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Research Article

Morphological Analysis of Tea Factories as Industrial Structures

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Abstract

With the establishment of the Republic and the momentum generated by the Industrial Revolution —the most significant cultural, economic, social, and physical transformation of the era—industrialization activities in Anatolia accelerated rapidly and played a decisive role in shaping cities and societies. As major industrial enterprises in the Eastern Black Sea Region, tea factories have persisted not only as products of industrialization but also as core components of the modernization program. Although initially located outside the urban core, these large, multifunctional buildings gradually became focal points of settlements and significantly influenced urban growth and development decisions. In addition to shaping urban morphology and skyline, tea factories contribute perceptually and semantically to collective memory by reflecting the history of the built environment, as well as economic, technological, and industrial development processes. The literature review indicates that, despite their economic and ideological significance during the Republican period, tea factories remain insufficiently represented in academic studies. In response to this gap, the study aims to systematically analyze the multidimensional morphological impacts of tea factories on the formation and transformation of settlement patterns in the Eastern Black Sea Region. The study area consists of nine factory settlements with reliable data, located along the coastal belt of Trabzon, Rize, and Artvin, where tea cultivation is most intensive. Within this framework, morphological analyses supported by conceptual maps and tables were conducted to examine figure–ground ratios, spatial boundaries, relational patterns, and the effects of factories on the urban silhouette. The findings demonstrate that tea factories, embedded in collective memory, function as tangible expressions of Republican ideology and play a significant role in shaping urban morphology, skyline, and the social, cultural, and economic life of their regions. The study is expected to contribute to efforts aimed at identifying, evaluating, and safeguarding the historical and social values of tea factories.

Keywords:
Çaykur tea factory, Eastern Black Sea, Social memory, Urban identity, Urban morphology

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INTRODUCTION

Industrialization is defined as "a process of economic development characterized by a dynamic manufacturing sector, with a large share of national resources directed towards technical innovation (up to-date), producing and owning means of production and consumer goods, capable of ensuring high development for the economy as a whole, and ensuring economic and social progress" (Özbilen, 1970). Based on the definition, it is seen that economic development stands out in industrialization. Economic development will undoubtedly raise the level of welfare, but it will also affect the social change of society. Thus, it will be possible for society to develop culturally, increase educational opportunities, and change employment and the physical environment. Within the large-scale facilities established during the Republican period, which were designed to foster development across multiple domains, built environments incorporating diverse social functions were systematically introduced. Modernization movements manifested themselves in the field of industry in a very short time. As a result, in addition to cultural spaces such as educational buildings, sports fields, libraries, cinemas, and lounges, social-cultural units such as places of worship and accommodation structures such as guesthouses were built in industrial settlements. According to Zeybekoğlu, with the ideology of modernization and independence brought about by the Republican Revolution, economic activities were handled as an integrated spatial and social policy (Zeybekoğlu, 2002; Semiz & Toplu, 2019). As a result, industrial settlements were built, which played a role in the development of studies in the field of urban morphology.

Established as one of the large-scale industrial enterprises during the first 50 years of the Republic, the Tea Factories, the most important structure of industrialization in the Eastern Black Sea Region, has continued its existence as one of the central components of the modernization program until today. With their large multifunctional physical structures, these buildings, which were located on the periphery or outside of the city in the first years of their establishment, became the focal point of the settlement over time and played a major role in urban growth and development decisions. In addition to affecting urban morphology and silhouette, tea factories shed light on the history of the built environment, economy, technology and industrial developments. They also have a very important perceptual and semantic place in social memory (Eminağaoğlu & Yurttaş Şahin, 2023).

Considering their role in both the economic and ideological development of a period during the history of the Republic, the importance of Tea Factories has not been sufficiently emphasized enough in academic studies. Although there are economic studies on tea factories in the literature, architectural studies are insufficient. In this study, the aim is to partially address the gap in the existing literature concerning tea factories, which have influenced the Eastern Black Sea Region across social, cultural, economic, and other domains. Moreover,

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the physical impacts of these large-scale industrial structures on the settlement environments in which they are situated, as well as the dominant conditions shaping local development, are examined through comprehensive morphological analyses.

1.1. Material and Method

1.1.1. Material

Within the scope of the study, three provinces in the Eastern Black Sea Region, where tea production is most intensively carried out, were selected. From these provinces, nine factories for which data could be obtained through a sampling approach were included in the analysis. During the selection process, particular attention was given to choosing factories located along the international coastal highway and positioned within the visible settlement silhouette. Accordingly, the structures examined in the study consist of the Araklı, Sürmene, and Of Eskipazar Tea Factories in Trabzon; the Pazar, Ardeşen, and Fındıklı Tea Factories in Rize; and the Arhavi, Hopa, and Kemalpaşa Tea Factories in Artvin (Figure 1.).

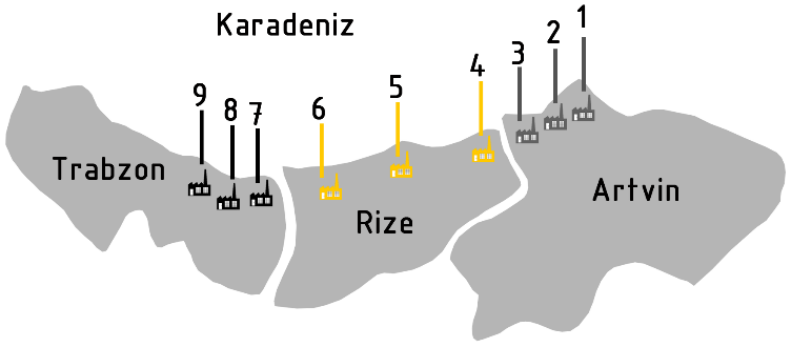

Figure 1. Provincial distribution of factories in the study area (produced by the authors)

Çaykur Factories, which are handled within the scope of the study area, undertake a leading role in increasing the socio-economic development level in the Eastern Black Sea Region in areas such as tea agriculture and industry in general, urbanization, income distribution, regional migration, efficient use of agricultural lands, prevention of erosion, development of agriculture-based industry and similar areas. Çaykur, the strategic institution of the region, is the largest organization in the Turkish tea sector with 49 Wet Tea Processing Factories. Approximately 55-60% of the fresh tea products produced in the region are purchased and processed by Çaykur, although it varies from year to year.

