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The mill that does not grind grain

History of the paper mill in Duszniki-Zdrój



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Duszniki-Zdrój 2020



Muzeum Papiernictwa
w Dusznikach-Zdroju



**DOLNY
ŚLĄSK**

INSTYTUCJA KULTURY
SAMORZĄDU
WOJEWÓDZTWA
DOLNOŚLĄSKIEGO

Publisher:
Museum of Papermaking in Duszniki-Zdrój, Poland
57-340 Duszniki-Zdrój, ul. Kłodzka 42, Tel. +48 748 627 400

The publication was financed from the funds of the Self-Government of Lower Silesian voivodeship within the framework of the efforts aimed at inscribing the paper mill on UNESCO world heritage list.

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R. Grzelakowski, H. Hoehl, K. Jankowski, M. Młynarczyk (courtesy of the Ministry of Culture and National Heritage), M. Solska, T. Szarski, A. Szeląg, P. Szewczyk, T. Szewczyk, M. Szymczyk;
archives of the Museum of Papermaking in Duszniki-Zdrój and the Phillumenistic Museum in Bystrzyca Kłodzka

Cover design:
Krzysztof Jankowski

Design and preparation of the publication for print:
Grey Studio Paweł Myszkowski

Circulation 2000 copies

ISBN: 978-83-60990-58-2

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Introduction

Early days of papermaking in Duszniki-Zdrój are lost in the darkness of history. We know that in 1562, when the Kłodzko county had been subjected to the Kingdom of Bohemia, the paper mill had been sold by Ambrosius Tepper to Nicolaus Kretschmer arriving from Saxony. So when was it established? We are still searching for the answer to this question. In the early 17th century, high waters of the Bystrzka Dusznicka river severely damaged the paper mill, constituting Gregor Kretschmer's property at the time. However, he reconstructed the mill by 1605 and made his business flourish. Already in 1607, emperor Rudolf II granted the coat of arms to Kretschmer, and nobleman's title followed soon after. In the 18th century, Duszniki together with the Kłodzko land found themselves under the Prussian reign. The paper mill survived a number of wars and, due to its location by the road from Prague to Wrocław, it witnessed the marches of numerous opposing armies who would, however, always pass the mill with great respect.

The paper manufactured here for centuries would always promote cultural, scientific and artistic development. It was used by the kings of Bohemia, Poland and Prussia. The rulers of numerous cities as well as priests from nearby parishes used to write their documents down and prepare their books on the sheets from Duszniki. Local paper was used by many artists, including Fryderyk Chopin, treated in the local sanatorium.

The paper mill constituted the source of income for three families of papermakers: Nicolaus Kretschmer's descendants, then the Hellers and – from 1920s until the late interwar period – the Wiehrs. The 18th century marked the golden era of the paper mill, managed by the Hellers. In this period the facility was extended and ornamented and the manufacturing process considerably modernized and increased. The 1930s turned out to constitute the hardest times for the paper mill. In the period

of great economic crisis, which broke out in 1929, the situation of the company was deteriorating very fast and the only solution consisted in intending it for public purposes. By selling the facility, already out of its operation, to the town in 1939 Carl II Wiehr, the last papermaker from Duszniki, hoped for the creation of the museum. However, he did not live to see it happen, as he died in 1941.

The Second World War came to its end, country borders changed. Lower Silesia, together with the Kłodzko land and Duszniki, became part of Poland, ruined by the war and where the forced regime began to fight private property. The paper mill in Duszniki was nationalized. In the course of time, the value of its historical building became increasingly appreciated. 1956 turned out to be the decisive year, as it was when the paper mill was entered into the register of monuments and monuments' conservator extended their custody over it. Renovation of the decaying facility began. In 1968, the Museum of Papermaking was opened in the paper mill and in 1971, hand manufacturing of paper was reactivated in the former manufacturing room. The Museum was becoming an increasingly popular touristic attraction and in 2009 Polish Tourism Organization listed it among Polish most important touristic products. In 2011 President of the Republic of Poland awarded the paper mill with the status of the Monument of History, considering the facility to be one of the most precious cultural goods in Poland.

Thanks to the research conducted in recent years, history of the paper mill is becoming less of a mystery. The results of scientific analyses make it possible to state that the Duszniki paper mill is a unique facility not only among other historical paper mills preserved until today, but it is also an outstanding monument of technology, worth the inscription on the UNESCO world heritage list.



