Andis Alksnins The 21st Century "Hillfort" – A Historical Guide to the Present **Transformation**

Abstract

The culture of the Baltic people is one of the oldest according to many investigations in the fields of anthropology and archaeology. The main aim of this research is to update and reanimate ancient heritage and promote society's interest in the historical roots of the nation.

During the research a map was created with all known and registered hillforts and other manmade earth formations using cartographic materials and literature from the period of the early 20th century until today. The research paper analyses the link between the hillforts as protective structures and ancient mounds which do not comply with the characteristics of hillfort construction and location. These mounds, using the term of folk language and historical writings, are called sacred hills and have a significant role in Baltic culture.

The output of the research is a design proposal that intends to establish a centralized institution to preserve the informative materials of the past and promote the development of modern research in the field of Baltic culture. The design is based on a free-standing building – a cultural centre with scientific and public information functions for the Baltic nations, including the latest research on archaeology, anthropology, language and genetic studies. The function of the centre would be to collect the latest research materials from many scientific institutes to obtain comprehensive information and release it to the public. Speaking metaphorically, the building symbolizes a way of knowledge which sets visitors on a journey to the past and future.

Keywords

Baltic culture, historical heritage, hillforts, scientific research, centre of knowledge

Introduction

Nowadays the foundation of society is individuality and knowledge. People are gradually losing touch with their own culture and native country, and this is today's reality. The identity of the individual has grown in importance. One of the biggest threats is excessive globalization, which creates a disparate society with no historical, spiritual or cultural background. Nations may lack unity. The same can be said about knowledge. The great variety of opinions diminishes principles that were important for a long time. It is important to use historical ideas and knowledge as a basis when forming new structures around us. The consequences of the assimilation processes of nations and cultural uniqueness and the loss of the knowledge of our ancestors are the biggest threats to modern society. If there are no longer people who are interested in keeping alive traditions and ancestral knowledge, it may endanger the existence of the respective nation in the future.

Today, historical information on design processes is no longer the main factor. Various interpretations of historical artefacts have led to a situation where people no longer pay attention to principles that were important for our ancestors. Historical research and preservation of monuments promote the transfer of information for further generations. Nowadays, in Latvia, the protection is provided by the Nature Protection Board and State Inspection for Heritage Protection - in cases when monuments are located in the territories of cultural heritage. The list the institution has created of archaeological and natural monuments, such as hillforts and other ancient mound formations, is a step in the right direction, but there is no mechanism that transmits this information to the public. Also, the monuments have not been explored together as one integral system. Their locations or positions can provide information for further research that will help us to understand whether there is a greater interconnection or not. The available information and literature are studied only from the archaeological point of view and do not provide the whole picture of the overall system.

There are many different kinds of natural and manmade objects with mythical and historical backgrounds, such as caves, giant stones, springs, mounds and even large trees located throughout the current territory of Latvia. All of them are mostly located next to each other, forming a complex structure. These objects were very important in Baltic culture and, to a certain extent, have remained so up until today. Baltic culture, with its fundamental values, constitutes one of the oldest societies on the territory of Europe that still exists, maintaining its traditions, perceptions and way of life. Ancient mounds have been a part of this culture for a long time, especially with regard to the construction and architectural shapes of the first megastructures - hillforts.

Over the past 100 years, important research has been conducted in the field of hillfort detection, surveying and cartography. Archaeological excavations confirm that the majority of the mounds mentioned as hillforts in the nation's oral traditions and historical testimonies were inhabited during a specific period of time. However, not all researched mounds hold traces of civilization and a cultural layer. This suggests that without the construction of fortification structures, these mounds also served a different or additional purpose. Archaeologists of today do not provide a clear answer to this finding.

