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# Understanding Heritage of Early Modernist Sanatorium Architecture: Salutogenic Design, Healing Effects of Nature, Memory, and Impact on the Spirit of Place

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**Abstract.** Patrimonialization of the 20<sup>th</sup> century modernist heritage has been gaining pace in recent decades. Modernist buildings of different typologies are being viewed and analyzed as heritage embodying the ideas and spirit of time of the modern movement. Healthcare facilities, including sanatorium buildings, are not an exception. However, understanding this recent heritage raises numerous complexities and contradictions, such as space vs/and particular place, international, universal vs/and local, personal memories vs/and collective memories, local place-related memories vs/and non-local memories. This article aims to contribute to the comprehensive understanding and interpretation of early modernist tuberculosis sanatoria buildings as cultural heritage by demonstrating valuable aspects of early modernist sanatoria architecture and their preservation and continuity pathways via memory and place and their interconnections.

**Keywords:** sanatoria architecture, tuberculosis sanatoria, modern movement, modernist architecture

## Introduction

When sanatoria are the topic in architecture, most of the time, the first building which is mentioned is the Paimio Sanatorium of A. Alto. Although sanatoria were a widespread phenomenon in the 19<sup>th</sup> and early 20<sup>th</sup> centuries due to the spread of tuberculosis all over the world, this type of buildings is closely linked with the ideology and aesthetics of modernism and the modern movement in architecture. The view towards the modern movement and its architectural and urban legacy is shifting from strong criticism and directing the flaws to see it as heritage and as the expression of the spirit of time in recent decades. Patrimonialization of recent architectural legacy is gaining pace in different countries, and this encourages looking at the building typologies and the specific objects, which might have contradictory associations and sometimes negative images. The complexities and challenges related with the patrimonialization of the architectural legacy of the 20<sup>th</sup> century justify the relevance of the object of this research - heritage of early modernist tuberculosis sanatoria architecture. Several complexities and contradictions can be mentioned for revealing the need to better understand the heritage of the modernist tuberculosis sanatoria architecture. Sanatoria buildings can be seen as the expression of the ideas of modernist design and ideology; at the same time, this building type has influenced the development of the modernist design. Modernist sanatoria buildings are the expression of the internationalization of architecture, healing practices, lifestyle and at the same time, particular sanatoria are closely integrated with local history, community, and

landscape. Sanatoria buildings can be seen as the legacy embodying the advances in design and healthcare. However, at the same time, specific tuberculosis sanatoria might be stigmatized by locals and shun off due to the nature of this disease as this illness has been stigmatized for a long time [7]; moreover, currently, tuberculosis is not a massive problem anymore, there are numerous instances of abandonment of former sanatoria.

The aim of the research is to contribute to the comprehensive understanding of early modernist sanatoria buildings as cultural heritage, which can lead to their further management strategies.

The methods applied in this research include literature analysis, case studies and theoretical conceptualization; they are applied in order to distinguish the most important aspects of early modernist sanatoria architecture, such as the advancements of design and healing approaches of the time, development of salutogenic architecture, tapping into the healing effects of nature and to trace the possible strategies of preservation and continuity of these valuable aspects in connection to the spirit of a particular place and in the realm of memory. Due to the aim to explore the above-mentioned complexities and contradictions, the case study objects – early modernist tuberculosis sanatoria located in Lithuania and Turkey were selected and analyzed. One of the reasons for choosing the particular sanatoria from these countries is related to the discrepancy of their characters. Lithuania and Turkey differ due to their demographic structure, culture, traditions, and climate. However, they both implemented

the ideals of modernism in the same type of buildings. In its discourse, modernism is an international style profoundly influenced by universality, functionality and rationality. Therefore, the comparison between these sanatoria from different geographies can assist in analyzing and understanding the impact of local dialects on the design of a building with a very specific purpose. Furthermore, it can influence the knowledge transfer for establishing new strategies towards modernist heritage since the structures are subject to different stages - while one has the continuity of function and currently functioning, the other one has the potential for refunctioning and is abandoned. In that regard, this research is in-depth qualitative research which is a pilot study to stimulate further research.

### Literature review

The analysis of literature, first of all, focused on the sources about modernist architecture, the history of sanatoria architecture and its links with the modern movement. According to V. Migonytė [34], Inter-war period resorts developed in the interconnection between recreation, modernity and nature and the development of sanatoria architecture was an inseparable part of this process. Thus, in the course of literature analysis, several themes characterizing development and architecture of early modernist tuberculosis sanatoria had emerged: 1) history of sanatorium institution, treatment of illness, equipment, shape and layout of buildings; 2) evolution of the salutogenic design of buildings; 3) connection with nature and landscape of sanatoria buildings and tapping into healing effects of nature. These three distinguished aspects are analyzed below in greater detail. They are seen as essential themes to be considered in the patrimonialization, preservation and present day use of early modernist sanatoria buildings and building complexes.

#### *History and features of modernist sanatoria architecture*

At the beginning of the 20<sup>th</sup> century, tuberculosis overwhelmed the European continent, and it was the leading cause of mortality throughout Europe, which was even called the white plague [47]. Moreover, in the Inter-war period, tuberculosis was one of the most pressing problems of industrialized countries due to the boom in industrial sectors (factories, mines, etc.). Tubercle bacillus, which was discovered in 1882 by R. Koch, helped medical professionals to understand the importance of isolation in its prevention [5]. Therefore, a new type of building design was required to fulfil this specific function, which was a health facility, but at the same time, typologically different from a hospital.

