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DIPLOMARBEIT

Das Freilichtmuseum & Lehm-Therme Filovci

ausgeführt zum Zwecke der Erlangung des akademischen Grades
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ENGLISH

The open-air museum Filovci is an establishment aiming to preserve traditional architecture and local crafts. The autochthonous Pannonian architecture is on the verge of extinction, which reinforces the importance of the museum's role. In addition to its central task of preserving cultural monuments – »cimprače«, a key goal of the museum is also to indicate guidelines for the modern Pannonian architecture. The revitalization and development of the museum have been thoughtfully considered and encompass the following elements:

- a new building which is founded on the analysis of vernacular architecture of the Pomurska region and establishes a dialogue with the existing traditional construction

- a reconstruction which maintains the existing while adjusting the object to the needs of its new function

- the transfer of the object and of the old semi-globe shaped oven located in the museum's interior

- the regulation of traffic

The second part of this work contains a “clay-wellness” project, which is adjacent to the open air museum. It is a stand-alone facility, which gradually becomes pavilion-style architecture. It is very important a humble attitude towards existing cultural monuments in the vicinity. The use of natural building materials, especially clay and wood, should become the core of the modern Pannonian architecture, where wood represents the main construction material and clay ensures both the quality of living comfort and has a notable aesthetic role. The region has throughout history developed a culture of living on the ground floor only and in close connection to the soil, which we should strive for in the future as well.

DEUTSCH

Das Freilichtmuseum Filovci ist eine Stiftung, die für die Erhaltung der traditionellen Architektur und Handwerk zuständig ist. Indigene Pannonische Architektur hat sich auf den Rand des Aussterbens zu finden, deswegen ist die Rolle des Museums noch wichtiger.Neben der Kernaufgabe der Erhaltung von Kulturdenkmälern - "cimprače" ist entscheidend Leitlinien zeigen auch den Pannonischen modernen Architektur. Revitalisierung und Entwicklung des Museums sind sorgfältig durchdacht und enthält die folgenden Abschnitte:

- Neubau basierend auf einer Analyse der Volksarchitektur Mura Region und stellt einen Dialog mit bestehenden traditionellen Baukunst

- Rekonstruktion, die die bestehende bewahrt und die Anlage auf die Bedürfnisse der neuen Funktionen einstellt

- die Anlage und den Alten Ofen herunterladen

- Verordnung der Verkehrssituation

Der zweite Teil der Arbeit enthält einen - Lehm-Therme Projekt, das neben dem genannten Museum platziert ist. Es ist ein Stand-Alone-Anlage, die teilweise Pavillon-Architektur ist. Es ist sehr wichtig demütigen Haltung gegenüber den bestehenden Kulturdenkmäler zu behalten. Die Verwendung der natürlichen Materialien, insbesondere Holz und Ton sollte der Kern der modernen Pannonicher Architektur werden, wo Holz das Hauptstrukturmaterial ist und Ton, das dem angenehmeren Aufenthalt erbringt, hat auch eine deutliche ästhetische Rolle. Die Landschaft hat durch die Geschichte für die Entwicklung der Lebenskultur besorgt, nur auf dem Boden; im Erdgeschoss und in Kontakt mit dem Erdreich. Das wäre notwendig, um in der Zukunft verfolgen.

acknowledgments

At the end of my At the end of my formal education I wish to firstly thank my father for his support and understanding during my studies. A thank you goes also to my other family members as well as friends who have supported and encouraged me on my path of education.

Open-air museum Filovci
Restoration and development of the museum

content: page:

&

Clay Wellness
Architectural design

Introduction

Open-air museum Filovci

The Pannonian region lies along river Mura in the northeastern part of Slovenia, with part of it being situated in the hilly areas and a part in the ravines. This rural area is known for its abundant agricultural land and vast forests. Its peopleharbor anattachment to soil, clay and wood. For the past couple of decades the Pannonian region has seen little investment in terms of infrastructure, though many view unbridled constructionas having a negative impact on the preservation of arhitectural identity and housing culture. The vernacular architecture of the Pannonian region has all but died out and the inherited architectonic development is unsuitable. If certain good practices based on past identity of folk architectural planning would be followed we could see a return of the original building concepts. This way the local landscape could once again regain its signature style, character and identity. These reasons led me to choose the only open-air museum in the region for my thesis. Thanks to the endeavors of family Bojnec in Filovci the last two examples of "cimprača" – a cabin with mud plastered walls and a straw roof – have been saved from destruction and preserved as a cultural heritage. The open-air museum in Filovci has thus taken it upon itself the responsibility to maintain the local architectural cultural heritage. The museum's success up to this point has resulted in the need for an update, expansion and clear guidelines for future development. These points should be approached in accordance with the following architectural strategy and intervention.

Firstly, the present state has to be summed up and the situation analyzed. Then the intervention plan and the following tasks need to be carefully laid out and made sure they are in accordance with the goals and the development plan of the museum and the locality. Two aspects are vital for a successful implementation of the open-air museum into the suitable context: the example of cultural heritage under discussion falls into the realm of architecture where the type and the method of construction, use of materials and residence culture are at the forefront. For this purpose I have prepared anoverview of basic characteristic of building with clay and wood, as these are the two materials that form the core or vernacular Pannonian architecture. The second point of importance is the placement of the museum into a broader context. To achieve this I will take a look at open-air museums in Slovenia and in the neighboringcountries. I have compiled a list of such museums in Austria, Hungary and Slovenia and made a short summary of their characteristics.

Clay Spa

Independently of the museum's development other initiatives are under way. Local geothermal water and geothermal holes have prompted an interest in the development of a tourist attraction. As this complex would boarder on the existing open-air museum careful planning of the architectonic image and program contents of such a complex is vital. This gave rise to the idea of the so called clay spa, a combination of thermal and clay bath, or to put it in other words, a spa where the clay would be mixed with thermal water instead of regular water. This content can easily be applied to a health segment, which would be based on clay and thermal water, and the classic form of wellness activity, where the customers bathe in clay baths to relax and enjoy themselves. Incorporating these ideas could ensure a certain harmony with the museum. I have devoted the second part of my thesis and prepared a solution for implementation of the required infrastructure. There are still many open questions regarding the realization and technical aspects of this project, so my architectural proposition relies mainly on morphological and typological aspects and the spatial distribution of the possible spa activities based on the potential of this wellness program.

Analysis

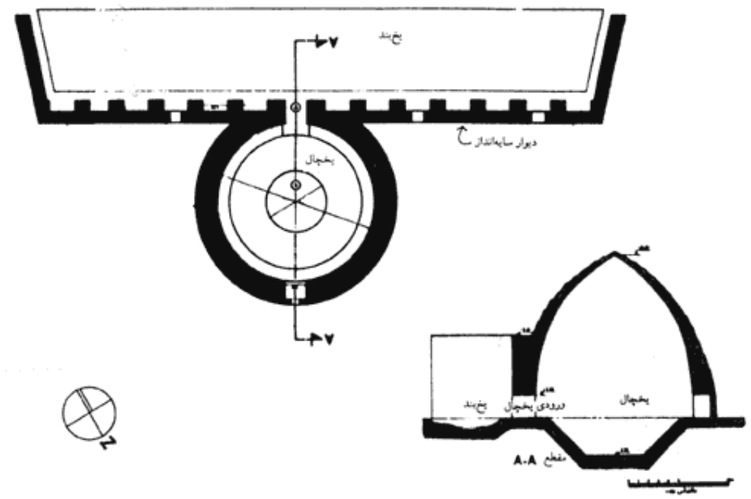
During its almost a decade long operation the museum has come to represent one of the most important tourist destinations of the region. This is to a great extent attributed to the well accepted pottery workshop. The museum boasts two relocated cultural monuments – the Pannonian "cimprača" (a wooden cottage with clay plastered walls and a straw roof), an old kiln for firing pottery, a small residential building, an already present residential building retrofitted into a shop and a distillery with the status of cultural heritage. An already operational workshop has been relocated to the museum, but as it lacks proper architectural placement on the estate it is on the priority list or changes and improvements. There is a great need for a suitable space where pottery classes could be held and drying, glazing and firing pottery could be carried out. A space for multimedia presentations and other smaller museum events is also needed. So a decision to erect a new structure has been agreed upon, which would not only solve the museum's infrastructural problems, but also offer an architectural dialogue with vernacular construction and the cultural monuments located in the immediate vicinity.

Before starting with the construction of the new structure one of the smaller wooden structures needs to be relocated. While it is not part of our cultural heritage it is worth preserving for its interesting construction methods: the logs are placed vertically instead of horizontally. There is a more suitable location for it on the other side of the museum and relocating it would fill the obtrusive emptiness of the new location.The existing brick residential building also requires repairs. The initial plan was to remove the object and replace it with a new architectural design, which would architectonically restore and sum up the entry point of the museum together with the new structure housing the workshop and the multimedia facilities. After consideration we came to the conclusion that it would be better to renovate the existing structure and thus keep the existing architecture. I have prepared the minimal needed procedures in order to restore the structure to its new intended purposes. It should also be pointed out that a new traffic regime needs to be arranged, as the simultaneous visit of more busses in a short interval is causing serious traffic congestions.

Clay - building material

Building material of the past and the future. Clay is a widespread building material and is found in all arid, as well as temperate climates. Even today about a third of the world population lives in clay houses. In emerging countries clay dwellings surpass half of all dwellings. Clay as a building material has been known for over 9000 years; in Turkmenistan rectangular clay houses from 9000 B.C. have been found (Pumpelly, 1908). In all ancient cultures clay has been used not only for building, but also for art; the Great Wall of China was originally built almost exclusively from rammed earthand was only later rebuilt using bricks and natural stone. The core of the Sun pyramid in Teotihuacan in Mexico was built 300 – 900 A.D. using about 2 million tons of rammed earth. Vault of the mortuary temple commemorating Ramses II in Egypt built about 3200 years ago was made of unfired clay blocks. In dry climate where wood is scarce clay construction techniques were developed. Such techniques were also used to cover open spaces like the grand Bazaar in Iran, where domes were used to cover up spaces. In China at least 20 million people live in clay dwellings.

NimVar Yakhchal (http://www.eartharchitecture.org/index.php?/plugin/tag/domes)



NimVar Yakhchal (http://www.eartharchitecture.org/index.php?/plugin/tag/domes)

Wadi Daw'an (http://www.theglobaldispatches.com/articles/mud-brick-architecture-of-yemen)

Some general characteristics of clay:

- Clay contracts when dried

The volume of clay reduces with drying, which causes the clay to shrink for 3-12% (rammed earthshrinks for 0.4-2%). The contraction can be minimized by reducing the percentage of water in the composition of clay.

- Clay is not waterproof

Clay needs to be protected from rain. Different kinds of plaster can be used for this purpose, as well as horizontal isolation or construction solutions, such as canopies.

- Clay regulates humidity

Clay can relatively quickly absorb air moisture and can release it later. This helps to regulate air humidity in affects the quality of the surrounding climate. Research at the scientific institute for experimental construction in Kasselhas shown that raw clay bricks accumulate in 2 days 30 times more humidity than fired bricks. The measurements, carried out by the institute in a house made of dried clay bricks during the period of 5 years, have shown that such houses retain almost constant air humidity thought the year.

- Clay retains heat

Clay, like other heavy construction materials, retains heat and helps improve the climate conditions of an area. Along with passive construction and the use of solar power it contributes to energy savings.

- Clay can be reused

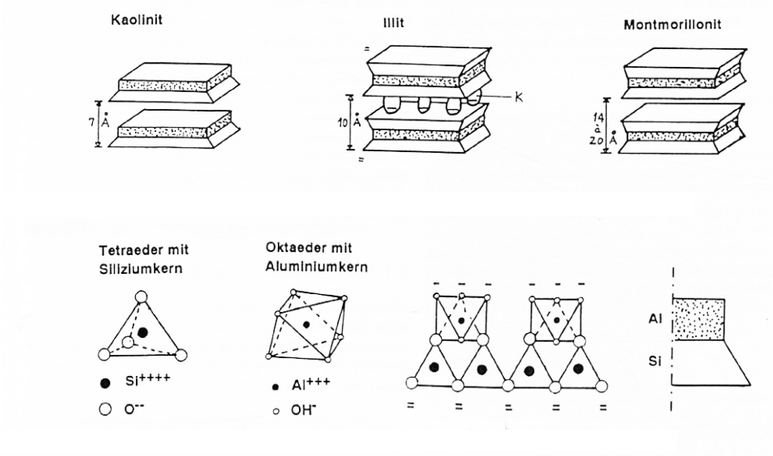
Unfired clay can be reused indefinitely. Dried clay needs to be ground and rehydrated in water. After that it can immediately be molded. Compared to other building materials clay is not considered to be a waste product and does not negatively impact the environment.

Loam

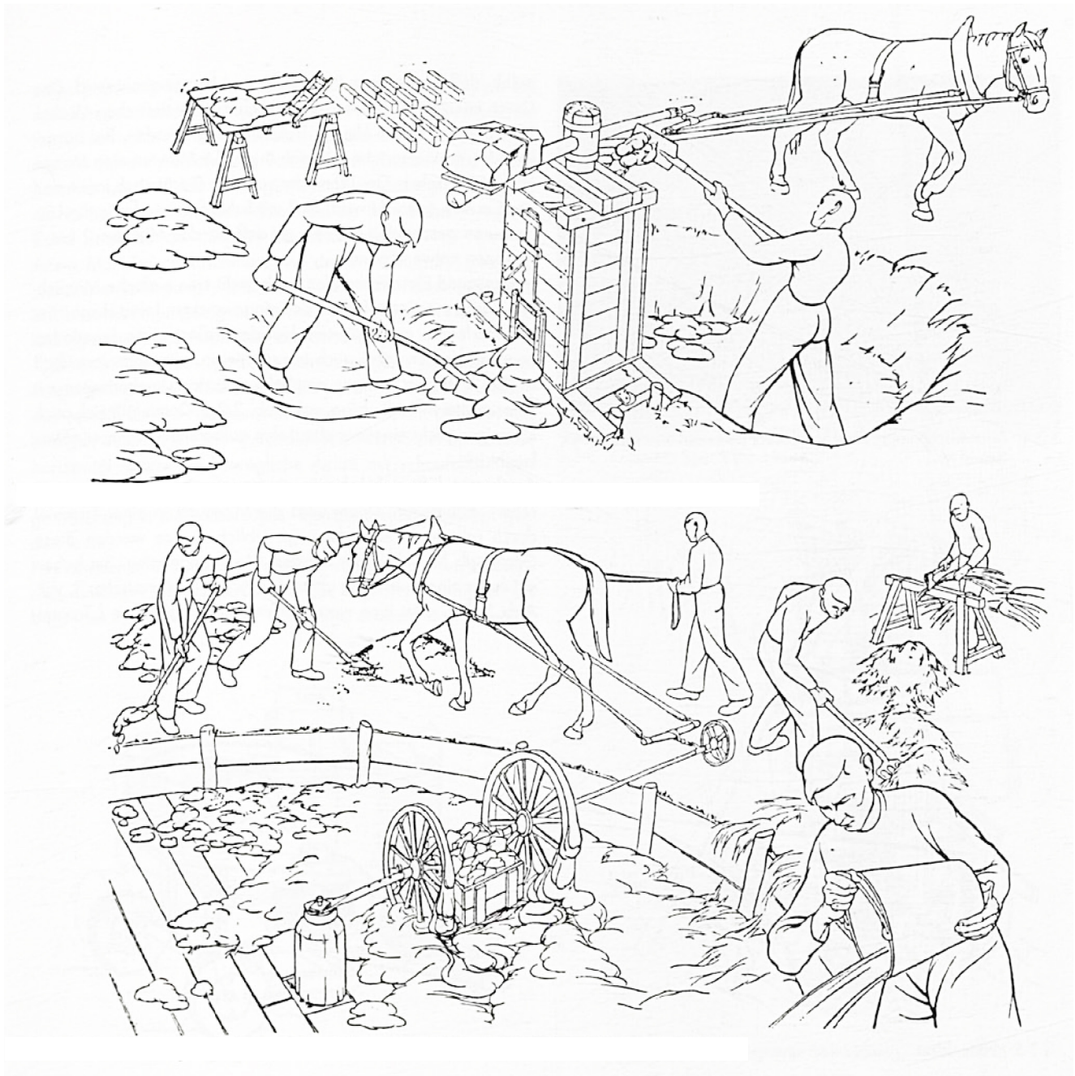
Loam is soil composed of sand, silt,a smaller amount of clay and larger particles. In loam clay functions as a binding material and binds the other larger particles together.Clay particles are smaller than 0.002 mm, silt particles are between 0.002 mm to 0.06 mm, while sand particles range between 0.06 to 2 mm. Particles with the size between 2mm to 60mm are called gravel.

Clay

Clay is a product of chemical weathering of rocks, mostly silicate-bearing ones. Aluminum oxide with chemically bound water is called Kaolinit. Other frequent minerals comprising clay are montmorillonite-smectite and illite. All three materilas are rarely found in their pure form. They are often mixed with oxihydroxides, which color the clay in a yellow or red hue. Chemically bound water in the minerals evaporates when temperatures reach 400-900 °C.



structure and formation of clay minerals (Minke, Lehmbau-handbuch, 1994, page 29)



preparation of clay in a clay-mill (Minke, Lehmbau-handbuch, 1994, page 65)

Preparation of the building material

The preparation of clay as a building material is the key task and often the hardest part of building with clay. The preparation depends on the type of clay and the method of use, from moist clay to dried bricks, but the sequence of steps always remains the same:

- Hydration
  If the clay is dry it first needs to be hydrated. This is done using shallow pools. The clay is sub merged until it is hydrated enough to be moldable.

- Reduction and mixing
  In the past clay was left out in the open during the winter. The cold helped to break the clumps of clay into smaller particles. Even today clay is kneaded with feet (sometimes animals are used) in emerging countries. During this process different supplements can be added, like sand and straw.

- Filtering
  Certain construction methods require a finer mixture without larger particles. The most basic solution is the use of a sieve. These can range from primitive ones to sophisticated machinery.

- Resting
  The prepared clay must be stored in a damp environment for 12-48 hours before use. By leaving the clay to rest its binding properties improved, as the bonds between the minerals strengthen. The fatter the clay, the longer it needs to be rested.

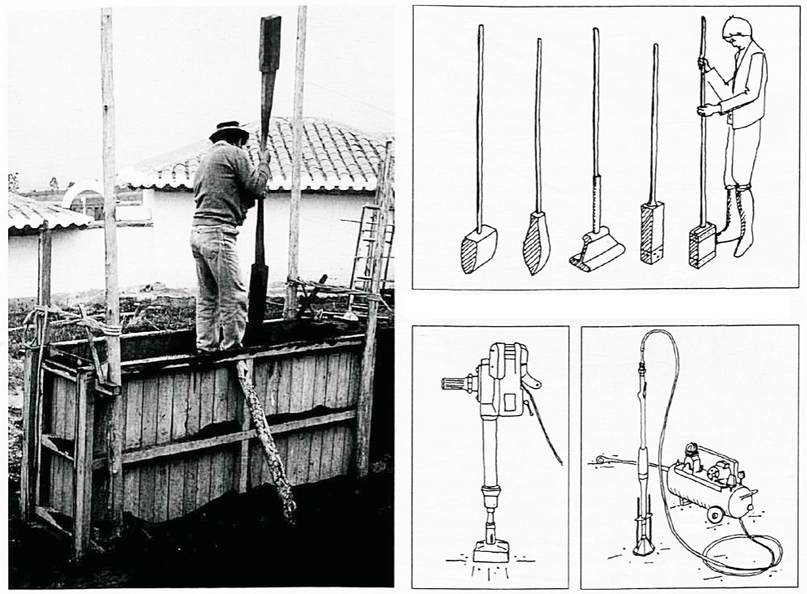
- Tempering
  This means adding rough granular particles, like sand, which influences how tough the clay will be. These additives need to be applied when the clay is still relatively moist and greasy, so the entire mass can be properly mixed. Besides sand and gravel, other materials like hair, straw, sawdust and others can be added.

