
Wieliczka and Bochnia Royal Salt Mines

(Poland)

No 32ter

Official name as proposed by the State Party

Wieliczka and Bochnia Royal Salt Mines

Location

Małopolska region, Bochnia municipality
Poland

Brief description

The rock salt mines of Wieliczka and Bochnia have been worked since the 13th century. They are the oldest of their type in Europe. They have a number of underground levels, forming hundreds of kilometres of galleries with numerous excavated rock salt chambers. The chambers have been transformed into underground chapels, storerooms, and diverse other rooms, in which altars and statues have been sculpted from the rock salt. Above ground, the property is completed by the Wieliczka Saltworks Castle, which was used for the management of the mines. The property as a whole bears witness to the stages in the secular history of a major European industrial establishment.

Category of property

In terms of categories of cultural properties set out in Article I of the World Heritage Convention of 1972, this is an extension of a property to form a serial property of 3 *groups of buildings*.

1 Basic data

Included in the Tentative List

29 January 2010

International Assistance from the World Heritage Fund for preparing the Nomination

None

Date received by the World Heritage Centre

11 February 2011

Background

This is a proposal for an extension of the Wieliczka Salt Mines which were inscribed on the World Heritage List at the 2nd session of the World Heritage Committee (Washington, D.C., 1978).

Because of significant humidity problems which posed a serious threat to its integrity, the property was inscribed on the List of World Heritage in Danger in 1984 (Decision 08 COM X.26-27). Following substantial ventilation and

drainage works, the property was removed from the List of World Heritage in Danger in 1998 (22 COM VII.2). A buffer zone was proposed by the State Party and accepted by the World Heritage Committee in 2008 (32 COM 8B.63).

Consultations

ICOMOS consulted TICCIH and several independent experts.

Technical Evaluation Mission

An ICOMOS technical evaluation mission visited the property from 18 to 22 September 2012.

Additional information requested and received from the State Party

ICOMOS sent a letter to the State Party on 19 December 2012, asking it to:

- Examine whether the property can be extended to include technical elements above ground;
- Clarify whether the Goluchowski level of the Bochnia mine forms part of the property or not;
- Set up a common Steering Committee for the three component parts of the serial property;
- Update and approve the conservation master plan for the Bochnia mine;
- Be particularly vigilant in the control of urban development in the buffer zone.

The State Party provided an additional response, dated 18 February 2013, which is taken into account in this evaluation.

Date of ICOMOS approval of this report

6 March 2013

2 The property

Description

The State Party proposes a dual extension of the Wieliczka Salt Mines, which are already inscribed on the World Heritage List. The extensions are located in the same region of the foothills of the Carpathians, near Krakow, and were involved in the working of the same geological seam of rock salt.

Part1:

The Bochnia salt mines are around twenty kilometres east of the Wieliczka mines. As with Wieliczka, the Bochnia mines are an entirely underground property, consisting of a complex ensemble of galleries, chambers and shafts. The depth of the ensemble varies from 70 m (level 1) to 261 m (level 8). Above ground, they correspond to a long strip, following an east-west axis. The length of the strip is 3.6 km and the strip's width does not exceed 700 m.

The successive mining levels forming the property are as follows:

- Level 1: Danielowiec,
- Level 2: Sobieski,

- Level 3: Wernier,
- Level 4: August, extended by Dobosz,
- Level 5: Lobkowicz,
- Level 6: Sienkiewicz,
- Level 7: Błagaj – Stametti,
- Level 8: Podmoście.

The spatial organisation of each level is characteristic of 18th and 19th century mining. It includes a central gallery, along the axis of the salt seam, and lateral mining galleries at intervals of roughly 40 m. The most fragile galleries are protected by timbering, but in most of the galleries this was not necessary. This mode of working led to the opening of a large number of chambers, some of which are impressive in size. The chambers are in the shape of ogival arches, for reasons of stability. Some of them were made into underground chapels, the main ones being the Passion, St Kinga's and St Joseph's. Others were made into stables, shops, workshops, gunpowder stores, etc., or made into passages between the different levels.

This part of the property has two access shafts remaining since mining ceased in 1964. To the east, the Sutoris shaft dates back to the 13th century; it was extended down to level 8 in the 1830s, and later to level 9. In the centre of the property, the Campi shaft dates from the 16th century, when it reached a depth of 300 m, and was extended to a depth of 408 m in the 19th century. The Trinitatis shaft, which dates from the early 20th century, is close to the western edge of the property. The property also includes a dozen shafts for pumping or ventilation.

A tourist route was laid out in the mine in the 19th century, so that tourists could visit the mine without interfering with the salt mining. Today the tourist route runs for some 2 km through the galleries, between levels 3 and 6.

Only those parts of the different levels which are safe and accessible have been selected to constitute the property proposed for the extension. Some galleries have been backfilled or abandoned for safety reasons in the course of the mine's history. These include the deepest zones, from level 10 to level 16. These galleries were excavated between the mid-19th century and the cessation of mining. The backfilling has contributed to the stabilisation and preservation of the upper galleries, which are in fact the earliest. The backfilled and abandoned zones do not form part of the property, but constitute its underground buffer zone.