The selected topic is historically significant and up-to-date at the same time. There are several possible ways of finding the most appropriate materials. Historical information can be found only in libraries and it constitutes about 80-85% of all the materials used in this research. Printed materials can be divided into two categories:

- Periodically collected brochures and maps with drawings and descriptions of newly founded hillforts and other mound formations from the period of the 1920s till today;
- History-based books about Baltic culture, including materials related to research on ornaments, archaeology and anthropology. Other information is available on different

websites or by interviewing people who work in fields related to the topic of this research, for instance, scientists, teaching staff at universities and book authors. Gathering information helps to establish a closer link with the real situation.

Historical exploration and classification

The etymology of the word 'pilskalns' (the Latvian word for hillfort) and pyleskalnis (the Lithuanian word) is related to the words 'pilstīt' (in Latvian) and istpilti (in Lithuanian), which mean "to toss up the earth or sand". These earth embankments characterize prehistoric fortifications in the territories of the Baltic people (Brastins, 1923). The first hillforts in Latvia - specially fortified structures - were constructed at the end of the Neolithic Period or the late Stone Age and early Metal Age (Urtans, 1991). The periods of Latvian hillforts were identified and clarified with the help of modern archaeological research. The oldest hillforts were built at the end of the 1st century BC (Urtans, 2013); for example, the Daugmale and Padure hillforts are the oldest known formations in Latvia. The fortified settlement was built because of the accumulation of material goods, which had to be protected from intruders. In a further development, fortified castle mounds appeared with small villages forming next to them. The traditions of local hillfort construction were slowly discontinued after the invasion of German feudal lords. They built mainly stone fortifications in order to remain in the region for a longer time. This pioneered a new phase in Baltic history - the domination by a foreign power. The new stone fortifications were built near existing hillforts or directly on top of them, for example, in Valmiera. Other stone fortifications were built in places where no information about hillforts from the pre-German period is available, for example, in Rujiena (Urtans, 1991).

The hillforts, as a significant element of the Latvian cultural landscape, have attracted the attention of travellers and researchers for nearly two centuries. For example, the poet and lawyer Ulrich von Schlippenbach (1774-1826) described many hillforts in his travel notes on Courland. But the first scientific interest in hillforts emerged in the middle of the 19th century through the leadership of the Baltic-German pastor August Bielenstein (1826-1907), who was known as a researcher of Latvian ancient history, ethnography and language (Urtans, 2006). He visited more than 30 hillforts and created descriptions that were later published in an edition of the Latvian Association of

Literature. Further exploration of hillforts was initiated by Latvian researchers after the proclamation of the Republic of Latvia in 1918. The greatest merit in this field should be given to Ernests Brastins (1892-1942), a researcher of the prehistory of Latvia. He organized and participated in several expeditions all around Latvia from 1922-1927. Within the context of his official duties, he led these expeditions with the goal of obtaining information about hillforts, ancient battlefields and other fortifications for the needs of the War Museum. He tried to find the specific locations of hillforts using historical materials from previous Baltic-German researchers. Furthermore, he carried out all his expeditions by visiting all the regions of Latvia on foot. He walked more than 1500 km during his first expedition in Kurzeme (Brastins, 1923). This great work was crowned by the publication of four books dedicated to Latvian hillforts. Each hillfort was textually and graphically described with surveys, cross sections, location plans and pictures. The work carried out by Brastins provided the opportunity to make a variety of summaries and conclusions about the typologies, classifications, topography and building periods of hillforts (Urtans, 1995). Archaeological research continued after WWII during the occupation by the Soviet Union.

One of today's best-known archaeologists and researchers is Juris Talivaldis Urtans (born 1952). He started his career in archaeology in the mid-70s while researching different archaeological monuments, including hillforts. In the mid-80s, which is often referred to as the Awakening Period, the Latvian people, in investigating their national identity, slowly started to focus their attention on regional research and on the more ancient past of Latvia. Due to this initiative, new hillforts were discovered (Urtans, 2009). Even today, work on hillfort detection continues and new discoveries are being made. For a hillfort to be considered as discovered, it has to be confirmed by an authority in archaeology, by a historian or a regional researcher who states that the hill can be designated as a hillfort (Urtans, 2006). All information should be available for researchers and public use. Currently, about 500 hillforts (data from the year 2009) and ancient mounds are registered under state supervision but not all of them have the necessary characteristics

to be called hillforts (Urtans, 2009). Hillforts differ considerably in terms of appearance and are characterized by a peculiar set of features. These features distinguish them from manmade earthworks or naturally formed hills. Some features are described in the book Ziemelvidzemes pilskalni (Urtans, 1991):

