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RESEARCH ARTICLES/*ARAŞTIRMA MAKALELERI*

Research Article

Place through Time: Investigating Place Identity Language within the Temporal Dimension

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Abstract

After an in-depth discussion on space, place, placelessness and place identity through readings from Heidegger, Norberg-Schulz, Relph and Lynch, the work concentrates on Aldo Rossi's Pathogenic and Propelling definitions. The paper aims to use these definitions to further understand the symbiotic relationship between place and architecture. This relationship leads to a continuous evolutionary process which develops place identity over time and plays an intrinsic part in architectural design. By transposing language from Rossi's 'The Architecture of the City' and applying it to place identity, the paper enables analysis into the effectiveness of pathogenic, propelling, and evolved place identity approaches. This language is explored further through the use of key case studies, mapping their identity from pathogenic to evolved.

The paper concludes that place identity plays a strong role in maintaining the authenticity of place. However, when necessary to maintain relevance in a changing world, architectural identity is required to be transformative and revealing - evolving and propelling alongside people, place, and culture.

Keywords: Architecture, Identity, Language, Place, Time.

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Araştırma Makalesi

Zaman İçinde Yer: Yer Kimliği Dilini Zamansal Boyutta İncelemek

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Özet

Heidegger, Norberg-Schulz, Relph ve Lynch'in eserlerinden; yer, yer kimliği ve yersizlik üzerine derin tartışmaların ardından, bu çalışma Aldo Rossi'nin Patojenik ve İtici tanımlarına odaklanmaktadır. Makale, yer ve mimarı arasındaki simbiyotik ilişkiyi daha iyi anlamak için bu tanımları kullanmayı amaçlamaktadır. Bu ilişki, zaman içinde mekan kimliğini geliştiren ve mimari tasarımın ayrılmaz bir parçası olan sürekli bir evrimsel sürece yol açmaktadır. Rossi'nin 'The Architecture of the City' kitabındaki dili aktararak ve onu mekan kimliğine uygulayarak, patojenik, itici ve evrimleşmiş yer kimliği yaklaşımlarının etkililiğine yönelik analiz yapılmasına olanak sağlar. Bu dil, kimliklerinin patojenden evrime doğru haritalandığı, anahtar alan çalışmalarının kullanılmasıyla derinlemesine araştırılır.

Makale, yer kimliğinin gerektiğinde değişen dünyada geçerliliğini korumak için yerin özgünlüğünü korumada güçlü bir rol oynamasına rağmen, mimarı kimliğin dönüştürücü ve açıklayıcı -insanlarla, yerle ve kültürle birlikte gelişen ve harekete geçiren- olması gerektiğini belirtir.

Anahtar Kelimeler: Dil, Kimlik, Mekan, Mimarlık, Zaman.

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INTRODUCTION: PLACE THROUGH TIME

An understanding of place is necessary to understand architecture as "without place, architecture simply doesn't exist. When architecture is created so is place" (Kief, 2015). Place is "a meaningful location" (Cresswell, 2004), yet also a way of seeing, knowing, and understanding the world. As Christian Norberg-Schulz opined, "It is meaningless to imagine any happening without reference to a locality. Place is evidently an integral part of existence" (Norberg-Schulz, 1980). Architecture can respond to a place's identity through a comprehensive analysis of the cultural, historic, physical, social, and environmental contexts. The result is an architecture that is 'rooted' in its place and displays 'sitedness', along with an appreciation of time, place and understanding (Krause, 1991). Although a considered visual response is not essential to place identity, it can allow significance and meaning to be attributed. "Place identity has greatest power when visual form, individual and social meaning come together" (Ruggeri, 2010). This response does not, however, need to be a replica of the formal identity, but rather "the colours, materials, smells and sounds which are recognised and shared emotional heritage" (Sepe, 2013).

Furthermore, place identity is not simply a product of the architecture; while spatial qualities may distinguish a place from others, "characteristics of the inhabitants … distinguish them from inhabitants of other places" (Carta, 1999). Each individual has a unique yet significant relationship with 'their' place, or any place they visit. Some memories and responses will be shared while others will be individual. Therefore "overlapping definitions of place identity exist – again both individual and collective" (Hague, 2005). It is the complex relationship architecture has with place and identity that enables such meaningful and deep-rooted, emotional responses.

"Places are spaces with identity" (Day, 2002). Architecture defines place and place plays an intrinsic part in architectural design. This symbiotic relationship drives a continuous evolutionary process. Place identity is "not static and unchangeable, but varies as circumstances and attitudes change; and it is not uniform and undifferentiated, but has several components and forms" (Relph, 1976): the same place could be described differently with time (Hague, 2005).

Aims and Objectives

This paper aims to gain a greater understanding of whether place identity adapts and evolves in an ever-changing world, or if it remains a static entity. By transposing language from Aldo Rossi's 'The Architecture of the City' and applying it to place identity, it enables a developed discussion and analysis into the effectiveness of pathogenic, propelling, and evolved place identity approaches. Finally, it aims to understand if there are connections between the legibility and effectiveness of place identity; what are the consequences of tangible and intangible interventions alongside material and formal responses?

Methodology

Pathogenic, propelling and evolved place identity approaches will be tested using a case study methodology, using a mixture of primary (site drawings, planning applications, etc.) and secondary sources (books, journals, and articles, etc.). The process will comprise two steps: research involving a review and critique of existing literature on place identity, enabling a contextual framework of perception and reproduction of place, alongside analysis of existing theories into how identity evolves over time; and analysis involving the application of this framework to relevant case studies and consideration of the effectiveness of the place identity approaches. The case studies, which all share an affiliation

with place, will be categorised into pathogenic, propelling and evolved place identities, allowing comparison between the contrasting strategies.

LITERATURE REVIEW: PLACE THROUGH TIME

Importance of Place Identity

The importance of the relationship between architecture and place identity needs to be understood in order to appreciate fully the need to understand how place identity evolves over time. As Kief observed, "[p]lace plays an intrinsic part in any architectural design. It defines the what, where, and when of the structures and people who inhabit that place" (Kief, 2015). Allowing places to be unique, to differentiate themselves from other parts of the world, is a principal human desire of both individual and collective identity. Furthermore, with globalisation increasingly apparent, creating a sense of place becomes ever more meaningful. In 1976, Relph put forward the concept of 'placelessness', "the casual eradication of distinctive places and the making of standardised landscapes" (Relph, 1976). These sites, bereft of cultural, historical, and personal meaning, are the result of globalisation within economics and politics (Arefi, 1999). In response, Frampton argued the central strategy of critical regionalism was to "mediate the impact of universal civilization with elements derived indirectly from the peculiarities of a particular place" (Frampton, 1998). Although there were major criticisms of Relph's 'Place and Placelessness', "that it is essentialist; out of touch with what places are today" (Seamon, 2008), scholars still maintain that an appreciation of the concept, also labelled 'non-place', 'commodification' and 'standardisation', can provide useful understanding to enable better acknowledgement of place in future designs. With the current social and political landscape, this is potentially more relevant than ever with a "backlash against globalisation and supra-national organisations, and a seeming strengthening of national sovereignty and regionally devolved parliaments" (Hourston Hanks, 2018).

For Feld, "[h]uman experience begins with space and time and then proceeds to place" (Feld, 1996). Perhaps a more fundamental reading of place provides justification far greater than merely the human enjoyment of experiencing different place identities. A more dynamic and open-ended reading suggests place as the origin of community and individual identity. It suggests the locus of the emergence of identity alongside the separation of subjectivity and objectivity.

This reading stems from Heidegger's thinking, often regarded as a backstop of place identity theory, and discussed and built upon by many since then including Malpas and Norberg-Schulz. There is a suggestion from both these authors that architecture reveals things about the identity of a specific place, revealing wider concepts about the cosmos at a larger scale, whilst simultaneously revealing the identity of individual people at a smaller scale. Architecture, therefore, has the ability to draw parallels across scales between people and place, where "[t]he primary purpose of architecture is hence to make a world visible" (Norberg-Schulz, 1988). Norberg-Schulz draws on an example first provided by Heidegger: a temple that, "in its standing there, first gives to things their look and men their outlook on themselves" (Heidegger, 1971), suggesting a simultaneous revealing of both place and personal identity. Heidegger terms this as the temple "sett[ing] truth into work" (Heidegger, 1971), while Norberg-Schulz adds that the "given place possess[es] a hidden meaning revealed by the temple" (Norberg-Schulz, 1988). The temple is not simply added to what is there, but it allows things to emerge as what they are.

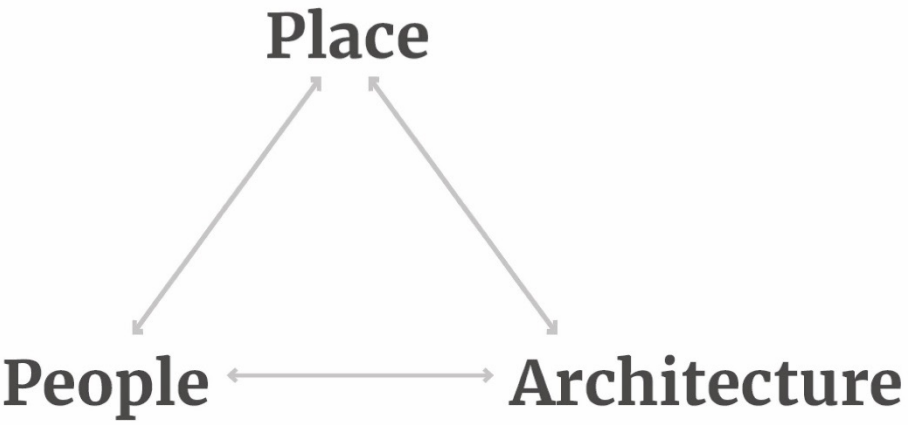

Figure 1. Relationship between Place, People and Architecture

In a similar yet even more radical vein, 'Place and Experience', the first major publication by Jeff Malpas, proposes place as the origin of self-identity from a philosophical and psychological perspective. Malpas builds upon the notion that we discover something from the landscape and describes place as a way of understanding where our communal and individual identity emerges. It is suggested that place is a primary unit of experience and that nothing can begin until we begin to engage with place. Malpas argues that place is something that pre-exists; it has the possibility of an identity that needs to be discovered. This is mirrored by our individual identity as he goes on to say, "[t]he land around us is indeed a reflection, not only of our practical and technological capacities, but also of our culture and society" (Malpus, 2018). He concludes we only discover ourselves through the way we engage with and the way we transform places.

These works suggest a complex and reciprocal three-way arrangement between place, people and architecture [Figure 1]. Architecture encompasses our fundamental reading of the world; both the places within it and our individual identity. Therefore, an understanding of this relationship - of place identity - is crucial.

Differences between the Generation and the Continuation of Place

While it is understood that "good architecture is born out of and developed in the context of existing environments" (Breitling, 2012), to further interpret the relationship between architecture and place, the generation of place identity must be understood.

Figure 2. Elements of the Generation of Place Identity

The elements that constitute the generation of architectural place identity [Figure 2] can be divided into two main groups: place identity formed as a function of industry; or an identity created as a result of geographical isolation. In reality, many identities are generated as a combination of both. Knowledge and culture appear as important elements, straddling both groups, and consequently have a strong relationship with place. They can be used to explore and understand each other; "Place informs culture and in return culture influences Place" (Kief, 2015). Due to the relative permanence of buildings, they often become bearers of individual and collective memory and knowledge, leading to strong associations and distinct regional patterns.

Often places are born out of a developing industry, with the forms and materials that are now seen to be vernacular to the region, used initially either as a direct result of a pragmatic functional requirement, or the increased generation of wealth in the area. Increased growth of a place, particularly during a period of booming industry, can form strong ties between a quickly developing place identity and culture. A primary example would be Stoke-on-Trent, where the now iconic and identifying bottle kiln shape was a requirement of the firing process being developed by the pioneering potteries.

The degree of geographical isolation can also affect place identity. In locations that evoke the strongest sense of place, "it is very often the pervasive presence of a single, readily available local material… that are their most striking feature" (Weston, 2003).

Finally, the local environment and climate often influence the creation of a place's identity, showcased by "[t]he amazing skill [of] primitive builders in dealing with climatic problems, and their ability to use minimum resources for maximum comfort." (Rapoport, 1969). However, the importance of climate on the creation of the built form has been questioned, with the "examination of the extreme differences in urban pattern and house types … show[ing] them to be much more related to culture than climate" (Rapoport, 1969). It could therefore be argued that only extremes in climate have a significant effect on a place's identity. As Heath argued, "[v]ernacular architecture, then, represents a localised response to broad cultural systems, historical events, and environmentally determined regional forces" (Heath, 2009).

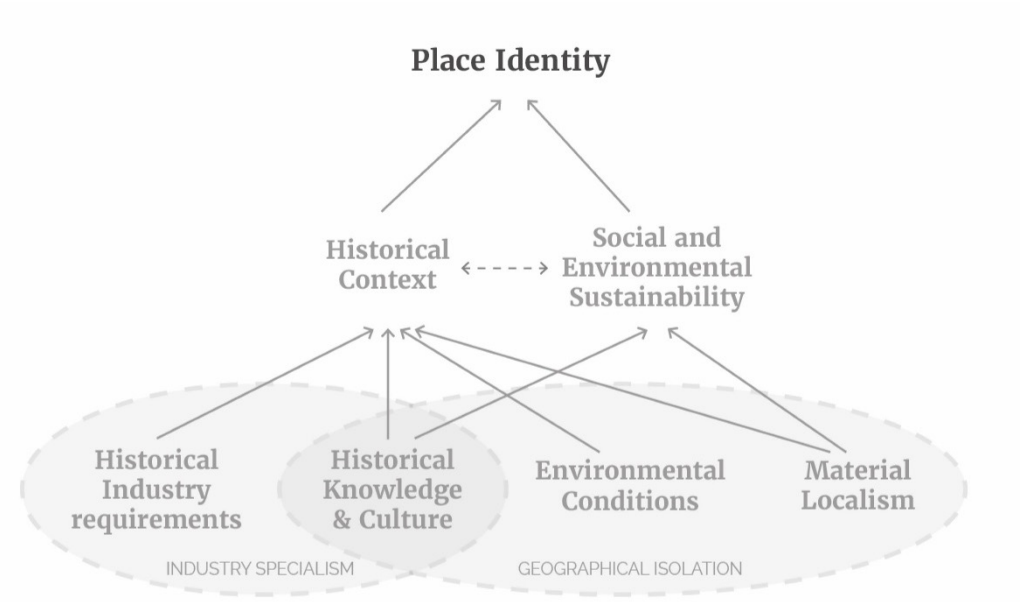

Figure 3. Elements of the Continuation of Place Identity

The continuation of place identity [Figure 3], however, is governed by a different, yet related, set of parameters. In most places, the primary industry has modernised or subsided; local culture has diminished in a globalised world; knowledge is instantly shared; and new technology and materials, that can be transported around the world where necessary, have been developed to overcome environmental issues. However, the historical context is still relevant for buildings to achieve 'sitedness', and to provoke and promote individual and collective memory. While the original parameters are no longer requirements, they are relevant as secondary elements, connected through the contexts of history and sustainability. Therefore, the different elements that make up the generation and continuation of place identity induce architectural responses relevant to the present context, and consequently, the place identity evoked by architecture can change through time, as the context develops.

It could be argued that contemporary placemaking is a balance between utilising opportunity whilst retaining memory. We invariably will –and should– alter buildings, spaces and places depending on current opportunities and constraints. Building forms and materials "grow, change, and evolve" (Heath, 2009) as new knowledge and technology allow for more sustainable construction, crucial within the current climate crisis. Sustainable architecture and place growth occur as "fully evolved, stabilised, and embedded building responses that embody a very slow rate of change" (Heath, 2009). This ensures "stories and connotations are transmitted and modified from one memory to another; they root us in time and place" (Von Meiss, 1991).

Place Identity through Time

In contrast to this evolving representation, place identity in literature is often associated with phrases such as authenticity and 'genius loci', the Roman belief that "every object has its own character or spirit" (Kief, 2015). This static reading of place, associated with Norberg-Schulz, implies every place has an essence that was established during a point in its history. Once discovered, a manifestation of the essence can be created that responds to the place's 'genius loci'. Consequently, architecture has the potential to govern the 'genius loci'; it "encompasses the persistent qualities … and potential of a built environment" (Breitling, 2012). Furthermore, Norberg-Schulz suggested, "[p]lace must preserve its identity through change, which is to say that it remains the same even if it is never identical" (Norberg-Schulz, 1988). This theory of a fixed representation of place can be successfully applied to certain places, where the entire identity responds to a single, important point of time in that place's history. While relevant to the discussion, this reading of place, however, creates the impression of urban and natural landscapes as "fixed entit[ies], fragment[s] of the past that ha[ve] endured the ravages of nature and human action" (Heath, 2009). Accordingly, it can become problematic when attempting to apply it to other places that have seemingly developed more organically.

These more transitional places are perhaps better understood when applying a more generous reading of Norberg-Schulz, which can be attained from his earlier work that builds upon theories from Heidegger. This more open-ended sense of place is built upon an understanding of give-and-take between people and place. It is argued that people do not simply project a pre-conceived idea outwards onto the landscape; an idea about themselves, society or even the wider universe. Instead, the landscape, both built and natural, can be used to discover, acting as a structure to guide understanding. Landscape and place do not conform in a linear process, but rather are one piece of a two-part process between people and place. Heidegger uses the example of a bridge, where "the banks emerge as banks only as the bridge crosses the

stream" (Heidegger, 1971). This suggests the built landscape, the architecture of the bridge, makes the place come into presence and reveals an element of place identity. Norberg-Schulz adds, "[h]uman life takes place on earth, and the bridge makes the fact manifest" (Norberg-Schulz, 1988), suggesting that a strong yet dynamic relationship between an architectural landscape and the people within it can evolve over time. This reciprocal relationship allows parallels to be drawn between the structure of society and the landscape it is within.

Similarly, Relph argues place identity is "not static and unchangeable but varies as circumstances and attitudes change; and it is not uniform and undifferentiated but has several components and forms" (Relph, 1976). This suggests the identity of a place responds directly to the circumstances of the time and the attitudes of the people. Places act as experientially based versions of spaces (Seamon, 2008), suggesting place has a connection to the individual, and the meaning may be different depending on individuals past experiences. As people's opinions and actions change based on past experiences and contemporary thinking, their experience of a place also evolves as "appearance, observable activities, and functions [are] interwoven in the experiences of places" (Relph, 1976). This leads to a continuous evolution of experientially perceived place identity, due to the integral connection between people, places, and architecture. In Weston's terms, "[s]ense of place is necessarily a function of people's relationships with specific locations, not a property of them, and to do with intangible memories, associations, scents or other qualities" (Weston, 2003).

Lynch argues that the progression of time suggests the earth should be conserved, "as it cannot be preserved" (Lynch, 1972); in the same way, it could be suggested place identity should be conserved. Responses should be considered, however need not replicate the existing architecture, allowing place identity to shift over time in response to cultural changes and updated technology, while always allowing identity to be traced back through history. Heath argues tradition itself, "is the illusion of permanence" (Heath, 2009): vernacular forms can quickly move outside of tradition, as it is not a "static legacy of a past that is handed down from one generation to another" (Heath, 2009). It is instead a transposition of the past within the context of the present and future.

It is the importance of the relationship between place identity and architecture, the fact architecture can reveal the meaning and identity of places, that inspires the evolution of place and self-identity. As we continue to create architecture, we, therefore, continue to reveal a developing place identity.

A New Place Identity Language

This interpretation - a continually developing place identity - demonstrates parallels with some of the theories conceived and developed by Aldo Rossi in his seminal work, 'The Architecture of the City'. Among many pioneering and well-regarded theories, Rossi held the view that a city remembers its past, particularly through the use of monuments, which give structure to the city and can hold our collective memory. When discussing the temporal dimension, Rossi suggested: "the difference between past and future … reflects the fact that the past is partly being experienced now, and this may be the meanings to give permanences: they are a past that we are still experiencing" (Rossi, 1982). "The form of the city is always the form of a particular time of the city; but there are many times in the formation of the city, and the city they change its face even in the course of one man's life, its original references ceasing to exist" (Rossi, 1982).

Of particular interest is the language Rossi uses when defining permanences into two separate 'aspects'; He suggests they can either be considered pathogenic or propelling elements. Both these aspects symbolise a strong representation of the past. Pathogenic elements appear "isolated in the city; nothing can be added. [They] constitute, in fact, an experience so essential that it cannot be modified" (Rossi, 1982). Whereas propelling elements represent a "form of the past [that] has assumed a different function, but it is still intimately tied to the city; it has been modified and we can imagine future modifications" (Rossi, 1982).

Figure 4. The effect of Material and Formal Language on Pathogenic, Propelling and Evolved place Identity

While Rossi uses these aspects to describe permanences of the city, it is possible to transpose the language to place identity theory, allowing pathogenic and propelling forms of place identity, and consequently a unique and critical analysis of place identity within the temporal dimension. When transposing this language to the theory of place identity, a few key concepts become apparent. Firstly, the propelling and pathogenic aspects can be applied more widely. Rossi suggests the language can be applied purely to the permanences of the city, yet this language can be applied to all buildings evoking place identity, as all buildings in a place can contribute to the collective identity. Secondly, further definition can be applied by adding a third aspect: evolved. The place identity of these buildings has evolved into something new, and they can no longer be considered to conform to the existing place identity. This leads to the subjective question of when a place identity is perceived to be evolved place identity, rather than a propelling version of the existing identity. Analysis of case studies will be utilised to further this discussion. Thirdly and finally, artefacts can evoke different aspects of place identity from the different elements that constitute them. For example, the material language could evoke a different aspect of place identity compared with the formal language, as showcased simplistically in [Figure 4].

Exploring this language further, Figure 5 showcases how pathogenic and propelling artefacts affect the identity of a place over time. The gradient of the boxes implies the degree of evolution of each artefact from the previous. Pathogenic artefacts retain the identity of a place, in contrast to propelling artefacts which cause an evolution in identity over time.

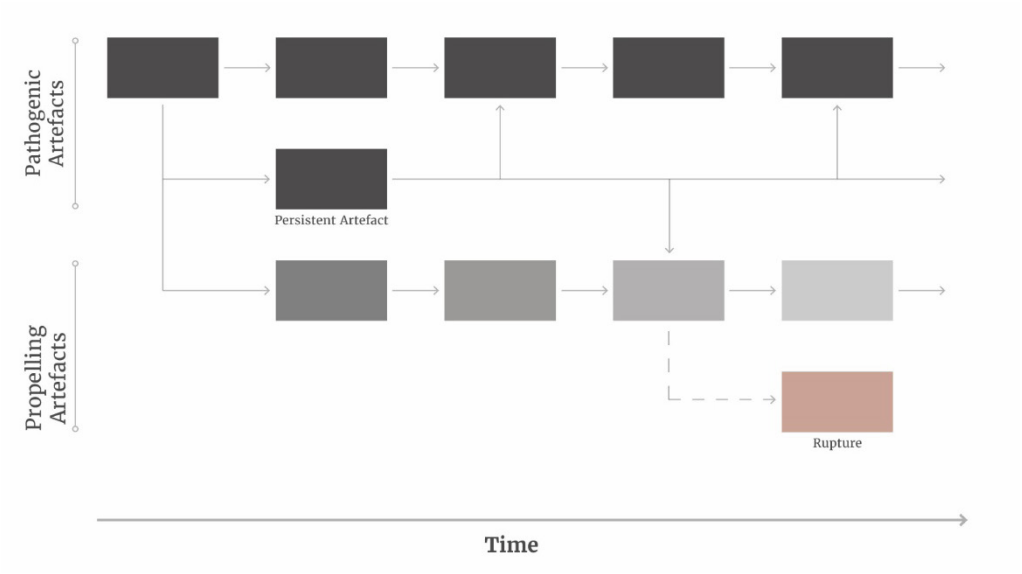

Figure 5. How Pathogenic and Propelling Artefacts of Place progress identity over time

As a result of these concepts, the following definitions can be formed as a transposition from Rossi's original definitions:

> *Pathogenic artefacts of place*: Buildings that continue to replicate the essence of place through traditional and vernacular elements, while responding to their context without modification.
> *Propelling artefacts of place*: Buildings that continue an intimate tie with the existing place identity yet develop it, generating a modified place identity for future developments to respond to.
> *Evolved artefacts of place*: Buildings that evoke a place identity that has evolved into something new and can no longer be considered to conform to the existing place identity.

A small selection of case studies will be analysed in detail in the following sections, each case study carefully chosen to explain, develop or question the discussions around place identity and how the newly defined language can be applied within the temporal dimension of place.

PATHOGENIC PLACE IDENTITY: PLACE THROUGH TIME

Lavenham, Suffolk

The Suffolk village of Lavenham may have been occupied for centuries, but the identity of the village that still exists today was forged during the prospering wool trade of the 15th and 16th centuries [Figure 6]. The resulting industry upturn led to Lavenham becoming one of the richest towns in the UK, paying considerably more tax than larger towns. This wealth was "reflected in the magnificent medieval buildings which were built by the wealthy merchant families" (Nash, 2017). A large portion of the building stock, therefore, was built within a relatively short period of prosperity, utilising the same materials, building techniques and aesthetic qualities desirable at the time. This uniformity, now seen to be 'quintessential Suffolk', has survived largely untouched to the present day, as the subsequent recession stalled growth in the area for many years. This moment

of pause in Lavenham's history perhaps broke the opportunity for any potential evolution and strengthened the existing uniform identity, Lavenham's 'genius loci', that induced the primarily pathogenic place identity that still exists today.

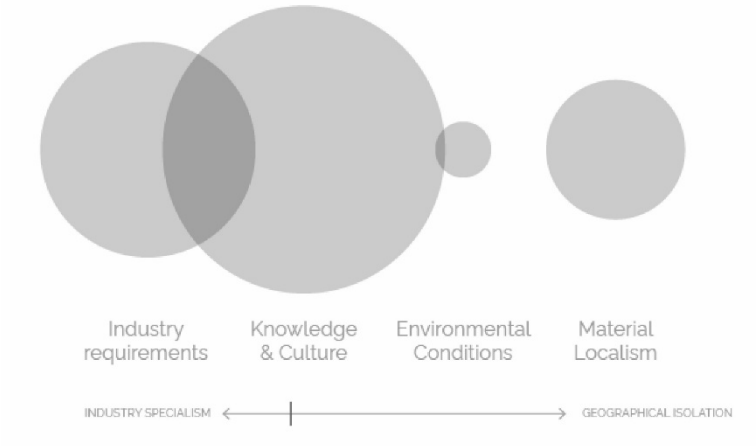

Figure 6. Generation of Place Identity in Lavenham

Figure 7. Lavenham Architectural Identity

Here, then, "[b]uilding vocabulary, material usage, and craft techniques were disseminated among builders and users alike until early experimentation yielded to a fully developed pattern of local building practice" (Heath, 2009). The architectural characteristics, both the material and formal language, have remained almost unchanged even through building use change and development, which could have resulted in performative and aesthetic changes to the identity. Instead, the magnificent timber-framed buildings with plaster infill remain and are now considered some of the best examples of half-timbered buildings in the country [Figure 7]. Diagonal glazing bars separating small diamond panes of glass prevail, despite major developments in glazing technology, and exposed timber construction is still used regardless of the increased maintenance required. These, among the many other iconic architectural characteristics in Lavenham, show no sign of modification into the future, suggesting the identity of Lavenham and its community is greater than the pragmatic improvements possible in a contemporary world.

Lavenham demonstrates that the period in which a place is conceived has a significant effect on the language and character of that place into the future; "It determines materials that can be used and is a starting point for understanding the cultural and social reasoning behind a place's creation" (Kief, 2015). It appears the strongest pathogenic place identity occurs in places with rapid periods of growth and recession. If a place is created during a single period with a uniform character, place identity is more likely to remain pathogenic, as any evolution appears out of place. This contrasts with areas built slowly, as place identity evolves over time, allowing for continued propelling development.

PROPELLING PLACE IDENTITY: PLACE THROUGH TIME

Pier Arts Centre, Orkney

Located on the waterfront in Stromness, Orkney [Figure 8], the Pier Arts Centre contains an internationally acclaimed collection of contemporary art. The project, led by Reiach and Hall Architects in 2007, included the "refurbishment of historic pier buildings, along with the creation of a new gallery building" (Reiach and Hall Architects, 2007). Three distinct elements are included in the scheme, leading to a combination of pathogenic and propelling identity: a traditional terraced block on Victoria Street containing the entrance point and two gable-ended perpendicular buildings projecting towards the sea; and the new shed building that acts as a contemporary and propelling counterpart to the original pier [Figure 9].

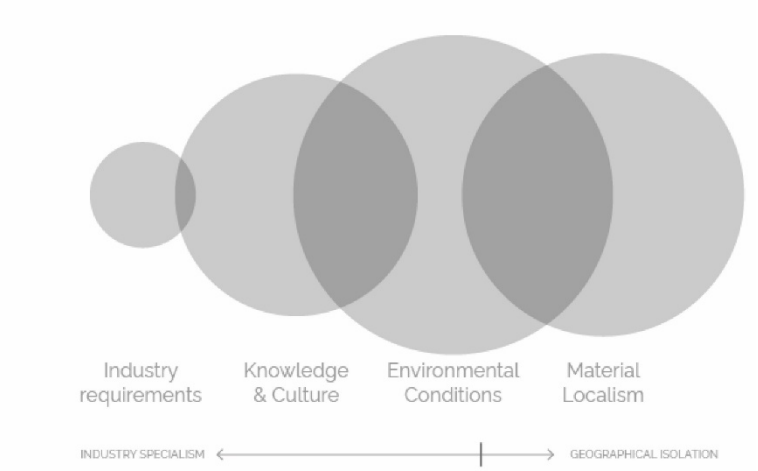

Figure 8. Generation of Place Identity in Orkney

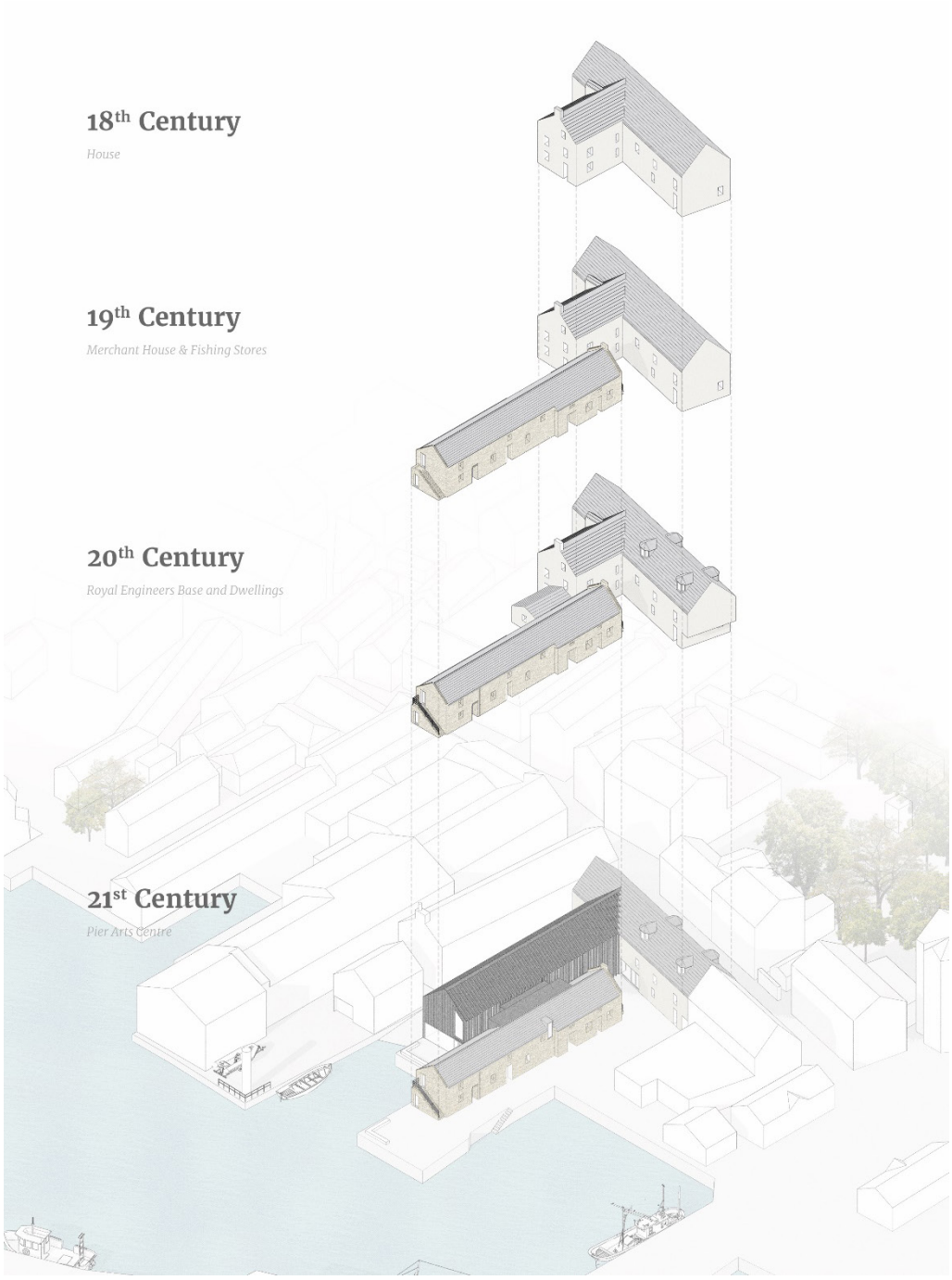

Figure 9. Pier Arts Centre through time

During the 18th and 19th Centuries, the morphology of Stromness developed into what it is today; "the houses, built gable on to the sea, belong[ed] to merchants [with] outbuildings and piers as were necessary to sustain their commerce" (Gillespie, 2007) [Figure 10]. Therefore, the piers in Stromness are sites of an individual yet shared past and contain embodied memories, defined by Pallasmaa to have "an essential role as the basis [for] remembering a space or a place" (Pallasmaa, 2012). Thus, a site of connectedness is located at the restored pier which can be described as "a material bridge to the past of the place" (Brown, 1975). Furthermore, the centre restores the community identity, as "the focal point for the local artistic community" (Pier Arts Centre, n.d.). It echoes the past when the Hudson's Bay Company ships docked while en route to Canada, one of the social highlights in Stromness, demonstrating that architecture has the potential to revitalise an individual and community identity.