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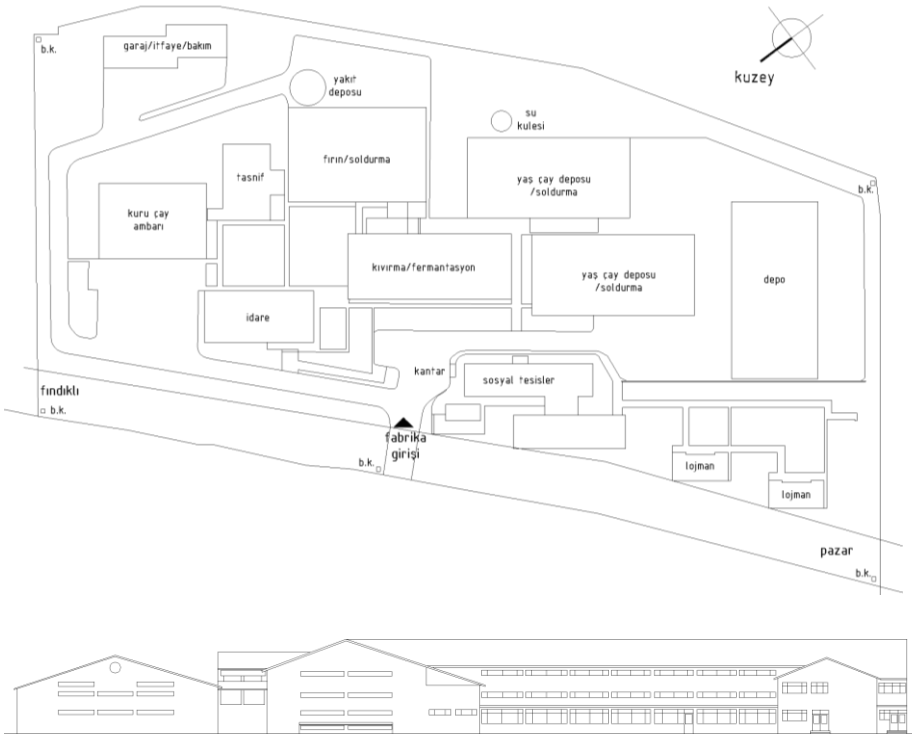

Figure 2. Ardeşen Tea Factory plan and facade (produced by the authors)

There are departments such as withering, curling, drying departments, and warehouses in the factory premises, as well as sorting, green tea production, boiler room, tea unloading departments, dining hall, and workers' lodge buildings. In addition to these, units such as cooperatives, administrative buildings, woodsheds, lodging, lodging houses, clubhouses, and warehouses were designed within the campus to meet needs such as shelter, socialization, recreation, and entertainment. Although the story heights of the buildings vary according to the function, they are designed as 1, 2, 3, and rarely higher stories. The factory buildings consist of quadrangular forms with a horizontal effect. Band windows and large-sized doors are used throughout the buildings. There are also chimneys visible from many parts of the settlement (Figure 2.). In all the factory buildings, frame construction systems in which reinforced concrete and steel are used together are used as building materials. As a result of geographical requirements, hipped roofs, and mixed roofs were preferred for the upper covers of the buildings. These upper covers covering the wide openings of the buildings were constructed with steel and/or reinforced concrete. The facades of most of the buildings mostly preserve their originality. Although the buildings have been painted at regular intervals, because they are in a region with heavy rainfall and high humidity, damages such as contamination, vegetation, mossing, abrasion, corrosion, and loss of parts are observed in the building elements. In addition to these, in the building, which was downsized in line with periodic requirements and needs, function changes were made with the increase in capacity. This situation has led to the deterioration of the spatial fiction shaped according to the function attributed to the

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buildings during the design phase. In addition, later additions to the buildings have led to a change in the visual perception of the buildings (Eminağaoğlu & Yurttaş Şahin, 2023).

Table 1. Information about the factories in the study area (ÇAYKUR, 2024) (produced by the authors).

No	Province	Factory Name	Informations
1	Artvin	Kemalpaşa Tea Factory	Kemalpaşa Tea Factory covers an area of 42,381 m_2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 42,381 m^2. It produces 165 tons of tea daily during the green tea production season.
2		Hopa Tea Factory	Hopa Tea Factory covers an area of 26,621 m^2 in the center of the campus. The factory campus, which continues to exist today, has an indoor volume of 18,597 m^2. It produces 160 tons of tea daily during the green tea production season.
3		Arhavi Tea Factory	Arhavi Tea Factory covers an area of 36,171 m^2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 24,308 m^2. It produces 280 tons of tea daily during the green tea production season.
4	Rize	Fındıklı Tea Factory	Fındıklı Tea Factory covers an area of 30,245 m^2 in the center of the campus. The factory complex, which continues to exist today, has a closed volume of 22,740 m^2. During the green tea production season, 195 tons of tea is produced daily.
5		Ardeşen Tea Factory	Ardeşen Tea Factory covers an area of 36,171 m^2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 24,308 m^2. It produces 280 tons of tea daily during the green tea production season.
6		Pazar Tea Factory	Pazar Tea Factory covers an area of 44,166 m^2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 22,606 m^2. It produces 150 tons of tea daily during the green tea production season.
7	Trabzon	Of Eskipazar Tea Factory	Of Eskipazar Tea Factory covers an area of 12,785 m^2, 35 km from the center of Of. The factory campus, which continues its existence today, has a closed volume of 14.368 m^2. It produces 150 tons of tea daily during the green tea production season.
8		Sürmene Tea Factory	Sürmene Tea Factory covers an area of 32,906 m^2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 17,653 m^2. It produces 150 tons of tea daily during the green tea production season.
9		Araklı Tea Factory	Araklı Tea Factory covers an area of 25,557 m^2 in the center of the campus. The factory campus, which continues to exist today, has a closed volume of 17,465 m^2. It produces 130 tons of tea daily during the green tea production season (ÇAYKUR, 2024).