A great deal of evidence of mining techniques has been preserved in the underground galleries: marks on the rock salt walls, tools, wagons, rails, ramps, etc. A certain number of recent machinery, notably for the access shafts, pumping and ventilation, is in working order.

Note that the two headframes and the associated buildings above ground do not form part of the proposed extension, but they are inside the perimeter of the underground property as projected to the surface.

Part 2:

The *Wieliczka Saltworks Castle* is located on an elevation in the north-west of the city of the same name, above the mine field. From the Medieval mine working period onwards, it constituted a fortified complex for the management of the mining, and the packing and storage of salt. Some of its component parts exist today only as traces, while others have been rebuilt or extended over the centuries, particularly after bombing during World War Two. The complex includes:

- The central House Amidst the Saltworks, which is the earliest part of the fortified complex (13th-14th centuries); it has one upper floor; it was rebuilt in the 17th century and then restored in the 20th century.
- The Saltworks House, to the north; this forms part of the property's defensive walls; it is a large building with an upper floor; initially dating from the 14th-15th centuries, it has been renovated and restored on many occasions.
- The southern building today forms the southern built limit of the property; it is built of brick, and dates from the 19th century.
- The mining reserve includes archaeological traces of an earlier 13th century mine shaft, which is nowadays filled in.
- The castle walls correspond in part to the line of the first fortifications of the castle, which are today inside the complex, and partly the later eastern defence walls.
- The tower in the north-west is included in the eastern defence walls; the tower is square and dates from the 14th century.
- The saltworks kitchen includes elements dating from the 15th century.
- The open spaces consist of garden beds and courtyards.

Extension

The Wieliczka salt mines (already inscribed on the World Heritage List), were worked on a grand scale for more than seven centuries. They consist of more than 200 km of underground galleries, excavated chambers and shafts. The property covers five main rock salt extraction levels, from 57 m down to 198 m in depth. The mines house a large collection of original tools and equipment illustrating the development of mining technology from the Middle Ages until modern times. They have also provided a base for the creation of works of art, such as chapels with altars and statues sculpted out of the rock salt.

In line with its earlier recommendations, ICOMOS considers that it is necessary to clarify the extent of the underground areas of the Wieliczka mine – whether it includes 5, 7 or 9 levels – and that all the levels and connecting shafts should be included in the main zone. An adequate map must be supplied to show the extent and area of the underground area constituting the Wieliczka mine property.

History and development

The sedimentation of the rock salt took place during the Miocene period. It was then disturbed and folded by the

tectonic movements which led to the formation of the Carpathians. The workable deposit consists of successive layers at depths between 60 m and 500 m. The richest layers are at a depth of between 200 m to 300 m.

The first human use of this resource was by means of evaporation of brine seeping to the surface in springs in the Wieliczka region. This is attested by archaeological evidence from the Neolithic until the Bronze Age, and subsequently in the 1st century BC.

There is little known about the history of salt mining in the first millennium AD, although local populations seem to have continued the tradition of salt evaporation. A turning point came in around 1100, when it seems that brine springs were less abundant. Evaporation techniques changed, and then shafts were used in addition to the springs. Initial attempts at mining for the direct extraction of rock salt took place in the 13th century, when it was discovered that the salt came from rock salt deposits.

The difficulty of digging shafts that were waterproof, and the desire to control salt production led to intervention by feudal lords, and later by the Grand Duke of Poland, Boleslaw V the Chaste. He called in the Cistercians to resolve the technical problems, and to run the ducal mine workings created in 1249. The exclusive right to mine the salt was granted to the sovereign.

Under the aegis of the Dukes, and later of the Kings of Poland, mining intensified at the end of the 14th century, under the name of the *Krakow Saltworks*. Wieliczka castle was expanded as the centre for the management of the mines and the marketing of the salt. The director was granted a high rank in the hierarchy of royal power.

Initially, the mines were worked entirely by manual labour, but in the 15th century animals were harnessed for certain tasks, with the use of a horse mill for vertical lifting, and then transport of the salt by carts. Various types of mechanisms were used to carry the rock salt to the surface, cut in the form of heavy cylindrical blocks.

Until c. 1500, the two sites of Bochnia and Wieliczka were of similar size. Then Wieliczka outstripped Bochnia. The golden age of the *Krakow Saltworks* continued until the mid-17th century, when 2000 miners extracted around 30,000 tons of salt annually. The salt was sold throughout Poland, in Silesia, in Bohemia, in Moravia and in Hungary. At that time, it was the largest enterprise in Poland, and one of the largest in Europe.

The region came under Austrian domination in 1772. The unified management of the two sites continued, forming a state enterprise until 1867. After 1867, the two mines were managed independently, but under the control of the same regional authority. The economic importance of the mines for Austria was so great that an underground tourist route was put in place from the early 19th century. Visits were made by the Emperors of Austria and of Russia. Salt spas were also established at Wieliczka. Boosted by the innovations of the industrial revolution and the

development of mining techniques, production shot up, exceeding 140,000 tonnes a year by 1900.

During the 20th century, economic conditions changed, with competition from sea salt which was easily brought in by boat and railway. Rock salt had to be mined at greater depths, and costs were increasing. After World War Two, at a time when mines were closing in many parts of Europe, the Wieliczka site was closed down in 1964, and the Bochnia site a little later.