Figure 10. Urban Composition of Stromness

The form of the new shed building initially appears pathogenic, maintaining the domestic scale of nearby buildings in Orkney (Gillespie, 2002) [Figure 11]. However, the design of the connecting structure also demanded the gravitas of a cultural building, leading to a composition "sitting parallel but further back from the sea, [but with dimensions] wider and higher" (Architects Journal, 2006) than the neighbouring dwellings. 'Familiarity' is also present with "the spacing of the ribs echoing the original gallery's rafters" (Reiach and Hall Architects, 2007). Appearing solid when viewed gable-on, the new element begins to dissolve as you travel around it, revealing the traditional harbour building behind. It is a character that varies rhythmically, connecting with both the past and future and mimicking the natural rhythm of the waves.

Figure 11. Urban Composition of Stromness

While all three buildings retain a vernacular gable-ended form, the Pier Arts Centre utilizes three different material strategies. The original and historic pier building has been restored to its original materials: "all existing stone quoins, sills, and chimneys [were] carefully refurbished" (Reiach and Hall Architects, 2004). This solid stone appearance is contrasted by the new shed construction, glazed and ribbed [Figures 12 and 13]. Although the form still provides a link to the waterfront setting, the exploration of contemporary materials is less archetypical. Additionally, the "ambivalent and melancholic" (Reiach and Hall Architects, 2007) façade alternates between solid and void; the black patinated zinc ribs enclosing the translucent glass panels relate to the tarring seen within the local architecture of Stromness (Gillespie, 2007). The contemporary lightweight construction allows for increased sustainability credentials and is a provocative step that embodies the forward-thinking environmental mindset Orkney has demonstrated previously, generating renewable energy that covers 120% of its own needs (McKie, 2019).

Figure 12-13. 1:20 Models comparing Pier Arts Centre's Tradition and Contemporary Gable Ends

Finally, the entrance street façade [Figure 14] is all white giving a "familiar yet … uncanny air about it" (Reiach and Hall Architects, 2007) in comparison to the 'dun-coloured' streetscape of Stromness. This feeling is continued with the window placement: considering the change of use from a residential house to a cultural centre, Reich and Hall introduced a large, glazed opening at the threshold, set back from the street at a slight angle. This intervention feels out of place in the small streets of Stromness, with most other buildings demonstrating

Figure 14. Pier Arts Centre Street Elevation, showcasing historic and updated façades

an inward-facing and protective stance, although it does allow for the new typology to be expressed within the streetscape. The angled 'shop window' glazing suggests part of the existing house was carved away at ground floor level, providing a covered porch as you enter the arts centre. Breaking up the glazing into a series of smaller elements, more synonymous with Stromness, may have helped to propel the place identity in a less audacious manner.

Generally considered a successful and sensitive intervention, a few key modifications propel forward the identity of the arts centre as a contemporary public building, while still retaining and imitating many of the vernacular architectural features of the Stromness pier typology.

Windermere Jetty Museum, Cumbria

The new boathouse and museum located at the edge of Lake Windermere [Figure 15] rehouse an internationally significant boat collection. The cluster of dark sheds includes "exhibition spaces for the display of steam launches, motorboats, yachts and other vessels" (Carmody Groarke, 2019). At its heart is a historic wet dock, allowing the display of boats on the water inside the museum [Figure 16]. The site's boatyard repurposes a historic gravel-extraction plant and runs live conservation projects, "continuing the working life of the place … as well as providing a reinterpretation of the site's industrial and picturesque heritage" (Carmody Groarke, 2019). The scheme was, therefore, designed to make a "connection between people, boats and water" (Groarke, 2019).

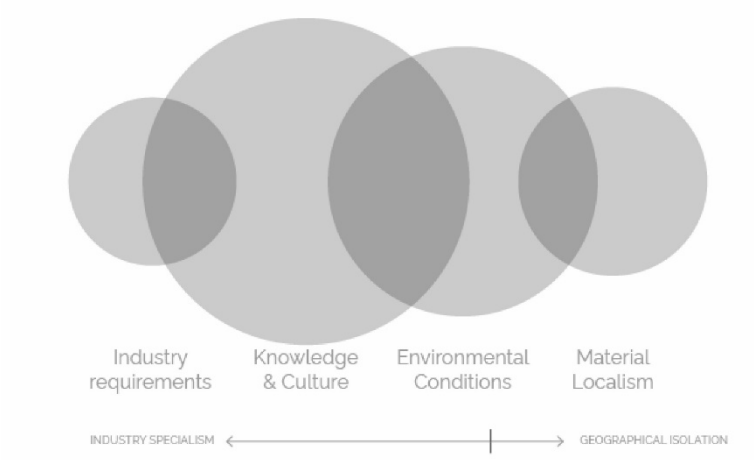

Figure 15. Generation of Place Identity in Cumbria

Reflecting the observations of Rossi, Windermere Jetty "expresses a conscious link from the past to the present" (Carmody Groarke, 2013). The boatsheds, designed with pitched roofs and extended eaves, form a hierarchy of masses, which when combined, retain the unmistakable essence of a boatyard with wharves and slipways [Figure 17]. Carmody Groarke believed this gave the forms a familiarity "made special by the overhanging canopies which extend the inside spaces of the building" (Carmody Groarke, 2013), while also providing the historic function of an all-weather shelter.

This pathogenic form is contrasted with a propelling material language; oxidised copper cladding that ordains the boathouses, with the wet dock clad in black-coloured timber, a counterpoint to the museum buildings representing the prominence of the wet dock historically. The "restrained palette of materials" (Wilson, 2019) stands in conflict with the local vernacular, comprised mainly of slate, stone and painted pebbledash render. The durability of copper, however, means the material will gain a natural patina expressing its "story of origin and history of human use." (Pallasmaa, 2012). This allows it to transition

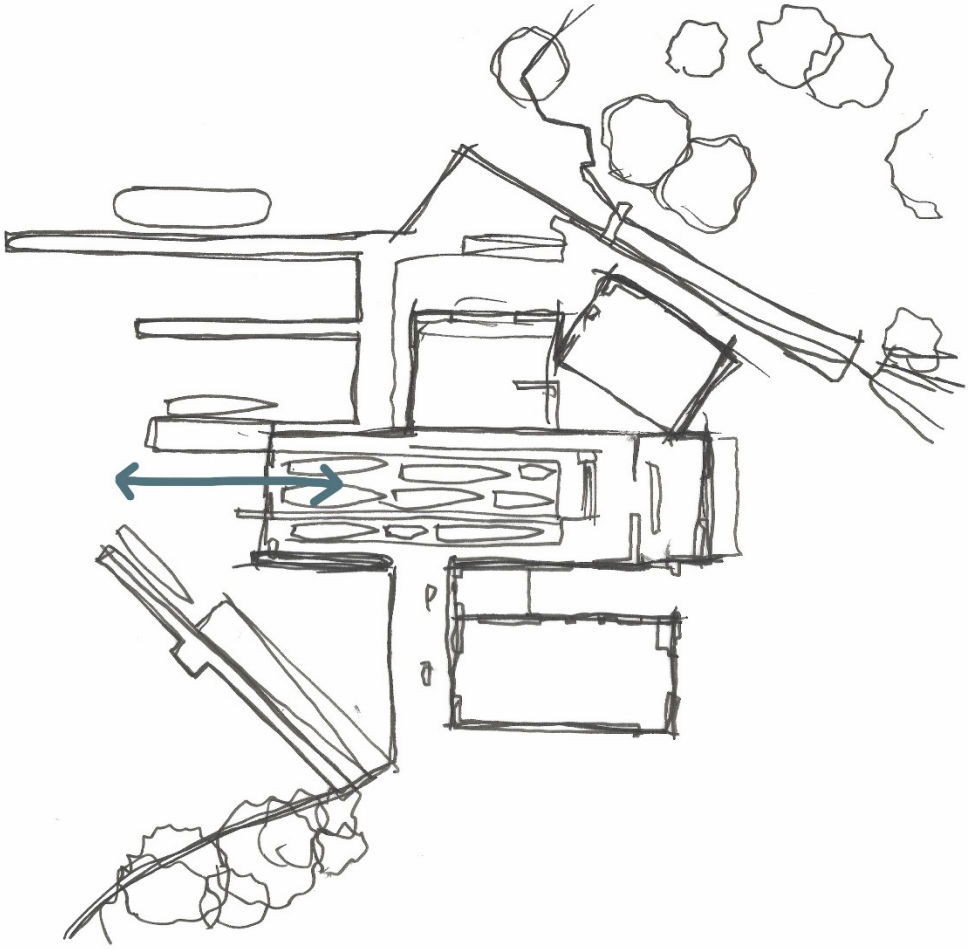

Figure 16. Windermere Jetty Museum Plan

from an appearance analogous with "the area's traditional, black-creosoted boathouses, [towards] an uneven verdigris" (Wilson, 2019), similar to the grey-green most materials in the Lake District tend towards overtime.

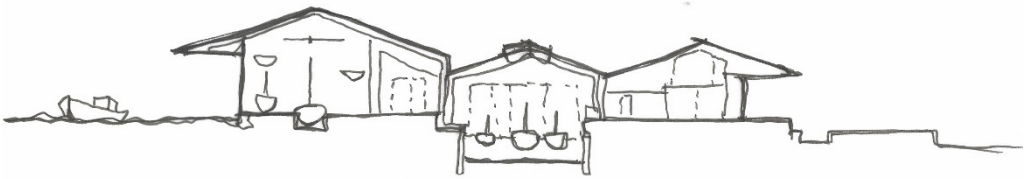

Figure 17. Windermere Jetty Museum Section

Jesus College, Cambridge

In contrast to the past two case studies, Niall McLaughlin Architects' extension to Jesus college tends towards the use of a propelling form and pathogenic material choice. This inversion of formal and material language still enables the scheme to successfully respond to the identity of Cambridge [Figure 18] while also being a forward-thinking and contemporary piece of architecture.

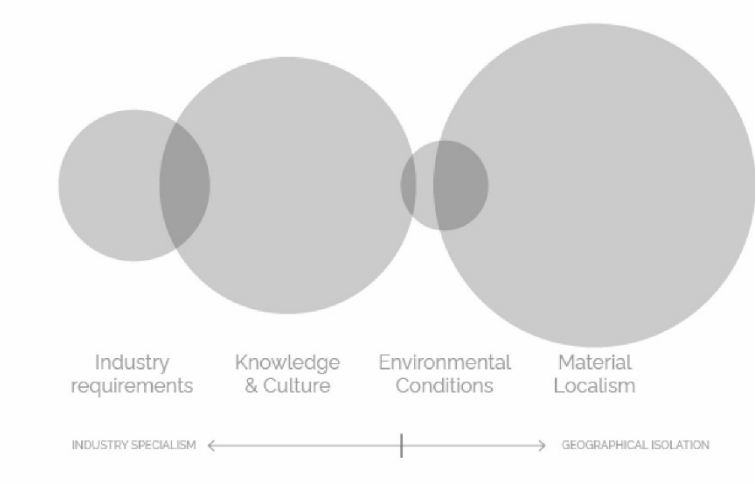

Figure 18. Generation of Place Identity in Cambridge

The re-modelled 1970's Rank building is "unified through a consistent palette of high-quality traditional materials including oak, stone, brick and quarry tiles" (González, 2017) chosen to suit the historic setting. Yet it remains innovative with its "loose geometry, use of daylight and simplicity of forms" (RIBA, 2018), propelling the existing identity while still echoing the rhythm of the original façade and adjoining buildings – the structural spacing has been retained and mimics the width of the neighbouring terraced housing [Figure 19]. The intervention combines a selection of dissimilar buildings, drawing upon the existing Cambridge identity and local materials, to provide "vital life for the College community [and] an outward-looking public presence in the centre of Cambridge" (González, 2017).

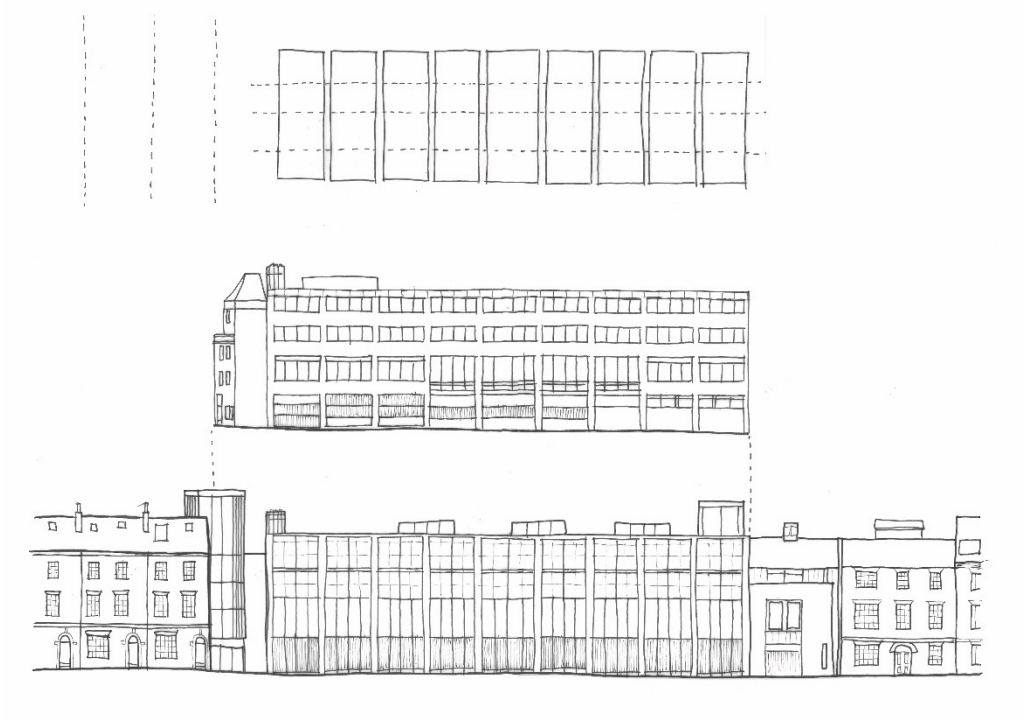

Figure 19. Rhythm of Jesus College Elevation showcasing historic and contemporary façades

EVOLVED PLACE IDENTITY: PLACE THROUGH TIME

David Brownlow Theatre, Newbury

To the southwest of Newbury, Horris Hill school appears almost isolated as a campus –a little village– providing a holistic education within 65 acres of countryside [Figure 20]. The cluster of red brick, hanging terracotta tile and

pitched gable buildings form a tight-knit and protective community for boys aged 4-13 years. Although there have been additions to the campus since the original building was completed, the unity of the settlement has been largely maintained, with most additions having been placed near the original Victorian school building.

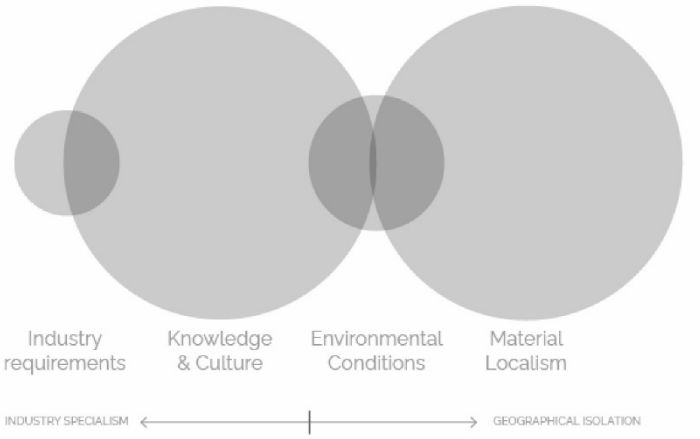

Figure 20. Generation of Place Identity in Newbury

The new theatre acts as a place of assembly within the school, whilst simultaneously utilising the performative nature of the architecture to create an external civic courtyard – "a new centre of gravity on the western side of the campus" (Jonathan Tuckey Design, 2020). The important role that theatre and public speaking play within the educational approach of the school is reflected in the interpretation of the campus as becoming a "little city" (Jonathan Tuckey Design, 2020), evolving the identity of the settlement significantly. This is emphasised in the façade design, with a prominent timber portico fronting the newly created 'Greenhill courtyard' [Figure 21], in many ways referencing the entrance of a classical temple. Jonathon Tuckey suggested the design for the theatre had been motivated in part by the vision of the Victorian school

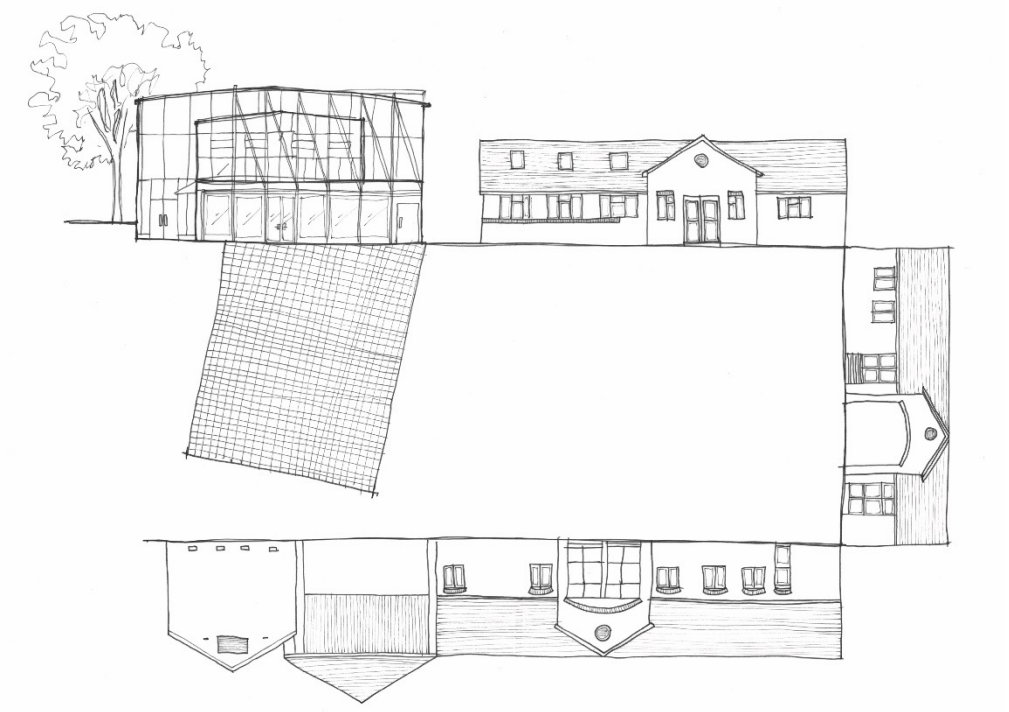

Figure 21. David Brownlow Theatre Courtyard Elevations

campus as a 'gothic' brick hill-town, with "the arrival of the new theatre building as analogous to the arrival of new civic forms within the Italian cities of the Quattrocento" (Jonathan Tuckey Design, 2020).

While the civic and performative nature evokes an evolved identity, the material language "draws from its surroundings" (Jonathan Tuckey Design, 2020), referencing both the textured red hues of the surrounding brick structures and nearby woodland [Figure 22]. The repetition of equally sized Viroc panels endows the building with rhythm and elegance both horizontally and vertically, recalling the appearance of Renaissance churches. Making use of Viroc sheets cut to minimise wastage, the facades are inventive in their ability to provide the building with varied depth and three-dimensional texture using only flat sheet

Figure 22. David Brownlow Theatre 1:20 Model showcasing the Material Language of the scheme

materials, rather than the solid construction of the nearby Victorian buildings. The designers have worked on themes of 'collective memory' rather than 'replication' to provide an evolved sense of place.

The theatre is formed with the ubiquitous use of engineered timber, consisting of a CLT frame surrounded by Viroc cladding [Figure 23]. These are ancient construction techniques updated for the modern era, with timber engineered offsite and cut as efficiently as possible to reduce wastage and emissions. Through the use of modern construction methods, however, the imperfections and traces of makers' tools are absent. Links are made to Tudor theatres through the inclusion of timber-framed stalls, while polished black Viroc is cut into a similar formation to the stone floors of great 17th Century public buildings. Contemporary engineered materials root the building in architectural history, yet it portrays an identity different to that of the existing red brick village.

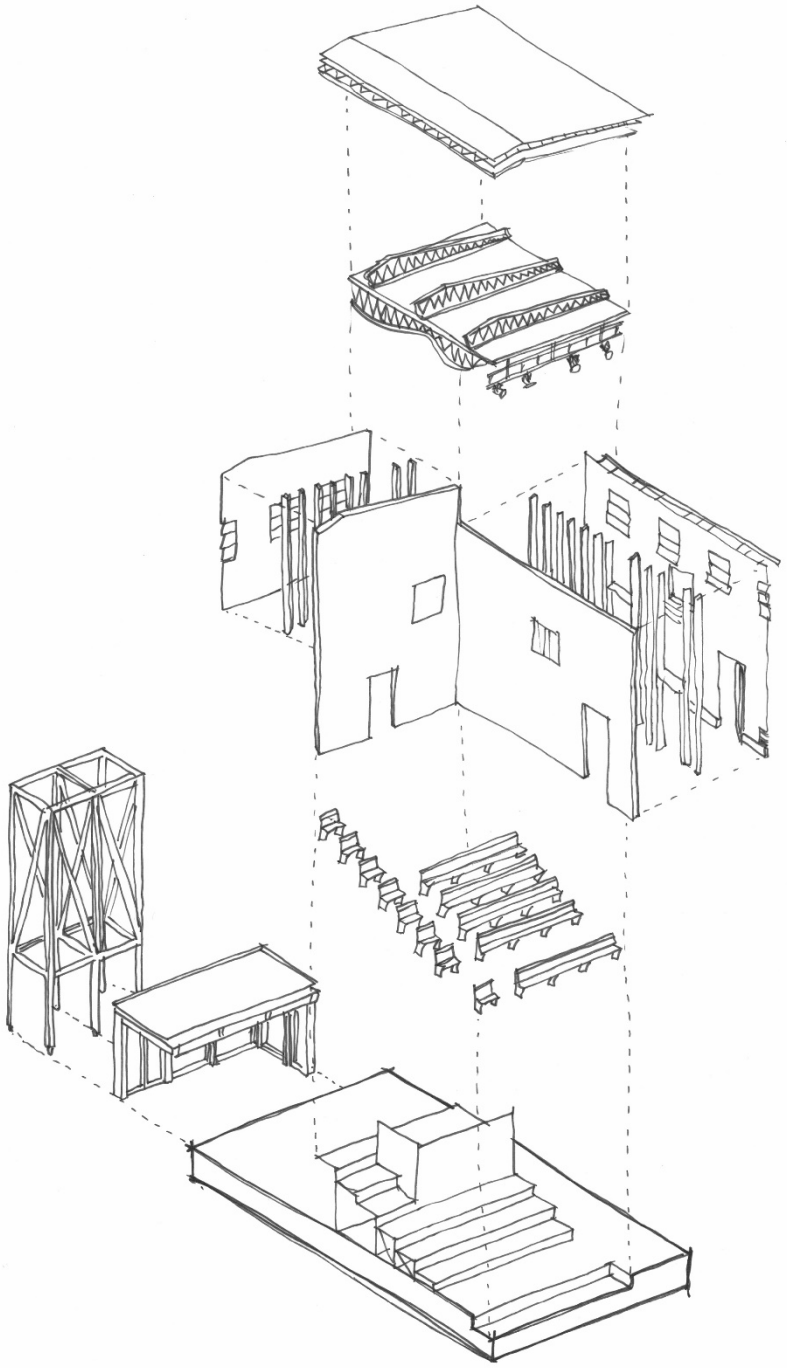

Figure 23. David Brownlow Theatre Exploded Construction Axonometric

This is a sustainable, contemporary piece of architecture that takes full advantage of modern manufacturing techniques to evolve the identity of Horris Hill school, activate the built context immediately surrounding the site and bring in to use several under-utilised and unloved spaces. While tangible links to the existing place identity are minimal, intangible connections achieve an evolved 'rootedness' that enables the building to fit with its context, and in many ways take command of the place identity of the settlement, revealing a new identity for the existing buildings.

CONCLUSIONS: PLACE THROUGH TIME

The review of literature alongside the case study analysis has allowed the speculation of a series of conclusions.

Pathogenic & Propelling Artefacts

It appears the strongest and most static place identity occurs in places with rapid periods of growth and recession, showcased clearly by Lavenham village. If an area is developed over a short space of time – within a period of uniform place identity - it is more likely to remain in a pathogenic position. Evolutions feel more out of place in contrast to places built over a longer period, where there are already multiple strands of place identity prevalent. Where place identity is constantly evolving, it could be suggested the speed of the evolution is determined by the number of pathogenic and propelling elements - more propelling elements leads to faster development of a place's identity. This evolution can be successfully conveyed using both material and formal language, although a conversation between the two is often most effective. A pathogenic form and propelling material language can allow for a sustainable approach to architectural placemaking, as demonstrated by the Pier Arts Centre and Windermere Jetty Museum, while Jesus College, Cambridge demonstrates a successful approach with a pathogenic material choice and propelling form.

Tangible & Intangible Place Identity

Time deals with the intangible – the memory, both individual and collective. This is true for both places and buildings themselves - both can generate and emote memories (Hornstein, 2011; Day, 2002); "the very permanence of buildings makes them predestined for use as bearers and points of orientation in individual and collective memory" (Breitling, 2012). It appears intangible place identity relies on collective memory, which, while allowing for a deeper and more personal connection, also requires predetermined knowledge and experiences. For "our experience of the present very largely depends upon our knowledge of the past" (Connerton, 1989); the collective knowledge of the past, therefore, is reflected in the collective experience of the present. These intangible connections based on collective memory lead to a more propelling place identity, as the connections to place can be more abstract and subconscious. Finally, it could be suggested that place identity is described as evolved - that the place identity is different to that of before - when there are only intangible connections to the existing place identity remaining. The David Brownlow theatre uses a series of intangible connections that allow it to achieve a successful sense of 'sitedness' while the tangible, material and formal language has propelled and developed towards a new civic identity.

Final Thoughts

The world changes. Currently, it appears, it is changing faster than ever. Place identity has played a strong role in maintaining the authenticity of place, whilst simultaneously revealing the world to the people, and the people to themselves. Yet how can this notion be reconciled with a "transformative state of identity and

multiple sources of local and global influence?" (Heath, 2009). It requires place identity to be equally transformative and revealing - evolving and propelling alongside people, place, and culture. For "as time changes so do the uses and meanings embedded in a place" (Kief, 2015), suggesting the passing of time is as crucial as the original creation of a place.

Conflict of Interest

No conflict of interest was declared by the authors.

Authors' Contributions

The authors contributed equally to the study.

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In this research, the necessary permissions were obtained from the relevant participants (individuals, institutions and organizations) during the survey, in-depth interview, focus group interview, observation or experiment.

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Chris Bennett received an MEng in Architecture and Environmental design and an MArch in Architecture from the University of Nottingham. His thesis project, which was nominated for the RIBA Silver medal and the AJ Student Award, proposed a necklace of community buildings along the pierheads of Stromness, Orkney, with a focus on subtly evolving the architectural identity of the town to be more performative and sustainable. He is now continuing his architectural career in industry at dRMM Architects in London, where he is developing his knowledge in sustainable architecture.

Laura Hanks is Associate Professor in the Department of Architecture and Built Environment at the University of Nottingham, where she teaches across the undergraduate and postgraduate programmes. Laura's research interests coalesce around contemporary contemporary museum design, the architectural expression of identities and issues of narrative place making.Her key publications include the monographs *Museum Builders II* (John Wiley and Sons, 2004) and *New Museum Design* (Routledge, 2021), the co-edited volume *Museum Making: Narratives, Architectures, Exhibitions* (Routledge, 2012), and chapters in *Architecture and the Canadian Fabric* (UBC Press, 2012), and *The Future of Museum and Gallery Design* (Routledge, 2018).

Research Article

An Evaluation Set Proposal on the Interaction of Cinema & Architecture for Improving the Creative and Aesthetic Dimensions in Architectural Art and Education

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Abstract

Architect candidates must undergo a qualified aesthetic and cultural education in a professional field such as architecture that outweighs the artistic side. This idea originates from the belief that architectural projects and designs by architects with a profound artistic-cultural education enriched by global culture would enhance aesthetics and liveability. Understanding great works of art is pivotal to reshape societal and architectural aesthetics.

The relationship between architecture and cinema starts primarily with the spaces.Thus, exploring the interplay between architecture and cinema within spatial designs is crucial. This article aims to establish an evaluation set uncovering the original architectural and artistic elements in movies that heavily rely on architecture. Our objective is to equip architects, interior designers, urban planners, industrial designers, and landscape architects with the tools to analyze films referencing architectural art and derive insights.

The research methodology involved a comprehensive analysis of various films, assessing architectural concepts, design principles, and the architectural perception they convey. Each film's architectural and cinematic interplay was scrutinized, and the findings were compiled into tables. The components within these assessment tables were meticulously interpreted in relation to architectural concepts, design principles, artistic aesthetics, and architectural perception.By internalizing the films examined in this study, a cultural maturity can be achieved, offering a valuable resource for enhancing the aesthetic, theoretical, and artistic aspects of architectural education. The primary goal is to inspire architects with a deep understanding of these cinematic works, enabling them to approach their profession, events, and projects with a refined, sophisticated, and aesthetic perspective, ultimately contributing to their professional growth.

In conclusion, the internalization of the analyzed films can lead to cultural maturity, which, in turn, serves as a valuable resource for enhancing aesthetic, theoretical, and artistic qualities in architectural education.

Keywords: Interaction between architecture and cinema, Architecture in cinema, Architectural education, Space in cinema, Evaluation set.

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Araştırma Makalesi

Mimarlık Sanatı ve Eğitiminde Yaratıcı ve Estetik Boyutun Yükseltilebilmesi İçin Sinema-Mimarlık Etkileşimine Dair Değerlendirme Seti Önerisi

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Özet

Mimarlık gibi sanatsal yanı ağır basan bir mesleki alanda, mimar adaylarının nitelikli bir estetik ve kültürel eğitimden geçmesi gereklidir. Derin bir sanatsal-kültürel eğitimden geçmiş, dünya kültürünü özümsemiş mimarların yapacağı eserlerin ya da düzenleyeceği çevrelerin daha yaşanabilir ve estetik olacağı düşüncesi bu çalışmanın çıkış noktası olmuştur. Bu anlamda; toplumda ve mimarlarda yeni bir estetik algı yaratmak için büyük sanat yapıtlarının yakından tanınması gerekmektedir.