According to the Cambridge dictionary, the definition of a sanatorium is “a special type of hospital, usually in the countryside, where people can have treatment and rest, especially when they need to get better after a long illness.” While a sanatorium can be for the treatment of an illness, it can also have recovery purposes, which mitigate the symptoms. Therefore, these facilities evolved

over time and became multipurpose places where people also escaped existential dread, depression, and other anxieties. As a result, frequently, staying at a sanatorium was more of a choice of the patient due to the recommendation of a doctor rather than it was the only way to heal from the illness. In addition, the hospitalization was essentially caused by the need for isolation and not by the fact that the patient was unable to move. Consequently, these characteristics affected the design of the sanatoria buildings. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, the corridor layout was widespread in sanatoria and hospitals. Beds in long corridors were separated by curtains to create a private space for the patient. Only in the early 20<sup>th</sup> century this type of ward was replaced in British sanatoria by separate pavilions with wards on either side of the corridor, with spacious balconies running around the perimeter of the façade. The construction and planning of sanatoria for the treatment of specific illnesses, such as tuberculosis reflected the ideology and aesthetics of the period: the need for cleanliness, health, hygiene, sunlight, clean air, and open spaces. It is interesting to note that when tuberculosis sanatoriums were built, the patients' relatives often stayed in the vicinity of the sanatoriums, which led to the formation of new settlements, infrastructure, and business sectors to meet the needs of the settlers [33, 44].

#### *Development of salutogenic architecture*

Health institutions are primarily focused on healing the illness, which sometimes causes the issue that they are paying just secondary attention to the patient's psychological, spiritual, and social needs. There are so many outer reasons that trigger the stress level of people, especially in a healthcare institution where the fear of deterioration of health is considered as well. However, the salutogenic design approach can assist in fulfilling the patient's psychological, spiritual and social needs, as well as aiding the healing process. The development and features of early modernist sanatoria architecture can be seen as an important milestone in the evolution of salutogenic design.

The planning of the sanatoria required sufficient external areas so that the patients would have the possibility of having direct contact with the sun and access to clean air. However, these areas were also supposed to provide them with the possibility to have physical exercise and also should be used for leisure. As stated by A. R. A. Carvalho et al. [9], patients tend to get a prescription for sunbathing in sanatoria, which is called heliotherapy. Heliotherapy was seen as a cure which could heal the disease permanently. It was believed that if a patient was once healed, the occurrence of fresh air and sun, even in the future, would provide the protective powers for a successful fight against the causal organism [6]. Proto-modern and early modernist architecture quickly reflected this new environmental concern [7]. According to M. Campbell [7], Austrian architect Otto Wagner was commissioned

to design a clinic with large, decked terraces at Entwurf in 1908. Consequently, the balconies in the sanatoria, which were called cure balconies, were one of the main components, both in the architecture of the building and in the treatment. Furthermore, the existence of balconies also provided the possibility of constant ventilation. While in some examples, access to the balcony was only from individual rooms, it was common to have sun porches, which were along the whole façade and accessed by everyone as a communal space. The buildings also featured accessible flat roofs to be used as spaces for patient rehabilitation [49]. This type of tuberculosis treatment, where patients were housed in open spaces: balconies, terraces, and specially adapted wooden houses with movable walls, was particularly popular at that time [25]. D. Lüthi [30] stated that the principal characteristics of sanatoria, which were built at the beginning of the 20<sup>th</sup> century, were a rational layout, sober façades, and new and economical materials. They tend to have rooms on the southern side of the structure, while the corridors are located on the northern side. According to C. Robie [45], functionalist aesthetics of the era affected the design of the sanatorium building, and they were typically white with smooth surfaces, which represented and emphasized hygiene. According to B. Tranavičiūtė [49], as the exteriors of the sanatorium buildings were designed under the influence of architectural modernism, the interiors were linked to the principles of patient care: well-lit interiors, using large areas of glazing, were intended to free the spaces from darkness and possible bacterial growth. In his design of Paimio Sanatorium, A. Alto emphasized that the user's psychological and physical requirements should be acknowledged as the basis of the design [54]. He designed the rooms in a specific way by playing with the colours so that he could establish a peaceful environment for the lying-down patients' perspective. At the same time, even though some of the rooms were supposed to be used by more than one patient, he tried to create a personal space and a sense of individuality through his design.

On the other hand, not only modernism affected sanatoria, but the design and aesthetics of sanatoria affected modernist architecture and interior design as well. Architects of the time marketed the characteristics presented above of sanatoria buildings as both preventative and reactive cures, which they applied in other buildings, such as in the design of social housing. The intention of the modern movement was to cure the perceived physical and emotional ailments that occurred by living in crowded cities and resolve hygiene conditions [7]. P. Overy [44] stated that P. Behrens designed an apartment block in 1927 that "was directly inspired by the model of the sanatorium and provided every tenant with an open-air south-facing terrace." As M. Campbell [7] concludes, "It cannot be claimed that the introduction and use of the flat roof, balcony, summer house and recliner chair were the direct results of early treatment methods for tuberculosis, but the popularity of

these modernist architectural features in the pursuit of good health and hygiene, placed them in the annals of a therapeutic lifestyle..."

Currently, it is widely acknowledged that changes in aesthetic design of healthcare settings can influence and improve patient health outcomes [38], including the psychologically supportive design used in the salutogenic design that can stimulate and engage people, both mentally and socially, and support an individual's sense of control [12]. In addition, the legacy of tuberculosis sanatoria design aimed at health restoration is an important reminder in the therapeutic context "overtaken by new drug therapies and treatment methods" [7].

