

When thermal springs shape cities: the cases of Caldas da Rainha (Portugal) and Poços de Caldas (Brazil)

Quando as nascentes termais ordenam cidades: estudos de caso em Caldas da Rainha (Portugal) e Poços de Caldas (Brasil)

Cuando las aguas termales ordenan las ciudades: estudios de caso en Caldas da Rainha (Portugal) y Poços de Caldas (Brasil)

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Abstract

This article aims to discuss the formation and development of cities from the discovery of thermal waters in certain territories. The different ways of using these waters, the buildings that emerged from the thermal practices, and the transformations and appropriations that occurred in the urban landscape over time are elements for the proposed analysis. The discovery of thermal waters as a natural resource in several locations led to the search and discovery of new knowledge, specific and technical, boosting social and economic development based on health and leisure treatments. The similarities and differences between the elements of the urban form and the agents involved in constructing these resorts are compared. Regarding thermal spas, some structures are consolidated in the territory, composing a thermal environment built between the end of the 19th century and the beginning of the 20th century in Brazil and Europe.

Keywords: Balneary; Thermal Springs; Hygienic Principles; Poços de Caldas (Brazil); Caldas da Rainha (Portugal).

Resumo

Este artigo tem como objetivo discutir a formação e o desenvolvimento de cidades a partir da descoberta de águas termais em determinados territórios. As diferentes formas de utilização dessas águas, as edificações que surgiram a partir das práticas termais e as transformações e apropriações que ocorreram na paisagem urbana ao longo do tempo são elementos para a análise proposta. A descoberta de águas termais como um recurso natural, em diversas localidades, conduziu à busca e à descoberta de novos conhecimentos, específicos e técnicos, impulsionando o desenvolvimento social e econômico, a partir dos tratamentos de saúde e lazer. Comparam-se as similaridades e as diferenças dos elementos da forma urbana e os agentes envolvidos na construção dessas estâncias. Quando se trata de estâncias termais, há estruturas que se consolidam no território, compondo uma ambiência termal essencialmente construída entre o fim do século XIX e o início do século XX, no Brasil e na Europa.

Palavras-chave: Estâncias termais; Nascentes termais; Princípios higienistas; Poços de Caldas (Brasil); Caldas da Rainha (Portugal).

Resumen

Este artículo tiene como objetivo discutir la formación y el desarrollo de las ciudades a partir del descubrimiento de aguas termales en determinados territorios. Las diferentes formas de aprovechamiento de estas aguas, las edificaciones que surgieron de las prácticas termales y las transformaciones y apropiaciones que se dieron en el paisaje urbano a lo largo del tiempo son elementos para el análisis propuesto. El descubrimiento de las aguas termales como recurso natural, en varios lugares, llevó a la búsqueda y descubrimiento de nuevos conocimientos, específicos y técnicos, que impulsaron el desarrollo social y económico, basados en tratamientos de salud y



ocio. Se comparan las similitudes y diferencias de los elementos de la forma urbana y los agentes que intervienen en la construcción de estos balnearios. Cuando se trata de balnearios termales, existen estructuras que se consolidan en el territorio, componiendo un ambiente termal construido esencialmente entre finales del siglo XIX y principios del siglo XX, en Brasil y Europa.

Palabras clave: Balnearios; Aguas termales; Principios de higiene; Poços de Caldas (Brazil); Caldas da Rainha (Portugal).

INTRODUCTION

Water, besides being a vital resource for man, is fundamental for economic activities. Bodies of water play an essential role in the circulation of people and goods and also play a vital role in the development of cities because, based on their natural courses and locations in certain territories, they play the role of conditioning, structuring, modeling, and transforming urban layouts.

In addition to these forms of use, water is a natural resource used by man for therapeutic purposes. For centuries, different cultures have benefited from waters with unique properties. Thermalism can be defined in the following terms:

Thermal, mineral and natural waters are used to recover, maintain, and expand health. It can be used as a synonym for balneotherapy, which is a term widely used internationally, which refers to the set of therapeutic practices carried out through hot or warm baths with natural mineral waters, generally practiced at the source – therefore in spas (Hellmann; Rodrigues, 2017, p. 6-7).