Mimarlık ve sinema arasındaki ilişki öncelikle mekânlardan başlar. Dolayısıyla mimarlık ve sinema arasındaki etkileşimi mekân tasarımı üzerinden ele almak gerekir. Makalenin amacı,mimari arka planı yoğun önemli sinema yapıtlarındaki mimarlık kavramları, mimari tasarım ilkeleri ve mimari algıyı inceleyerek, filmlerdeki özgün mimari ve sanatsal değerleri ortaya çıkaracak değerlendirme seti oluşturmaktır. Mimarlık sanatına referans veren sinema eserlerinin mimarlar, iç mimarlar, şehir plancıları, endüstriyel tasarımcılar ve peyzaj mimarları tarafından doğru bir şekilde anlaşılarak analiz edilebilmeleri ve buradan çıkarsamalarda bulunabilmeleri için araçlar geliştirmektir.

Metodolojide,tüm filmlerde listelenen filmler kapsamlı bir şekilde incelenmiş ve mimari konseptler, mimari tasarım ilkeleri, mimari algı ve atmosferler üzerinden değerlendirilmiştir. Her bir film mimarlık ve sinema etkileşimi açısından değerlendirilmiş ve bulgular tablolaştırılmıştır. Değerlendirmeler tabloda gruplandırılarak setler elde edilmiştir. Her bir değerlendirme setinin öğeleri, mimari kavramlar, tasarım ilkeleri, sanatsal estetik ve mimari algı açısından ayrıntılı olarak yorumlanmıştır.

Bu çalışmanın hedeflediği film yapıtlarının özümsenmesi ile erişilen kültürel erginlik sayesinde mimarlık eğitiminde estetik, kuramsal, sanatsal niteliklerin yükseltilmesi için faydalı kaynaklara ulaşılması mümkündür. Söz konusu derinlikli yapıtlarla beslenen mimarların gelişkin, sofistike ve estetik bakış açısı ile mesleğe, olaylara ve projelere yaklaşımı ve nitelikli gelişim göstermesi asıl hedeflenendir.

Sonuçta, incelenen film yapıtlarının içselleştirilmesi yoluyla, mimarlık eğitiminde estetik, kuramsal ve sanatsal niteliklerin geliştirilmesi için değerli kaynaklar sağlayan kültürel olgunluğa ulaşmak mümkündür.

Anahtar Kelimeler: Değerlendirme Seti, Mimarlık Eğitimi, Mimarlık ve Sinema Etkileşimi, Sinemada Mekan, Sinemada Mimarlık.

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INTRODUCTION

In Turkey, some cities possess distinctive features and exceptional values in terms of historical heritage. Therefore, as urbanization accelerates, many cities have unfortunately lost their unique identities due to the prevalence of poor designs and inadequate and unremarkable buildings. The responsibility for these falls on the whole society, particularly the architectural community. Later, the cities experienced a notable shift in focus toward economic interests and lost much of their aesthetic accumulation.

Undoubtedly, individuals from diverse backgrounds contributed to the development of this architectural setting. Among them are the architects themselves. The architects are not solely responsible for all these adverse outcomes. The emergence of this situation can be attributed to social attitudes, political preferences, and the challenges faced during this era.

Architect candidates must undergo a qualified aesthetic and cultural education in a professional field such as architecture that outweighs the artistic side. The idea that the projects to be made or the environments to be designed by architects who have undergone a deep artistic-cultural education and have absorbed the world culture will be more livable and aesthetic has been the starting point of this study. In this sense, great works of art must be recognized closely to create a new aesthetic perception in society and architects. Architectural education and the profession must prioritize creating a qualified architectural environment by raising awareness and equipping themselves and the community on this issue.

Architecture has been in relation to various branches of art. Painting, sculpture, literature, and so on. At the interaction between architecture and cinema, it is possible to take advantage of the visual power of cinema, its ability to give a sense of space close to reality, and the spatial alternatives it creates. The methods and different perspectives presented by these two branches of art nourish each other.

Research on the relationship between architecture and cinema and their interaction has focused on space design. Studies on the definitions of space in cinema and the methods of designing the space have also been carried out in our country to a certain extent. As a matter of fact, between 1996 and 2015, a total of 44 dissertations were made on the intersection of "cinema-architecture" (Ünver, 2010). However, among these theses, the number of studies that directly examine the contribution of the art of cinema to the discipline and education of architecture, *space design, fiction, vision, and aesthetic value* is insufficient. While some cultural sources are available to support the architectural design approach in this regard, they are not comprehensive enough. (Donald, 2000; Damrau, 2000; Eisenstein, 1994; Fear, 2000; Lamster, 2000; Neumann, 1999; Pallasmaa, 2006; Pallasmaa, 2007, Shonfield, 2000).

The relationship between architecture and cinema starts primarily with the spaces. Therefore, it is necessary to consider the interaction between architecture and cinema through the design of spaces. This article aims to develop an evaluation set that examines the architectural concepts, design principles, and perceptions portrayed in notable films with a strong architectural background and to uncover these works' original artistic and architectural values. One of our goals is to create tools that enable architects, interior architects, urban planners, industrial designers, and landscape architects to accurately comprehend and examine cinema works that reference the art of architecture and draw conclusions from them.

LITERATURE REVIEW

The notion of architecture's potential to shape this area has been present since the inception of cinema. According to Lindsay (2015), architects are crucial in advancing creative filmmaking.

Various approaches have been taken to address the design of spaces, definitions of spaces in cinema, and space design issues in the interaction between cinema and architecture. According to Pallasmaa, "Both architecture and cinema articulate lived space. These two art forms create and mediate comprehensive images of life. Both art forms define dimensions and essences of existential space; they create experiential scenes for life situations." (Pallasma, 2007). Based on the traces of the practical relationship between architectural practice and cinema, Masiero states, "Since the mid-twentieth century, many artists have followed the methods of architects in creating and bringing their works to life." (Masiero, 2006).

In her writing, Açalya Allmer explores the connection between space and cinema and notes that the concepts of criticism, imagination, representation, control, transformation, and utilization that apply to architecture are also relevant to film and cinema. In her book, she examined the critical approach in the architectural design process, the thought of the space forming the design first and then the representation of the ideas of the space by methods such as plan-section, the usefulness of the spaces created by these representations by people, the task of the architect to control the space created and the mutual exchange and transformation of the designed space together with the users and wrote that these have similarities with the filmmaking processes of the director in cinema (Allmer, 2010).

Cinema presents not only future spaces that have not been experienced but also carry spatial avantgardism within it by offering new horizons to images and architectural concepts that distort human perception or go beyond the boundaries of human perception of space. Thus, it creates the design inputs that inspire the designer. According to Anthony Vidler, cinema has been a valuable platform for testing and exploring architecture. In his words, "Films have served as a laboratory for architecture, for the exploration of the built environment and architecture from the very beginning." (Vidler, 1999).

Architects have begun to take advantage of cinematography for architecture. Neaumann supported this with the view that there are concrete parallels and similarities in the process of architecture and film production (Neaumann, 1999). In the interaction between architecture and cinema, cinema has inspired the designs of well-known contemporary architects such as Bernard Tschumi, Rem Koolhaas, Daniel Libeskind, and Jean Nouvel. Rem Koolhaas, an architect and a former screenwriter, highlights that there are only slight distinctions between architecture and filmmaking (Koolhaas, 1996). According to Bernard Tschumi, architecture emphasizes the importance of mental interpretation in cinema beyond the dimensions of time and space. The structures portrayed in movies hold a considerable impact, capable of shaping the architecture of the future. The spaces and the life situations made palpable by the completion of the images on the screen by all the images formed in the memory gain meaning in the direction of what the images evoke in the person's mind (Tschumi, 2000).

Architecture and cinema often utilize common techniques such as framing, camera angles, sequencing, collage and montage, scale, perspective, shot scale, lighting, color, and time. Architect Jean Nouvel explains the influence

of cinema on his design as follows: "In the continuous shot/sequence that a building is, the architect works with cuts and edits, framings and openings. I like to work with the depth of field and to read the space in the context of depth. That's why all my buildings have intersections that are achieved by superposing different screens." (Fillion, 1997).

The space depicted on the cinema screen is not an exact replica of the architectural space but rather an interpretation of it. Recently, there has been increased research on these issues within our country. Especially from the master's and doctoral theses (Aksoy, 2003; Babaoğlu, 2004; İnce, 2007), we see that the production and use of space in cinema and the methods of space design are examined at the intersection between cinema and space. In the interaction of cinema with other design disciplines, it has been seen that some topics, such as the visual communication of concepts, technological advancements, similarities in methodology, issues with modern architecture, representation of space, and more, are studied.

Gökçe Beşışık examined the interdisciplinary approaches in the processes of creating the film space and the architectural space in "*Space Fiction and Understanding in Cinema and Architecture*" (Beşışık, 2013). In the Berlin Jewish Museum and Dogville section, an architectural structure and a film are analyzed in terms of cinematic and spatial elements. The Berlin Jewish Museum and Dogville film, which are being studied, explore themes of nothingness, absence, and deprivation in their spatial and cinematic elements. These themes are presented within an ideological framework that contains multiple parallels. Especially in the production of "*cinematic space" and "architectural space,*" the commonalities in the interaction of cinema and architecture and the parallels of the methods and techniques borrowed from each other were emphasized.

Zeynep Güngör's thesis on industrial design titled "*How do Objects Communicate: Set Design Analysis of Stanley Kubrick's 'A Clockwork Orange'*" examines the potential of both design and cinema to communicate an idea or a concept using visual tools in interdisciplinary relations (Güngör, 2008). The study has demonstrated that the figurative imagery portrayed in movies can be utilized to uncover the correlation between cinema and design. In the movie "*A Clockwork Orange,*" which was selected as an example, semiotic analyzes of the elements that make up the sets were made, and the meanings and indicators of the elements and environments that make up the set design were explained.

The study of space through the films of director Ridley Scott, four of the director's films were studied in Mete Ümit Meterelliyoz's thesis "*The Use of Space in Ridley Scott Cinematography.*" While outer space is examined through "*Alien,*" urban space through "*Blade Runner,*" landscape space through "*Thelma and Louise,*" and public space through "*Gladiator*" movies, it is explained that many of the methods used by the director in creating space are directly related to architecture. It has been said that the software he used in his films in 2000 coincides exactly with the software that allows the creation of architectural space in a digital environment, that the methods he uses are repeatable, and that he is a guide for designers working at the scale of space, especially in the digital domain (Meterelliyoz, 2001).

Director Peter Greenaway's cinematography delves into the intersection of architectural history, literature, and art history, showcasing a multidisciplinary passion. In the cinematography of Greenway, the movies "*The Cook, the Thief, His Wife and Lover,*" "*Prospero's Books,*" and "*The Pillow Book*" delve into the

history of architecture from the history of reading by exploring the relationships between the body, books, and space through visual representations (Horuz, 2010).

John Rajchman's enigmatic concept of the virtual house has been explored in science fiction films, analyzing the intricate connections between humans, machines, and space (Rajchman, 1998). Kaçmaz and Uluoğlu examine the impact of the virtual house on architecture in the context of Paul Renders' film "*Thomas in Love*" (2005).

THE METHOD OF RESEARCH

In the first part of the study, the publications on cinema-architecture interaction were scanned, and 119 films emphasizing architecture were examined with preliminary research. The films listed in the table below were scrutinized extensively and assessed based on architectural concepts, architectural design principles, and architectural perception and atmospheres. Each film was evaluated regarding the interaction of architecture and cinema and the findings were documented to the table. The sets were obtained by grouping the evaluations in the table. The elements of each evaluation set were interpreted in detail in terms of architectural concepts, design principles, artistic aesthetics, and architectural perception. Inferences from these interpretations led to a dedicated effort to acquire valuable creative tools related to the field of architecture.

CREATION OF THE EVALUATION SET

The concepts in the selected 68 films were examined in terms of design principles, aesthetics, functionality, and perception, and evaluations and contributions of architecture that stood out in each film were revealed. These were classified as follows: 1. Spatial setup 2. Design innovations and inventions 3. Inspiration for real life 4. Technological innovations 5. Imaginary richness 6. Fictional richness 7. Vision (on space) 8. Fantasy to elevate design knowledge 9. Different ideas about new and other lives and worlds 10. Architectural artistry, aesthetics and avant-garde Below, we will provide a detailed explanation of these evaluations grouped within the framework of the relationship between architecture and cinema.

Table 1. below shows the films evaluated based on the category they were shown in as the source of evaluation. Some films were included in multiple categories. The number of evaluations on the architectural background of each film varies.

The design and creation components of the architectural art in the evaluation set, which emerged as a result of the literature reviews and the examination of the films classified in the table above, are interpreted in detail below:

1. Spatial setup

Cinema inherently starts with a spatial setup. In this sense, its starting point is the same as architecture. The vital situations established through the images awakened in our memory as soon as the architectural space is integrated with our minds can also pass to the physical dimension and materialize in the viewer's mind in the same way during the film in the cinematic space. In these aspects, film images expand the boundaries of our relationship with the world. While the images in the memory create fiction with new images, different images, and vital imaginations are revealed in our minds. Moreover, the visual content presented in movies is not confined to just architectural spaces. Cinema exhibits

Table 1. Evaluation set

Films Examined	**The combined values that the examined films offer to the art of architecture and design within the framework of design principles, concepts, aesthetics, artistry, and perception.**
1.Grand Budapest Hotel 2. Playtime 3. Mon Oncle 4. Koolhaas Houselife 5. Dogville 6. The Shining 7. BlowUp 8. Cloud Atlas 9. Blade Runner 10. The Fifth Element 11. Gattaca 12. A Clockwork Orange 13. Truman Show 14. The Lord of the Rings	***Spatial setup***
1.Grand Budapest Hotel 2. Koolhaas Houselife 3. Holy Motors 4. Panic Room 5. Cloud Atlas 6. Blade Runner 7. Alien 8. Matrix 9. They Live 10. Brazil 11. Inception 12. Alice in Wonderland 13. Jurassic Park 14. Charlie and the Chocolate Factory 15. 1984	***Design innovations and inventions***
1. Roman Holiday 2. Winter Sleep (Kış Uykusu) 3. Gurbet Kuşları 4. American Beauty 5. City of God 6. Salaam Bombay 7. Manhattan 8. Fellini's Roma 9. Before Sunrise 10. 24 City 11. Baraka 12. Koyaanisqatsi 13. Ekümenopolis 14. Manufactured Landscapes 15. My Architect: A Son's Journey 16. The Architect 17. Speer und Er 18. Sketches of Frank Gehry 19. The Conformist	***Inspiration for real life***
1. Inception 2. Cloud Atlas 3. The Fifth Element 4. Gattaca 5. Matrix 6. Blade Runner 7. Alien 8. Truman Show	***Technological innovations***
1. Grand Budapest Hotel 2. Cloud Atlas 3. Blade Runner 4.1984 5. Alien 6. The Man Who Fell to Earth 7. They Live 8. Inception 9. Alice in Wonderland 10. The Lord of the Rings 11. Jurassic Park 12. Suspiria 13. Edward Scissorhands 14. Charlie and the Chocolate Factory	***Imaginary richness***
1. The Belly of the Architect 2. Lost in Translation 3. The Da Vinci Code 4. Barton Fink 5. Johnny Got His Gun 6. Lost Highway 7. Panic Room 8. Rear Window 9. The Cabinet of Dr. Caligari 10. BlowUp 11. American Beauty 12. Muhsin Bey 13. Fellini's Roma 14. Tarkovski Cinema 15. Truman Show 16. Ulysses' Gaze 17. Ben-Hur 18. The Name of the Rose	***Fictional richness***
1. Dogville 2. Modern Times 3. Cloud Atlas 4. Matrix 5. The Man Who Fell to Earth 6. Inception 7. Truman Show 8. Jurassic Park 9. The Lord of the Rings 10. Charlie and the Chocolate Factory	***Vision (on space)***
1. Grand Budapest Hotel 2. Mon Oncle 3. The Fall 4. Dogville 5. Johnny Got His Gun 6. Rear Window 7. The Cabinet of Dr. Caligari 8. Cloud Atlas 9. Blade Runner 10. The Fifth Element 11. Alien 12. Brazil 13. Inception 14. The Illusionist 15. Truman Show 16. The Lake House 17. Jurassic Park 18. The Lord of the Rings 19. Edward Scissorhands 20. Charlie and the Chocolate Factory	***Fantasy to elevate design knowledge.***
1. The Belly of the Architect 2. Roman Holiday 3. Lost in Translation 4. The Da Vinci Code 5. Modern Times 6. American Beauty 7. City of God 8. Salaam Bombay 9. Alien 10. Brazil 11. Manhattan 12. Fellini's Roma 13. Doctor Zhivago 14. Troy 15. Baraka 16. Koyaanisqatsi 17. Ekümenopolis 18. Manufactured Landscapes 19. Alice in Wonderland 20. Jurassic Park 21. Merci Patron	***Different ideas about new and other lives and worlds***
1. Grand Budapest Hotel 2. Playtime 3. Mon Oncle 4. Dogville 5. The Shining 6. Lost Highway 7. Holy Motors 8. The Cabinet of Dr. Caligari 9. Muhsin Bey 10. Metropolis 11. A Clockwork Orange 12. Fellini's Roma 13. Doctor Zhivago 14. Truman Show 15. Tarkovski Cinema 16. Ben-Hur 17. Charlie and the Chocolate Factory 18. Edward Scissorhands 19. The Lord of the Rings	***Architectural artistry, aesthetics and avant-garde***

a free creation process with the support of imagination by using all kinds of visual arts and applications. In this sense, it has possibilities that architecture does not have. While architects must work within the constraints set by their employer or client, the world of cinema can use any image within an infinite realm of imagination. This aspect of cinema presents a practice of spatial setup that initiates and inspires unique, marginal, extraordinary, competent, and striking inventions. This practice is similar to what architecture seeks in reality.

2. Design innovations and Inventions

In addition to allowing the designer of the spaces to produce unreal representations of space, being a testing ground for architecture, creating memories of spatial experience, and offering spatial awareness, cinema has also shared its techniques and methods with the space designer. Space designers have adopted these cinematographic techniques as design input since cinema's discovery and widespread popularity. Another contribution of cinema thinking to the design process of architectural space is the potential to predict future spaces that are impossible to construct in the present. So much so that designers can partially or entirely transform the spaces that cannot be created today or use them as a design input by being inspired. For example, utopian and dystopian films often showcase futuristic space designs. Not only do these movies offer an incredible viewing experience, but they also present unique and creative design concepts for architects to consider. Furthermore, looking at it from an architectural perspective, cinema spaces can have innovative applications that may serve as inspiration for future practical uses. Because of all these features, it is possible to look at cinema as a laboratory that produces experimental products for architecture and as a fictional plateau and to carry the design innovations and inventions that occur there to the architectural field over time.

3. Inspiration for Real Life

Cinema provides an opportunity to experience places that have yet to be visited and create a rich spatial experience. Memories about places that have never been visited are embedded in memory and contribute to the architectural experiences of the individual. In this respect, it contributes to architectural culture and education and creates a richness of spatial experience. The art of cinema allows us to witness, experience, and share the diverse, conflicting, exceptional, and unexpected lives of people in regions, countries, and cities that we may not have the opportunity to visit. This provides architects with the essential elements of knowledge, manners, and experience in unexpected forms that will significantly benefit them. With the inferences obtained from this, it is possible to reach concrete ideas about how different forms of life can be maintained in different contexts and how they will be realized in architectural thought.

4. Technological Innovations

Cinema and architecture share common techniques and have become a reference for each other. Cinema presents exciting opportunities for exploring space through the use of camera techniques, technological advancements, and visual illusions. These techniques can be both inspirational and practical in architectural applications. For example, architectural animations, which have become easier to produce with the developing and widespread computer technologies, can be highly functional for architectural spaces that are still in conceptual and design stages, thanks to the time and motion parameters that animation inherently offers. It is believed that utilizing technology and its applications can be helpful in teaching and representing architecture by creating

a perception of space. Architecture can also benefit from cinematography techniques such as framing, montage, sequence, and light as design inputs.

5. Imaginary Richness

The art of cinema benefits from architecture by creating virtual spaces, reconstructing existing spaces, and incorporating architects and architectural products into its storytelling. While cinema utilizes architecture as a tool, architecture finds inspiration in cinema to delve into the complexities of the human mind. The cinematic productions that depict real-life locations can either reinterpret these spaces through the director's perspective or use them as a reference to create new environments or speculate on what the future of these spaces might look like. But most importantly, the pioneering directors pursuing the art of cinema must have the vision and imagination to succeed. It is typically expected that directors in the film industry possess exceptional vision and creativity capabilities. The imaginative creations can offer valuable insight and inspiration during the various stages of architectural design.

6. Fictional Richness

Cinematic products that reconstruct spaces can sometimes create unrealistic, degenerated, or exaggerated environments that do not accurately represent reality. The objective is to narrate the story most effectively. In a cowboy drama, for example, a cinematic space can be obtained by constructing only the façade of the typical cowboy town. Choosing this option is far more economical and feasible than building an entire town. It is also enough to narrate the story. Unfortunately, the architect has no way of making this in real life. Yet, the architect can gain new and unique fictional ideas by observing and getting impressions from that virtual world designed with specific assumptions. It is like the solution of an equation with two unknowns. It is possible to determine the potential solution of one side of a problem by examining the already solved side. Therefore, the free spaces that filmmakers easily construct are reflected in the world of architects as new experiments and allow speculating on the results.

7. Vision (On Space)

The architectural space of the cinema, which will be redesigned and subsequently built and used, may bear qualified and experimental propositions about the vital positions that may occur in the future and the predictions of society and people about the future. Based on these propositions, it is possible to make functional and rational inferences about the future vision and mission of the structure or space. This is one of the most fundamental concerns in architecture. Spaces that are not technologically possible to produce today can be created through cinema. These conceptualized spatial products can be brought to life or serve as inspiration when conditions allow. These environments can offer valuable insights into how present-day structures may appear in the future. During the early years of cinema, it was recognized that films had the potential to serve as the foundation for the architecture of the future. After watching Metropolis in 1927, Luis Buñuel said: "Film will be the faithful translator of the architect's boldest dreams." (Bunuel, 2004).

8. Fantasy to Elevate Design Knowledge

The cinema provides the space designer with the opportunity to create imaginary spaces. Cinema is a testing ground for architecture. Cinema can create memories of places that haven't actually been to and give a sense of spatial awareness by presenting spatial images from different perspectives and scales. Utilizing its techniques and methods as design input can provide the potential for architectural design knowledge. Cinema spaces contain reality and beyond together and make the subject feel that she is experiencing the

space with her whole body, even while experiencing it only with the sense of sight. Cinema can create fantastic architectural spaces that serve their function and evoke emotional responses from viewers. Carefully placing these architectural patterns within the architectural space presents new and exciting opportunities for designers. The movie space provides the architecture with imagination, design knowledge, and different ideas for application by making the experience of space, which can sometimes be fantastic and surreal, feel very close to reality.

9. Different Ideas About New and Other Lives and Worlds

Movies usually focus on the unique, the diverse, the thrilling, the motivational, and the exceptional. Even in dramatic fiction that handles the ordinary, cinema shows us other people's living spaces, other places, countries, cities, and lives. The majority of these lives exist beyond our small, physical world. Through cinema, we become partners in this vitality, spatial fiction, the universe of emotions and dreams, and in particular, the contemporary architect, who designs the space not for himself but for others, needs to know and experience these lives beyond his own perception. Cinema reveals the vast universe of experience, fantasy, dream, observation, and that secondary, tertiary, and quaternary lives. These showcased experiences contain valuable information, data, and components that are essential for every architect.

10. Architectural Artistry, Aesthetics and Avant-garde

Through the art of cinema, a previously perceived ugly and negative place can be transformed into a visually pleasing and appealing space through aestheticization. This process can be referred to as converting stillness in space to a state of movement. The film spaces are not only in agreement with the story but can also symbolically represent the significance of the space portrayed to viewers. While creating the background of the narrative, the director sheds light on the individual's feelings and the space's characteristics and draws his character and story in such a way as to reflect all its features. As he works on the project, he aims to infuse life into the room using various elements such as time, rhythm, color, sound, shadow, texture, and light, much like in architecture. It aims to attain high admiration through the aesthetic aspect, which draws inspiration from various other art forms such as painting, music, sculpture, architecture, literature, and more. The cinema can blend various art forms into a single entity, resulting in distinctive styles. These artistic, aesthetic, and avant-garde practices can also be used in architecture by being experienced in cinema or inspired by cinema. While all these artistic activities for the setting of the space add character to the film, they also offer aesthetic and artistic ideas to the architects.

CONCLUSION

In this study, it is believed that the above evaluation set will contribute to the architectural analysis and interpretation of the films, within the framework of architectural concepts, architectural design principles, architectural aesthetics, and architectural perception, in the film readings made in the context of architecture-cinema interaction.

Through internalizing of film works analyzed in this study, it is possible to achieve cultural maturity that provides valuable resources for enhancing aesthetic, theoretical, and artistic qualities in architectural education. The primary objective of this study is to inspire architects with a profound understanding of the said cinema works, enabling them to approach their profession, events, and projects with a refined, sophisticated, and aesthetic viewpoint, ultimately leading to qualified development.

This study aims to initiate the transformations of understanding in the field of architecture. To make future cities more livable, it is necessary to watch, comprehend, appreciate, and internalize cinema works that emphasize architecture. This is necessary not only for students but also for architects, urban planners, academics, artists, and even anyone with an urban consciousness.

One of the primary objectives of this research was to enrich the approaches that address interdisciplinary cooperation in architectural education and training. This study provides fresh perspectives on the architectural education program and research areas. (New course suggestions, graduate and doctorate topics, research areas, etc.)

Due to advancements in technology, the current educational approach in architecture, urbanism, and interior design has become outdated (Ayıran, 1995; Türkyılmaz, 2010; Önel, 2000; Aközer, 2013). Computers can significantly aid in tasks such as technical drawing, static calculation, planning, material requirements, workflow, and more. Architectural creation has been centered around various aspects such as aesthetic theories, artistic background, creative ideas, comprehensive knowledge of the world and life, the ability to make the right decision, and global general culture. The importance of these issues in architectural education has not yet been fully understood (Kahvecioğlu, 2001; Foquè, 2009). Unfortunately, architecture faculties often graduate students who lack proficiency in aesthetic, intellectual, artistic, and cultural aspects, and the professional practices of these graduates contribute to the creation of poor architectural environments that exist today.

In light of the above explanations, a conscious and in-depth architecture must follow, examine and internalize works of art and thought related to basic architectural issues in architecture, urbanism, and design education. However, more than the sources and studies to help increase the quality of architecture and design education, emphasizing the importance of theoretical studies and raising the cultural level of students and society is needed in Turkey. The findings of this research are believed to possess qualities that can inspire architects and aspiring architects in their creative endeavors.

Conflict of Interest

No conflict of interest was declared by the authors.

Authors' Contributions

The authors contributed equally to the study.

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In this research, the necessary permissions were obtained from the relevant participants (individuals, institutions and organizations) during the survey, in-depth interview, focus group interview, observation or experiment.

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Research Article

A Study on Gathering the Opinions of Architecture Students to Enhance User Interaction with Historical Urban Fabric: A Case Study of Tepebağ District in Adana Province

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Abstract

The historical urban fabric is an important part of our cultural heritage, and historical districts are valuable assets that reflect the identity and character of a city. However, over time, what kind of changes, unplanned urbanization, and other factors reduced the authenticity and user interaction of these historical districts. The urban historical fabric, which can be considered as cultural heritage, has the chance to sustain its continuity under the responsibility of various professions, especially the discipline of architecture. Based on this reality, it is inconceivable for an architecture student, who is educated to learn, comprehend, and preserve the historical fabric, to remain indifferent to the cultural heritage of a city. In this context, a study was conducted to gather the opinions of architecture students with the aim of increasing their interaction with the historical urban fabric. The objective was to use the views of responsible architecture students as data in collaboration with stakeholders to improve and enhance the interaction with the historical urban fabric.

The study measured the demographic information and awareness of architecture students at Çukurova University regarding the field through a questionnaire. The reasons and frequency of users' experiences in the area were analysed. Within the scope of the study, participants were presented with sample images from cultural, economic, social, educational, and public open/semi-open space categories within the historical fabric. Using a 5-point Likert scale, the study aimed to determine the preferred value and rationale of these spaces if they were located in Tepebağ. The results of the survey aimed to increase the interaction of architecture students, aged 18-26 (+), with the significant historical fabric of Tepebağ District in Adana Province. The study aimed to gather their opinions and recommendations regarding the historical fabric and to contribute to initiatives that increase the interaction of young individuals with the historical fabric by sharing the collected data with relevant institutions.

Keywords: Historical Fabric, Tepebağ, Experience Analysis, Architecture Students.

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Araştırma Makalesi

Tarihi Kent Dokusuyla Kullanıcı Etkileşimini Artırmak Amacıyla Mimarlık Öğrencilerinin Görüşlerin Toplanması Üzerine Bir Çalışma: Adana İli Tarihi Tepebağ Mahallesi Örneği

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Özet

Tarihi kent dokusu, kültürel mirasımızın önemli bir parçasıdır ve tarihi mahalleler, bir şehrin kimliğini ve karakterini yansıtan değerli varlıklardır. Ancak, zamanla yapılan değişiklikler, plansız kentleşme ve diğer faktörler nedeniyle bu tarihi mahallelerin özgünlüğü ve kullanıcı etkileşimi azalmaktadır. Kültür mirası olarak nitelendirilebilecek olan kentsel tarihi doku; mimarlık disiplini başta olmak üzere birçok meslek dalının sorumluluğu altında devamlılığını sürdürebilme şansını elde edebilmektedir. Bu gerçeklikten yola çıkılarak mimarlık eğitiminin tarihi dokuyu öğrenme, anlamlandırma ve yaşatma sorumluluğu çerçevesinde mimarlık eğitimi alan bir adayın kentin kültür mirasına duyarsız kalması düşünülemez. Bu bağlamda tarihi kent dokusuyla etkileşimi arttırmak amacıyla mimarlık öğrencileri görüşlerinin toplanması üzerine bir çalışma yapılmıştır. Amaç; tarihi kent dokusunun iyileştirilmesi ve etkileşiminin arttırılmasında sorumluluk sahibi mimar adaylarının görüşlerinin paydaşlarla iş birliğinde veri olarak kullanılmasıdır.

Çalışmada Çukurova Üniversitesi mimar adaylarının demografik bilgileri ve alan ile ilgili farkındalıkları anket çalışması ile ölçülmüş, kullanıcıların alanı deneyimleme sebepleri ve sıklıkları analiz edilmiştir. Çalışma kapsamında katılımcılara tarihi dokuda yer edinmiş kültürel, ekonomik, sosyal, eğitim ve kamusal açık/yarı açık mekân kategorilerinden örnek görseller yönlendirilmiş, 5 dereceli doğrusal ölçekle bu mekanların Tepebağ'da olması durumunda alanın mimar adayları tarafından tercih edilme değeri ve nedenselliği öğrenilmeye çalışılmıştır.

Anket çalışması sonucunda; 18-26 (+) yaş aralığında kümelenen Çukurova Üniversitesi mimarlık öğrencilerinin ülke ve kent için önemli bir tarihi dokuya sahip olan Adana ili Tepebağ Mahallesi ile etkileşimini arttırmak, tarihi dokuyla ilgili görüş ve önerilerini almak ve bu verilerin gerekli kurumlarla paylaşılarak gençlerin tarihi dokuyla etkileşimini artırmaya yönelik girişimlerde bulunulmasına ön ayak olmak çalışmanın hedeflenen çıktıları arasında yer almaktadır.

Anahtar Kelimeler: Deneyim Analizi, Mimarlık Öğrencileri, Tarihi Doku, Tepebağ.

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INTRODUCTION

Cities are settlements that gain meaning and identity with the combination of different elements. The traces of the people living in these settlements in the historical process are revealed through elements such as streets, districts, architectural structures and squares. These elements are the features that distinguish the city from other cities and make it unique. Various initiatives are being undertaken in order to preserve the historical texture and increase the interaction with the users. One of these initiatives is the integration of new functions that will serve to revitalize the area without damaging the existing urban and historical fabric Studies conducted in areas where cultural heritage is valued produce positive results by increasing user interaction with these areas and user adoption of the city.

In order to enhance interaction with Tepebağ District, which represents the historical urban fabric of Adana, and to prevent the perception of the city as a disconnected entity, the opinions of Çukurova University Department of Architecture students were sought. Quality assessments were conducted within the urban space, and spatial recommendations were put forward. This holistic approach aims to create a more livable and interactive space by preserving its historical texture and equipping it with new functions.

This study aims to take a step towards preserving the historical texture and increasing user interaction within the architectural discipline. Architecture students gain sensitivity to the cultural heritage of the city through this study and contribute to the sustainability of the historical texture. Additionally, the results of the study are used in cooperation with the relevant stakeholders, helping to make decisions to improve the historical texture and increase its interaction. Thus, it is aimed to enrich the urban life and increase the interest of the society in cultural heritage by ensuring the preservation and preservation of the historical texture in Tepebağ District and similar regions.

