

# Preliminary Measures for Preserving the Industrial Heritage of Kalamata

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**Abstract:** - This chapter presents the industrial heritage of Kalamata in the early 20th century and some preliminary measures for preserving this heritage. During this period, the city was transformed into a center of manufacturing production, since artisanal units for processing agricultural products were operating. The main points of interest of the cultural route are the three industrial buildings of the city that have survived to this day, the “Karelia” tobacco factory, the “Evangelistria” Messinian Roller Mills and the Stassinopoulos Brothers’ silk factory, which were erected in the 20th century near the Nedontas River and the port of Kalamata, to house robust primary industries that processed the silk produced in the region, as well as the tobacco and grains transported from other regions of Greece, strengthening the local economy. Other craft units of the city that operated at the same time will also be presented, such as distillery, soap making, pomace oil production, fig processing and electricity units. A proposed cultural route interprets dynamic systems of relationships between people, society, and the environment and focuses on oral testimonies, primary sources and archival material mainly from the same period.

**Key-Words:** - Industrial heritage, cultural heritage, economic development, tobacco industry, silk factory, power station, Messinia, 20th century.

Received: March 18, 2026. Revised: April 21, 2026. Accepted: June 8, 2026. Published: October 12, 2026.

## 1 Introduction

Greece, which had been an insignificant part of the vast Ottoman Empire for centuries, as a newly established and now independent state (in 1830), had to differentiate itself from the East and approach Europe, as much as possible, since it had already been ruled by the Bavarian-born European monarch Otto, from 1832 to 1862. When Prince George of Denmark ascended to the Greek throne in 1863 (as King Georgios I), the situation of the Greek state, as well as of the capital Athens, was very different from the picture that the Bavarians had seen thirty years earlier. Although it was far from the level of advanced European states, it certainly had significant progress to show, compared to the incredible desolation it had shown in 1832, after the Greek independence. This progress is confirmed by the vast majority of the numerous relevant

publications that saw the light of day in the daily and periodical press of Europe in those years, publications that were often signed by prominent personalities of the time, writers, archaeologists, architects, etc. [1], [2].

The new dynasty of King Georgios was to start from some calculable bases and not from scratch, as his predecessor (King Otto) was obliged to do, which may have been one of the reasons for the latter’s downfall, combined with the fact that he did not manage to extend the boundaries of the Greek territory. On the contrary, King Georgios was fortunate to begin the period of his hegemony with the annexation of the Ionian Islands, to continue with that of Thessaly and Arta, and to end his reign with the acquisition of Macedonia, the rest of Epirus, the Aegean islands and Crete. This gradual increase in Greek territory, combined with the liberal reforms brought about by the dynastic

change and the relative stability of political life, gave a new impetus to the economic development that had begun in the previous period [3] and became particularly noticeable in the last quarter of the 19th century. This change in data also resulted in a change in the living conditions of the population, with a corresponding change in its values and priorities. The fact is, however, that the situation was fluid and conditions were constantly changing.

The turn of the century was a time of contradictions and explorations, both in architecture and in the society; it reflected, as Greece struggled between, on the one hand, economic failures (bankruptcy and financial control, since 1893) [4] and military disappointments (the war of 1897, the Cretan Issue) and, on the other, the ever-increasing indications of a rapid realization of the long-awaited national restoration. Therefore, the Greek state under these circumstances could not accept and manage the phenomenon of industrialization on its own, since even the completion of public buildings was undertaken by wealthy individuals. The above elements, as happened during the Ottonian period, directly influenced the design and implementation process even of “public utility” factories (for the production of gas, electricity), continuing to reflect the socio-political perceptions of their time [5].

Especially for the completion and operation of public utility projects, foreign investors were also interested in the electrification of the large cities of Greece, always having as their main competitor the production and use of gas, and in many cases, they proceeded to acquire gas production companies, in order to overcome this obstacle. Moreover, in the mid-19th century the Mediterranean was a field of economic and political competition. The internationalization of businesses and the export of capital followed the opening of markets, while industrial and commercial development gave impetus to technological development, the expression of which was the large public works, constructed worldwide. The bold engineers, whose action appeared as an alliance of capital and science, proceeded with new applications of technology that responded to the increased needs of transportation, contributing in a fairly significant way to the transformation of society [5].

## 2 The Industrialization of Greece

In the independent Greece of 1830 there could be no talk of industrialization. The 19th century, an era of industrial and technological development for the Western World, was marked in Greece by the attempt to adapt to the standards of the now

industrialized Europe, as well as by the effort to create the structures necessary for the country's prosperity. The development of industry, as a set of developed forms of industrial production, was difficult to combine chronologically with the formation of Greece into a state, since, as it is well known, it was an agricultural and sparsely populated country. The Greek Revolution (1821-1829), along with independence, also brought an almost complete economic destruction, as a consequence of the long-term war effort, with urban centers in an embryonic state. At this time, the majority of the Greek population lived in the countryside and invested in self-sufficiency, in products that covered the needs of the rural household and self-consumption. Nevertheless, during the first decade of the newly established state, there was quite frequent talk of industry [6].