*View of Duszniki-Zdrój from the west
(W. Steinmetz, 1838, lithography, National Museum in Wrocław, sign. MNWr. VII-607)*



Paper mill in Duszyni, 1930s, watercolour painting, unknown author

Development of hand papermaking

The invention of paper is one of the most crucial achievements of human civilization. For centuries, paper was manufactured by hand and used mainly for writing down and spreading thoughts, news and knowledge. The popularization of machine papermaking technique in the 19th century resulted in considerable decrease in the price of this material, which made it increasingly accessible. With civilizational development speeding up every decade, the demand for paper grew. In the early 21st century, over 400 million tons of paper are manufactured in the world each year. At the same time, progress in the field of storing and spreading information initiated in the 1990s, results in paper changing its intended application. Nowadays, we use less paper for writing and printing, while the manufacturing of paper for packaging as well as hygienic and sanitary purposes increases.

Paper was invented in 105 AD in China. Its invention is attributed to court official Cai Lun (62–121). He used to crush raw materials – wood fibre, hemp waste and used fishing nets – with a hammer to form pulp. He would then spread it on a loosely woven sieve immersed in water. A thin layer of pulp, after draining and drying, would form the paper. With the course of time, sheets began to be arranged on sieves manufactured from thin plant (e.g. bamboo) stems.



蔡倫

Cai Lun – the inventor of paper

Within a few centuries, the art of papermaking had reached the neighbouring countries, while first European papermaking workshops was established as late as in the early 12th century by the Arabs in the Iberian Peninsula and allegedly in Sicily. Soon after, the Europeans took over papermaking know-how from the Arabs.

Papermaking process was refined in the 13th century in Italy. In the region of Fabriano (city situated 200 km to the north from Rome), a number of changes were introduced in the paper mills, which brought increased quality and manufacturing capacity. An important innovation consisted in the application of a waterwheel-driven stamp



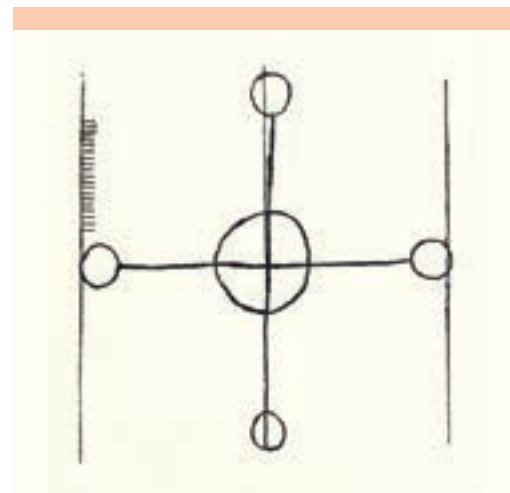
Stamp mill for rag defibring, from J. De La Lalande, Art de faire le papier, Paris 1761

mill, used to transform linen or hemp rags into pulp. **With this invention, the era of paper mills began.**

What is more, the sieve from thin plant stems, used so far for the forming of sheets, was replaced by a sieve with wire ribs, which ensured much higher durability and more even surface of the sheets shaped with its use. In the second half of the 13th century, also in Fabriano, using watermarks was inaugurated. What is more, Italian papermakers refined paper sealing method by soaking the sheets in the solution containing glue from sheep skin and hooves. Glue particles would penetrate the fibres and

thus, the ink would not form blots, but remain and dry on the paper.

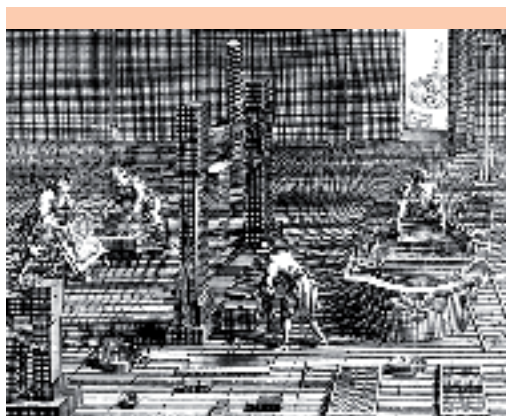
The papermaking process, refined in Italy, spread nearly all over Europe: ca. 1326 papermaking began in France (Richard de Bas in Auvergne), in 1390 in Germany (Nuremberg), before 1411 in Switzerland (Fribourg), before 1453 on the outskirts of Constantinople, ca. 1488 in England (Hert-