#### *Healing effects of nature*

Even though the reason to have establishments of sanatoria in the countryside might seem like it is only because of the isolation possibilities, it is also possible to state that one of the reasons for it was due to the restorative effect of the natural environment on people's health. In the 19<sup>th</sup> and 20<sup>th</sup> centuries in Europe, the patients started to be treated in environments which are close to the sea and with pine tree forests since it was believed that climate has a direct impact on the healing process [58]. Sanatoria were built in mountainous areas as well. By the way, the first person to investigate the power of such sanatoria for the treatment of pulmonary tuberculosis was the physicist H. Brehmer, who, in 1854, visited the village of Gerbersdorf (now Sokolowski, Poland) in the Silesian mountains [33]. Especially for tuberculosis, an outdoor environment with access to clean and fresh air, ample sunlight, and a steady, moderate temperature is found as the best place for the treatment. When buildings were needed as sanatoria in the 1880s, mostly older existing buildings were transformed for this usage, which were not initially designed for air cures [30]. Therefore, these cures were performed by walking, which established the requirement of having some infrastructure and landscaping in the surroundings. Furthermore, since a good diet was also seen as one of the most important factors in the recovery process, most of these buildings required food production facilities and gardens. As a result, a particular architecture-environment relationship was formed at the beginning of the 20<sup>th</sup> century, which focused on the improvement of the living conditions for patients.

Currently, there is a large body of research demonstrating the positive effects of interactions with nature on people's physical and psychological health [20]. Natural environments can affect mental health and well-being since they are proven to have the ability to restore cognitive functions [43] and facilitate stress reduction [20, 50- 52]. Attention restoration theory, which is used in cognitive psychology, tries to explain whether depleted directed attention can be re-energized through the restorative experience of effortless soft fascination in nature [25, 26]. Growing research in this area supports

a significant link between spending time in a natural environment and reduced stress, improved attentional capacity and cognitive functioning, increased concentration and impulse control in children and adults with attention deficit hyperactivity disorder, reduced physical pain and faster healing, lifting mood, and reduced risk of morbidity [20]. The simple fact that healing gardens now exist in widely varying healthcare settings shows that they are allied with a broad conception of health [23]. It can be concluded that the early history of tuberculosis sanatoria has demonstrated that the outside environment is as crucial for the recovery process as the design of buildings. In that regard, sanatoria have a specific architecture-environment connection since while it is focused on healing, the way it attempts to heal is not only based on medication. In a sense, it can be stated that they are somewhere in between the salutogenic and healing effects of nature approaches.

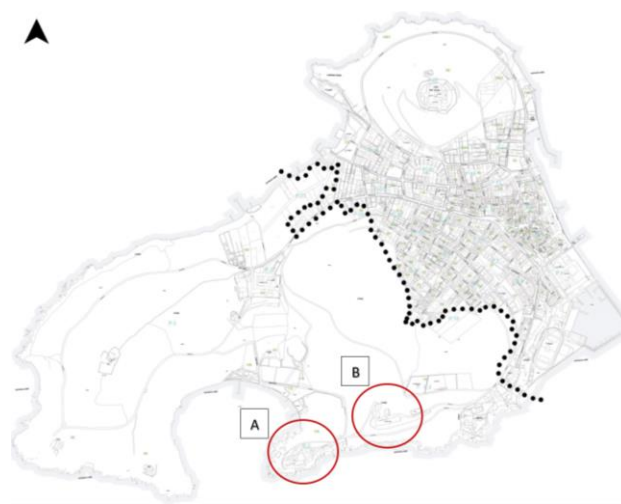
### Case studies

Two case study areas were selected and analyzed for a further understanding of the peculiarities of early modernist sanatoria architecture. Heybeliada sanatorium buildings in Turkey on the Heybeliada Island of Istanbul coast and Aukštoji Panemunė district of Kaunas (Lithuania) with three Inter-war period tuberculosis sanatoria (one for children and two for adults or mixed use) were selected. The choice of the case study objects was justified by the need to illustrate the previously mentioned complexities and contradictions. Furthermore, the aspects distinguished during the analysis of literature - history of the institution, treatment of illness, equipment, shape and layout of buildings, design of buildings, connection with nature and landscape of sanatoria buildings – were highlighted in the analysis of case studies as well.

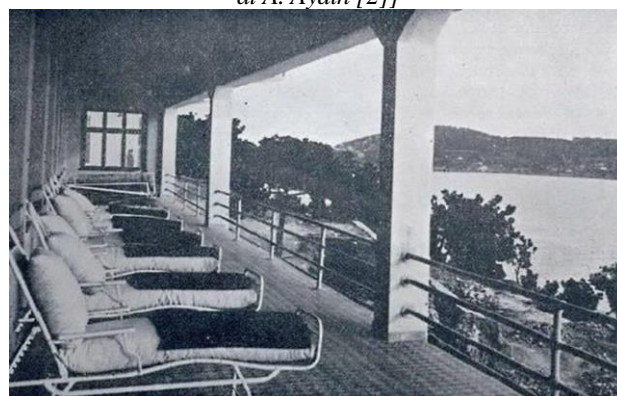
#### *Heybeliada sanatorium*

When the idea of opening a sanatorium in Heybeliada was discussed, the first plan was to use the already existing building in Yesilburun, which was used by the refugees. The idea to convert the building, which was owned by the military, was accepted by the government, and the sanatorium opened in 1924. However, at the same time, also the construction work started in the plot for extensions to the existing building, and they continued until 1939. Finally, in 1945, a new building was decided to be built in a second location to expand the existing sanatorium and double its capacity. The construction of the new building was finished in 1946, and after this date, the sanatorium started to function as a health complex which is located in two separate places in the southern part of the island (Fig. 1).

The reason for choosing the southern part of the island is related to the main directions of the sun and the wind around this location [13]. Especially the pine forests, which are located in the northern part of the island, have the ability to block strong winds.



*Fig. 1. Plan of the island with the first and second location of the health complex: A - first location, B - Second location [Prepared by the authors from the map demonstrated at A. Aydin [2]]*



*Fig. 2. Photograph of the façade long balconies of the main sanatorium building [27]*

Furthermore, due to being an island and surrounded by the sea, the area has high-quality air, which is balanced with low humidity. Therefore, the air and the sun conditions of the area were found to be the best for tuberculosis patients.