MATERIALS AND METHODS

The materials utilized in this study encompass a wide range of sources, including books, e-books, articles, journals, papers, archives from various institutions and organizations, as well as resources from master's and doctoral theses accessible through the Council of Higher Education's thesis catalog. Additionally, the research draws upon thesis studies conducted abroad and written documents derived from internet resources that form the foundational conceptual content of the study.

The study area is Adana Province Historical Tepebağ District, and interaction analysis, quality evaluation and spatial suggestion evaluations of this texture were performed. The data of the research was obtained by the survey analysis method. The subject group of the study consists of the students of Çukurova University Department of Architecture. The number of active students of Çukurova University Department of Architecture is 503 and the questionnaire was applied to 106 people within the scope of the study. In the preparation of the questionnaire, the knowledge and experience of the researcher, as well as the quality criteria of the urban space in the study "How To Design A Safe Public Space" by Madden (2002), were used.

In the context of spatial quality parameters, the survey questions in the study carried out to reveal the urban space quality assessment of Adana province Tepebağ District were prepared to measure how users perceive the urban

space in the historical texture. The survey study consists of three parts. In the first part, there are questions for the evaluation of the usage practice in the context of obtaining the demographic structure and the experience of the region.

"Have you experienced the Tepebağ region before?" asks the second part. Students who answered "yes were asked to evaluate the reasons for experiencing the historical urban space, the frequency of visits, the mode of transportation used when visiting the region, and the spaces with different functions (social, education, health, commercial, green texture). The rating was "Very sufficient/2". score- Sufficient/1 point- Undecided/0 point- Inadequate/-1 point- Very insufficient/-2 points". The problem was evaluated by taking the arithmetic averages of the obtained data.

In the following parts of the section, the participants were asked to evaluate the historical Tepebağ region in line with the quality parameters of Madden (2002) in urban space. "Strongly Agree (+2), Agree (+1), Undecided (0), Disagree (-1), Strongly Disagree (-2)" to analyze the questions prepared to determine the thoughts and evaluations on the urban space quality of Tepebağ District. A 5-point Likert scale was used and scored in the range of (+2) – (-2) values.

In the third part, it is aimed to collect suggestions and user opinions to increase the frequency of Tepebağ being preferred by the students of architecture department. In this context, respondents were asked questions related to visuals of venues with various functions, and their answers were requested using a 5-point Likert scale, ranging from 'Strongly Disagree' to 'Strongly Agree,' in response to the question, "If there were..." As a result of the analysis of all these survey data, suggestions were developed as research output.

THE CONCEPT AND IMPORTANCE OF URBAN SPACE IN HISTORICAL CONTEXTS

The concept of architectural space is defined as designed voids that fulfil users' psychological, social, physical, and cultural needs (Schulz, 1971). Urban space, which encompasses the public and social areas outside of buildings, is described by Kuban (1994) as an "organized artificial physical environment." It refers to the living places that have been embraced as a whole, with historic buildings and environments that have witnessed many events and managed to endure over centuries. Urban space represents the areas where people interact within a city, including streets, avenues, parks, squares, commercial centers, and cultural and historical structures.

The concept of urban space in historical environments refers to urban areas and locations within historical contexts. This concept underscores the interaction of period structures and spaces with the urban fabric. Urban spaces within historical contexts bear the imprints of the past while also responding to contemporary functional and social requirements. Historic city centers aim to preserve the inherited fabric and, in doing so, strive to maintain the vibrancy and sustainability of the city. The interventions and designs implemented in these areas aim not only to conserve the historical texture but also to create functional and aesthetically pleasing spaces that cater to the needs of urban users.

Historic urban centers, serving as tangible evidence carrying social, architectural, cultural, and economic traces from the past, are officially regarded as representations of cities and societies. The preservation and active engagement with these urban centers, which cities possess as their greatest legacy from the past, are crucial in bridging the gap between the past and the future (Arabacıoğlu and Aydemir, 2007). Today, historic urban spaces are

often less frequented compared to modern city centers and face the risk of fading into obscurity. Nonetheless, comprehending and interpreting the distinct identity formed through the changes, developments, and transformations that cities and their inhabitants have undergone over time holds significant importance. Establishing a meaningful relationship of interaction, utilization, and appreciation with the historical cores of urban areas plays a pivotal role in the preservation and appreciation of cultural heritage.

According to Zeren (1981), revitalizing historical urban areas, which are deemed a crucial component of cities, through well-functioning spaces tailored to human scale in terms of environmental utilization and social equilibrium, represents a valuable initiative. This initiative not only promotes interaction among the present and potential users of the area but also fosters and sustains awareness and consciousness regarding historic city centers. nsuring the historical continuity of the city and inviting people to engage with its historical fabric are crucial goals. This can be achieved by adapting these areas to quality standards in spatial, environmental, and sociocultural aspects. The aim is to integrate historic environments into the lives of city dwellers and pass on cultural heritage to future generations.

As Doratlı (2000) points out, the deterioration of buildings, landscapes, sociocultural and environmental perceptions in historic city centers affects the potential for renewal and transformation the region into an attractive and vibrant hub. Therefore, minimizing the mentioned problems, revitalizing historic urban spaces, and enhancing the image of the area constitute the main objectives of this study. Within this scope, the principles of quality in urban space, obtained through a literature review, are intended to be further developed through a survey conducted with university students to propose revitalization and improvement measures for the region.

THE CONCEPT OF QUALITY IN URBAN SPACE

The topic of quality, which is being studied to keep up with the developments brought about by globalization, is gaining importance day by day. Quality is a concept that can have different meanings depending on the subject of discussion. In the context of architectural quality, it can be defined as a concept dependent on satisfying the needs of users. In the case of urban space, quality is highly significant because we start experiencing the city from the moment. We step into architectural spaces such as homes, schools, workplaces, hospitals, etc. (İnceoğlu and Aytuğ, 2008). Historic settlements have cultural significance and serve as the continuation of urban memory, making it essential to preserve and sustain them. Therefore, architectural, environmental, and sociocultural quality principles are important parameters to focus on. In this context, a survey was conducted by the students of the Department of Architecture at Çukurova University in Adana province to analyze the relationship between the level of quality in urban space and the reasons for experiencing Tepebağ District. The survey questions were shaped based on Madden's (2002) criteria for measuring the quality of urban spaces. According to these criteria, urban spaces should:

- Provide opportunities for social activities and accommodate units with different functions that appeal to city users.
- Offer gathering and focal points that provide a communication environment for city users (stops, commercial units, squares, parks).
- Ensure that the entrances of the spaces within them can be easily perceived without the need for additional guidance.

- Consider the dominance between pedestrian routes and vehicular traffic. Pedestrian transportation should prevail within the city limits, allowing pedestrians to reach their destinations easily.
- Have a distinctive identity and defining characteristics.
- Be compatible with the existing urban and historical fabric in their surroundings and should not exhibit an additive stance.
- The survey questions developed within the scope of the study were aligned with these parameters, and the opinions of users experiencing the historic urban space of Tepebağ in Adana were obtained. The findings and discussion section presents the analysis of the survey responses.

REGAINING THE HISTORICAL URBAN TEXTURE TO THE CITY

The social, economic and physical changes that cities have undergone in the historical process often cannot adequately meet the requirements and user demands of the age. This situation causes a significant decrease in the interaction of the historical city centers with the users, and as a result of the city's transformation and inability to keep up with the present, these regions cannot reach the access and interaction they deserve as an idle part of the city (Demir, 2018). Rehabilitation and revitalization of historical centers is increasingly recognized as an effective means of urban development that allows cultural values to be synthesized with economic opportunities and provided benefits (Sing & Yoh, 2016). To improve the general condition of historical urban spaces, the aim should be to develop vibrant, dynamic and livable city centers where people can feel safe and live, new business lines can develop and create opportunities for new activities (Oruç and Giritlioğlu, 2006).

Revitalization is one of the methods that can be applied in order to make the historical city centers live in yesterday, today and tomorrow as well as to ensure the social sustainability of the region in terms of urban. Tiftatchell and Hedgcock (1993) define urban social sustainability as "the ability of a city to function as a long-term, sustainable environment for human interaction, communication and cultural development". Most of the examples that can be described as successful in terms of social, economic and cultural sustainability in historical urban space; It is seen that an environment where cultural and social groups with social diversity can live together in a harmonious coexistence is encouraged, and units that offer functional options to adapt the city users to the region (PAN, 59; Polese & Stren, 2000).

Within the scope of the study, images of spaces with different functions were placed in the questionnaire to produce revitalization strategies to increase the communication and interaction of users with these regions, and "If there was ..... in Tepebağ, I would have more interaction with that region, the region would become lively. would come" was sought to answer the question.

DATA ANALYSIS OF THE FIELD STUDY

a) Adana Province Historical Tepebağ Region

The historical Tepebağ region of Adana, which was selected for revitalization and quality assessment in the historical urban space within the scope of the study, is a settlement area where we can come across artifacts of traditional residential architecture, including Tepebağ Tumulus, the first settlement of Adana (Payaslı Oğuz and Aksulu, 2007). "Tepebağ Tumulus", which is described as an archaeological site, has a topography consisting of a plain on the hill and

its skirts. There are sloping streets and then flat areas in the area (Halaman and Edirne Erdinç, 2022).

Adana province Tepebağ District is a residential area of great architectural importance. This District, which draws attention with its historical texture and architectural structures, is an important part of Adana's cultural heritage. The architectural value of Tepebağ District is not limited to the buildings themselves. At the same time, street arrangements, squares and open spaces complete the architectural integrity of the district. These elements provide residents and visitors with an enjoyable urban experience.

To make the Tepebağ region, which functioned as a city center surrounded by agricultural lands until the 1940s and continued to grow, an area frequented by university students, who have an important place among the city's user groups, architectural space proposals with various functions were made for revitalization, with the goal of gathering opinions.

b) Preparation of Survey Questions

A survey was conducted with the participation of 106 students studying at Çukurova University, Department of Architecture, which was selected as the subject group in 2023. In the survey, there are questions about the evaluation of Tepebağ District, which is the historical urban space of Adana, by students studying architecture according to the quality criteria in urban space. In this study, which aims to determine the steps to be taken in order to increase the interaction of the users with this region and to determine the steps to be taken to revitalize the region, questions were prepared in order to determine the desired and preferred functions to be brought into the historical texture by using the revitalization method.

EXPERIENCE ANALYSIS IN HISTORICAL URBAN SPACE

In the questionnaire regarding participants' experiences and opinions about the selected pilot region, each question was individually analyzed, and the findings were presented in both tabular and textual formats. While graphical and tabular representations were created for all questions, only the tables related directly to the outcomes were included in the article to maintain the flow of the study.

Evaluation of Participants' Demographic Information

It is seen that the majority of the students participating in the survey are female, predominantly between the ages of 21-23. It is possible to say that the architectural students, which are the focus group of the research, are at a rate of 97.2% and the target group has been reached. The education level of the participants mainly focused on the 3rd and 4th grades and that more than half of the participants completed a large part of the architectural education (Table-1).

The development of the sense of belonging of the city users, learning and visiting the characteristic regions of the city, establishing a relationship with the parts of the city and being able to own them are related to the duration of their stay in that city. 43.4% of the participants were born in Adana and continued their lives there. This situation has an important place in the analysis of the relationship with the level of awareness of Tepebağ, the historical region of the city. While 61.3% of the participants have knowledge about Tepebağ District, the experience rate of the region is 70.8% (Table-2). In this case, it is possible to say that the area is not fully recognized by some of the participants who experienced the Tepebağ region.

Participant Information	Number of Persons	Percent (%)
Gender		
Male	25	23.6%
Female	81	76.4%
Age		
18-20	22	20.8%
21-23	65	61.3%
24-26	13	12.3%
26 +	6	5.7%
Architecture Student		
Yes	**103**	**97.2%**
No	3	2.8%
Education Level		
1st Class	18	17%
2st Class	26	24.5%
3st Class	34	32.1%
4st Class	28	26.4%

Table 1. Distribution of Demographic Information of Participants.

Participant Information	Number of Persons	Percent (%)
Duration of Residence in Adana Province		
0-1 years	16	15.1%
1-4 years	31	29.2%
4 (+) years	13	12.3%
I was born and raised in Adana	**46**	**43.4%**
Level of Knowledge About Tepebağ		
Yes	24	20.8%
No	**82**	**61.3%**
Experience of Tepebağ		
Yes	**75**	**70.8%**
No	31	29.2%

Table 2. Distribution of Participants' Field Knowledge and Experience.

"Have you experienced the Tepebağ region before?" question was directed to the students participating in the survey. For the next step, a referral was made to the section according to the answer, and users who had experienced Tepebağ District before were directed to the second part of the survey. The participants, who had not experienced the region before, were immediately presented with the questions in the 3rd part without seeing the 2nd part of the questionnaire.

COLLECTING OPINIONS OF PARTICIPANTS ACCORDING TO THEIR EXPERIENCES AND DATA ANALYSIS

In this section, the question "Have you experienced the Tepebağ region before?" The answers of the users who answered "Yes" to the question are included. At this stage, it is aimed to make inferences about the quality level of the historical Tepebağ District in the urban space by referring to the opinions of users who have experienced the historical region before.

Reasons For Experiencing Tepebağ District

"For what reasons do you usually come to the Tepebağ region?" question was directed to the respondents who participated in the survey and who

had experienced the Tepebağ region before. 70.9% of the answers given to the question were concentrated in the Education/Technical Trip category (Table-3). This situation may show that the subjective relationship of the architect candidates with the historical texture is very weak and their communication with this region is provided by conditional orientation.

Frequency of Visiting Tepebağ District

When the interaction frequency of Çukurova University Architecture Department students with Tepebağ District is analyzed; Table 3 presents the data showing that 106 people who participated in the survey chose the option "Rarely" with a rate of 84.8% (Table-3).

Table 3. Experiencing Reasons and Frequency Distribution of Tepebağ District.

Reasons to Experience Tepebağ District	**Number of Persons**	**Percent (%)**
Social Activity	**18**	22.8%
Cultural	**22**	27.8%
Education/Technical Trip	**56**	**70.9%**
Eating and drinking	**5**	6.3%
Shopping	**7**	8.9%
Work	**2**	2.5%
Tourist trip	**17**	21.5%
Other	**8**	10.1%
Frequency of Visiting Tepebağ District	**Number of Persons**	**Percent (%)**
Every day	**0**	0
More than twice a week	**1**	1.3%
Once a week	**2**	2.5%
Once a month	2	2.5%
Several times a month	**4**	5.1%
Rarely	**67**	**84.8%**
For one trip	**1**	1.3%
A few times just for the technical trip	**1**	1.3%
When visiting family	1	1.3%

In this direction, it is possible to say that Çukurova University Architecture Department students between the ages of 18-26 (+) do not interact regularly and frequently with the historical urban fabric of Adana.

Spatial Adequacy Situations of Tepebağ District

In the second part of the survey, the adequacy of usage in various functions within the historical Tepebağ District of Adana province was analyzed with the assistance of user opinions. The adequacy status of different functions in terms of venues is as follows:

- Adequacy of places with socio-cultural functions: Among the 79 respondents to the questions in this section, 24 were considered adequate, 21 were undecided, 27 were deemed inadequate, and 7 were considered very inadequate.
- Adequacy of educational venues: Among those who responded to the questions in this section of the questionnaire, 7 found them adequate, 24 were undecided, 39 found them inadequate, and 10 considered them very inadequate.
- Adequacy of venues serving health-related functions: In this section of the questionnaire, there were 5 respondents, with 32 being undecided, 34

finding them inadequate, and 8 considering them very inadequate.

- Adequacy of functional spaces related to commercial diversity, dining, shopping, tourism, and entertainment, etc.: This section received evaluations of very sufficient from 16 individuals, sufficient from 21, undecided from 22, inadequate from 13, and very inadequate from 7.
- Adequacy in terms of park and green space arrangements: In this regard, 6 people found it very sufficient, 18 found it sufficient, 22 were undecided, 23 found it inadequate, and 12 considered it very inadequate.

According to the findings obtained as a result of the evaluation of the adequacy status of the spaces with different functions in Tepebağ District, made by 79 people who saw the questions in this part of the questionnaire, "Very sufficient/2 points- Sufficient/1 point- Undecided/0 point- Insufficient/-1 point- Very insufficient/- 2 points" (Table 4).

Table 4. Tepebağ District Spatial Adequacy Status and Scores.

Spatial Adequacy Situations in Tegebağ District	Strongly Agree (+2)	Agree (+1)	Neutral (0)	Disagree (-1)	Strongly Disagree (-2)	TOTAL
Sociocultural Spaces	0	24	21	27	7	**- 17**
Spaces with Education Functions	0	7	24	39	10	**-52**
Spaces with Health Functions	0	5	32	34	8	**-40**
Commercial Spaces	16	21	22	13	7	**+26**
Parks and Green Spaces	6	18	22	23	12	**-17**

When assessing proficiency levels based on user feedback regarding spaces serving diverse functions within the historical context of Adana, it becomes evident that areas designated for educational purposes are perceived as the least satisfactory. A comparative analysis of these evaluations reveals that commercial spaces consistently receive the highest positive ratings from users. As a result, this underscores the imperative to augment both the quantity and quality of educational, healthcare, socio-cultural, and public open spaces. This initiative aims to revitalize Tepebağ District and foster increased engagement among aspiring architects within this locality. The collection of insights from local residents is paramount for formulating policies aimed at enhancing spatial quality and revitalization

To assess the responses aimed at determining the alignment of Tepebağ District in Adana province with quality criteria in urban spaces, a 5-point Likert scale was employed. The scale ranged from 'Strongly Agree' (+2) to 'Strongly Disagree' (-2), with answers falling within this value range being scored.

- "Tepebağ District: It enables social activities and hosts units with different functions that appeal to urban users": 6 Points
- "Tepebağ District: It has meeting points and nodes that provide a communication environment for city users (Stops, trade units, squares, parks)": 27 Points

• "Tepebağ District: The entrances of the spaces it houses can be easily perceived": 5 Points (Table-5).

Table 5. Evaluation of Tepebağ District According to Quality Criteria in Urban Space I.

Tepebag District;			
Quality Criteria in Urban Space	It allows social activities and hosts units with different functions that appeal to urban users.	It has assembly and nodal points that provide a communication environment for city users	The entrances of the spaces it contains can be easily perceived
Strongly Agree (+2)	6	12	7
Agree (+1)	27	14	10
Neutral (0)	18	12	14
Disagree (-1)	27	5	11
Strongly disagree (-2)	3	3	4
TOTAL:	**6 Points**	**27 Points**	**5 Points**

• "Tepebağ District; Pedestrian transport dominates vehicle traffic. It can easily reach the desired point on foot": 12 Points

• "Tepebağ District; It has a unique identity and defining qualities": 61 Points

• "Tepebağ District; It is compatible with the existing urban and historical fabric around it": 29 points (Table-6).

Table 6. Evaluation of Tepebağ District According to Quality Criteria in Urban Space II.

Quality Criteria in Urban Space	Pedestrian transport dominates vehicle traffic. It can easily reach the desired point on foot.	It has a unique identity and defining qualities.	It is compatible with the existing urban and historical fabric around it.
Strongly Agree (+2)	9	25	11
Agree (+1)	13	14	17
Neutral (0)	9	4	12
Disagree (-1)	11	3	2
Strongly disagree (-2)	4	0	4
TOTAL:	**12 Points**	**61 Points**	**29 Points**

• "Tepebağ District; Do you think it is promoted enough?": -42 Points

• "In Tepebağ District: Do you think it is necessary for the municipalities to carry out a study on the revitalization of the region?": Compliance with the quality criteria in the urban space was evaluated by getting 76 points (Table 7).

In this context while the view that the city has a unique identity stands out with 61 points, inferences can be made that support the view that the city has certain nodal points and that the region can be perceived as a whole with its environmental and urban historical texture

Tepebag District;		
Quality Criteria in Urban Spaces	Do you think that the promotion of the region is done enough?	Do you find it necessary to carry out a study on the revitalization of the region?
Strongly Agree (+2)	3	36
Agree (+1)	2	7
Neutral (0)	7	1
Disagree (-1)	18	1
Strongly Disagree (-2)	16	1
TOTAL:	**42 Points**	**76 Points**

Table 7. Evaluation of Tepebağ District According to Quality Criteria in Urban Space III

Survey Study Findings on the Revitalization of Tebebağ District by Referring to User Opinions

In the 3rd part of the survey titled "If there was …….. in Tepebağ", It is aimed to collect suggestions and user opinions to increase the rate of preference by university students studying in the architecture department of Tepebağ, a historical region of Adana.

Participants were asked to rate the images provided in the questionnaire. In accordance with the results obtained, it is integrated with the historical texture of Tepebağ District.

- Having a library structure: 66%,
- Office structure: 48.1%
- Presence of restaurant structure: 79.3%
- Cafe structure: 80.2%
- Having an art gallery/exhibition structure: 77.4%
- Existence of public spaces in open space: 70.7%
- Existence of transportation axes/streets closed to traffic: 66.9%

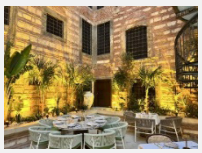
Having shopping units with different functions: was evaluated as an element that helps increase interaction with the region and revitalize the region by 68% (Table-8).

It is aimed to collect suggestions and user opinions in order to increase the rate of preference of Tepebağ District, a historical region of Adana, by university students studying at Çukurova University, Department of Architecture. For this purpose, 106 survey participants were presented with images of space examples with different functions in the historical urban texture and were asked to rate the expected interactions with the region if the space examples in these functions were activated in an integrated manner with Tepebağ. They were asked to evaluate the visuals, which they thought as "If ..... had been in Tepebeğ, I would have more interaction with that region, the region would become more lively", according to a 5-point Likert scale between "Strongly Agree" and " Strongly Disagree" (Table-9), (Table-10).

Table 8. Preference Ranking of Survey Participants According to the Suggestions of Spaces with Different Functions in the Urban Texture for the Historical Tepebağ District.

Participant Preference Ranking	1	2	3	4	5	6	Percent (%)
Art gallery	24	19	**25**	21	9	9	%79,3,
Restaurant	19	**30**	24	16	10	7	%77,4
Cafe	**39**	24	15	14	10	4	%80,2
Office	20	15	18	19	11	**23**	%48,1
Library	11	13	10	8	**33**	31	%66
Shopping Venues	11	16	18	**23**	20	18	%68

Table 9. Evaluation of Space Suggestions with Different Functions in the Urban Texture for the Historical Tepebağ District

"If there was …….. in Tepebağ"			
Spatial Suggestions with Different Functions in Historical Urban Texture	**Library**	**Shared Office**	**Restaurant**
			
Strongly Agree (+2)	53	33	66
Agree (+1)	17	18	18
Neutral (0)	16	25	5
Disagree (-1)	9	17	6
Strongly Disagree (-2)	11	13	11
TOTAL:	**92 Points**	**41 Points**	**122 Points**
Spatial Suggestions with Different Functions in Historical Urban Texture	**Cafe**	**Art gallery**	**Open area**
			
Strongly Agree (+2)	67	71	56
Agree (+1)	18	11	19
Neutral (0)	3	6	8
Disagree (-1)	4	5	11
Strongly Disagree (-2)	14	13	12
TOTAL:	**120 Points**	**122 Points**	**96 Points**

"If there was …….. in Tepebağ"		
Spatial Suggestions with Different Functions in Historical Urban Texture	Pedestrian Streets	Shopping Units with Different Functions
		 
Strongly Agree (+2)	61	52
Agree (+1)	10	20
Neutral (0)	12	14
Disagree (-1)	9	10
Strongly Disagree (-2)	14	10
TOTAL:	95 Points	94 Points

Table 10. Evaluation of Space Suggestions with Different Functions in the Urban Texture for the Historical Tepebağ District

Evaluation of Spatial Alternative Suggestions for Revitalization

- "Can you share with us your opinions and suggestions regarding the revitalization of the Tepebağ region, located within the historical urban fabric of Adana?" When the answers to the question are evaluated, the results obtained are as follows:

- By acquiring spaces where social, cultural and artistic events can be held, the region will be visited by users not only for a few hours but more frequently.

- The flexible use of the spatial units in the historical urban texture and the design of the historical texture and modern functional spaces as designs that allow flexible use will contribute to the region's visit by more people.

- It will arouse interest both for architecture students and for the local people, if the buildings are restored without ignoring the historical texture while the practices are carried out for the revitalization of the region, by loading new functions and bringing them into use.

- By rearranging pedestrian and vehicle roads, creating side streets in concepts that contribute to traffic-free tourism, including second-hand booksellers and commercial units where Adana-specific souvenirs are sold will add value to the region in terms of tourism.

- The organization of an event in this region by photography or advertising experts, along with the production of a promotional film and the publication of a significant event such as the Orange Blossom Festival in Adana, aims primarily to enhance local users' awareness of the area and subsequently boost their curiosity and visitation rates.

- The design and construction of landmarks will contribute to the brand value of Adana and the Tepebağ region.

- Organizing activities for the reintroduction of street culture and landscaping works that will bring green texture to the city will make the region more interactive than its current state,

- Informative and introductory studies about Tepebağ, which is an example of Adana's historical urban texture, by the Metropolitan Municipality will add value to the city,

- The area can be made more interesting by restoring the houses in the historical area and maybe making an archeopark,

- Since the area is generally seen as problematic in terms of security, putting the rehabilitation works of the streets on the agenda is a step

towards solving this problem, and solving the trust problem will have a positive effect on the interaction rate of the users with the area,

- Creating working areas that are open 24 hours a day and interact with the historical urban fabric will benefit the study's target audience, architecture students.

- It will be a conscious step towards preserving cultural heritage by creating areas that bring together the local tradespeople of the city. These areas can also strengthen the bond between the youth and people of the city with the past.

- Opening courses that give the opportunity to learn the work of masters in the region where traditional craft branches are carried out, and designing a workshop environment for architecture students where upper and lower workshops can come together are among the opinions and suggestions conveyed to us by the students.

CONCLUSION AND RECOMMENDATIONS

It is inevitable that historical city centers, which are alive and exposed to some physical and perceptual changes in the process, are in renewal and transformation. When the findings obtained in the survey study were analyzed, it was found out that increasing interaction with the historical urban fabric of a city is important for students, each of whom is an architect candidate. It is one of the study's intended outcomes for architecture students, who are taught to respect design, aesthetics, and cultural heritage in their professional ethics and education, to design by integrating the past and future of the city in which they live. It has been concluded that the inclusion of social, cultural and educational building groups in the historical Tepebağ District of Adana will increase the interaction of the architecture department students with the region. It is thought that the rate of appealing to the users will increase with the use of the architectural students residing in this city and the arrangement and animation activities to be carried out in the light of the suggestions they offer. It is aimed to share the results of the survey analysis obtained by interviewing the Seyhan Municipality KUDEB unit, and to provide the city with different functions with high added value as a result of cooperation with the stakeholders. It is expected that the study will shed light on the revitalization to be carried out in the Tepebağ District of Adana province and the studies aimed at increasing the quality of the urban space.

Conflict of Interest

No conflict of interest was declared by the authors.

Authors' Contributions

The authors contributed equally to the study.

Financial Disclosure

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Ethics Commitee Approval

Ethics committee approval is needed as data was collected by survey method within the scope of the study.

Legal Public/Private Permissions

In this research, the necessary permissions were obtained from the relevant participants (individuals, institutions and organizations) during the survey, in-depth interview, focus group interview, observation or experiment.

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Research Article

An Analytical Approach to the Traces of Settlement of the City of Sakarya from Antiquity to the Present

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Abstract

According to the known history of the world, the first communities generally chose natural cave environments on the edges of sea, lake and stream for settlement and spread towards the interior of the land over time. These communities have learned to move to higher elevations in order to be protected from phenomena such as water rises and ground movements in the natural flow of the earth. It is an ironic situation that these natural phenomena that shape the earth are called disasters today.

In this context, the aim of the study is to question Sakarya River, which was formed as a result of an earthquake action, and along this river, the settlement decisions of the cultures that established living spaces within the borders of the city of Sakarya by mapping them chronologically from the Paleolithic period to the present day with an analytical approach. Within the scope of the study, the effect of the earthquake phenomenon in the city, from the ancient times to the present, while the settlement decisions are taken, will be discussed and the effect of this information on the current settlement decisions of the city will be questioned.

Types of analysis specific to the method developed within the scope of the study are; systematic literature review, epigraphic documents, aerial and archive photographs, maps. While reading the traces of settlement in the historical process, the study makes the structural constructs created by the cultures visible through the icons created within the scope of the study.

Keywords: Ancient Ages, Earthquake Action, Geographical Information, Sakarya City, Traces of Settlement.

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Araştırma Makalesi

Antik Çağlardan Günümüze Sakarya Kentinin Yerleşim İzlerine Analitik Bir Yaklaşım

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Özet

Dünyanın bilinen tarihine göre ilk topluluklar yerleşim için genellikle deniz, göl ve akarsu kenarlarındaki doğal mağara ortamlarını seçmiştir ve zamanla kara içlerine doğru yayılmıştır. Bu topluluklar, yeryüzünün doğal akışında süregelen su yükselmeleri, yer hareketleri gibi olgulardan korunabilme adına daha yüksek kotlara taşınmayı öğrenmiştir. Yeryüzünün biçimlenmesini sağlayan bu doğal olguların bugün afet olarak adlandırılması ise ironik bir durumdur.

Bu bağlamda çalışmanın amacı bir deprem hareketi sonucu oluşmuş olan Sakarya Nehri ve bu nehir boyunca, Sakarya kenti sınırları içerisinde yaşam alanları kuran kültürlerin yerleşim kararlarını, kronolojik olarak Paleolitik dönemden günümüze, analitik bir yaklaşım ile haritalayarak sorgulamaktır. Çalışma kapsamında kentte, antik dönemlerden günümüze yerleşim kararları alınırken deprem olgusunun ne derecede etkin olduğu tartışılarak bu bilginin kentin güncel yerleşim kararlarına etkisi sorgulanacaktır.

Çalışma kapsamında geliştirilen yönteme özgü analiz türleri; sistematik alan yazın taraması, epigrafik belgeler, hava ve arşiv fotoğrafları, haritalar olarak sıralanabilir. Çalışma, tarihsel süreçte yerleşim izlerini okurken kültürlerin oluşturduğu yapısal kurguları, çalışma kapsamında oluşturulmuş ikonlar aracılığı ile görünür kılmaktadır.

Anahtar Kelimeler: Antik Çağlar, Deprem Hareketi, Sakarya Kenti, Yer Bilgisi, Yerleşim İzleri.

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INTRODUCTION

Long-lasting changes such as ground movements, formation of mountains, volcanic activities, glacial movements, water movements and cycles, which are defined as geological events, contributed to the formation of the soil. The events did not end with the formation of soil. Soils are not static as geological events continue. Factors such as the results of physical and chemical events in the soil, climatic effects, and efforts to renew the soil itself cause the transformation of the earth. As the earth transforms, mountains, plains, underground and surface waters continue to form with it and form the identity of the place.

The first settlements were established on the edge of wide plains and natural harbours, on plains with fertile soils, along rivers and valleys, on natural roads and passages. The plains, rivers and valleys with fertile soils played a primary role in the selection of the place, and the cities were located near the big streams and their elbows. Those of the plains located near natural roads and gorges developed by gathering more populations.

There are different opinions about the formation and flow direction of the Sakarya River, which constitutes the main data of the study. The first view is that the graben pit formed in the area cut by the North Anatolian fault diverts the flow to Sapanca Lake-Gulf of İzmit. With the separation of Sapanca Lake from the Marmara Sea, the Sakarya River flowed to the north and reached to the Black Sea, and in this direction, it filled the graben pit where the Adapazarı Plain is located with the accumulations it brought (Türk Mühendis ve Mimar Odaları Birliği, 2012).

Another view is that the river was formed in the late Pliocene period, which started in the last period of the third geological age, which lasted from about 5.3 million years ago to 2.5 million years ago. In line with this view, which claims that the Sakarya river has always flowed towards the Black Sea, the Black Sea was 120 meters lower than today in the last glacial period and has risen to its present level in the last 8 thousand years. All of Turkey's deltas have been formed in the last 5-6 thousand years according to this new sea level (Türk Mühendis ve Mimar Odaları Birliği, 2012).

