabag Hayreddin, Timurtas, and Sulu Pasa) that were clustered predominantly among Christian and Jewish communities. Christian communities were located in the southeast part of the city except for four districts (Yanik Manastir, Metrepolid, Kizlar Manastiri, and Cavus Manastiri) that were scattered among different neighborhoods. The Jewish community was located in the southern part of the city (below Egnatia Street) and was clustered together circling the two main Christian communities that were located inside its borders. Finally, two more districts were identified during this documentation: Istrira (District of the Westerns), located above the port of the city, and Agora, which was mainly a place of commercial activities with very few residents.

Figure 2: a: Map produced by Dimitriades (1983), based on the Ottoman Tax Census Report of 1906. b: the boundaries of the city’s districts in 1906 were digitized and georeferenced in the Greek Grid (EPSG: 2100). The thematic representation depicts the ethnicity of most residents per district. c: zoomed view of the Dimitriades map.
Dimitriades’ map reconstruction was used to locate and digitize points of heritage interest. More than 190 different points were identified, the majority of which included religious facilities (e.g., mosques, churches, synagogues, etc.) as well as Ottoman fountains, educational facilities, hammams, etc. (Figure 3). The majority of religious facilities regarded the Islamic doctrine followed by the Jewish and Christian ones. Their spatial distribution followed that of the city’s districts, with only a few of the mosques located outside the Muslim communities, while synagogues were exclusively located inside the Jewish districts (Figure 4). It is worth mentioning, however, that several Byzantine churches were converted to mosques during the Ottoman Period, hence this dispersed distribution of Muslim religious facilities over the urban fabric (e.g., the church of 12 Apostles is referred to as Soguk Su Camii, Acheiropoiitos Church is referred as Eski Cuma Camii, the church of Agios Panteleimon as Ishakiye Camii, etc.) (Stamnas et al., 2018).

In 1912, during the Balkan Wars, the city was liberated from the Ottoman Empire and incorporated into the Greek State. This year marked the beginning of a significant population shift as Slavic-speaking residents began fleeing the city toward the Balkans along with hundreds of Muslim citizens who had
moved to the newly founded Turkish State. Furthermore, the Jewish population had to accept the end of the millet system that provided them with several benefits and, among others, started using the Greek language instead of ladino (Jewish-Spanish Language). During World War I (1914-1918), a large number of Allied Forces’ troops arrived in the city and were installed in military camps around the boundaries of what is now known as the historic city center. Officers of the Allies assisted in mapping and documenting the city through photographic footage that is still held in the National Archives of France, the U.K., and Greece. Social media groups have also significantly contributed to disseminating these images to the public (Figure 5). In 1917, a major fire event destroyed approximately 30% of the city, leaving approximately 72,000 people homeless, the majority of whom were of Jewish and Muslim origin (Karadimou-Gerolympou, 2002) (Figure 6). The new urban plan of the city was assigned by the Greek government to Ernest Hébrard, a French architect and urban planner who was largely influenced Haussman’s work in Paris. As such his new urban plan dismissed the existing urban layout of the city which consisted mainly of narrow streets and introduced large boulevards that would become the main transport axes of Thessaloniki. At that time, the majority of people who lost their houses and fortunes in the fire were displaced outside the city’s center, seeking refuge primarily in empty military camps abandoned by the Allied Forces after the end of World War I. The number of heritage facilities destroyed or severely damaged by the fire is unknown, but it would be safe to assume that very few survived (Figure 7).

Figure 5: Location and photographic documentation of known mosques (Camiis) at the beginning of the century. (Source of images: https://www.facebook.com/groups/oldthessaloniki)
Figure 6: Map presenting the Area of the City affected by the great fire of 1917.