Large-capitalist businessmen from abroad wanted, either out of patriotism or even for purely investment purposes, to contribute to the development of the country, by creating large workshops (“manufactures”), which were in essence nothing more than concentrated production units, something that Greece had been unaware of until then. It is worth noting at this point that the investors of the first “industrial units”, in order to implement their goals, directly sought the protection of the king, negotiating all kinds of benefits, facilities, privileges and sometimes money, and evaluating their work as beneficial for the whole of society, as it aimed at introducing new production methods, modern techniques, professions or products unknown in the country [7]. The young King Otto, fascinated by the power and prestige that the institution of manufacturing had given to certain advanced countries, such as France, showed willingness – as did the governments that succeeded him – to facilitate the establishment of factories by all possible means: granting plots of land or even land, renting out taxes in kind on the domestic production of the necessary raw materials, duty-free on imported equipment, excluding, however, direct state financing, due to the existing poor state of the state's finances. Only a few enterprises that did not manage to overcome the initial difficulties in time were financed by the state, with meager amounts, of the order of 30,000 drachmas, at most. However, this effort failed as a whole, as the centralized workshop could not find its place in a market economy that lacked the appropriate infrastructure [5].

Apart from the concessions of urban plots on favorable terms, which in some cases were found to have actually facilitated the establishment of certain

enterprises, the other state benefits to aspiring factory owners proved to be insufficient and almost useless. In particular, quite problematic was the fate of the agricultural lands that were granted to those enterprises that wished to combine the industrial establishment with the cultivation of raw materials in the same area. The areas given to those interested were very large (e.g., 8,300 acres were granted to a sugar company for the cultivation of sugar beets) and required a fairly large number of workers, non-existent by Greek standards during the specific period. As a result, none of the major crops could thrive, while the concession of relatively privileged areas of land sometimes led to the fragmentation of national lands, an issue that particularly concerned the state. Benefits and privileges, ultimately, could not overcome the resistance of the structures of domestic production and the habits that had taken root through centuries of life. However, the concession of privileges by the state to the factory owners resulted in some of them demanding exclusive privileges, such as not being able for others to establish another similar factory in the wider area, so that their businesses would acquire the form of a monopoly [5].

In Greece of 1870, there were now many more well-off people, compared to the first decades of the century, ready to invest in the emerging industry. The agricultural sector, which formed the basis of the economy in the country, was already in the process of being transformed into “capitalistic agriculture based on family exploitation” throughout the 19th century [8]. The changing agricultural economy, due to the more intensive work, presented a surplus in agricultural production. This surplus passed into the hands of those who intervened in the stage of placing the products on the market, or who extracted profit from production in the form of “usurious lending” to producers [6], while the producers were left with only a small amount of production. It is therefore clear that in the world of trade, a hierarchical pyramid was forming, the bases of which were progressively broadening. From the structure of absolute domination by a small economic and social group, there was a transition to a more complex structure with denser gradations, in which the various strata of the new bourgeoisie participated, however numerically weak it was. In 1870, the absorption capacity in capital and labor in the two traditional productive sectors of the country - agriculture and shipping - seemed saturated for the first time. These capitals, as well as the labor force that could not be absorbed, found space in industry, which already existed in embryonic form and would need many more years until it grew satisfactorily.

In 1875, industry was not the dominant sector of the Greek national economy. On the contrary, it was a small or medium-sized industry, concentrated in the sectors of current consumption goods, with low added value. Its appearance created a gap and discontinuities within the entire secondary sector of an agricultural country, while its fate depended on the acceleration of the industrialization process. It is worth noting, however, that only five cities, including Kalamata, concentrated 66.4% of the industrial establishments of Greece, 73.6% of the horsepower and 82.4% of the workers [5].

The process of industrialization in Greece did not begin in rural areas, as it did in Western Europe, but followed the development of cities. The new industries were now consumer-oriented, in contrast to the two older sectors (tanning and silk-making), which were export-oriented. Thus, all the sectors that developed during the “take-off” period were aimed at the domestic market [6]. These new light industries were established in places where the large concentration of population ensured a considerable market and a reserve of labor force. These advantages were automatically combined with access to the transportation network, especially to ports, such as that of Kalamata. The division of Greece into coastal areas and inland areas was very much in effect, as in the past, although it was not particularly evident in the censuses of this period [9].