1.1.2. Method

The urban morphological analysis of the factories was conducted using systematically structured tables. These tables incorporate thematic maps containing schematic representations of buildings, road networks, the historical settlement core, the contemporary settlement area, the factory itself, and the adjacent residential–commercial axis. Furthermore, to determine the figure–ground ratio of each factory within its settlement pattern, a 400,000 m^2 area encompassing the factory was delineated. Within this boundary, the closed, semi-open, and open spaces; surrounding structures; circulation routes; and all components forming the factory campus were graphically illustrated,

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and their proportional distributions within the selected 400,000 m^2 zone were quantified numerically.

In addition, the tables include urban silhouette drawings of the factories, prepared using archival data obtained from the General Directorate of ÇAYKUR Tea Enterprises and supplemented by findings from fieldwork. Through the evaluation table generated from these analyses, the plan- and silhouette-based urban figure–ground ratios of the nine factory settlements, their spatial relationships with the surrounding built environment, and the ways in which they influence the urban silhouette in both planimetric, and three-dimensional perspectives were examined and interpreted using conceptual maps (Figure 3.).

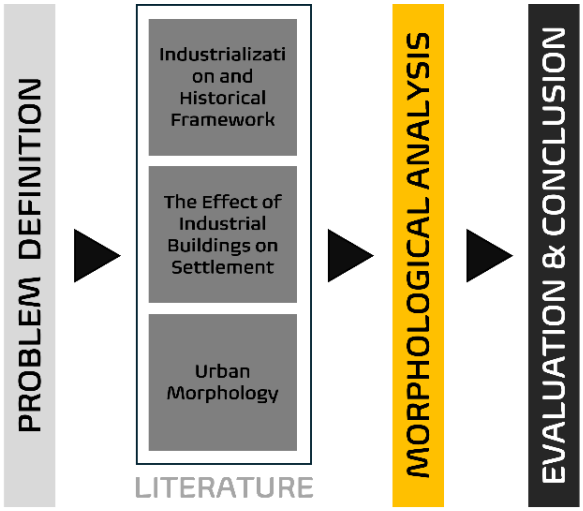

Figure 3. Research methodology (produced by the authors)

1.2. Tea Factories in Historical Process

As a result of the 16th century developments, the Industrial Revolution turned into an industrial movement centered in Europe. These developments, which affected Anatolian geography during the Ottoman Empire, continued afterwards. (Bigat, 2017; Kazas, 2008; Yavaşoğlu & Özgül, 2020).

The Republic of Turkey, which was established after the national independence achieved in World War I, has acted with the aim of creating a modern and independent country since its establishment (Zeybekoğlu, 2002). This idea also emerged as a reflection of the nationalism movement that emerged after the French Revolution and the desire to create a national identity by getting rid of colonialism. (Bozdoğan, 2020). In line with this goal, reform and improvement studies were carried out in many political, legal, social, cultural, and economic fields. The intellectual framework of the period was dominated by the idea that the foundation of a modern and independent state could only be realized through the establishment of a stable economic infrastructure. In this context, an economic policy that supported the private sector for industrialization has been implemented

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since the 1920s. In the 1930s and afterwards, the liberal economy, in which the private sector was supported, was replaced by a statist-oriented economic order. While the private sector continued to be supported in the background, a system in which the state was the locomotive power in the economy began to be implemented (Bigat, 2017; Bancı, 2006; Ayvaz & Halaç, 2023). Following these arrangements, the First Five-Year Industrialization Plan was prepared in 1934-38. In line with this plan, it was planned to establish sugar, weaving, mining, cellulose and ceramic factories in locations determined by the state. (Sadioğlu & Yürük, 2020; Ay, Efe Güney, & Ecemiş Kılıç, 2022). After the 1950s, factors such as the development of transportation facilities, the migration of the population from rural areas to the city, the increase in the potential workforce with the increasing population, the strengthening of the private sector and the increase in investments led to the development and diversification of the industry. The Industrial Development Bank of Turkey, which was established in these years, accelerated the development of private industry with its own facilities (Semiz & Toplu, 2019; Toprak, 2019; Bancı, 2006; Dönmez, 2019; Kasap & Toy, 2018; Durukan Kopuz, 2018).

Figure 4. The first modern tea factory (URL-1)

After the Industrial Revolution, moves towards the production of tea, which has been produced in the Far East for thousands of years, have started to be realized in our country. In 1888, the first steps were taken and in 1892, repeated attempts to produce tea failed due to the wrong choice of geographical region. In 1917, research activities within the state were interrupted due to the outbreak of World War I. Due to the increasing unemployment in the Black Sea Region after World War I, steps were taken to increase agricultural activities in the region (Alikılıç, 2016; Kacar, 1992). In 1924, a law was enacted specifically for tea production and units were opened in this context. The first fresh tea leaf harvest and dry tea production was realized in 1938. In 1940, a decree was prepared to allow tea production from Araklı Creek to the border with Georgia. Between 1940-42, the first tea workshops were established and developed on a capacity basis. In 1947, with the breakthroughs made in the industry, the first tea factory was established in Rize Center (Kuzucu, 2012; Lafcı, 2013) (Figure 4.).

