The history, the value and the future of wine cellars in the Tokaj Wine Region

Objective

In 2002 UNESCO declared the Tokaj Cultural Landscape part of the World Heritage. The traditional cellars have significant value and were a key factor in the listing of Tokaj.
The World Heritage tender (2001) lacked sufficient detail of the underground treasures. Since the value of the cellars is mainly hidden – being underground structures – they are not as obvious as an old building. Most cellars are closed to the public. No register of the cellars exists as no tax has to be paid. Neither have there been surveys nor do cellars have their own land registry number. They could however be declared Underground National Heritage. Sometimes nobody knows about the 500 year-old cellar under a 150 year-old building that is a well-known and protected national monument.
However, it is the cellars that are described as World Heritage Items. They include the single cellars (Sárospatak Castle Cellar, Tolcsva Museum Cellar), the groups of cellars (in Tolcsva and the Ungvári cellars in Sátoraljaújhely) and the cellar rows (Hercegkút Gombos-hegyi and Kőporosi cellar rows). In these cases the plan and surface photos were included.
These wine cellars were created in different ways. Energy and money-saving were always important factors. Thus there is little decoration apart from at the surface. Underground – in the dark – practical considerations were above aesthetics so there are few unusual forms. In many cases the arrival of electrical light in the 20th century was followed by extensions and the old walls were scraped or the vaults cleaned. Thus history was erased and few traces remain. The cellar mould (Cladosporium cellare) also covers much evidence.

A survey of the underground is the basis for the Management Plan. The material below aims to support this.

The importance of the cellars

A good cellar climate was particularly important in the days before the technology which allows control of the temperature, the humidity and the microflora of the underground corridors. The temperature varies little throughout the year as in all underground storage over 10 metres below ground. The Tokaj wine makers created north-facing entrances and steep steps into the cellars that retained the winter cool in a similar way to ice huts. Fermentation was carried out in the warmer areas nearer the entrance and, when they did not want the sweet wine to ferment, they stored it in the coldest area of the cellar. This aging also endowed the wines with specific aromas. Ventilation shafts were drilled to ensure exchange of air.

Cellar climate

Ventilation shaft in a cellar in Mád

Where necessary the shafts were blocked and doors between the cellar branches were used to control the air movement and humidity.

Doors used for air regulation

The cellar walls are covered by the cellar mould Cladosporium cellare. They do not have the typical mouldy smell. The enormous surface area regulates the humidity as well as being advantageous for the filtering of unwanted fungus and bacterium.

Condensation of humidity on the cellar mould

Some of the Tokaj cellars are as old as the Gothic cathedrals. They have been under construction and widened over the generations. This is one of the reasons UNESCO declared Tokaj part of the World Heritage, citing the large number of cellar rows and cellar systems.

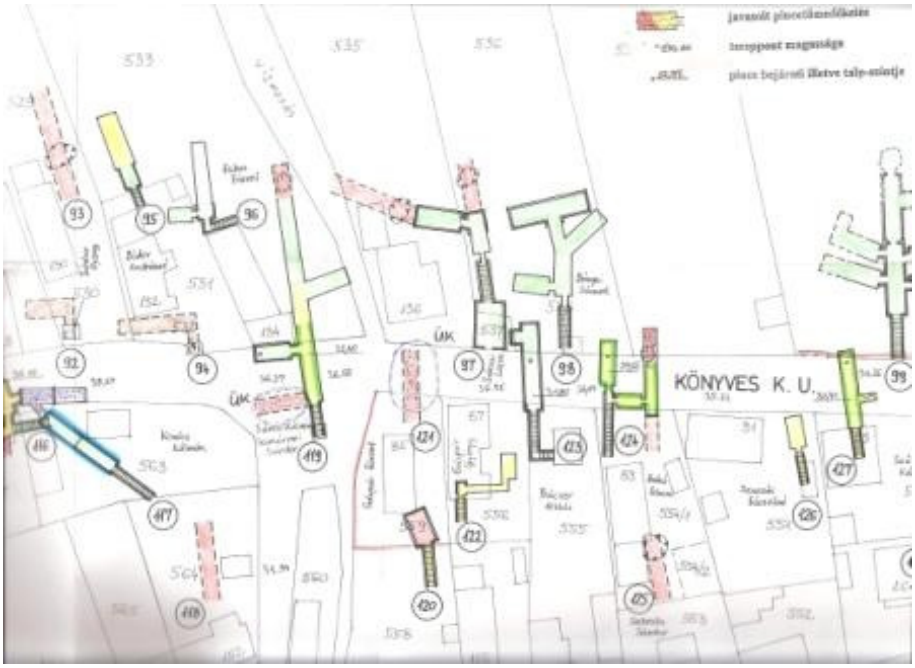
The Gombos-hegyi cellar row in Hercegkút