According to T. I. Gökçe [19], at the first location, there were small buildings which were constructed in different stages due to economic reasons. The sanatorium at this location consists of administrative buildings, service buildings such as a laundry building, a large kitchen, a canteen, technical buildings such as laboratories, a building for surgery operations, a pharmacy, and separate buildings for male and female patients. The main sanatorium building contains façade long balconies, which were used in the treatment (Fig. 2).

Even though the construction of the buildings was spread over a fifteen-year period, architecturally, they had holistic design strategies, which created the impression that it is a whole complex [58]. The sanatorium in the first location has a dominant architectural language representing and following the modern movement era (Fig. 3).



Fig. 3. The Sanatorium in the first location - Location A on the map [21]



Fig. 4. The second sanatorium designed by R. Gorbon - Location B on the map [21]

The building group at the second location was designed by the famous architect R. Gorbon, and it consists of the new sanatorium building, a school for the education of the nurses, a kitchen, a water tower, a transformer station and an extension building that is connected by a bridge to the main building block. In this additional building, there is a pharmacy and a cinema. Furthermore, workshops were taking place for the patients in the main building.

The main building at the second location has an enormous façade which is approximately more than a hundred meters long. There are balconies on the front façade of the building that shape the design of the façade with its columns that are located every three meters. The balconies are continuous, and they were used as cure balconies, where all the patients can rest and at the same time have fresh air (Fig. 4). Both buildings' light colour rational geometric shapes clearly contrast with the dynamic green landscape of the island. From one point of view, landscape as a setting helps to highlight modernist architecture, although, especially in the case of the main building in the second location, the columns of the front façade harmoniously interplay with the trunks of the trees of surrounding forested areas.

The sanatorium itself was not only a place for health, but also a rehabilitation centre so that the patients could use their time there to join some activities and learn some skills. According to K. Yilmaz [57], the rehabilitation in the centre was based on various stages, such as medical treatment and rehabilitation. The stage of medical treatment focused on normalizing the health of the patient, which could bring the health to a level where the patient could return to work and skill treatment. The rehabilitation stage focused on supporting the

patients by teaching them new skills, which would help them to return either to their previous jobs or help them find

a new job. In 1957, 98 of the 130 patients left the sanatorium only after finishing their courses to learn job skills. Therefore, it can be stated that one of the dominant characteristics of this sanatorium was its rehabilitation possibilities for the future.

Until 2005, even long after tuberculosis stopped being a massive problem for society, the sanatorium stayed operational. After the earthquake which happened in Istanbul in 1999, the sanatorium was damaged, and a detailed restoration was performed in 2001. However, in 2005, the buildings complex was emptied by the government due to not having enough patients and logistical issues of the islands. In 2020, it was allocated to the Presidency of Religious Affairs of Turkey with the intention of converting the complex into an Islamic Education Centre; however, it was cancelled by a court order in 2023. Nowadays, the buildings are empty and without a function. It is possible to summarize that the Heybeliada sanatorium complex well exemplifies the history and features of early modernist sanatoria buildings with numerous universal characteristics, such as the organization of treatment, straightforward minimalist design, the use of balconies and its connection to the unique nature of the island; the unique standing out feature was workshops with profession-oriented rehabilitation of persons, which helped them to return to social and economic life after the treatment. Therefore, an appropriate function for the building can be beneficial both for the physical and social continuity of this heritage.

#### *Aukštoji Panemunė sanatoria*

History of Aukštoji Panemunė and its development as a historic suburb and recreation and health restoration location attains increasing attention from Lithuanian researchers [11; 29, 33–36; 41]. According to the researchers, the development of the phenomenon of leisure, recreation, and health restoration culture intensified in the 1940s with the resulting establishment of the network of recreation and healing resorts around the city of Kaunas, then the temporary capital of Lithuania. In 1932, a law initiated by the Ministry of the Interior legally established the concept of a resort. The document also marks the symbolic beginning of a period of intensive modernization of resorts and the increasing attention of the state to hygiene, health, and recreation issues. The discussions of this period related to resorts were based on modernist rhetoric, using keywords such as hygiene, cleanliness, natural sunlight, an abundance of fresh air and open spaces [29; 34]. According to V. Migonytė [34], recreational places near the rivers have become one of the most important areas in Kaunas and its surroundings, where recreation, modernity and nature can be combined. Aukštoji Panemunė suburb, which until the 19<sup>th</sup>–20<sup>th</sup> centuries grew as an independent linear plan settlement more distant from the urban core [11], was one

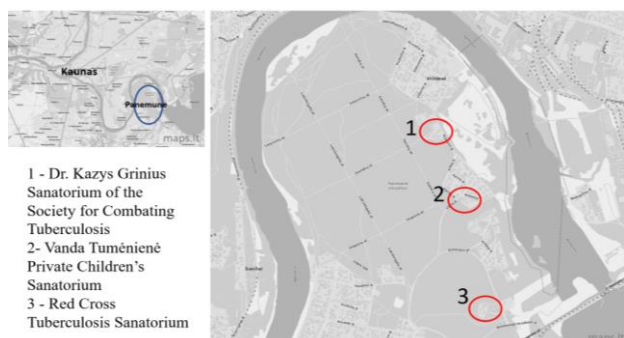


Fig. 5. Location and plan of Aukštoji Panemunė historic district and historic sanatoriums located in it [created by authors]



Fig. 6. Historic photograph of Dr. Kazys Grinius sanatorium

of the Society for the Fight against Tuberculosis [36]

of such location. The pine forests of Aukštoji Panemunė and the two main beaches have become the basis for a new resort, officially declared in 1933. Consequently, the territory and its plots began to be managed more carefully, and more recreational and rehabilitation facilities were built [29; 34]. Growing awareness of the leisure culture, change of the legal status and resulting investments had transformed Aukštoji Panemunė from a small suburb into a busy recreational area in a little less than a decade. State and private investments in modern health care and health restoration were an inseparable part of this transformation. In order to combat the nationwide spread of tuberculosis, outpatient health facilities were developed in parallel in the forested area of Aukštoji Panemunė. Dr. Kazys Grinius sanatorium of the Society for the Fight against Tuberculosis, the private children's sanatorium of Prof. Vanda Tumėnienė, and the tuberculosis sanatorium of the Lithuanian Red Cross Society were established in the area [36] (Fig. 5). Similarly to other European countries, tuberculosis sanatoria built in Lithuania reflected modernist features [49]. The history and features of each historic sanatorium are presented below.