The development of spas in Europe and Brazil took place over a long period, from the 15th century to the mid-20th century. In Brazil, the resort that stood out the most was Caldas da Imperatriz, in the south region, which, based on the presence of the Portuguese Crown in the 19th century, sought to follow the model of Caldas da Rainha, proposing the construction of a thermal hospital, and Poços de Caldas, in the south of Minas Gerais, which has become a reference for a spa in Latin America.

The term “hydromineral resort,” widely used in Brazil, is associated with an urban agglomeration that provides therapies based on mineral waters. At the beginning of the 20th century, locations with this vocation were widespread in Brazil, greatly influenced by the culture of European thermalism, which was already well established in that period.



The set of activities involved in the thermal environment creates an identity for the resorts, defined not only by the presence of the thermal establishment but by all the other practices and equipment involved, directly or indirectly. The history of spas combines, therefore, in addition to treatments and healing, sociability, leisure, and entertainment. Mangorrinha (2000) defines that:

A spa comprises the spa center (which includes hydrotherapeutic, cultural, and environmental equipment), the hotel facilities, and all the structures that join them to achieve a pleasant stay and a diversified occupation but balanced. These equipments and their relationships with each other grant a patrimonial value to the thermal microcosm (Mangorrinha, 2000, p. 221).

Pinto and Mangorrinha (2009), state that “thermal architecture has, in its genesis, a determining dependence: it is impossible to build it anywhere, only where there is the liquid that gives it its reason for being” (Pinto; Mangorrinha, 2009, p. 11). The buildings involved in the thermal ambience (the establishments connected to the therapeutic baths) are arranged in the territory close to the thermal springs, to preserve the properties of the waters as much as possible. The equipment and buildings must also adapt to the site’s natural conditions, dialoguing with the landscape, aligning with the courses of rivers and streams, contributing to the formation and preservation of the large green areas that are essential in an estancia, shaping the thermal microcosm.

The Portuguese village of “Caldas de Óbidos” and the Brazilian village of “Campo das Caldas” have, in their origins, the particularity of the discovery of sulphurous waters, used for body and soul therapies. Thus, it is from the study of these two cases, the current cities of Caldas da Rainha, in Portugal, and Poços de Caldas, in Brazil, that the theme of this article will be developed, focusing on water in the dynamics of the foundation and development of cities.

Caldas da Rainha (Portugal): the origin of the village

The origin of Caldas da Rainha stemmed from the discovery, by Queen Dona Leonor de Lencastre (1458-1525), of the healing properties of the waters of that locality (Carvalho, 2012, p. 10). Given the discovery, a great transformation takes place, as the Crown initiates works and incentives for its settlement. Queen D. Leonor ordered the construction of a spa hospital, the only one of its kind in the world, as poor patients from all over the country could be treated there free of charge, with permanent medical support and hospitalization. According to the beliefs and science of the time, the sick received all the necessary care to cure illnesses: thermal treatment through baths and spiritual treatment, since, next to the hospital, the Church of Our Lady of Pópulo was built in 1500.



According to Mangorrinha (2000), the construction of the primitive thermal establishment in Caldas da Rainha “brought to the history of culture, medicine, and urbanism two particularities: the first is the emergence of a village around an assistance institution and the second is the development of a hospital that used water as a healing treatment resource.” The Hospital was built for the Kingdom, with a privileged location in Portuguese territory, close to the capital, Lisbon, facilitating the regular presence of patients and holidaymakers. In 1488, 30 residents settled to consolidate the estancia’s original nucleus (Mangorrinha, 2000, p. 46, 64-65).

The first blocks that gave rise to the village, as seen in Figure 1, were traced from the construction of the Thermal Hospital and the Nossa Senhora do Pópulo Church. In “Praça Velha,” located in front of the Hospital, there were some other buildings essential to the daily life of the village, such as the Town Hall and Jail, the infirmaries, and other facilities linked to the Hospital, such as the Royal Palace, the stables and the ovens.