The cellars' values remain hidden behind the entrances at the surface and thus are not as obvious as built heritage and natural assets. This is how no-one, not even the authorities, is aware of a 500 year-old cellar under a 150 year-old heritage building. There is no appropriate register of the cellars, not to mention the treasures they contain.

Cellar cadaster

A cellar cadaster would be of great importance to local people and businesses, as well as architectural and heritage authorities. A register is vital to ensure the protection of the underground passages and to prevent damage to buildings and infrastructure (roads, water pipes) at ground level.
Development over the last 50-60 years has unfortunately caused great damage to the cellars. Waterproof layers have been cut through during excavations for foundations of houses and walls and many cellars are leaking as a result. The waste water system also causes problems. The great increase in hard surfaces (i.e. tarmac roads) means that precipitation concentrates in certain areas. The shaking caused by the dramatic increase in traffic has also increased the number of cellars collapsing. State assistance is usually only available when there is a direct risk to life or of accident – and often meant a lorry carrying concrete to fill in the cellar for good. There has been some strengthening of the vaults but there is no system for preventing damage. The only by-pass built for heavy vehicles is in Tállya.

By cellar cadaster we mean a system based on a survey (if possible 3-D) that includes the site of the cellars, their entrances, owners, prime characteristics in condition, the necessary strengthening and renovation. During this survey the unique features should also be recorded according to the classification detailed below.
This work has already been begun. Detailed surveys have been prepared in several of the region's towns and villages.



Detail from a cellar survey from the early 1990's in Tarcal

Where necessary, the wine community authorities and the mining authority should be given the right to access cellars.

The hidden treasures of the cellars

Geological layers and rarities

The various bedrock layers can be seen in many newly dug cellars and in those where the vaults have been cleaned or refined.

A recently excavated cellar in Hercegkút

These layers became visible after widening of this cellar in Tállya

Bedrock and soil

The effect of the soil, the taste of the soil and the terroir have become magical words in recent years that can be explored in the bouquet, taste and flavours of the wine. They can however be difficult to show visually or verbally. Visitors can see the rock exhibitions of Tokaj producers, or take home a handful of rocks from the distinctive vineyards. But these rocks can often be seen in the cellar walls too if the cellar mould is removed in a couple of areas or if a "window" in the vault is left. The cellars at 6 to 8 m below ground are at an important area for the root system, in the layer providing trace elements. This variety underground can create an impressive and lasting memory even if the cellar is below less acclaimed vineyards. It can provide more proof than a handful of stones from the surface.

The roots of the vine are reaching this zone (Mád)

The **bedrock and soil** have always been important to the quality of Tokaji wines. The varied volcanic bedrock of the Zemplén Mountains and the tufa on the surface are extremely varied. The bedrock, rock type and depth of soil change within a couple of hundred metres, all affecting the conditions for the vines. Forest soils on clay are the most common in the region. The most famous historical vineyards are generally higher and contain larger proportions of minerals due to the degradation of the tufa and other rocks. The soil in these areas have higher levels of potassium, magnesium and trace elements.