Rammed earth

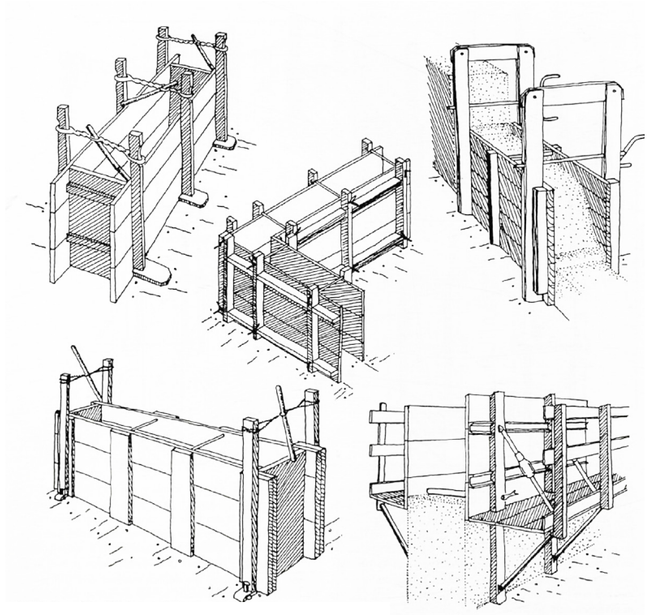
With rammed earth the naturally moist clay is packed into paneling in 10-15cm layers and is pressed tight. Paneling is generally made out of 2 boards which are laid parallel to each other and crosswise linked. The French term for this technique is called »pise de terre«. The traditional methods of this technique are still used in many developing countries, while in developed countries machinery has substituted physically demanding manual labor. Compared to “Nasslehmverfahren” procedurerammed earth dries faster and produces relatively high firmness. The advantages compared to using adobes lies in the monolith composition of the walls which contributes to a longer lifespan.

Traditional paneling uses wooden boards held together by bonds. This construction method leaves behind traces or even openings, which usually need to be properly clogged up. To avoid such drawbacks paneling techniques where no bonds are used have been developed. A special kind of paneling can be used to construct corners. The ordinary 19mm thick wooden boards (50cm x 150cm) used in paneling need to be supported every 75 cm, otherwise they bend because of the pressure when pounding clay into the mold. It is recommended to use thicker boards (30mm-40mm) in order to avoid using supporting mechanisms.

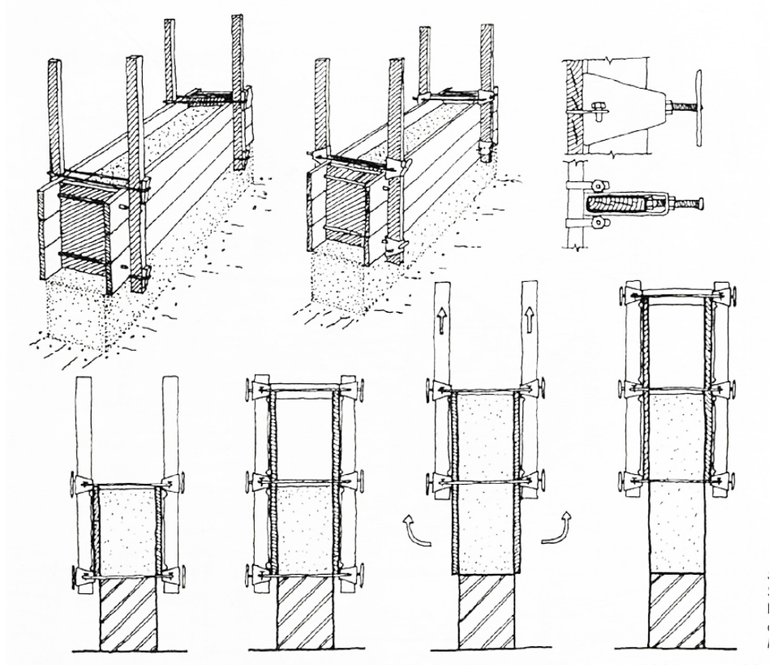
Rammed earth walls are made in a moist state and, according to traditional practices, in layers which are 50-80 cm high. Then the paneling is horizontally moved forward. As one layer is finished the next is built on top of it. During construction the walls need to be reinforced to support its own weight and the excessive capillary rise of water. As the paneling is removed the clay already retains its firmness. Rammed earth wall does not require a lot of material expenses to finish the outer layer; a smooth surface is achieved just by wiping the wall with a wet towel or sponge.



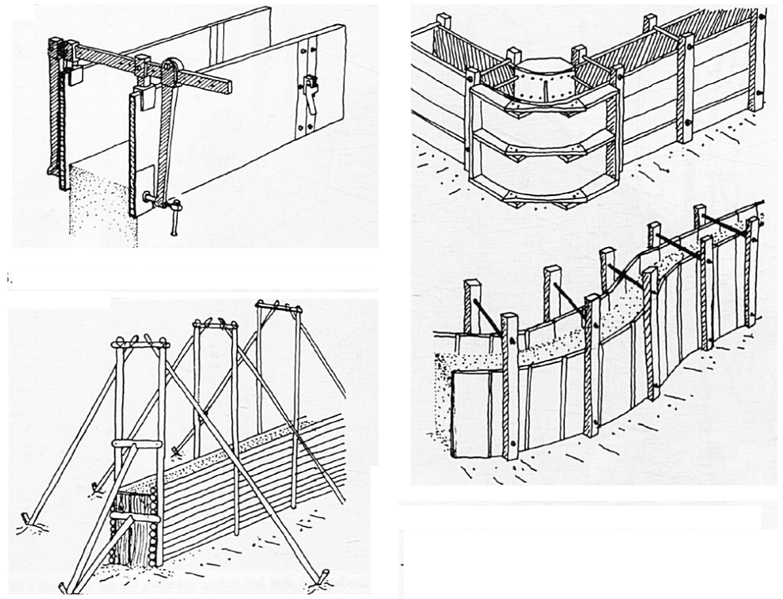
stamping tools and devices (Minke, Lehmbau-handbuch, 1994, page 101



Rammed earth formwork with crossbars (Minke, Lehmbau-handbuch, 1994, page 97)



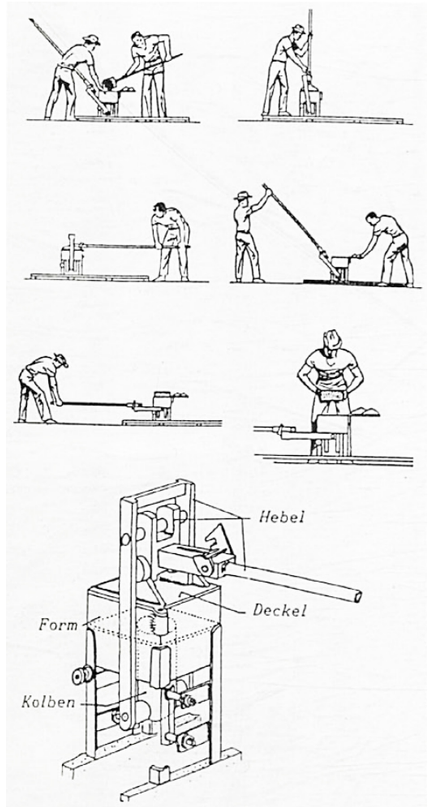
“climbing formwork “(Minke, Lehmbau-handbuch, 1994, page 98)



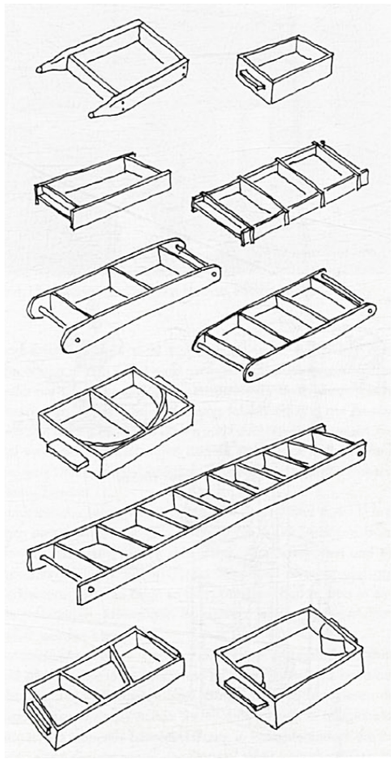
Formwork for rounded and curved walls (Minke, Lehmbau-handbuch, 1994, page 99)

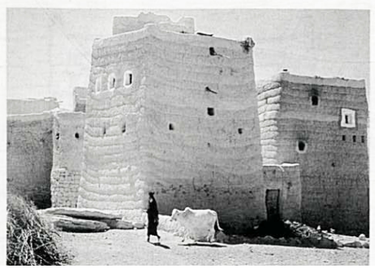
Adobes

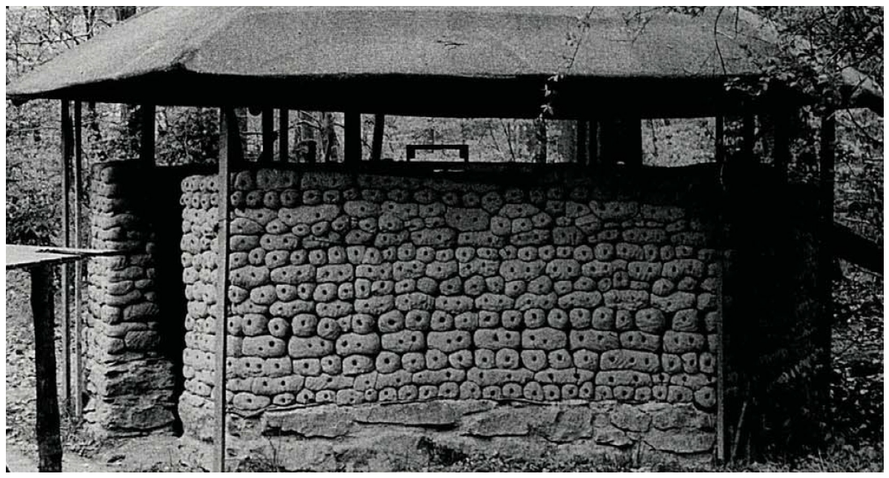
Adobes are sun-dried earth bricks. They are usually fashioned by hand; properly prepared clay is put into models made of wood (or later, metal). Excess clay, sticking out of the paneling is removed by hand, a piece of wood or wiring. The more compactly the clay is stuffed into molds, the more compact and firm the brick will be. The first clay bricks press was developed by the French architect Francois Cointeraux in 1789. Later many more systems for manufacturing clay bricks have been developed. The approximate composition of hand-made and very sandy clay bricks is the following: 14% clay, 22% silt, 62% sand and 2% gravel. This kind of brick has enough rough, sandy particles and clay for sufficient porosity and firmness. Processing dried clay bricks is easier and faster than processing fired clay. Usually an ordinary wood saw is sufficient for shaping such bricks; a few centimeter deep cut into the brick is enough, as the remainder can then easily be broken away with a hammer. If plaster is applied to such walls caution has to be exercised, as clay plaster quickly dries up adobes. To avoid this rough sand is added to the plaster which reduces contraction and cracking, typical of fast drying. If adobes are used for floors they are better than rammed earth floor in that they do not take as long to dry and can be used sooner.



Hand lever press and molds for manufacturing (Minke, Lehmbau-handbuch, 1994, page 119)



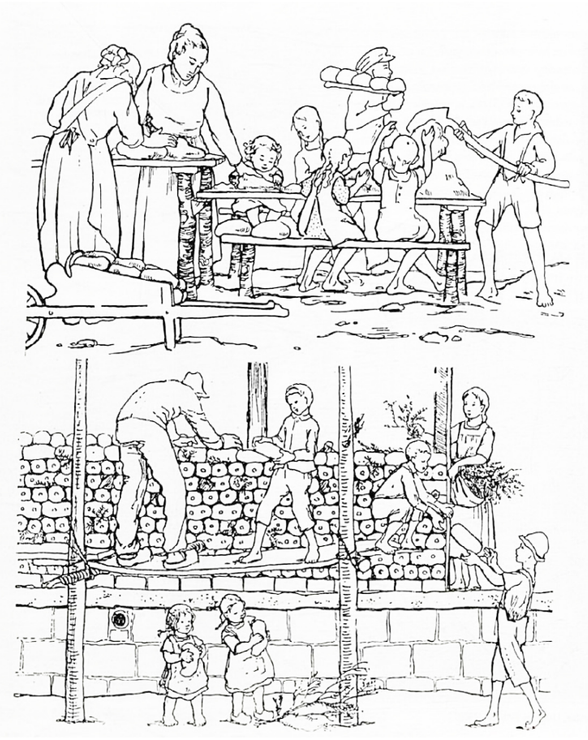




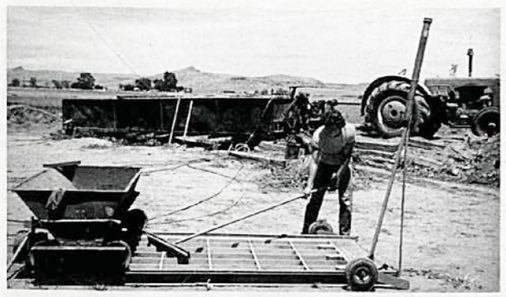
Unplastered wall of a sheepfold (Minke, Lehmbau-handbuch, 1994, page: 145)

Basic clay building techniques

No other building material has the same property as clay in becoming plastic and easy to form when water is applied. This makes clay a starting-point of creative use. Hand-made walls are still present in Africa and Asia, and they are also known in Europe and America. This represents the most basic of building techniques using clay. No machinery is needed; clay can be kneaded by feet and clumps can be kneaded by hand. There are also no parallel procedures like shifting the paneling with building using rammed earth. As the layers of clay dry relatively quickly on direct sunlight the building of such walls can be done continuously layer by layer. Even a dome can be built in this fashion, without any paneling or support.



"clay bread" tway of construction (Minke, Lehmbau-handbuch, 1994, page: 144)



adobe-production and air drying (Minke, Lehmbau-handbuch, 1994, page: 122)

Clay as filler in skeletal construction

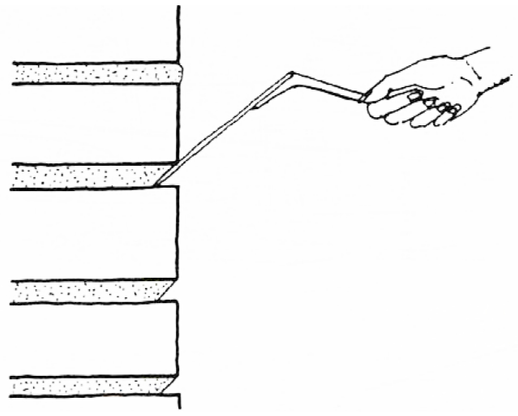
Clay was often used to fill the cracks and openings in walls made of horizontally or vertically places wooden logs, poles, sticks and twigs. This method of construction was popular throughout the tropical and subtropical areas. This method of construction is said to even predate rammed earth and clay brick usage. Traditionally all the horizontal elements are supporting elements, but usually we come across pillars positioned between 1 and 3,5 meters apart which act as supporting elements for the roof or the walls. These pillars are intertwined with wooden profiles shaped like a net (less than 10x10 cm). Such a construction is then plastered on both sides with clay. The wooden skeletal frame functions as the load-bearing element while the clay,

traditional wall construction (Minke, Lehmbau-handbuch, 1994, page: 158)

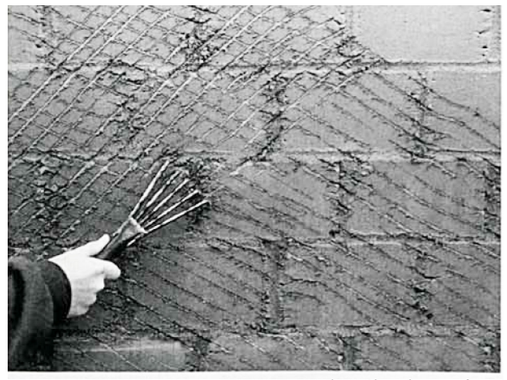
historic straw clay infilling (Minke, Lehmbau-handbuch, 1994, page: 158)

Clay plaster

Clay plaster is mostly made up of sand and silt and contains only enough clay for binding purposes. This is achieved with as little as 5% clay in the mixture. If the ratio of clay exceeds 12% this usually results in unwanted cracks due to contraction at drying. The ideal mixture is hard to define, as there are a number of critical factors, including the type of clay, moisture content and others. The most demanding method is applying experimental layers on the wall. When preparing clay plaster it is important that the mixture contains enough larger sand particles. The mixture must also contain human or animal hair, coconut fibers or chopped straw. The plaster has to be applied in an equally thick layer and with enough pressure for it to stick to the base. The coating on the clay plaster has to be regularly maintained if subjected to weather effect, as the wind, frost and other factors negatively affect its mechanical properties. The outer coatings have to be waterproof and porous, so that the moisture can pass through.



cutting out the horizontal joints
(Minke, Lehmbau-handbuch, 1994, page: 185)



roughen the clay surfaces
(Minke, Lehmbau-handbuch, 1994, page: 186)

tools for roughen the clay surfaces
(Minke, Lehmbau-handbuch, 1994, page: 185)

“Clay-Throwing” plaster (Minke, Lehmbau-handbuch, 1994, page: 191)

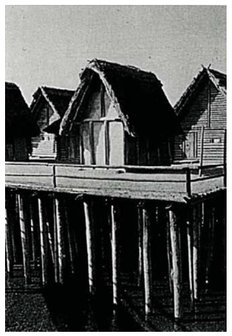
Wood constructions

We differentiate between 3 types of construction techniques using wood when it comes to the method of construction (as well as depending on size, volume, dimensions, weight,…)

- Massive constructions as with making walls of a cottage with logs
- Advanced techniques using balloon and platform framing
- Skeletal constructions differ depending on the type and placement of pillars and load-bearing elements

Building with logs

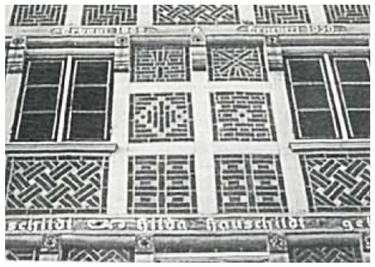
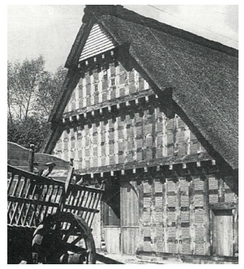
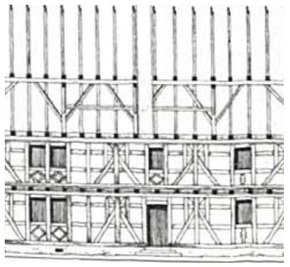
This is considered to be the most basic method of building with wood, especially with provincial structures, barns and simple outbuildings. It is a financially accessible construction with great overall contribution. The construction is simple but proper control should be maintained none the less. This kind of construction can be seen as the beginning of



photos:
Prachtl, Holzbau-systeme, 1978

Prefabricated construction

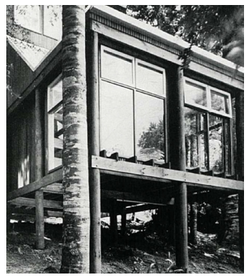
This system uses prefabricated wood elements like pillars and pylons. Joints also play an important role here.


The pylons

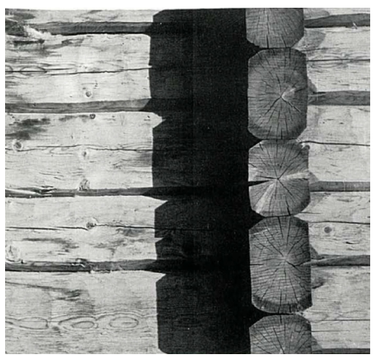
The pylons are made of parallel logs of the same width. This construction is typical for bogs and flood-prone land. Such constructions can last for over 100 years and are relatively inexpensive to erect.

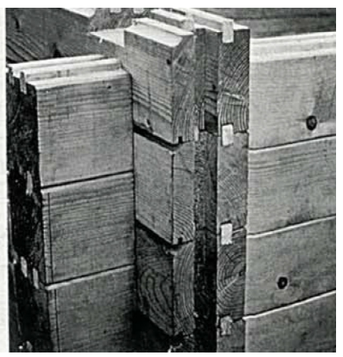





Building with wood and clay

This is one of the oldest methods of building with wood. With permanently populated buildings in our climate extra isolation is added to the wooden construction and the walls are usually coated from the inside.



Planing and design

Planning includes usage, design, construction and realization. These aspects then lead to a functionally, esthetically, technically and economically suitable construction. The planning starts with how the rooms are going to be used and how they will be shaped. Then the materials are chosen and the construction is planned out. Everything is based on the economical and reasonable judgment of the builder.

Riko Haus (www.riko-hise.si)

Guest House by Sweet Sparkman Architects
(http://www.ifitshipitshere.com)

Wood impregnation

Wood needs to be properly protected when used in construction. This includes technical protection as well as chemical. There are different methods of coating: spraying, smearing, submerging and impregnation. Fungicides and pesticides have to be checked for this purpose.

Protection from moisture

Moisture can seriously harm wooden structures; it creates conditions under which harmful organisms grow and can also diminish the effectiveness of isolation which results in higher heating expenses. With improperly constructed buildings moisture will condense as it crosses from warm to cold atmosphere, resulting in condensation and the occurrence of aforementioned problems.

Protection from fire

Wood belongs to normally flammable materila. In case of fire the heat does not cause notable deformations and the slow rate of burning caused by the layer formed layer charcoal prevent a suddent collapse of wooden constructions.