Studies of human history are generally explained through the finds of the Old Stone Age, which is defined as the Paleolithic Age with its scientific name. This period, defined by finds dating back approximately 2 million years, ended 12,000 years ago (Arsebük, 1998). When the traces of the Paleolithic and Neolithic period people in the basin formed by the Sakarya river were traced, as a result of the flakes obtained from the excavations, the remains and finds of settled life were found in the Karasu district, which has a coast to the Black Sea, and in the regions on the shore of the Sakarya River. It is observed that the settlement has continued until today in this area where the Sakarya River meets the Black Sea, which is fertile but not suitable for settlement due to its proximity to the fault line and alluvial soil characteristics. The close relations of these primitive settlements with water resources are known. Human communities living in the region have made living a way of life with frequent earthquakes and accompanying natural disasters, as in all of Anatolia. These regions have not been abandoned for centuries as they have fertile soils that allow agricultural activities.

We construct our "settlement" practices in the light of what we have gained from the knowledge of the place over time. To the extent that our settlement initiatives are compatible with the existing natural environment, we can sustain our life cycle with it in a qualified and sustainable way. Otherwise, our effort

to somehow integrate with the natural environment will succumb to ground movements such as earthquakes, which are included in its absolute cycle, causing the built environment we have created to disappear and most importantly, tens of thousands of lives will be lost.

The earthquakes with a magnitude of 7.7 and a magnitude of 7.6 in the center of Pazarcık in Kahramanmaraş province and centered in Elbistan on 06.02.2023, which we have experienced, are an important indicator that we cannot construct our attempts to create the built environment in the light of what we have obtained from the knowledge of the place. After the Kahramanmaraş-centered earthquake in our country, many studies have been carried out on post-disaster recovery both in the earthquake region and through social media channels.

However, as observed from the Kahramanmaraş-centered earthquakes we have experienced today, the pre-disaster process should be managed correctly in accordance with the requirements in order to minimize the damage that will be caused when the disaster occurs. In the Anatolian geography, which has a settlement practice dating back to the Paleolithic period; without ignoring the information about the place, it is necessary to construct an environment in which the earthquake phenomenon can be removed from being a disaster situation by using the right materials, on the appropriate ground, with appropriate planning-construction techniques.

Within the scope of the study, based on the traces of the first settlement of the city of Sakarya, which is located on the North Anatolian fault line, it was aimed to periodically examine the formation phases of the city within the borders of today's administrative city, and in this process, it was tried to discuss how the earthquake phenomenon was effective in the settlement decisions of the city.

SAKARYA URBAN DEVELOPMENT THRESHOLDS

The traces of urbanization became visible with the Hittite Civilization, which established the Anatolian unity in 3000 BC, in the region, where traces of settlements have been found since the Paleotic period and the administrative borders of today's Sakarya city are located. After the Hittites, who were divided as a result of internal turmoil in 1200 BC, the Phrygians dominated the region. When the Phrygian domination ended, the region passed into the hands of the Lydians. In the 6th century BC, the Persian Empire destroyed the Lydian Kingdom and dominated Anatolia. Macedonian King Alexander the Great defeated the Persians in the 4th century BC and dominated Anatolia. After the death of Alexander the Great, the Kingdom of Bithynia declared its independence and declared its dominance in the region including Sakarya, and in the 1st century BC, the Roman Empire ended the Kingdom of Bithynia and added the region to its lands (Turkish Statistical Institute, 2013).

The spring of the Sakarya River was formed when the waters coming out of the spring, where the ancient Sangia Ancient City is located, 3 kilometers southeast of Eskişehir Çifteler district, first became a small lake and then flowed. The basin formed by the river during its flow towards the Black Sea constitutes the settlement area of the city of Sakarya. Sakarya River, which took its name from Saggarios, a Phrygian river god in the Bithynia period, also gave its name to the province of Sakarya (Union of Chambers of Turkish Engineers and Architects, 2012). The city of Sakarya is located in the Çatalca-Kocaeli section of the Marmara Region, where this river empties into the Black Sea. The main landforms of the city are Adapazarı Plain, Geyve Strait and Sakarya Delta. Adapazarı Plain is the largest

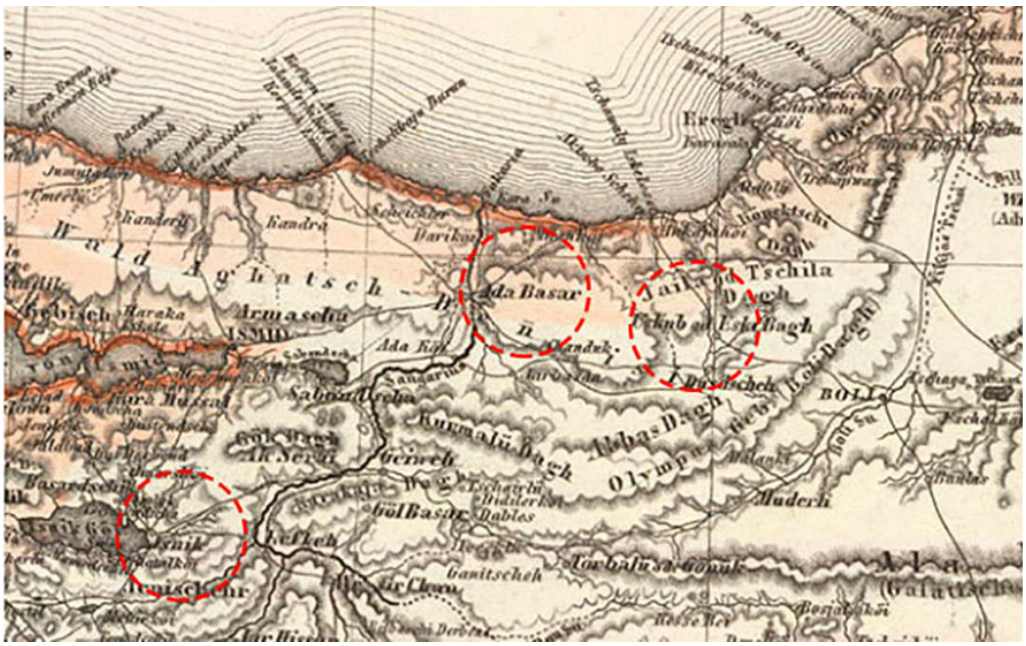

Figure 1. Map of Sakarya city and its surroundings, dated 1860 (Grassl, 2023).

alluvial plain of the Marmara Region. Adapazarı is the central district where the population of Sakarya is concentrated.

Earthquakes in the city as a result of tectonic events and the sediments carried by the rivers have been effective in taking the present state of the plain (Tuncel, 2005). Sakarya city, which passes through the North Anatolian fault line in its south, has experienced earthquakes that caused great damage in the city with the effect of the alluvial ground. In addition, the city of Sakarya has a strategic importance in terms of its location with centers such as Nicomedia (today İzmit), Nikea (İznik) and Prusias (Düzce), which have witnessed important events in the historical process (Figure 1).

Sakarya city, which is located on the third and fourth time geological structure, has been destroyed and rebuilt by the earthquakes that have been experienced since ancient times, with the effect of the active North Anatolian fault line passing through its south. According to the data obtained from archaeological, epigraphic, numismatic and literary sources, 300 earthquakes and 40 tsunamis, dated between 2100 BC and 1900 AD, occurred in the city. Especially the earthquakes that occurred in the 4th century AD caused great damage in the city (Doğancı, 2015). The city, which was established on the alluvial ground passing through the North Anatolian fault line from its south, has suffered greater damage in the last century, in the earthquakes of 1943, 1967 and 1999, due to the concentration of the population in the Adapazarı Plain (Akyol & Hayır, 2007).

Although Sakarya city suffered great damage each time in the earthquakes, it continued to maintain its presence in the same region. The city has been an important settlement for civilizations throughout history due to its climate diversity, water resources, fertile agricultural lands, and land-river-sea transportation relations. These features can be listed as the reasons why the city, which was destroyed by earthquakes since ancient times, did not change its settlement area.

The Traces of Settlement of Ancient Civilizations Between the Paleolithic Period and the Hellenistic Period in Sakarya City

It is accepted that the people of the Paleolithic Age, who are hunter and gatherer communities living under the limiting and determining pressure of nature; did

not know how to produce food and only fed on wild vegetables, fruits, roots and animals they hunted (Arsebük, 1998). Since the cave settlements were scattered and sparse settlements for the Paleolithic period man, who is defined as the "cave man", to accommodate the wandering, gatherer and hunter communities; the Paleolithic period man built simple and less differentiated shelters in order to maintain his life. It is observed that there are structures that can be easily erected and removed, covered with light materials such as leather, reeds, branches, mud, etc. While the shelters were used for sleeping-resting and limited individual activities, collective activities and interaction were carried out around the fire in the campsite (Acar, 1996).

Before the transition to the Neolithic period, there was a transitional phase in which hunter-gatherer and settlement prevailed together in Anatolia. The fertile, wetland basins where natural food and game animals are abundant and the proximity of the regions to the ore regions; made settled life possible for the people of the period. As a result of these data; it can be interpreted that sedentary life was not started by agriculture, and that agriculture provided the necessary surplus for the division of labor and barter, and thus the continuation of the settlement. When the shelters built in the period are examined; it is observed that there are small cellars, warehouses and hearths in the shelters, and that they are similar to the round planned shelters of the previous period (Acar, 1996).

The need for worship brought by our belief systems is another important factor in the transition to settled life. We can experience an example of this in the buildings built by Neolithic people in Göbeklitepe. New areas were needed for storage as a result of processes such as food processing and drying brought about by the surplus product produced by agriculture, which ensured the continuation of the settlement in the period. In addition, the common living areas seen in the hunter-gatherer society have been replaced by residential areas with the effect of agricultural production. Due to the growth-proof nature of the round houses, the rectangularization of the house became inevitable and the first step of the "grid planned structures" was taken (Acar, 1996). In the Çatalhöyük settlement, where advanced irrigated agriculture was started and pottery was made for the processing, storage and circulation of surplus agricultural products; the first

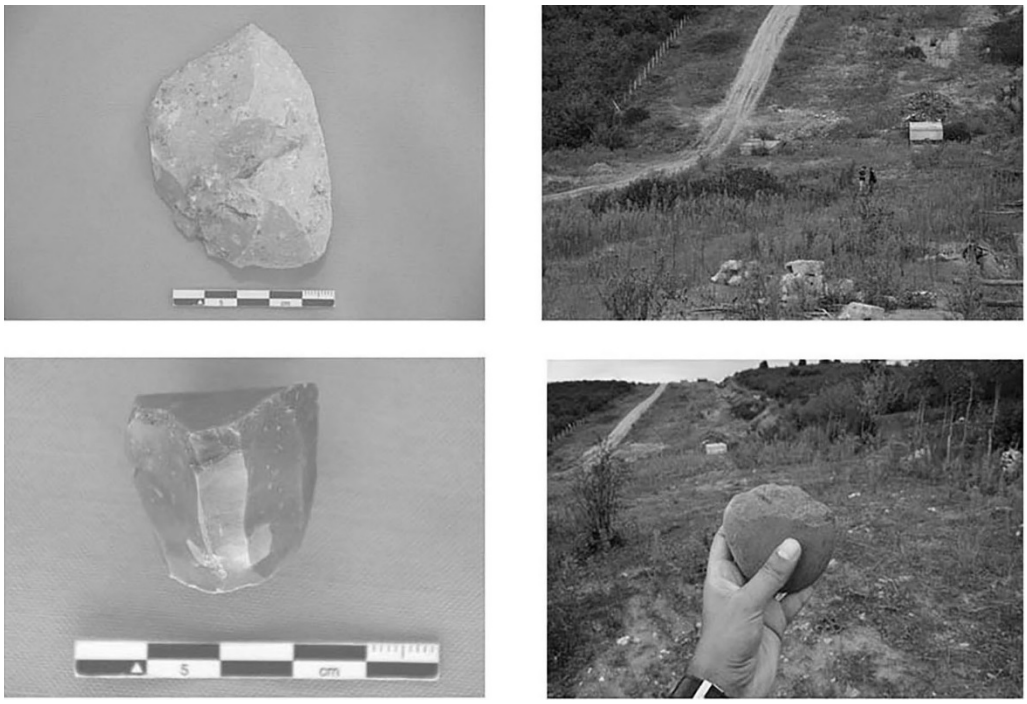

Figure 2. Paleolithic settlement traces in Sakarya (Tay Project, 2023).

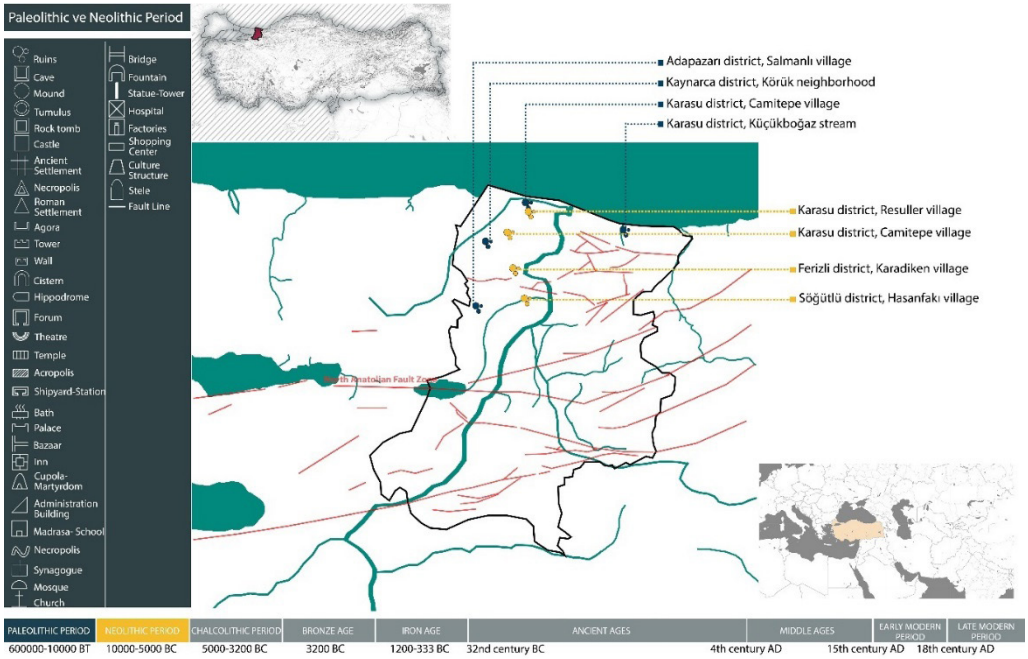

Figure 3. Paleolithic and Neolithic period settlement traces in Sakarya city (The map was created by the authors with data from the Tay Project site).

known city plan in history was depicted on the walls of a house (Acar, 1996; Tuğaç, 2021). In the process that developed with agricultural production and domestication of animals in the Neolithic period, basic vital practices began to be produced that will build today's urban life, the traces of which will continue to this day.

When traces of the Paleolithic and Neolithic period people, whose daily practices are basically known, are traced in Sakarya city; it is seen that the settlements are concentrated in the Karasu district, which has a coast to the Black Sea, and in the regions along the Sakarya River, as a result of the flakes obtained from the excavations (Tay Project, 2023), (Figure 2, 3).

In the Chalcolithic period, when agriculture was centralized and animal husbandry developed, population growth was experienced due to climatic data and geographical conditions becoming similar to today's. Mining developed and metals such as copper and tin began to be processed. As a result of these developments, a new order has emerged in which men's labor and skills come to the fore, unlike the main-centered order based on women's labor. In this new order, trade is dealt with and power is centralized by replacing the egalitarian order (Acar, 1996; Tuğaç, 2021). When the settlements of the Chalcolithic period people in the city of Sakarya were examined, flint flakes were found in Kaynarca district, which has a coast on the Black Sea, and stone hand ax and hand-shaped terracotta mug in Kocaeli district Sakarya (Tay Project, 2023), (Figure 4).

Developments such as maritime trade and the invention of writing in the Bronze Age, which came to the forefront with its metal richness, intensified "prehistoric globalization" (Acar, 1996). During the period, "megaron-type houses" with a square or rectangular plan, front entrance, one room with a hearth in the middle, built of adobe or stone materials became widespread (Akurgal, 1990; Bozkurt & Altınçekiç, 2013). The hierarchical developments in the period are reflected in the spaces with structures such as the palaces and head temples of the inner castle, and capitals rise from among the cities. With the development of trade, an enriching urban life is formed in the kingdom centers (Acar, 1996). When the artifacts found in the Bronze Age in Sakarya were examined, red slipped pottery belonging to the Advanced Bronze Age II-III was found on the Taraklı-Göynük road (Tay Project, 2023), (Figure 4).

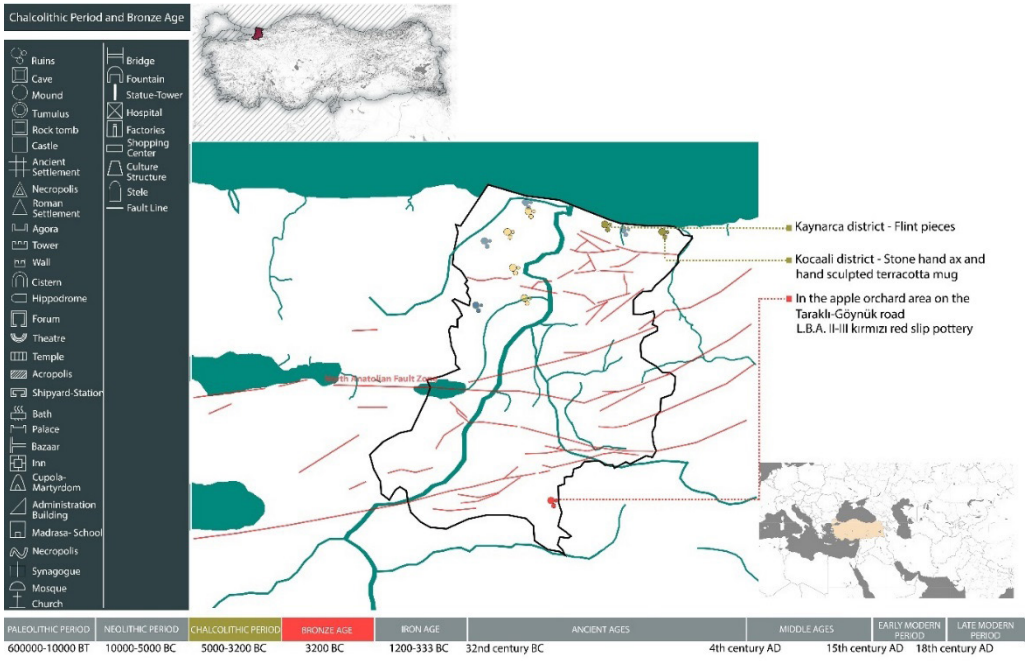

Figure 4. Chalcolithic and Bronze Age settlement traces in the city of Sakarya. (The map was created by the authors with data from the Tay Project site).

The Phrygians (750-300 BC), who ruled in Central Anatolia during the Iron period (1200-333 BC), developed in woodworking and used stone as a material (Tuğaç, 2021). When the structures built by the Phrygians are examined; adobe structures with a megaron plan, stone foundations and stone or wooden beams on the upper parts are observed (Arslan, 2016; Bozkurt & Altınçekiç, 2013). When the Iron period settlements of Sakarya city are examined; it can be seen that Erenler district, which constitutes the central settlement of today's Adapazarı, Tarseia / Tarsos Ancient City in Küçükesence village, Kabaia / Kabia Ancient City in Geyve district, Malagina Ancient City in Mekece village of Pamukova district, Taraklı district, Lamneis Ancient City and Taraklı district, Oka Ancient City settlements are observed (Adak, 2017), (Figure 5).

When the Hellenistic period settlements in Anatolia are examined; it is observed that while the principle of equality was observed in the residences in the classical period settlements, the concept of "luxury" began to take place in settlement

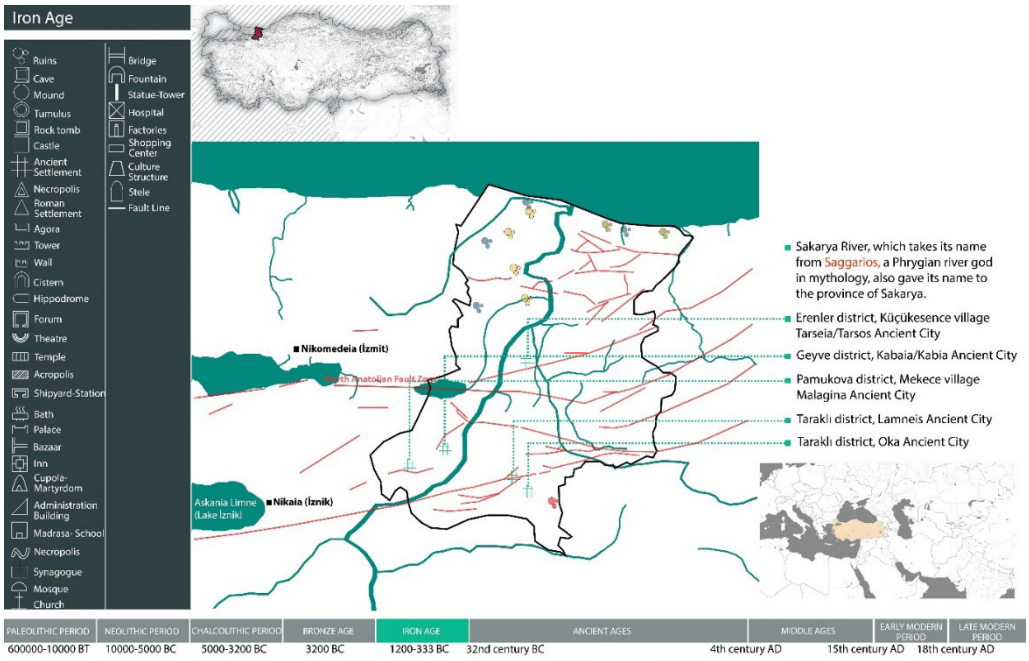

Figure 5. Iron period settlement traces of Sakarya city (The map was created by the authors with data from the related article, Adak, 2017).

practices by deteriorating the principle of land integrity and equality in the following process. The residences have a peristyle -a rectangular open courtyard surrounded by columned corridors- in direct proportion to the magnificence of the house. This type of housing, which belongs to the Hellenistic period, has undergone significant changes during the Roman period (Abbasoğlu, 1996). When the artifacts belonging to the Hellenistic period in Sakarya were examined, steles and cemeteries were found in Akyazı district (Adak, 2017).

When the settlement structure of Sakarya city until the Roman period is examined, the proximity to the water source is the main element that creates the settlement. The city was chosen as a settlement by ancient civilizations due to its coast to the Black Sea and the presence of the Sakarya River.

Sakarya City Roman Period (27 BC-AD 395) The Relationship Between Ground Movements and Settlement Construct

When the Roman period settlements that influenced by the Hellenic culture are examined; the city of Timgad, which provides ease of defense and was implemented for reasons such as social hierarchical structure and material use, has the characteristics of typical Roman period settlements although it is not located in Anatolia. The houses are generally houses with inner courtyards but besides these, the first examples of multi-storey mass housing were also encountered. City; the city square has merged with the agora and the acropolis and left its place to the forum. Roman Empire was divided into two in 395 AD. The Western Roman Empire was destroyed, and the Eastern Roman Empire (Byzantine) continued to rule in Anatolia (Tuğaç, 2021).

While reading the settlement practices of Sakarya when the Roman period is examined, according to some researchers, Sakarya was completely dependent on the city of Nicomedeia (today İzmit) during the Roman period. Others, by ending the eastern border of Nicomedia at Sapanca Lake or the Sakarya River, accept that the Adapazarı Plain belongs entirely to Prusias (today's Düzce). Samanlıdağ (Sophon) was a natural border to the city which was located between Nikomedeia and Nikea which were the important centers of the period (Adak, 2017).

In Sakarya, which was on the transit route of important centers in the Roman period, various stations and market places were established in order to supply the army. Plateas which corresponds to the vicinity of Beşköprü or Dörtyol built on Çark Stream and Demetriu are some of the stations that functioned as market places. The ancient city of Tarseia/Tarsos (today's name Küçük Tersiye/Küçük Esence), which is located close to the center of Adapazarı, which is the current center of Sakarya, which was chosen as a settlement during the Iron period; also continues its existence as a settlement during the Roman period. The early name of the city is Tarsos, which supports the data we have obtained. The place name Tarseia continued to exist as Tertiary until the 20th century (Adak, 2017). The selection of the region as a settlement during the Iron period and its location close to the water can be listed as the reasons why the region continued its existence as a settlement during the Roman period, despite the alluvial ground. (Figure 6, 7).

Sakarya City Byzantine Period (395-1453) The Relationship Between Security Element and Settlement Fiction

In the period when the Roman Empire was dissolved in Anatolia and the Byzantine Empire ruled, the atmosphere of trust was lost as a result of the wars between the tribes in Western Europe. With the economy based on agriculture, the administration passed into the hands of the feudal lords and the Middle Ages began. The lack of an environment of trust caused the medieval cities

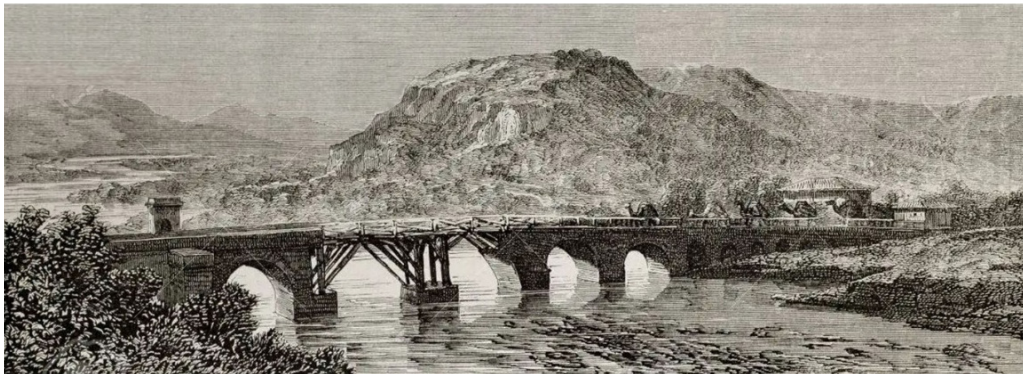

Figure 6. Old view of the Ancient Roman Bridge over the Sakarya (Sangarius) River, Bithynia region, Turkey, (İğdir, 2023).

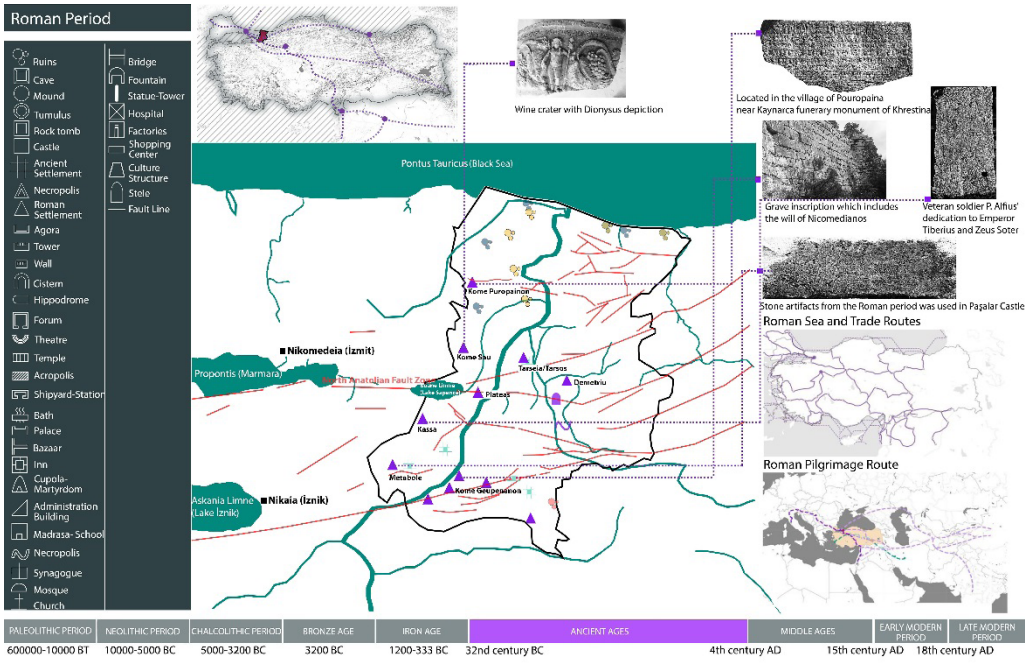

Figure 7. Roman settlement traces of Sakarya city (The map was created by the authors with data from the related article, Adak, 2017).

to develop inwardly within the walls. The gridal form applied in the Roman period deteriorated and the organic structure compatible with the topography became dominant. It is observed that buildings such as hippodrome, temple, and theater were abandoned during the Byzantine period and that religious structures were given importance. In addition, it is observed that the housing structures have returned to the village order (Tuğaç, 2021).

In parallel with these data, when the Byzantine period works in the city of Sakarya are examined; it seems that the castles, the castle bastion and the Sangarios (Justinianus) Bridge are the works that have survived to the present day. Justinianus (today's name Beşköprü) between 553 AD-561 AD was built by the Byzantine Emperor Justinianus. There is no water flowing under the bridge at the moment as the Sakarya River, which flowed in the region by splitting into two branches at the time it was built, changed its bed and flowed in the other branch as a whole. Due to the high flow rate of the river during the Byzantine period, 4 bridges were built and demolished in the region and the bridge was named "Beşköprü" (Akyol, 2007), (Figure 8).

Metabole (Paşalar) Castle which contains thousands of architectural elements from the Roman settlement to the Middle Byzantine period, is also one of the important works of the period (Adak, 2017). When the traces of the Byzantine period settlements are examined, it is seen that the settlement was planned by keeping the security factor in the foreground (Figure 9).

Figure 8. View of the Justinian Bridge dated to the 1880s (Old Türkiye Photos Archive, 2023).

Investigation of the Settlement of Sakarya City in the Ottoman Period (1299-1922)

With the victory of the Battle of Manzikert in 1071, the gates of Anatolia were opened to the Turks. It is observed that the Turks adopted the settled life even before they came to Anatolia. Since the Turks raised horses in Central Asia, they had to relocate and there are certain migration routes. They used tents as shelters for spring and winter quarters. As a result of the excavations carried out in Transoxiana and Khorasan; it is observed that the Turks built structures with a square plan, four iwans, a central dome and large courtyards in Central Asia. The traces of this scheme whose origin is based on nomadic culture, will also show itself in Turkish houses in Seljuk and Ottoman architecture. Tents located

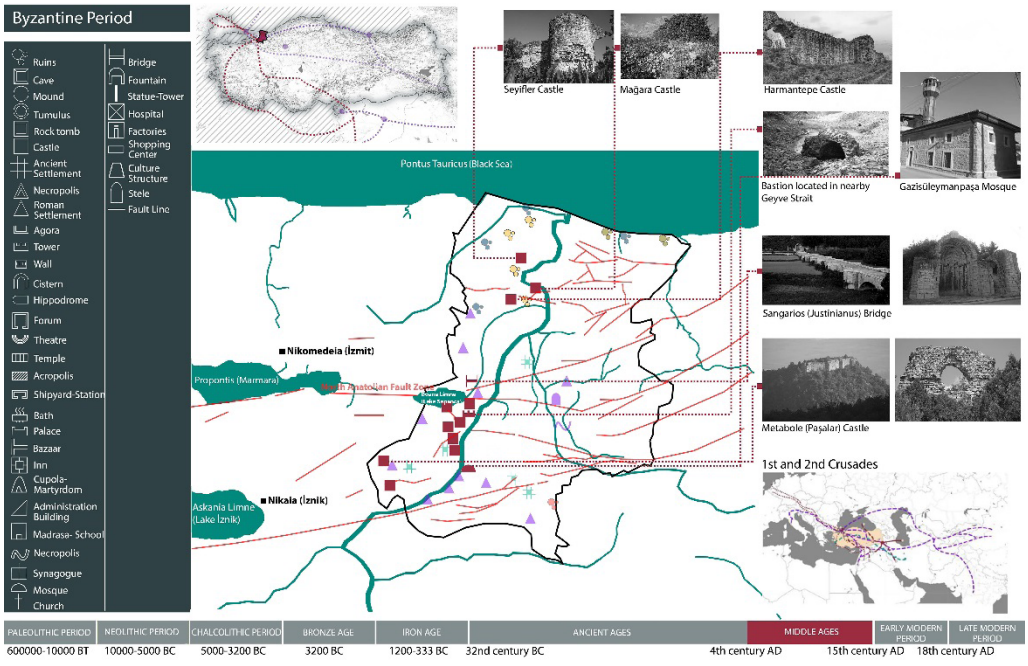

Figure 9. Traces of Byzantine period settlements in the city of Sakarya (Sources of the images are indicated in the bibliography and the map was created by the authors with data from the relevant doctoral thesis, Yıldırım, 2003).

around the common area and where they stayed during migration will appear as rooms and sofas in the Turkish house. During the period of the Anatolian Seljuk State, new functions were given to the existing structures, such as the conversion of churches into mosques, and the city developed by joining the Byzantine cities. During the period, castle-city settlements continued to get stronger (Tuğaç, 2021). The Ottoman Empire was established as a result of the collapse of the Anatolian Seljuk State and the strengthening of the Ottoman Principality.