Post-volcanic activity also left its mark – and is visible in the cellars. The hot water cooled as it rose through the ground, and the dissolved mineral material precipitates out. Iron and manganese compounds paint the tufa with striking yellow and brown.

Post-volcanic activity: minerals dissolved in hot water that precipitate out

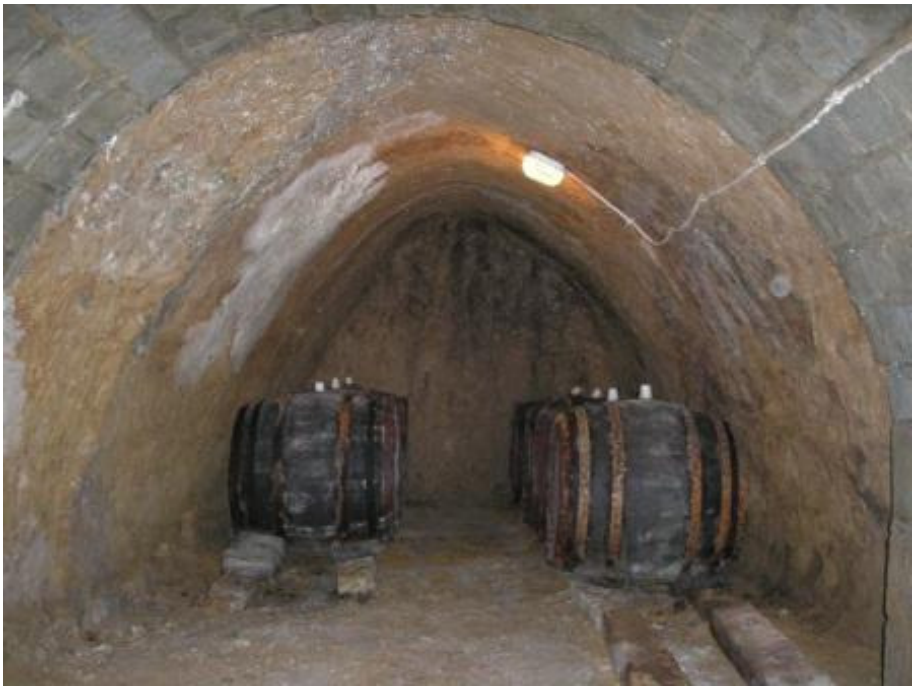
Natural glass – obsidian – is common in tufa.

Obsidian (natural glass) in the wall of a cellar in Viničky, Slovakia (Szőlőske)

Architectural and technical heritage

The cellars can be classified in three main types: dug and mined cellars, hall cellars dug from above and closed with a vault, and former mine shafts that have been made into cellars.

Dug and mined cellars – originally most had no vault, depending on the sub-soil.

