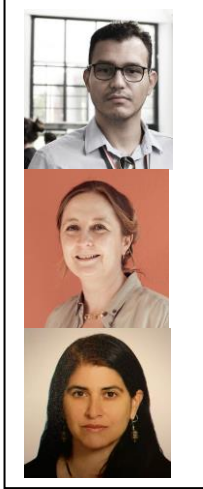


Drawing Connections to Archaeological Context: New Mudbrick/*Kerpiç* Designs for Tayinat/Kunulua on the Amuq Plain



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ABSTRACT

A 7th semester interdisciplinary architectural design studio at the Architecture Department of Mustafa Kemal University in Hatay brought together an architect, an urban designer and an archaeologist with architecture students. The project enabled the students to explore the archaeological site of Tell Tayinat on the Amuq Plain from different angles in order to create contemporary designs, aimed at research, preservation and presentation of the ancient site, while drawing inspiration from its historic context. Students determined the challenges that Tayinat presented as an archaeological setting for contemporary designs. They observed characteristics of mudbrick and addressed a variety of associated functional, logistic, topographical, climatic and protective requirements in their projects. Not all designs utilized mudbrick. Some preferred other natural materials, such as wood, though these designs could also be transformed into mudbrick. Those that relied on the vernacular focused on traditional mudbrick technology and were challenged by natural limitations, such as durability, strength and size. Others combined contemporary construction techniques with mudbrick, where mudbrick functioned only aesthetically as a finishing material, or utilized contemporary mudbrick technologies in accordance with current construction and spatial needs. Students explored uses and technologies of mudbrick at the site and elsewhere, addressing issues of climate-control and eco-friendliness, and scrutinizing the adaptability of contemporary designs to archaeological contexts. The results of this elective design studio, which presented the students with the challenges of an archaeological context, also provided on-site experience and research-by-design & design-by-research and defined their experience in architectural learning. The variety in projects and results generated discourse and should be emphasized as it paved the way for addressing similar dynamics also found at other sites.

Keywords: Tayinat, Antakya, *Kerpiç*/Mudbrick, research-by-design, architectural design in archaeological context

1 INTRODUCTION

1.1 Project Tayinat

Project Tayinat was an elective design studio in the 7th semester of the undergraduate programme in architecture, which aimed at introducing contemporary architectural design into an archaeological site. The archaeological and architectural heritage context of the site, as well as its landscape, were initially discussed as a source for inspiration in terms of concept, function, morphology, materials and technology to be associated with students' designs. The cultural landscape, generated through human-nature interaction in the past, was further enriched through the recent interaction of archaeologists, researchers and visitors, creating yet another layer of experience. Understanding the daily-life at the site and its urban-architectural morphology in the past and their reflections at the present formed an intriguing design problem: Some of the proposed functions included, but did not limit themselves to the needs of the current archaeological researchers and the visitors, thus not focusing entirely on the presentation and the preservation of architectural remains at the site. The prominence of the *höyük* in the landscape of the Amuq Plain, and especially on the historical route connecting Antakya with Aleppo, which continues to function in present day, was also a matter of consideration in design, in addition to its close distance to the current river bed of the Orontes (Asi) River. The design was to be an experimental building. Participants in the studio had the opportunity to adapt and experiment with old and new building technologies and materials. *Kerpici*/mudbrick proved to be the most inspirational architectural element in all design projects of the students.

1.2 Constructing a Challenging Interdisciplinary Framework

The archaeological site acts as a field library for architects and urbanists, where archaeologists become the librarians. Collaboration between an architect, an urban designer and an archaeologist creates a challenging interdisciplinary framework, opening up creative discussions on time and context. Project Tayinat opened up new perspectives of research for all its participants, both students and instructors, as this paper presents.