In 1971, the underground facilities at Wieliczka were inscribed on Poland's national heritage list, and Bochnia followed in 1981. Both Wieliczka and Bochnia were tourism sites both before and after the closure of mining operations. In the 1970s, some 700,000 people a year visited the mines, and today this figure has risen to around one million.

3 Justification for inscription, integrity and authenticity

Comparative analysis

The State Party firstly compares the Wieliczka Saltworks Castle with the Royal Saltworks of Arc-et-Senans (France, 1982, (i) (ii) (iv)). The main parallel drawn is that both embody a major architectural project for the management of a royal saltworks. The types of architecture are, however, unrelated to each other. The French property illustrates the Utopia of the Enlightenment with a well preserved set of buildings, whereas Wieliczka is a fortified construction of Medieval origin which has undergone many alterations. The comparison is more relevant with the other part of the French property, the Great Saltworks of Salins-les-Bains, which date back to the Middle Ages and were worked over a period of many centuries, like the nominated property. The condition of the buildings above the ground at Salins-les-Bains is fairly poor, and many of the historic elements are no longer present today.

Around ten European mining sites already inscribed on the World Heritage List are examined, and their main characteristics are presented in comparison with those of Wieliczka and Bochnia. But the mining techniques depend quite considerably on the minerals worked, and on the geological situation of the mines, even though there may be a large number of common features: galleries, shafts, technology to carry the ore to the surface, etc. Generally speaking, Wieliczka and Bochnia are among the first European subterranean mines, although there were earlier attempts in antiquity and even protohistoric periods.

A dozen salt mining sites in Europe are also examined, including the one already mentioned, Salins-les-Bains and Arc-et-Senans in France, the only one to be inscribed on the World Heritage List. Here,, the salt was obtained from underground brine, which was then evaporated over a fire. This type of salt extraction is quite different from that of the nominated property. By comparison, the sites at Imon (Spain), Brunswick and Berczn (Germany), Cacica, Slanic, Unirea and Turda (Romania), and Solivar

(Slovakia) involve the direct working of underground deposits, in a way similar to the nominated property. Some are earlier, and some also contain chambers which have been converted into chapels, or used for other purposes. The nominated property includes all the elements embodied in the other sites, forming a very complete technical and artistic underground complex. It is furthermore the largest mining complex, and was worked over a long period of history. Various sea salt extraction sites are referred to, but although the final product is of the same kind, the means used to obtain it bear little relation to the nominated property, and the sites concerned are completely different.

ICOMOS considers that the comparative analysis of historic salt mines and saltworks is satisfactory, as far as Europe is concerned. References to other regions of the world, such as the salt quarries of the Central Sahara, or the Kansas salt mines in the United States, would also have been worthwhile. The comparative analysis of architectural complexes used for the management and control of salt, and strategic mineral resources more generally, would have been worth looking at more thoroughly.

ICOMOS considers that, despite some gaps, the comparative analysis justifies consideration of the extension of the property already inscribed on the World Heritage List.

Justification of Outstanding Universal Value

The nominated property is considered by the State Party to be of Outstanding Universal Value as a cultural property for the following reasons:

- When the Wieliczka mine was inscribed, in 1978, the neighbouring Bochnia mine was still being worked, which was why it was not considered. However, the two mines have a common and parallel history, under the name of Krakow Saltworks, from the very beginning of underground salt mining, and they are of similar size.
- The testimony provided by the Bochnia mine is similar in technical, cultural and artistic terms, but is an outstanding complement to the testimony already acknowledged at the Wieliczka mine.
- The Saltworks Castle provides architectural testimony of initially fortified buildings which were then developed for the administration and management of one of the earliest major industrial enterprises in Europe. The diversity of the buildings bears witness to the various periods of working of the Krakow Saltworks.
- The Wieliczka Saltworks Castle museum contains exceptional documentation on the techniques used to mine rock salt, and on the associated industrial and social history, going back more than 700 years.
- The two proposed extensions help to strengthen the integrity of the property already inscribed.

The statement of Outstanding Universal Value for the property inscribed on the List is: *"The salt mine in Wieliczka is a unique development in the history of mining, because the rock salt deposits were mined without interruption from the 13th to the end of the 20th centuries. Excavation in this mine is on a grand scale, with corridors, galleries, and chambers, as well as underground lakes, totalling more than 200km in length over seven levels, which are between 57m and 198m deep. These mines are home to the largest collection of original tools and mining equipment illustrating the development of mining technology from the Middle Ages to modern times. Not only was the Wieliczka salt mine the site where an economically valuable raw material was mined, it also gave rise to the creation of exceptional works of art, such as chapels with altars and statues made from this atypical material. Wieliczka attracted visitors because of its uniqueness and beauty almost from the beginning of its existence. The first tourist route was opened in the middle of the 19th century."*

The justification for the serial approach is that it would enable better integrity, by taking into account the historic extension of salt extraction at two neighbouring and complementary mining sites, as well as the testimony of the Saltworks Castle with regard to the management of the mines since their beginnings.