Figure 1: “Front of the Hospital das Caldas, as it was on March 28, 1747”. Drawing by D. Luís de Vermell Y Busquets. We highlight, in orange, the infirmary for the poor; in blue, the entrance to the Hospital; in red, the Church; and in green, the Town Hall and Jail. Source: Adapted by the authors based on Ferrari, Ferrari, and Correia (1930, p. 41).

There is a particularity in Caldas da Rainha related to spirit therapy as a complement to water therapy. The Thermal Hospital was estimated to be built between 1485 and 1508, indicating operation in 1488. The Nossa Senhora do Pópulo Church was the last element of the set to be made. Priority was given to building the establishment of baths and infirmaries, as physical care was more urgent. The Church (Figure 1, highlighted in red) was built next to the Thermal Hospital, facilitating patients’ access to daily rituals.

Aires-Barros (2005) comments that the mineral waters of Caldas da Rainha were the first to be subjected to analysis in Portuguese territory in a detailed study by Paul Choffat, in 1893. In this study (see Figure 2, on the right), the thermal springs were located inside the hospital, and the properties of the waters were analyzed.

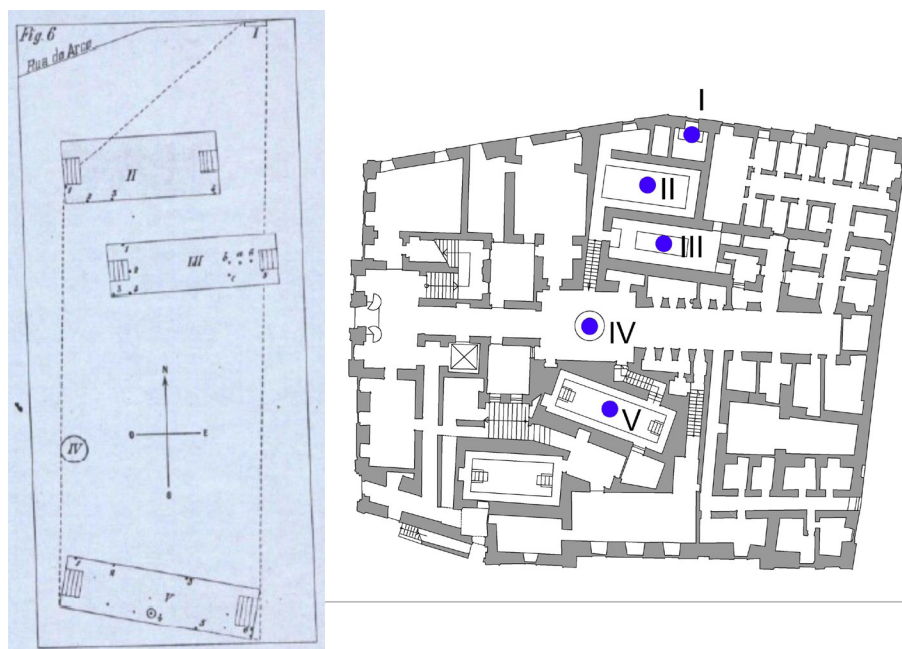


Figure 2: Two-images composition. (Left) Survey with the five thermal springs of Caldas da Rainha in 1893: I – from the North; II – Queen’s Pool; III – Women’s Swimming Pool; IV – Buvette; V – Men’s Pool. (Right) Redesign the plan from 1999 with the location of the same springs inside the Thermal Hospital. Source: Adapted by the authors based on Choffat (1893) and Redesign Aires-Barros (2005, p. 72).

The original nucleus of the Hospital was built based on the location of the thermal springs, of which were integrated into the treatments inside the building. The Royal Hospital became the main articulating and organizing element of the layout of the then-town. From there, the paths, streets, blocks, and equipment were consolidated in the landscape, along with the green areas in its surroundings, and are essential for preserving the thermal core and aquifers (see Figure 3).