The state of open-air museums in neighbouring countries

In order to compare the current situation of open-air museum in the neighboring countries I have compiled a short analysis, which sheds light on the relation of individual nations to this specific cultural heritage. Selection of the museums is based in the work of Adelhart Zippelius - “Handbuch der europäischen Freilichtmuseen”. The work contains a comprehensive overview of the sutiation in the field of open-air museums in Europe. I update the content according to data from official websites of museums.

Austria

	OPPENING:	TOTAL AREA:	NUMMBER OF BUILDINGS:	OPERATOR:
ASPARN AN DER ZAYA	1970	1,8 ha	11	The Museum of Prehistory Lower Austria
BAD TATZMANNSDORF	1965	1,5 ha	19	Bundesdenkmalamt & Kurbad Tatzmannsdorf A.G.
GROSSGMAIN	1974	50 ha	100	Salzburger Museum Carolino Augusteum
MONDSEER – RAUCHHAUS	1960	2 ha	5	Heimatbund “Mondseer Rauchhaus”
ANZENAUMÜHLE BAD GOISERN	1968	0,02 ha	1	Association of Upper Austrian open-air museums
MITTERMAYERHOF IN PELMBERG	1970	0,1 ha	2	Association of Upper Austrian open-air museums
MARIA SAAL	1952	4 ha	38	Freunde des Kärtner Freilichtmuseum in Maria Saal
STUBING	1970	45 ha	97	Association Austrian Open Air Museum

Hungary

	OPPENING:	TOTAL AREA:	NUMMBER OF BUILDINGS:	OPERATOR:
BALASSAGYARMAT	1934	0.5ha	6	Balassagyarmati Nagy Iván Múzeum - Palóc Múzeum
BUGAC	1975	230 ha	14	State Tourist Office
NYIREGYHAZA	1970	4 ha	69	Sóstói Dorfmuseum
SZENTENDRE	1967	47 ha	310	Department of Ethnographic Museum Budapest
SZOMBATHELY	1973	6 ha	59	Vasi Skanzen
VESZPREM	1959	0,04 ha	4	Ethnographic Open Air Division: Areul Vajkai
ZALAEGERSZEG	1968	4,5ha	15	Göcsej Dorfmuseum (Göcseji Falumúzeum)

Slovenia

	OPPENING:	TOTAL AREA:	NUMMBER OF BUILDINGS:	OPERATOR:
ROGATEC	1981	0,5 ha	10	Institute for protection of natural and cultural heritage of Celje
PLETERJE	1988	0,1 ha	7	Institute of Culture and Tourism “Historium”
LAND OF HAYRACKS	2013	2,5 ha	19	Dežela kozolcev Šentrupert, d.o.o.
OPEN AIR MUSEUM FILOVCI	2005	0,3 ha	5	Zavod loncarska vas Filovci

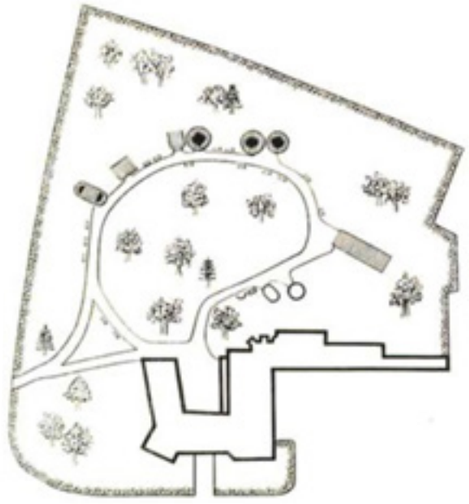
Austria

In the 1950's the interest in this kind of museum science started to grow. In 1959 R.Wildhaber mentioned only the small Carinthia open-air museum (KärntnerFreilichtmuseum am Kreuzbergl), while today there are at least 6 open-air museums and more are to be constructed. It began in Upper Austria (Oberösterreich) with the open-air museum MondseerRauchhaus (FreilichtmuseumMondseerRauchhaus), which is now connected with farmhouse museums and farms in Upper Styria (1968 "FreilichtmuseumAnzenauerMühle", 1970 "FreilichtmuseumMittermayerhof in Pelmberg"). Together they form condensed points of the so-calledUpper Austrian open-air museums.
This trend was then continued in Carinthia (Kärnten) where in 1952 the Carinthia open-air museum was established (KärntnerFreilichtmuseum) on the farm bought in 1936. In Stübingbei Graz the Austrian open-air museum has been founded in 1962. It is considered as the central open-air museum of the entire Austria and has been open to the public since 1970. Other Austrian states have since followed suit and founded regional open-air museums. One was opened in 1965 in Bad Tatzmannsdorf in Burgendland, another in 1973 in Großgmainin Salzburg. There are plans to open two more open-air museums in Vorarlberg and Tirol as well.

Asparn an der Zaya (Lower Austria):

The museum of ancient history was founded in 1963 in the castle of Asparn an der Zaya. It is located in the 1.8 hectares large castle courtyard and contains 11 reconstructions of prehistoric buildings, from the ancient Stone Age to the younger Copper Age. The reconstructions were carried out under scientific supervision and adhered to the findings of relevant diggings. The museum exhibits residential and farm buildings, clay and wood houses joined into villages together with agricultural and garden areas.
Official title: Museum für Urgeschichte des Landes Niederösterreich mit urgeschichtlichen Freillichtsmuseum in Asparn a.d. Zaya

Address: 2151 Asparn a.d. Zaya, Niederösterreich



Bad Tatzmannsdorf (Burgenland)

The museum was built in 1965 even though research in this field was not yet able to explain everything. Its construction was initiated by the Austrian Federal Monuments Office (Bundesdenkmalamt) and Kurbad-Tatzmannsdorf AG. The museum is comprised of buildings whose future was uncertain due to economic reasons and were relocated to the open-air museum to be preserved for future generations. These include residential buildings and outbuildings from the late 18th century to the early 20thcentury. Thematically the museum is linked to the state Burgenland and is comprised of 14 agricultural facilities, one of them being a bell tower. New buildings in the vicinity are preventing the museum to expand.

Official title: Burgenländisches Freilichtmuseum
Address: 7431 Bad Tazmannsdrof, Burgenland

Grossgmain (Salzburg)

The museum was built in 1974. The founder was the city and state Salzburg as part of the organizationSalzuburg Museum Carolino-Augusteum (Sulzburger Museum CarolinoAugusteum). The museum expands on 45 hectares and includes about 100 examples of agricultural architecture and other genuine historic buildings, which have been relocated to the museum.

Official title: Salzburger Freilichtmuseum
Address: 5010 Salzburg, Museumplatz 6

Linz (Upper Austria)

State Upper Austria contains one central open-air museum and consists of both relocated structures as well as existing ones and a few dislocated units:

1. Open-air museum Mondseer – Rauchhaus

The museum was founded in 1949 and the official opening took place in 1960. It stretches on 2 hectares of land and is made up off a farmhouse with a typical Mondseeland shape. The building was originally located about 2 kilometers southeast from the current location, where it was relocated to in 1959 because of the highway construction. The building combines residential areas, stables and a barn all under one roof and by type falls under “Salzburgisch-bayrischenEinhauses”.

Address: Mondsee, Bez. Vöcklabruck, Oberösterreich

2. Open-air museum Anzenaumühle Bad Goisern

The museum opened its doors for the public in 1968 and contains a residential building accopanied by a mill and a bakery. In the beginning of the 18th century a sawmilland a stamp millwere added. The building was entered into the land register as “Mill-Saag”in the beginning and later on as a Residential building with a mill(„WohnhausmiteinerMühle”). It is the oldest building in Traunkirchen, its first mention dates back to 1325.

Address: 4822 Bad Goisern 294, Bez. Gmunden, Oberösterreich

3. Open-air museum in Mittermayerhof in Pelmberg

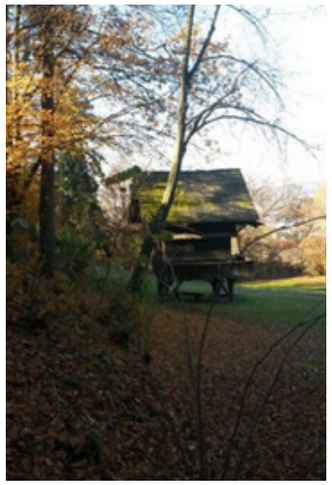
The estate was bought and repurposed as a museum in 1965 and was officially opened for the public in 1970. The museum consists of a homestead with a mill, which operated until 1953. The facilities were well preserved and thus it was reasonable to preserve it as an open-air museum and give the visitors a view of the preindustrial times. The museum holds an authentic country saloon and a number of agricultural tools and equipment. The building is known for its large, 35.000 kg straw roof and a secret evacuation tunnel.
Address: 4202 Hellmonsödt, Bez. Urfahr, Oberösterreich

Six additional dislocated units are planned for construction in: Braunau, Ried, Vöcklabruck, Windischgarsten, Rohrbach and Freistadt. The administrative center of Upper Carniola open-air museums is located in Linz (Museumstrasse 14).

Maria Saal (Carniola)

This museum is considered to be the first such museum in Austria. It was founded at a different location than “KärntnerFreilichtsmuseum am Kreuzberglbei Klagenfurt” in 1952. Its beginnings span into the 1930s with aspirations of dr. Oswin Moro and Ferdinand Rauegger who bought the Bodnerhaus in St. Oswald in 1936. In 1960 the museum was expanded to a 4 hectares large estate and the Maria Sall in the eastern part of the museum. The construction was carried out under the watchful eye of prof. Oskar Moser. State Carniola is the main area of influence. The museum estate is divided into 4 terraces of different heights, enabling a natural expansion of the museum. It features farmhouses and farms from different regions of Carniola and consists of 38 buildings.

Address: 9063 Maria Sall, Kärnten



Stubing (Styria)

The museum was officially opened in 1970 as the central open-air museum of the entire Austria. The founder is the association Austria's open-air museum (ÖsterreichischesFreilichtmuseum). The estate is 45 hectares large and contains a natural water source. The heavily varied terrain allows for a genuine depiction of folk architecture of separate building groups. The museums spans in the direction of east-west, starting in Burgenland in the east and continuing into Vorlaberg in the west of the estate. As the museum was beingconstructed special attention was laid on the landscape design and the design of gardens around the buildings. With careful positioning of meadows, pastures, fields and so on a specific characteristic of different fields of influence was achieved. Spaces for events and lectures are located in the newer building. The museum also has a restaurant.

Address: 8114 Stübingbei Graz

Today the museum is considered to be one of the largest and most important open-air museums in Europe. It holds 97 structures of historic value, their foundation date ranging across 6 centuries.

HUNGARY

Already in 1885 as part of an exhibition of the countryside 15 farmhouse living rooms were shown. A few years later, in 1896, a whole village was built in Budapest featuring 24 typical Hungarian folk buildings with accompanying facilities from different regions of the country. Even though it was termed by the project initiator as the first true open-air museum and though it complied with all the known museum standards and regulations of that time the ethnographic village was removed once the exhibition of provincial architecture ended. Only after three decades have passed was there a resurgence of open-air museum activity in Hungary, as a small open-air museum was built inBalassagyarmat. It took another three decades for the trend of building such museums in Hungary took root; in 1966 an open-air museum was founded in Zalaegerszeg, in 1967 in Szentendre, Szombathely and Bugac, and another one in 1970 in Nyiregyhaza. The museum in Szentendre became the largest of its kind in Hungary, while the ones in Szombathely, Zalaegerszeg and Nyiregyhaza are considered to be regional open-air museums. The museum in Bugac is a shepherd museum and a Hungarian peculiarity. The museum in Vesprem also deviates from the aforementioned examples in that it consists of four monumental buildings which are still mostly stand on their original locations.

Balassagyarmat (Nograd County)

In the years 1932-1934 under the leadership of dr. Bela Soldos a regional museum on a 0.5 hectares large estate was erected. It featured six representative rural structures inspired by the village Karancskeszi, Bocsar-Lapujtö and Patvarc. A realatively small open-air museum is integrated into the museum Paloc. The area of influence of the latter is Nograd County.

Address: Balassgyarmat, Paloc liget 1

Bugac (Bacs – Kiskun County)

This museum is unique from the others in that it is specialized on presenting the shepherd traditions and culture. It carries an important ecological role as its estate spreads on 230 hectares large land in a protected park. The structure within are mostly shepherd facilities, but the technical characteristics of impermanent materials bring them closer to reconstructions. The museum features 14 shepherd structures, as well as a restaurant "Bugaci Csarda".

http://puszta.com
Address: Bugac

Nyiregyhaza (Szabolcs – Szatmar County)

The museum was founded in 1970 in Sostonear Nyiregyhaza and is a department of the JosaAndras museum. The Szabolcs – Szatmar County is its area of influence. It spans on a 4 hectares large estate. The structures held within are divided into 7 different divisions: Nyirgegend, Tirpak-Gehöft, Szatmargegend, Retköz, Mezöseg, BeregtTiszahat and a town center with a church, a bell tower and a craftsman street. The museum consists of 58 agricultural, 1 bourgeois, 5 feudal, 3 religious and 2 technical structures.

Address: Nyiregyhaza, Egyhaz u. 15, JosaAndras Museum

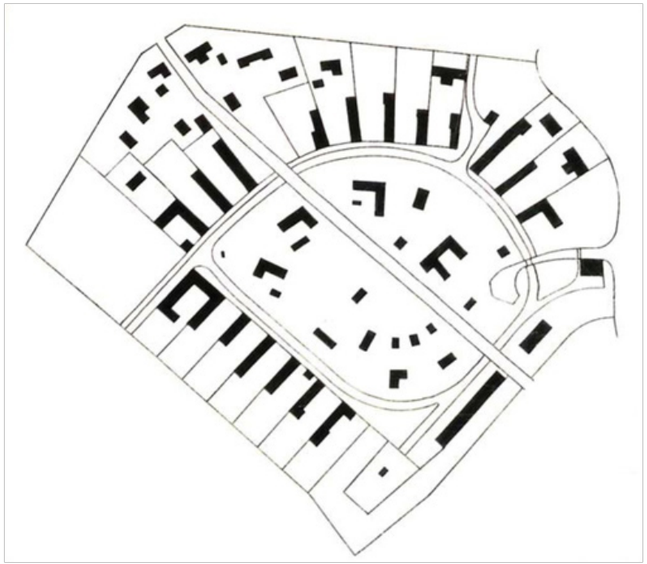
Szentendre (Pest County)

The museum founded in 1967 was planned as the main Hungarian open-air museum. At first it was a part of the ethnographic museum in Budapest, but has become autonomous in 1972. It is located on a 47 hectares large estate and on its premises there are 310 relocated monumental structures. They are divided into 10 regional groups: 1. Northern hilly region, 2. Viticulture and monocultures, 3. Upper Theiss region (Szatmar County), 4. Middle Theiss region, 5.Southern Theiss region, 6.Danube-Theiss region, 7.Southern Transdanubia, 8.Middle Transdanubia, 9.Eastern Transdanubia, 10.Small plain. Individual building groups such as vine cellars, mills, shepherd's cottages, religious structures, bridges and so on are arranged according to local needs.

Address: H 2000 Szentendre, Szabadsagforras (Postafiok 125)

Szombathely (Vas County)

The museum is part of the ethnographic department of the museum Savaria in Szombathely. It was founded in 1967 and opened in 1973. Vas County is its area of influence. The estate of the museum spans on 6 hectares, where there are 59 relocated structures. Building plan shows a circular design plan and includes the exhibition structures.



Veszprem (Veszprem County)

This museum consists not only of a central location, but the distant locations- which are not part of the immediate museum premises - also form its content. Its beginning can be traced back to 1935, when in Tihany a village was built, modeled after the village Öcs. This structure is the only one that is not an original monument. The idea of a local open-air museum with an accompanying dislocated unit in Vesprem sprung up in the early 60s and in 1959 the estate in Nagyvazsony was bought for the purpose of setting up a museum. Soon after the fourth dislocated unit of the museum was built – Bakonybel.

Address: Vesprem. Lenin liget No. 5

Zalaegerszeg (Zala County)

The Zala County's museum is under the jurisdiction of ethnographic department of museum Göcsej. In 1968 a 4.5 hectares large open-air museum was opened at a cut-off meander of river Zala. On one bank four homesteads are positioned, on the other bank - two. The museum also includes 7 vine cellars. One can also visit an open-air museum of oil industry. The museum also holds 3 religious structures and 1 technical structure.

Address: Zalaegerszeg, Batthyany u. 2

Besides the aforementioned museums, there are a few smaller open-air museums to be found in Hungary:

Szalafö	http://www.museum.hu/muzeum/670/orsegi_Nepi_Muemlekegyuttes_-_Szalafo-Pityerszer/info
Papa	http://www.alamy.com/stock-photo-papa-hungary-esterhazy-palace-in-kastely-park-1784-now-a-museum-8988213.html
Sellye	http://www.museum.hu/muzeum/174/Kiss_Geza_Ormansagi_Muzeum_es_Skanzen
Kiskunfelegyhaza	http://www.museum.hu/muzeum/126/Kiskun_Muzeum
Dunapataj	http://www.dunapataj.hu
Hollokö	http://www.holloko.hu/hu/info/latnivalok-szolgaltatasok/muzeumok/falumuzeum.html
Verpelet	Verpelét, Kossuth Lajos út 54., 3351 Hungary
Mezökövesd	http://www.mezokovesd.hu/index.php?action=showmenu&id=3
Tiszacsege	4066 Tiszacsege, Rákóczi utca 38, Hungary

SLOVENIA

Rogatec

The initiative to arrange an open-air museum Rogatec was put forward by the eponymous group with technical help from the Institute for the Protection of Natural and Cultural Heritage of Slovenia in Celje in 1981. First the homestead of the poet JožeŠmit was relocated – a wooden residential building from the beginning of the 19th century. At the same time they relocated the surrounding agricultural facilities and soonafter a double hayrack from Croatia. Once the relocations were finished an administrative office was built, a beehive, a pigsty and the latrines were erected and a vegetable garden, an orchard and a vineyard were arranged. In the second phase a replicate of a vine cellar was built based on the pictures of the original vine cellar in Dobrina. A smithy was also set up, based on the Mordej smithy in Dobovec.
The open-air museum Rogatec is the largest of its kind in Slovenia and its role is to preserve the architectural heritage of Slovenia between 18th-20th centuries. In 1997 the museum was nominated for the title European museum of the year.

http://www.rogatec.si/muzej-na-prostem-rogatec

Pleterje

At the end of the 1980s three wooden structures were relocated on behest of Carthusian monastery Pleterje: Keglič homestead in Ostrog, a residential building in Mihovo and a double hayrack. In the museum one can also find an agricultural facility, a pigsty, a field latrine, a drying room for fruit and flax and a well. There is also an herb and vegetable garden set up, where visitors can learn about herbalism.