The course of the Project Tayinat presented opportunities for architects and urbanists to refresh their knowledge through new discoveries about the past and then present archaeologists new research perspectives in development and preservation through contemporary design. Discoveries on past cultural elements present architects and urbanists with new design tools. Information and inspiration derived from the past expand the consciousness of the designers in terms of understanding and creativity while understanding a design process can provide archaeologists determine ways to connect the past with the present and preserve their remains for the future. An interdisciplinary framework brings productivity and creativity from different angles, as it also helps to articulate challenges and generate processes of problem-solving. Archaeological research, combined with urban and architectural design in an interdisciplinary context, can address needs of preservation, development and communication of historical knowledge in creative ways.

2 THE RATIONALE

2.1 Tell Tayinat's Historical Background

Tell Tayinat functioned as major regional centre in the Early Bronze Age and the Iron Age, in the 4th and the 1st millennia BCE, respectively. Occupation moved during the Middle and Late Bronze Ages to neighbouring Tell Atchana, located about 800m southeast of Tayinat, also known from textual sources as the capital Alalakh of the kingdom of Mukish. The underlying reason of this movement appears to be the Orontes River, which changed its course numerous times on the Amuq Plain throughout history. [1, 2]

Identified as Kunulua, the capital of the Iron Age Syro-Hittite kingdom of Unqi/Patina [1, 2], Tayinat became famous with the discovery of the massive basalt statue of the Iron Age King *Suppiluliuma* in 2012. The ancient statue recently evolved into a symbol of the modern city of Antakya. The statue

of *Suppiluliuma*, along with other monumental discoveries of stone, stand against the *kerpiç*/mudbrick architecture of this impressive ancient site on the Amuq Plain, forming an interesting juxtaposition of durability between stone and mudbrick. In order to simplify the context, the participants were asked to concentrate on the Upper City and the Syro-Hittite layer from early Iron Age, which contains the Temples II and XVI, the Royal Palace and the city walls and gates, the urban layout of which was clearer and easier to understand, rather than the remains that date to the Early Bronze Age. (Fig. 1)

The Oriental Institute of the University of Chicago had conducted excavations at Tell Tayinat between 1935 and 1938, while Sir Leonard Woolley, the excavator also of Ur and Carchemish, directed excavations on Atchana before and after World War II. Robert Braidwood, often cited as the inspiration for the movie character *Indiana Jones*, also conducted major systematic surveys on the Amuq Plain, setting the stage both for the future of archaeological survey techniques and for the regional chronological frameworks determined on the basis of pottery remains. [1, 2, 3] Current excavations were initiated as part of the Tayinat Archaeological Project by Timothy Harrison from the University of Toronto in 2004 following a series of regional surveys on the Amuq Plain and continue to this day.

2.2 The Design Problem

The design problem presented to the students focuses on the fact that the project area is both a cultural heritage and an active archaeological excavation site. Archaeologists working on the site have been conducting excavations, during which precautions were taken to preserve immovable remains *in situ*. The studio participants were asked to select a building site on the *höyük*, with consideration of past, present and future excavation areas. They needed to understand how the process of archaeological research in an excavation project worked to ensure proper integration of their designs into an archaeological site. An alternative was to design a reversible and/or movable structure without underground foundations and using natural materials.

A fundamental problem identified during the studio process was the fact that the site is seldom visited by tourists or locals. Even the finding of the King *Suppiluliuma* statue has not been enough to increase visitor numbers or interest in the site. Many residents in the city confuse Tayinat with Atchana or do not at all know that the statue was found in Tayinat. Local, national and international tourists visiting the site are few in number even though the *höyük* is located on the main road from Antakya to Reyhanlı and Aleppo, only 25km from the city centre and can be reached by public transportation. A cotton ginnery that is constructed on top the archaeological site veils visual contact from the main road while obscuring the Assyrian Governor's Palace, which was excavated in 1930's. Similarly, a modern cemetery obscures the ancient city walls and ancient gates next to the main road.