ICOMOS considers that this justification is appropriate, as the Bochnia mine was for a long time of similar importance to the Wieliczka mine, which has already been inscribed on the List. Their technical cultural and artistic testimonies have run in parallel, from the beginnings of the mining of the rock salt, and they complement each other. While the Saltworks Castle is not in itself of outstanding value, it makes a significant contribution to a general understanding of the property and its history.

Integrity and authenticity

Integrity

The two mining sites clearly embody a geological continuity, and the historic parallels between the working of both have been established. The general integrity of the property is thus reinforced by the proposed extension of the property already inscribed on the List, the Wieliczka mine, to include the Bochnia mine. The contribution of the Wieliczka Saltworks Castle enables the inclusion of the historic buildings used for the management of the company, built and altered from their Medieval origins right up to the end of the 20th century. Use has been continuous, and the recent reallocation of functions has been carried out in the interests of the interpretation of the property.

The technical testimony is extremely comprehensive, both as regards elements that are still present or have been restored in the mines, or in the Saltworks Castle museum.

The elements proposed for the extension have been chosen in order to fully express the integrity of the property constituted by the former Royal Saltworks of Krakow.

ICOMOS considers that the property's integrity is significantly strengthened by the proposed extension. Furthermore, in its answer dated February 2013, the State Party said that it did not wish to act on the suggestion of extending the property to include various elements above ground, such as the remaining mine shaft headframes and the steam machine room still in place at the Campi shaft. The State Party takes the view that these elements, which are relatively recent in terms of the mine's history, are too closely interwoven into the urban fabric of the buffer zone to provide a sufficient expression of integrity and authenticity, and that they contribute only marginally to the value of the property.

Authenticity

There is no doubt about the authenticity of the mining property. In the Bochnia mine, levels 3, 4 and 6 bear witness to the mining operation that was established in the 18th century and developed in the 19th. Conversely, the structural and architectural authenticity of the Wieliczka Saltworks Castle is only relative, as it has undergone numerous rearrangements and reconstructions during its history, particularly after bomb damage in World War Two.

The extended property is an authentic expression of the tangible conditions of the underground extraction of rock salt, at various historic periods, using technical means which were constantly being changed and improved.

The elements of the property which express its intangible values of technical knowhow, social traditions, spiritual practices and aesthetic culture are authentic.

The continuity of the use of the mines and of Wieliczka Saltworks Castle since the 13th century is authentic, and is attested by a large amount of documentary evidence.

ICOMOS considers that the property does indeed express a reasonably satisfactory degree of authenticity regarding mining, but the preserved structure is of the 18th century, and the technical testimony dates essentially from the 19th and 20th centuries. Technical knowledge for earlier periods comes mainly from historic records, and from resulting reconstructions, which are sometimes a little over-interpreted, rather than from direct evidence.

ICOMOS considers that the conditions of integrity and authenticity have been met.

Criteria under which inscription is proposed

The extension is proposed on the basis of cultural criterion (iv).

Criterion (iv): be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history.

This criterion is justified by the State Party on the grounds that the Wieliczka and Bochnia salt mines have, continuously since the Middle Ages, embodied an example of a major industrial establishment, along with the elements of its technical and administrative organisation. This is perfectly illustrated here by the evolution of mining techniques down the ages, thanks to the good preservation of the early galleries, with installations which are specific to each one. A very comprehensive collection of tools and machinery is present in the mines, bearing witness to the evolution of mining techniques over a long period of European history.

ICOMOS considers that the Wieliczka and Bochnia Royal Salt Mines illustrate the historic stages of the development of mining techniques in Europe, from the 13th to the 20th centuries. The galleries, the subterranean chambers organised and decorated in ways that reflect the miners' social and religious traditions, the tools and machinery, and the Saltworks Castle which administered the establishment for centuries, provide outstanding testimony about the socio-technical system involved in the mining of rock salt.

ICOMOS considers that this criterion has been justified.

ICOMOS considers that the proposed extension constitutes, with the property already inscribed, a serial property which is fully justified.

ICOMOS considers that the property nominated for extension meets the conditions of integrity and authenticity and meets criterion (iv).

Description of the attributes

- The two neighbouring rock salt mines of Wieliczka and Bochnia have been joined under the name of Krakow Saltworks. They have had a common and parallel history since the 13th century.
- They form the largest mining ensemble of its type in Europe, and the best preserved, with an extremely extensive network of galleries, which can still be visited.
- They provide outstanding testimony to rock salt mining techniques and their evolution over some 800 years of continuous working.
- They embody outstanding cultural and artistic testimony in the reuse of the worked mines.
- The Saltworks Castle bears witness to the initially fortified buildings which were developed for the administration and management of one of the oldest major European industrial enterprises. Their diversity bears witness to the various periods of working of the Krakow Saltworks.
- The Wieliczka Saltworks Castle museum contains an exceptional documentary record of the techniques used

to mine rock salt and the associated industrial and social history.

4 Factors affecting the property

The mines have been definitively closed down. There is no plan to resume mining. On the contrary, a spa establishment has been set up in the Bochnia mine, and is managed by the same company that runs the tourist route.

The urban sites of Wieliczka and Bochnia constitute the buffer zones above the two mining sites. They consist of early ensembles of buildings which embody part of the history of the mine; they are listed as historic urban centres. However, a major urban renovation and development programme at Bochnia, close to the Campi shaft, has been announced.