The development of Greek industry brought about radical changes in urban societies. Industrial workers began to constitute a significant part of the class structure, already from the beginning of the 20th century. While during the period 1861-79, the productive population of Greek cities was steadily decreasing in relation to the non-productive (from 49% to 36% of all those employed in non-agricultural sectors), after 1889, a reversal of the figures is observed, until, in 1920, the population employed in industry and transport amounted to 56% of the active urban population [5].

## 2.1 Electrification in Greece

Electricity had not completely conquered Greek industry until 1920. Many factories remained steam-powered until then, while a significant number of them used their own electricity generation unit, using diesel engines, that is, they had their own “thermal plant” [10]. The spread of electricity and the establishment of electric plants in the periphery, at the beginning of the 20th century, although as a trend it was limited, contributed dynamically to the formation of industrial centers, such as Kalamata [5].

The American company Thomson-Houston of the Mediterranean (branch) attempted until 1900 to electrify many cities in Greece, including Kalamata, and proceeded to the corresponding electric lighting contracts. In March 1899, the above company and the Municipality of Kalamata signed a contract for the installation of an electricity production plant for municipal lighting, as well as for the supply of electricity to individuals, for lighting or industrial use. Thus, with the contract between the mayor of Kalamata, P. Mavromichalis, and G. Konopisopoulos, an engineer, the municipality granted the latter the exclusive right to install an electricity production plant for the city of Kalamata. The electricity produced would be used to provide lighting to the municipality and individuals, but also for any type of industrial enterprise, whether for motive power or for heating or finally for chemical purposes. The duration of the contract was set at 50 years. The municipality provided free-of-charge a suitable site for the construction of the central power station. After the expiration of the contract, the facilities would become the property of the Municipality. The contractor, G. Konopisopoulos, retained the right to assign and transfer at any time his rights and obligations to the company Thomson-Houston of the Mediterranean [5].

At the beginning of the 20th century, the three-phase alternating current asynchronous motor was invented and developed. With this new technology, the number of electrically driven machines increased, therefore the consumption of electricity became increasingly important. By the end of World War I (1918), twenty-one cities in Greece had electricity production plants [5].

### 3 Cultural Heritage & Economy

During the 19th century in Messinia, as in other Greek regions with densely populated urban centers, where there are ports, such as Athens, Piraeus, Patras, Lavrio and Syros [11], factories were founded and developed due to the utilization of machinery in the production sector, for the processing and standardization of products [12]. In Kalamata, in 1918, the Chamber of Industry and Commerce was founded and, in 1920, it already had 1024 registered businesses and 6,000 workers in industry, with a total population of 217,000 inhabitants. These industries were concentrated at the mouth of the Nedontas River and in the Port, to facilitate commercial transactions, as well as in the Analipsi area (West Beach - Old Douana).

The industrial boom in Messinia had been strengthened by the arrival of refugees in 1922. The

settlement of refugees from Asia Minor in Greece led to the strengthening of industrial production, since they offered cheap labor, an increase in the labor force and, above all, the necessary know-how. Significant industrial development was maintained during the interwar period, so that the city and the craft units continued to be related to the processing of agricultural products, which were in wide demand. At the same time, Athenian commercial enterprises expanded to Kalamata [13].

The branches of industry that developed rapidly in the aforementioned period are silk manufacturing, tobacco industry and grain processing. Therefore, Kalamata was transformed into a center of manufacturing production. At the same time, particular development is noted in the sectors of alcohol production, soap making and olive-kernel production, carbonated drinks and ice-making, as well as the building materials factories, a nail factory, and others related to clothing, with an increased number of workers.

However, the region experienced economic decline and crisis until World War II, due to the raisin crisis (1893-1905), as other more dynamic urban centers emerged in Greece. After the war, local industry shrank, as many tobacco factories closed, as did the factory of the Wine & Spirits Company in 1960 and the "Evangelistria" Roller Mills in 1989. Economic growth continued until the third decade of the 20th century, despite the existing historical-political circumstances and the intense economic fluctuations.

The post-war industrial decline of Kalamata constitutes a characteristic example of the deindustrialization of a regional urban center in Greece. While from the late 19th century until the interwar period the city emerged as one of the most significant economic and industrial centers of Southern Greece (also known as the "Marseille of the Morea"), the period following the Second World War was marked by the gradual contraction and ultimate collapse of most of its historical industrial units. The causes of this post-war decline were:

The centralization in the core urban center (Athens-Piraeus), following the war and the Civil War, when the Greek state implemented developmental models that favored the concentration of industrial activity within the Attica basin.

The technological lag and lack of modernization, when many local industries failed to modernize their mechanical equipment, thereby losing their competitiveness against imported goods or large Athenian manufacturing units.