- Firstly, a hillfort is built with a levelled surface. This was necessary for protection and construction of living spaces and auxiliary buildings.
- Secondly, a hillfort is characterized by specially built slopes. Usually these gradient surfaces were scarped. It was necessary to create one or more terraces in order to keep these slopes safe and to prevent them from collapsing.
- Thirdly, there is a system of ramparts and ditches protecting the hillfort against enemy attacks. This system was usually combined with gates and fortification buildings.
- Fourthly, a cultural layer formed in hillforts used for a long period of time. The cultural layer, which is usually black-colored, consists of the inhabitants' waste, the remnants of buildings and structures - wood chips, bark, straw, ashes of burned buildings, coal, livestock manure and layers of sifted earth. The cultural layer is the source of history which tells us about the life of the respective period in the language of material evidence.

Since the 19th century, many systems have been developed that could introduce a classification according to the allocation of external characteristics. Typological schemes of hillforts have been developed mostly by archaeologists. Some research was conducted by the Latvian professor Fricis Balodis (1882-1947), who determined regional structure features of hillforts. He mentioned that hillforts with steeped slopes or with terraces and slopes are typical and common in the region of Latgale, while in Kurzeme and Zemgale hillforts typically have a high rampart at the end of an assailable plane surface (Balodis, n.d.).

Many hillforts were partly destroyed during the numerous wars that Latvia underwent, since many entrenchments and bunkers were dug (for example, Vecpils hillfort). Approximately two dozen Latvian hillforts were excavated during the 20th century. Only some of them have been

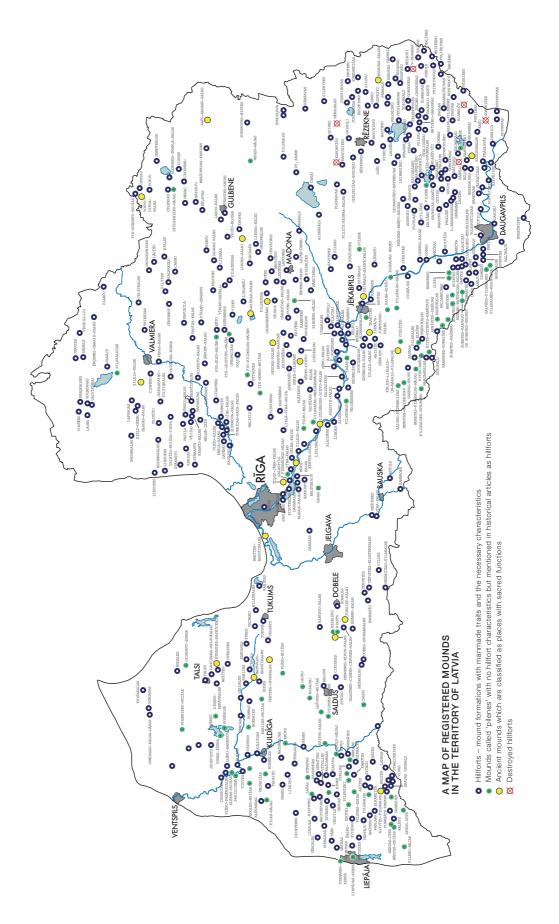
archaeologically investigated.