While examining the settlement structure in the Ottoman period; it can be divided into 3 periods: Early period (14th century-15th century), Traditional/Classical period (16th century-18th century) and Westernization period (19th century-20th century). The Ottoman Empire gave importance to urbanization from the early period. While settling around existing cities, as in the Seljuk period, it also built its own organic order. In the organic urban settlement, the built environment is built by acting together with natural data (Figure 10).

In the 17th century, a settlement policy was determined in order to settle the Ottoman people and as a result of the Celali Revolts, the people migrated from the countryside to the city. In this period, it can be said that security which is the main element that constitutes the settlement setup of Byzantium also played a role in the construction of Ottoman urban settlements. Ottoman cities with ethnic, religious, economic and social diversity; they are settlements that are in harmony with the natural environment, the size of the parcels increases as they move away from the city, small adjoining structures in the middle of the city center with public buildings, there are no class differences and the neighborhood culture is widespread. The bazaar where commercial activities are carried out in Ottoman cities is an important center (Tuğaç, 2021).

With the reform movements that came with the Tanzimat Edict declared in 1839, Ottoman cities experienced transformations in physical, social and administrative areas. Along with the traditional organic city plan in urban

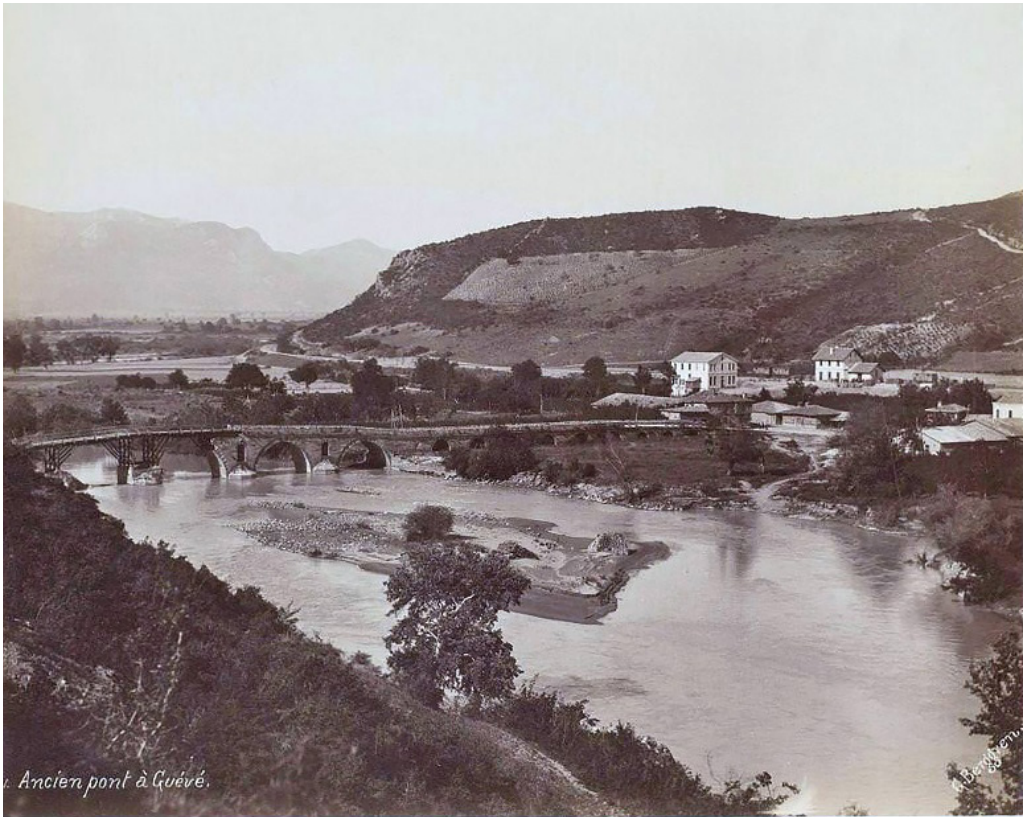

Figure 10. Old view of Geyve Bridge over Sakarya River and Geyve district of Sakarya province (Old Türkiye Photos Archive, 2023).

settlements, the grid city plan has also begun to be seen as a result of reasons such as the development of railways, the destruction of the traditional texture in natural disasters, and the transition to the nuclear family process in the social structure (Aliağaoğlu & Uğur, 2016; Özcan, 2007). In the period, row type houses were built and multi-storey housing culture began to become widespread with apartment building (Bilgin, 1996).

In parallel with these developments when the settlement practices of Sakarya are examined, it is known that there was a settlement called "Island" or "Ada village" at that time. The Island Village was formed by transforming the Adapazarı Plain and the surrounding forest areas into agricultural areas and since the 16th century it has formed the core of the present city. A village named Ada was developed as a market place in the location where today's city settlement is located and the city began to be named with this name. The city of Adapazarı was named after the second word of its name, the "market" because it was established as a marketplace before. The word "island" was taken because those coming from the east to the marketplace had to cross the Sakarya River and those coming from the west had to cross the Çark Water and the settlement surrounded by water had an island appearance (Karaer, 2020), (Figure 11).

Figure 11. The view of Kadı Bridge, located in the borders of Serdivan district of Sakarya province, from the 1890s (left), (Adapazarı History, 2023) and view of Adapazarı district of Sakarya province, dated 1901 (right), (Old Türkiye Photos Archive, 2023).

Sakarya city, which has been an important transit point since ancient times and was a marketplace during the Ottoman period, became a commercial center towards the 19th century. Adapazarı was a district of the İzmid sanjak of the Hüdavendigar province in 1852. With the establishment of the municipal organization in 1869 and the articulation of the Haydarpaşa-Ankara railway line to the city in 1899, the development of the city of Adapazarı on the southwest-northeast axis accelerated (Karaer, 2020), (Figure 12).

Figure 12. The view of Adapazarı Station, dated 1914 (Sülük, 2023).

Kaynarca Şeyh Müslihüddin Mosque, a wooden bell-style mosque built by Şeyh Müslihüddin, the sheikhülislami of Sultan Orhan Gazi, Taraklı Yunuspaşa Bath, Geyve II. Bayezid Bridge which is the only bridge example that has survived from the Ottoman period and Geyve Elvanbey Lodge are important structures built in the period. In addition, Sinan Bey Inn, which is one of the important structures that indicates the commercial position of Geyve, located on the middle arm road route in the Ottoman triple road system connecting Anatolia to İstanbul, is one of the works of the Ottoman period that has survived to the present day (Çetin, 2006), (Figure 13).

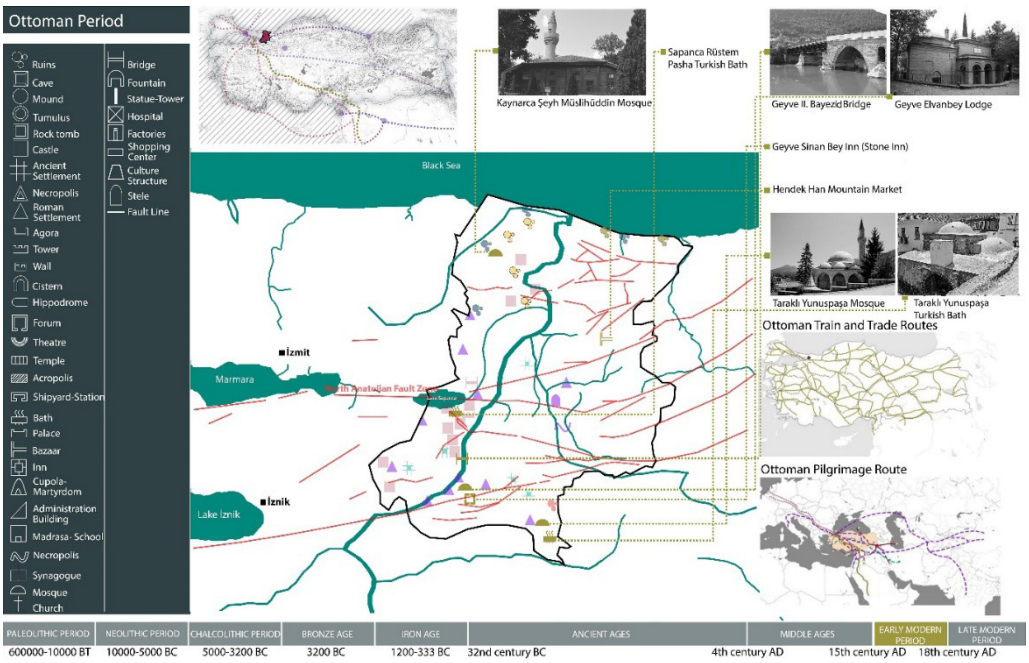

Figure 13. Traces of Ottoman period settlement in Sakarya city (The map was created by the authors and sources of the images are indicated in the bibliography).

When the settlement structure of the city of Sakarya in the Ottoman period is examined in outline, it is observed that ethnic groups played an important role in creating the built environment. This effect has continued until today and has created the cosmopolitan structure of the city. Another important turning point is the transformation of the city's built environment with the westernization movements of the Tanzimat period. During the Ottoman period, the settlement was generally along the east of the Sakarya River and moved to the west over time.

Investigation of Sakarya City Republican Period (1923-Present) Settlement Fiction

The transformation of settlement practices in Anatolian cities from the proclamation of the Republic to the present can be examined under 4 main headings: 1923-1950: Early Urbanization Practices, 1950-1980: Unplanned Urbanization Period, The Built Environment Transformed by the 1980-2000 Neoliberal Era Decisions and Transformation of the Built Environment after the 2000s.

1923-1950: early urbanization practices

In early urbanization practices, the capital Ankara was accepted as a prototype for all Anatolian cities; boulevards, streets and intersections were designed with a gridal plan scheme and a radical modernization was made (Tuğaç, 2021). Stone, wood and adobe, which are the materials of the place of residence, were abandoned and the structures were built using concrete, steel and glass materials. State housing built in this period is considered to be the origin of mass housing (Bilgin, 1996). As a result of the granting of housing loans for cooperatives

in 1945, housing production patterns changed and an "idealized modern housing image" was created by moving from traditional housing typology to two-storey houses and the first cooperative spaces (Tuğaç, 2021).

1950-1980: unplanned urbanization period

In the period between 1950 and 1980, the population migrating from the countryside to the city, with the effect of industrial developments such as mechanization in agriculture, caused unplanned urbanization with slums. With regulations such as zoning amnesty and the Condominium Ownership Law published in 1965, reinforced concrete apartments have become increasingly common (Bilgin, 1996; Tuğaç, 2021), (Figure 14).

Figure 14. Aerial photograph dated 1963 of Adapazarı district of Sakarya city (Sakarya Metropolitan Municipality Archive, 2023).

The built environment transformed by the 1980-2000 neoliberal era decisions

As a result of economic restructuring within the framework of neoliberal policies implemented after 1980, developments such as the establishment of metropolitan municipalities and the regulation of zoning rights have led to rapid urbanization of the built environment (Tuğaç, 2021). In addition, after the Marmara earthquake in 1999, in the 2000s as a result of the important transformations in Turkey's housing policies such as the creation of TOKİ houses, a period was entered in which new construction practices were constructed.

Transformation of the built environment after the 2000s

After the 1999 Marmara earthquake, the way of housing and settlement practices were questioned, and a series of regulations were made in the housing production process, such as the published earthquake regulations. And as a result, a uniformized housing stock resistant to earthquakes has emerged. When the transformation of the built environment after the earthquake is examined; it is observed how important it is to accept the earthquake, which is the main goal of the article, as a location information and to design the built environment together with the earthquake phenomenon.

When the various structures that have survived to the present day in the city of Sakarya, pointing to the period of Turkey, are examined; People's House, Atatürk's House, Yeni Mosque and Orhan Gazi Bazaar maintain their presence in the city with their historical layers (Figure 15). Uzunçarşı, which is one of these structures, was not heavily damaged in the 1999 Marmara earthquake due to its 2-storey and earthquake-resistant structures. The main axis of the city of Adapazarı in the southwest-northeast direction was formed by the filling of the formerly stream-swampy area with soil by the inhabitants and the first settlements were located on opposite sides of the stream bed. The roads were constructed parallel to the stream and the main axis emerged. Uzunçarşı is located at the end of the axis parallel to this axis. A large part of the tradesmen in today's Uzunçarşı consists of immigrants who migrated at that time. This reflects the cosmopolitan nature of the city.

Figure 15. Traces of Republican period settlements in Sakarya city (The map was created by the authors and sources of the images are indicated in the bibliography).

When traces of urban development have been traced in the city of Sakarya since ancient civilizations, the settlement in the land close to the water source and with a solid ground draws attention. During the Bithynia period, it was settled in the Tarseia/Tarsos (today's Küçük Esence) region on the edge of the Sakarya River, close to Adapazarı. In the Roman period, the settlement in Yenikent, close to the center of Adapazarı, where earthquake houses were built after the 1999 Marmara earthquake, draws attention. The relationship between the settlement decisions on the land with solid ground in the Roman period and today's settlement practices will be discussed in detail in the conclusion and evaluation section. As the urban growth process of Sakarya city continues to be examined, it was settled along the east of the river during the Ottoman period and it seems that the settlement shifted to the west over time. In the Republican period, the city developed on the southwest-northeast axis until the 1999 Marmara earthquake. After the earthquake, the development in the west of the Sakarya River slowed down and turned to the northwest (Hayır & Akyol, 2007), (Figure 16, 17).

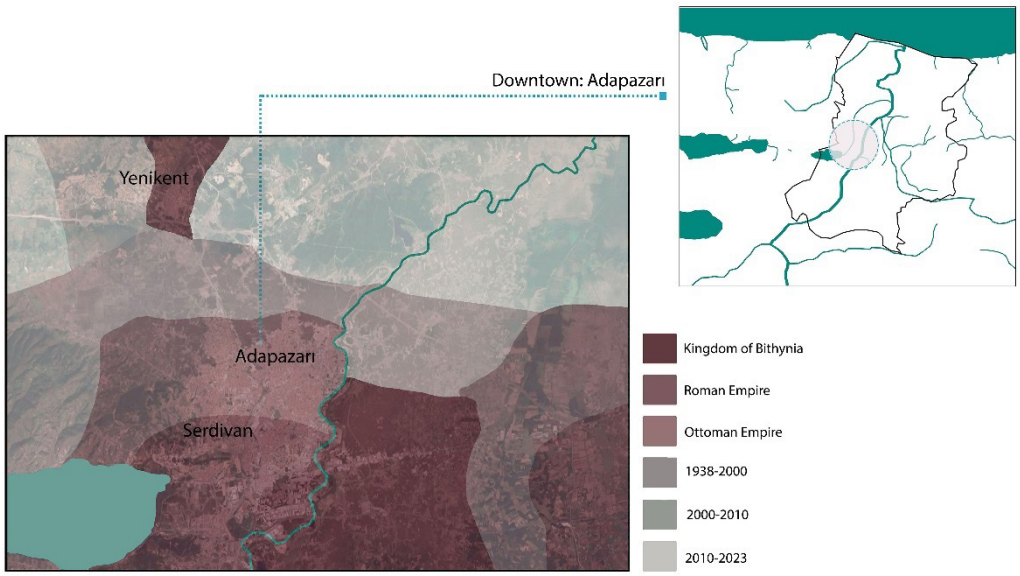

Figure 16. Adapazarı district of Sakarya city and its surrounding urban development (The map was created by the authors).

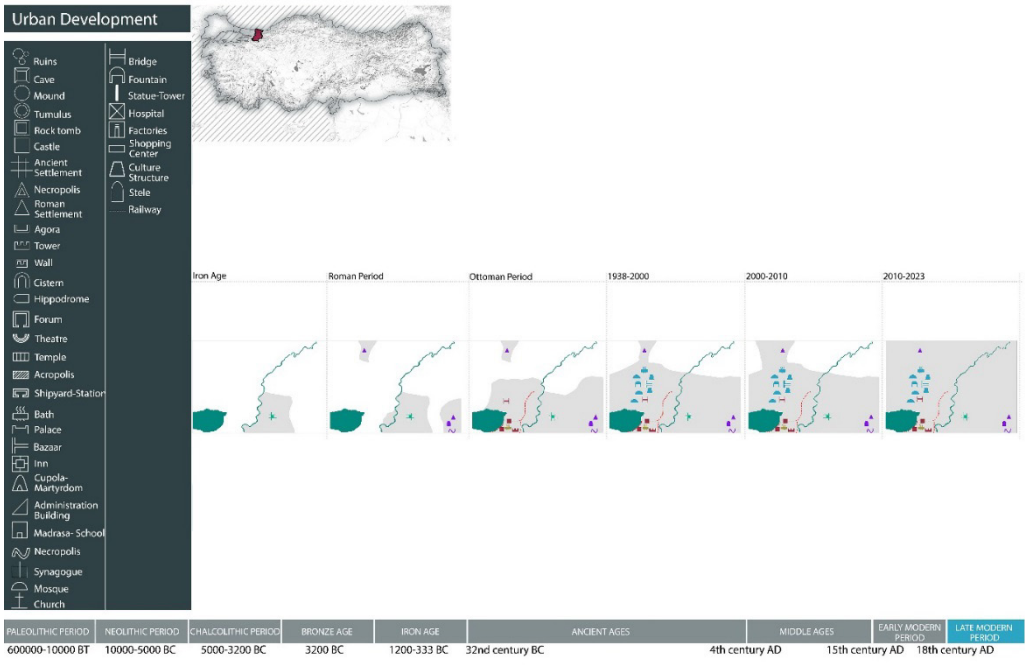

Figure 17. Urban development map of the city of Sakarya from the Iron Age to the present (The map was created by the authors).

When the settlement traces from the ancient times to the present are examined comparatively in the city of Sakarya the proximity of the settlements to the water source during the Paleolithic, Neolithic, Chalcolithic and Bronze Ages draws attention. Although the practice of settlement close to water was continued in the Iron Age and Roman period, it is observed that settlement was given importance on land with solid ground. In the Byzantine period traces of settlements where the security element was at the forefront can be reached along the west of the Sakarya River through the castles, the castle bastion and the Sangarios (Justinianus) Bridge. During the Ottoman period the settlement shifted to the east of the river and generally there was a settlement on solid ground (Table 1).

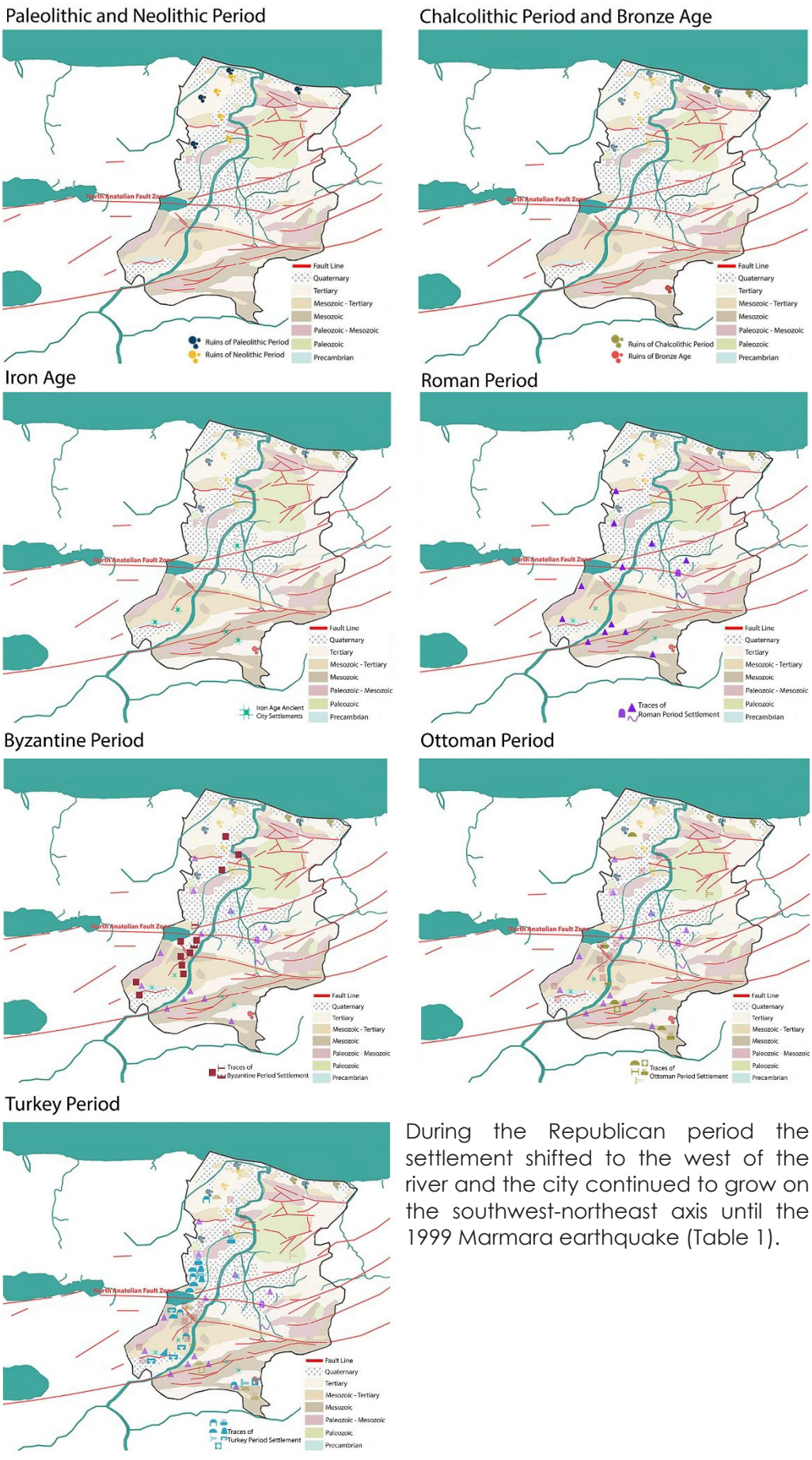

Table 1. Examination of the relationship between the settlement traces of Sakarya city from ancient times to present the earthquake phenomenon. The transition from the young alluvial soil to the old solid ground is in the south direction and the ground differentiations are indicated by colours. A large part of the city consists of alluvial ground with the effect of the river and precambrian land is observed in Pamukova district (The map was created by the authors).

During the Republican period the settlement shifted to the west of the river and the city continued to grow on the southwest-northeast axis until the 1999 Marmara earthquake (Table 1).

THE PLACE OF EARTHQUAKE CASE IN SAKARYA CITY SETTLEMENT PRACTICES

The city of Sakarya, located on the North Anatolian fault line, has experienced earthquakes that caused great damage and loss of life throughout history. The Nicomedia and Nikaia earthquakes that took place in 120 AD during the Roman period and the earthquakes estimated to have occurred between 161-192 AD caused great damage to the settlements of the Bithynia Region close to today's Adapazarı. In addition, the earthquakes experienced in 268-270 AD, 358 AD and 368 AD also caused damage to the Roman period ancient city settlements in the region (Şahin, 2000). The earthquakes in the region caused serious damage to the ancient city settlements, causing the settlements to be concentrated on rocky lands with solid ground. Kome Sau Antique City near Karaman, which is one of the village settlements close to Adapazarı, draws attention because it is the region where the city is desired to be moved after the 1999 Marmara earthquake.

When the Byzantine chronicles are examined in order to understand the effects of the earthquake phenomenon on the city of Sakarya, it is understood that a significant part of the 548 earthquakes that occurred between 500 BC and 1890 AD occurred during the Eastern Roman (Byzantine) period and that these earthquakes caused great destruction in the city. In the information obtained from the Byzantine chronicles while the place and date of the earthquake were generally reported, the damage caused by the earthquake and the number of disaster victims were also reported. During the earthquakes experienced in the city during the Byzantine period, tsunamis sometimes occurred and caused great destruction, and the important castles and churches of the period were destroyed (Ekin, 2005).

Earthquake is an important phenomenon that accompanies the attempts to create the built environment in the city during the Ottoman period. In particular, the earthquake that occurred on September 10, 1509, which Ottoman historians called Kıyamet-i Suğra (Little Apocalypse), destroyed many monumental structures in the city and caused great damage in the city. Severe earthquakes occurred in the city in 1719, 1788, 1878, 1894 and 1912 which sometimes brought tsunamis together during the Ottoman period, and also caused significant damage. The earthquake that occurred on July 10, 1894; it caused the minaret of Orhan Mosque in Adapazarı to fall and many buildings were damaged. The fact that one of every five buildings is unusable after the earthquake and there is not a single structure that was not damaged by the earthquake shows the severity of the earthquake. It is stated that the waters of the Sakarya River rose during the earthquake and invaded the fields. Despite all the negativities caused by this earthquake, the fertile land of the region draws attention according to the transfer of western travelers and missionaries (Ekin, 2005).

"Despite all these disadvantages that the country presents, I advise European companies and even small entrepreneurs: Do not give up on your agricultural and industrial projects. The soil is truly astonishingly productive: the humid climate is extremely suitable for vegetation. The natives and immigrants here - Turks, Armenians, Bosnians, Bulgarians, Circassians, Tatars, etc. - cultivate in a way that can be considered primitive. They start fires or cut down trees in the forest to open a field. They obtain a product that European farmers who farm according to the rules in their country can emulate (Ekin, 2005, p. 690-691)."

When Evliya Çelebi talks about Sapanca in his Travel Book, he points to the Sapanca Rüstem Pasha Bath which is a work of Mimar Sinan, built during the Ottoman period with the words "It has a beautiful mosque, a bath, a beautiful

bazaar". As a result of a great earthquake that took place in the region in 1719, the complex was destroyed and in a decree written to the Sapanca judge for its repair the bath was also requested to be repaired (Çetin, 2006, p. 243).

Although sufficient information cannot be obtained from the archive documents in the sources reached about the earthquakes affecting the city of Sakarya during the Ottoman period, it is possible to read in detail the damage caused by the earthquake in the city and the impressions of the city after the earthquake from the reports of western travelers and missionaries.

When the earthquakes experienced in the city of Sakarya during the Republican period are examined, the earthquakes in 1943 (6.9 intensity), 1967 (7.1 intensity) and 1999 (7.4 intensity) caused greater damage in the recent past. The earthquake, the epicenter of which was Gölcük on August 17, 1999, caused loss of life and great destruction in the city of Sakarya and its surroundings (Hayır & Akyol, 2007). The city, which suffered great damage especially in the center of Adapazarı, suffered great destruction as a result of the collapse of the buildings on the east of the line that separates Tığcılar Neighborhood and Semerciler Neighborhood (Bol et al., 2007), (Figure 18, 19, 20, 21).

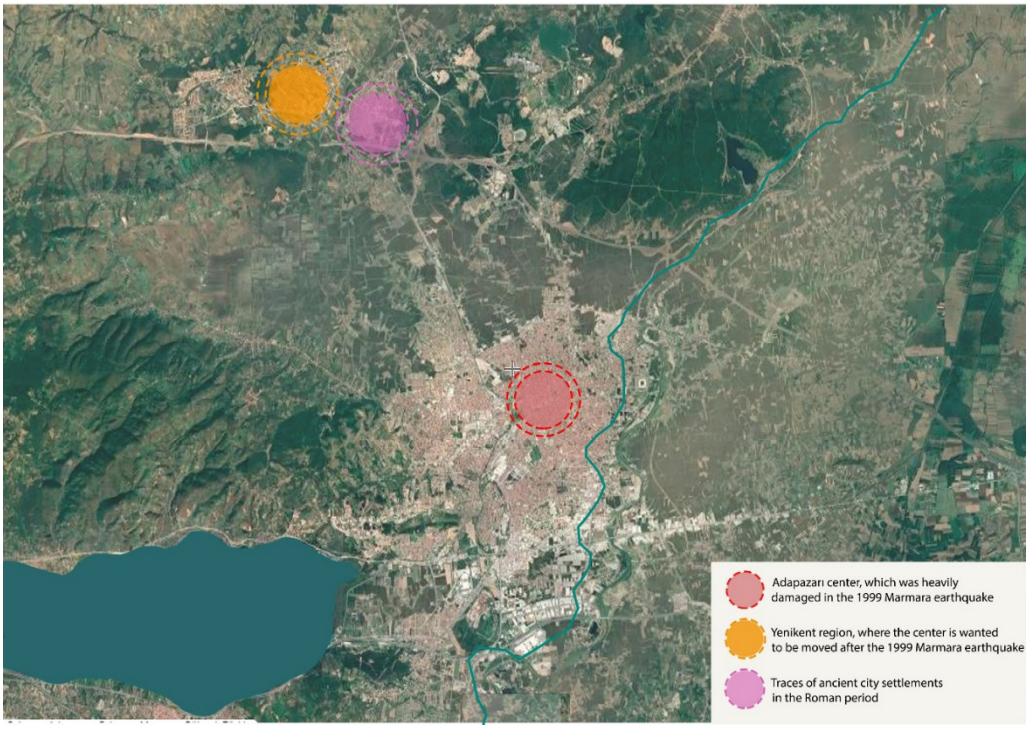

Figure 18. Adapazarı center, which was heavily damaged after the 1999 Marmara earthquake, and the Yenikent region where the center was wanted to be moved after the earthquake (The map was produced by the authors based on the image obtained from Google Earth dated 2023).

After the 1999 Marmara earthquake which the city of Sakarya experienced, a report was prepared for the creation of new settlements on solid lands for the city of Sakarya and its affiliated settlements after the 1999 earthquake, with the work of experts from MTA, TÜBİTAK and METU institutions. The conclusion reached by the report is that the structures on and in the immediate vicinity of the active fault and the structures built on the soils with high liquefaction feature, suffered great damage as a result of the earthquake. In addition, during the construction process of buildings, construction errors and defects are also important factors that cause damage. As a result of the report, Yenikent region which is located close to the center of Adapazarı and whose ground is resistant to earthquakes was presented as a new settlement area. (General Directorate of Mineral Research and Exploration, 2000).

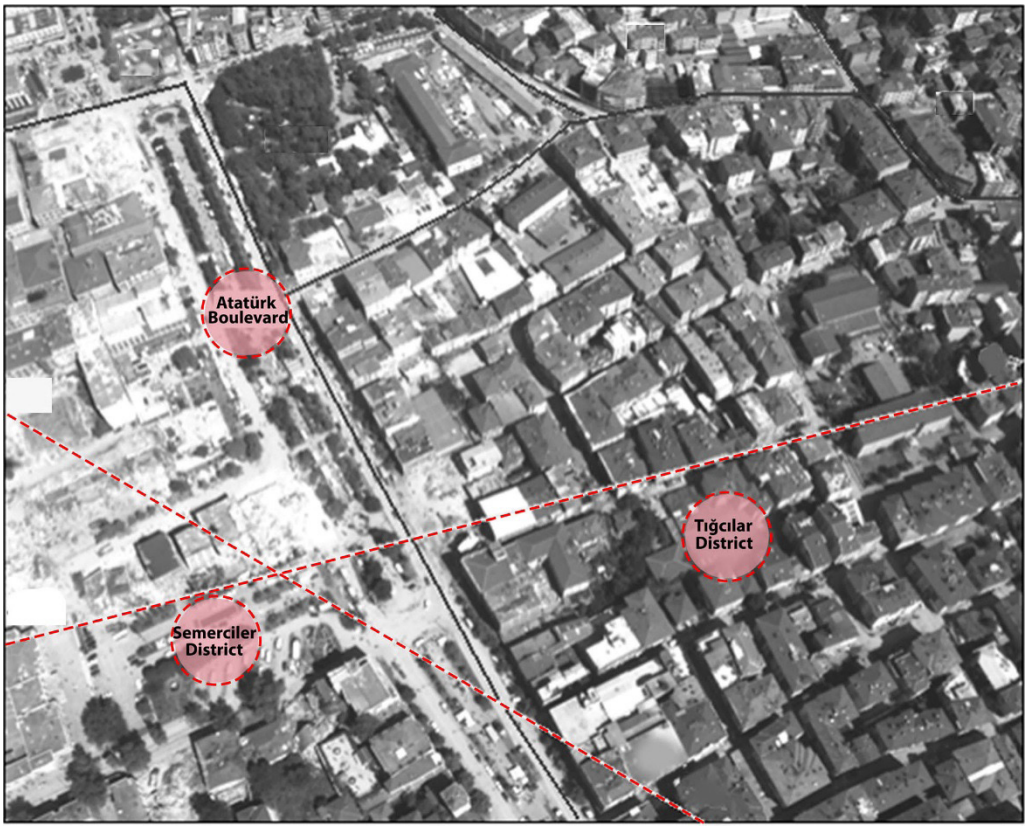

Figure 19. Aerial photograph of damaged areas in the center of Adapazarı after the 1999 Marmara earthquake (Bol et al., 2007).