The presence of large numbers of tourists in the galleries should not have any significant impact on the atmosphere underground, in terms of possible deterioration of the attributes. However, the humidity of the air is a permanent threat to the integrity of the rock salt sculptures, particularly during the summer period.

There is no risk of methane or dust in the mine representing a danger for visitors.

There is a risk of flooding, particularly in the eastern zone at Bochnia, because of possible weaknesses in the old shafts and abandoned galleries, as in some cases the backfill is not completely watertight.

In geological terms, the saline and mineral mass of the rock salt deposit is in a phase of geomechanical compression. This process has been accelerated by the mining itself. The galleries and chambers are thus currently subject to gradual subsidence or deformation. This process can be attenuated and slowed down, but cannot be completely eliminated.

Climate change could give rise to exceptional weather events, which for the property could raise the level of risk of flooding.

ICOMOS considers that the main threats to the property are the risks of humidity affecting the rock salt structures and sculptures; this danger seems to have been underestimated in view of the high levels of summer visitors. It would also be advisable to determine that the underground spas are harmless in this respect. Other factors requiring attention are the geodynamic risk of subsidence of the subsurface; the risk of flooding, linked to a possible increase in rainfall as a result of climate change; and control of urban development in the vicinity of the Wieliczka Saltworks Castle and the Campi shaft at Bochnia.

5 Protection, conservation and management

Boundaries of the nominated property and buffer zone

The salt mines of Wieliczka, which are already inscribed on the World Heritage List, have a geographic area of 969 ha at ground level, and a buffer zone of 244 ha. No-one lives in this part of the property; the population in the buffer zone is 5000.

The Bochnia salt mines have a geographic area of 135.4 ha at ground level and a buffer zone of 332.6 ha. No-one lives in this part of the property; the population of the buffer zone is 18,000.

Wieliczka Saltworks Castle is a property with an area of 0.547 ha and a buffer zone of 4.0 ha. No-one lives in this part of the property; the population of the buffer zone is 138.

ICOMOS considers that the boundaries of the property proposed for extension and of its buffer zone are adequate.

Ownership

The Bochnia mine is the property of the State Party, and is wholly owned by the State Treasury. It is managed by a semi-public company (the former public enterprise and new private shareholders) which rents out the mine for tourism and spa activities.

Wieliczka Saltworks Castle is wholly owned by the *Krakow Saltworks Museum*, which is a state cultural institution.

Protection

The legal texts which govern the properties nominated for the extension are as follows:

- Act on Protection of Cultural Property and Museums (1961);
- Act on State Enterprises (September 1981);
- Act on Organising and Conducting Cultural Activities (1991, amended in 2001);
- Act on Mining and Geology (February 1994);
- Act on Museums (1996);
- Act on the Protection and Care of Historic Monuments (July 2003).

The Bochnia mine site is legally protected both as a registered historic monument (N° A-238, December 1981) and as a historic monument of Poland (presidential decree, September 2000). It is also protected by decree no. 64/5 of the Malopolska Region (December 2005) with regard to the geological and natural values of the property.

Wieliczka Saltworks Castle is inscribed on the State Party's register of historic monuments (N° A-579, March 1988).

The protection of the monuments is the responsibility of the *National Heritage Board* and the Conservator's Office for Protecting Historic Monuments. The application of mining laws and regulations is the responsibility of the *Krakow District Mining Office*.

ICOMOS considers that the legal protection in place is adequate and effective.

Conservation

A large number of technical elements illustrating the history of the mine have been preserved *in situ*. Other objects are at the Wieliczka Saltworks Castle Museum, along with substantial archive records of the history of the saltworks since the Middle Ages.

Property conservation work is conducted by the Museum management, under the dual control of the Historic Monuments Conservation Department and the District Mining Office, in partnership with the various players on each site. University specialists can join the research and monitoring programmes relating to the property.

Systematic initiatives have been under way to backfill galleries, shafts and conduits which have no heritage value at the Bochnia mine since the early 1990s. The backfill consists of a mixture of sand and mining waste. At the same time, a heritage inventory of the galleries was carried out, to determine which should be conserved and which should be backfilled. The works were completed in 2009. It seems that the geodynamic tendencies of the ground have been satisfactorily stabilised as a result. This enabled definition of what could be conserved at Bochnia, which led to the process of extension of the property already inscribed.

The general state of conservation of the Bochnia mine is considered to be satisfactory, both as regards the structural elements (galleries, shafts, chambers, stairs, ramps, etc.) and the decorative and architectural elements of the mining ensemble.

The general state of conservation of Wieliczka Saltworks Castle is considered to be satisfactory, both as regards its external structures and its interior appointments.

Major works for the conservation and restoration of technical, structural and decorative elements have recently been carried out in the Bochnia mine. Works were also carried out to improve visitor access conditions and safety during the underground visit. The works formed part of a Master Conservation Plan for the Bochnia mine, as an historic monument, drawn up in 2003. A series of additional works have been scheduled for the period 2010-2013. In February 2013, the terms of reference for the conservation of the Bochnia mine were brought into alignment with those of the Wieliczka mine already inscribed, in accordance with the ICOMOS recommendation.