Last but not the least, the students were asked to reflect on the interdisciplinary and innovative nature of archaeological research in their designs, generating a cognitive learning environment, like a living research lab that brings concerns of the specialists with those of the students, which could also be observed by the visitors. The aim was to generate a place for improved interactive and interdisciplinary learning as well as producing an authentic life experience. The expected final results could be more clearly described with the following examples: Paolo Solari's built vision and concept of "arcology" in Arcosanti in the middle of Arizona Desert, which itself an experiment in 1960's on the combination of ecology and architecture [4], and the archaeological complex of the Karatepe-Aslantaş Open-Air Museum, yet another Syro-Hittite centre in Osmaniye on the north of the Belen Pass, designed by Franco Minissi and Turgut Cansever, and built by renowned archaeologist Halet Çambel, who also conducted research on the site, and her husband, Nail Çakırhan in 1957-1961. [5]

Design ideas were expected to lead the students to generate work far beyond receiving inspiration from authentic architecture. During the studio classes, the instructors invested effort more on the design concept than on the form, the program and the details of the projects. The instructors drew particular attention to three characteristic design elements of ancient architecture: The formation of

ritualistic L-shaped movement pattern (processional route) in urban design (Fig. 1), the use of *kerpiç*/mudbrick in construction and the placement of orthostats on public architecture.

The process of interactive thinking was supported through presentations by the studio instructors: Berk Kesim focused on urban form and the significance or the spirit of place. Nilüfer Baturayoğlu Yöney focused on architectural design in different historic contexts and Elif Denel focused on the history and understanding of the urban form, architecture and daily life at Tayinat and at other contemporaneous sites. A guest speaker, architect Sinan Omacan of Atölye Mimarlık, İstanbul, presented his work on preservation and presentation strategies at different archaeological sites in Turkey and answered students' questions on context and specific requirements. In addition two field trips were organized, one to the Hatay Archaeology Museum to look at the finds and to collect information about the site, and the other to Tell Tayinat to observe the site and its environment.

2.3 Urban Movement in the Upper City

An L-shaped procession route is observed in the heavily damaged central part of the upper city, connecting the East Gate to the area south of the Temple XVI in a processional progression and culminating in the public space where the statue of *Suppiluliuma* and other monumental works of art were originally located. [1, 2] This area seems to have acted as a focal point in terms of urban design. (Fig. 1) Similar L-shaped ceremonial paths are recognized also at such contemporaneous sites as Carchemish. [6] The revival or repetition of movement, which culminates with a staircase at Temple XVI, was proposed as an inspirational beginning point for understanding and presenting the ancient city. Architectural and urban history literature generally draws attention to linear paths in terms of ritual processions or circular ceremonial paths around special buildings. However, archaeological literature depicts behavioural patterns based on different morphologies as well [7].

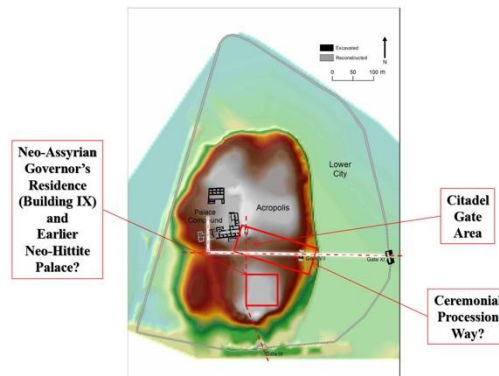


Figure 1. L-shaped Procession Route. Modified from Harrison, T. P., Denel, E., p.152, 2017 [8]

2.4 Mud, *Kerpiç*/Mudbrick and Orthostats

Mud is one of the first and most widely used building materials in the world. The earliest examples of human settlements in the ancient Near East provide evidence for the use of mud as a binder and a finish as well as in the production of mudbrick and baked/fired bricks. Stone appears to be preferred where it was easily available, though brick stands out as the most important building material in Mesopotamia, where stone was scarce. [9] In addition to wattle-and-daub, mudbrick as a building material provided more elaborate, mass produced and processed techniques for public, ceremonial and residential architecture alike.