The changes in international markets, exemplified by the decline of the silk industry, driven by the global prevalence of synthetic fibers (nylon) and intense competition from Eastern markets.

The crisis in the trade and processing sector of currants and figs, which dramatically affected local processing plants.

The decline of the port, due to alterations in maritime trade routes and the shift toward road transport that diminished the role of the port of Kalamata as a transit hub.

The 1986 earthquake that delivered the final blow to the city's remaining industrial stock by destroying building infrastructure and accelerating the local economy's transition toward the service and tourism sectors.

Therefore, Kalamata's transition from a post-war industrial center into a modern, multifaceted tourism and cultural hub is the subject of extensive study by the local municipal authorities.

### 3.1 The Economic Transition

The city's tourism development over recent decades has been driven by infrastructure, strategic investments, and a shift towards alternative forms of tourism. The key pillars of this modern tourism growth are accessibility infrastructure (acting as catalysts for development), major hotel and urban investments, and cultural and thematic tourism. Relevant initiatives include:

The "Moreas" Motorway (A7), since the completion of this road reduced the Athens–Kalamata travel time to approximately two hours, making the city accessible for weekend getaways and year-round tourism.

The "Captain Vassilis Konstantakopoulos" International Airport (KLX), achieving the rapid increase in charter and low-cost flights directly connecting Kalamata to dozens of European cities.

The impact of the "Costa Navarino" hotel complex (spillover effect) that, although located in Western Messinia, this landmark investment placed the entire region on the global luxury tourism map, with Kalamata serving as its primary urban and transport gateway.

The Kalamata International Dance Festival, an event of international renown that boosts cultural tourism.

Gastronomy and agritourism, leveraging local products (olive oil, Kalamata olives, figs, wine) and linking them to the Mediterranean diet to create a strong thematic tourism product.

Conference tourism and MICE (Meetings, Incentives, Conferences, and Exhibitions), with the

city consistently attracting scientific and corporate conferences, thereby extending the tourism season.

In recent years, the coastal zone and the Bournia area have attracted significant domestic and foreign investment for the development of five-star resorts and luxury residences, as well as for the upgrading of the waterfront.

However, these developments create challenges and necessitate a new sustainability model. This rapid growth has brought issues of sustainable tourism to the forefront:

Strain on infrastructure (parking, waste management, water supply) during the summer months (carrying capacity).

Rising rental prices for permanent residents and students, driven by the proliferation of short-term rentals (e.g., Airbnb).

Issues of climate neutrality (given that Kalamata has been selected as one of the EU's 100 Climate-Neutral and Smart Cities by 2030) necessitating the integration of tourism development with green transport, energy upgrades, and the protection of the natural environment.

In this context, the adaptive reuse of Kalamata's industrial heritage stands as a key issue regarding the city's urban planning, cultural management, and economic revitalization.

Following deindustrialization and the devastation caused by the 1986 earthquake, Kalamata was left with a significant stock of abandoned industrial infrastructure. In recent years, significant preservation and adaptive reuse projects have been implemented or are currently in the planning stages, driven by public initiatives, private investment plans, and academic studies:

The imposing historic Mills complex, featuring distinctive concrete silos in the coastal zone, serves as the most emblematic example of private-sector adaptive reuse. A proposal by an architectural firm envisions transforming the complex into 4- and 5-star hotel facilities while preserving historic industrial elements (such as wooden silos and machinery) and incorporating a museum space open to the public.

One of the most successful examples of the adaptive reuse of industrial and technical heritage in Greece is the old railway station and engine depot, which were transformed into an open-air "Railway Theme Park", spanning approx. 5.4 hectares; here, the historic buildings, platforms, and rolling stock (steam locomotives and carriages) have been integrated into the urban fabric as spaces for recreation, culture, and greenery.

The Kalamata Municipal Regional Theatre was established and developed within the premises of

former industrial warehouses and buildings, serving as a vibrant cultural hub.

The old raisin and cargo warehouses at the port of Kalamata, along with the Autonomous Currant Organization facilities on the waterfront, are frequently the subject of redevelopment proposals aimed at transforming them into multi-purpose cultural venues, exhibition centers, and MICE facilities.

However, the adaptive reuse process in Kalamata faces specific challenges:

High restoration and structural reinforcement costs, as many buildings sustained significant damage during the 1986 earthquake.

Ownership issues, with multiple ownership or public sector involvement in certain properties delaying their redevelopment.

Participation in the “100 Climate-Neutral Cities by 2030” program, under which Kalamata now aims to carry out the restoration of historic buildings based on bioclimatic criteria, linking the preservation of heritage with the green transition.

Accordingly, the present study aims at assisting the preservation of the industrial heritage of Kalamata, as presented in the next subsections.