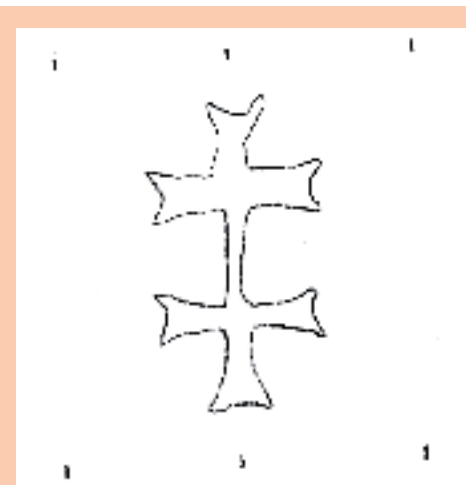
Redraw of the oldest watermark ever known, Bologne 1282

ford), in 1491 in Poland (Prądnik Czerwony near Cracow), before 1565 in Russia (Moscow).

Important inventions, enabling to further increase the quality of paper and enhance manufacturing capacity, were made by Dutch papermakers, who in the second half of the 17th century constructed a tool for transforming rags into paper pulp characterized by much greater efficiency than the stamp. The machine began to be called the Hollander, from the country where it had been invented. It was nearly eight times more efficient than the hammer stamp and the properties of paper pulp manufactured with its use were much



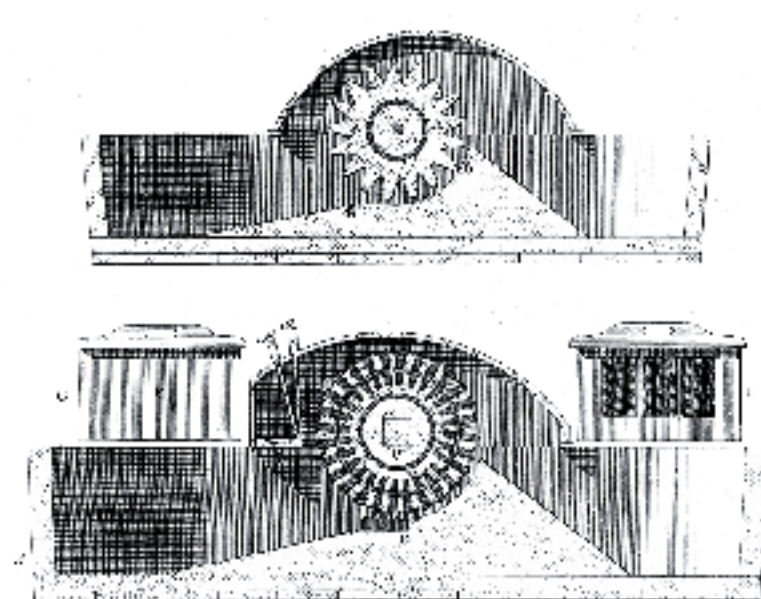
Hand papermaking, from J. De La Lalande, Art de faire le papier, Paris 1761



Redraw of watermark from Prądnik Czerwony, 1516, collections of the Museum of Papermaking

better compared to the one obtained with the previous tool.

The paper machine, constructed in 1798 by Nicolas Louis Robert from France, was the invention which initiated industrial revolution in papermaking. Its application differentiated paper factories from paper mills based on hand manufacturing process. What is more, factories were powered with steam machines (sometimes water turbines as well) and the mills with traditional water wheels. The popularization of machine manufacturing in the 1830s and 1840s resulted in the decline of former hand papermaking. Mills were liquidated in the decades to come, unable to win over their competitors – paper factories.



Hollander's design, from J. De La Lalande, Art de faire le papier, Paris 1761

Early days of papermaking in the Silesia region

First paper mills in Central Europe date back to the late Middle Ages. Also in the Silesia region, at the time forming part of the Kingdom of Bohemia, the manufacturing of paper was initiated in the late 15th century. The first Silesian manufacturing facility was in operation in Wrocław already in 1490. In the late 15th century, Silesian facilities were also established in Świdnica, Nysa and Racibórz.