The space intended for baths (public changing rooms, the bathhouse, the place for the syrups) is called “thermal.” He is the regulating element of the estancia, and the estancia is developed from this edification. The streets and blocks were distributed, and the territory was consolidated from this structuring nucleus.

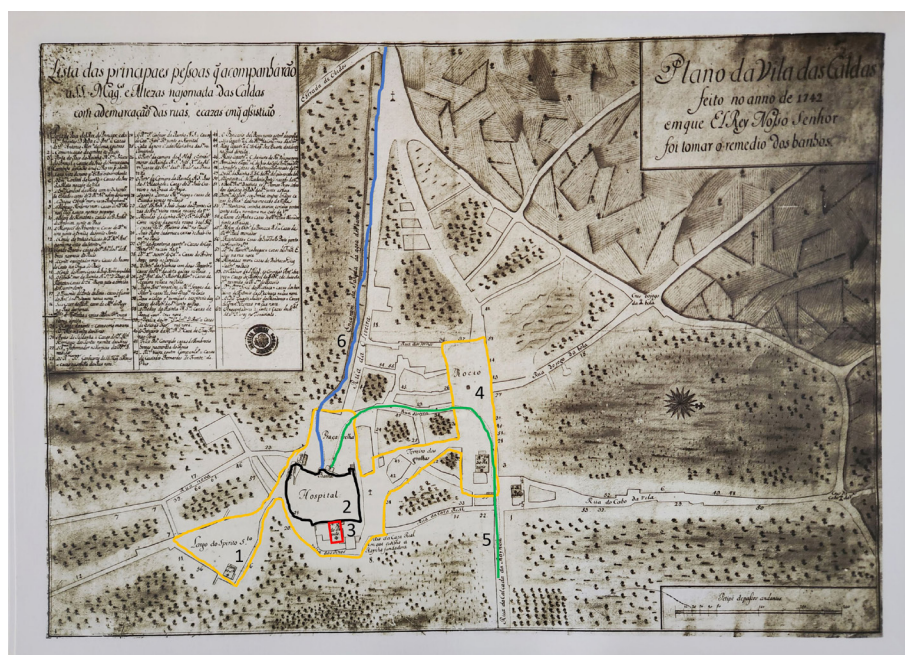


Figure 3: The plan of the Caldas da Rainha village was drawn up in 1742. In yellow, is the delimitation of the primitive core of the town. (1) Former Largo do Espírito Santo; (2) Thermal Hospital; (3) Nossa Senhora do Pópulo Church; (4) Rossio Square with the Pelourinho da Vila; (5) Rua da Calçada da Rainha; (6) Path from the ditch to the water remaining from the hospital baths. Source: Adapted by the authors based on Ludovico (1701-1760), Digital Collection of the National Library of Portugal.

In the 18th century, the Portuguese Court passed through Caldas da Rainha, as doctors advised King D. João V to enjoy the baths. His first stay took place in July 1742, and a plan of the Villa was drawn up from it (Figure 3) by the royal architect João Pedro Ludovice. The plan is a complete survey of the existing buildings and their respective owners so that the Royal Entourage could later use them when the King went to Caldas da Rainha for treatment. In this survey of 1742, the spatial distribution of the urban agglomeration develops in the triangle of Largo do Espírito Santo, passing through Praça Velha and Praça do Rossio, where the Pelourinho da Vila was located.

In addition to the baths, under medical prescription, the *"aquista"*, as he was known in Portugal, and *"curista"*, in Brazil, ingested daily doses of thermal water. From the end of the 18th century, the treatment also involved walking in the open air. Later, leisure and entertainment also became part of the ritual. Mangorrinha and Pinto (2015) comment that innovation in Portugal comes with the construction of a delimited thermal park, which incorporates various activities inside, designed according to the medical precepts of therapies, hygiene, and health, giving rise to the ritual of water and leisure practices, accompanying the transformation of society (Mangorrinha; Pinto, 2015, p. 9).