The sanatorium of the Society for the Fight against Tuberculosis was opened in 1930 on the outskirts of the Jonas Basanavičius Park, near the village of Vičiūnai. The speech of dr. K. Grinius's, president of the society, during the opening of the sanatorium revealed the concern about the spread of tuberculosis and the healthcare institutions. Moreover, his speech reveals that

the sanatorium complex was built in stages in the 1-hectare parcel of land granted to the society by the state, including a homestead with an existing masonry house. In the first stage, the central part of the building was constructed, and later the right and left wings were added. The buildings were designed by the engineer V. Melejinas. In 1930, 50 patients were treated in the sanatorium, and in 1937 it already had 80 beds [34; 36]. The main building can be characterized as a rational modest architectural design example, the absence of ornamentation as well as the columned veranda clearly allows to attribute it to the category of early modernist sanatoria. Although, at the same time, the symmetry of the composition and the façade of the central block, which is visible from the forest area, creates a representative image of the institution (Fig. 6).

A special inter-war publication on the prevention of tuberculosis mentions that "the sanatorium is modernly equipped, with central heating, sewerage, electric light, alarm system, it has its own bookstore and a separate staff of 17 employees, serving children and adults. Patients are treated conservatively and actively. The conservative treatment is carried out according to B. Dettweiler's hygiene-dietetic system, providing the sick body with quiet, good, adequate food, fresh air and sunlight. Active treatment is used where conservative treatment is insufficient." [34; 36]. Further this publication of the period testifies both to the advanced medical system and rapidly developing infrastructure of the time, and to the ambitions of tuberculosis treatment in a modernizing local resort, taking into account the western trends in the architecture and planning of this type of sanatoriums: "The central part of the building and the right wing are used for adult tuberculosis patients. Almost all wards have a separate exit to a common open veranda. One shared, a completely isolated ward in the central block, on the second floor, is reserved for adult patients with bone tuberculosis. They have a separate exit to a solarium on the roof of the veranda, where patients are treated with sunlight. On the right wing, on the first floor, at the end of the corridor, there is an operating room, and on the north side, a wing with baths, toilets and an isolation room with a separate exit to the courtyard extends. The entire left wing of the sanatorium has three large wards for children with bone, glands and bronchi tuberculosis. All the wards have a separate exit to a large open veranda, and a solarium. The two-story brick building to the north contains the doctor's office, bathrooms, showers and toilets, as well as the doctor's and nurses' apartments, the housekeeper's office and flat, the kitchen and the cook's room. This house, with a completely separate entrance from the sanatorium courtyard, has an isolation room for children" [34].

The largest of the three tuberculosis sanatoriums in Aukštoji Panemunė is the sanatorium of the Lithuanian Red Cross (Fig. 7). One of the tasks of this society was to establish tuberculosis hospitals. This sanatorium was established in 1932 in the southern part of the Vičiūnai



Fig. 7. Historic photograph of tuberculosis sanatorium of the Lithuanian Red Cross Society [36]



Fig 8. Contemporary situation of historic sanatoria in Aukštoji Panemunė: 1 - former Dr. Kazys Grinius sanatorium of the Society for the Fight against Tuberculosis; 2 - former private children's sanatorium of Prof. Vanda Tumėnienė; 3 - former tuberculosis sanatorium of the Lithuanian Red Cross Society [photo by the authors]

village on a 1.75 hectares plot of land. The architect of the sanatorium was R. Steikūnas. This is a four-story brick masonry building of representative architectural character with some features of historicism, like elements of orders and decorated pediments. Like other sanatoria, the facades of the Red Cross building were filled with balconies and open terraces, where the patients were able to enjoy the sun. The interior of the building was organized in a corridor layout characteristic of the early sanatorium building. This sanatorium had the possibility to treat up to 150 patients [33; 36].

In 1933 the already operating sanatoria in Aukštoji Panemunė were supplemented by a third one – a tuberculosis sanatorium for children established by Prof. V. Tumėnienė at her personal expense designed by the architect G. Gumėniukas (Fig. 8, 2). The children's sanatorium could treat 50–60 children at a time, of which five beds were for babies. The two-story building of the sanatorium was wooden, with balconies and an open veranda. In 1937, the sanatorium was enlarged by another 30 beds. During the summer, children with bone tuberculosis were also accommodated on the balconies, which meant that the sanatorium was able to accommodate as many as 100 children during this season. A brick masonry extension of the sanatorium was built in

1940 designed by the engineer K. Sinkevičius, the first floor of which was equipped with a kitchen, garage, laundry and mortuary, and the second floor with two rooms for the nurse and the cook and maids. There was an X-ray room and a small laboratory in the sanatorium. In front of the building there was a garden and a white fence [35]. The wooden architecture of the building as well as balconies and veranda columns interplay with surrounding pine trees. Wood as a building material was characteristic of the residential architecture of Aukštoji Panemunė resort, thus sanatorium building harmoniously blends with the character of the local built-up structure.