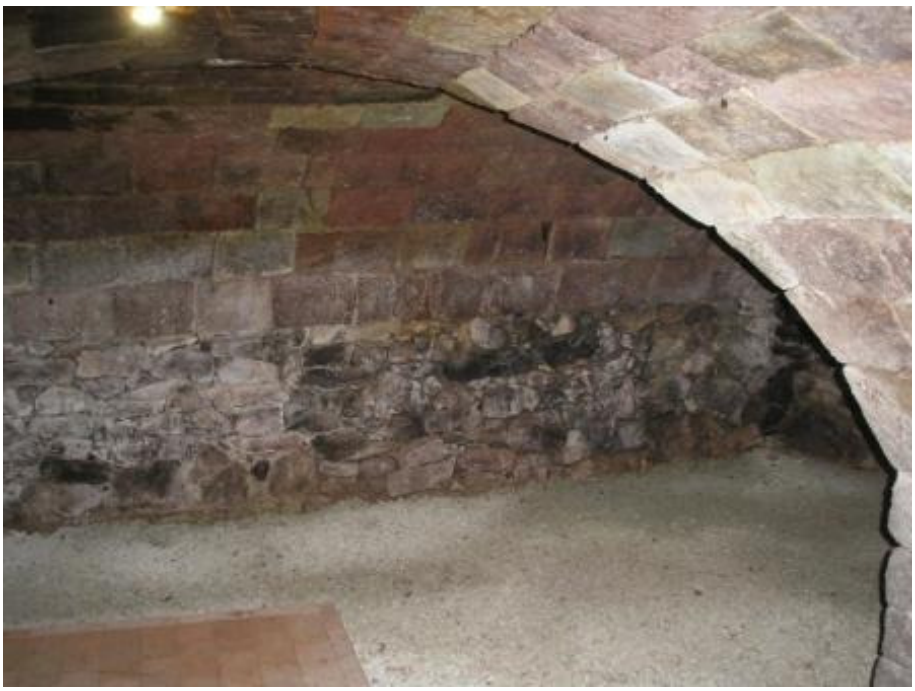


The original Gothic semicircular arch in Erdőbénye (recently strengthened)

Without vault - loess clay in Abaújszántó

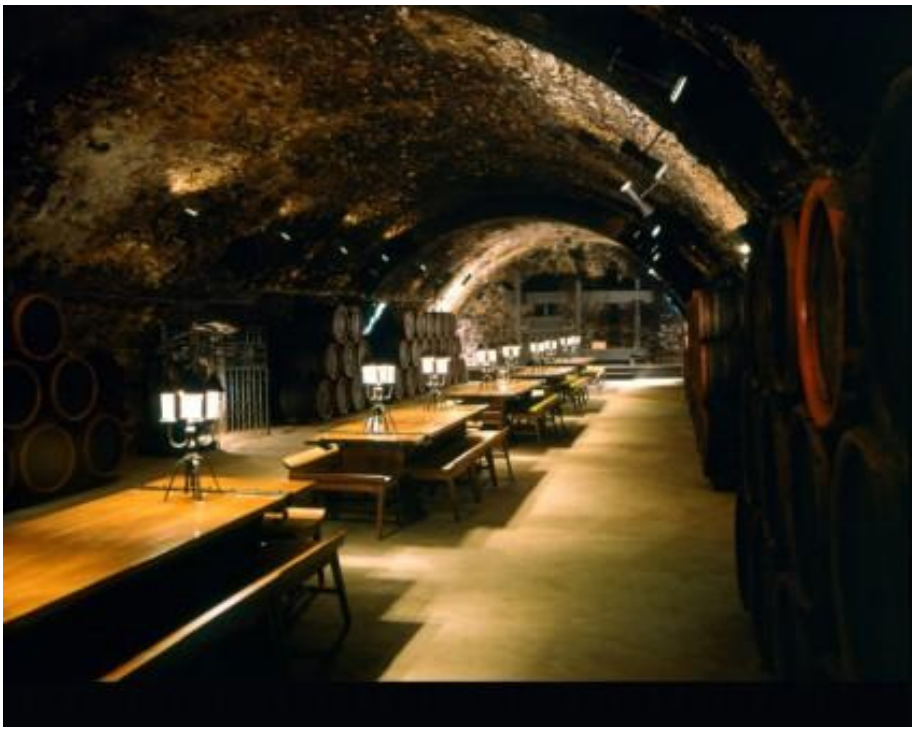
The softer loess can support arches of 1.5 to 2m without additional strengthening. The tufa common in the area can support up to 3 to 5 m wide corridors. Examination of the walls may tell of the tools used or the origin of the stone or bricks used for the arches.

This cellar in Mád is at least 400 years old



Arch in Mád; strengthened later

The **hall cellars** often served various functions including store place for crops, stables, place of prayer.



Rákóczi Cellar in Tokaj

The largest underground hall is 28 m long, 10 m wide and 5 m tall.