1.3. The Impact of Industrial Buildings on the City

Invented in 1712, the first steam engines were developed and used in different fields and their importance in industry increased. Factory structures shaped around steam engines affected the entire environment with their noisy and dangerous structures. In the first years of their establishment, new settlements were formed around the factories, which were generally established far from the settlement center due to their noise, pollution and dangers, and this situation brought along problems related to vital activities in these cities. Migration from rural areas to newly formed settlements led to rapid population growth and poor living conditions. With modern urban studies, factories and workers' residences were reconsidered, started to be planned and built. Healthier settlements were designed with the planning of industrial areas (Benevolo, 1971; Pekdemir Başeğmez & Asiliskender, 2023). Factories have become one of the important problems of urbanization over time. Housing and transportation of workers have become important factors for the location of the factory. For this reason, not only the factory but also its surroundings were designed. A direct relationship was established between the locations of factories, houses and public spaces. In the factory settlements built in America during this period, there were houses, shops, schools and chapels that were the blueprints of the companies. Workers living in these settlements often created their own culture, working hours and social activities within the built environment (Garner, 1992). All these developments were made to improve unhealthy conditions in industrial zones and to increase the working efficiency of workers.

In Turkey, as a result of the modernization process, especially in the Early Republican period, there has been a reconstruction of the physical environment as well as economic development. Industrial buildings, with the structures within them, had effective physical locations within the reshaped settlement pattern (Gür, 2020). As a result of the supply and transportation requirements needed in the ordinary cycle of the industry, the units that make up the industrial established in the appropriate region had to be shaped with a certain functional fiction to obtain the maximum benefit. This fiction consists of buildings and machinery, ateliers, workhouses and factories, mines, operation and treatment areas, warehouses and storages, places where energy is produced, transmitted, and used, transportation and all its infrastructure, as well as places used for social activities such as housing, health, worship or education related to the industry, which are arranged in a systematic organization (Zeybekoğlu, 2002). In addition to their physical location within the city, industrial settlements have also become an important symbol in the urban silhouette. In the early years of the Republic, factories took on a symbolic meaning with their tall chimneys rising as symbols of industrialization in cities and were named “national chimneys” (Peri, 2006; Acar & Uzunali, 2021).

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Figure 5. Arhavi Tea Factory chimney (authors' archive)

With their various services and social activities, industrial settlements have effectively shaped the lives of local people, functioning not only as a place of production but also as social and cultural centres. Structures of this nature have been important spaces that support social change. Especially structures such as housing, social facilities, guesthouses and lodges for accommodation and socialization have played an important role in the intended sociocultural change (Eminağaoğlu & Yurttaş Şahin, 2023). In short, industrial structures consist of many components (such as historical, technological, social, etc.) of industrial culture. These components have resulted in factory campuses not only developing the local economy of the region where they are established but also affecting the socio-cultural life in every sense with their structures as production spaces, modern technologies, and new social life routines.

The establishment of factory buildings in small-scale settlements after the proclamation of the Republic, particularly after 1935, caused significant changes in the economic, spatial, and social structure of the region, which was previously reliant on agricultural activities (Asiliskender, 2009). In addition to the physical presence of the factories, the spatial functions that were added or changed because of needs and limitations were also reflected in the spatial texture of the settlement. Another reflection of the functional changes was also experienced in the silhouette of the building and landscape views. In short, the spatial effects of the factories were felt not only in the areas where they were established but also in the settlement (Asiliskender, 2006). The social and cultural spaces built for the needs of the workers and their families in the established factories occupied large areas and directed the development of the settlement. The settlements concentrated around the factory complexes also affected the landscape and infrastructure. Factory complexes have emerged as prominent urban landmarks, shaping new transportation networks and development zones through the construction of additional roads, residential areas, and social and cultural facilities.

Industry has undergone many changes since the Industrial Revolution. Thanks to globalization, advances in technology, and transportation, the spheres of influence of the industry have changed significantly. The results of this change have been seen especially in the built environment. In the second half of the 21st century, with the increase in

the speed of production technology, a new consumption culture emerged and dragged society to a new order in daily life. Over time, consumption has overtaken production (Harvey, 1992). This transformation did not end industrial production while designing new production systems, on the contrary, it caused it to grow. In the 1970s, computer technologies developed, and workers began to use the systems that operated them, not the machines that produced them (Rappaport, 2017; Ķeire & Vugule, 2022).

Although the shift of production from workshops to factories caused some difficulties in production spaces and their surroundings, this situation became one of the most critical planning data for 20th century cities. Factories were initially conceived as part of the company town with its residential areas, schools, hospitals and social spaces; later, they pioneered the establishment of larger towns with residential areas and directed growth. As the number of factories increased in the second half of the twentieth century, factories created their own production campuses or districts to meet growing consumer demand (Pekdemir Başeğmez & Asiliskender, 2023). Today's technological developments are also changing the equipment of factory workers. Face-to-face communication is decreasing with the developing communication technologies. With the increase and diversification of consumption needs, interaction moves outside the factory campus. For this reason, factory campuses have shrunk; they have generally turned into production centres. This situation causes the physical existence of industrial buildings, which are the physical reflection of the social, economic, cultural and architectural development of a period, to disappear, as well as the erasure of the image formed in society.

1.4. Urban Morphology

The word morphology means shape, form knowledge in the context of the word origin (TDK, 2024). The widely accepted definition of urban morphology can be explained as "the examination of the physical form of settlements". More precisely, it is the study of the formation of urban texture components and their relationships that define their composition and configuration over time (Smailes, 1955). In this context, in short, urban morphology is used as an important method of analysis in determining the stages of change-transformation of the urban texture with all these features, expressing the spatial and functional fiction within the historical origins of the buildings and transferring them to the present day (Kubat & Topçu, 2009). Urban morphology is an approach that analyses the physical form of cities. Morphological change occurs in social and economic contexts and has a direct impact on the city's construction and architectural texture (Koç & Kubat, 2018).

At the centre of urban morphology is the urban pattern and the urban pattern is shaped by different users at different spatial scales in line with different objectives and requirements. The concept of space is

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produced with different contextual relations in each period. This situation enables the construction of a dynamic relationship between the conscious interventions of users and urban objects. In the historical process, space experiences a change of state under the control of the user. In this context, the concept of space fills the place of the relation formed in the previous state with a new relation in each change of state. These changes of state become concrete and observable through spatial change in the city, revealing different spatial organization structures in different periods. These relations are shaped successively in the process. In this context, spatial relations between users, which are effective in shaping space, lead to the formation of morphological periods in which different spatial characteristics become evident. However, this process is a one due to many different inputs (Ünlü, 2018; Sınmaz & Özdemir, 2016; Sakar & Ünlü, 2018).