Major conservation and restoration works were recently carried out on the facades and towers of Wieliczka

Saltworks Castle. Archaeological monitoring of the site is now under way.

Maintenance and running repairs on the sites are carried out by the permanent staff of the management unit for each site, and in the mines by the specialised technical departments.

ICOMOS considers that the conservation of the property is generally appropriate and that it is effective. However, ICOMOS recommends that particular attention be paid to monitoring the effects of humidity on the structures of the underground property and its sculpted decorations; and that for restoration of architectural and historic technical elements, particular attention be paid to avoid inaccurate reconstructions and the risk of over-interpreting the existing remains.

Management

Management structures and processes, including traditional management processes

The Bochnia mine and its operation for tourism purposes have been entrusted by the State Party to the semi-public company *Bochnia Salt Mine Spa*. Wieliczka Saltworks Castle is managed by the state cultural institution *Krakow Saltworks Museum*. Its director answers to the Ministry of Culture and the National Heritage Board. The *Krakow District Mining Office* is responsible for the subsurface, its geomorphological conservation and the control of its use for tourism, in accordance with the rules in force.

The stated intention is to strengthen the management system for each of the sites, so as to coordinate them and organise their common relations with the municipalities, the region and the specialised departments of the State Party. This is a multilateral system project, made up of management units which up to now have been independent. The need to intensify cooperation between the three sites has been recognised by the State Party.

For the time being, there is no global management framework for the serial property. It has been announced that the *Monitoring Group* for the extension proposal could constitute this permanent overarching body, under the name Serial Property Steering Committee.

Policy framework: management plans and arrangements, including visitor management and presentation

Industrial activity is currently being wound up under the *Programme for the total liquidation of the mining company*, under the control of the Ministry of Industry and the District Mining Office.

The *Strategic Development Plan of the Malopolska Region* (2007-2013) is intended to promote the conservation of cultural and landscape properties, and ensure better regional integration of tourism programmes.

The *Local Programme for the Revitalization of the Town and Commune of Bochnia* (2007-2013) is complementary to the strategic plan, and takes a global overview from a post-industrial viewpoint. The above-ground site of the Bochnia mine ("Pole Campi") forms an important part of the programme. It guarantees the protection and conservation of the two properties proposed in the extension, in accordance with the legal acts and texts.

The two mining sites are well adapted for relatively large-scale tourism. The technical facilities for access to the underground galleries open to visits are good. Visitor safety is the responsibility of the District Mining Office.

Visitor capacities are determined by the capacities of the shafts facilities: 180 people per hour at the Sutoris shaft, and 250 per hour at the Campi shaft. The annual number of visitors to the mine is in the order of 135,000 (2009); this figure is increasing. Wieliczka Saltworks Castle is visited by about 30,000 people a year. It is also used as a cultural venue (exhibitions, concerts, etc.).

The actions already carried out to backfill the abandoned galleries and shafts were intended to ensure geomechanical stabilisation of the ground. To complement this effort, various studies are under way, along with a programme to make the ancient shafts and galleries of Bochnia more watertight, to prevent the risk of flooding.

An automatic fire alert procedure is in place at Wieliczka Saltworks Castle. More generally, a safety team consisting of staff working underground in the mine is always ready to carry out an emergency evacuation. But the description of the safety plan for tourist visits remains rather unspecific.

The conservation of the historic parts of the mine is covered by the *Conservation Plan* 2007-2013. The operation of the mine for tourism and the spa provides another source of revenue.

The operation and conservation of Wieliczka Saltworks Castle are funded by the budget of the Ministry of Culture and by the National Heritage Board. The Museum collects revenues from tourist visits.

The director and staff of the Museum constitute the scientific core for the documentary inventory of the various sites and for the monitoring of conservation.

The Bochnia mine has 135 employees and office staff, of whom more than 100 work underground. It has around thirty engineers and technical managers, and about a dozen scientific experts. The underground spa has around a hundred employees and managers. The Museum has a team of 106 people, including 9 curators and more than twenty graduate specialists in history, archaeology, geology, art and ethnography, etc. A series of specialist training courses, linked to the conservation of the property's values, are provided on-site.

Involvement of the local communities

This is carried out by the Municipality of Bochnia through its local development plan. It is associated with the management of the properties proposed in the extension.

ICOMOS considers that the individual management system for each site is satisfactorily established. Each site has a large number of competent specialists of its own. The programmes for the conservation and management of the sites function satisfactorily.

In response to ICOMOS's question about the lack of an overarching management structure for the serial property and the necessity of ensuring that all the partners concerned are involved in it, the State Party reports that progress has recently been made (February 2013) with the setting up of a working group, and of coordination between the officials in charge of the three sites which are to form the serial property. A commitment has been made that the working group will very shortly be transformed into a *Property Monitoring and Coordination Team*. This team will constitute a unit in its own right, and will hold regular meetings.

ICOMOS considers that the management system for each individual site is satisfactory, but that the coordination of the serial property is no more than embryonic at present. It is therefore important to:

- Confirm the setting up of the *Monitoring and Coordination Team* announced in the State Party's response dated February 2013, in accordance with paragraph 114 of the *Operational Guidelines*; state its composition, its human and material resources and how it will operate in practice;
- Provide a better description of the safety plan with regard to the operation of the tourism activity.