Figure 20. The view of Çark Street in the Adapazarı district of Sakarya, damaged in the 1999 Marmara earthquake, 20 years after the earthquake (Mediabar News Archive, 2019).

Figure 21. The view of the Yenidoğan Neighborhood in the Adapazarı district of Sakarya, which was damaged in the 1999 Marmara earthquake, 20 years after the earthquake (Mediabar News Archive, 2019).

As can be seen, the city of Sakarya, located on the North Anatolian fault line, was destroyed by the earthquakes it experienced in the historical process and was rebuilt. For this reason, the earthquake phenomenon should be one of the main factors that should be given priority in urban planning decisions. Although the alluvial ground where the Sakarya River and Sakarya River, which was formed by the earthquake action, poses a risk for the settlement due to the earthquake; it has been preferred for settlement by civilizations since ancient times due to

its fertile lands and strategic location. The fact that civilizations chose the same region for settlement each time caused the accumulation of cultural layers in the region and made us question the factors affecting the relationship between the inhabitants and the "place". As a result of all these, within the scope of the study, it is tried to be revealed that reading the data of the place, which creates the identity of the city and contributes to the urban memory; is one of the main elements that should be given importance in city planning initiatives. In order to minimize the damage in the new earthquakes that are expected to occur in the city, it is valuable to accept the earthquake phenomenon as a local data and to make planning initiatives in this direction.

CONCLUSION AND EVALUATION

Man is so closely related to his place of residence that our knowledge of this place will enlighten us about a local as well. Anatolian geography is the most important center where people have built their "settlement" practices from ancient times to the present. This geography exists in a continuous dynamic cycle with ground movements. In this context, within the scope of the study, the settlement practices of civilizations from ancient times to the present were examined in the city of Sakarya, which is defined within the administrative borders today, which exists with the earthquake phenomenon (Figure 3,4,5,7,9,13,15). Located within the settlement network of the Sakarya River, which forms a cultural backbone in the city with its waters coming out of the spring, which is 3 km southeast of Eskişehir Çifteler district, the region today called the city of Sakarya within the administrative borders, is tried to be put forward together with the earthquake phenomenon that brought it into existence.

The city, which has existed with the phenomenon of earthquakes since 2100 BC, was chosen as a settlement by civilizations such as Hittites, Phrygians, Lydians, Persians, Ancient Macedonian Kingdom, Bithynia Kingdom and Roman Empire. While the earthquake phenomenon razes the city to the ground and re-creates it, it also offers fertile lands to it. This is one of the important reasons why the city was chosen as a settlement by civilizations from ancient times to the present. From the cultural layers that have accumulated on top of each other, traces of the built environment built by the Roman Empire and the Ottoman Empire, which preserved its existence after the earthquakes, have continued. The cultural heritage that preserves its existence after the earthquakes is an important document not only for the Anatolian geography but also for the whole world. It is valuable to protect this cultural heritage in order to make sense of the relationship that human beings have established with the place in settlement practices.

Despite the devastating earthquakes experienced by Sakarya city, the Sangarios (Justinianus) Bridge, which was built in the Byzantine period, and the Metabole (Pashas) Castle, which contains thousands of architectural elements from the Roman settlement to the Middle Byzantine period, are among the important works that have survived to the present day. In addition, the city preserves its cultural richness with works such as Kaynarca Şeyh Müslihiddin Mosque, Taraklı Yunuspaşa Mosque, Geyve II. Bayezid Bridge was built in the Ottoman period, and Uzunçarşı, Community Center, Atatürk House, New Mosque and Orhan Gazi Bazaar was built in the Republican period. The aim of the study is to lay the groundwork for constructing the environment that will enable to transfer this wealth to future generations.

Even though the 1999 Marmara earthquake caused great destruction in the city, the city continues to exist in the same region (Figure 23). In order to minimize

the damage to the city following the new earthquakes that may occur in the city, after the 1999 Marmara earthquake; it was decided to move the city center to the Yenikent Region, which includes the Karaman, Korucuk and Camili campuses, which are lands that are well grounded against earthquakes. After the decision taken, collective disaster houses were built in Karaman, Camili and Korucuk campuses, respectively, and it was aimed to unite the workplaces destroyed in the earthquake in the industrial estates created. In order to support the development of the city in this direction, it is aimed to move the governor's campus and various schools, which are planned to gather all the official institutions of Adapazarı, to this region. While the development of the city on the southwest-northeast axis before the earthquake tends to the northwest after the earthquake; the city continues to develop in the direction of Serdivan district with the influence of Sakarya University and individual preferences (Hayır & Akyol, 2007).

After the 1999 earthquake, the development of the city in the direction of Yenikent region was supported and plans were made to move the center to this region. However, Yenikent Region, where the center is wanted to be moved, has been included in the urban development as a secondary center, and the people of Adapazarı continue their daily practices such as shopping, sports, eating and drinking, social activities, as in the past, in Çark Street and its surroundings, which still maintains its quality as a city center today. This is an indication that after various natural disasters such as earthquakes, urban planning initiatives should be carried out with interdisciplinary collaboration with concepts such as belonging and urban memory that create the city.

When the Roman period ancient city settlements are examined; it is observed that the ancient city settlement of Kome Sau, one of the settlements located close to the center of Adapazarı, coincides with the Yenikent region, where Adapazarı city center was intended to be moved after the earthquake (Figure 22).

While the earthquakes that the city of Sakarya experienced in the historical process somehow guided the attempts of the ancient city settlements of the Roman period to create the built environment, it is a problematic approach to include such an important issue in the urban development process only after a devastating earthquake. It is observed that the earthquake phenomenon experienced by the city of Sakarya since ancient times is the dominant factor that should be included in the urban development process of the city, considering the expected big Istanbul earthquake. It is valuable to read the information about the place correctly so that the earthquake can be removed from being a disaster situation and included in settlement practices.

The fact that the city exists in the same region after devastating earthquakes shows; that the task of creating cities that are resistant to various natural disasters such as earthquakes should be handled with the common approach of people from different disciplines such as sociology, psychology, architecture, urban and regional planning, engineering and earth sciences. The establishment of settlement practices with an interdisciplinary common approach can contribute to the creation of the sense of belonging that the residents establish with the city. If a planning approach in which the earthquake phenomenon, which is the ancient knowledge of the place, is taken into consideration while planning the settlement structure of Sakarya city, which has such fertile lands, the earthquake can be removed from being a disaster situation that destroys the city. The aim of the article is to transfer the data that will accompany this process to the planning approaches of the future and to contribute to the literature.

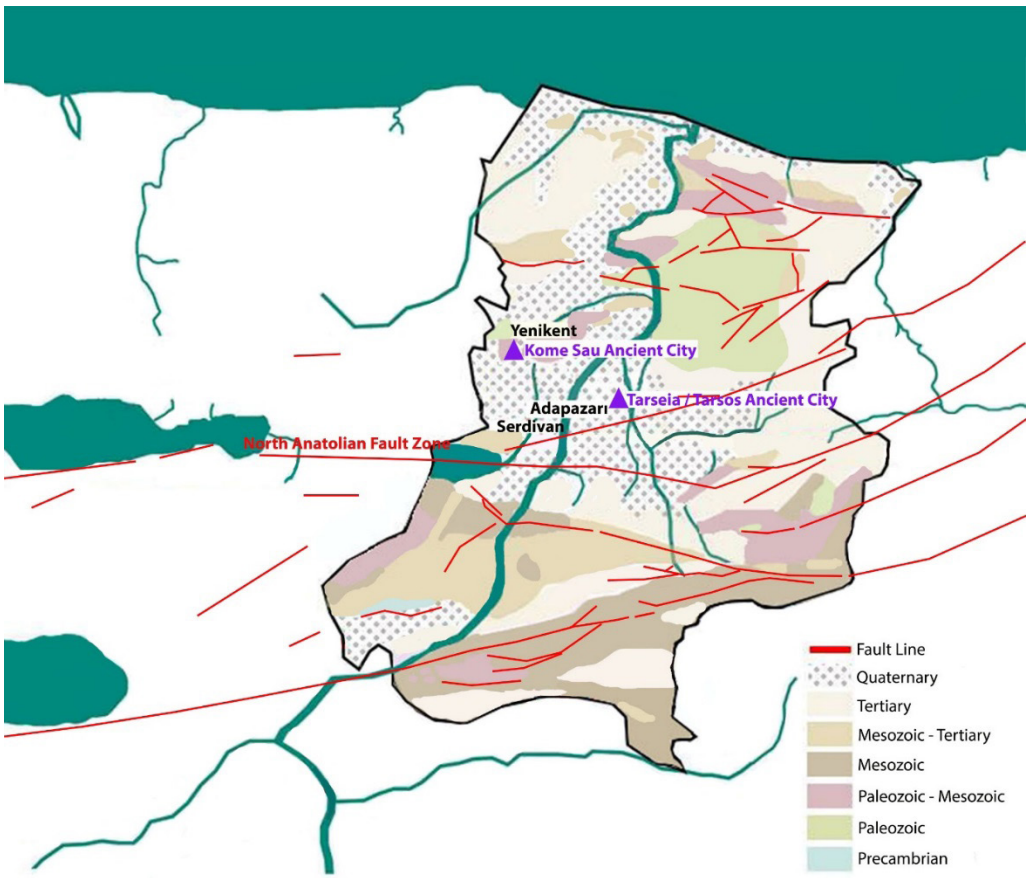

Figure 22. Sakarya city today's city center and traces of the Roman period ancient city settlement. The transition from the young alluvial soil to the old solid ground is in the south direction and the ground differentiations are indicated by colours. A large part of the city consists of alluvial ground with the effect of the river and precambrian land is observed in Pamukova district. Map was created by the author with the data obtained from the related article (Kurt & Duman, 2016).

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Confict of Interest

No confict of interest was declared by the authors.

Authors Contribution

All author(s) individually 1) participated the design process, collecting data and analysing the data examined, 2) participated the writing the draft and critically evaluating the content, 3) approved the final version of the article and took all responsibility for this manuscript. While the 1st author Ayse Tugce Balaban was involved in the process at a rate of 75%, the 2nd author Elif Yesim Kösten was involved in the process at a rate of 25%.

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Research Article

Conservation as a Driving Force for the Sustainability of Yeşilburç Village Cultural Heritage Values

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Abstract

Historical environments and cultural assets, which are important components of these environments, carry values that are transferred from generation to generation and provide a link between the past and the present. Today, globalization and urbanization, which pose a significant threat to this invaluable heritage, also threaten rural settlements, where place-specific values are relatively better preserved than in urban centers. The protection of the heritage values of historical environments as a whole and the importance of protection have also been revealed by international treaties. This article focuses on Yeşilburç Village in Niğde Province, one of the villages built by Greeks migrating to Greece and later inhabited by Muslims migrating from Greece, following the forced migration agreement signed between the Turkish and Greek governments in 1924.

Yeşilburç historical settlement was declared an urban conservation area in 2019, and a conservation plan is under construction in line with the current legal regulations in Turkey. In this study, it is claimed that the conservation works are a driving force and opportunity for the sustainability of the settlement, and the importance of the documentation studies carried out within the scope of the planning studies is emphasized. The data presented in this study is based on fieldwork and archival research conducted during the conservation planning process and assesses the challenges encountered in the process, the existing and potential values of the site, and the threats and opportunities that may hinder conservation. The key and triggering role of conservation and its potential resource quality is indispensable in maintaining the original values of the Yeşilburç settlement, which has a rich historical past, and new research will strengthen this situation.

Keywords: Cultural Heritage Documentation, Conservation Plan, Heritage Tourism, Integrated Conservation, Sustainability.

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Araştırma Makalesi

Niğde İli Yeşilburç Köyü'nün Kültürel Miras Değerlerinin Sürdürülebilirliği İçin itici Bir Güç Olarak Koruma

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Özet

Tarihi çevreler ve bu çevrelerin önemli bileşenleri olan kültürel varlıklar, nesilden nesile aktarılan değerler taşımaktadır. Bu özelliği ile de geçmiş ile bugün arasında bir bağ kurulmasını sağlarlar. Günümüzde bu paha biçilmez miras için önemli bir tehdit oluşturan küreselleşme ve kentleşme, mekâna özgü değerlerin kent merkezlerine göre nispeten daha iyi korunduğu kırsal yerleşimleri de tehdit etmektedir. Tarihi çevrelerin sahip olduğu miras değerlerinin bir bütün olarak korunması ve korumanın önemi uluslararası antlaşmalarla da ortaya koyulmuştur. Korumayı gerçekleştirmek için disiplinler arası çalışmalara dayanan kapsamlı belgeleme çalışmalarının yapılması önceliklidir. Bu makalede, Türk ve Yunan hükümetleri arasında 1924 yılında imzalanan zorunlu göç anlaşması uyarınca, öncesinde Yunanistan'a göç eden Rumlar tarafından inşa edilen ve mübadele sonrasında, Yunanistan'dan göç eden Müslümanların iskân edildiği köylerden biri olan Niğde İli Yeşilburç Köyü konu edilmektedir.

Yeşilburç tarihi yerleşimi, 2019 yılında kentsel sit alanı olarak ilan edilmiştir ve Türkiye'de mevcut yasal düzenlemeler doğrultusunda koruma amaçlı imar planı yapım aşamasındadır. Bu makalede koruma amaçlı çalışmaların yerleşimin sürdürülebilirliği için itici bir güç ve fırsat olduğu öne sürülmekte, planlama çalışmaları kapsamında yapılmakta olan belgeleme çalışmalarının önemi vurgulanmaktadır. Bu çalışmada sunulan veriler koruma planlama sürecinde yapılan kapsamlı alan çalışmalarına ve arşiv araştırmalarına dayanmaktadır. Süreçte karşılaşılan güçlükler, alanın mevcut ve potansiyel değerleri ve korumaya engel olabilecek tehditler ile olası fırsatlar değerlendirilerek sonraki çalışmalara kaynak oluşturmak amaçlanmıştır. Zengin bir tarihi geçmişe sahip olan Yeşilburç yerleşiminin özgün değerlerinin sürdürülmesinde, korumanın anahtar ve tetikleyici rolü ve potansiyel kaynak niteliği vazgeçilmezdir ve alan özelinde yapılacak yeni araştırmalar bu durumu güçlendirecektir.

Anahtar Kelimeler: Bütüncül Koruma, Koruma Planı, Kültürel Miras Belgeleme, Miras Turizmi, Sürdürülebilirlik.

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INTRODUCTION

Niğde has a rich natural and cultural heritage. As in every Anatolian city, it is possible to observe cultural stratification both in rural and urban areas. This cultural landscape, which has developed over the centuries due to various factors, still has many areas of research to explore. Niğde is one of the regions where the non-Muslim population, consisting of Greeks and Armenians before the Republic, was mostly settled (Özkan, 2007). With the agreement signed between Turkey and Greece in 1924, the exchange of the non-Muslim population living in Turkey and the Muslim population living in Greece was made compulsory. With the treaty, these lands also continued to exist for years, and the structures that the settled people had to leave continued their existence as the living spaces of the new population settled within the framework of a certain policy. Within the scope of the exchange, 21 villages in Niğde city center were resettled reflecting a significantly higher number of people living in the province. (Öztürk, 2005). Yeşilburç where is one of those resettled settlements is located approximately 5 km from the city center in the northeast of Niğde (Figure 1). What makes the settlement unique and important is the story of the village, the first owners, who built this extraordinary texture and structures, and immigrated to Greece, and the newcomers with the agreement.

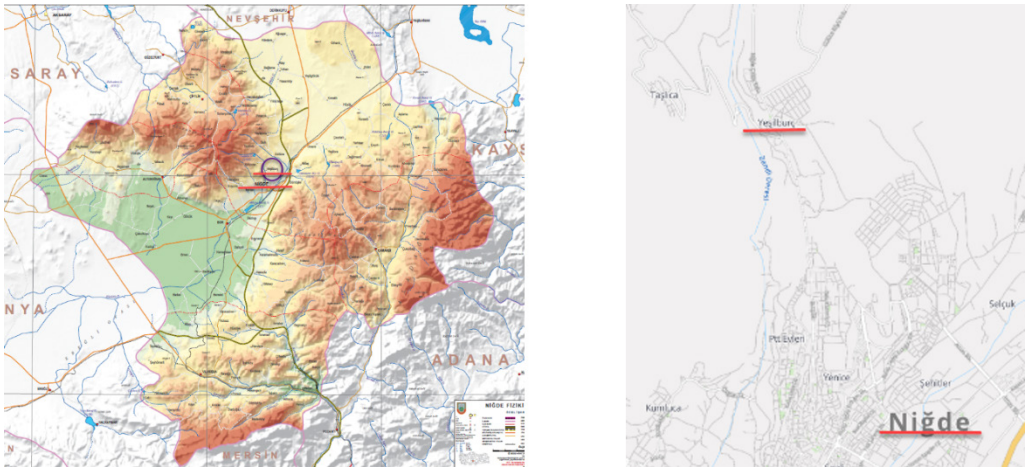

Figure 1. Location of Yeşilburç Village, Niğde (https://atlas.harita.gov.tr)

The settlement is located on the slopes of a deep valley positioned just to its west, and the structures were built on terraces that are stepped from the lower level of the slope to the upper level to enjoy this extraordinary view. Characteristic feature of the village has two-storey, mud-roofed and stony houses with underground spaces, which are located adjacent to each other alongside the terraces and facing the South-west.

The main square is in front of the old church building. One of the exciting things that can be easily noticed in the old part of the village is that the decorated doors of the houses date back to the early 20th century. Entrance doors have been turned into works of art, are primarily masterworks, and preserve the features of the period when they were built.

Its proximity to the city center is one of the biggest threats to the settlement's conservation and survival. Even though its special qualities have been recognized, the lack of any laws other than those that protect registered historic structures has led to the loss of some of the original structures and values of the rural fabric. Declaring the settlement as an urban site in 2019 is a source of hope for the preservation of cultural values and sustainable urban development (Figure 3).

YEŞİLBURÇ VILLAGE: HISTORY, CULTURAL AND NATURAL HERITAGE

The historical background of the region, including its geographical characteristics dating back to prehistoric times, can be gathered from the excavations conducted in the area. The findings and evaluations made from these investigations, as well as historical documents, provide valuable insights into the area's past. The region is located on important trade routes, and the fertile farmland is located within easily accessible geography and has hosted many cultures (Strabon, 2012). Although a detailed account of the history of the city of Niğde is not included in this study, its history, dating back to the palaeolithic period, can be summarized as follows: the Assyrian Trade Colonies, the Hittites, the Tabal Pradesh Hittite State, the Frighs, the Persians, the Kingdom of Macedonia, the Kingdom of Cappadocia, the Romans, the Byzantine Empire, the Anatolian Seljuk State, Eretna Bey, Karamanos Bey, and the Ottoman State(Gabriel,1962). The historical links of the Yeşilburç settlement can also be evaluated within this framework.

The publications on the Yeşilburç settlement mostly focus on the population exchange, which constituted a breaking point in the history of the settlement, and its aftermath, or on a few monumental buildings in the settlement (Yılmaz, 2013; Kuzucu, 2008). There is no data on when and by whom the settlement was established. Although current research dates the existing building to the 18th century concerning the repair inscription dated 1807 in the Karamanl inscription of the church (Pekak, 2007), it would not be wrong to say that the history of the settlement and the building is much older. The information obtained from the Ottoman archive records dating back to the region, which came under Ottoman rule in the second half of the 15th century, shows that the settlement existed in the early 1500s. In the research named "Detection of Settlement Centers of Niğde District in the First Quarter of the 16th Century" (Hüseyniklioğlu, 2009), it is stated that Niğde District, which is connected to the Niğde Sanjak, consisted of a total of 5 townships and 120 villages, Niğde, Melegübi, Şamardı, Melendiz, and Bor between the years 1500-1522. Yeşilburç is one of the villages where the location was determined, and it is seen that its settlement was registered with the name "Denege" in three cadastral registers between the years 1500-1522.

From another study on the Greek schools in the region, it is understood that the Yeşilburç (Denegi) Greek secondary school, which does not exist today, had 35 male students and was licensed in 1895 (Topal, 2016). According to the first comprehensive census of the Ottoman period in 1830, where only men were counted, the total male population of the city of Niğde was 5997, of which 1475 were non-Muslims. Toyer (2001), emphasizes the fact that the estimated population of the city of Niğde was 6,000 at the beginning of the 19th century, and approximately 10,000 at the end of the century, and that the Orthodox Turks were from the Karamanids, and states that it was recorded as Greek in the population records and stated that there were 320 Greek-speaking Greek families from Nacracas (Teney, Eneyi or Yeşilburç). The Karamanlı inscription of the Yeşilburç Church also confirms that a Turkish-speaking orthodox population lived here(Özkan, 2007).

With the treaty made in 1924, the inhabitants of the village left the settlement, taking only their personal belongings as much as they could carry. In the interviews made with the first and second-generation residents of the village, the people who lived in Krifçe Village in Greece before were told that the people who lived in the village of Krifçe, first went to Thessaloniki a grueling journey, from there by ship to İzmir, from there by train to Isparta and then to Uluağaç Village, which was also abandoned by the Greeks, in Niğde. and then they settled in

Yeşilburç about a year later in 1925 (Kuzucu, 2008). In the archive documents, it is stated that 71 households were settled with the decision of the Ministry of Internal Affairs(Kuzucu,2021). It is an important problem that was also discussed in later research that many problems were encountered during the resettlement process during the population exchange process and that some of the migrating families could not adapt to the places where they were resettled (Tekeli, 1990). Even though the exchanges faced problems such as not reallocating in case of relocation, it was not possible to prevent the relocations made for various reasons. For this reason, it was not possible to reach the population and settlement information immediately after the population exchange.

Another piece of information conveyed about Yeşilburç is that the economic situation of the Greek population living here before the migration was quite good, correspondingly the quality of buildings were good. It is also among the information conveyed that some of the buildings that remained empty during and after the settlement of the newly arrived population were dismantled and used for residences or public buildings built in the center of Niğde. For this reason, some of the qualified structures of the settlement that existed right after the population exchange do not exist today. Today, the population structure, which has been settled after the exchange, has also changed in size. According to the 2022 census, 464 people lived in Yeşilburç as summer and winter populations differ(Nufusane,n.d.). In order to spend the hot summer days in this healthy environment, the population of the settlement has reached the highest level in recent years with the people living outside the village, the new homeowners from the surrounding provinces and recently bought old mansions.

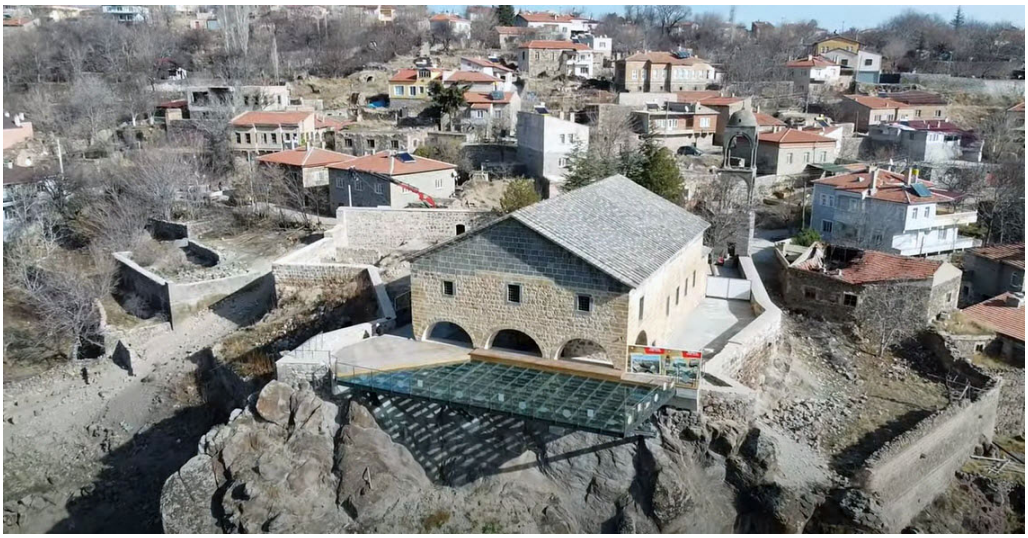

Figure 2. Yeşilburç Church-Mosque (https://www.youtube.com/watch?v=uxCknMEuCVo)

The migration of the culture revealed the Yeşilburç Village structures and then the reuse or production of the spaces by the life practices of the Muslim community who settled in these structures ensured the continuity of the cultural heritage. For instance, The Church of Yeşilburç, which is one of the most important structures of the settlement, was converted into a mosque by the community that settled after the population exchange and even used for educational purposes from time to time (Figure 2). After the completion of its restoration in 2022, it maintains to be a focal point as a panoramic point of view, a museum, and a place of worship. It is possible to follow the traces of spatial continuity and spatial transformation not only in monumental structures but also in residences as in whole heritage in Niğde(Açıkgöz and Tektaş, 2016). As can be seen in Ata's study conducted in 2017, its spatial transformation which took place were revealed in the Oral's House.

Figure 3. Conservation Areas and Registered Buildings of Yeşilburç Village, Niğde (Matched with Google Earth 2013 Image)

Yeşilburç's cultural landscape contains traces of socio-political-economic processes in its historical past and reflected in its built environment, ongoing social traditions, intangible heritage elements, and a legacy that provides continuity between the past and the future. It is the formation of a culture consisting of various beliefs, traditions, and customs, and it has an important tourism potential with its natural beauties and the existence of a deep valley right next to it and a ski resort very close, as well as a spatial experience that allows visitors to follow the transformation of places that host another culture.

CONCEPT OF CONSERVATION AS A DRIVING FORCE IN SUSTAINABILITY

The protection and strengthening of heritage sites demonstrates an organized universal approach, supported by international consensus and treaties. Organizations under the umbrella of UNESCO ICOM, ICOMOS; their subcommittees, TICCIH; In addition to other non-governmental organizations AGA KHAN, EUROPA NOSTRA, World Historic Cities, the World Monument Fund, which offers more intensive studies on economic support, and the Global Heritage Fund are the main organizations we can count in this regard.

The basic scientific approach to the protection of cultural heritage and restoration of monuments has been revealed with the Athens Charter, II. The Convention for the Protection of Cultural Property in the Event of Armed Conflict held in The Hague, 14 May 1954. Urban conservation, in other words, the protection of a monument together with its environment, became important in urban and rural settings, and vernacular buildings at the time Venice Charter asserted Evolution of Preservation Theory in 1964.

The concept of cultural heritage was first discussed and accepted at the conference organized by UNESCO in Paris. Preserving, collecting, and assessing cultural and natural heritage because of the magnitude and gravity of the new dangers that threaten them is the core of the Preamble to the 1972 World Heritage Convention. The World Heritage Convention defined cultural heritage by dividing it into three categories: monuments, groups of buildings, and sites.

Following the 1972 Convention's adoption, UNESCO compiled the World Heritage List, including the extraordinary heritage that needs protection. The vision of cultural heritage has continuously evolved since the adoption of the 1972 Convention concerning the protection of the World's cultural and natural heritage (the World Heritage Convention, m.1.1)Architectural works, sculptures, paintings, archaeological structures and inscriptions, cave dwellings, groups of buildings, and sites comprised of human works, humans, and nature were involved in the World's cultural and natural heritage. In the European Architectural Heritage Regulation (COEa, 1975: article 1), architectural heritage is not limited to monuments. Smaller-scale building groups in old towns and characteristic villages in natural and man-made formations are also included in the architectural heritage. It was emphasized that not only great monuments but also their surroundings should be assesed. Similarly, in the Amsterdam Declaration (COEb, 1975: article b), it is stated that the 19 "Architectural Heritage" includes not only individual buildings and their surroundings of extraordinary quality but also all towns or villages of historical and cultural significance.

The Amsterdam Declaration of 1975, on the other hand, is important in terms of introducing the concept of holistic protection, including user participation and the protection of social structure.

The UNESCO 2003 Convention on Safeguarding of the Intangible Cultural Heritage defines the interdependence between intangible cultural heritage and tangible cultural heritage and remarks the important role of Intangible Cultural Heritage as a part of cultural diversity on the promotion of sustainable development. It defines the cultural heritage as "the legacy of physical artifacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present, and bestowed for the benefit of future generations".

Information from Nara authenticity document (ICOMOS, 1994) indicates that the preservation of cultural heritage in all its forms and all historical periods becomes easier to the extent that values are attributed to this heritage.

Recognizing and understanding these values and interpreting them depending on the initial design and later features of the cultural heritage, its historical existence, and meaning forms the basis of the judgment to be made about the originality of the work remains in question. The values attributed to cultural assets can vary from culture to culture, even within the same cultural context. In other words, it is unacceptable to ground on the assessment of judgments and their associated originality evaluations on single and unchanging criteria.

In addition, it is known that the values attributed to a structure change over time, so there may be variations of interpretations.. Therefore, different architectural structures that remain as idle should be protected and transferred to future generations with the awareness that they are part of the same cultural heritage.

As in the Yeşilburç settlement, if there are ruptures that will change the social and physical structure of the settlement and the use of space for various reasons, the preservation of the heritage becomes a more important issue.

The CEMAT Resolution N° 2 adopted by the Council of Europe Conference of Ministers responsible for Spatial/Regional Planning (CEMAT) in Moscow, Russian Federation, on 9 July 2010 regarding the rural heritage concluded that With both tangible and intangible aspects, the rural world is a treasure trove of the cultural, natural and landscape heritage(Nepravishta et.al.,2021). When searching for authenticity, modern people draw on their rural roots, seeking an identity in the rural world.

Sustainability is one of the most important agendas of our age and associated with three basic concepts. This triad, summarized as environment, culture, and economy, is directly related to conservation. Feilden(1995), the famous theorist of the conservation approach of our time, by saying that, "Sustainability is about prolonging the life of a building in order to contribute to a saving of energy, money, and materials, and conservation is about preserving our heritage in order to make the best use of it". He highlights the close relationship between the conservation and sustainability.

The approach to the sustainability of existing structures or cultural heritage and the design of new structures have overlapping and diverging aspects of future traceability. The design of new structures includes more of the natural environment, resource utilization, ecology, green architecture, potential, reduction of the impact on the ecosystem and resource use, and re-use targets. With future flexibility and transformation expectations, it seeks the suitability of premises and materials for this transformation and cycle. Conservation, on the other hand, aims at transferring to the future the land-specific nature of the environment/cultural landscape produced with the sustainability approach, the knowledge transferred from the past to the present, and the heritage values. The cultural landscapes that are sought to be preserved already contain a large part of the objectives of both the use of existing structures and the environmentally-friendly, ecosystem-compatible, life-cycle reconstruction.

A historical setting must be revived in order to preserve it. A settlement tissue in which life persists cannot be preserved as a museum piece. The fact that change is the only thing that remains unchanged reveals the social phenomenon and the impossibility of stopping change. For this reason, the change needs to be managed rather than stopping. As Madran and Özgönül (2007) said, at this point, the aim is to ensure the continuity of valuable components of the past and to meet the needs of changing activity patterns, adding new things, and allowing buildings to live. Conservation must not be a witness to change, it must be an important part of sustainability (Fairclough, 2001). According to Fairclough(2001), sustainability of a historical environment is to control change and determine the trends for the most effective exploitation of the heritage of the past.

Moore (1998) argues that protection must be a large tent, that should be extended to the entire settlement, and the quality of life of the settlement should be achieved by new elements that provide access to existing sites or make

necessary connections with them while applying subtle methods of protection in some structures, which add value to the city's heritage.

IMPORTANCE OF CONSERVATION PLAN

Declaring an area as a protected area by the law on the protection of cultural assets in force in Turkey necessitates a special plan for this area, in order to protect and maintain the heritage values of the settlement. According to this law, "Urban sites; Cultural and natural environmental elements (buildings, gardens, vegetation) that have architectural, local, historical, aesthetic and artistic features and are more valuable than they carry one by one due to their coexistence and transferring the lifestyle of the period to which they belong to the next generations. , settlement textures, walls, streets and squares, etc.) are the areas where they coexist".

Contrary to conservation plans, zoning plans are based on future projections, as they focus on the development of the city, and may often include decisions that will suppress or destroy the old fabric in the center of the city.. In rural areas, which are given less attention in development planning, the situation is a little different because change is frequently uncontrolled by an implementation plan. This situation poses a great threat to the control of the settlement, especially if the settlement is close to the city center, as in Yeşilburç village.