Geographical and functional network

At the moment, there are no publicly available maps that provide an overall picture of Latvian hillforts and other ancient mounds; therefore, it is essential to change the current situation by creating one common map. Of course, it is possible that such a map might not be complete, since there might be some hillforts which have not been announced or discovered yet. Historically, hillfort researchers divided Latvia into 5 districts: Kurzeme, Zemgale, Augszeme, Vidzeme and Latgale. It is possible to highlight one aspect that helps us to understand the creation principles behind historical hillfort maps. If all hillforts were indicated on a 19th century map, it would be possible to conclude that hillforts are located near the biggest roads of that time. This could mean that the first discovered mounds were simply easier to access (Urtans, 2006). The overall situation becomes clear when all hillfort maps are put together (Figure 1). The map shows the current situation using all available materials since the early 20th century. The blue dots mark mounds with hillfort characteristics; green dots mark mounds called 'pilenes' (earth embankments with no hillfort characteristics); yellow dots mark mounds classified as places with sacred functions; red dots with a cross mark destroyed hillforts.

It is evident that hillforts and other mounds are located throughout the territory of Latvia. There are regions with a lot of hillforts, for example, southwest Kurzeme and central Latgale. And there are regions where hillforts are not a widespread phenomenon, for example, northern Kurzeme, central Zemgale, northwest Latgale and northern Vidzeme (Urtans, 1991). Undeniably, riverbeds, geographical borders and relief play an important role in the location of mounds. The map shows that all the biggest or oldest rivers like the Daugava, the Gauja, the Venta and the Abava are marked with hillforts, because rivers served as trading routes

Next page: Figure 1. A common map of hillforts and other mounds in the territory of Latvia (Riga: Andis Alksnins, 2015)



in ancient times. The second factor is related to the geographically advantageous position, influenced by the topography of the earth and proximity of ancient borders. This fact was already observed in the 1930s by Professor Fricis Balodis. He mentioned that the borders of fortifications are clearly visible on the network of hillforts, especially along the Livonian-Latgalian and Latvian-Russian borders. A large number of Curonian hillforts are located next to rivers, as this was the main route from the Baltic Sea to the western inland (Balodis, n.d.). Most cities of present-day Latvia have their own hillfort. This means that these structures served as a seed of urban development with centres and living space around them. The map and various sources of literature show that hillforts are surrounded by many other mounds that are not classified as fortifications. These mounds or earth formations are often located not far from hillforts or directly near them. They are mentioned in folklore, historical writings and many legends. The most common place names are Baznickalns (Church Hill), Elkakalns (Spiritual Hill), Svetkalns (Sacred Hill) and Upurkalns (Sacrificial Hill). Early researchers expressed confidence that no Christian churches, chapels or altars had ever been located. According to Brastins (1923) the word 'baznīca' (church) must be an old local word and can be derived from the words bags, bog (in Sanskrit), which mean god in English; and 'zinica' (in Latvian), žijnica (in Lithuanian), which is related to the Latvian words 'zintenieks' and 'zināt' (to know, to understand in English). Meanwhile, the word 'elks', in the opinion of researchers, comes from the Scandinavian word helg or the German heilig and means 'svēts' (in Latvian), *šventas* (in Lithuanian) and *sacred* (in English) (Brastins, 1923). Archaeologists tend to base their work only on information obtained during excavations. Modern science reacts very carefully to everything that is not quantifiable or measured yet. This is the reason why many of these mounds have not been archaeologically investigated. The cognitive value of archaeological materials is very high. Many domestic objects and their fragments are found in the cultural layer of the living space; therefore, there are very few findings of this type at cult typology sites, while all the other findings transmit their sacred significance

(Urtans, 1993). Few publications provide information about archaeological excavations of sacred or cult hills and mounds. So far, the most important research on cult hills was conducted by archaeologist and historian Eduards Sturms (1895-1959) during the 1930s. The researcher often refers to these places in his conceptual article Elka kalni un pilskalni Kursa. He raised the hypothesis that these mounds are specially arranged places for sacred cult activities and remained near hillforts as political centres. He also expressed the opinion that ancient sacral places had a complex character (Jakovics, 2005). There has been a lack of findings during the excavations, and this is the reason why it is difficult to interpret these sacral places only from the viewpoint of archaeology.