Poços de Caldas (Brazil): the springs and the village

The origin of Poços de Caldas is also linked to the discovery of its thermal springs in the 18th century. Aristides de Mello e Souza (1936) states that

Before any written documentation, the oral tradition collected by Pedro Sanches states that Portuguese hunters, at an uncertain time, hunted here for tapirs and deer, which formed their drinking water in the wells *at the emergence of the sulfur sources. By analogy with the Caldas of Portugal, these hunters were named Caldas. The waters here were also warm: warm waters like in Portugal. However, Caldas is the name of the city which Poços de Caldas originally depended on* (Mello e Souza, 1936, p. 11-12).

Even with different trajectories, even due to the difference in the date of origin of each resort – Caldas da Rainha since 1485 and Poços de Caldas since 1872 – the thermal vocation and the urban development of both were driven by the presence of the waters.

There is an agreement in force, signed between the two localities, through Ordinary Law No. 7416, of April 17, 2001, of the Municipality of Poços de Caldas, which grants the title of sister city of Poços de Caldas to Caldas da Rainha, due to of the origin of the two locations linked to healing by thermal waters. Given this brotherhood agreement between the resorts, an international partnership was established with the EHTTA (European Historic Thermal Towns Association), the entity responsible for managing the European Route of Historic Thermal Towns. According to the EHTTA, to belong to this historic route, Poços de Caldas met the requirements with its relevant activities in the field of thermalism, becoming part of the circuit as the only thermal city that does not belong to the European continent.

The origin of Poços de Caldas is very different from what was usual in the colonial period in Brazil when the formation of villages took place along the supply routes, and the development of these localities was linked to the construction of a chapel, the creation of the parish and subsequent elevation to town, with the establishment of the pillory, the distinction of the square and the term and the construction of the town hall and prison.

The village of Nossa Senhora da Saúde das Águas de Caldas has, in its origin, the development linked to the discovery of sulfurous waters. In 1826, an order was fulfilled by the president of the Province of Minas Gerais so that the judge from outside Vila de Campanha da Princesa would go to “Campo das Caldas” in order to carry out an inspection on the spot and take the necessary measures.



The first survey and graphic recording of the springs of thermal waters and what else existed in that village was then carried out (Figure 4). “Campo das Caldas” was already a small town, considering the opening of streets and the construction of a hospital.

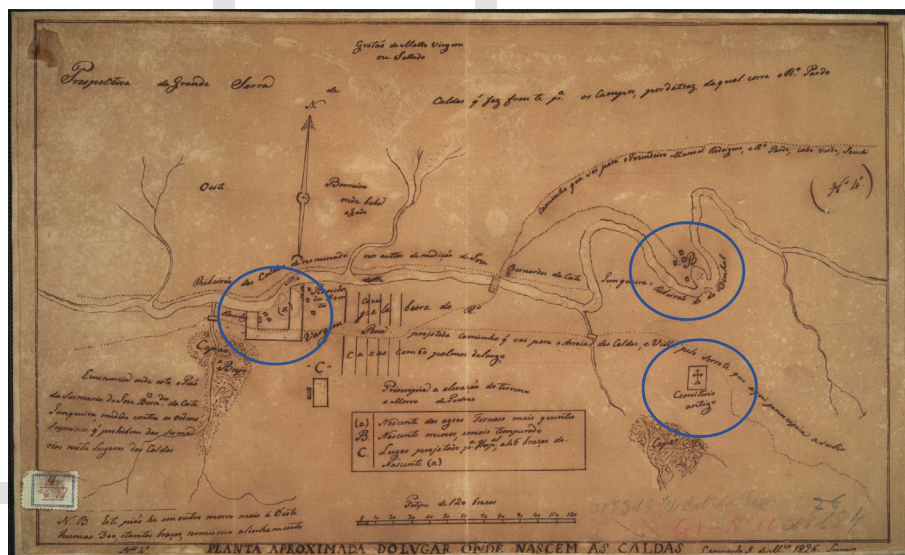


Figure 4: The first record of the village of Campo das Caldas was in 1826. Highlight the two springs of thermal waters and the history of the old village cemetery (where the Mother Church of Nossa Senhora da Saúde is currently located). Source: Adapted by the authors based on Loureiro (1826) – “Collection of the National Library Foundation, Brazil.”