http://www.skansen.si

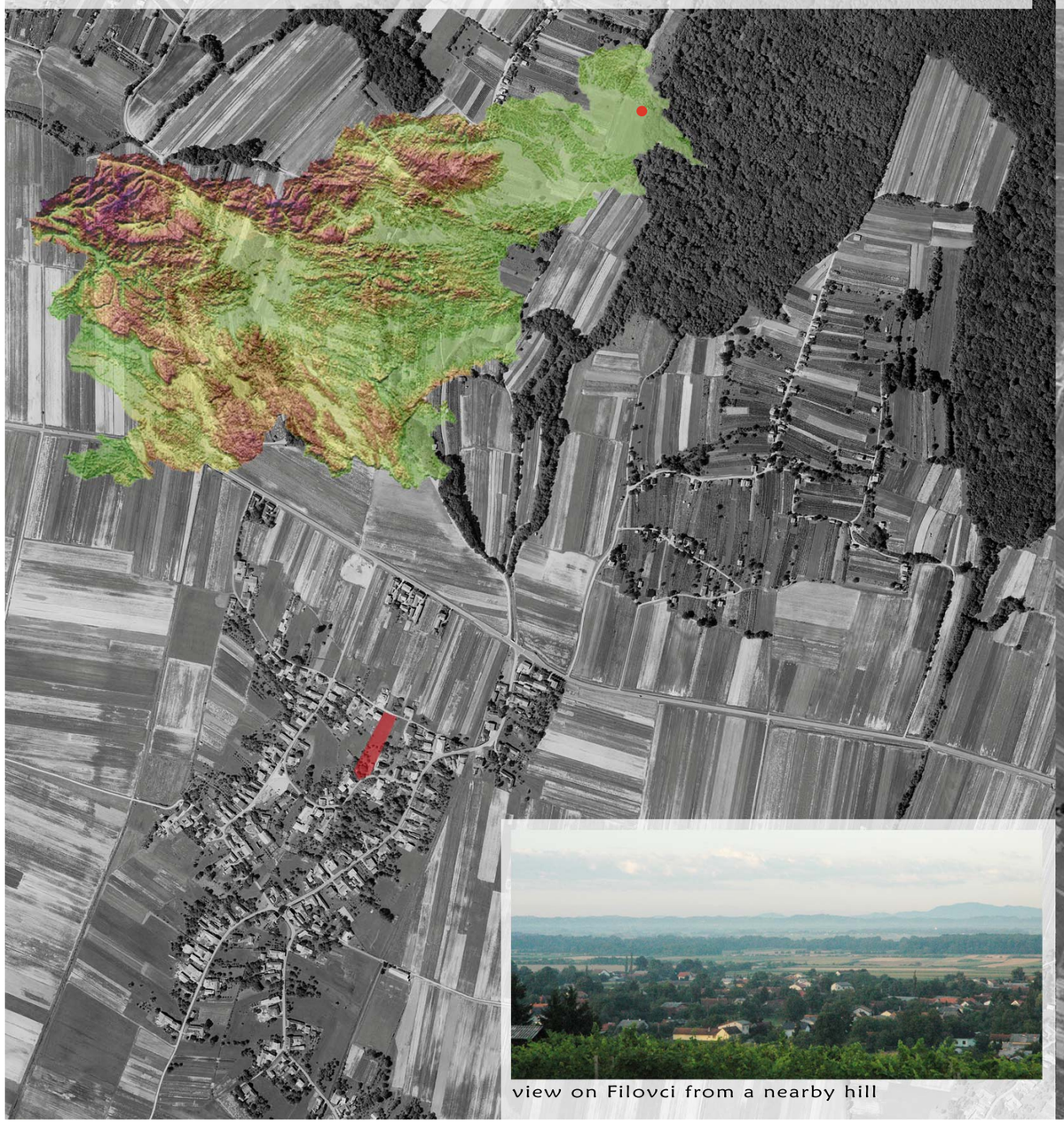
Land of Hayracks

Land of Hayracks is an open-air museum specialized in hayracks. These are presented in a chronological and spatial order on a 2.5 hectares large estate. The oldest hayrack dates back to 1795 and is known under the name “Lukatovtoplar”. In Slovenia hayracks have developed into different styles; 3 single hayracks (a simple single hayrack, a single cloaked hayrack, a single stretched hayrack) and 3 double hayracks (a low double hayrack, a double “goat” hayrack, a double linked hayrack – “toplar”).

http://www.dezelakozolcev.si

ABOUT FILOVCI

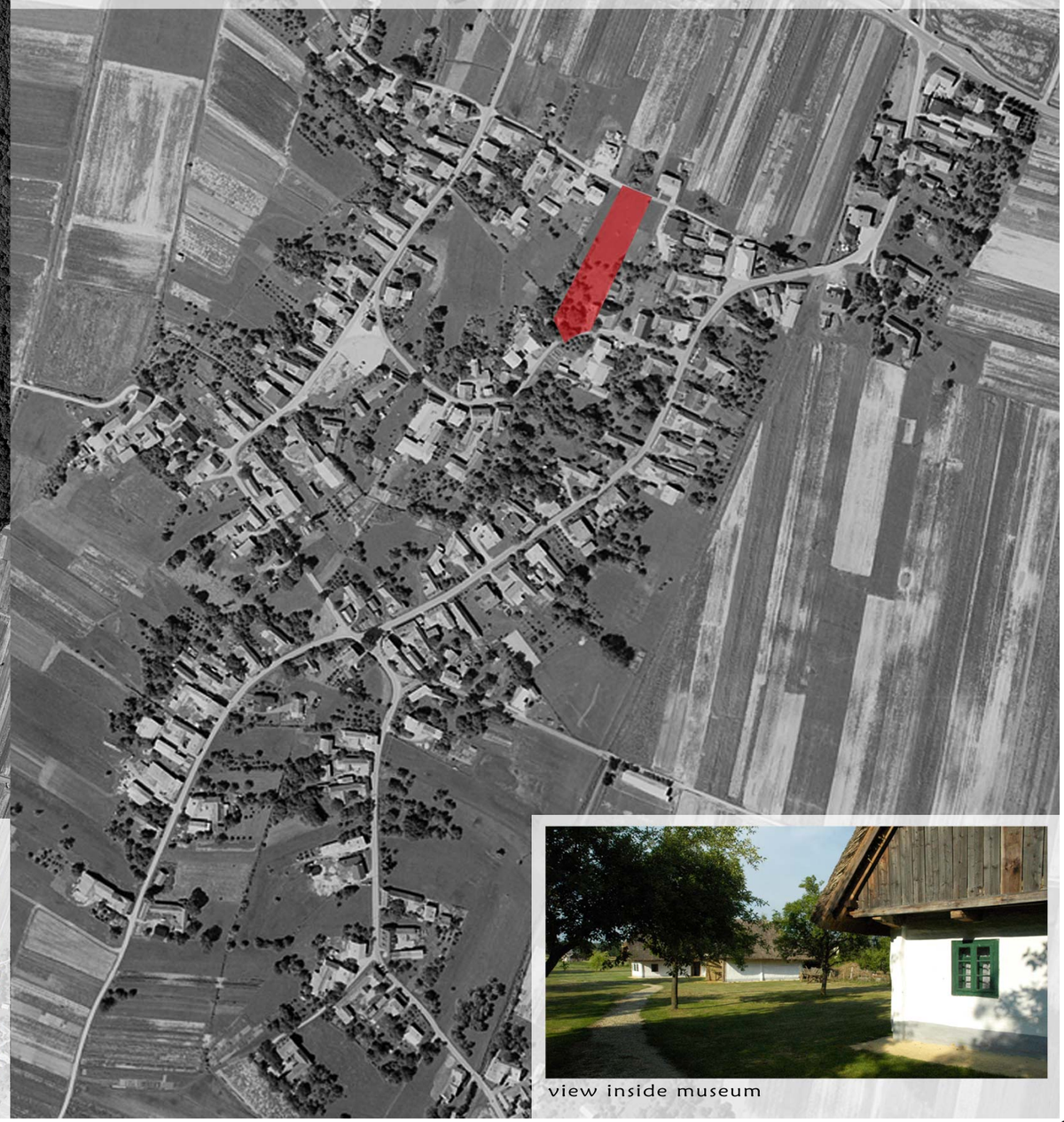
The entire Prekmurje region is known for quality pottery, but the finest goods come from Filovci. A specialty of Prekmurje pottery is black ceramics which uses a special firing method and no glazing. A special semi-globe shaped oven with seven to eight chimneys is required for this firing method. Today, black ceramics are only produced in Filovci. The spindles now run on electricity, but the masters of Filovci still produce excellent items that are not only functional, but also decorative



view on Filovci from a nearby hill

OPEN AIR MUSEUM FILOVCI

Museum combines cultural monuments of folk architecture and maintains and develops pottery workshop in Filovci. Old houses, so called black kitchen, black pottery, old rounded stove, workshop and permanent exhibitions take visitors to the characteristics of the landscape and present typical crafts for this part of the region.

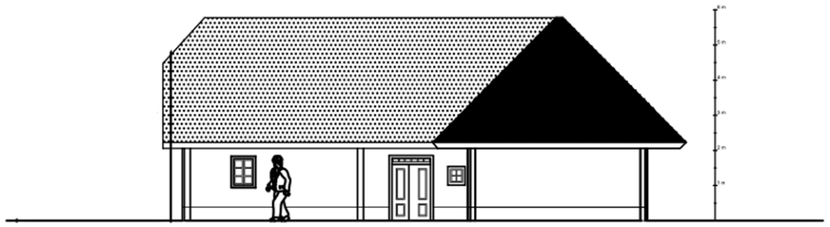


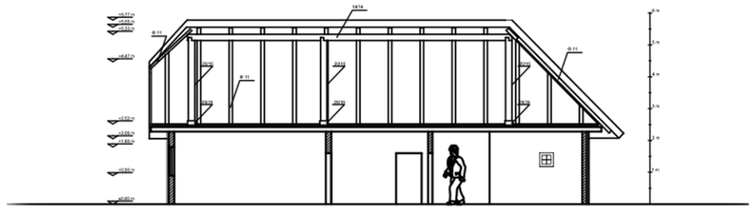
view inside museum

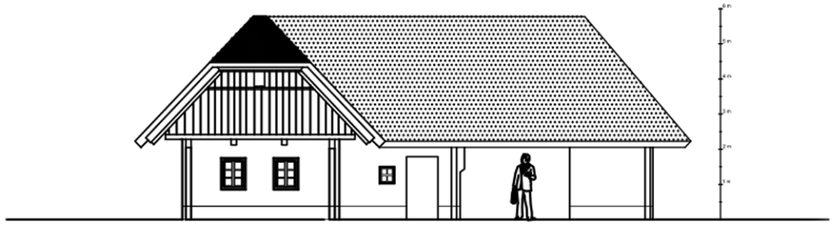
examples of dilapidated houses from Filovci (facilities are demolished)

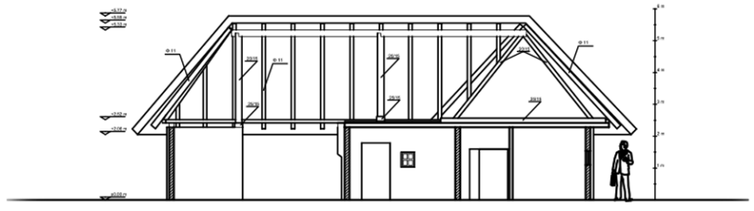
THE MISSION OF OPEN AIR MUSEUM FILOVCI

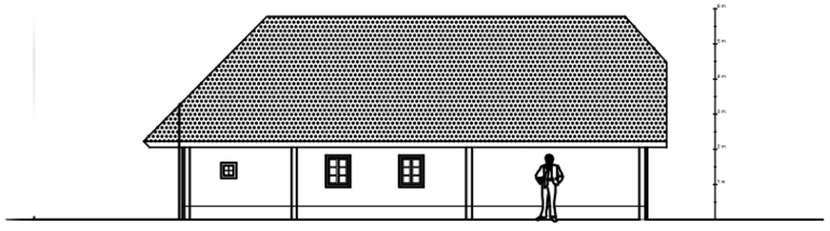
Mission of the museum is to take care of the remains of the Pannonian architecture, which are under monument protection. Unfortunately, many good examples are demolished or in critical condition so the relocation is no longer possible. With careful transfer to a new location facilities maintain their status as a cultural monument and thus their value is maintained. Connection to traditional crafts and tourist sector ensure economic stability and long-term vision.Relocation itself involves architectural measurements and use of documentation of Institute for Protection of Monuments facilities.

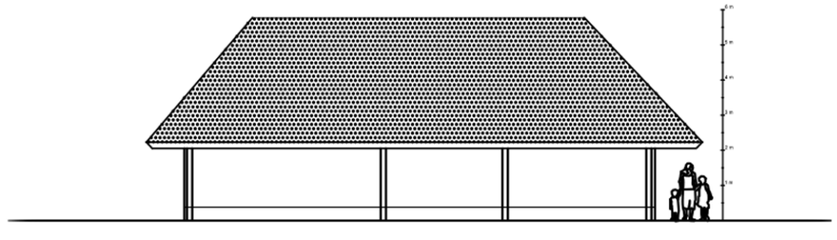


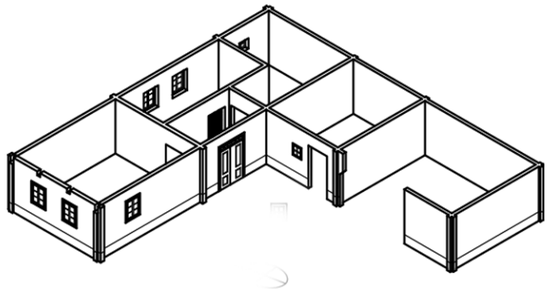


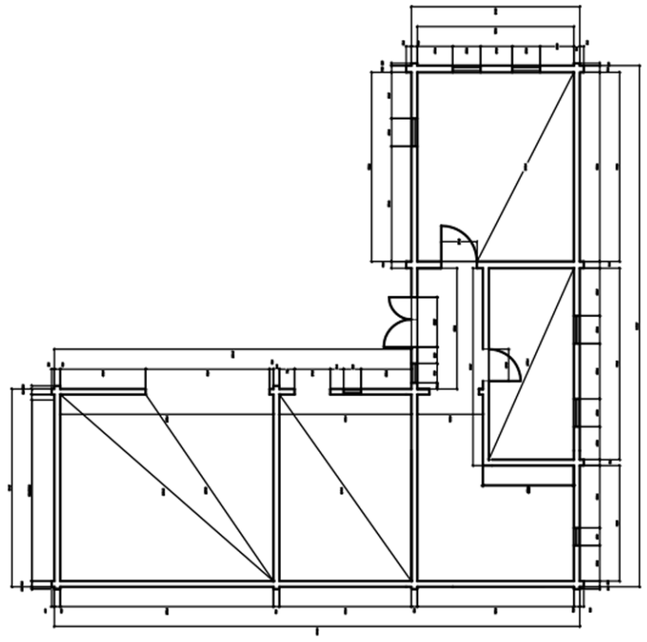






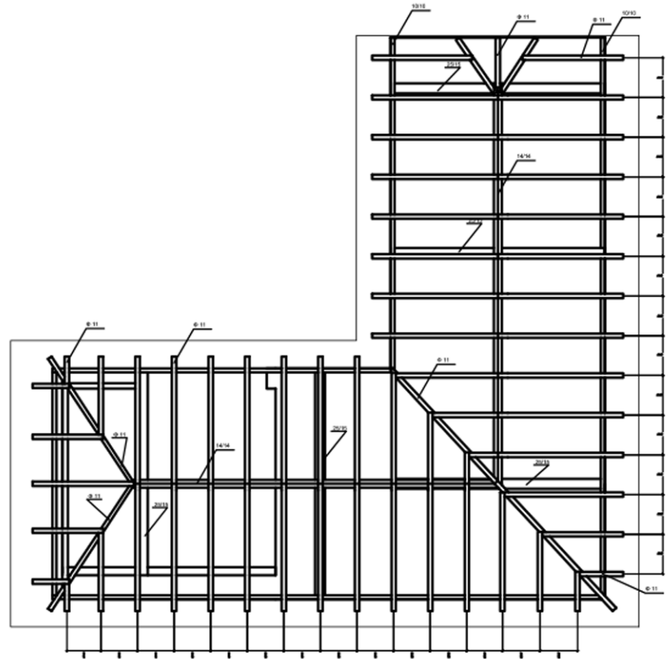






Transfer

Before cultural heritage is transferred, exact measurements need to be taken as well as all the components of the building need to be carefully tested. According to plans, the building is newly set up inside museum.



conservation status

The firstly transferred »cimprača« which encapsulates the village's rich pottery history and the recognizable »reduction stoneware«. The building enjoys the status of a cultural monument of the 1st category and represents one of the last examples of this autochthonous construction. The house is made of wood, which is plastered with clay. The flood is built from rammed earth, except in the main area which has wooden flooring. The house is covered by straw. A permanent exhibition of the village's pottery masters is displayed.

conservation status

The second »cimprača«, which was a century ago one of the biggest farmhouses in the village, has also been moved to the museum. It serves as a house of culinary art where traditional dishes are prepared in the black kitchen. The house is also built from wood, clay and straw. It is a cultural monument and is under the protection of the Cultural Heritage Protection Act. Together with the first »cimprača« it forms the core of the open-air museum in Filovci. From the viewpoint of the reconstruction and development of the museum, this »cimprača« will also not be changed.

need for renovation

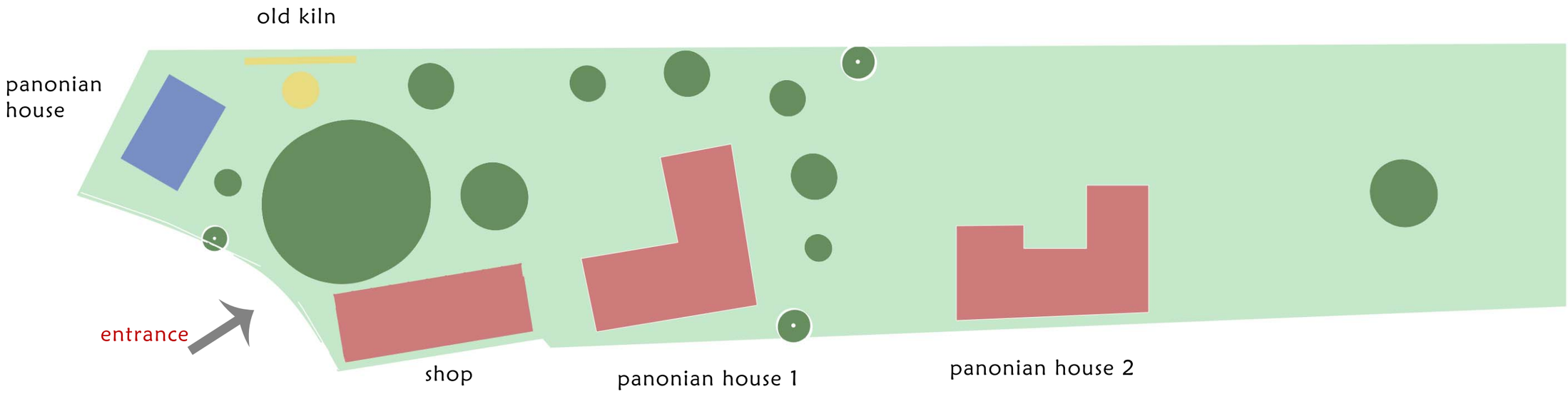
This is a bricked construction, a residential building which has previously existed at this location. The house is in a poor condition and will as such be renovated and adjusted to the current needs of the museum. After the renovation, the building will serve both as a pottery and ceramics shop and an information point of the museum. The attic will be renovated and intended for private use.

need for relocation

A wooden house, which already existed in the area of the museum, represents the modest life of the village. The two-space building is covered with a brick roof. In the process of renovation and development, the building will receive a new place in the museum, thereby rounding up the project as a whole. The building deserves special attention especially due to the method of its construction, which placed the wooden beams vertically instead of horizontally. The building is not protected as a cultural monument; however it is nevertheless assuming a greater role in representing Pannonian architecture.

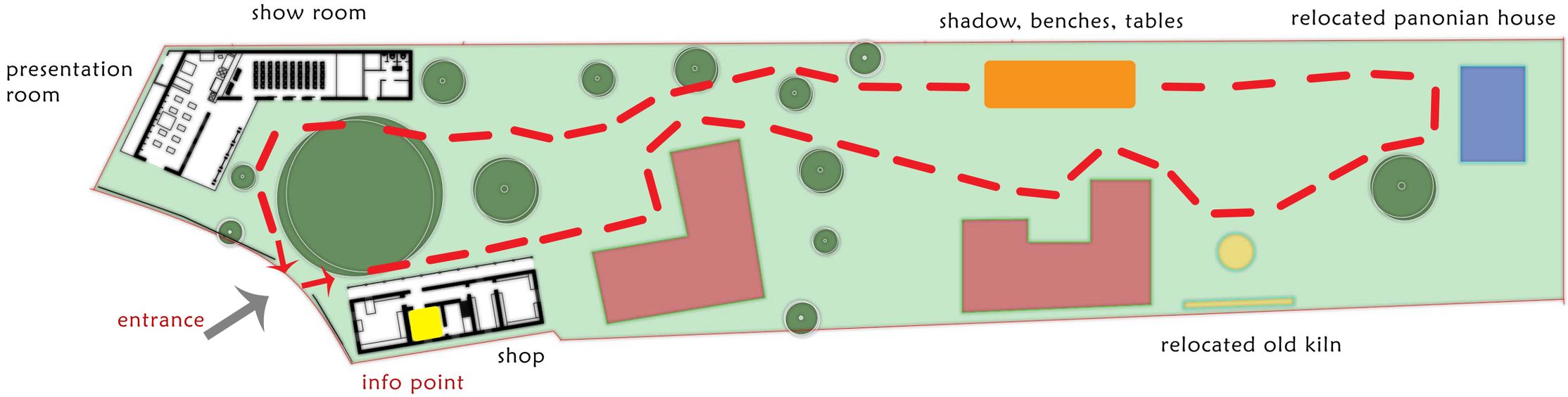
need for relocation

The industrial building, in which the old oven used for firing traditional black ceramics was placed at the time of the museum's opening, does not possess any special value and will therefore be demolished, while the oven will be moved to a new location inside the museum. The oven has an important task, being the only working oven of this type in the region.