6 Monitoring

The monitoring of the mines is carried out in accordance with the laws and acts governing mining in Poland. Monitoring is today carried out in conjunction with the monitoring of the environmental protection of the mining sites and of the health of local residents. It includes quarterly monitoring of general safety (geology, fire) and monitoring to ensure the health of visitors and staff; quarterly monitoring of air quality; weekly monitoring of the presence of methane, and monthly monitoring of the ventilation systems. The underground team for the evacuation of visitors in the event of a proven risk is also checked on a quarterly basis.

In view of the risk of a gradual subsidence of the ground, the monitoring of 12 geomorphological parameters of the underground site is in place, on an annual or twice-yearly basis. Geodetic monitoring of changes in the surface is also in place.

An inspection of the general condition of Wieliczka Saltworks Castle is carried out annually. It also undergoes an inspection to ensure the quality of conservation of its collections and the quality of its activities.

The specialised departments of the operating company carry out the technical monitoring operations, under the supervision of the District Mining Office. The Conservator's Office for Protecting Historic Monuments (Ministry of Culture) supervises all the sites from the viewpoint of the correct conservation of historic monuments.

ICOMOS considers that the monitoring of the properties nominated for the extension is generally satisfactory. However, underground humidity and its impact on sculpted elements should be specifically monitored on a regular basis, and the monitoring of the underground electrical and mechanical systems needs to be specified.

7 Conclusions

ICOMOS considers that the Bochnia Salt Mines and the Wieliczka Saltworks Castle significantly contribute to the strengthening of the Outstanding Universal Value already recognised for the Wieliczka Salt Mines, and to the reinforcement of its integrity.

8 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the extension of the Wieliczka Salt Mine to include the Bochnia Salt Mine and Wieliczka Saltworks Castle, and thus become the Wieliczka and Bochnia Royal Salt Mines, Poland, be approved on the basis of **criterion (iv)**.

Recommended Statement of Outstanding Universal Value

Brief synthesis

The Wieliczka and Bochnia salt mines are located on the same geological rock salt deposit in southern Poland. Situated close to each other, they were worked in parallel and continuously from the 13th century until the late 20th century, constituting one of the earliest and most important European industrial operations.

The two mines include a large ensemble of early galleries which extend to great depths. The residual excavations have been altered, and made into chapels, workshops and storehouses, etc. A substantial ensemble of statues and decorative elements sculpted into the rock salt has been preserved in both mines, along with an ensemble of tools and machinery. An underground tourist route has existed since the early 19th century.

The two mines, which over a long period were combined as one company with royal status, were administratively and technically run from Wieliczka Saltworks Castle, which dates from the Medieval period, but has been rebuilt several times in the course of its history.

Criterion (iv): The Wieliczka and Bochnia Royal Salt Mines illustrate the historic stages of the development of mining techniques in Europe, from the 13th to the 20th centuries. The galleries, the subterranean chambers arranged and decorated in ways that reflect the miners' social and religious traditions, the tools and machinery, and the Saltworks Castle which administered the establishment for centuries, provide outstanding testimony about the socio-technical system involved in the underground mining of rock salt.

Integrity

The integrity of the property is significantly strengthened by the proposed extension, particularly with regard to the diversity of the ensemble, in mining, technical and artistic terms, and the completeness of the evidence of the historically ancient working of rock salt in this region of what is today Southern Poland. The extension to include Wieliczka Saltworks Castle, which historically administered the mines and managed sales of the salt for the benefit of the princes and kings of Poland, opens up a new dimension for the Outstanding Universal Value of the ensemble.

Authenticity

The property expresses relatively satisfactory mining authenticity, although the preserved structure is that of the 18th century, and the technical testimony relates essentially to the 19th and 20th centuries. Technical knowledge about earlier periods stems mainly from historic records, and from the resulting reconstructions, which in some cases are slightly over-interpreted, rather than from direct evidence.

Management and protection requirements

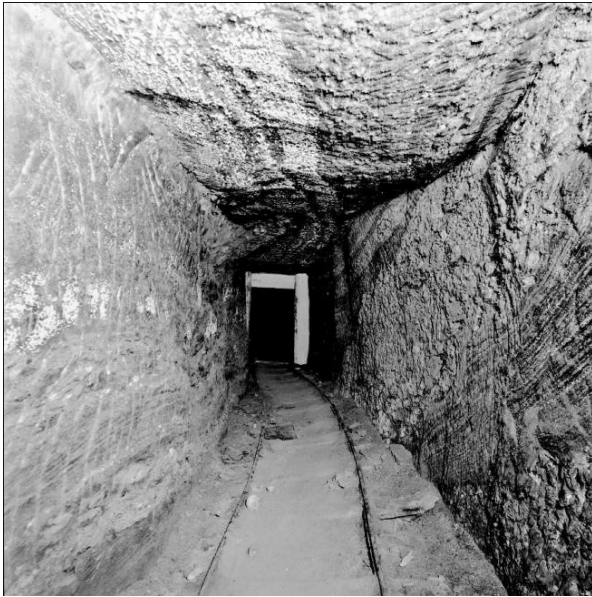
The Bochnia salt mine is legally protected both as a registered historic monument (N° A-238, December 1981) and as a historic monument of Poland (presidential decree, September 2000). Wieliczka Saltworks Castle is inscribed on the register of historic monuments of the State Party (N° A-579, March 1988). The protection of the monuments is the responsibility of the National Heritage Board and the Conservator's Office for Protecting Historic Monuments. The application of mining laws and regulations is the responsibility of the Krakow District Mining Office. The system for the individual management of each site has been satisfactorily put in place. Each site can draw on a large number of competent specialists. The functioning of the programmes for the conservation and management of the sites is satisfactory. The mining elements have been fully taken into account, which has led to a lengthy programme of stabilisation of the abandoned galleries, and the selection of the most representative galleries, in historic and heritage terms, for