The extensive use of *kerpiç*/mudbrick in large cities, and the limited durability of the material against the effects of weathering, appear to be among the practical reasons for the introduction orthostats in urban areas. Orthostats not only protected the lower parts of mudbrick walls against water and weathering, but also formed a unified surface with the stone façades surrounding public open spaces, such as city streets and squares. As such, they eventually generated an additional opportunity in symbolic representation with artistic depictions of symbols and narratives that could be displayed on them. The *in situ* orthostats at Carchemish along the Processional Way and lining the side of the

Monumental Staircase form some of the best-known examples of Iron Age architecture. The Iron Age limestone orthostats from Tayinat, now in the Hatay Archaeological Museum, may well have once adorned the base of a monument in the public square extending on the south of Temple XVI. Similarly, orthostats lined gates that controlled passage between distinct areas of cities at this time, marking them as distinctively liminal zones, defining important areas of settlement centres and controlling access. Such examples are found at Carchemish, Zincirli in addition to Tell Tayinat in southeast Turkey and Tell Halaf in north Syria.

3 THE RESULTS

3.1. Design Scenarios: Failed!

The instructors pre-determined three design scenarios based on the use mudbrick. The students were asked to select a design attitude each from the perspective of an architect, an architectural preservationist or an architectural historian. The first scenario was about designing a research and visitors' centre at the archaeological site. The second, which adopted a fictional approach, suggested that site was discovered with all its inhabitants and architecture intact. The students were in charge of intervening in this isolated, hypothetical and historical cultural geography. The third and final scenario was about integrating a new urban and architectural design to the city as it existed in the past, in the 9th century BCE. However, only the more realistic first scenario was selected by the students with the other two only partially attracting interest. However, this lack of interest was not perceived as a total failure, but was considered as a studio phase, which opened new discussions and deliberations on the lack of knowledge about the past settlement structures.

3.2. Use of Kerpiç/Mudbrick in Participants' Design Projects

Structural systems to be adapted in design projects and material choices were left to the participants, who could make decisions on the basis of the environment and the particular characteristics of the archaeological site. However, 12 out of 20 projects preferred mudbrick in establishing a relationship between their designs and its context. Guest speaker Sinan Omacan's examples of new and interpretive mudbrick designs at sites that share similar characteristics might have provided a further inspiration for the students as well. As such, the students used mudbrick in different ways.

3.2.1 Traditional Use of Kerpiç/Mudbrick

The use of mudbrick with traditional production and masonry techniques was the simplest approach. However, such vernacular architectural designs were, of course, challenged by the limitations the material presented for spatial needs, durability, and strength. Meanwhile, the reversibility characteristic of the material and the possibility it presented for superficial foundations provided an advantage for construction on archaeological areas and close to excavation trenches. Similarities that emerged between modern designs and original buildings, however, formed a disadvantage in that, it was not easy to differentiate between new designs or reconstructions, and remains of the archaeological walls. Furthermore, it became difficult to resolve issues involving infrastructural needs of modern designs that were physically so closely located to original archaeological remains. Traditional mudbrick masonry was already utilized by the current archaeological team of the Tayinat Archaeological Project at the site to form sacrificial layers on the remains of the original structures, so that the remains can be protected against decay and the plans of architecture can be observed clearly by visitors [10].

3.2.2 Kerpiç/Mudbrick Facing

Some of the student projects preferred contemporary construction techniques, providing only an aura and feeling of mudbrick, thus using it aesthetically as a cladding. The relationship of these projects to the archaeological setting was achieved through the apparent relationship of mudbrick with the surface of the site that consists entirely of dirt. As such, these projects displayed a sense of respect towards the heritage underneath their designs. In addition, some projects designed structures that were barely touching the ground, while others consisted of mobile, temporary or reversible

structures, which also displayed a sense of respect and protection towards the ancient remains below the surface of the *höyük*.

One group created ‘a Bronze Age skyscraper’ standing on a steel frame structure, which was only faced with mudbrick. The motivation of this group generated from an aim to increase the visibility of their design and the ancient site. However, the final result approached a dystopia. (Fig. 2) This group emphasized that their motivation to use mudbrick, was based on not only the fact that it was the characteristic material of the site, but also the climate- and eco-friendly properties of mudbrick.