Morphological approaches, which are mostly used to understand and analyse the city due to its structure, help to collect comprehensive information about the urban area. Morphological analysis, which enables the analysis of urban phenomena at different spatial scales and through different disciplines, helps to make sense of the physical development process with structural data. For the last two decades, urban morphology has been associated with urban growth; scientists have been trying to understand how the shape of the city has changed over the historical process and the main reasons for this. As defined by Li et al. (2022), urban morphology is an interdisciplinary approach that focuses on physical form to reveal the characteristics of transformation and displacement of urban areas over time at various spatial scales. According to Duan et al. (2022), the city is a structure, it is not easy to deeply analyse the influencing factors only from a whole object. In order to divide the under relatively simple conditions, starting from the different scale levels of a city, examining all the details and effects of its form language will probably have a positive effect on this issue. According to this idea, urban morphological analysis can be handled at three levels: single element, parcel, and city (Duan, Lan, & Jiang, 2022). In urban morphology research, it is stated that different levels of detail of the city can be handled at different scales. The first studies, which saw the city as a part of geography, focused on different fields of study by separating the parts that make up the city towards the middle of the 20th century (Yalıner & Begeç, 2023; Soleimani, 2022). Urban morphology, which is basically constructed as a part of geography, recognizes that the environment built in the natural environment is based on cultural transmissions. When we look at the city, the structural elements that make up the city consist of many classifiable sub-elements such as streets, squares, roads, and parks. Urban morphology and planning, although regulated through laws and administrative frameworks, are intrinsically linked to a wide range of evolving urban dynamics, including industrialization, urban thresholds and belt zones, population growth, urbanization processes, urban identity, typological

differentiation, conservation practices, obsolescence, urban transformation, energy management, and sustainability. In this way, studies have been carried out to understand the nature of urban development and to manage the development process (İlhan & Ediz, 2019). Since it is based on cultural accumulation, it is inevitable to experience morphological change along with culture. Altınbulak (2022) mentions that the city should be treated as a dynamic and transforming living organism within the scope of morphology. Due to its layered structure, urban morphology can provide information about past life as well as foresight for the future depending on cultural changes (Aydınsoy, 2023; Bancı, 2006).

In morphological studies, the urban texture can be analysed at the parcel level, making it easier to recognize the characteristics and layout of individual buildings and thus analyse the city. Individual elements include buildings and spaces within and outside the parcel and can directly express the character of the settlement through their appearance and spatial arrangement. The physical structure is a continuous system of smaller parts with various behaviours, which are arranged and interconnected for a variety of reasons - social, cultural, economic, etc. - and finally form the unique, temporary urban image. Buildings and groups of buildings that physically occupy large areas within the settlement scale can create remarkable images in the region.

Urban form is not only about permanent physical elements such as buildings, streets, hills, rivers, and trees. The important thing is to decide on the elements that make up the city. These elements are the social structure, the economic system, the ecological system, the preservation of the spatial and semantic background, and the maintenance of the ordinary motion (Kevin, 2010). However, the guiding variables and impact rates of each city are different from each other and even for the same city, different variables may have more dominant effects at different times. For the same region, a factor that is an indicator of development in one period may become a problem to be solved in the next. For this reason, in interpreting the temporal morphological change regardless of scale, it is necessary to read the city with its different dynamics instead of evaluating the intertwined urban components separately or categorizing the urban texture according to its form (McAdams, 2007; Gür, 2020).

MORPHOLOGICAL EVALUATION OF TEA FACTORIES

Tea factories, which emerged as a spatial reflection of modernization and independence with the establishment of the Republic, led the existing rural settlement typology to turn into an industrial-oriented form. With the establishment of tea factories in the Eastern Black Sea Region, which mostly shows a dispersed / loose collective settlement character because of geographical and climatic requirements and limitations, collective settlements with tighter qualities, especially shaped around the factory, began to form. The settlements, which were