One way to obtain information is through archaeology, but another way is through exploring history by using folkloric materials. They contain a collection of historical facts in most cases. The spiritual heritage of the Baltic people is a part of the oral traditions. It is possible to find information about natural sanctuaries or energetically active regions in various old writings, chronicles and contemporary literature. These natural processes play an important role in the daily life of the Baltic people. This is one of the reasons why Latvian archaeologists have not discovered the significant characteristics of cultural and sacred buildings. Some modern researchers argue that no evidence has been found of sanctuaries with temple buildings. This would confirm the fact that our ancestors used natural sanctuaries only for sacral activities (Urtans, 1993).

Ancient mounds as sanctuaries and hillforts as fortifications are part of the Latvian landscape with necessary functions. Large groups of sacred sites in Latvia have been registered that were probably intended for bigger events. For example, Mujanu Zilais kalns is the central cult hill in Vidzeme, while in Latgale the central cult hill is Sauleskalns near Kambuli. Aside from major sanctuaries, there were also local ones that belonged to a small number of people or just one household (Rotbaha, 2006). Ancient mounds are different in shape and construction compared to other artificially modified hills. It is difficult to say anything about regional

features, but many mounds are similar in form to each other with a round structure, concentric ramparts around the perimeter, terraces and several "entrances", for example, Aizviku Hill and Matkules baznickalns in Kurzeme or Skudru Hill in Vidzeme (Urtans, 1993). Archaeologists have found hills without a cultural layer or even artificial modifications (ramparts, etc.) of the surface. But the geometrical shape, as a whole, is different from the rest of the surroundings.

All ancient mounds with sacral functions are characterized by the fact that usually there are other natural elements or places with energetic and sacred significance located near them, for example, a huge stone in the hill below Rites Stupelu Hill (Urtans, 2006). These components are indicators of places that had sanctuary functions in the past. The cultural historian and writer Janis Polis noticed that the energy centres of ancient mounds were created at the intersection of many underground waters. He considers that historically these places served as health centres (E-Misterija, 2006). Today, scientists have already developed equipment capable of measuring dowsing networks. Underground bodies of water are observed relatively accurately in places with ancient sacral and burial functions.

One well-known local sacral place is Zilaiskalns located near Koceni. It has the opportunity to become a sacred place of national importance. Since only a few sanctuaries have been archaeologically investigated in Latvia, there is a lack of comprehensive information. Together with Christianity's encroachment on the territory of modern Latvia, systematic destruction of Baltic sacred sites has taken place; such sites have been regarded as incompatible with Christian ideology. This could be one of the reasons for the incomplete information provided in scientific studies. If no material is left, no conclusions are drawn. Currently, all ancient mounds are categorised as hillforts. For example, Jena Hill in Trikata is known as an ancient sacral place, but at the same time it is perceived as a hillfort. It is necessary to examine all the available information to ensure correct classification, conducting further archaeological research and studying the oral tradition of our ancestors.

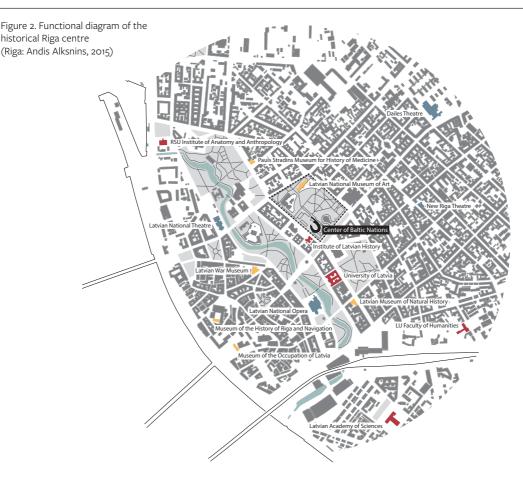
A step towards the future

It is apparent that public access to hillforts and other mounds was very different compared to today. If we look at recent history, hillforts were mostly free of chaotic vegetation during the 1920-30s, but nowadays all ancient mounds are partly or fully covered with trees. Also, a lot was done to improve accessibility. Ernests Brastins mentioned in his publications that it is not necessary to do additional rebuilding of hillforts, because each intervention causes damage to the monument. This means that there is no need for renovation processes and historically created earth formations or other structures should stay as they are today. In other words, there should be no falsification of the past.