conservation. However, the very recent setting up of a Monitoring and Coordination Team common to the three sites must be confirmed, both in terms of its structure and the way it will function, particularly in order to harmonise the conservation plans and to ensure the involvement of all the partners concerned.

Additional recommendations

ICOMOS recommends that the State Party give consideration to the following:

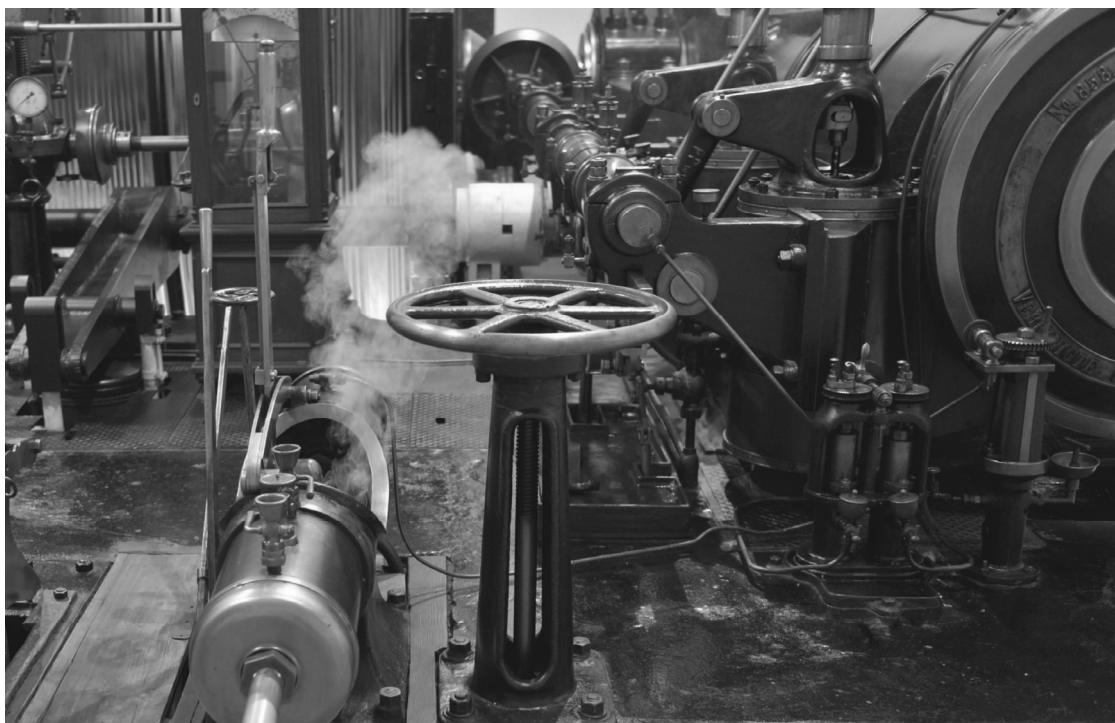
- Clarifying and specifying the extent of the subsurface and connecting shafts forming the Wieliczka mine; provide an adequate map to show the extent and area of the mine;
- Confirming the setting up of the *Monitoring and Coordination Team* for the property which was recently announced; specify its composition, its human and material resources and how it will function in practice;
- Paying particular attention to the control of urban development in the buffer zone, in the vicinity of Wieliczka Saltworks Castle, and for the development of the “Pôle Campi” at Bochnia, and keep the World Heritage Committee informed, in accordance with paragraph 172 of the *Operational Guidelines for the Implementation of the World Heritage Convention*;
- Providing a better description of the safety plan with regard to the operation of the tourism activity;
- Strengthening the study and monitoring of the risks associated with humidity affecting the underground structure and the sculptures of the Bochnia mine, particularly in view of the high level of tourist visits and the development of the spa;
- Paying particular attention to the risks of flooding at the Bochnia mine, bearing in mind a possible increase in torrential rain as a result of climate change;
- Stating the monitoring used for the underground electrical and mechanical systems at the Bochnia mine, and provide details about the emergency evacuation plans;
- Paying greater attention, in the case of architectural restorations and technical reconstructions, to inaccurate reconstructions and the risk of over-interpretation of existing remains.



Bochnia salt mines - Level 5: Lobkowicz (left) and underground chamber (right)



Bochnia salt mines – St Kinga's underground chapel



Bochnia salt mines - steam machine room at the Campi shaft



The Wieliczka Saltworks Castle