According to the researcher of Lithuanian inter-war period resort architecture V. Migonytė [34, 36], the architecture, planning features, and interiors of Aukštoji Panemunė tuberculosis sanatoria buildings reflected the universal tendencies of modernization and the features of Western European modernism, based on the belief in the healing power of the sun, just as in other well-known modernist sanatoria. Aukštoji Panemunė, which, according to D. Dijokienė [11], has preserved its valuable natural conditions and historic wooden architecture, has a favourable situation for continuity of salutogenic design, healing effects of nature enriched with historical memories of interwar leisure and health restoration culture and early modernist architectural design. It is important to underline that all three historic sanatoria continue their therapeutic functions (Fig. 8). The former Dr. Kazys Grinius sanatorium of the Society for the Fight against Tuberculosis and the former tuberculosis sanatorium of the Lithuanian Red Cross Society currently function as subdivisions of nursing and palliative care hospitals. The former private children's sanatorium of Prof. Vanda Tumėnienė currently functions as a children rehabilitation centre.

### Theoretical conceptualization

Taking into consideration the contradictions and complexities related to early modernist tuberculosis sanatorium architecture and the themes distinguished in the course of literature analysis, spirit of place and memory were selected for theoretical conceptualization as a means to link personal, collective, local and universal dimensions in the interpretation of early modernist sanatorium architecture heritage.

#### *Spirit of place and modernist architecture*

Modernism is one of the architectural movements which is argued on the most, both between the experts and also non-experts. This is because modernism, in its nature, focuses on new and experimental techniques not only in the design of architectural objects but also in the design of the city as well. As I. B. Whyte [56] states, the ideal of modern science was mastering the forces of nature and the idea of progress. Therefore, it can be possible to state that the modernist era changed the definition and the perception of place. It can be noted that place very often became replaced with space, which is more abstract and disconnected from a particular

locality. As a consequence, connecting with modernist architecture and the urban environment at the personal and locality level frequently began to require extra effort to spend. It can be hypothesized that the pure expression of the ideas and principles of modernism in architecture is more associated with the spirit of time and non-local phenomena than with a particular place.

Place and the identification of a place is a topic which is discussed by various disciplines for decades. According to D. Canter [8], 'place' is a combination of actions, conceptions and the physical environment. However, the term place extends the focus of attention beyond geographic space to the experience people have of being in a particular environment [3]. Therefore, the definition of place is not only related to its physical characteristics but also to the meaning it carries or the meaning attached to it. For example, in his speech at the CIAM 5 meeting in 1937, J. Hudnut stated that 'cities which are patterned not only by those intellectual forces which seek to bend natural law to human betterment but also by those spiritual forces which throughout human history also left repeated imprints upon human environment' [40]. However, when the urban environment of modernism is analyzed, the spirit of the place is relatively lost.

Spirit of place, which is also called *genius loci* by some scholars, is a concept which has existed since the Romans. Romans believed that the spirit existed outside of the object or a place and protected the place, but at the same time, it preserved the life characteristics of the place as well [55]. Therefore, the spirit of the place is the reflection of the identity of the location, and it is what makes the location different from any other place. Most of the time, the spirit of place is discussed through its connection with cultural memories, which create a sense of place. M. Harney [22] states that the term *genius loci* is not only the spirit of place, but it also involves the sense of place as well. Furthermore, some theorists use the terms spirit of place and sense of place as each other's synonyms; however, G. Holden [24] distinguished between these two terms. He stated that the spirit of the place is external quality, while the sense of place is the internal quality of the perceiver. As a result, whether they are synonyms or not, both of these terms explain the characteristics of the place, which can provoke memories, emotions and feelings in individuals that can change their perception of these places either in a positive or a negative way.

K. Ardakani and S. S. A. Oloonabadi [1] state that, even though the sense of place might be personal, it is the outcome of collective perception. The perception of people tends to be motivated by the way people deal with their physical environments in daily life, and places can significantly contribute to the creation and retention of memory. The more familiar the environment is, the more people will establish mental patterns for that environment, and consequently, people will feel more comfortable in that environment. According to C.

Norberg-Schulz [42], one of the essential qualities of a place is to make man feel at home on Earth. Therefore, it requires triggering attachment and carrying intangible qualities, which would make this process easier. M. Vecco [53] identifies the spirit of a place as a meta-concept, which signifies that it has intangible qualities. She states that *genius loci* has a double character, which is intangibility and tangibility, and it is the nexus between these characters. Therefore, all these characteristics support the creation of associations with the places. M. Vecco [53] distinguishes three different layers - dimensions of significance of *genius loci* as meta-concept: the visible and tangible material layer; the invisible experience of the place created in the human mind; the underlying processes of human and natural activity with all interrelations between them.

However, when the modernist era in architecture and urban planning began, the intangible qualities started to fade [14]. As a result, it is believed that it might have affected the perception of architectural objects and built-up areas. F.M. Mazzola [32] states that the main limitation of urbanism and architecture in the modernist era was the presumption not to consider what happened before. Therefore, both the spirit of the place and the sense of the place have at least partially vanished. However, it is not only what happened which is essential. It can be argued that the associations that the place triggers in people and the emotions felt while being at that location can also affect the spirit and sense of the place. The associations towards every place cannot always be positive and make people feel comfortable. There can be negative associations towards some building types or particular buildings for various reasons, it can be stated that they have a negative image or negative charisma [48], both because of their designs or the function of these structures, which do not trigger any positive feelings. Hospitals and sanatoria can be regarded as one of these buildings. According to M. Campbell [7], in the middle of the 20<sup>th</sup> century, the scourge and stigma associated with tuberculosis were still prevalent throughout the developed world. However, despite being a type of health institution, sanatoria can be evaluated in another category since they can trigger mixed feelings due to their peaceful environmental qualities.