Undeniably, hillfort and mound structures held a significant place in Baltic culture. Nowadays, stone fortifications and Christian churches are perceived as more valuable structures than ancient mounds and hillforts. After assessing the value of cultural-historical data together with questions of national identity preservation, it is necessary to form an informative and technical database to stimulate the research quality of subjects related to the history of the Baltic people's way of life - the fields of archaeology, anthropology or language - and update such topics as Baltic gene engineering or even radiesthesia. One of the important tasks is to come up with the right tools to transfer the information to the public.

The place of knowledge

The political and economic life of modern Latvia happens in the cities, which historically have formed next to the territories of ancient hillforts. The power of centralization is much more pronounced than it was in many individually built areas during the past. Historically hillforts were also used as a protection mechanism for spiritual and material knowledge. In today's world – the age of information – knowledge is no longer concentrated but is scattered between the virtual environment and archives of printed materials. In order to preserve ancient information from our ancestors, it is necessary to carry out collection processes and find



viable forms of public information. This should be based on historical principles using new methods, addressing as many interested people as possible. It could be called a hillfort of the 21st century – an information facility for Baltic culture. Our ancestors had the ability to maintain their own culture, language and way of life despite external influence. The interests of contemporary Latvians are changing in their priorities and becoming more disparate. This is the time when a small but durable nation like Latvia has to activate the mechanism of selfpreservation. The formation of a contemporary hillfort or "temple of knowledge" will be presented in understandable language and form for contemporary people. It will include a comprehensive essence of the cultural heritage of Baltic nations and function as a platform for new research development and publications. The culture of the Baltic people is one of the oldest according to numerous studies in Europe and Asia.

The main objective of the project *The Cultural*,

Educational and Science Center of Baltic Nations is to restore and reanimate the cultural heritage, and to promote public interest in the field of our national roots. Currently, there are already several public buildings or centres in Latvia that have the mission to preserve our ancestral traditions and way of life in general. But there is no focal point that could attract more interest around the country and beyond its borders. This project should be easily accessible, as people would be participating with the specific goal of acquiring new knowledge or simply communicating with other visitors; it should be a welcome place for all.

The centre of Baltic culture must comply with several criteria, reflecting the historical context, the presence of nature, and at the same time the urban environment, because it should be close to its visitors. Historically, all scientific institutes, national museums, and cultural and educational establishments are located in city centres. The project idea continues this historical succession, creating a centralized

place where the past meets contemporary knowledge. The existing situation is such that all research and available information about Baltic culture, way of life and archaeological investigation is dispersed in various museums and institutions all over the city. There is no physical or virtual infrastructure for finding valuable information. This has led to a situation in which people do not have an exhaustive picture of what is happening in the field of Baltic culture. One of the goals is to change the current situation and gather together both past and present research materials related to the fields of ethnography, history, archaeology, anthropology, writing, language and genetics, which will create one common informational space about Baltic peoples. The centre would serve not only as a spot for knowledge acquisition and exchanging ideas but also as a place to hold various events, scientific conferences, and celebrations or as an environment where you can relax your mind.