In Poços de Caldas, the thermal springs are fundamental elements in the organization and development of the urban space since they determined the village's origin and the spas' location. The three streams, Caldas, Serra, and Poços, which permeate the city, are the structuring elements of the occupation of the territory, defining the urban layout, configuring the blocks, the articulation of squares, parks and the disposition of the equipment that compose the estancia.

Poços de Caldas did not consolidate at random, as throughout its trajectory, it always had specialized professionals who defined the directions of the resort, proposing urban plans and structuring projects to develop the locality. When the village was founded in 1872, Doctor Joaquim Floriano de Godoy, president of the province, requested analyses of the mineral and thermal waters and gave orders to provide a plan for the locality. The idealized plan proposed a regular layout with a central square. “This plan provided for cleaning around the sulfurous wells, construction of bathrooms and fountains, measurements and demarcation of lots, land alignments, among other measures to be taken” (Dias, 2022, p. 66).

The 1872 plan, designed by Engineer Pedro Luís Taulois and demarcated by Engineer Henrique Soares do Couto, was based on an orthogonal layout, with wide streets, organization of regular blocks, and demarcated lots. In Figure 5, the thermal springs and the natural course of the streams are highlighted in the plan.



Figure 5: Redesign of Planning plan for Poços de Caldas in 1872, the year of its foundation. In blue are the watercourses, and in black are the Pedro Botelho thermal springs. Source: Adapted by the authors based on Ottoni (1960), Print n. 15.

Urban principles

Caldas da Rainha and Poços de Caldas were true laboratories where various agents could intervene, implement, and experiment with new knowledge, mechanisms, and techniques, seeking to improve the aesthetic and sanitary conditions for the urban environment. Between the end of the 19th century and the beginning of the 20th century, Urbanism – as a disciplinary field – developed in various parts of the world, and the spas in question were remodeled based on the principles of hygiene, health, and aesthetics, then in force.

During the second half of the 19th century, improving health standards in cities became increasingly necessary and urgent. The accelerated population growth and the increase in urban density aggravated the problems caused by the low hygiene standards then in force. To solve these problems, engineers and physicians were invited to develop projects and head committees to implement urban and sanitation projects (Leme, 1999, p. 22).

The thermal ambiance involves several activities in addition to constructing the buildings where the baths are taken. The bathing ritual is complemented with the ingestion of water prescribed by doctors (which justifies the construction of shower stalls and fountains, and with walks in the open air, in green spaces, in the



parks and gardens that are found around the spas, and that still serve as a natural protection to the thermal springs. To complement the daily activities of the aquista or curista, leisure and entertainment hours are distributed through ballrooms and music halls, cafes and tearooms, reading rooms, casinos, theaters, galleries, kiosks, bandstands, etc. The arrival of the railroads between 1886 and 1887 in the resorts under study was also an inducing factor of economic development, as it increased the circulation of people and knowledge.

European models inspired the development and consolidation of the seaside resort of Poços de Caldas. They relied on the effective action of doctors, engineers, technicians, many foreigners, wealthy landowners, together with the government of Minas Gerais. The period between the end of the 19th century and the beginning of the 20th century was marked by the dissemination of new knowledge on urban issues, projects with a hygienist character, and "improvement plans," as intervention projects in cities during this period were known. Several projects were proposed by several associations of managers who sought to develop the *estancia*. The plans were based on beautification, sanitation, and territorial organization assumptions. The current configuration of the *estancia* was idealized during the management of the mayor and physician Carlos Pinheiro Chagas (1889-1932), assisted by the best specialists who worked in Brazil. During this administration, the Great Works Project was implemented in Poços de Caldas, constructing the Palace Hotel, the Palace Casino, the Antônio Carlos Thermas, and the José Affonso Junqueira Park (Figure 6).