Figure 2. Images adapted from Hatay Mustafa Kemal University, Faculty of Architecture, Department of Architecture, 2001745 Renovation and Regeneration Projects in Architectural and Archaeological Sites, 2020-2021 Fall, project by Ali Kılıç, Oğuz Baran Akkurt, Enes Önal

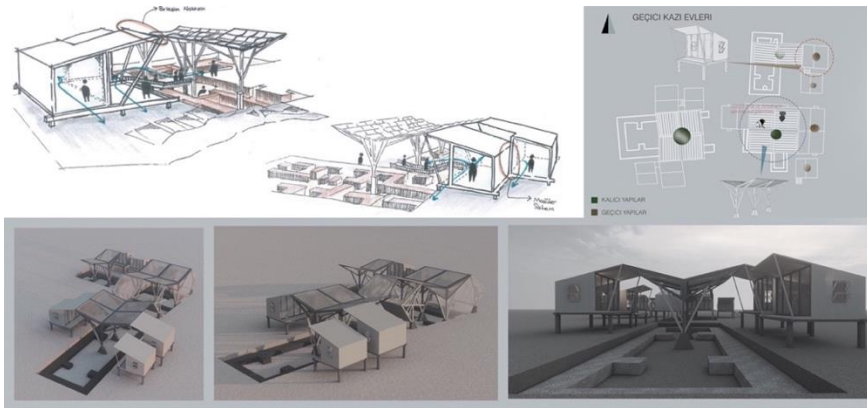


Figure 3. Images adapted from Hatay Mustafa Kemal University, Faculty of Architecture, Department of Architecture, 2001745 Renovation and Regeneration Projects in Architectural and Archaeological Sites, 2020-2021 Fall, project by Kadir İlik, Aycan Aydan, Aybike Yücel

Another group was inspired by the nature of mud itself. Mud is temporary when it is wet and permanent when it dries, always ready to be transformed. Hence, designs of this group involve removable structures, which become permanent shelters over the excavated areas when work is completed. (Fig. 3) In order to highlight the nature of ‘old’ that mudbrick represents at the site, this group preferred a building material, called “linit”, a type of tempered u-channel glass, which is clearly ‘new’ and thus provides a contrasting effect for differentiating between the old and the new. Other groups also used similar approaches, but different materials. A common solution was providing a feeling of mudbrick with the use of temporary structures and other natural materials.

3.2.3 Kerpiç/Mudbrick Adapted

The projects of this group commonly preferred contemporary mudbrick technologies, such as monolithic systems produced *in-situ* or in frames and supported with modern structural systems in a response to current construction and spatial needs, while trying to adapt their designs to the characteristics of the archaeological site.

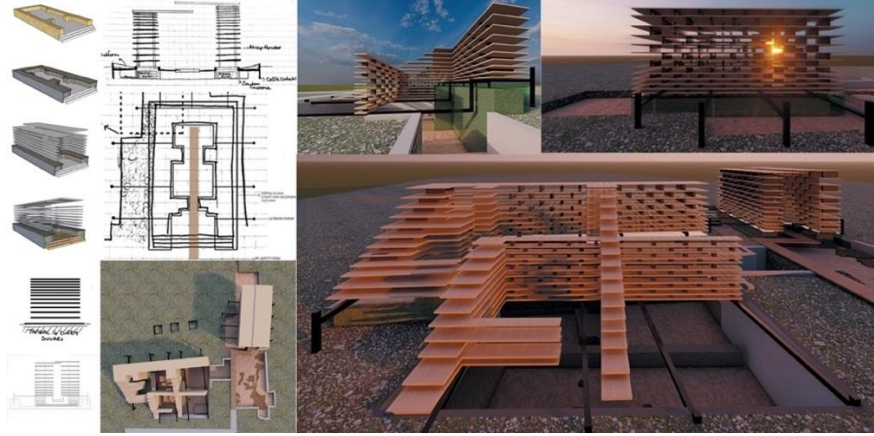


Figure 4. Images adapted from Hatay Mustafa Kemal University, Faculty of Architecture, Department of Architecture, 2001745 Renovation and Regeneration Projects in Architectural and Archaeological Sites, 2020-2021 Fall, project by Ceren Selçuk, Zeki Ünlükolukisa, Ahmet Emin Aslantaş