While these kind of areas functioned as a closed system to external influences in the past, currently, they tend to lose their place-specific qualities rapidly becoming the same by being shaped within the framework of global tastes with the increase in transportation, access, and interaction. If the area that needs to be protected is located within the city, integrating with the zoning plan in line with the objectives of preparing a special plan for this area, determining and maintaining the existing values of the settlement, integrating it into the whole city and ensuring its development can help the city remain sustainable and preserve its historical environment.

The plans of urban sites and conservation areas that are present in the majority of Turkey's urban centres, have either been established or are currently being prepared. Rural settlements are quite numerous when compared to urban centers. The determination of any of these settlements as an urban protection area is a very important decision as it will make a plan in this area mandatory. Here, there is an approach that reveals the lack of legal regulations for the protection of the cultural landscape in rural areas in Turkey and the inaccuracy of evaluating these areas with the same status as urban areas. Protecting a rural area, regardless of its status, is an important opportunity in terms of identifying, protecting, and sustaining local and unique values, and revia ving local economies. Cultural heritage is the driving force of sustainable development and gives meaning to social and spatial development.

Another approach that has come to the agenda within the scope of sustainability in the world and gained momentum with the Metropolitan Law announced in Turkey in 2012, is the creation of design guides for rural settlements for controling the building mechanism in the settlements. With this law, the boundaries of the municipality were expanded to include the villages. According to the law, municipalities are responsible for bringing urban services to all these areas, and rural planning experience is insufficient as mentioned earlier. Considering that the creation of guidelines called "Village Design Guides" will control the construction in these areas, these guides have been created as pilot projects, and the central government has introduced various support mechanisms for

the preparation of them (Öğdül et. al., 2018). However, the preparation of the guides is advisory and not mandatory.

Conservation Plan, as defined in the law (Kültür ve Tabiat Varlıklarını Koruma Yasası, 1983), is prepared for protecting cultural and natural assets in line with the principle of sustainability. An announcement of the conservation area cancels all the existing plans which makes it necessary to prepare a special plan in this area for the continuity of development. Planning studies, which is based on a site survey, which includes archaeological, historical, natural, architectural, demographic, cultural, socio-economic, property, and construction data, has great importance to determine the existing situation. This is one of the concerns that is addressed in this study.

A holistic and interdisciplinary approach is important in the documentation stages with a considerable importance to provide accurate determinations and different perspectives in the protection of areas with various layers, depth, and richness, such as the Yeşilburç. Site analysis and documentation should be completed and evaluated by a team of experts from various disciplines of competence, which will be determined depending on the specifications of the area.

The holistic approach to the conservation of historic cities places conservation shoulder-to-shoulder with sustainability and prioritizes the avoidance of conflict. It seeks common ownership of a vision and working framework that is coordinated across the diversity and multiplicity of disciplines and players in urban management and urban life. To summarise, it necessitates collaborative thought and collaborative action, all based on a core that incorporates best practises in both sustainability and conservation (Rodwell, 2003).

The holistic approach allows the buildings, the plot sizes, street patterns, and open spaces, together with the traditional patterns of use, movement, and the human culture that goes with them, to determine the least interventionist approach to the society, environment, and economy of a historic town. At the same time, it allows the connections and relationships with other settlements in the surrounding area and the areas to be protected to be addressed in a multi-faceted manner.

The declaration of a settlement as an urban site represents the first step towards the sustainability of the settlement. It then makes it mandatory Conservation Plan. However, the processes defined in the law are quite technical. The establishment of expert teams depending on the nature of the area is expected to determine the original characteristics of the settlement. However, as the study progresses, it does not have the flexibility to recruit new experts based on the information and findings obtained or to create financial resources or redefine the budget for the study's deepening. Similarly, preserving the holistic concept of planning requires a cross-border approach and a team of experts who can develop that approach. This is not taken into account in the calculation of costs in conservation planning work

Today, many different methods of documenting settlements are used within the framework of technological possibilities. City scaled digital documentation technologies and detailed and multi-layer analyses carried out on a building scale can be synthesized using the same technologies, and new data can be easily integrated and updated (Brown, 2016).

CONCLUSION

In conclusion, this article has shed light on the critical role of conservation as a catalyst for sustaining the cultural heritage values of Yeşilburç Village in Niğde Province. The study has revealed several key findings that underscore the importance of conservation efforts in preserving this unique historical settlement. Yeşilburç Village, with its rich history and distinctive architectural heritage, serves as a testament to the cultural and historical legacy of the region. The village's unique narrative, encompassing both Greek and Muslim populations, renders it an invaluable cultural asset.

The village's proximity to urban centers has exposed it to the threats of modernization and urbanization. Without conservation initiatives, there was a risk of losing original structures and the authentic rural character of the settlement. In the global context of cultural heritage conservation, emphasizing the role of international organizations such as UNESCO, ICOM, and ICOMOS, along with national and regional bodies, in guiding and supporting conservation practices are important to understand the importance of the subject.

Conservation is portrayed as a bridge between the past and the future, aligned with the principles of sustainability. It encompasses environmental, cultural, and economic dimensions, ensuring the longevity of both historical structures and the communities intertwined with them. Conservation plans are the most important tool that allows the determination and maintenance of heritage values. It is our responsibility to recognize the value of the past and protect and promote this heritage, which is an essential factor to ensure economic, social, and cultural development and sustainability.

Beyond the central and general approaches to site-specific solutions, offering site-specific creative solutions will have the flexibility to change them in line with developments. Yeşilburç, which presents a unique cultural landscape with both its heritage values and natural beauties, has the potential to become a tourism area with its close environmental relations and connections, skiing, nature sports and many different activity opportunities. In terms of both the use of the building stock and the income to be obtained through tourism, conservation is seen as one of the tools of development. Protection also strengthens the sense of belonging. This is important not only in terms of providing financial benefits but also in terms of strengthening social values.

Conservation planning necessitates a holistic, interdisciplinary approach, involving experts from diverse fields. This approach guarantees meticulous assessments, comprehensive documentation, and a nuanced understanding of the heritage under consideration.

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Legal Public / Private Permissions

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Research Article

Effects of Indoor Plants on Organic Chemicals Released from Furniture and Decoration Element

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Abstract

Plants have been used for centuries to decorate homes and add a touch of nature to interiors. Beyond their aesthetic appeal, plants have numerous benefits for indoor environments. Research has shown that plants can purify the air, improve indoor air quality and have psychological and physiological benefits. In this research, it aims to figure out the extent of knowing the effects of indoor plants on organic chemicals emitted from furniture and decoration elements. For this purpose, 225 randomly selected people participated in the prepared research questionnaire. According to the results of the survey, it was determined that the 18-25 age group participants and the participants with postgraduate education had a higher level of knowledge about the effects of plants on indoor pollutants compared to the participants in the other age and education groups. On the other hand, no significant difference was found between the evaluations of male and female participants regarding the effects of plants on indoor pollutants. When these results are examined in general, it is seen that the participants do not have enough information about the effects of indoor plants on the organic chemicals emitted from the furniture and decoration elements. As a result, it has been revealed that users should be informed about the effects of indoor plants on organic chemicals and awareness should be raised on this issue. And it has been reported that increasing the level of knowledge on this subject can provide significant contributions to human health.

Keywords: Interior, Plant, Organic Chemical, Equipment, Furniture.

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Araştırma Makalesi

Mobilya ve Dekorasyon Elemanlarından Salınan Organik Kimyasallar Üzerine İç Mekan Bitkilerinin Etkileri

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Özet

Bitkiler yüzyıllardır evleri dekore etmek ve iç mekânlara doğa dokunuşu katmak için kullanılmıştır. Bitkilerin estetik çekiciliğinin ötesinde iç mekânlar için pek çok faydası vardır. Araştırmalarda bitkilerin havayı temizlediği, iç mekân hava kalitesini iyileştirdiği, psikolojik ve fizyolojik açıdan çok sayıda faydalarının olduğu vurgulanmıştır. Bu araştırmada, katılımcıların iç mekân bitkilerinin mobilya ve dekorasyon elemanlarından ortama yayılan organik kimyasallar üzerindeki etkilerini bilme düzeylerinin belirlenmesi amaçlanmaktadır. Bu amaçla hazırlanan araştırma anketine rastgele seçilmiş 225 kişi katılmıştır. Araştırma sonuçlarına göre, 18-25 yaş grubu katılımcılar ile lisansüstü eğitime sahip katılımcıların, diğer yaş ve eğitim grubu katılımcılara göre bitkilerin iç mekân kirleticileri üzerindeki etkilerine ilişkin bilgi düzeylerinin daha yüksek olduğu tespit edilmiştir. Öte yandan kadın ve erkek katılımcıların bitkilerin iç mekân kirleticileri üzerindeki etkilerine ilişkin değerlendirmeleri arasında anlamlı bir farklılık bulunamamıştır. Bu sonuçlara genel olarak bakıldığında, katılımcıların iç mekân bitkilerinin mobilya ve dekorasyon elemanlarından ortama yayılan organik kimyasallar üzerindeki etkileri hakkında yeterli bilgiye sahip olmadıkları görülmektedir. Sonuç olarak, çalışmada iç mekân bitkilerinin organik kimyasallar üzerindeki etkileri hakkında kullanıcıların bilgilendirilmesi ve bu konuda farkındalık oluşturulması gerektiği ortaya koyulmuş, bu konuda bilgi düzeyinin artırılmasının insan sağlığına önemli katkılar sağlayabileceği bildirilmiştir.

Anahtar Kelimeler: Bitki, Donatı Elemanı, İç Mekân, Mobilya. Organik Kimyasal.

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INTRODUCTION

Considering the data published by the Turkish Statistical Institute (TUIK) in 2021, it is seen that the population living in provinces and districts in Turkey has increased to 93.2%, while the population in towns and villages has decreased to 6.8% (TUIK, 2022). These statistical data show that the population living in the city is increasing day by day. Cengiz et al. (2019) reported that people living in big cities spend at least 80% of their lives indoors. In this period when cities are rapidly becoming concrete and environmental paroblems are increasing, indoor plants that enable people to connect with nature; They are living creatures that make many positive contributions to daily life and reduce stress with their colorful flowers and leaves (Güçlü, 1999). Many studies (Ulrich, 1981; Ulrich, 1991; Ulrich and Simons, 1986; Ulrich and Parsons, 1992; Kaplan and Kaplan, 1989; Hartig et al., 1991; Giese et al., 1994; Wolverton and Wolverton, 1996); Chang and Chen, 2005; Dijkstra et al., 2008; Bringslimark et al., 2007, 2009; Ranaas et al., 2011; Korpela et al., 2017; Sezen et al., 2017; Yıldırım et al., 2020ab; Selim et al., 2020) show that indoor plants affect people's mental and physical health positively. In addition to their health benefits, plants can also be used to enhance the aesthetic appeal of interiors. Interior designers often use plants to add colour, texture and depth to a room (Wang, 2016). Residents can use plants to give modern homes a more organic and natural feel, which can be particularly appealing to people looking for a more sustainable and eco-friendly lifestyle.

In this regard, Ulrich et al. (1991), Shibata et al. (2001), Chang and Chen (2005), Yoo et al. (2006) and Bringslimak et al. (2007), it is suggested that indoor plants reduce the stress of individuals living in closed and stressful environments, have a restorative effect and increase productivity. Lee et al. (2015) noted in their study that plants used indoors help to create a calming and relaxing environment, which can be especially beneficial for people suffering from anxiety or depression. In addition, Giese et al. (1994), Wolverton and Wolverton (1996) and Yıldırım (2013) reported that indoor plants emit water vapor into the air by perspiration of their leaves, however, they carry organic chemicals in the air towards their roots and turn them into a source of nutrients and energy with the help of microorganisms there, through a system called metabolic degradation. It has been reported that plants with a larger leaf surface area absorb the chemicals in the air better and clean the polluted air, and the plants reduce the microorganisms (bacteria, fungi, protists, viruses, viroids, prions) spreading to the environment by 50-60%. In this respect, indoor plants are an important design element that directly affects the health and performance of people (Şevik et al., 2015). Therefore, it is essential determining people's knowledge levels living in large cities about the reparative effects of indoor plants on organic chemicals and to raise awareness on this issue.

In recent years, together with the many advantages (material with a rich color and pattern range, product variety, low cost and price, fast delivery, etc.) brought by fabricated production, the health of users may be adversely affected, albeit unintentionally, due to indoor pollutants emitted from furniture and decoration elements (Yıldırım and Ünlü, 2013). Carcinogens, mutagens, teratogens, viruses, bacteria, and allergies are the most common indoor pollutants. Indoor pollutants can cause serious problems for human health, are commonly encountered in three main forms; flammable (carbon dioxide, nitrogen dioxide, carbon monoxide, sulphur dioxide, etc.), volatile (formaldehyde, organochlores, phenolic compounds, etc.) and harmful gases (nitrogen, radon), particles (suspended particles, fungi, bacteria, viruses) and radiation (Pearson, 1989; Vural ve Balanlı, 2005; Yurtsever, 2007). The chemical emission sources of indoor pollutants identified by Wolverton and Wolverton (1993) are given in Table 1.

Sources of chemical emissions	Formaldehyde	Benzene	Xylene/ Toluene	Trichloro-ethylene	Alcohol	Ammoniac	Acetone
Interior Coatings	■	■	■	-	■	-	-
Particleboard and Fiberboard	■	■	■	-	■	-	-
Plywood	■	-	-	-	-	-	-
Adhesives	■	■	■	-	■	-	-
Paints and Varnishes	■	■	■	-	■	-	-
Joining Elements	■	■	■	-	■	-	-
Biological Substances	-	-	■	-	■	■	■
Carpets and Fabrics	■	-	-	-	■	-	-
Cosmetics	-	-	-	-	■	-	■
Printers and Printed Copiers	-	■	■	■	-	■	-
Tobacco Smoke	■	■	-	-	-	-	-

Table 1. Sources of chemical emissions of indoor pollutants

Table 1 demonstrates that organic chemicals such as Formaldehyde, Benzene, Xylene/Toluene, Trichloro-ethylene, Alcohol, Ammoniac, Acetone are present in artificial materials such as particleboard, fiberboard, plywood, synthetic fibers, plastics, paints and varnishes used in furniture and decoration elements. People exposed to air pollution caused by these chemicals; according to studies, it can cause severe structural damage to the human cells, as well as general symptoms (headache, dizziness, fatigue, nausea, difficulty concentrating), mucous membrane irritation (nose, throat, eye and skin irritation), skin reactions such as redness, difficulty in breathing and cancer (Pearson, 1989). Thiermeyer (1994) reported that volatile gases of organic chemicals released into the environment can cause serious harm to human health if they are inhaled for more than 8 hours a day. For this reason, the selection and use of materials used in furniture and decoration elements is of great importance in terms of human health. One of the most important benefits of indoor plants is their ability to purify the air. Studies have shown that some plants can remove harmful pollutants such as formaldehyde, benzene and trichloroethylene from the air (Meng and Ji, 2012; Zhang et al. 2020).

Given the information provided above, it is crucial that consumers have as much knowledge as possible about the substances that pose a hazard to human life. In this regard, it was revealed in the study by Yıldırım and Ünlü (2013) that a significant number of people lack enough knowledge of organic chemicals. According to a related study by Yıldırım et al. (2020b), parents are under-informed about the organic pollutants released by the nursery furnishings they purchase.

H1: Regarding how indoor plants affect organic compounds, men and women have different levels of knowledge.

H2: Regarding how indoor plants affect organic compounds, different age groups have different levels of knowledge.

H3: Regarding how indoor plants affect organic compounds, different educational groups have different levels of knowledge.

MATERIAL AND METHOD

Participants

Table 2 demonstrates general data on the gender, educational status, and age of the research participants.

Table 2. General information of the participants

Participants' Information		f	%	Total	
				N	%
Gender	Female	109	48,4	225	100
	Male	116	51,6		
Age	18-25	57	25,3	225	100
	26-35	53	23,6		
	36-45	63	28		
	46-55	35	15,6		
	56 and above	17	7,6		
Education	Secondary Education	42	18,7	225	100
	Associate	34	15,1		
	Undergraduate	106	47,1		
	Graduate	43	19,1		

f: Number of participants, %: Percentage value

According to Table 2, 48.4% of the participants were female, 51.6% were male, 25.3% were 18-25 years old, 23.6% were 26-35 years old, 28% were 36-45 years old, 15.6% were 46-55 years old, 7.6% were 56 years and over. In addition, 3.1% of the participants have primary education, 15.6% secondary education, 15.1% associate degree, 47.1% undergraduate and 19.1% graduate education.

Data Collection Tools

A total of 225 Ankara residents took part in this study. The research questionnaire, which was prepared to test the research hypotheses previously defined, consists of two parts. The first part includes general information of the participants, and the second part includes questions to measure the level of knowledge of the participants regarding the effects of plants grown in residences on indoor pollutants. In the design of the research questionnaire, questionnaires that were previously found reliable in studies conducted by Yıldırım and Ünlü (2013), Ünlü and Yıldırım (2015), Yıldırım (1999), Başkaya et al. (2005), Yıldırım and Akalın (2009), Erdogan et al. (2010) and Yıldırım et al. (2020b) were used.

The items of the questionnaire that were aimed to measure the knowledge levels of the participants about indoor plants were applied with the online survey form in a two-week period in April 2022. Each questionnaire was filled in about 20 minutes on the Google Forms interface. Before starting the survey, the participants were given introductory information about the research and then asked to evaluate the questions given respectively. The data obtained from the questionnaire were entered into the SPSS package programme and the necessary analyses were made.

Data Analysis

Participants' evaluations of indoor plants were defined as dependent variables, and participants' gender, age and education level were defined as independent variables. Firstly, Cronbach Alpha reliability tests of the research data were performed, then percentage, mean and standard deviation values of the data were calculated, and one-way analysis of variance (ANOVA) was performed to determine whether the differences between independent variables were

statistically significant at P<0.05 level. Independent variables were explained comparatively with graphs.

FINDINGS

The reliability tests of the data obtained from the questions aimed at measuring the level of knowledge of the participants about the effects of indoor plants on organic chemicals were carried out with Cronbach's Alpha. Accordingly, the reliability coefficient of the scale was calculated as 0.885. The reliability coefficients of the dependent variables and the scale are given in Table 3.

Table 3. Reliability analysis results

Dependent Variables		Dependent Variable Reliability	Scale Reliability
A1	I know that indoor plants have an air purifying effect.	0,902	0,885
A2	I know that indoor plants reduce the effect of harmful gases released from furniture and decoration elements.	0,846	
A3	I know that indoor plants reduce the carcinogenic effect of formaldehyde, which is used as glue and preservative in household products and building materials.	0,844	
A4	I know that indoor plants reduce the carcinogenic effect of radon gas released from building materials and elements containing soil, brick, natural stone.	0,848	
A5	I know that indoor plants reduce the harmful effects of pollutants such as carcinogens, mutagens, teratogens, viruses, bacteria and allergens that cause very serious problems for human health.	0,850	

The reliability coefficient of the main scale consisting of five questions is 0.885. When the alpha reliability coefficient is over 0.70, according to earlier studies by Cronbach (1951) and Panayides (2013), each dependent variable and scale can be regarded as reliable. It is seen that the reliability coefficient of all dependent variables of this study is above 0.70. This result shows that the data are reliable.

The differences between the knowledge levels of women and men about the effects of indoor plants on organic chemicals were analysed by statistical methods and the mean and standard deviation values of the data obtained and the results of ANOVA test are given in Table 4.

Table 4. Results on the effect of gender on dependent variables

Dependent Variables	Gender				ANOVA Test		
	Female		Male				
	Ma	SD	M	SD	F	df	Sig.
A1	2,28	0,86	2,37	1,05	0,416	1	0,520 is
A2	3,05	1,15	2,92	1,17	0,753	1	0,386 is
A3	3,47	1,24	3,31	1,22	0,975	1	0,325 is
A4	3,56	1,27	3,37	1,27	1,302	1	0,255 is
A5	3,13	1,15	3,04	1,22	0,344	1	0,558 is

Note: is: insignificant at p< 0.05 level.
M: Mean value, SD: Standard deviation, F: F Value, df: Degree of Freedom.
a: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I do not know at all.

Table 4 shows that there are differences between the evaluations of women and men regarding the effects of indoor plants on organic chemicals. According to the results of the ANOVA test, no statistically significant difference was found

between the evaluations of the participants according to their gender for all dependent variables at p<0.05 level. These results are given graphically in Figure 1.

Figure 1 shows that the evaluation results of women and men are close to each other, on the other hand, both genders have A2 (I know that indoor plants reduce the effect of harmful gases released from furniture and decoration elements), A3 (I know that indoor plants reduce the carcinogenic effect of formaldehyde used as glue and preservative in household products and building materials), A4 (I know that indoor plants reduce the carcinogenic effect of radon gas released from building materials and elements containing soil, brick, natural stone) and A5 (I know that indoor plants reduce the carcinogenic effect of radon gas released from building materials and elements containing soil, brick, natural stone); (I know that indoor plants reduce the carcinogenic effect of radon gas released from building materials and elements containing soil, brick, natural stone) and A5 (I know that indoor plants reduce the harmful effects of pollutants consisting of carcinogens, mutagens, teratogens, viruses, bacteria and allergens that cause very serious problems for human health).

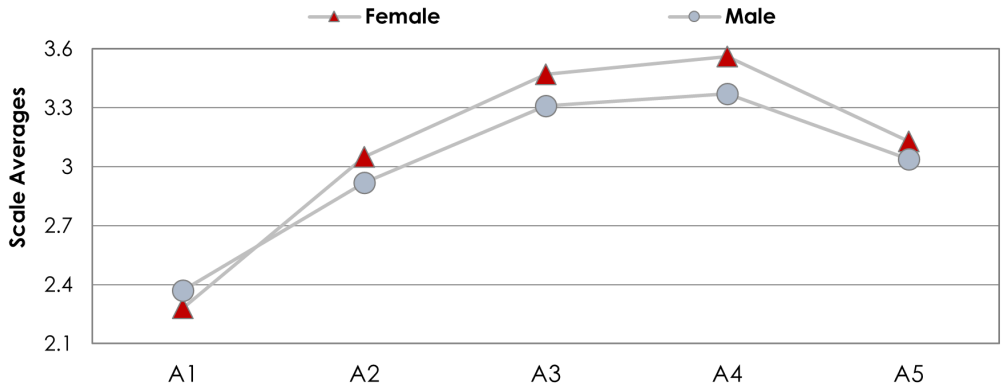


Figure 1. Results on the effect of age on dependent variables

Note: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I don't know at all

These results show that there is no significant difference between the knowledge levels of women and men about the effects of indoor plants on organic chemicals. According to these results, the hypothesis " Regarding how indoor plants affect organic compounds, men and women have different levels of knowledge." proposed in H1 is not supported in general.

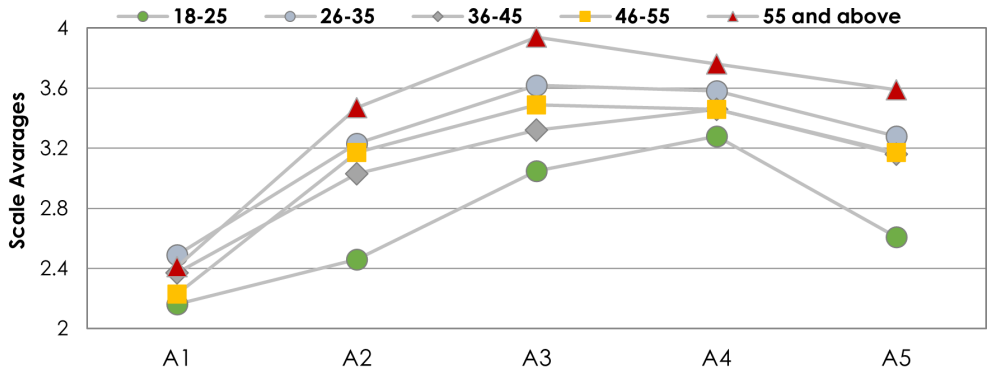
The differences between the knowledge levels of the participants of different age groups (18-25, 26-35, 36-45, 46-55, 55 and over) on the effects of indoor plants on organic chemicals were analysed by statistical methods and the mean and standard deviation values of the data obtained and the results of ANOVA test are given in Table 5.

Table 5. Results on the effect of education level on dependent variables

Dependent Variables	Age										ANOVA Test		
	18-25		26-35		36-45		46-55		56 ve üzeri				
	M[a]	SD	M	SD	M	SD	M	SD	M	SD	F	df	Sig.
A1	2,16	0,92	2,49	1,01	2,37	0,94	2,23	0,88	2,41	1,12	0,981	4	0,419is
A2	2,46	0,96	3,23	1,14	3,03	1,26	3,17	1,04	3,47	1,18	4,851	4	0,001*
A3	3,05	1,23	3,62	1,26	3,32	1,23	3,49	1,12	3,94	1,14	2,569	4	0,039*
A4	3,28	1,29	3,58	1,26	3,46	1,32	3,46	1,17	3,76	1,30	0,650	4	0,627is
A5	2,61	1,00	3,28	1,25	3,16	1,14	3,17	1,18	3,59	1,37	3,675	4	0,006*

Note: *: p < 0.05 is the level of significance. Is: Insignificant at p< 0.05 level.
M: Mean value, SD: Standard deviation, F: F Value, df: Degrees of Freedom.
a: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I do not know at all.

Table 5 shows that there are differences between the evaluations of the participants of different age groups regarding the effects of indoor plants on organic chemicals. According to the results of the ANOVA test, at the p<0.05 level, there are differences between the evaluations of the participants on A2 (I know that indoor plants reduce the effect of harmful gases released from furniture and decoration elements), A3 (I know that indoor plants reduce the carcinogenic effect of formaldehyde, which is used as glue and preservative in household products and building materials.) and A5 (I know that indoor plants reduce the harmful effects of pollutants consisting of carcinogens, mutagens, teratogens, viruses, bacteria and allergens that cause very serious problems for human health. However, no significant differences were found for the independent variables A1 and A4. These results are given graphically in Figure 2.



Note: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I don't know at all

Figure 2. The effect of age on dependent variables

Figure 2 demonstrates that the 18-25 age group participants have more knowledge about the effects of indoor plants on organic chemicals than the other age groups, and all age group participants do not have sufficient knowledge about the other variables except the dependent variable A1 (I know that indoor plants have an air purifying effect). These results show that there are significant differences between the knowledge levels of different age groups regarding the effects of indoor plants on organic chemicals. According to these results, the hypothesis proposed in H2, "Regarding how indoor plants affect organic compounds, different age groups have different levels of knowledge." was supported in general.

The differences between the knowledge levels of the participants of different education groups (Secondary Education, Associate Degree, Undergraduate, Graduate) on the effects of indoor plants on organic chemicals were analysed by statistical methods and the mean and standard deviation values of the data obtained and the results of ANOVA test are given in Table 6.

Dependent Variables	Education										ANOVA Test		
	Secondary Education		Associate Degree		Under-graduate		Graduate		Secondary Education				
	M[a]	SD	M	SD	M	SD	M	SD	M	SD	F	df	Sig.
A1	2,26	0,94	2,47	0,83	2,37	1,03	2,16	0,90	2,26	0,94	0,803	3	0,493[is]
A2	3,05	1,08	3,00	1,10	3,06	1,22	2,74	1,14	3,05	1,08	0,794	3	0,498[is]
A3	3,52	1,15	3,50	0,99	3,49	1,33	2,95	1,17	3,52	1,15	2,331	3	0,075**
A4	3,38	1,23	3,50	1,05	3,60	1,34	3,19	1,28	3,38	1,23	1,184	3	0,317[is]
A5	2,95	1,08	3,12	1,04	3,22	1,30	2,86	1,06	2,95	1,08	1,143	3	0,332[is]

Note: **: p < 0.10 is the level of significance. Is: Insignificant at p< 0.05 level.
M: Mean value, SD: Standard deviation, F: F Value, df: Degrees of Freedom.
a: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I do not know at all.

Table 6. Results on the effect of education level on dependent variables

In Table 6, it is seen that there are differences between the evaluations of the participants of different educational groups regarding the effects of indoor plants on organic chemicals. According to the results of the ANOVA test, a statistically significant difference was found for the dependent variable A3 (I know that indoor plants reduce the carcinogenic effect of formaldehyde, which is used as glue and preservative in household products and building materials) at p<0.10 level. However, no significant difference was found for the independent variables A1, A2, A4 and A5. These results are given graphically in Figure 3.

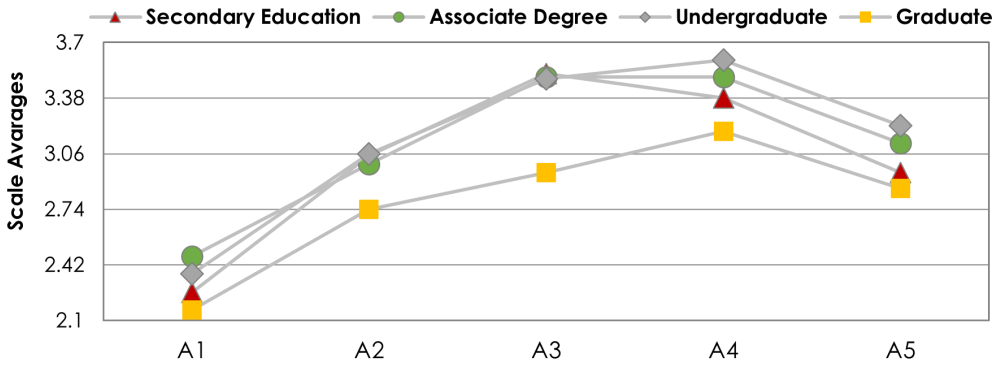


Figure 3. The effect of educational status on dependent variables

Note: Variable averages are ranked from 1 to 5. 1: I know a lot, 5: I don't know at all

The results in Figure 3 indicate the knowledge levels of the participants with postgraduate education are higher than the other education groups regarding the effects of indoor plants on organic chemicals, and all education group participants do not have sufficient knowledge about the other variables except the dependent variable A1 (I know that indoor plants have an air purifying effect). These results show that there are no significant differences between the knowledge levels of the participants regarding the effects of indoor plants on organic chemicals according to the educational groups. According to these results, the hypothesis proposed in H3 "Regarding how indoor plants affect organic compounds, different educational groups have different levels of knowledge." is not supported in general.

CONCLUSIONS AND SUGGESTIONS

In this study, the evaluations of the participants regarding the level of knowledge about the effects of indoor plants on organic chemicals were determined and the results obtained are given below respectively.

In the first result, it was determined that the evaluation results of women and men regarding the effects of indoor plants on organic chemicals were close to each other. However, A2 (I know that indoor plants reduce the effect of harmful gases released from furniture and decoration elements), A3 (I know that indoor plants reduce the carcinogenic effect of formaldehyde used in household products and building materials as glue and preservative), A4 (I know that indoor plants reduce the carcinogenic effect of formaldehyde used in household products and building materials as glue and preservative); (I know that indoor plants reduce the carcinogenic effect of radon gas released from building materials and elements containing soil, brick, natural stone) and A5 (I know that indoor plants reduce the harmful effects of pollutants consisting of carcinogens, mutagens, teratogens, viruses, bacteria and allergens that cause very serious problems for human health). These results show that there is no significant difference between the knowledge levels of women and men about plants. This result does not support the results previously published by Yıldırım and Ünlü (2013).

Another result demonstrated that there were some differences between the participant evaluations of different age groups regarding the effects of indoor plants on organic chemicals. Accordingly, among the evaluations of the participants, A2 (I know that indoor plants reduce the effect of harmful gases released from furniture and decoration elements), A3 (I know that indoor plants reduce the carcinogenic effect of formaldehyde used in household products and building materials as glue and preservative.) and A5 (I know that indoor plants reduce the harmful effects of pollutants consisting of carcinogens, mutagens, teratogens, viruses, bacteria and allergens that cause very serious problems for human health. These results show that there are significant differences between the knowledge levels of the participants of different age groups about plants. This result supports the results previously published by Yıldırım and Ünlü (2013).

Another finding was that the opinions of the participants in the various educational groups regarding the impact of indoor plants on organic compounds varied to some extent. Accordingly, it was found that participants with postgraduate education had higher levels of knowledge about plants compared to other educational groups, and all educational group participants had higher levels of knowledge about plants in all variables except the dependent variable coded A1 (I know that indoor plants have an air purifying effect).

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Conflict of Interest

No conflict of interest was declared by the authors.

Authors' Contributions

The authors contributed equally to the study.

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In this research, the necessary permissions were obtained from the relevant participants.

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