In the early 16th century, several new paper mills were founded in the region: between 1501 and 1506 in Opawa, ca. 1511 in Legnica and after 1520 in Głogów. Favourable conditions for Silesian papermaking were not interrupted by the fact of this province being taken over together with the Kingdom of Bohemia by the Habsburg dynasty, which took place after the Bohemian and Hungarian branch of the Jagiellonian dynasty had died out in 1526. The already established papermaking facilities remained in relatively good situation, and conditions of those times would enable the establishment of new paper mills. Among those who began their

operations at the time one should mention the mill in Duszniki (former Reinerz) near Kłodzko, established before 1562. The golden era of papermaking was impeded by the Thirty Years' War (1618-1648), when numerous facilities were damaged. While before 1618, at least 15 paper mills had operated in the Silesia region, when the hostilities came to their end, probably only six of them remained active. When the conditions for development became more favourable, Silesian papermaking industry began to recover gradually. Parts of damaged paper mills were reconstructed and new ones were established; in this way, in the early 18th century, their number came close to twenty.

As a result of the first Silesian war (1740-1742) between Prussia and Austria, an important part of Silesia including the Kłodzko land and Duszniki was incorporated into Prussia. Under the new rule, further boom was recorded in local papermaking. While ca. 34 paper mills had been active in Silesia in 1740, in 1800 there were ca. papermaking facilities within the area of the Silesian province forming part of Prussia. It was the peak period in the history of Silesian hand papermaking industry.

At the turn of the 18th and 19th century, Prussian economy experienced stagnation. A strong wave of industrial revolution reached the country as late as in the early 1830s. This situation was favourable for manufacturing facilities and crafts as, free from the competition of industrial production, they were still able to operate. Silesian papermaking experienced a similar situation and with its hand papermaking technique prospered as long as until mid-19th century. The first papermaking machine was installed in Prussian Silesia in 1834 in Mioszów near Wałbrzych (ca. 50 km from Duszniki). In the decades that followed, rapid development of papermaking industry was recorded in the entire province. At the beginning of the 20th century, ca. 40 paper factories relying on machine production technique were in operation in the region. At the time, the only paper mill working based on the old technique remained active in Duszniki.



View of the paper mill in Wrocław, drawing by M. Lemejda basing on the axonometric and perspective projection of Wrocław, 1562, B. Weiner, Wrocław University Library

Owners of the Duszniki paper mill

The Kretschmers

The first known date referring to local papermaking is the year 1562, when on Saint Bartholomew's Day, **Ambrosius Tepper** sold mill shares to **Nicolaus Kretschmer**. We do not know whether Tepper had been the actual founder of the paper mill or how long he had remained its owner. It should thus be assumed that the paper mill was established in 1562 or earlier. The purchaser of the mill, arriving from Saxony, had become the progenitor of the first family of papermakers from Duszniki – the Kretschmers, managing the mill as long as for 144 years – until 1706.

Nicolaus's son **Gregor**, was his successor, becoming the owner of the mill in 1588. He contributed to the improvement in the durability of the paper from Duszniki thanks to the use of water (probably mineral water) for the preparation of paper pulp, as it was supposed to make the sheets resistant to moths. He turned out to be not only a good papermaker, but also an apt organizer. In the early 17th century, flood destroyed his mill (sources quote two contradictory dates of this catastrophe: August 24th 1601 and August 24th 1603). Using the preserved



Watermark of the Duszniki paper mill from Gregor Kretschmer's times (1588-1623), photo of the diapositive and redraw

walls of the old structure, he very aptly erected the new and more durable paper mill, able to resist further floods. Therefore, it was not the only big expense incurred by the papermaker from Duszniki – thanks to his financial involvement, Holy Cross Protestant church was erected on the hill next to the paper mill.

Gregor Kretschmer together with his brother Georg were distinguished in the way not common for other papermakers. In 1607, emperor Rudolf II Habsburg granted the coat of arms to the Kretschmers, and



Coat of arms document for Gregor and Georg Kretschmer, papermakers from Duszniki, August 13, 1607, Prague – State Archives in Wrocław, Branch in Kamieniec Ząbkowicki

nobleman's title followed soon after, together with the nickname "von Schenckendorf", the source of pride for next papermakers from Duszniki representing the family.