Former mine shafts: the space left behind after mining for stone powder are rare.

Hall cellar in Szegi

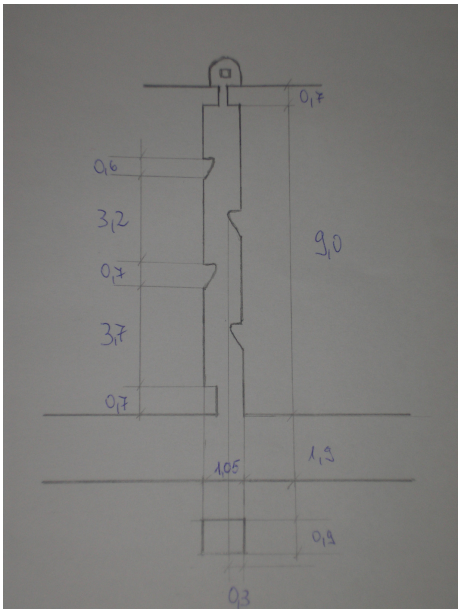
The largest underground space in the region is 1205 m² with a height between 6.5-7.2 m.

Who built the cellars and how?

Serfs were used to excavate the cellars. In the 17th to 18th centuries German-speaking settlers arrived, Carpathian Germans primarily from Medzev (now eastern Slovakia). They were renowned for digging cellars and building retaining walls.

Carving marks in the tufa in Erdőbénye

Torches and candles provided light for the cellar work with picks, hammers and chisels. Fire setting (using fire to heat stone and using water to cool the stone quickly causing even the hardest rock to fracture) was also done by hand. The rubble was removed in baskets or by lines of men who passed the stone to each other.

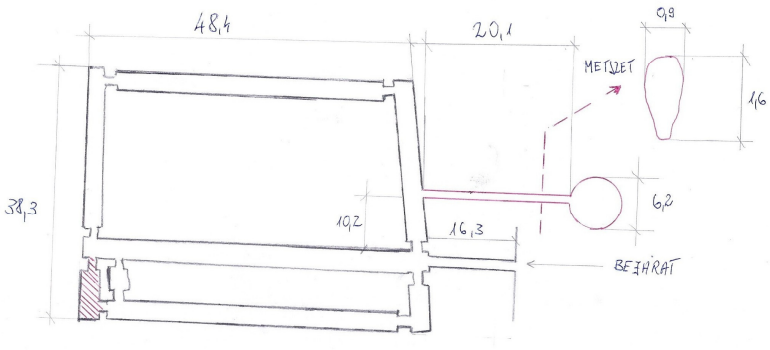


Shaft mining used to create a cellar from Tállya

Drainage

Individual solutions were found to drain off groundwater and aerate the cellar

Drain for groundwater in Szegilong



Plan for draining water in Szegilong

Vaults and the "chimney-like" air shafts

Carved stone was used for both the vaults and the "chimney-like" air shafts for several reasons. Stone had greater strength and was to be found nearby in practically limitless quantities. Both the stone and the carving work were cheaper than bricks. This situation changed only in the 19th century.

Fish-scale like ceiling in Mád

500 year-old air shaft in Sárospatak

The use of brick

Brick was typically used for renovation and areas near the surface under buildings.

Brick-faced air shaft in Sátoraljaújhely

Stone and brick together near the entrance to a cellar in Bodrogkeresztúr

Drawings and inscriptions

In terms of cultural heritage **the drawings and inscriptions on the walls are the most endangered**. These can be regarded as hundreds of year-old graffiti. The cover of cellar mould, re-carving of the arches and the strengthening of the vaults with stone and brick mean many have been lost in recent years.