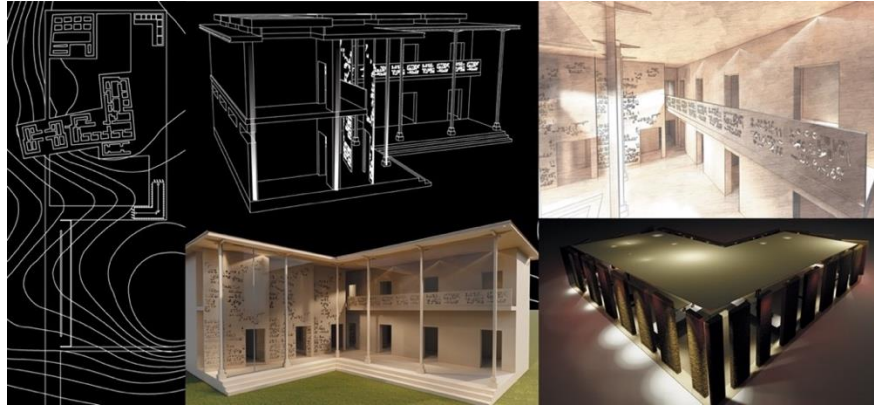


Figure 5. Images adapted from Hatay Mustafa Kemal University, Faculty of Architecture, Department of Architecture, 2001745 Conservation in Urban and Archaeological Sites, 2020-2021 Fall, project by İncinur Mutlu, Deniz Karlı, Berk Doğan

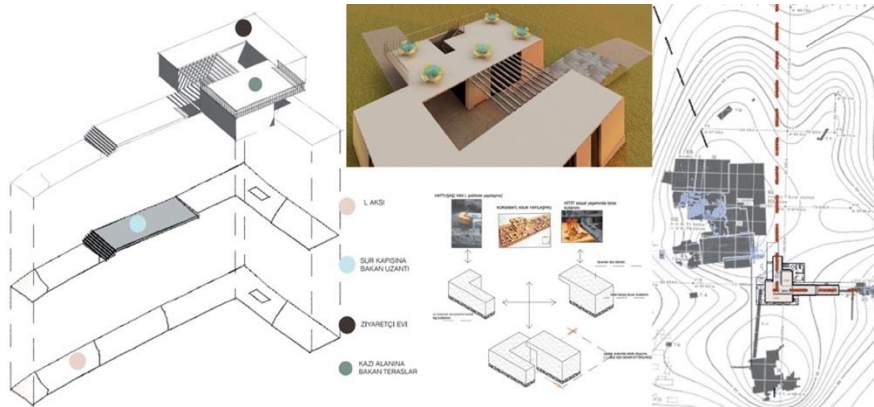


Figure 6. Images adapted from Hatay Mustafa Kemal University, Faculty of Architecture, Department of Architecture, 2001745 Renovation and Regeneration Projects in Architectural and Archaeological Sites, 2020-2021 Fall, project by Yasemin Şen, Bilge Pırıl Kavak, İbrahim Halil Tiryaki