The city of Riga has taken on the role of a common centre of Latvia and the Baltic states. It is important to realize the potential of the centre of Baltic culture. Therefore, Riga as a location would serve the development of the centre and attract considerable interest. The choice of location is determined by the context of the past, the influx of people and accessibility. Esplanade Park, located in the city centre, is a very important place in the urban fabric and has a good location between all the historically established museums, scientific institutes and other cultural buildings and facilities (Figure 2). Esplanade Park, as a historically multi-layered area, is a place next to the green boulevards of Riga city and has the necessary characteristics to become an important public space, creating a new contribution in the language of contemporary architecture. Historically this territory developed gradually, adding layer after layer over many centuries (Figure 3). As shown in historical information and drawings, the current area was occupied by the ancient Kubes Hill – a mythical place with sacred functions. The new building, as a contemporary structure, will represent this ancient mound or hillfort theme as a reference to the past situation. Currently, the area is not sufficiently developed and historically built structures are still visible in a landscape created

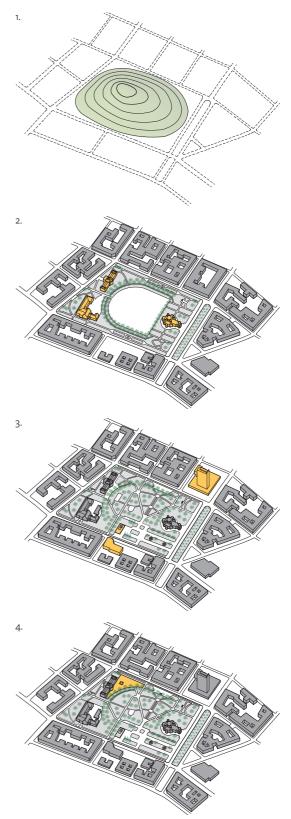


Figure 3. Esplanade Park historical development stages include: 1. ancient period until late 18th century, 2. 19th century, 3. 20th century, 4. 21st century (Riga: Andis Alksnins, 2015)

- Main entranceMain circulation areaVertical mobilityOutdoor space

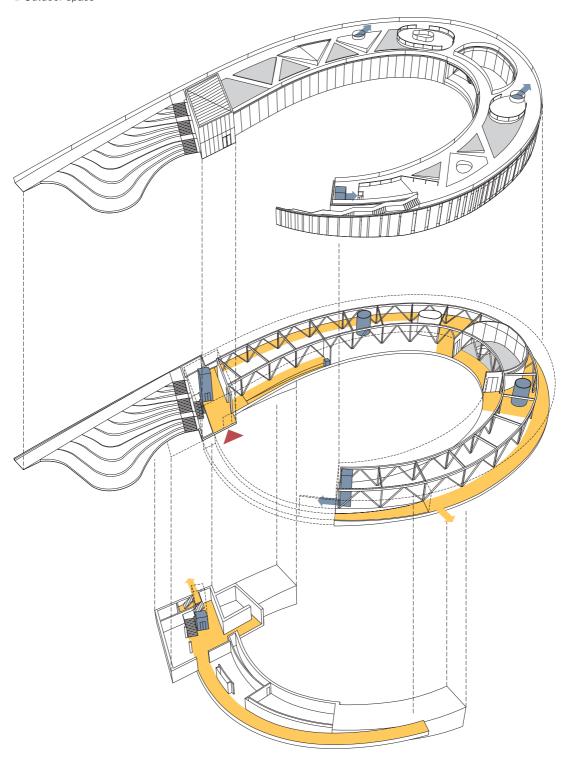


Figure 4. Circulation diagram (Riga: Andis Alksnins, 2015)



Figure 5. Visualization (Riga: Andis Alksnins, Reinis Salins, 2015)

by foreign powers. This project would improve the surrounding environment and infrastructure and give impulse to the regeneration processes of Esplanade Park, restoring the spirit of the newly established Latvian state in the 1920-30s.