BEFORE

AFTER

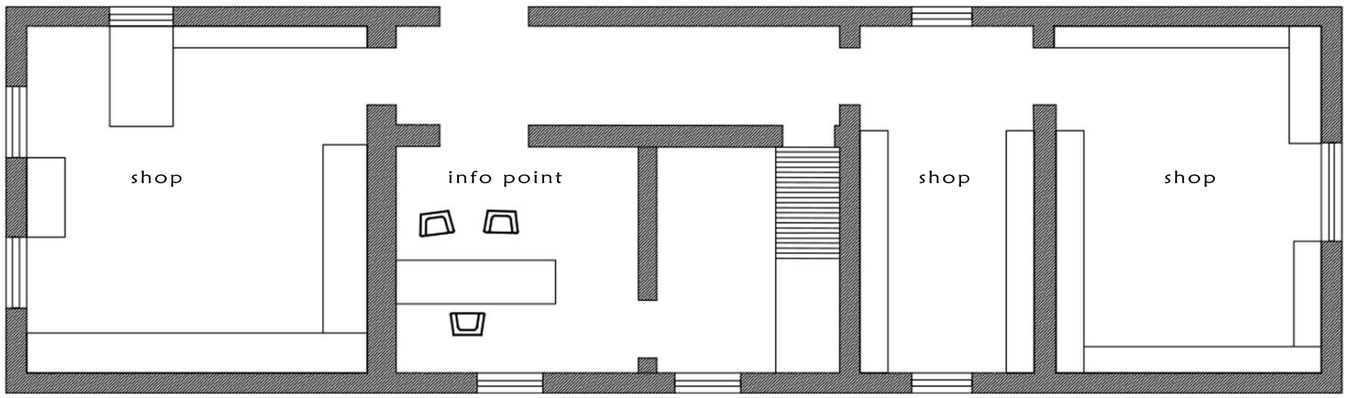


Upon entry to the museum, visitors receive all necessary information and purchase a ticket. Firstly they visit the two cultural monuments – autochthonous »cimprače«. Then they observe the pottery oven and the newly transferred wooden house. The resting space is intended for sitting down and tasting local culinary dishes, which is followed by a short video presentation of the pottery art and a visit of the pottery workshop with a presentation on the potter's wheel. Upon departure, visitors can also make a purchase of different ceramic products.

RESTORATION / SHOP & INFO POINT

1:100

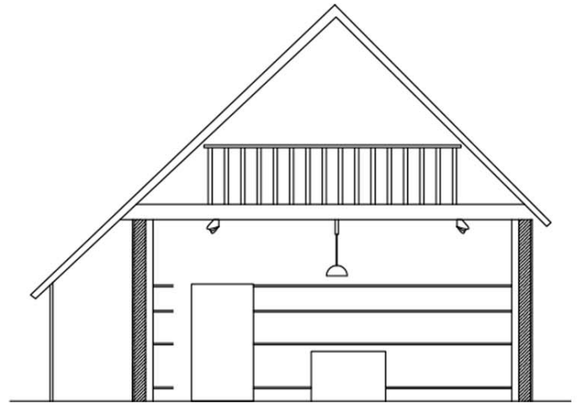
This residential building is in a poor condition and will as such be renovated and adjusted to the current needs of the museum. After the renovation, the building will serve both as a pottery and ceramics shop and an information point of the museum. The attic will be renovated and intended for private use.



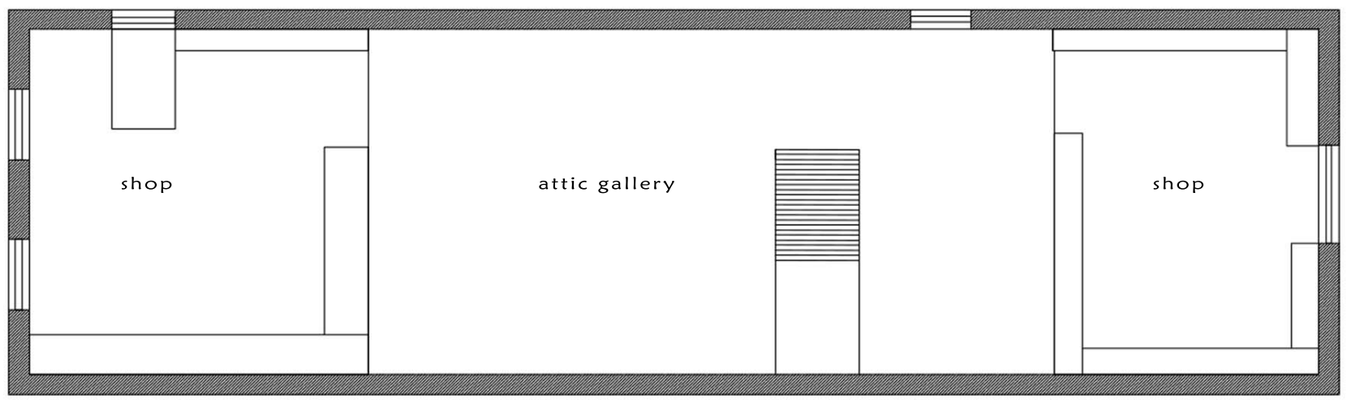
FLOOR PLAN

1M
2M

NORD



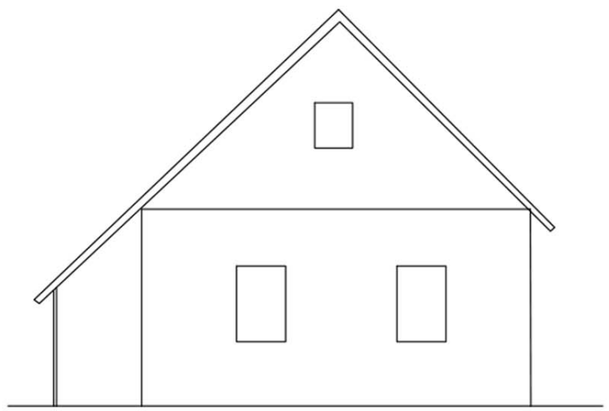
CROSS-SECTION PLAN



FIRST FLOOR PLAN

1M
2M

NORD



VIEW

Modern Pannonian architecture

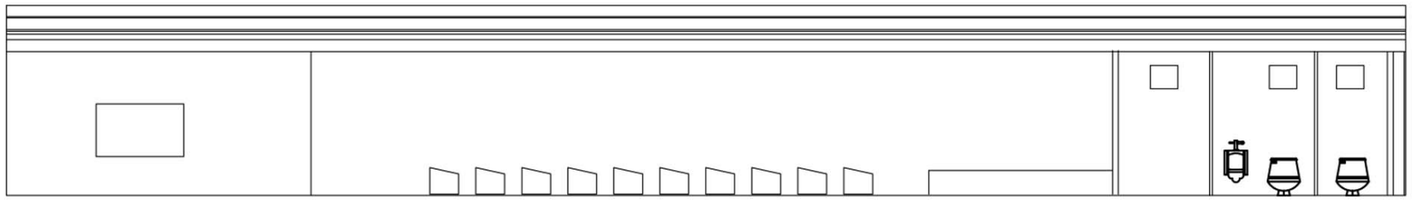
Modern architecture must first and foremost summarize the identity of the local vernacular architecture and present its essence. On the example of Pannonianarchitecture it would look like the following:

-The most explicit representation of Pannonian architecture is a residential structure built on a plain. As the name itself suggest, the most outstanding character of Pannonia region in Slovenia are the plains. Even though a part of the region gradually transforms into a hilly landscape, it's the plains that shape the region's identity the most. The fertile land, natural clay deposits, vast forests and other natural resources have enabled the people, inhabiting this region, to continuously evolve their relationship not just with nature, but soil as well. This is expressed to a great extent in housing culture; most houses have only the ground floor. The flatland nature of the region enabled the farms to expand at will and a lack of spatial restrictions resulted in most of the residential building having only the ground floor. In the beginning of the 20th century most of the houses still had clay floors, another indicator of the continuous physical connection of man with soil. This sets the trend for modern architecture, which favors the ground plan to be limited to the ground flood only, as long as the terrain configuration permits it. This in conjunction with a gable roof usually results in an unanswered question regarding the unused attic.

One of the possibilities also introduced in the renovation design of the open-air museum shop is to remove the ceiling and open up the ground floor into the attic. Another possibility to solving this problem can be found if we assume a different point of view. The roofing was the main reason for the gable roof's design. Straw roofs needed an incline, but they were excellent at balancing the climate conditions of the structure and were also an important aesthetical component. The question of a flat roof thatrises here is relatively complex, because at first glance it does not meet the topological demands and can quickly become a foreign object in the otherwise homogenous environment. If we take vernacular architecture into consideration this would mean giving up one of the key elements of the local autochthonicarchitecture – the straw roof. After careful consideration the flat root does coincide better with the current tendencies in architecture. The advantages of straw roof, especially its moisture control, can we substituted by quality construction solutions. If grass were to be planted on such a flat roof it would also improve the structures energy profile. Another design trait that should pose a question from the energy perspective is the size of window openings with one of the typical representatives of Pannonian architecture, namely "ciprača".

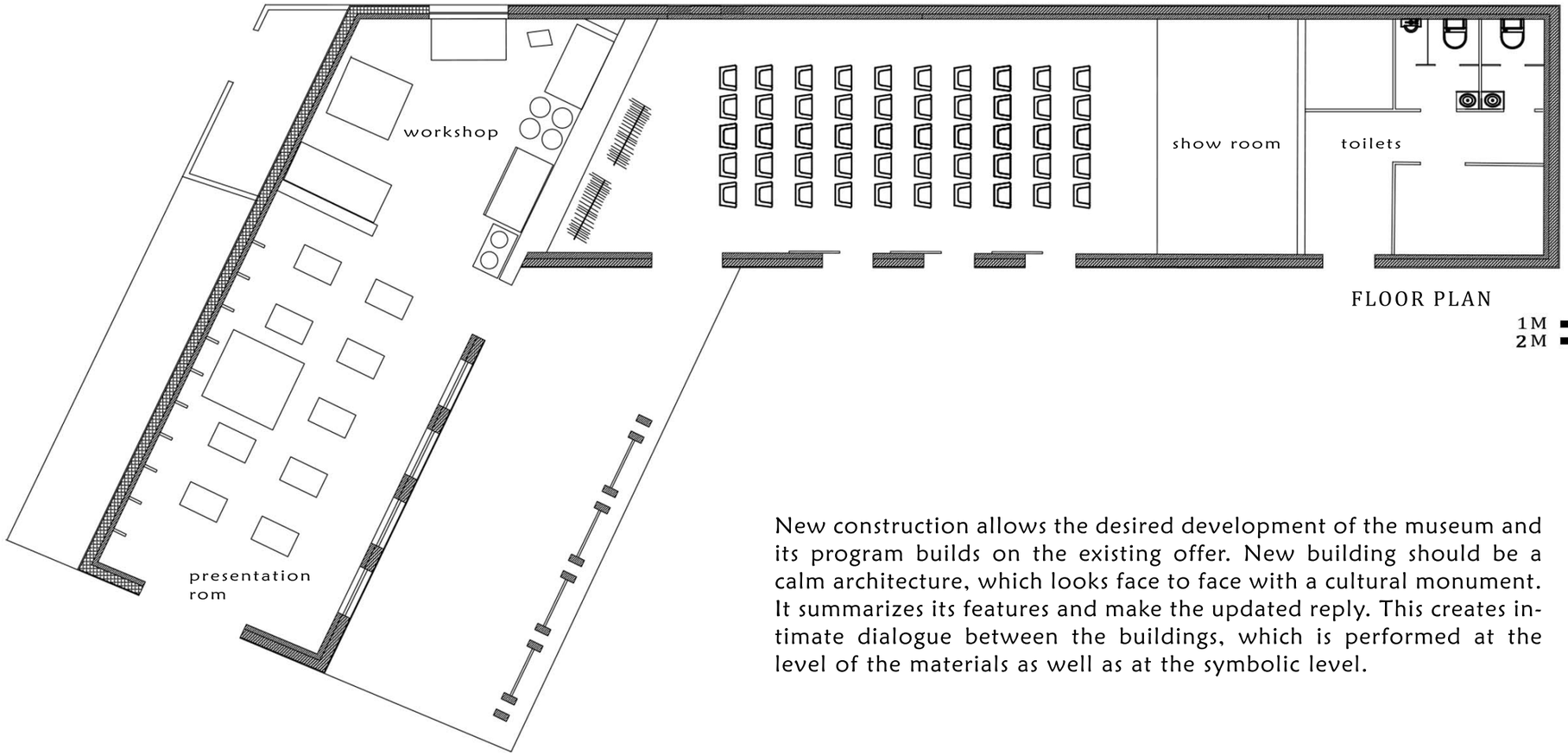
Heat loss in such a structure was bigger through the windows than it was through the walls, which were made of logs plastered with clay in both sides. So a compromise had to be reached; on the one hand adequate daylight had to be provided, on the other as little heat loss as possible was sought after. Today quality window systems allow for larger windows, thus raising the quality of housing culture, mostly on behalf of better natural lighting of indoor spaces and better optical interaction with the outdoors.
The choice of building materials is easier one. The use of wood as the main construction material and clay either as plaster for the interior or as fired clay façade is the most reasonable choice. Both wood and clay are found in the immediate environment and together with a central heating system they provide a high quality room climate and consequently living conditions.

NEW BUILDING
1:100



CROSS-SECTION PLAN

1M
2M

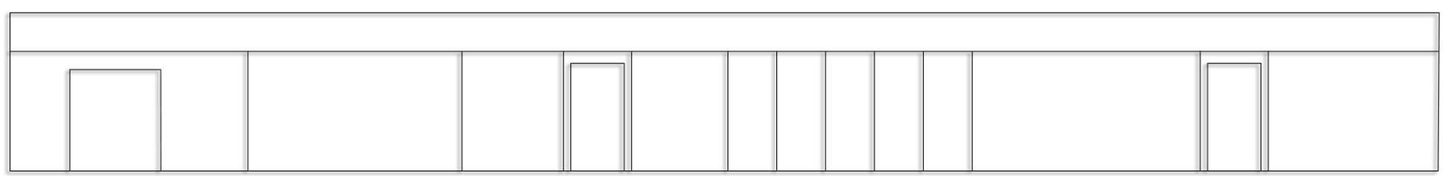


FLOOR PLAN

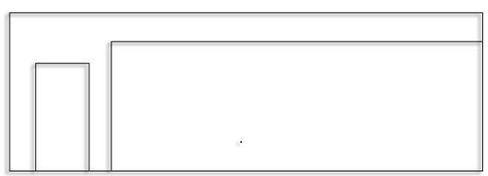
1M
2M

NORD

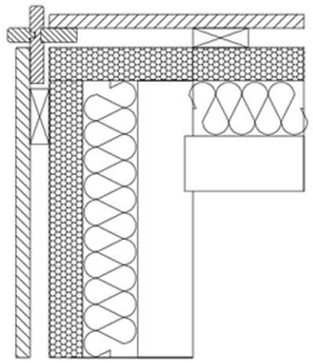
New construction allows the desired development of the museum and its program builds on the existing offer. New building should be a calm architecture, which looks face to face with a cultural monument. It summarizes its features and make the updated reply. This creates intimate dialogue between the buildings, which is performed at the level of the materials as well as at the symbolic level.

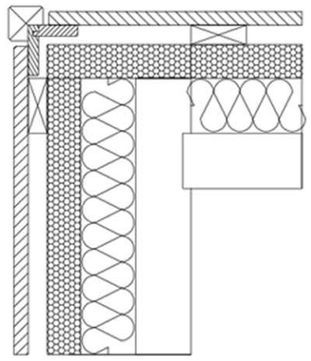


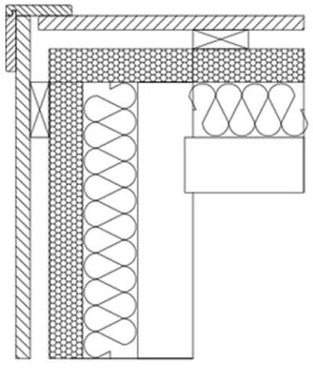
VIEW 1M
2M

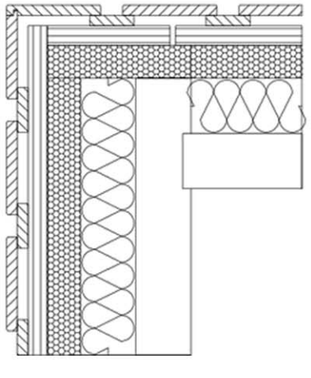


VIEW 1M
2M

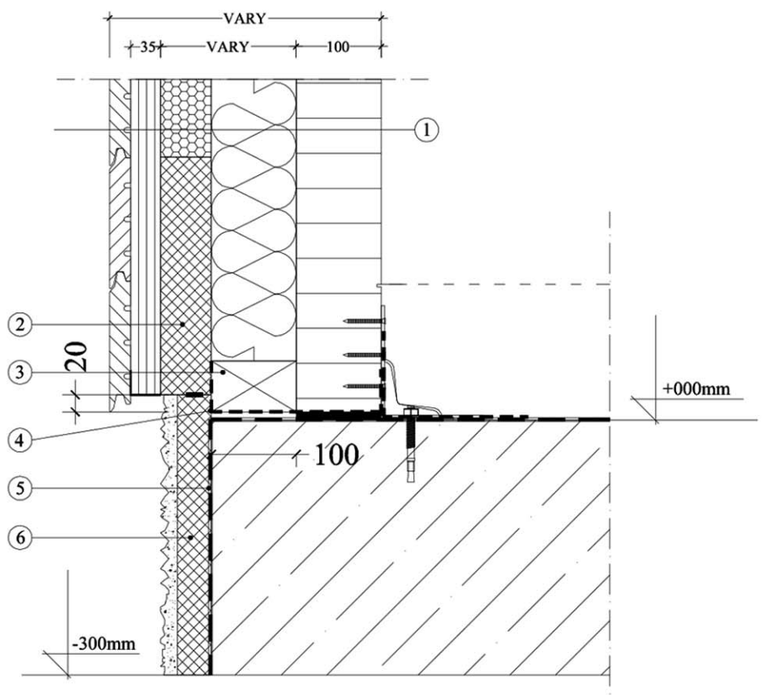






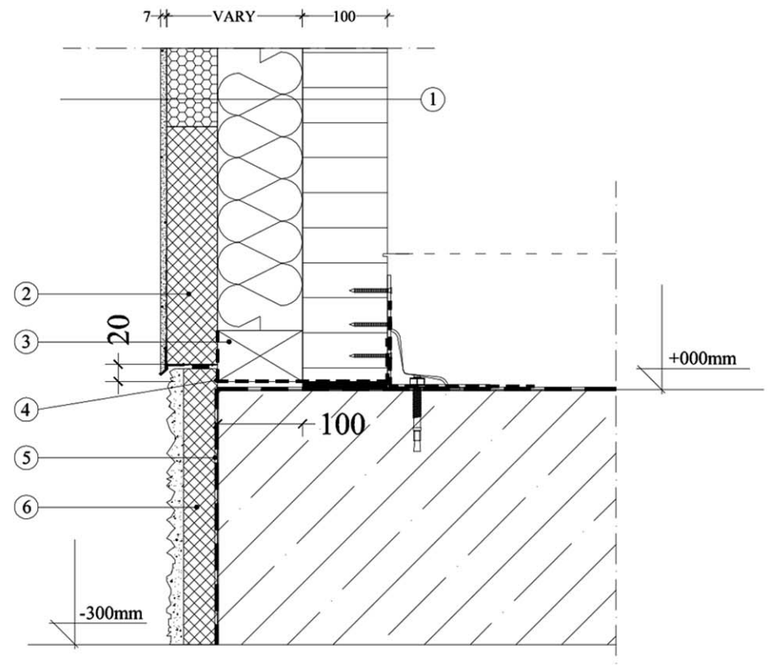


the solid thimber walls with timber facade



1 ... exteriror LMS, 100mm
thermal insulation - first layer
thermal insulation - final / facade layer
2 ... water proof insulation
3 ... reinforcement, 100/60mm
4 ... bitumen foil - Elotene 1000
5 ... hydroinsulation of the foundations
6 ... insulation of the fundation

the solid timber walls with rendered facade



1 ... exteriror LMS, 100mm
thermal insulation - first layer
thermal insulation - final / facade layer
2 ... water proof insulation
3 ... reinforcement, 100/60mm
4 ... bitumen foil - Elotene 1000
5 ... hydroinsulation of the foundations
6 ... insulation of the fundation

solid timber wall LMS
thermal and sound insulation
timber substructure
air layer
timber cladding

Construction Details

reference: Riko Haus (www.riko-hise.si)

On hot summer days of course cold water can be lead through the heating pipes of the naturbo system. Then the wall heating system works as a natural air conditioning system – with no noises at all and particularly healthy, because there is no draught.

Heating system - “lehmorange”

reference: www.lehmorange.de

The naturbo boards can be screwed or stapled directly to a wooden framework...