### 3.2 The Industrial Heritage of Kalamata

This study proposes the promotion of the industrial heritage of Kalamata, with a cultural route to industrial buildings of the city that have survived to this day, i.e., the “Karelia” tobacco factory, the Stasinopoulos Brothers’ silk factory, the Messinian Roller Mills “Evangelistria” and the Kalamata Power Station. This proposal is a preliminary activity that may contribute, among others, to the implementation of more preservation activities, for the promotion of the local industrial heritage.

#### 3.2.1 The “Karelia” Tobacco Factory

Based on the Decree 227 published in the Government Gazette on 15/7/1883, the tobacco industry in Greece was organized with emphasis on the establishment of tobacco factories, which were classified in three classes (A, B, C), as well as the strict rules of their operation. Kalamata was given the opportunity to develop factories that belonged to the A Class, making it one of the most important tobacco processing centers in Greece at that time. Factories that were classified in the B Class operated in cities of Kyparissia and Messina. In the town of Filiatra, explicit reference was made to the special cases where tobacco factories were established, which were classified in the C Class. In these factories, managers, inspectors and assistants were appointed, who took an official oath before the

authorities. Therefore, the participation of Messinia with the many cities (Kalamata, Kyparissia, Messini, Filiatra), which were included in the list of 72 regions of the state with tobacco factories, highlights the strategic importance of the region for public revenue from the tobacco consumption tax.

In 1888, the brothers Georgios and Efstathios Karelias founded a small tobacco business in Kalamata that supplied the local market and the surrounding villages with tobacco. The tobacco, as Messinia is not a tobacco-producing region, came by boat from the northern cities of Agrinio and Lamia [14]. G. Karelias had eight children, i.e., four sons and four daughters. Later, his sons were involved in the business, together with the cigar makers, the scissors makers and other workers. In 1916, his son Andreas Karelias bought the first automatic cigarette-making machine, so that production was converted from handmade to mechanized, with a huge increase in productivity. In 1930, the old tobacco factory was built (Figure 1) [15].



Fig. 1: The tobacco factory of Karelias; Aerial photograph of 1990 [17]

The original building in the center of Kalamata housed the tobacco production and processing areas, as well as the cigarette machines. The factory was staffed mainly by men and some refugee girls, in very poor conditions due to the substances produced during the manufacture of cigarettes. They worked approximately ten hours a day [16].

In 1929, the company was among the first 29 Greek industries and 20 years later it was in the 12th place. In the 1930s, the tobacco industry “Karelia S.A.” became well-known in the Peloponnese, but still almost unknown in the rest of Greece. After 1950, the company’s cigarettes had a large circulation throughout Greece. In 1957, the well-known and now historic brand, as well as the box packaging with the filter, which was a pan-Hellenic success, was launched [15].

### 3.2.2 The Silk Industry

From the 19th century until the mid-20th century, Messinia emerged as an important silk-producing region, as limited cottage production was transformed into an organized silk-making activity. Work was organized both in factory units and at home, with pay per piece produced. It is estimated that approximately 500 looms operated in the city, serving orders from craft industries and individuals. Kalamata was developed into a basic and well-known core of sericulture, silk-making and silk-textile production, with products known in international markets as “Kalamata silk” [18].

The development of sericulture in Messinia is directly linked to the favorable natural conditions and, above all, to the extensive cultivation of mulberry, a tree essential for the nutrition of the silkworm. The abundance of mulberry groves, throughout the prefecture, but also in a large part of the Peloponnese, contributed to the long-term development of sericulture and the connection of the region with silk production [19]. Already from the period of Turkish rule, silkworm breeding and silk thread production were widespread household activities, integrated into the economy of rural and urban households. Sericulture was particularly developed nearby, where mulberry cultivation was maintained on a large scale. The English traveler William Gell, who visited Kalamata in early 1805, reported that he found silk workshops in the city, as well as a room for sericulture in almost every house.

Silk processing began in Kalamata in 1828, when the Frenchman Alex Fournier, sea captain in the General Maison’s expedition in the Peloponnese (to assist the independence of the first modern Greek state), established the first motorized silk rewinding (processing) shop [20]. The thriving Fournier industry is described as flourishing in 1858, in the work of the English traveler Sir T. Wyse [21]. This unit, in a narrow alley of the city, marked the entry of industrial methods of processing silk (Solaris, 2021), it had a capacity of 40 basins and production continued to rely largely on women’s and children’s labor. In 1853, there was a total production of 192,000 kilograms of silk and 38,000 were flowing into the factories of Kalamata [22].