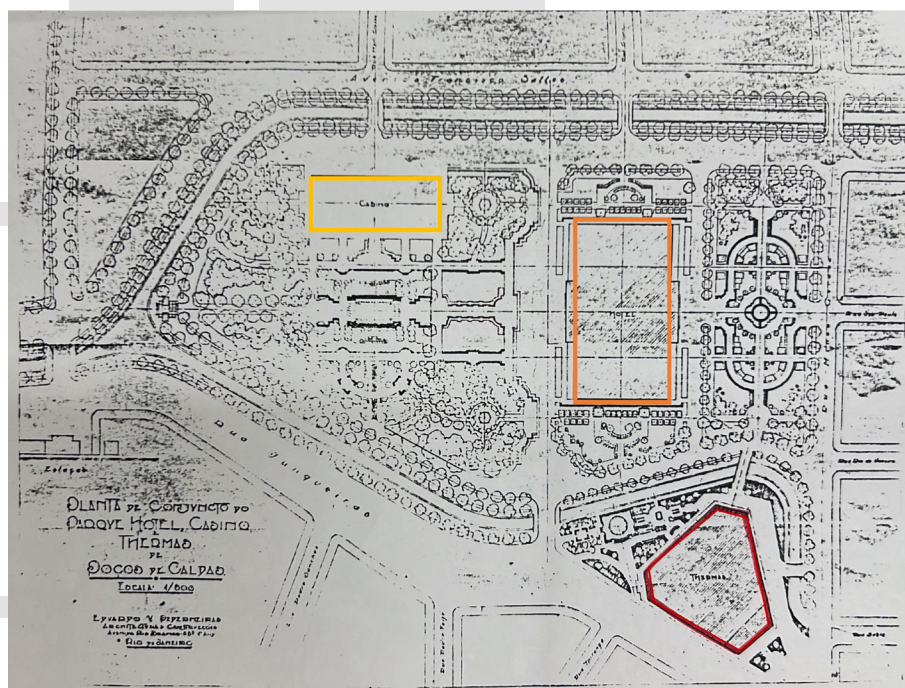


Figure 6: Copy of the implementation plan of the Poços de Caldas Hydrothermal Complex: Jose Affonso Junqueira Park, Palace Hotel (highlighted in orange), Palace Casino (highlighted in yellow) and Thermas Antônio Carlos (highlighted in red), dated 1928, by architect Eduardo de Vasconcellos Pederneiras. Source: Adapted by the authors based on the Collection of the Municipality of Poços de Caldas.

Caldas da Rainha has also undergone improvement and embellishment plans over time. The most prominent project was designed between 1888 and 1896 by the architect Rodrigo Maria Berquó (1839-1896), who accumulated two important functions: director of the Royal Hospital and President of the City Council (for one year). Berquó proposed several actions in the then village: Improvements in water and sewage treatment services, exploitation of water to supply the village's fountains, expansion of the Hospital establishment, construction of the Dom Carlos I Park with the presence of the lake, encouraging sports practices, enlargement and creation of new streets. It also created urban regulations requiring plans and elevations to be presented to the Chamber to obtain a building license, repairs, and/or any intervention in the then village. He requested the revision of the Code of Municipal Postures and the survey of the plan of the village in order to proceed with the numbering of the dwellings and the alignments. In Figure 7, the configuration of the town can be seen in 1926, the year before its elevation to city status (Serra, 2003, p. 116-118).



Figure 7: Survey of the village of Caldas da Rainha in 1926. Highlights: in red, the Rainha Dona Leonor Thermal Hospital; in yellow, the Nossa Senhora do Pópulo Church; in green, Parque Dom Carlos I; blue circles, the village fountains; in purple, Rossio Square; in orange, the paths to the main roads in the surrounding city and in black the line of the Caldas da Rainha Railway. Source: Adapted by the authors based on Ferrari; Ferrari; Correia (1930, p. 291).