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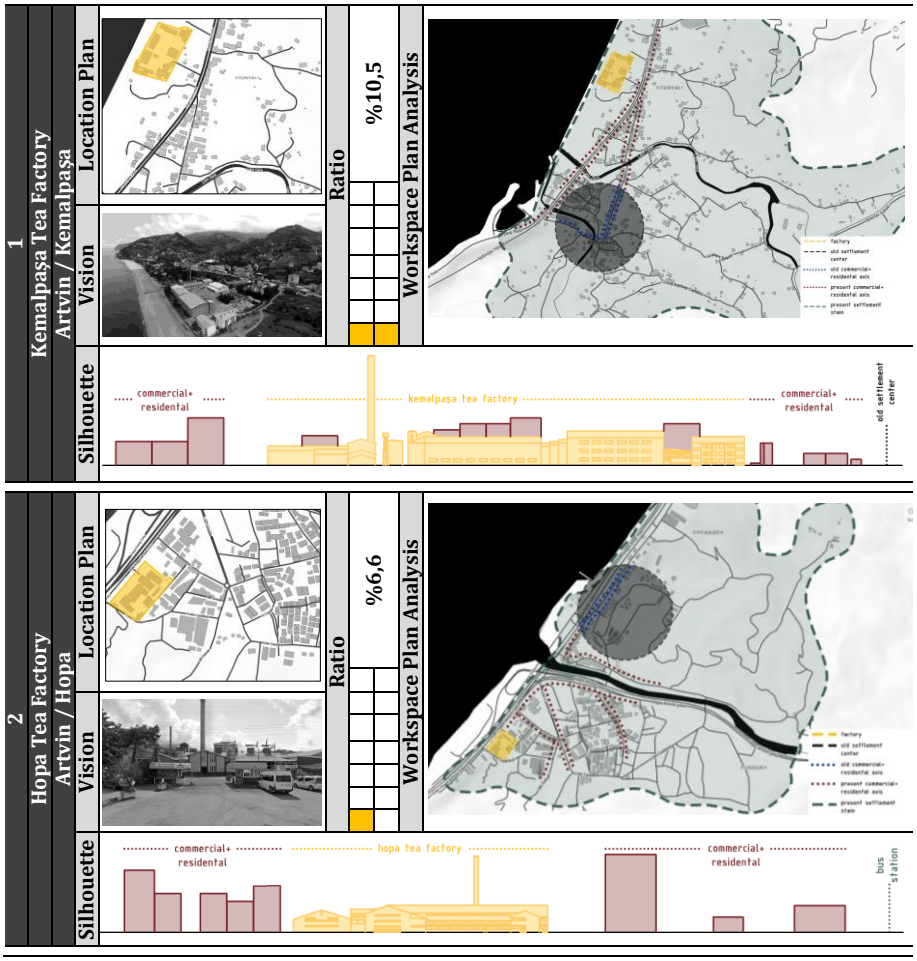
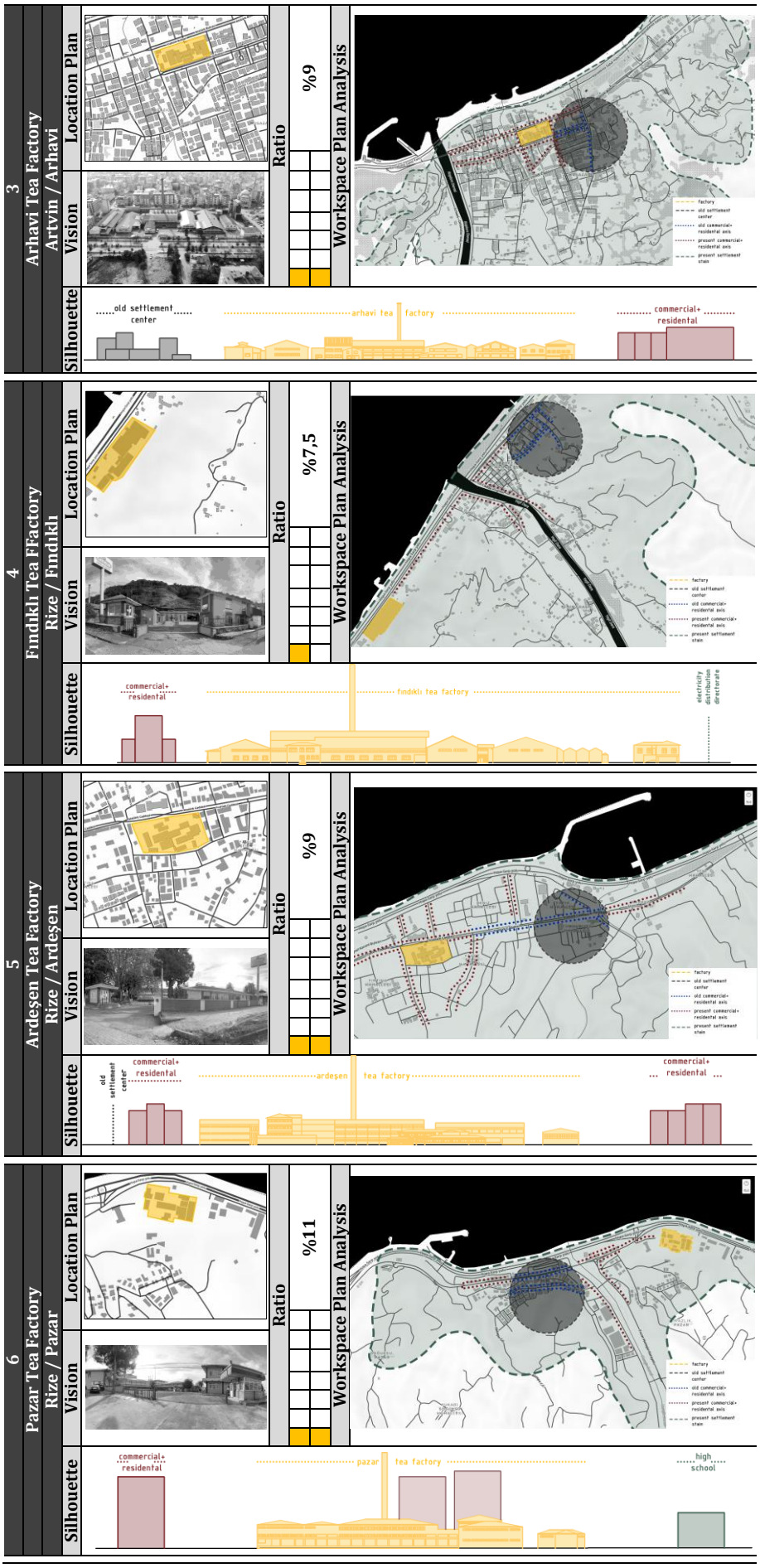
shaped because of the agriculture-dominated economy in the pre-factory period, have seen an increase in the human population after industrial activities. The zoning and infrastructure activities carried out in and around the factories to meet the needs of the increasing population caused the factories, which were located on the periphery of the settlements in the years they were established, to become a central location. Factory buildings and their associated sociocultural units were constructed in a modernist architectural language, utilizing the construction systems and materials characteristic of their period. Their surroundings, initially located outside the urban core and therefore open to new development, subsequently evolved to comprise predominantly structures built with contemporary construction technologies and materials.

In the table below, the morphological effects of the tea factories in the settlement are analysed at the plan and silhouette level.

Table 2. Morphological analysis of Tea Factory campuses.