#### *Memory and modernist architecture*

The perception of a place, which directly affects the feeling towards this place, can be formed by various factors. It can be due to the physical characteristics of the place, but at the same time, it can be due to the emotions they trigger in individuals, which has an impact on their perception. Memory is one of the most important elements in the perception process. While some memories are individual, cultural memories can also change the perception of an object or a place. According to C. Ellard [16], even some characteristics of people's preferences regarding their living environments reflect 'genetic memories' from their ancestors. He states that

people prefer to see more than be seen in the environment due to the habits from prehistoric times since that kind of setting would have increased their likelihood of survival. As stated by A. Saidi [46], people's instantaneous interaction with and reaction to their environment is through their bodies with various sensorimotor capacities, as well as their memorized experiences, which are shaped by their prior perception of the world in different biological, psychological and cultural contexts.

As G. Debord [10] states, the environment affects the emotions and behaviours of individuals in an organised or unorganised way. The research on this subject is called psychogeography, and it argues that sites can tell stories about the past for people. This is the same for architecture and architectural objects as well. However, different architectural objects, both due to their language and their functions, can trigger different memories in different individuals as well. Remembering, which is constructed and at the same time constrained by both cultural and social forms, is still an individual mental process, and an intersubjective explanation of how people remember as well acknowledges that, despite the fact that memory is socially organised and mediated, individual memory is never entirely conventionalised and standardised. According to B. Misztal [37], the memories of people who have experienced the same event are never identical because, in each of them, a concrete memory evokes different associations and feelings. Associations and feelings are essential since they affect how people inspect, understand and respond to events. As A. Erlil [17] states, some historical events or historical places might trigger different sensations in different people as well. Therefore, history and memory can be interpreted like a story, and have a close connection with people's perceptions.

Bachelard's [4] philosophy and topoanalysis of space, which is applied in this study, suggests that architecture is a space of memory that matters insofar as it is memorialized. By presenting poetic descriptions of spaces as the embodiment of the human inner world, architecture is given an ontological, personalized angle of approach by G. Bachelard [4]. G. Bachelard [4] maintains the superiority of particular location in memory process, as he notes, that it is only in space that people find the beautiful fossils of duration, hardened by long existence. Thus, architecture can be considered as a place of memory that creates and stores memories within itself. J. Malpas's [31] study 'Building Memory' further elaborates the connection between architecture and memory; it underlines that there is no place without memory and that there is no memory without place; and since there is no architecture that is not related to place, there is no architecture that is not related to memory. J. Malpas [31] argues that memory begins in a particular place, it is as if tied to it. The smell of a building, its surfaces, its shapes, the acoustic qualities of its spaces etc., all shape and make memories, and at the same time they are the carriers and triggers of memory. Accordingly, the memory always has a multiplicity of possibilities that

correspond to the multiplicity of places in which it opens up, thus, one place can trigger memory related with another location etc. It can be stated that the place can trigger both personal and collective cultural memories as well as the memories that are related to this particular place and are related to similar places or non-local, such as scenes from fiction books, films etc. Thus, it is important to understand the connections between memory and place for a better understanding of early modernist sanatoria architecture.

However, there might be buildings and sites that cannot tell the story of memories directly, they might need an interpreter to demonstrate the cultural memories. This can be regarded as one of the most significant problems of the 20<sup>th</sup> century's architectural heritage. For example, M. Mostafavi and D. Leathbarrow [39] note that the abandonment of ornamentation in modernist architecture results in the loss of some of the sensory forms that J. Malpas [31] argues can be used to embed it in memory. According to J. Malpas [31], the architecture of the modernist narrative of progress does not seek to create a memory or to continue what has already been started. In his view, such architecture, because of its modern form and materiality, often disregards the memory of a place – a topographical memory – that was formed before the object was even built. He even argues that if memory is given and transmitted through the senses, i.e. the materiality of objects, materiality that has a surface effect and depth, then one of the aims of modern and contemporary architecture was to erase or lose this materiality, thereby suppressing memory. According to J. Malpas [31], the more formal a building becomes, the more it becomes an abstract 'idea' rather than a materialized 'thing' – an object. K. Lægging [28] argues that the widespread use of formalist exemplar aesthetics has led to severe criticism of the international style, brutalism, and structuralism for creating monotonous, self-referential, and meaningless architectural works, formalist architecture, or the architecture of examples. However, even these buildings can manage the establishment of different associations in perception, which can create a positive impact.

The literature analysis and case studies of sanatoria revealed that the early modernist sanatorium architecture, despite being the expression of ideas of progress and modernization, has the potential to build and trigger memories. It can be possible to state that, due to the focus on their rehabilitation function rather than the illness itself, the sanatorium has a more positive image rather than a negative one in most cases. Furthermore, the environment they are in and their direct connection with nature and their usage of nature as a healing element might also have affected their perception. In the example of Heybeliada sanatorium, even though it had a modernist language in its architecture, the perception was more related to its function, which provided new opportunities to the patients who spent time there and gained new skills for their future. On the other hand, in the examples of Kaunas, the close connection to the local natural landscape and the features of early modernist buildings, which contain some elements of historical styles as well they are expressed in local 'dialects' of modernism,

affected the perception of these modernist sanatoria. In that regard, it might be possible to state that it is not the only architectural language which affects perception, but the associations created by the image and the function. Therefore, since one of the main discourses of modern movement is that the form follows function, as long as the function can establish better memories and associations, it can be stated that even those buildings might be appreciated.

### Discussion

The sanatorium movement [49], together with the general cultural movement of modernism, which involved the integration of form with a social purpose in architecture and design, attempted to create a new classless and hygienic lifestyle [7] that resulted in the architectural legacy of early modernist tuberculosis sanatorium buildings [18]. These buildings are the embodiments of universal values of modernism and the sanatorium movement and, at the same time, have close ties with the local landscape, history and communities.