Figure 7: 1. The City a few months before the fire (Messinas, 1997), 2. The aftermath of the 1917 fire (image source: https://www.athensvoice.gr/life/poleis/466212/1917-i-megali-pyrkagia-poy-allaxe-tin-opsi-tis-theasselonis/, accessed: 10 April 2023). The image was processed by the authors to identify 4 listed cultural heritage monuments that were not affected by the event and are presented in their current use and condition in thumbnails 1-4.

In 1922, the city’s population drastically changed as more than 120,000 Greek refugees (a number almost equal to the city’s original population at the time) arrived from Asia Minor and Anatolia, and more than 30,000 Muslim citizens fled the city to Turkey under the Lausanne Treaty, which included an agreement on mutual population exchange between Greece and Turkey. The refugees were installed in temporary settlements outside the city center, in places that would several decades later become a
structural part of the urban fabric (e.g. the districts of Toumba and Triandria in the North-Eastern part of the city) (Figure 8).

Figure 8: On the left is a map showing the Asia Minor and Anatolia Refugee Settlements as well as the settlements of the Jewish population (Source: Historical Center of Refugee Hellenism, Municipality of Kalamaria, 2010, p.53). On the right are the boundaries of these settlements thematically represented compared to the city’s current administrative boundaries.

**Thessaloniki in the 1930s and World War II.**

After the installation of the refugees in 1922-1923 the city rapidly expanded toward its eastern and western parts due to the increased need for housing. The town planning maps of 1937-1939 were acquired by the city’s “Construction and Urban Planning Applications” Directorate and were photographed on-site using a Hasselblad x1D II50C camera as their sometimes poor condition and time’s wear and tear did not permit the use of a scanning device (Figure 9). The images were geometrically rectified and processed in Photoshop to minimize the visual impact of the damaged sections and enhance their overall quality.
The next step involved the georeferencing of the map sheets and their transformation from the city’s local coordinate system (still used to this day) to the Greek Grid (EPSG:2100) which is the national coordinate system using 1st and 2nd-degree polynomial transforms, depending on the overall condition of each map sheet. During this process, the distribution of the map sheets was also reproduced which was not included as an accompanying map file. A total of 171 map sheets appear to regard the city based on its current administrative boundaries. 139 of them were retrieved by the Municipal Directorate while 32 are missing (Figure 10).
Simple map identification and content browsing were initially performed in which interesting aspects of the city’s former structure were revealed (e.g. the routes of the tramway, the former extent of the city’s shoreline which covered the area that is now the waterfront promenade, etc). The identification of heritage assets began in a two-fold manner. The first included the documentation of the heritage assets that were described on the map. An additional dataset was used that contained all the currently listed heritage assets. This dataset was compiled by the authors in 2021 and is part of a web-map application that can be found at the following URL address: https://www.thessheritage.gr/. 1,289 listed buildings and monuments can be located at present in Thessaloniki, the majority of which were constructed before 1939 (Figure 11). Their construction date was extracted from the National Cadastre’s Agency for the city. As can be seen, a significant number of listings have no construction date recorded, and it was assumed that they refer to buildings constructed at the beginning of the 20th century. This dataset will be used to verify their presence in the 1937-1939 town planning maps to record and digitize only those assets that no longer exist. Furthermore, additional research will be performed on the assets for which no construction date was recorded to verify or dismiss the original assumption about their age. An additional dataset, retrieved from the Municipality’s GIS system containing the current footprints of the buildings was used to confirm the identity and existence of the assets compared to the footprints of the 1937-1939 maps.

![Spatial distribution of current listed buildings and monuments in Thessaloniki and statistical data on their construction year.](image)

Figure 11: Spatial distribution of current listed buildings and monuments in Thessaloniki and statistical data on their construction year.