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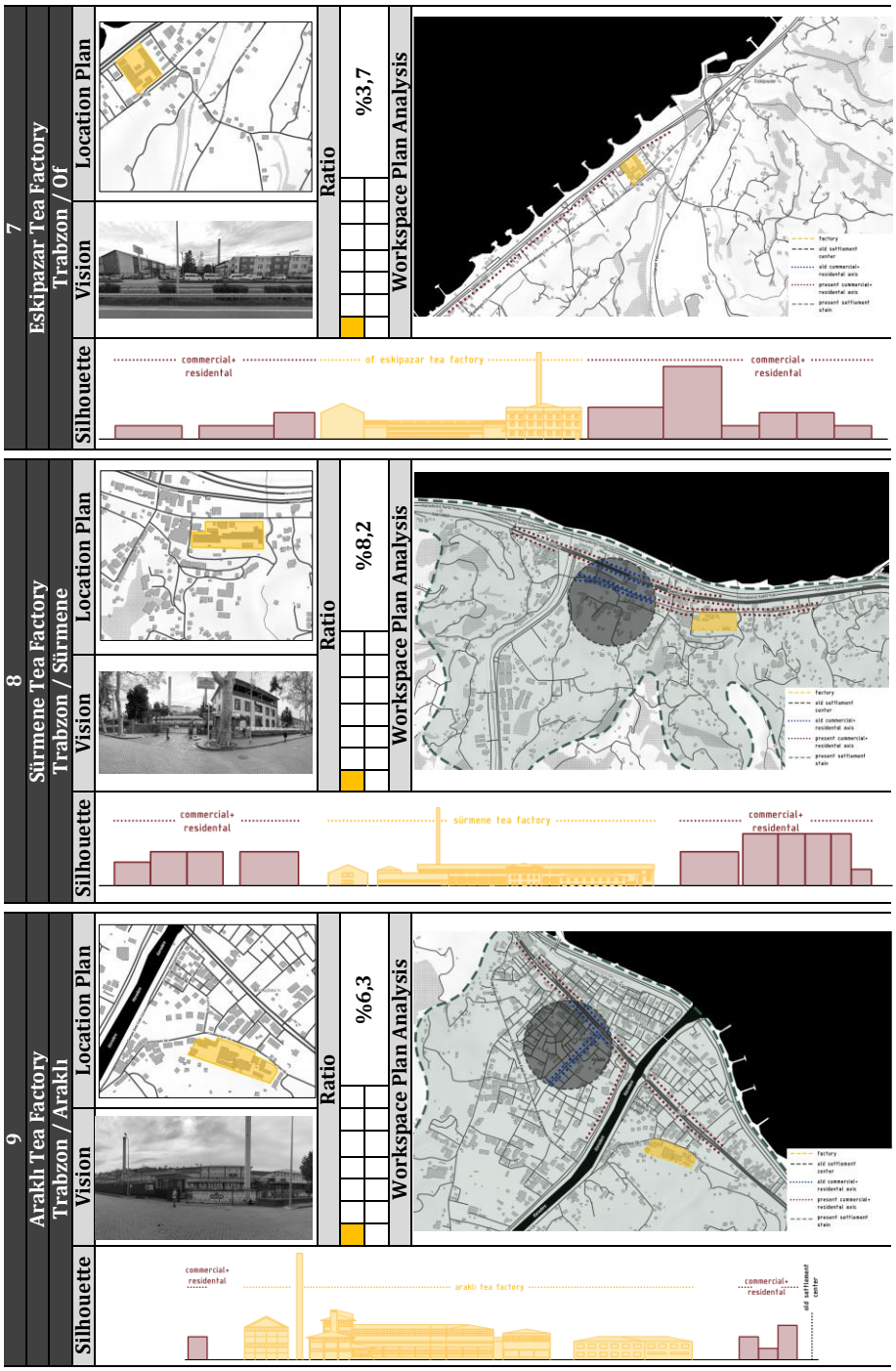
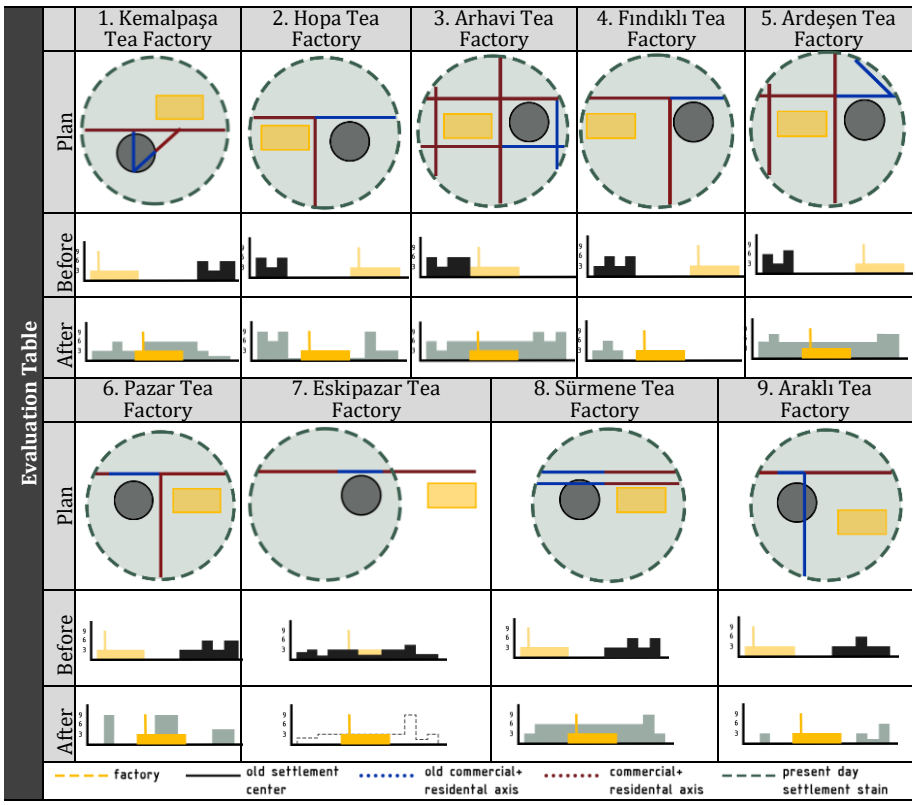


Considering the region in which they were established, factory buildings occupy a considerably larger area in both building scale and parcel size compared to other industrial buildings of similar quality, with a total area ranging between 12.000-44.000m2. As seen in the table, the Rize-Pazar Tea Factory, which occupies 11% of the selected 400.000 m2 settlement area, has the highest ratio among the selected examples. Trabzon-Eskipazar Tea Factory has the lowest ratio with 3.7%. It is seen that there is no clear standard in the size of the factories; the size is very variable depending on the capacity or the units within its structure. Especially considering the figure and ground rates in the settlement and their presence in the urban skyline, it is seen that even at

the lowest rate, factories occupy large areas compared to other buildings in the settlement.