The project design is based on a freestanding building - a cultural pavilion with scientific and public information functions for Baltic nations, including studies on archaeology, anthropology, language and genetics. Building functions will not overlap with information available in existing museums in the city centre. The idea is to collect the latest research materials from many scientific institutes and folk museums, obtaining comprehensive information and giving it to the public. Basically, the building is a one-storey structure, ensuring the possibility of continuous circulation through the building, and symbolizes the idea of infinity (Figure 4). Speaking metaphorically, the building symbolizes "the path of knowledge", which sets visitors on a journey to the past and future. Part of the building structure is raised, forming a building line along Brivibas and Kalpaka Boulevards and ensuring free pedestrian circulation as well as necessary views to the

monument of Latvian poet Rainis. The fifth façade of the building is a publicly accessible roof plane, creating many visual links between the inside and outside space. The roof is specially designed for pavilion visitors and all city residents or guests as well. It offers many views of Esplanade Park, creating a new meeting spot in the city (Figure 5).

Visitors make a full circle passing through the indoor installations, research exhibition halls and creative spaces, accessing a wide range of information about historical and modern research topics (Figure 6). It is possible to pass the same way again, returning to the starting point, which is like a never-ending pattern of life improvement.

This project will perform an important social function in summing up the knowledge of our ancestors and transferring it to public use. It will promote a better understanding of our nation's history and way of life over the centuries. Each step towards truthful information will give impulse to further development and research (Figure 7).

•••

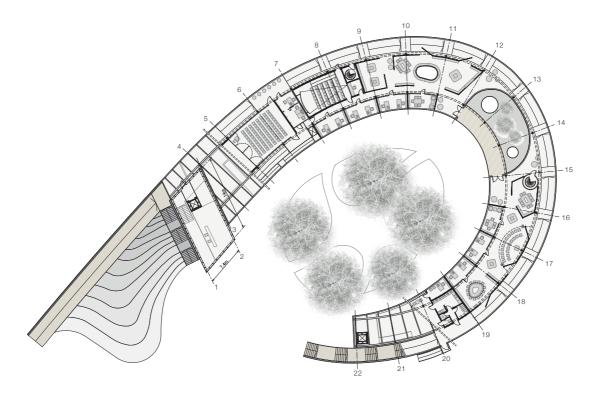


Figure 6. Ground floor plan of the building (Riga: Andis Alksnins, 2015)



References

Balodis, F., n.d. Latvijas pilskalni 1909-1934. gadu izrakumu gaisma. Riga: Latvijas vestures skolotaju biedriba.

Brastins, E., 1930. Latvijas pilskalni: Vidzeme. Riga: Piemineklu valdes izdevums.

Brastins, E., 1928. *Latvijas pilskalni: Latgale*. Riga: Piemineklu valdes izdevums.

Brastins, E., 1926. Latvijas pilskalni: Zemgale un Augszeme. Riga: Piemineklu valdes izdevums.

Brastins, E., 1923. Latvijas pilskalni: I-Kursu zeme. Riga: Latvijas senatnes petijumu biedriba "Valodze".

E-Misterija, 2006. Spidzenieku pilskalns (1. dala). An interview with Latvian historian of culture and writer Janis Polis. [online] Available at: http://www.e-misterija.lv/spidzenieku-pilskalns-1-dala/ [Accessed 16 November 2015].

Jakovics, A., 2005. Svetvietas. [online] Available at: http://svetvietas.lv/raksti.html [Accessed 16 November 2015].

Rotbaha, D., 2006. Latvijas svetvietas un to laudis. Riga: Jumava.

Urtans, J., 2013. Apceres par Latvijas pilskalniem. Riga: Nordik.

Urtans, J., 2009. Atrast pilskalnu. Riga: Nordik.

Urtans, J., 2006. Augszemes pilskalni. Riga: Nordik.

Urtans, J., 1995. Latvijas austrumu dalas jaunatklatie pilskalni: Valsts Kulturas piemineklu aizsardzibas inspekcijas materiali. Riga: Rigas Multimediju centrs.

Urtans, J., 1993. Latvijas senas svetnicas. Riga: Latvijas enciklopedija.

Urtans, J., 1991. Ziemelvidzemes pilskalni. Riga: Avots.