Drawing of the Reaper on a cellar wall in Tokaj

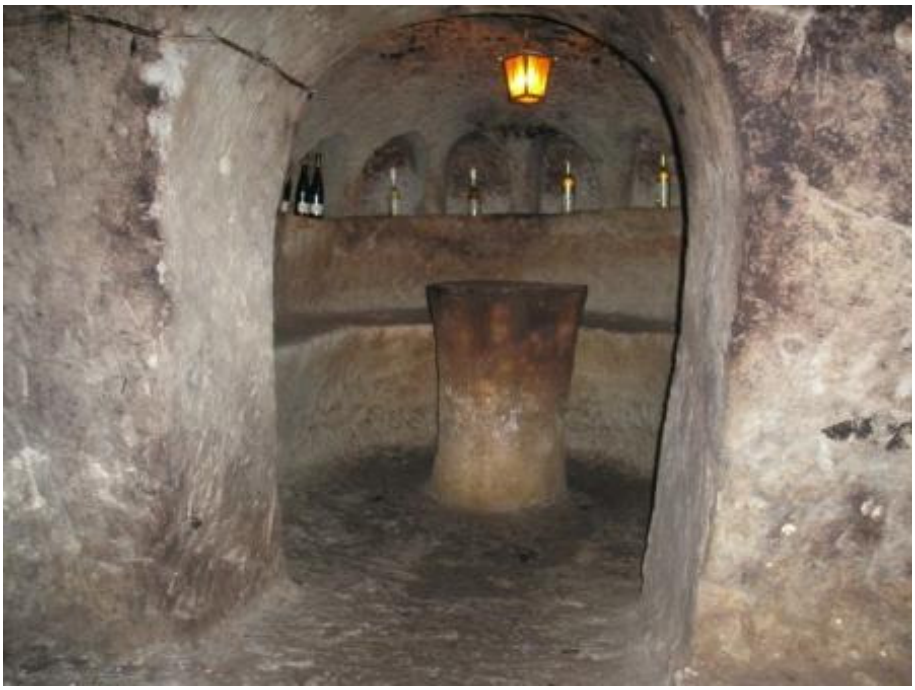
Cyrillic inscription in Tokaj

Historical figures and cellars

It is rare for **the inside of a cellar to be connected to a historical figure** and for the place to have remained intact.

Prince Rákóczi's barbecue area in Sárospatak

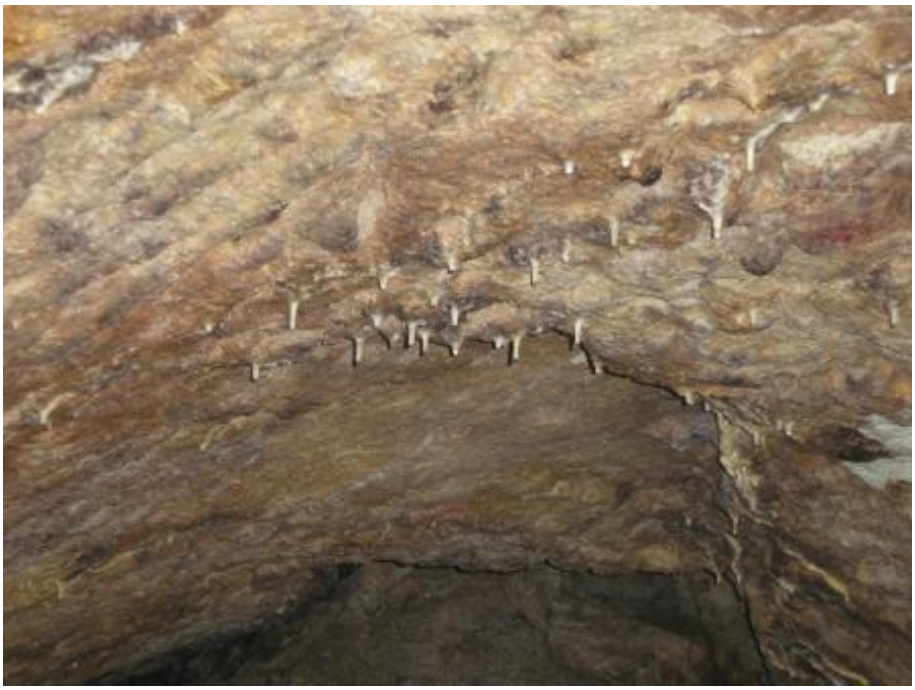
Today almost all cellars in the Tokaj Region have a **tasting area**. Most of these were created in the 20th century.