Closing the installation window

... or glued to brick or concrete with a mineral lime adhesive

Pressure grouting of the connectors (leak tightness test)

naturbo connectors are plugged on

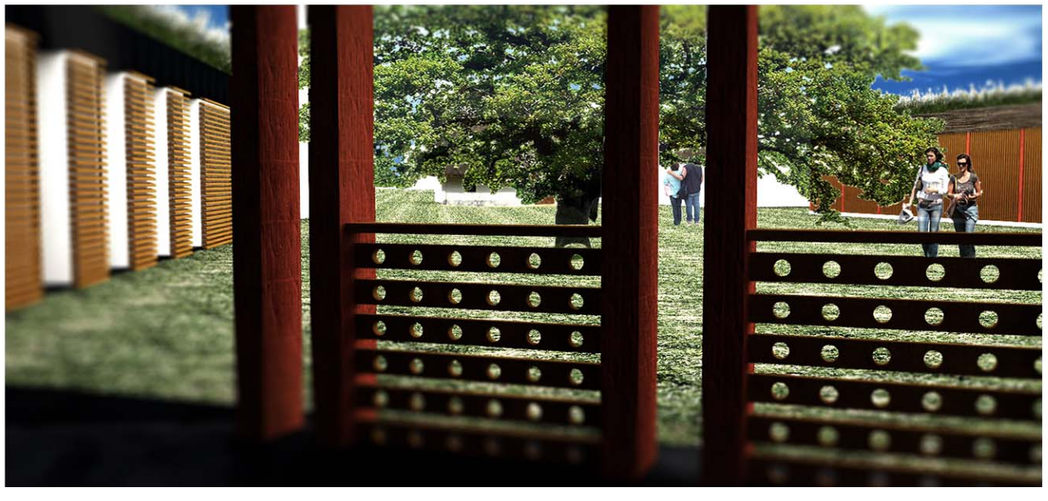
Fixing the reinforcing tape

Attaching the next board

Applying the clay finish plaster

Rendering

Natural materials and greenery make up a great ambient and ensure a relaxed atmosphere. It is very important to keep the older existing trees as well as not to over-dominate the nearby existing cultural heritage. The new design allows a fluent flow between the outer and inner space and makes visiting the building very comfortable for guests.



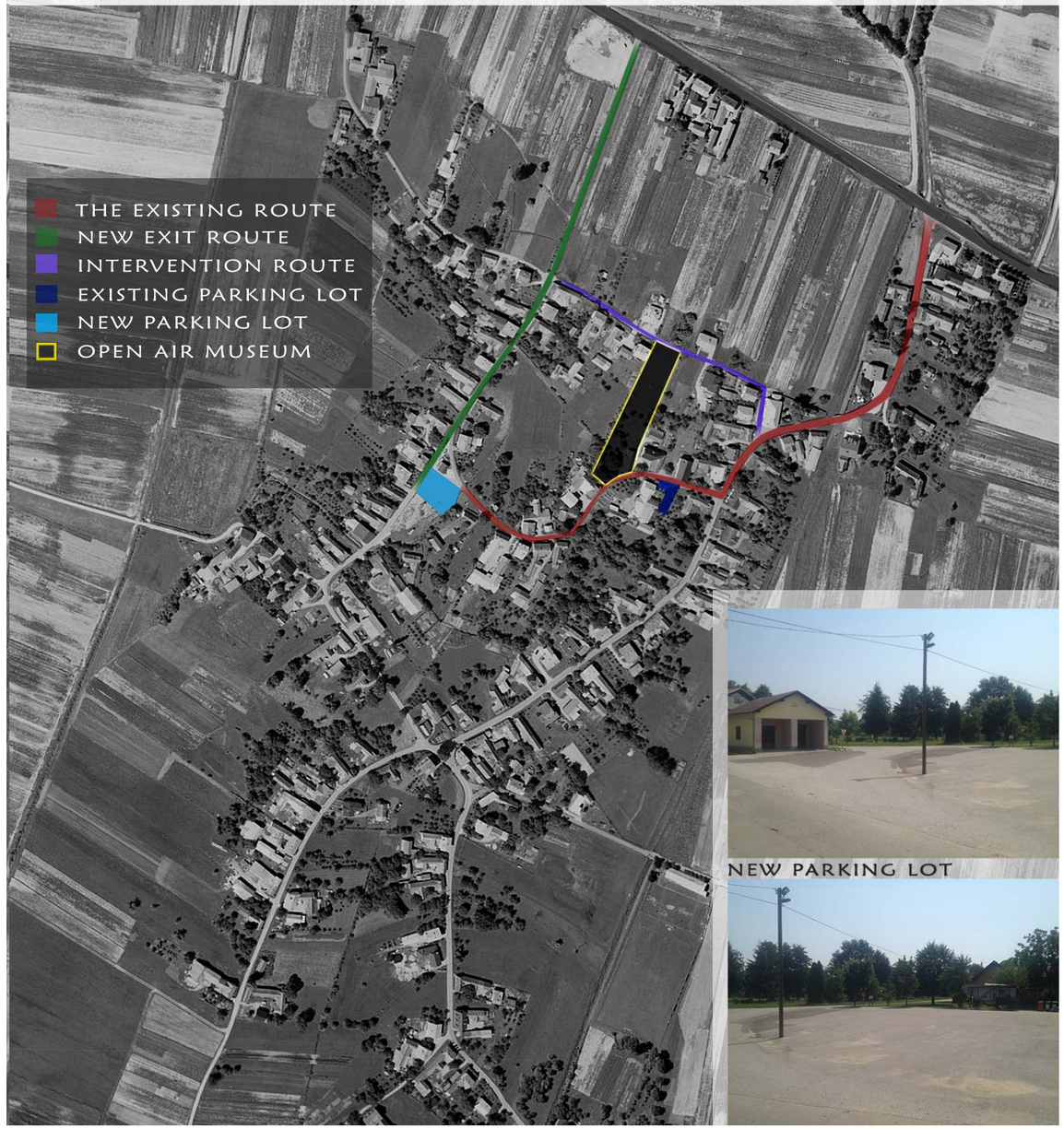
CURRENT TRAFFIC SITUATION

The current traffic conditions do not sufficiently meet the needs in the high season and therefore need to be improved. The existing parking lot next to the entry to the museum is suitable for personal vehicles and cyclists as well as for a short temporary stop of a bus, especially when elderly persons must exit. In the off-season the parking lot can also serve as the main parking area as it can accommodate up to two buses at the same time, at the same time leaving the traffic in the village uninterrupted.

EXISTING PARKING LOT

DEVELOPMENT

The new parking area is located near-by and offers a parking space to buses while their passengers are visiting the museum. Due to the narrow village road between the museum and the parking area a one-way regulation of traffic must be established, requiring the bus to stop at the smaller parking space at the entry to the museum and drop off the passengers and then wait at the new parking area. At the end of the visit, the bus repeats the circular ride to pick up the passengers or waits at the main parking lot in case the passengers are willing to walk back to the bus.



NEW PARKING LOT

Summary and contribution of architectural intervention

After the aforementioned reconstruction and rearrangement the open-air museum would achieve the desired standard and the expected effects. The results can be arranged into the following points:

- Traffic infrastructure: the museum has an organized access even at rush hour
- Pottery workshop: the museum has a space where presentations on a potter's wheel can be carried out, as well as pottery classes and workshops
- Multimedia space: a greater number of people can come and watch videos and photographs dealing with museum themes
- Balanced contents: by relocating the wooden residential structure from its original location to the location on the opposite side of the museum a greater spatial harmony of building placement would be achieved

This way the museum has a chance to develop its program and aim for a good representation of the so called Pannonian"cimprača". It would also allow the museum to maintain a genuine connection with the autochthonous environment and the modern structure would simultaneously ensure an adequate dialogue with the local architectural cultural heritage. The latter would help to promote the more suitable direction of the architectonic trend compared to the present tendencies.

The Petek Homestead (Petek is a family name meaning Friday) is a lovely example of a typical Pannonian architecture made of wood, clay and straw. The L-shaped house combines residential facilities and the outbuilding. Clay plastered wooden beams and rye straw thatched roof create a pleasant indoor atmosphere. In the house that used to be potter's workshop now resides a permanent exhibition of pottery which has been created by craftsmen in Filovci throughout the 20th century. You will be enchanted by clay floors, small windows and low doors that reveal the world of our ancestors. The building is a cultural and historical monument under state protection of the highest level.

As the most typical handicraft of Prekmurje region, pottery has a special place in our museum. Our visitors can see how pieces of pottery are created on potter's wheel and fired in the old domed furnace. The furnace is built of brick and plastered with mixture of clay and straw. It was used for reduction firing that creates a distinctive black colour on the surface product. Dried products are loaded into the furnace through a temporary "entrance" which is then closed with bricks. Right above the floor there are several openings for loading wood in the combustion chamber while openings at the top serve as vents. The furnace is operational and is used at least once a year for firing clay products in the traditional way.

Why Clay Wellness?

The healing effects of clay, especially clay masks, are well enough documented not to require further introduction. Antitoxic effects of clay and its absorbent properties as well as physical and chemical characteristics are especially sought after with joint injuries and a number of skin conditions. Clay masks and bandages are already present in certain specialized clinics. Clay baths are also available in certain places in Europe, especially in Germany. Not only is thermal water present locally, there is an unused geothermal hole roughly 500 meters away. If we would realize the project of clay geothermal baths, it would be the first such complex in Europe. The combination of anautochthonic ambient (open-air museum in Filovci) and the rural environment would give the visitors an insight into the world of clay and all its useful traits.

Such a complex would have to contain the following elements: clay pavilions for individual and for double clay baths, larger common baths in the central bathing hall, a medical center where skin conditions and other ailments could be treated, a restaurant, rooms to sleep, and a larger machine house, which would regulate and power the entire system of clay baths. Taking into account the available properties, the traffic infrastructure and the immediate vicinity of the open-air museum in Filovci, I have created a rough design for the possible placement of such a complex.

Starting points for architectural design

As this is a sensitive rural area dominated by brick farmhouses with the surrounding agricultural facilities and land, special care must be taken. Since the region severely lacks adequate modern architectural solutions we need to tread carefully. The new structure may already be exhibiting certain aspirations, but the design of the clay wellness center demands greater consideration, especially taking into account the size of the project.

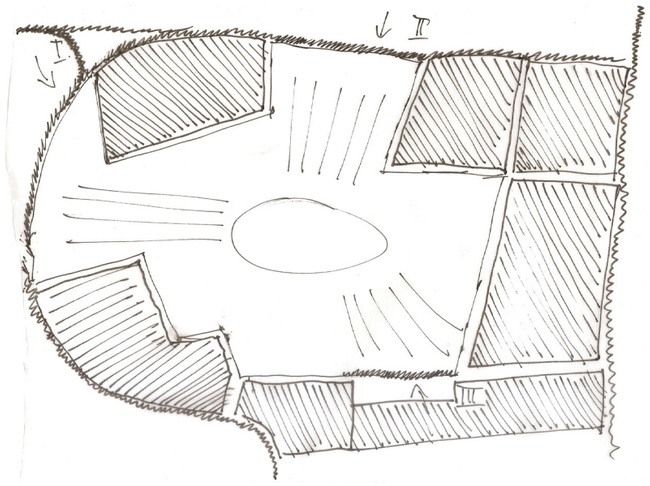
Main starting points:

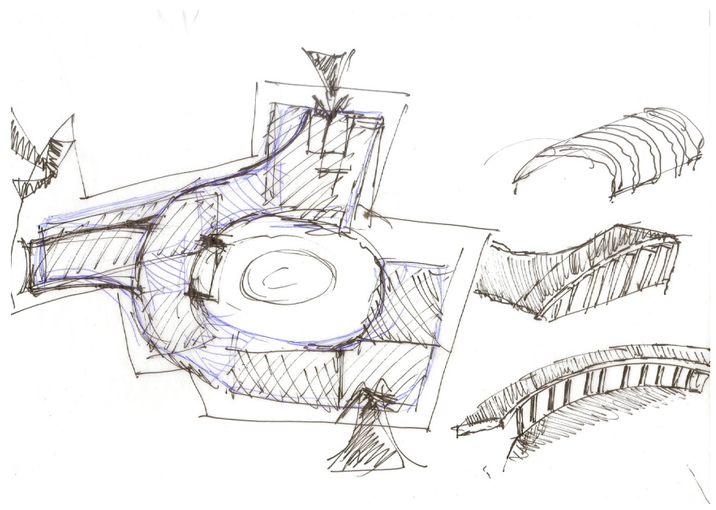
- All of the potentially available land should be used
- The access to the complex should be through the central parking space in the immediate vicinity. The access for intervention vehicles and delivery can be arranged from the secondary village road
- The complex does not exceed the height of the surrounding structures
- The structure occupies only the ground floor and has a flat, grass covered roof
- Bathing tubs are not to be found just indoor, but also outdoors in the inner courtyard, the meadow and under the trees
- Sleeping and living accommodations are also of the apartment type with private clay baths
- The medical center is separated from the rest of the wellness facilities and has its own driveway and parking space for the patients
- A single central area with multiple bathing tubs and a sauna is prefer

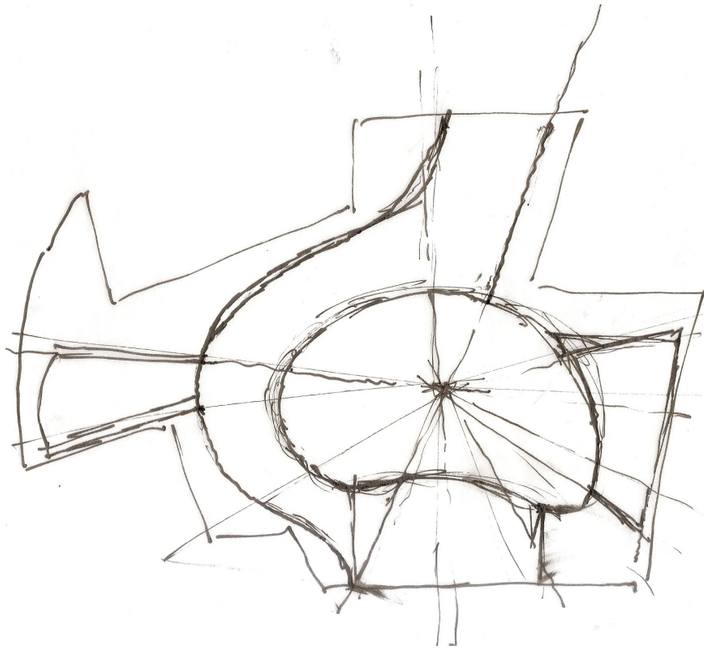
Design:

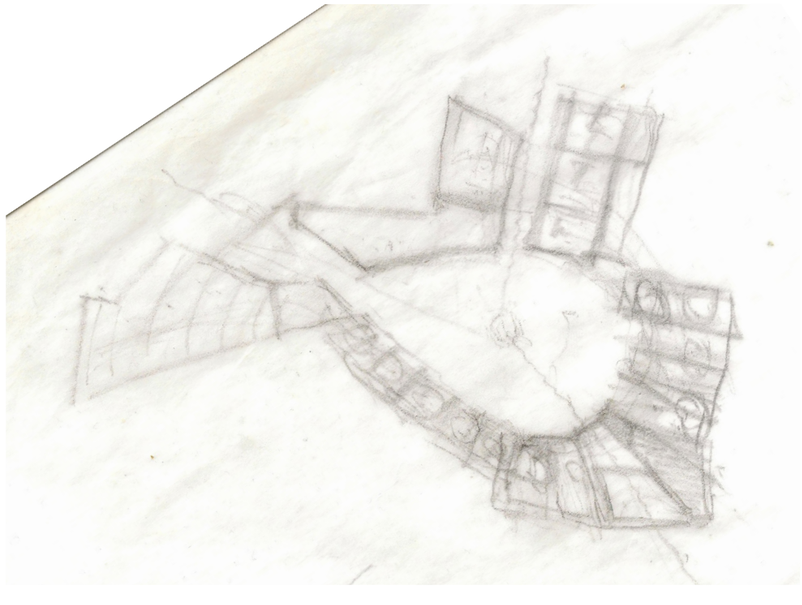
Taking location conditions and the main starting points into consideration the following layout of covered areas and open spaces is the most optimal:

- The central point of the available land is located away from the village roads and is considered to be the most beautiful part of the property. This should be where the clay baths are installed in open air and the natural shade of the nearby trees is used
- The edge of the property should be divided among the 3 aforementioned access points and the context suitably adapted
- The main access is at the main parking space, which is also designed to accommodate busses of visitors touring the open-air museum. The entrance should be moved slightly away from the road so a large group can safely assemble in front of it before entering together.
- The medical center has its own access point together with parking spaces. On the same side the machine room and the reservoirs for storing geothermal water and clay are placed. These also require a separate access point. Both of these access points are from the secondary village road and separated from the main access to the complex
- The access from the museum side is affected by the cultural monuments – this is where the “cimprača” cottages and the museum itself are positioned. Therefore it is reasonable to place pavilions in this part of the estate. They should be positioned with care in a way they supplement the cottages.









With these assumptions taken into consideration they should be organized into a meaningful whole and the following starting points can be used:

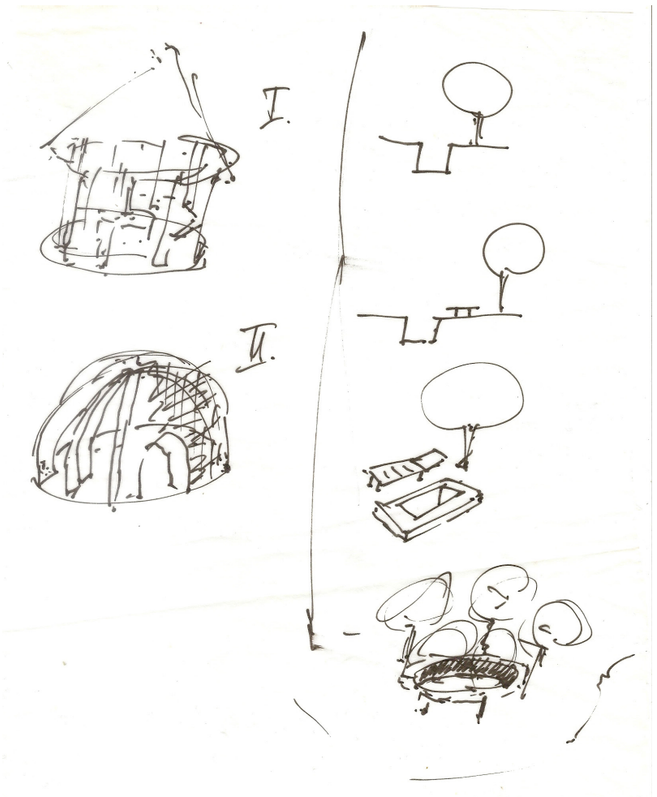
- Next to the main entrance on the southern site of the estate the reception lobby is placed and an access point for the wardrobes, the bathing saloon and the washrooms is organized. A pathway from the reception lobby to the accommodation facilities is organized.