During the period 1855–1860, the cottage factory evolved from a cottage factory to an industry. Five large steam-powered silk mills with 300 cocoon boilers were established. At the same time, silk mills were established in Andros Island, in Piraeus, and in Kerameikos area of Athens, with 300 boilers by an English company. In 1859, the silk mill of the large export house of Patras, Fels and Co., was established in the same district, with a capacity of

76 basins and an annual production of 5,000 kilograms of silk of all qualities [23]. In 1860, the prefecture (Messinia) held the second place nationwide, when production reached 192,000 kilograms, which, together with the silk mills of the area of Mystras (producing approximately 77,000 kilograms), amounted to more than half of the total national production. In 1862, due to the silkworm epidemic, the silk factories closed [14].

In 1865, the silkworm breeders of the Kalamata’s region used Japanese seeds. Six silk mills were steam-powered, among them two with 120 female-workers, each. Three fire-powered silk mills were still in operation with 50-70 female-workers, each.

According to the report with prot. no. 25 of the Directorate A, Hellenic Department of Industry, on Dec. 3rd 1917, out of the 80 nuns of the Monastery of the Nuns of Saints Constantine and Helen, 20 worked with 9 hand-operated looms. Sir Thomas Wyse, a visitor to Kalamata in the mid-19th century, as ambassador of Great Britain to Greece between 1849-1862, in his book, published after his death, states: “Very few of the monastic communities grow in Greece, like this Monastery” [21]. During the Greek Revolution, it was set on fire by the Egyptian Ibrahim Pasha, while in the mid-19th century it was repaired. As early as 1796, the year of its foundation by the nun Sophronia Benakopoulou, a center of silk weaving had begun to be created, as she promoted the cottage industry of silk. The development of Kalamata’s silk weaving was linked to the free teaching of Greek letters, as destitute and orphaned girls learned letters there, but were also trained in the processing of silk and the art of silk weaving by the nuns [24].

By the mid-1870s, Kalamata had emerged as the most important silk-producing center of the Greek state, with France as its main export market [19]. In 1875, the Kalamata District also held the second position nationwide [25]. The state’s concern for the sector was reflected in the establishment of a sericulture station in 1880, on the initiative of Prime Minister Alexandros Koumoundouros, to address the declining silk production, as the peperini disease affected the silkworms and caused economic damage [14].

According to data from the end of the 19th century, in 1897 there were twelve silk factories operating in Greece, five of which were located in Kalamata [26]. At that time, the first two private silk factories appeared in the city. In the early 1900s, there was a silk weaving factory, where silk fabrics for men’s summer clothing were sold [27], [28]. In 1911, the prefecture held the first place in terms of the production of cocoons and the District of

Kalamata the fourth place nationwide [25]. In the interwar period, a company, a handicraft and a large factory operated. In early 1935, the then government allowed the import of cocoons from abroad, resulting in the closure of the silk factories in five cities, including Kalamata. Gradually, the weaving mills took over from the old silk factories, spinning the silk necessary for weaving themselves. In a publication of the Chamber of Messinia in 1940, at least four factories are mentioned in the list of silk factories. The silk factories continued their operations through various difficulties until World War II. Therefore, silk manufacturing was a main source of income for hundreds of families in Kalamata throughout the 19th century and until World War II.

### 3.2.3 The Stasinopoulos Brothers' Silk Factory

The Stasinopoulos Brothers' silk factory was founded in 1882 in the Fytia area, a working-class neighborhood of Kalamata (Figure 2). The Stasinopoulos brothers were successful businessmen with a wide range of activities. In addition to silk factories, they were oil and olive oil manufacturers, owners of a steam-powered oil mill, and hoteliers. They were also founders of the tram company, and founding members of the flour mill "Evangelistria S.A.", in 1926. They came from the Arcadia region. The family's founder was Giannakos Stasinopoulos, in the early 19th century, who had five children (Konstantinos, Anastasios, Georgios, Syrios and Vasiliki). Konstantinos Stasinopoulos came to Kalamata in 1870. Because he achieved professional success, he invited his brothers Georgios and Syrios [29].

The factory's steam engines employed 250 working girls and several women [31], as well as their children, since they were also forced to work to supplement the family income, but also because there was no supervision at home during their mothers' working hours.



Fig. 2: The Stasinopoulos Bros. silk factory [30]

In the industries that processed agricultural products, women were preferred due to the lack of male workers, which led to continuous conscription, and the reduced wages compared to the male workforce. Working conditions were difficult, since the working hours of the female workers were long. They worked from 6:00 in the morning until 13:00, where they took a half-hour break, and from 13:30 until 19:00 in the afternoon. The working conditions were particularly difficult, since in addition to the 10–12 labor-hours per day, the work was done in an unhealthy environment. Social tensions arose that led to labor mobilizations. On May 15th, 1913, the workers of the Stasinopoulos factory went on strike, causing reactions from the owners, who also stopped working [32]. Although the Stasinopoulos Brothers silk factory was presented as the only one in Greece that competed with world production centers in quality and quantity [31], in 1930, the "first industry of Kalamata" of the Stasinopoulos definitively ceased operations. When the Stasinopoulos factory closed, it employed approximately 100 female workers. The silk factory served as a shelter during World War II.