CONCLUSIONS

Regrettably, the two thermal spas highlighted here faced some periods of decline, with a low influx of tourists and healers, as advances in medicine also influenced the decline in the use of thermal waters as a therapeutic resource. In Brazil, the prohibition of gambling in 1946, had a great influence on the decrease in the number of healers who frequented the *estância*. Changes in management, either by the State or by the Municipality, are also relevant issues to be considered, as they often end up harming the continuity of public policies for thermal economic development. In the case of Portugal, the death of the architect Rodrigo Maria Berquó, creator of one of the major improvement projects planned for the Portuguese resort, ended up retracting the projection on a European scale of this spa resort.

Given the rich natural heritage that is the thermal waters, there are currently several economic activities correlated with the practices of thermalism, such as health tourism, nature tourism, hydrological medicine, preventive medicine, pharmacology, cosmetics, spas, aesthetics, among others, correlated to health and wellness, in addition to the bottled mineral water industry.

Initially, water was used to heal and treat diseases when thermal baths were essentially linked to medicinal practices, configuring what became known as "classical thermalism." A more comprehensive thermalism was later developed, promoting new practices for society and creating activities compatible with the advancement of hygienist, urbanistic, architectural, cultural, and leisure issues in the localities. The thermal resorts are now considered places where it is also possible to practice idleness, "occupy" the free time of work in relaxation, walk in the open air, sports, artistic, and even intellectual practices (considering the moments of reading, writing, and conviviality).

Historically, vacationing was¹ associated with spas due to the presence of the most favored social classes. However, currently, in Brazil, "thermalism" is associated with "social thermalism," which continues to promote the use of thermal, mineral, and natural waters in the recovery, maintenance, and expansion of health but is also part of the PICS (Integrative and Complementary in Health), which are treatments that use therapeutic resources based on traditional knowledge, practiced and encouraged by the Unified Health System in Brazil (Hellmann; Rodrigues; 2017, p. 7).

1 According to the Italian Treccani Institute, the term "legatura" comes from Italy, from the word "il villeggiare," which means "retreat to a village," the practice of traveling, spending holidays, a period of rest or leisure, in the field, at sea or in the mountains, travel to a specific place to rest.





Figure 8: On the left, aerial view of Caldas da Rainha with emphasis on the urban fabric, Mata Rainha Leonor and Parque D. Carlos I. On the right is an aerial view of Poços de Caldas emphasizing José Affonso Junqueira Park. Source: (1) Caldas da Rainha, Dias dos Reis Collection (2021); (2) Poços de Caldas, João Batista Blasi Personal Collection (2018).

In spas, water continues to be the main focus. However, it is no longer the only element. The ways of “going to the baths” were expanded and refined, with practices driven by health and wellness tourism, creating spas (*salus per aqua*) and resorts (integrated hotel establishments), which became a kind of reinvention spas, benefiting from the elements of nature, the climate, and the natural landscape, to provide health through water and other forms of sociability. Tourism has been integrating new aspects of gastronomy and enology, providing unique experiences, and establishing other possibilities of interaction with nature, including new knowledge and sensations.

In Caldas da Rainha (Portugal), most of the buildings and improvements implemented in the locality were financed by the Kingdom and later by the State and, in the case of Poços de Caldas (Brazil), they were initiated by the Provincial Government and, later, also by the State, in partnerships with private concessionaires formed to develop and invest in the resort. The organization and administration of the two cities were permanently established in dialogue between the managers, doctors, and technicians who worked at these resorts.

The thermal establishments, the Hospital Termal Rainha Dona Leonor and the Thermas Antônio Carlos operate with bathing activities and treatments in progress. Promoting the preservation of the built heritage of spas is extremely relevant, and even more about the natural heritage. This essential good is water, a natural resource and the reason for the existence of these cities.

A new reality associated with thermalism and tourism must be disseminated, promoting issues related to urban renewal, heritage preservation, practices associated with nature, walking and enjoying the landscape and thermal ambiance, sustainability, and environmental quality that can become social and economic multipliers to make spas tourist destinations for health, leisure, and well-being. In both locations, recent tourism policies have been designed to bring

public management closer to private concessionaires interested in bringing in new investments. The monitoring of these actions by the local councils for the protection of cultural and environmental heritage has been fundamental in seeking sustainable tourism development.

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