Based on the records of the current dataset 1,147 listed heritage sites have no record of their construction period or appear to have been constructed before 1940. 112 records fall in the spatial extent of the non-retrieved map sheets and as such could not be identified. Of these, 460 were identified on the town planning maps of 1937-1939 (see examples in Figure 12). Unfortunately, 369 records regarded listings that are located in the area that was affected by the fire event of 1917, which for some reason was not represented in topographic detail on the 1937 map sheets (Figure 13). An additional 61 records regard protected landscapes rather than buildings whose existence in 1939 could also not be verified. Finally, 145 records of listed heritage sites could not be verified with certainty because their current building footprints seem to differ substantially from the one described in 1939’s map sheet (Figure 14).
Figure 12: Listed heritage Buildings identified in map sheet no. 167 in the eastern part of the city.

Figure 13: Listed Heritage Assets located in the area affected by the 1917 fire that could not be verified in the 1937-1939 map sheets
A total of 50 heritage assets were digitized from the 1937-1939 map sheets that do not exist at present, the majority of which regard former industrial (e.g. tanneries, breweries, textile fabrics, etc., 17 records) and religious sites (15 records). The religious sites provide valuable insight into the multicultural and ethnic background of the city and recent historic events before 1939. In this context, we can identify the great Jewish Necropolis located in what is now Aristotle’s University Campus, next to the Greek Civil and Military Hospital and the Central Military Hospital. The Jewish cemetery was destroyed by the Nazi occupation army between 1942 and 1944 (Saltiel, 2017). An Albanian (Muslim) cemetery was also located in the district of Triandria in what is now a park. A former Romanian cemetery was located in the western part of the city whose current use is also a park, as well as a German cemetery which is possibly for military victims of WWI. The industrial sites were primarily located in the western part of the city near the port and railway station (Figure 15).
Comparing the 1937-1939 datasheet to that of 1906, we can see that several Byzantine churches have been reinstated from mosques to their original use (e.g. the church of 12 Apostles and the Church of Taxiarchais) (Figure 16). In fact, only 3 Mosques appear in the 1937-1939 map sheets, specifically the Kazaz Haci Musaa Camii at Dios Street, Numan Pasaa Camii at the Islahane complex (in a building block that is now used as a school) (Figure 17), and Haci Mumin Camii located near the city’s Acropolis. We can also locate the Jewish Settlement “151” which was based in a former Italian Military Camp and Hospital in the district of Kato Toumpa to shelter the people affected by the 1917 fire (Figure 18). This area is now a densely populated residential neighborhood. Finally, regarding the Ottoman Fountains that existed in the former Muslim District, 13 locations were digitized from the 1906 maps, but only seven of them are currently located in the city.
Figure 16: Examples of Christian Orthodox Churches that were converted to Mosques during the Ottoman Period and reinstated to their original use after the liberation of 1912.

Figure 17: Numan Pasaa's Camii depicted in the maps of 1906 and 1937.
Conclusions-Discussion

In this research, three sets of maps were used to identify and geolocate lost urban and cultural heritage assets in the city of Thessaloniki, Greece. The first map was a spatial reproduction of a tax census performed by the Ottomans a few years before the city’s liberation. 192 different heritage sites were identified, the majority of which (127 records) regarded religious buildings such as mosques, churches, and synagogues. The fire of 1917 caused severe damage to several of these sites, some of which were never rebuilt. The new urban plan proposed by Hébrard and the rapid increase and composition change of the population after 1922, led to the abandonment or destruction of Muslim mosques in particular. The second set of maps regarded the town planning map sheets of 1937-1939 where we can see the new boundaries of the city as it expanded to its eastern and western parts. 50 heritage sites were identified in these maps, including cemeteries of different religious doctrines and nationalities, industrial sites, etc. When comparing the newly digitized information from these two sets of maps with the current records of listed heritage sites in the city, we can identify more than 150 sites lost since 1906. These sites were not only significant from a religious or even architectural point of view but also provided insight into the former multicultural part of the city. New technologies such as AR and VR applications can be used to replicate this historic past in the current urban fabric, since the heritage assets’ location is now known and documentation seems to exist for many of them, and attract the interest of the local population and tourists whose ancestry originated from the city.
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