- The medical and technical parts are separate. The technical part can be accessed from the western road

- The pavilions should be joined with the accommodation facilities within the complex and eventually reduced in the direction of north-east, towards the museum

- The complex should be opened up in the direction of the courtyard, thus enabling good visual communication with the courtyard and the covered areas

- The pavilions should be blazed in the directions facing south and west



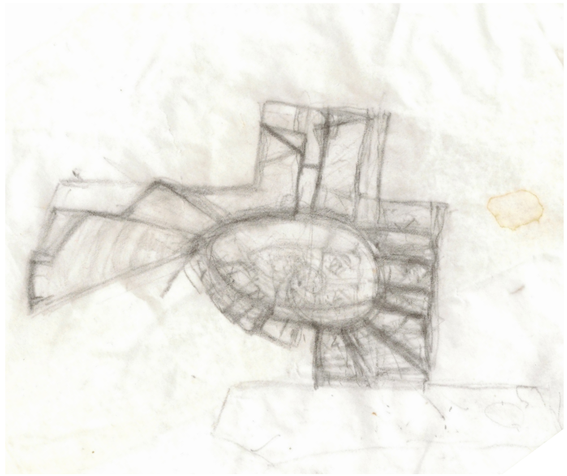
If we summarize the previous points and also take into account the tendency for ground floor only structures and a flat, grassy roof, the architectonic elements should be positioned in the following manner:

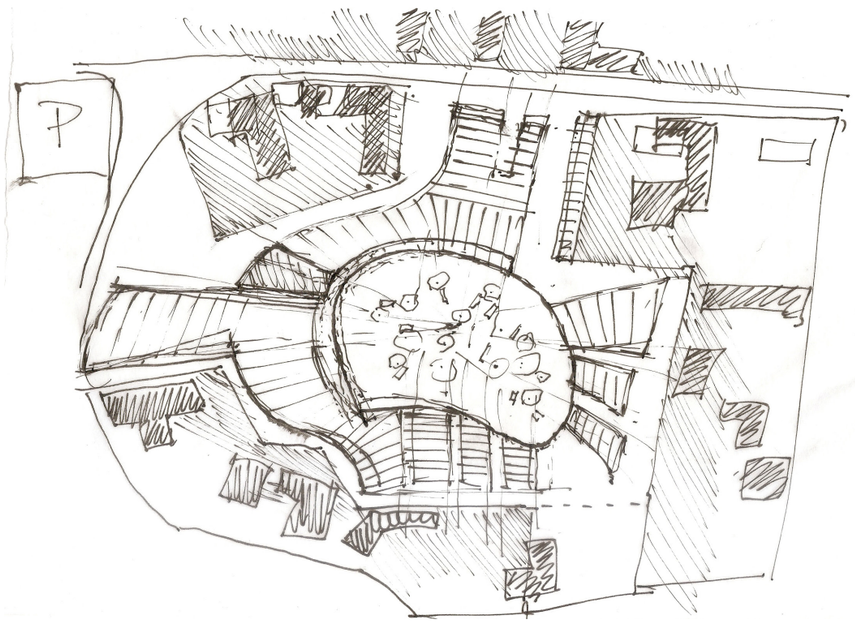
- The parts of the complex lying next to the village road should be in compliance with the rhythm of the houses and their dimensions

- The inner courtyard, where clay and water dominate, should be designed in organic shapes and retract from orthogonal ground plan ratios

- A coexistence between the perpendicularly shaped parts of the structure and the organically shaped parts must be achieved

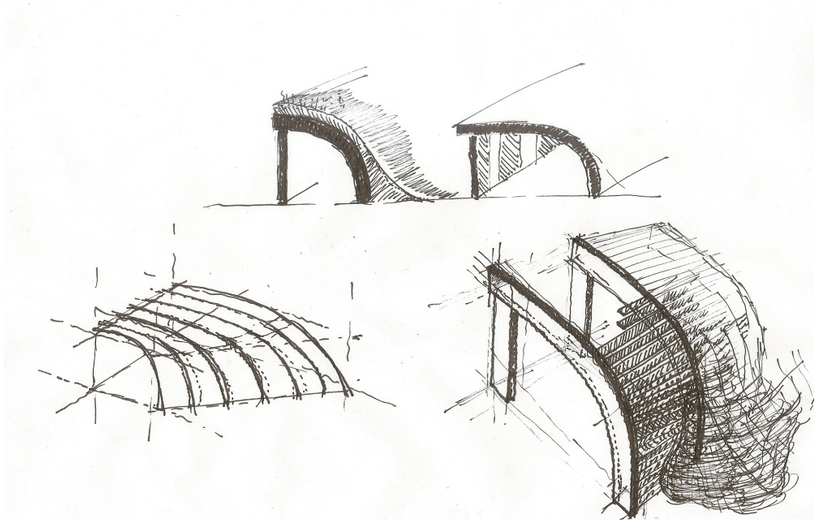
- The flat roof should be shaped in such a way that a part of the roof gradually bends down into the ground and fuses with it. This way the entire complex will be even less dominant and more in tune with the local elements; it will appear as if it is emerging from the ground up





Materials

Taking the local tradition and locally accessible materials into consideration the main materials should doubtlessly be clay and wood. Prefabricated wooden pylons, clay constructions and retaining walls allow for the construction of rounded shapes of walls and roofs. The interiors of clay pavilions are wholly covered in clay and in certain parts even the floor can be made of clay. The harmony of these 2 materials can in combination with larger glass surfaces work together to form a well-rounded solution to the challenges of modern Pannonian architecture.




Clay Wellness
Unique clay baths experience

RESTAURANT, CENTRAL MACHINE ROOM

RESTAURANT FOR 30 PEOPLE WITH LOCAL AND INDIGENOUS FOOD
MACHINE ROOM OF THERMAL WATER AND CLAY BATHS
EXHIBITION AREA
BAR

MEDICAL AREA

RECEPTION
MEDICAL ROOM
GROUP THERAPY ROOM
SINGLE THERAPY ROOM
AMBULANCE
WC

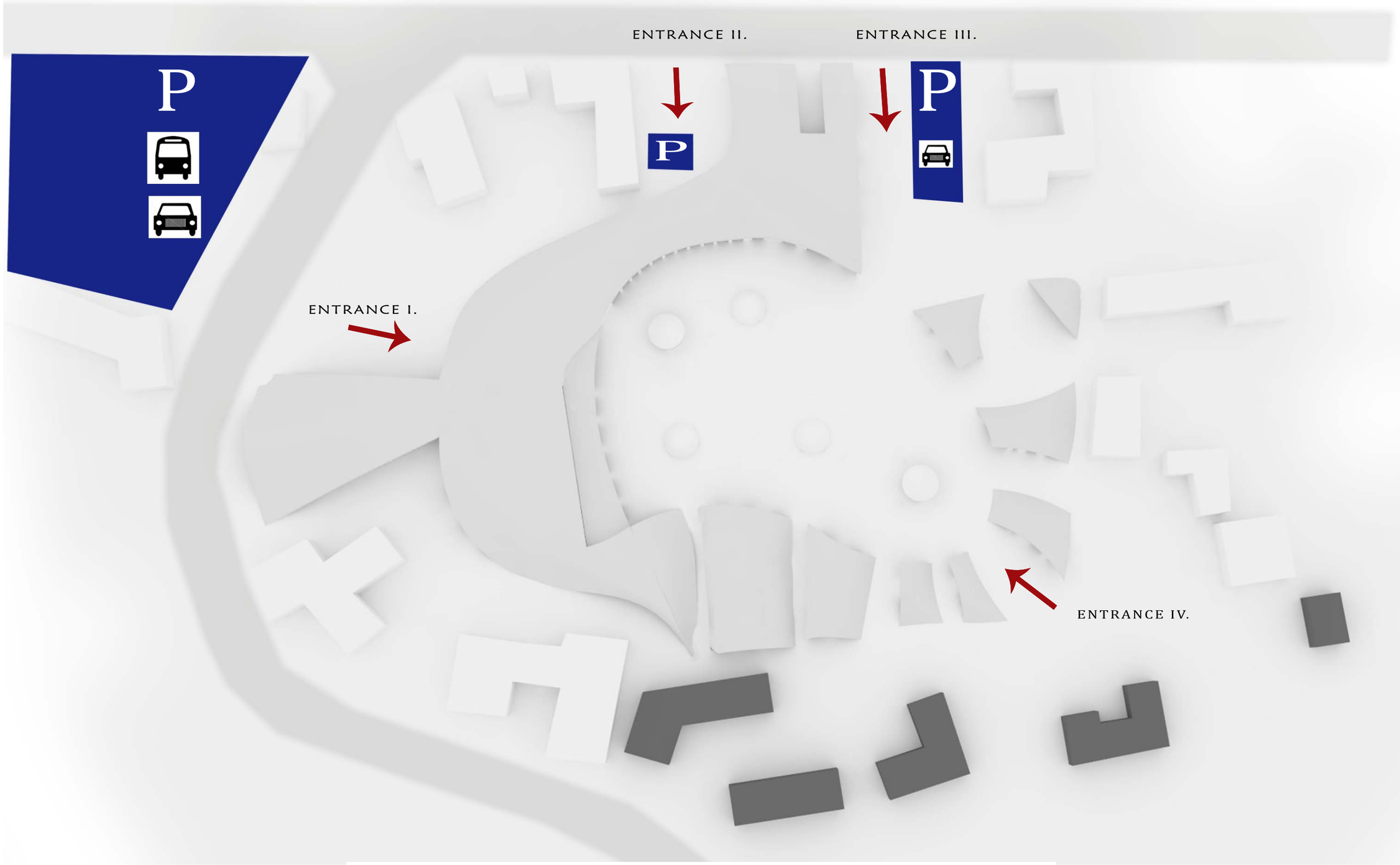
PAVILIONS

LIVING ROOM WITH CLAY BATH
SAUNA ZONE
KITCHEN
BATHROOM
BEDROOM

CLAY BATHS

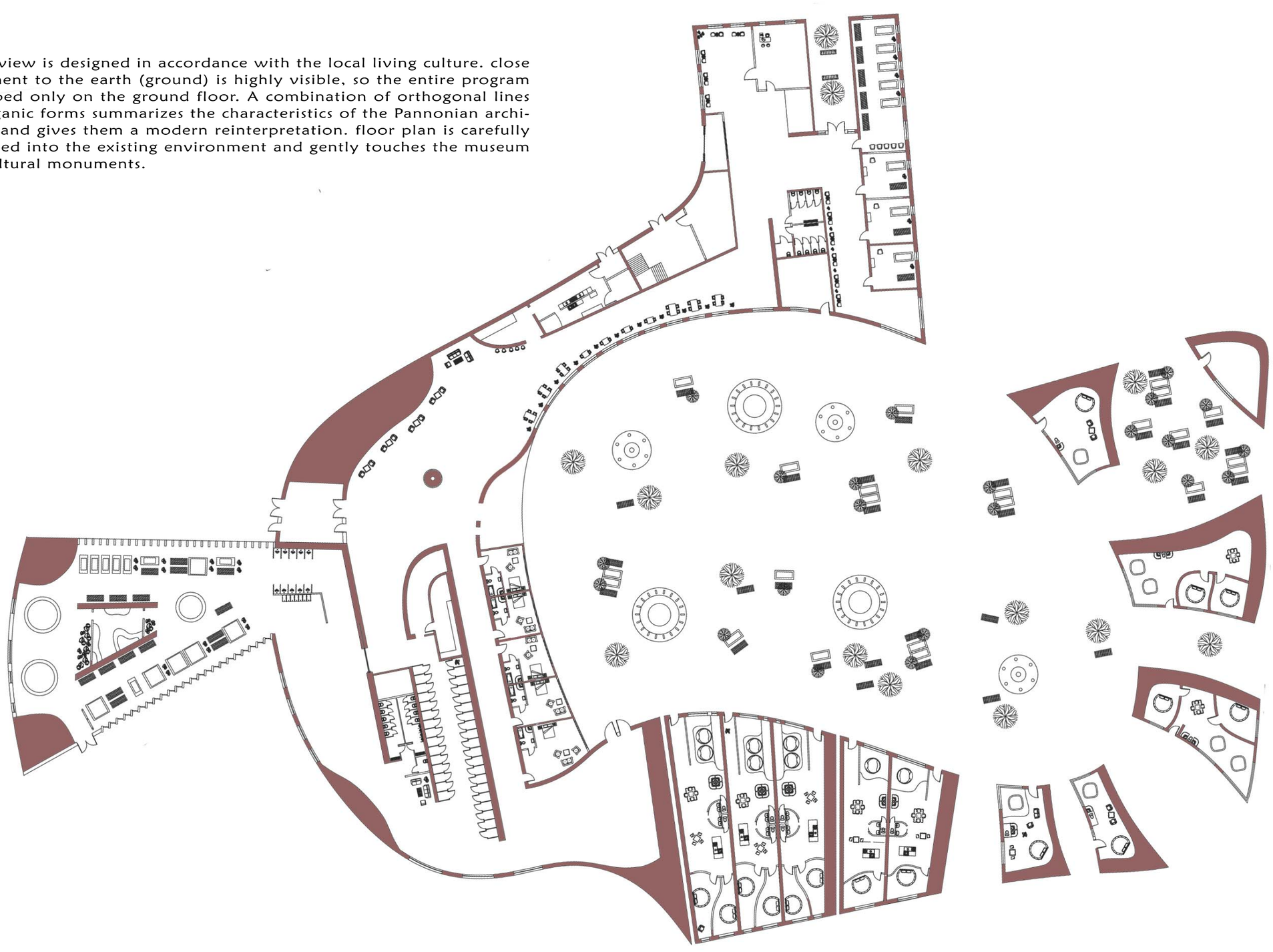
MAIN ENTRANCE
RECEPTION
CLAY BATHS
HOTEL ROOMS
SAUNA
DRESSING ROOM
TOILETS

OPEN AIR MUSEUM



entrance I.	The main entrance is located directly on the central car park
entrance II.	Entrance for visitors of the health center, delivery and clay supply
entrance III.	intervention path to inner courtyard and pavilions
entrance IV.	entrance for pedestrians and visitors to the outdoor museum

A plan view is designed in accordance with the local living culture. close attachment to the earth (ground) is highly visible, so the entire program developed only on the ground floor. A combination of orthogonal lines and organic forms summarizes the characteristics of the Pannonian architecture and gives them a modern reinterpretation. floor plan is carefully integrated into the existing environment and gently touches the museum with cultural monuments.



FLOOR PLAN

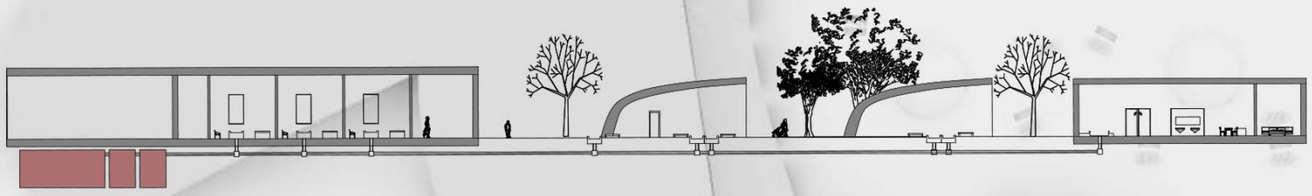
1M
5M
10M

NORD

CROSS-SECTION PLAN / NORTH-SOUTH

1M
5M
10M

NORD



CROSS-SECTION PLAN / EAST-WEST

1M
5M
10M

NORD

Clay is delivered in the form of dry granules and mixed before use with thermal water. The pipeline is developed under the tail surfaces and allows the liquid clay to be delivered directly into the tub. used clay is returned to the reservoir where it is purified and reused.

Inner courtyard is a green area where following units are positioned:

- clay bath, which is dug into the ground (single or double), in combination with the tree and lounger.

- food pavilion is a wooden structure covered with straw, which offers always fresh and of planting vegetables and a fireplace for food preparation

Inner courtyard is from one side closed, the other side is slowly poured into the surrounding courtyards.

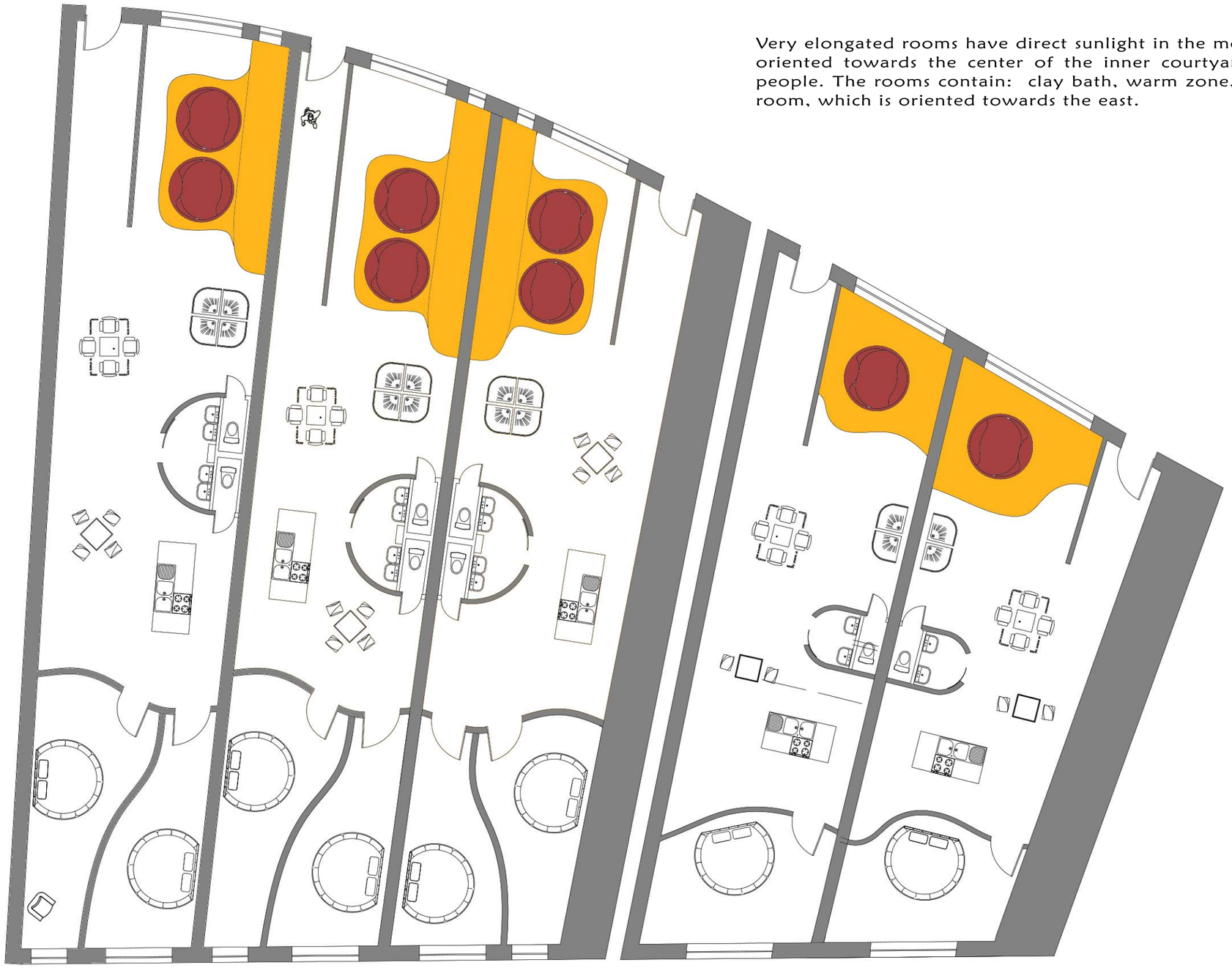
INNER COURTYARD

1 M
5 M
10 M

NORD

PAVILION TYPE I.

Very elongated rooms have direct sunlight in the morning and evening. They are oriented towards the center of the inner courtyard and are designed for 2-4 people. The rooms contain: clay bath, warm zone, kitchen, bathroom and bedroom, which is oriented towards the east.