### 3.2.4 The "Evangelistria" Roller Mills

The Roller Mills of Messinia, often known as "Evangelistria", is an industrial grain processing factory (mainly wheat/flour milling) in Kalamata. In 1926, the first large volume of the industrial complex was erected and the company officially began operating as Roller Mills of Messinia "Evangelistria" (Figure 3). At that time, unemployment and poverty plagued the city and hopes were created among the residents for cheaper bread and job opportunities. Newly arrived refugees from Asia Minor worked there.



Fig. 3: The "Evangelistria" building nowadays

By 1930, the company expanded by purchasing the surrounding land, which it transformed into storage areas, production units and catering areas for the workers. In 1933, the construction of an

underground tunnel for transporting wheat with suction machines under the waterfront began. Due to the operation of the silo, the dock workers (1934) reacted with strong public protests and demonstrations, because they would unload the wheat directly to the flour mills, without the need for their own labor, and thus would lead to dramatic unemployment.

During the war (1941–44), the facilities were occupied by the Italian occupying forces and suffered serious damage. In the post-war years, with a loan from the Marshall Plan, extensions were made in the early 1950s, while later, in 1969, a new warehouse was added. The two roller mills employed a total of 200 workers, who were organized in the Mill Workers' Union. After the strong earthquake of 1986, the complex suffered significant damage; the inability to modernize and the increased competition gradually led to the factory's closure [33], [34].

### 3.2.5 The Kalamata Power Station (1900)

The main volume of the machine room of the Kalamata power station, built around 1900 and measuring 40.00m x 15.00m, belongs to the traditional type of buildings with a rectangular plan and a pitched tiled roof. Its longitudinal side, parallel to the railway lines, consisted of a series of openings, emphasizing the horizontality of the building and reducing, at least visually, its great height. The adjacent volume of the machine room had a pitched tiled roof, raised in its center, which apparently served as an auxiliary space and needed to enhance its limited lighting. In addition to the ground-floor buildings, the most important of which was the engine room (with a total area of approximately 600.00m<sup>2</sup>), where the distribution board was located, there was also a two-story independent neoclassical building with a square floor plan and a hipped tiled roof, where the company's offices were housed, with a total area of 330.00m<sup>2</sup> [5].

The station was constructed by the "Hellenic Electric Company S.A.", with a preferential agreement, on two contiguous plots of land within the city of Kalamata, with an area of 660.90m<sup>2</sup> and 692.55m<sup>2</sup>. At the time of acquisition, it had two generating sets, with a power of 200kW and 190kW (Figure 4). Inside the engine room there was a 5-ton overhead crane (weight 7395kg). In total, the company had 5,641 single-phase supplies and 346 three-phase supplies.

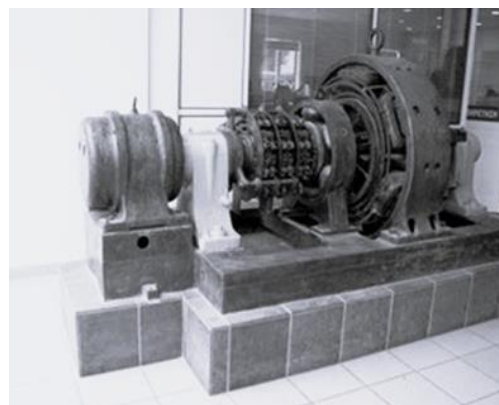


Fig. 4: Mechanical equipment details [5]

Built in 1901 [35], the main volume of the engine room has a rectangular plan, absolute symmetry, seven large horizontal openings with wooden frames and stone perimeter load-bearing walls. Because the openings were located on the longitudinal side of the factory, which faced the railway line, the middle opening is a door. The second hall of the complex, which is located in continuation of the first, is of course later, built about ten years later, since the openings form a porch with a slight arch. However, the office building is of interest (Figure 5), which is nothing more than a neoclassical two-story building that dominates the other end of the plot. In contrast to the other building volumes, its external decoration presents an eclectic character. Characteristics are the rosettes that complement this decoration, as well as the toothed cornice that runs around the perimeter of the roof.