The complexities and contradictions highlighted in the study (space vs/and particular place, international, universal vs/and local, personal memories vs/and collective memories, local place-related memories vs/and non-local memories) can be viewed as complementary contradictions and reconciled as well as highlighted when preserving heritage objects. For example, space vs/and particular place can be expressed as modernist architecture embedded in the local landscape. International, universal vs/and local can be expressed as local 'dialects' of modernist architecture [15]. Personal memories vs/and collective memories can be expressed as memories, stories of particular personalities related with the locality, sanatorium, treatment etc. and collective memories and stories attached to the place and revealed by heritage interpretation. Local place-related memories vs/and non-local memories can be expressed as personal and collective memories connected to a specific locality and specific sanatorium and non-local personal and collective memories engendered by fiction, films etc. triggered by the place.

Three themes relevant to the patrimonialization of early modernist tuberculosis sanatorium architecture related to modernity, health restoration and nature and their synthesis were distinguished and elaborated: history and features of modernist sanatorium architecture (modernity), development of salutogenic architecture (health restoration), tapping into the healing effects of nature (nature) (Fig. 9). These themes can be integrated in the development of scenarios for preservation of early modernist sanatorium buildings:

- *synergy of modernity, health restoration and nature* – continuity of function, similar functions. This situation is currently visible in the case of Aukstoji Panemune sanatoria, which continue their therapeutic functions. This continuity is complemented with the growing interest in Inter-war period history of Lithuania and Kaunas and in the local dialect of modernist architecture and related phenomena and personalities. Heybeliada sanatorium complex also maintained its original function

until recent times; however, the present day abandonment situation raises the need for alternative solutions.

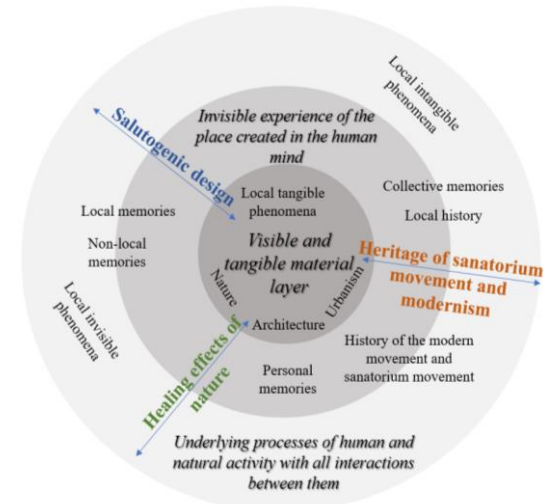


Fig. 9. Theoretical model of conceptualization of memory and place for interpretation and preservation of early modernist sanatorium buildings with reference to Vecco [53]

- *modernity and nature* – re-functioning the object, different functions simultaneously maintaining historical memories. This scenario could be a suitable scenario for Heybeliada sanatorium complex, which could house different therapeutic, leisure, and recreation of cultural functions at the same time illustrating the link between the tuberculosis sanatorium movement and the roots of modernist architecture mentioned by M. Campbell [7].
- *nature* – abandonment and decline of physical structures recording them and related memories in documents, re-naturalization of the place. Both case studies objects, especially Heybeliada sanatorium complex, sanatorium of the Lithuanian Red Cross Society and Dr. Kazys Grinius sanatorium of the Society for the Fight against Tuberculosis in Aukstoji Panemune have significant historical and architectural values and their abandonment and re-naturalization of the sites should be considered only as a last option.

### Conclusions

The study allowed concluding that early modernist tuberculosis sanatoria can be viewed as a distinct type of heritage related with the roots of architectural modernism, embodying numerous complexities and contradictions at the same time having clear heritage preservation and continuity paths allowing to tap into healing effects of nature, represent different types of memories and highlighting the layer of early modernism heritage in the character of the locality.

In the course of this research, the complexities and contradictions related to early modernist tuberculosis sanatorium architecture mentioned in the introductory section were clarified after analysis of literature, case studies and theoretical concepts and include space vs/and particular place, international, universal vs/and local, personal memories vs/and collective memories, local place-related memories vs/and non-local memories.

Each analyzed case study object had its own history, salutogenic design features and unique connection with nature and the local landscape. Preservation and continuity of these themes depend on the individual situation of each case under consideration and variations in these themes, and their combinations in heritage preservation strategies depend on the character of the place, the condition of the buildings, the influence of the buildings on the spirit of place, relevance of the memories attached to these buildings. Nevertheless, during the research three themes relevant to the patrimonialization of early modernist tuberculosis sanatorium architecture related to modernity,

health restoration and nature and their synthesis were distinguished and elaborated: history and features of modernist sanatorium architecture, development of salutogenic architecture, tapping into the healing effects of nature. These themes can be integrated while developing alternative scenarios for preservation of early modernist sanatorium buildings: synergy of modernity, health restoration and nature; modernity and nature; nature. The first scenario is recommended for Aukštoji Panemunė sanatoria; meanwhile the second, aimed at re-functioning, could be a suitable scenario for Heybeliada sanatorium complex.

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**Kopsavilkums.** 20. gadsimta modernisma mantojuma išvėrtėšana pėdėjās desmitgadēs pieaug. Dažādu tipolōgiju modernisma ēkas tiek aplūkotas un analizētas kā mantojums, kas iemieso mūsdienu idejas un laika garu. Veselības aprūpes iestādes, tostarp sanatorijas ēkas, nav izņēmums. Tomēr, izprotot neseno mantojumu, rodas daudzas sarežģītības un pretrunas, piemēram, telpa pret konkrētu vietu, personīgās atmiņas un kolektīvās atmiņas, ar vietu saistītās atmiņas pret lokācijas vietu. Raksta mērķis ir veicināt agrīnā modernisma tuberkulozes sanatoriju ēku kā kultūras mantojuma visaptverošu izpratni un interpretāciju, demonstrējot vērtīgus agrīnā modernisma sanatoriju arhitektūras aspektus un to saglabāšanas un nepārtrauktības ceļus caur atmiņu un vietu savstarpējo saistību.