A unique several hundred-year-old tasting room in Sátoraljaújhely

Future of the cellars

The future of the cellars will primarily be determined by our ability to preserve their condition from effects originating on the surface: water, shocks.



Stalactite formation in a cellar in Mád that is constantly leaking

At least 30 m³ rock collapsed here in Mád

Modern or traditional cellars?

In economic terms the high running costs of traditional cellars can present a challenge. The extent that modern buildings (with lower construction and repair costs) will take over the role of traditional cellars cannot be predicted. The main disadvantage of modern buildings is their high energy requirements.

Barrels stored at ground level (Mád)

Renovated cellar in Bodrogkeresztúr

Tasks to be determined in the Treatment Plan to protect the cellars

Different solutions are appropriate for the **geological, architectural and cultural assets**. However a unified approach to the protection is needed. The effects of changes at the surface and unconsidered alterations and developments threaten these assets. First the recognition of the cellars' value is of key importance. This should be followed by precise surveys and the creation of the cellar cadaster. It is important that people living in the wine region should **recognize their importance and consciously protect them** whether they be the owners, people carrying out building work or construction companies. Thorough preparation is needed to provide the information on which to base the heritage designation, determine the tasks to be undertaken by the authorities and to use (financial) support effectively.
Suggestions are given in the tables in the attachment.

Summary
Some believe that the importance of the traditional Tokaj cellar is less important in the age of stainless steel vats and air-conditioned storage of wines at ground level. For people to pay the appropriate price for the wines, their uniqueness and historical background must also be made known to support the excellent product. The underground and hidden world in the World Heritage Cultural Landscape offer just this. The romantic world of the cellars can bring new wine lovers and consumers, not only with their darkness, candlelight and cellar mould, but also with the conscious presentation of this typical asset of the Tokaj Wine Region. This is why the special attention should be paid to the creation of Treatment Plan for the cellars so we can preserve this part of our culture not only for our grandchildren, but also to use them in increasing interest in Tokaji wine.

Sátoraljaújhely, May 2013

Appendix

- Summary of the tasks for the various elements of value
- Bibliography

Text and photo by István Müller

English translation by Katherine Chapman

Tasks related to architectural and technical heritage

Type	Assets	Threats	Tasks	Nature of support
Architectural-technical heritage	The cellars, cellar systems, the age and size, position in the town or village planning, their effect on town or village planning	Surface threats (e.g. construction, water, waste water, shaking)	Creation of cellar cadaster – if possible 3D –with surface elements, **restriction of construction above and below ground**	For the survey and restoration
	Unusual shaped cellars without vaults	Effects of ground-level work, expansion, cleaning of the vault	Alterations – in case of danger only, **recommendations**	
	Vaulted cellars	Effects and expansion on the surface, use of non-local materials		
	Ait vents			
	Water drainage systems			
	Wells, springs			
	Fireplaces			

Tasks related to geological and cultural heritage

Type	Assets	Threats	Tasks	Nature of support
Geological	Geological layers visible on the cellar walls	Mould and changing the ceiling cover the layers	Protection and **presentation** of the vine root layer underground, **only recommendations**	No support necessary. **Change in perception.**
Cultural	Chapels, places of prayer	Surface work, extensions	Survey, research into history, **placing under protection**	For the survey, **processing history and repair**
	Tasting areas (pre 1900)			
	Marks on cellar walls	Surface work, extensions, changing the ceiling	Survey, deciphering, **placing under protection**	
	Writing on cellar walls			

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