A significant design achievement of these projects was to place emphasis on public space, re-interpreting the design of the ancient city and its buildings with emphasis on the present needs. One project attempted to interpret the volumetric perception of Temple XVI without touching the original mudbrick structure. (Fig. 4) This was an interpretation of the ancient architectural morphology achieved with a new structure built directly over the mudbrick remains, integrating the new with the old. The design became a three-dimensional installation. The sense of authentic space created inside

the installation and its presence as a three-dimensional entity at the site, made the archaeological remains more visible and understandable. The design resembled a deconstructed building with a steel frame carrying wooden panels. Another project used mudbrick in a contemporary structural system as non-load-bearing infill walls, making it possible to meet the spatial needs for contemporary design while integrating it with the heritage site. (Fig.5) The morphology meanwhile presented re-interpretations of the architectures of the Royal Palace, the megaron (or deep/narrow-house) form of the temples and the L-shaped route. A third project presented a combination of the two previous examples in adapting and designing the building directly as a part of the L-shaped route. (Fig. 6) The different spatial combinations of Iron Age architecture are used to produce a contemporary building at the intersection of the L. The design also reincorporates the idea of using orthostats, and creates a new public space.

4 CONCLUSION

In general, the studio achieved its aim of introducing last year architecture students to designing in an alternative and challenging context. The archaeological site of Tell Tayinat with its urban and architectural heritage, and the aura of ongoing archaeological research, provided inspiration and challenge necessary for educational problem solving for architecture students. Both the instructors and the participants operated in an interdisciplinary and interactive learning environment, with some on-site experience and through research-by-design & design-by-research approaches. The results of the studio, presented in thematic groups above, reflect the main points generating from both inspiration and interpretation. As the authentic material in architecture, *kerpiç*/mudbrick became one of the focal points of design, addressing a variety of functional, logistic, topographical, climatic and protective elements in all projects. Not all designs utilized mudbrick while those that relied on mudbrick, did so from different perspectives and approaches. Students explored mudbrick uses and technologies at the site and elsewhere, discussing issues of climate-control and eco-friendliness, and scrutinizing the adaptability of contemporary designs to archaeological contexts. The variety of projects and results generated multi-levelled interdisciplinary discourse and, interestingly, paved the way for addressing similar dynamics also at other sites.

5 REFERENCES

- [1] Denel, E., Harrison, T. P., 'Yeni Assur Dönemi Tayinat' in *Assurlular: Dicle'den Toroslar'a Tanrı Assur'un Krallığı*, eds K. Köroğlu, S. F. Adalı, YKY, İstanbul, pp. 328-342, 2019.
- [2] Harrison, T. P., 'Temples, Tablets and Neo-Assyrian Provincial Capital of Kinalia' in *CSMS Journal*, vol. 6, pp. 29-37, 2011.
- [3] Meanwhile their colleague James Mallowan, the husband of Agatha Christie, was excavating in Syria, a little to the southeast. Christie told the story of these excavations in *Come, Tell Me How You Live* (1946), and wrote a murder mystery, presumably set on Woolley's excavation in Ur and entitled *Murder in Mesopotamia* (1936).
- [4] Kostof, S., *The City Shaped: Urban patterns and Meanings Through History*, Bulfinch Press, Hong Kong, 1991.
- [5] <https://www.arkitera.com/haber/halet-cambel-ve-nail-cakirhanin-eseri-karatepe/> (accessed on 04.04.2022)
- [6] Denel, E., 'Ceremony and Kingship at Carchemish' in *Ancient Near Eastern Art in Context*, eds J. Cheng and M. H. Feldman, Brill, Leiden, pp.179-204, 2007.
- [7] Rykwert, J., 'The Street: The Use of its History' in *On Streets*, eds S. Anderson, MIT Press, Cambridge, pp. 15-27, 1978.
- [8] Harrison, T. P., Denel, E., 'The Neo-Hittite Citadel Gate at Tayinat (Ancient Kunulua)' in *The Archaeology of Anatolia Recent Discoveries (2015-2016)*, eds S. R. Steadman and G. McMahon, Cambridge Scholars Publishing, Volume II, pp. 156-178, 2017
- [9] Coockson, B. C., *Living in Mud*, Ege Yayınları, İstanbul, p.12, 2010.
- [10] Harrison, T. P., Denel, E., Batiuk, S., 'Tayinat Höyük Araştırmaları, 2016' in *39. Kazı Sonuçları Toplantısı*, ed. A. Özme, Bursa, vol. 3, pp. 563-571, 2018.