Table 3. Evaluation table.



The building communities of the factories affected the buildings, building groups, functions and the roads surrounding these parcels. In the residential areas where the factory buildings are located, the transportation pattern in which linear and grid systems are designed together is predominantly used. Factory buildings constructed for industrial activities were built on the intercity highway routes of the settlements where they were located. These highways, which started to be used for urban transportation with the construction of the Eastern Black Sea coastal road, which has an international character, have become the main commercial axes within the settlement with the effect of the factories. In particular, the building stock within the factory parcels and the surrounding plots has been reorganized for commercial or mixed residential–commercial use to keep pace with this transformation. This has resulted in commercial areas showing an edge characteristic between factories and residential areas. Residential and social structures designed within the factory campuses also led to the emergence of public socio-cultural structures around the factory. The factory and its surroundings are enclosed by buildings of varying heights depending on the settlement boundaries, predominantly ranging from one to eight storeys. Given the 4–5-meter storey heights required for industrial functions, the factory buildings create a pronounced horizontal impact within the urban pattern through their one-, two-, and three-storey configurations and spatial distribution. This

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horizontal emphasis is visually counterbalanced by the chimneys and water towers that rise within the factory grounds. Over the years, the chimneys rising from the factory complex have become a symbol of the city, determining the perception of the location of the factories from a distance and strengthening their physical presence.

Tea factories affect the settlements they are in not only with their physical presence, but also in terms of affecting the socio-cultural structure, the economic system and the continuity of collective memory. Factory buildings, which are shaped within the framework of a certain functional fiction, have effectively shaped the lives of the local people with their social and cultural spaces established for the needs of employees and their families, apart from their identity as production structures, and have become remarkable centres for the settlement. Urban morphology, which is based on cultural transmissions, has a layered structure because of the preservation of the time-dependent dynamic structure of the elements that make up the city. As a result of this, tea factories have also had different impact rates over time as the elements that make up the settlement in which they are located. Tea factories, which were considered as an indicator of development in the first years of their establishment, are now considered as a problem that needs to be solved because of changing needs.

EVALUATION and CONCLUSION

As of the early 19th century, the replacement of human and animal power by machines because of the large-scale developments in the Industrial Revolution led to large amounts of migrations from rural areas to the regions where mechanization took place. Globally, urban morphological analyses in countries have evolved into a different dimension with both the physical presence of factory settlements shaped by the requirements of industrial production and the increasing population because of migration. These developments in the industrial field on a global scale have also found a place in Anatolia, albeit late. Although the impacts of World War I during the late Ottoman period were not as profound as those experienced in Europe, the establishment of the Republic initiated a period of accelerated economic development supported by the prevailing state ideology. Guided by the principles of modernization and independence introduced through the Republican Revolution, economic initiatives were approached as integrated spatial and social policies. As a result, industrial settlements that played a role in shaping the practice of urbanization and the formation of modern identity and social consciousness were built.

The tea factories, which were established by the state with the steps taken to increase agricultural activities in the region due to the increasing unemployment in the Black Sea Region after World War I, have added value to the region in many areas, in terms of providing services in both economic and sociocultural fields at the point where society needs them. These structures, which are indicative of the

ideological approaches and economic development activities of the period, were able to establish close ties with the region in the local context. Both their physical shape and their impact on social, cultural, and economic life are of great importance throughout the region.

Since its establishment, the factory complexes have contributed greatly to the economic development of the local people. Both the workers working in the factory and the farmers producing tea earn their income through this institution. It has the distinction of being a centre thanks to the employment of a large community and the technical and social areas in its physical existence. Especially the realization of the sociocultural activities carried out in the region in the past within the borders of the factory has brought the impact of the campus on urban morphology and social life to the forefront. Therefore, with these features, tea factories physically occupy large areas in the settlements where they are located and shape the development of the city. The size capacity of tea factories as settlements is not standardized but varies within the scope of the buildings they contain. Nevertheless, considering the settlements they are in, the proportional values of the areas they occupy are high.

Tea factories, which have a very important place in the history of the Republic, occupy a remarkable area in the city silhouette morphologically. In addition to taking place in the city silhouette with their unique architectural qualities, the buildings played a major role in the functionalization of the surrounding structures. The chimney rising from the factory complex has become a symbol of the city over the years and has been decisive in the remote perception of its location. As a result, in this study, it is observed that the urban form of the settlements examined in this study has developed under the influence of tea factories and that these influences have also formed the symbolic elements of the city.

Tea factories are a group of buildings that have a very important place in the identity, social memory, and settlement morphology of the settlement they are located in. Although the factory campuses were partially located on the city periphery when they were first built, they remained at a central point with the expanding city limits. This situation causes the gases released from the iconic chimney to affect the whole city and pollute the air. The factory buildings, which were built as a major modernization step for the Early Republican Period, have become a problem that needs to be solved today. As with many other factory buildings, the issue of moving tea factories out of the city has come to the agenda. Factory buildings, which have effective locations within the settlement texture, face negativities such as technological inadequacy, economic loss, obsolescence, and loss of value in the historical process. Depending on the decisions taken because of developing industrialization and changing needs, the buildings are faced with the danger of demolition and the inability to continue their existence. These buildings should be considered the industrial heritage of the future

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because of their unique architectural qualities, and tangible and intangible values. Tea factories, which form deep traces in both the physical structure and social structure of the Black Sea Region, should be evaluated as cultural heritage and policies should be produced for their existence with this understanding.

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