### 3.3 Preservation Activities

Kalamata has the historical privilege of being the first city to be liberated with the start of the Greek Revolution (1821). At the same time, during the 19th century, it had the geographical privilege of being the largest southernmost port of the modern Greek state and the first to be approached by a ship, coming from the Southwest [36]. This privileged position of the city, as well as the productive activity of the wider Messinia region, helped the economy of the region to flourish, in terms of industry, trade and crafts. Thus, the city had watermills, tanneries, silk factories, lime kilns, a weekly bazaar, a trade fair, upholstery factories, public services, cafes, tailors, pharmacies, a trade association, notaries, etc.



Fig. 5: Office building view [5]

The rising socio-economic groups of Kalamata merchants and landowners after 1850, in collaboration with the local authorities, claimed new prospects for the city. Thus, a series of important works were carried out, such as:

- the reconstruction of the port (1901);

- the connection of Kalamata with the main railway network of the Peloponnese (from the 1890s), as well as the construction of a tram line (1908-1939);

- the arrangement of the bed of Nedontas River, as well as the construction of bridges;

- asphalt roads (1871) and the formation of squares;

- the electric lighting of the city (1899);

- the construction of churches, the building of the first Gymnasium (1861), and many neoclassical buildings;

- the urban planning union of the city center with the beach, according to the New City Plan.

This wealth led to the construction of many neoclassical buildings, in addition to the emblematic industrial buildings presented herein previously.

The need to preserve this cultural heritage has led to studies that, in addition to the structural restoration of buildings, also deal with the restoration of their original external appearance, as an integral element of material culture. Material culture is all the objects that people create or use: clothes, tools, weapons, machines, objects of worship, art, and buildings. At the same time, the relationships between people and objects, their history, and the systems of thought that they reflect are studied [37].

A key element of the external restoration of historical buildings is their colors. Color in Greek neoclassicism was established at the same time as the scientific verification of the colors of the ancient tradition. There was certainly a mixture with stylistic influences from the rest of Europe, but it also constituted an organic element of distinction of

architectural parts, contributing to the hierarchy of the separate elements of the style.

The contribution of the present research group to the restoration of historical buildings in Kalamata (and elsewhere) is the analysis of pigments, with non-destructive Raman and XRF spectroscopy techniques, of neoclassical and industrial buildings of the 19th and 20th centuries. For this purpose, the following were used [37]:

- the Thunder Optics - Gem Raman System and the SCIAPS X-200 spectrometer (or spectrograph) model (Figure 6);

- the Spectragryph software.

The XRF X-200 spectrometer is the most widespread model of SCIAPS USA, offering the best Value for Money ratio (Figure 6). It has a latest generation detector that guarantees high accuracy and reliability of measurements.



Fig. 6: The portable handheld XRF spectrograph X-200 SCIAPS [37]

The spectrograph's technical features include, among others, a 3.5" color touch screen, two built-in cameras, Android operating system, WiFi, Bluetooth and USB connectivity, an alloy library with more than 500 elements, rechargeable battery power, and "Hot Swap" function, i.e., the spectrograph continues to operate without a battery for one minute, giving the operator time to change the battery, while it is lightweight (1.5kg with the battery).

The use of the spectrograph and the related software allowed the analysis of the basic pigments of industrial buildings. Consequently, the main color-giving component of natural red ochre (ocher) is composed of hematite ( $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>). The term red ochre (ocher) or red earth describes various kinds of iron oxide pigments, such as Venetian red, mars red, English red, Indian red. The nomenclature is by no

means unequivocal and various authors have used the names differently [37].

Establishing the baseline chromatic characteristics of historic neoclassical structures necessitates a rigorous diagnostic framework integrating physical and non-destructive investigation methods. Mechanical stratigraphy, involving the controlled exposure of underlying paint and render matrices, serves as the primary diagnostic tool for identifying initial paint layers. To validate these physical findings, data are integrated with archival documentation, expert testimony, and historical visual evidence. Graphic documentation, including original elevation drawings and watercolor renderings, offers structural and chromatic indications, though subject to artistic approximation. Finally, surviving hand-colored photographs function as diagnostic control points, contributing to the accurate characterization of the building's original material palette.

## 4 Conclusion

Messinia district, with Kalamata, is a central industrial and commercial hub. In this study, a cultural route is proposed, featuring iconic industrial buildings of the city that have survived to this day, the tobacco factory “Karelia”, the silk factory of the Stasinopoulos Brothers, the Messinian Roller Mills “Evangelistria”, and the Kalamata Power Station. The stops were chosen so that they are close to each other and to make it easier to move between the stops, since the general direction is from the center of the city to the beach, due to the downhill terrain. This specific cultural route highlights the industrial wealth of the area and promotes various activities that will contribute to the preservation of this cultural heritage, within the framework of economic development through alternative forms of tourism.

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#### **Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)**

The authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

#### **Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself**

No funding was received for conducting this study.

#### **Conflict of Interest**

The authors have no conflicts of interest to declare that are relevant to the content of this article.

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