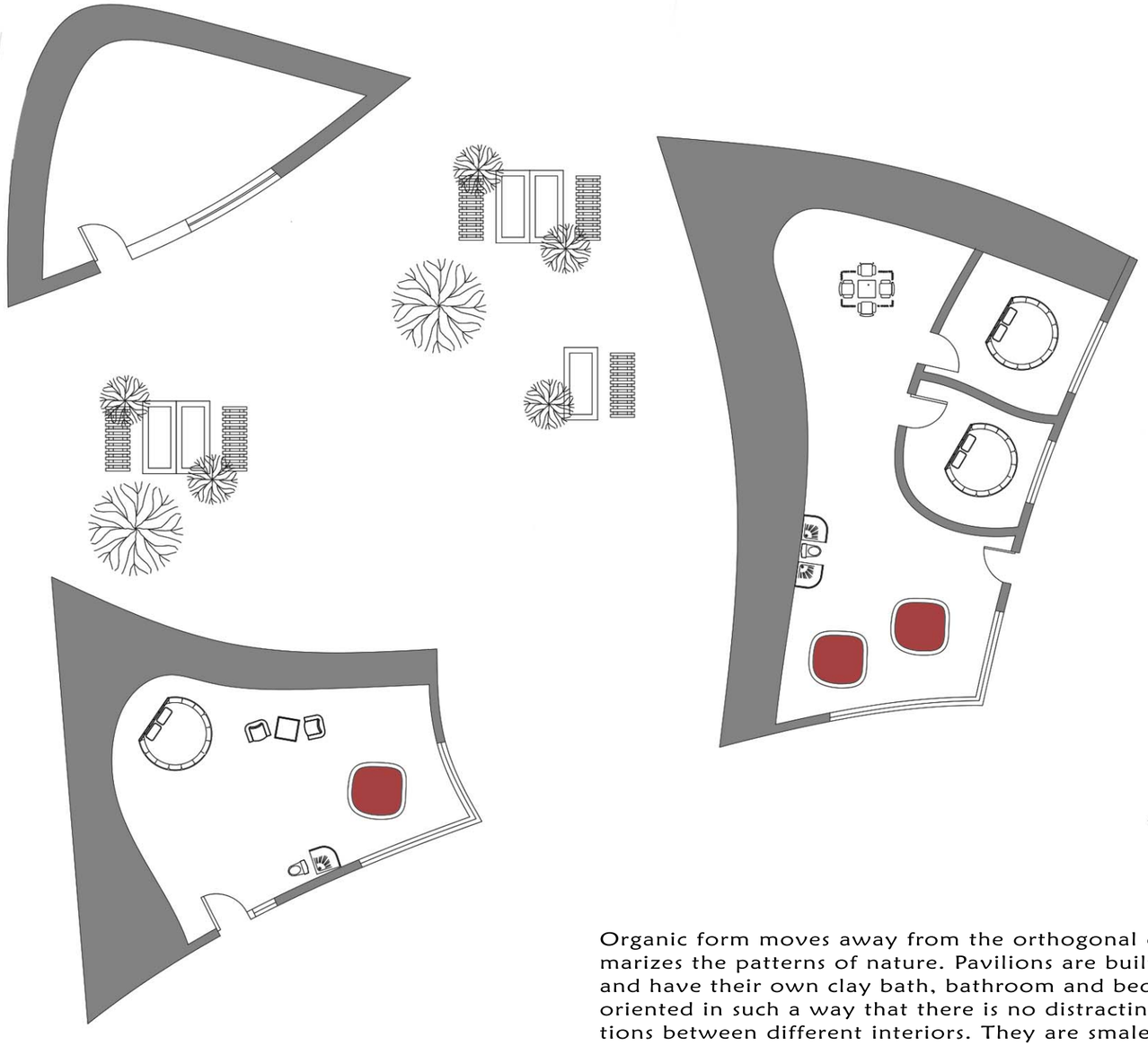


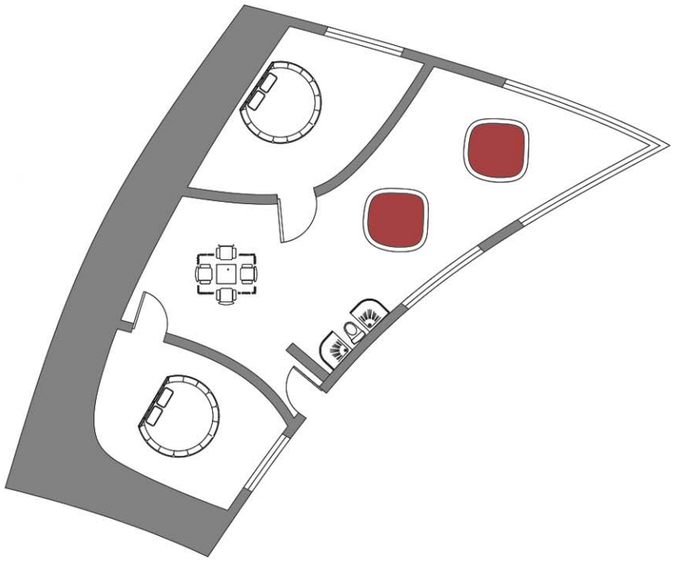
PAVILION TYPE 1

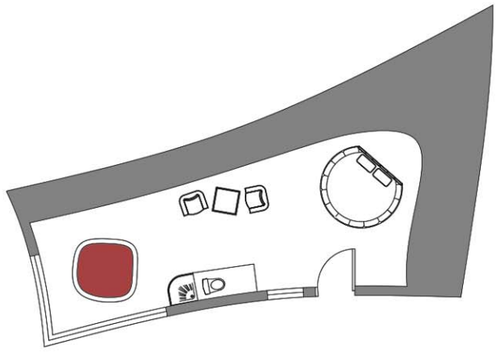
1M
2M

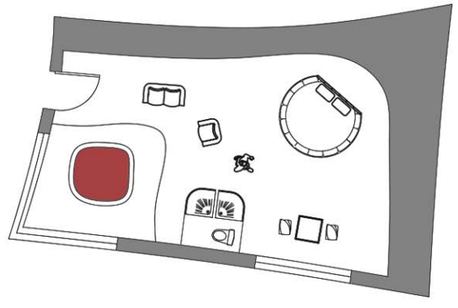
NORD

PAVILION TYPE II.









Organic form moves away from the orthogonal design and summarizes the patterns of nature. Pavilions are built for 2-4 people and have their own clay bath, bathroom and bedroom. They are oriented in such a way that there is no distracting visual connections between different interiors. They are smaler than pavilions type I and do not have a kitchen.

PAVILION TYPE II.

1M
2M

NORD

MEDICAL AND THERAPY ROOMS

Medical part of the building serves the implementation of treatment with clay and implementing therapies in clay baths. there is a room available for a group therapy as well as three separate rooms for individual appointments. In this part of the complex there is also a medical ambulance that serves mainly to treat skin diseases.

PAVILION TYPE II.

1M
2M

NORD

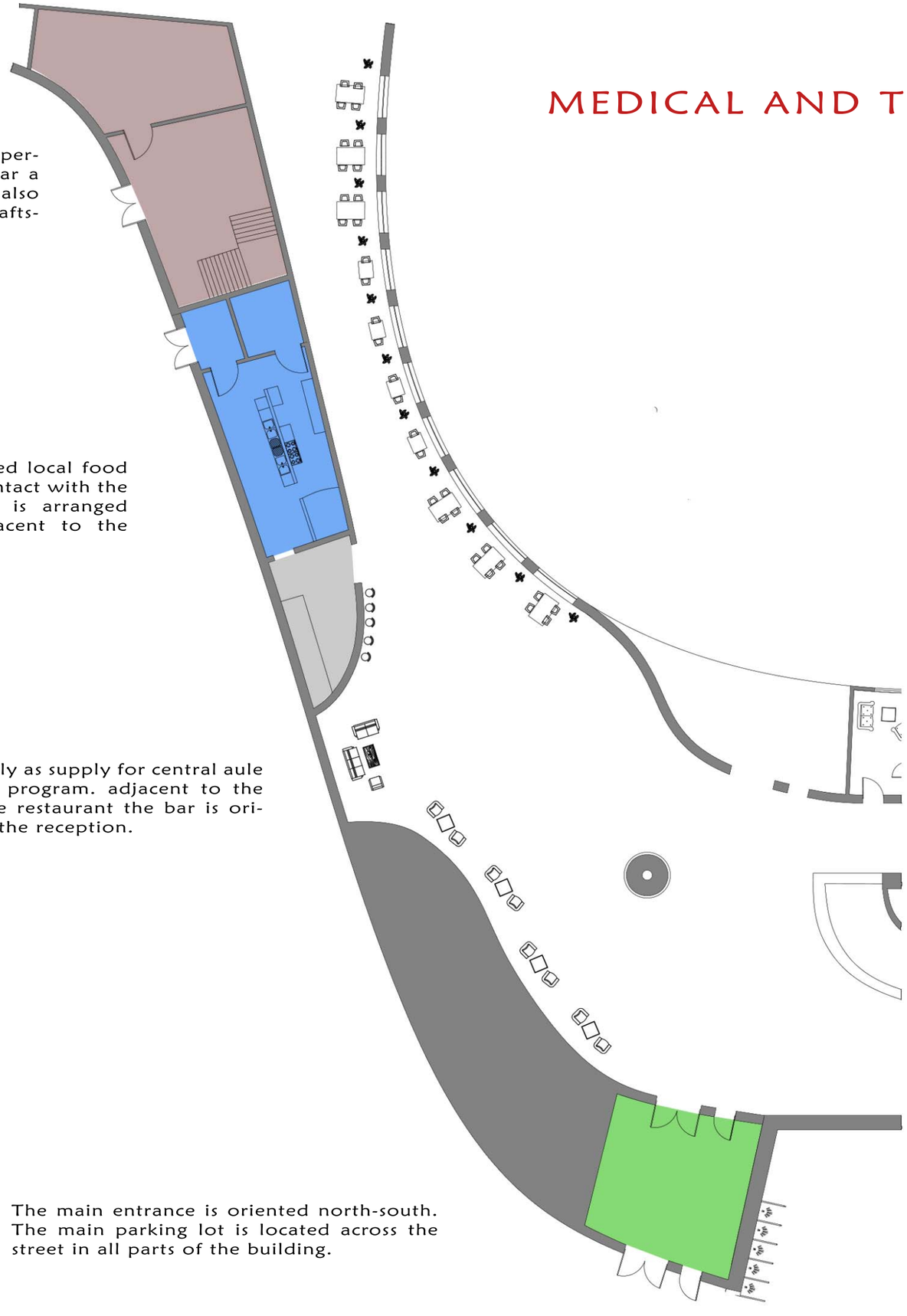
MEDICAL AND THERAPY ROOMS

Service center will monitors the operation of the building, in particular a system for the clay bath. rooms also contain a small workshop for craftsmen tasks.

Kitchen based on selected local food and drink and makes contact with the village cuisine. Seating is arranged longitudinally and adjacent to the inner courtyard.

Bar serves mostly as supply for central aule and exhibition program. adjacent to the kitchen and the restaurant the bar is oriented towards the reception.

The main entrance is oriented north-south. The main parking lot is located across the street in all parts of the building.



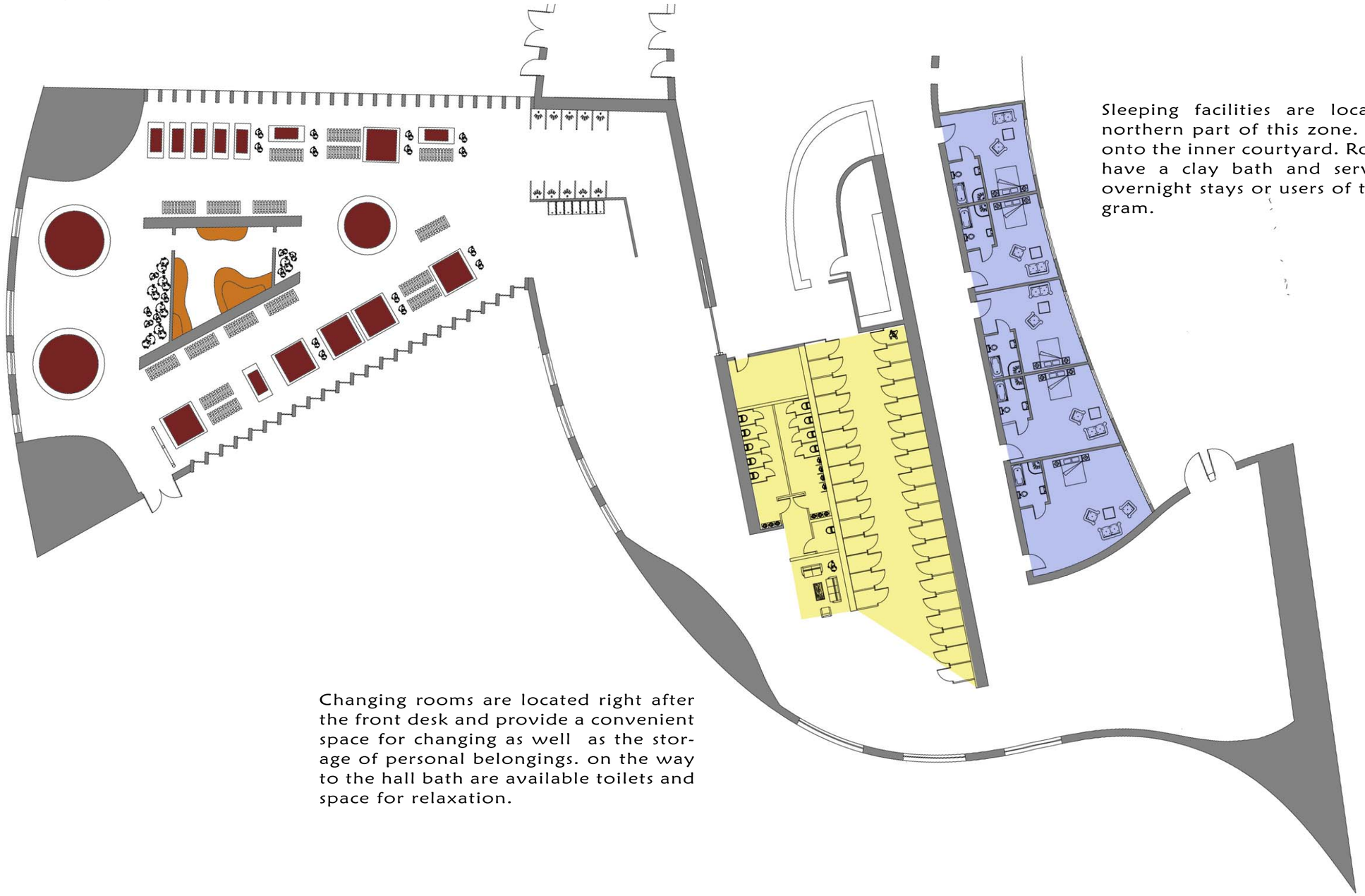
RESTAURANT

1M
2M

NORD

BATHING HALL

Covered bathing areas are located along the road. Clay baths are dimensioned for 1 to 4 persons. In the central part the so-called "warm zone" is located, where it is possible to dry clay faster.



Sleeping facilities are located in the northern part of this zone. View opens onto the inner courtyard. Rooms do not have a clay bath and serve only for overnight stays or users of therapy program.

Changing rooms are located right after the front desk and provide a convenient space for changing as well as the storage of personal belongings. on the way to the hall bath are available toilets and space for relaxation.

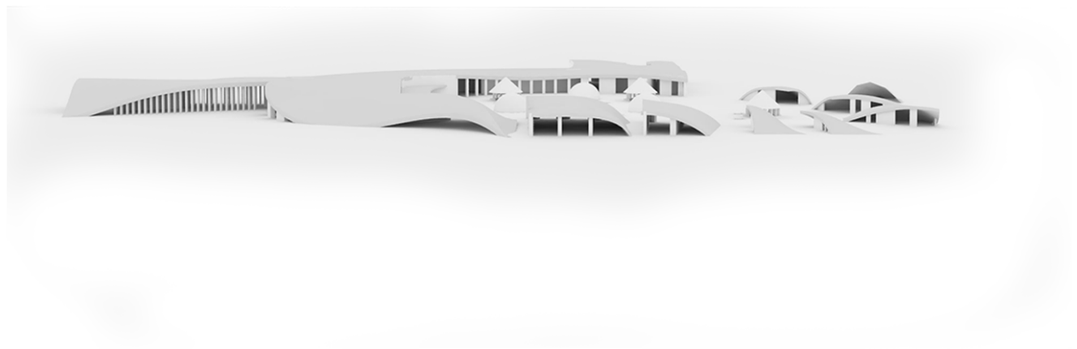
BATHING AREA

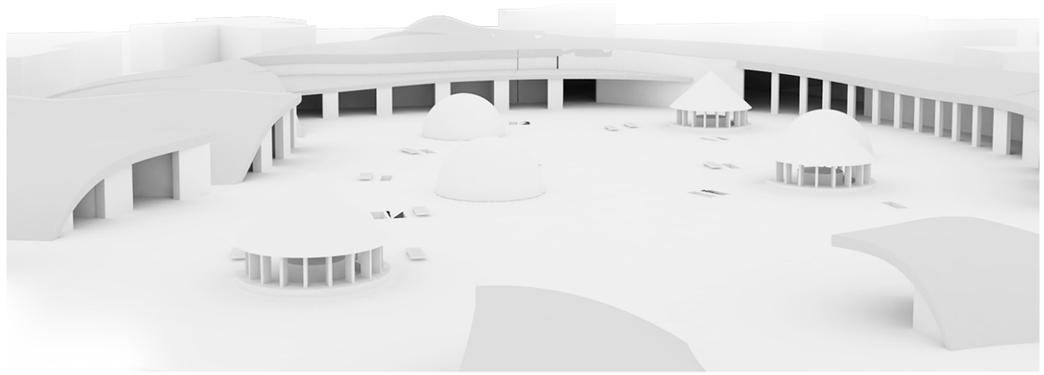
1 M
5 M
10 M

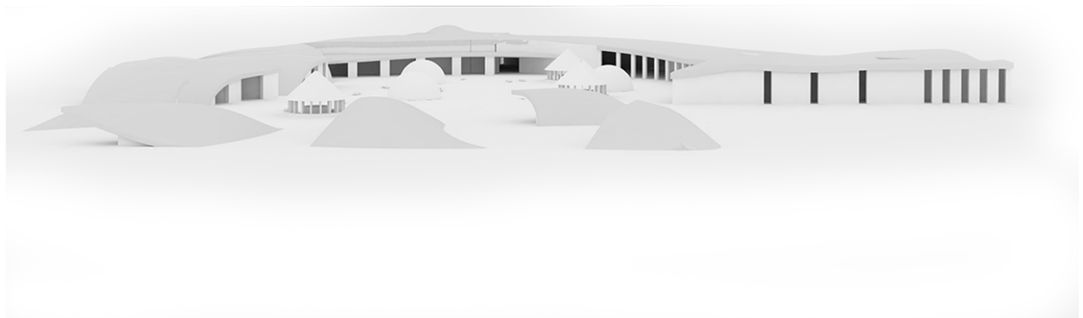
NORD

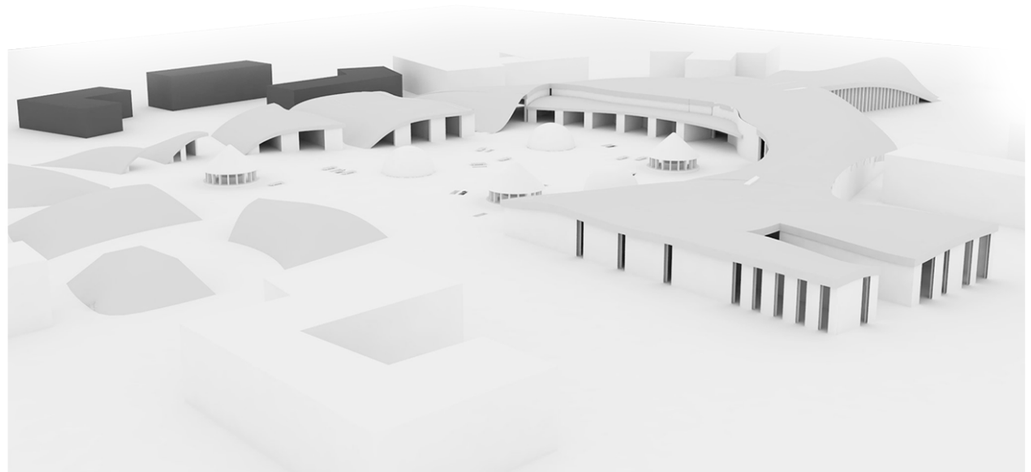
3D MODEL

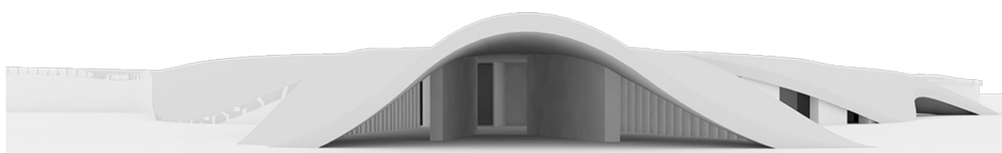
3D MODEL OF THE ENTIRE COMPLEX



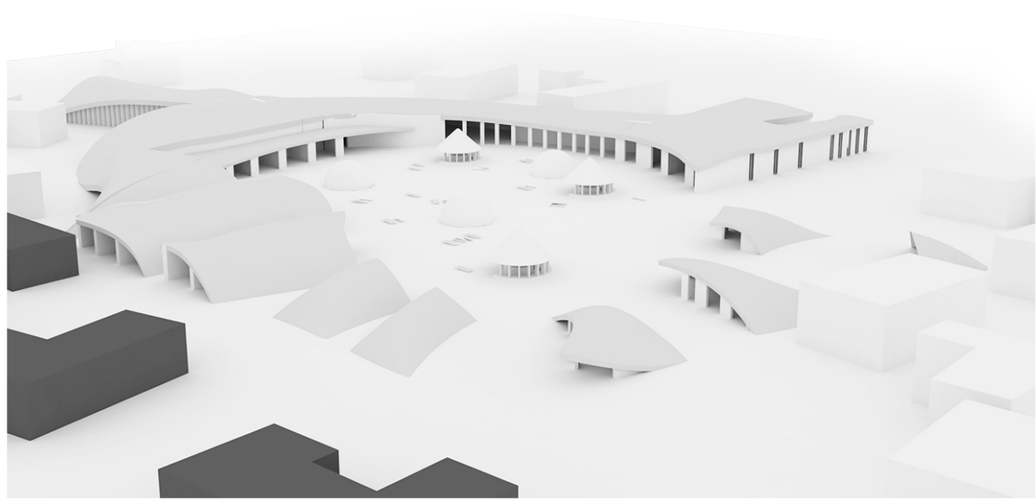








Different views on the situation are explaining the relation of the new facility with the existing museum. The dominant interior courtyard providing sufficient privacy as well as opportunities for socializing. Large glass panels allow an intense visual contact with nature and the environment.



Renderings

- large green inner courtyard
- greening of roof surfaces
- conservation of local ambience
- development of culture clay baths

Conclusion:

All kinds of heritages are important, including architectural, therefore it is necessary to devote our attention to preserving the existing heritage, especially, if it's on the brink of extinction. The open-air museum Filovci is preserving Pannonian architectural heritage and is also the place where the craft of pottery found its home. My desire of presenting the broader value of clay in our lives has prompted me to produce my own small contribution to the cultural mosaic of the Pannonia region. I hope to promote the awareness of local natural building materials and encourage their use. This work is intended to reflect my deep respect for traditional construction and the need to preserve the existing architectural achievements.

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