In 1619, **Samuel I**, Gregor's son, was mentioned as the owner of the paper mill and would run the family business until his death in 1640. Little is known about the history of the mill in Duszniki in this period. For Samuel it was for sure much more difficult to conduct his activity as the Kingdom of Bohemia, together with the Kłodzko county subjected to it as well as Silesia, became the arena of many hostilities during the Thirty Years' War (1618-1648) and the town of Duszniki suffered as well. Even if



Kretschmer coat of arms made in 1997, fragment of permanent display at the Museum of Papermaking, by K. Truss



Portrait of Samuel II Kretschmer, owner of the paper mill in Duszniki-Zdrój in ca. 1645-1656



Portrait of Christian W. Kretschmer, owner of paper mill in Duszniki-Zdrój in 1665-1689, front, 1671 – State Archives in Wrocław, branch in Kamieniec Ząbkowicki

the paper mill itself remained untouched, the decrease in production was for sure reported. The war brought important decrease in population, which also resulted in not enough raw materials for the manufacturing of paper.

In 1640, after the death of Samuel Kretschmer, Susanna, his widow, took over the mill. Their only son, Samuel II, was only 13 at the moment of his father's death and began to manage the paper mill only several years later. He died in 1656, aged only 29, thus managing the mill for the shortest period in the history of their family. This time is marked by post-war prosperity and re-establishment of commercial relationships.

After Samuel II's death, his wife **Susanna** became the owner of the mill (her mother-in-law's namesake). Their son **Christian Wilhelm** was only 9 years old when his father passed away and was able to take the management of the paper mill over no sooner than in mid-1660s. He managed the family business for over 20 years – until his death

in 1669. Under his management the paper mill was awarded the privilege of supplying the paper to offices in Wrocław, and in 1684 purchased the permit to collect rags within the entire Kłodzko county. This law strengthened the economic position of the paper mill in Duszniki, and at the same time blocked the chance for other paper mills to be established in the area. It was also said that the paper mill in Duszniki was authorized to collect rags in the area of the then Ziębice duchy and the town of Ząbkowice. Christian Wilhelm, similarly to his ancestors, was a respected man in the Duszniki environment, which is proved by the fact that he was elected town councillor, and mayor for some time.

When Christian Wilhelm Kretschmer died, his son **Wilhelm** aged 11, was unable to manage the mill on his own and papermaker's widow **Susanna Katharina** formally became the owner of the facility. She remarried in 1691 and her husband was **Anton Franz Rosenberg**, originating from



Portrait of Wilhelm Kretschmer, owner of the paper mill in Duszniki-Zdrój in the years 1697–1706

The Hellers and the Ossendorfs

From 1706 to 1822, for 116 years, the paper mill belonged to the representatives of the Heller family. The founder of the Duszniki line came from Frýdlant in northern Bohemia, a town which, similarly to Duszniki, had strong papermaking traditions. While the Kretschmers would not make any major investments connected with their business, then already in 1709, **Johan Anton Heller** bought former smithy facilities located nearby, transformed years before into a sawmill. With huge financial effort, he adapted the building for papermaking purposes. The facility was called “lower paper mill”, basing on which it may be assumed that it was located to the east from the existing paper mill. The investment proves increased demand for the paper from Duszniki, which was sold not only to local customers, but also to offices in Wrocław. In order to ensure the appropriate quantity of raw materials, in 1713 Heller, referring to former rights granted to the paper mill in Duszniki, regained the permit for collecting rags on the territory of the Ziębice duchy and the town of Żąbkowice. Johann Anton managed the papermaking business until 1737 and died in 1742, aged 85.

Anton Benedikt, born in 1704, shortly before the arrival of the Hellers to Duszniki, was the second papermaker from this family. His times were marked by the First Silesian War (1740-1742), which resulted in Silesia being annexed to Prussia. This created new conditions for the development of the business, but was also the source of new threats. Prussian-Austrian border established at the time cut Heller off from the areas of rag collection within the Broumov district. In return, he received from authorities the compensation under the form of the right to bring rags from Upper Silesia.



Portrait of Anton Benedikt Heller, owner of the paper mill in Duszniki-Zdrój in the years 1737-1772, by Caspar Rathsmann

First half of the 18th century marks the spreading of the new technique for preparing paper pulp in Central Europe, with the use of machine called the Hollander. The date of its installation in Duszniki remains unknown. However, it has been confirmed that Anton Benedikt Heller did it, spending 1000 rixdollars. Using Hollander resulted in two kinds of benefits for Heller. The new machine would crush rags into paper pulp much more precisely than stamps applied before, thus ensuring higher quality of the paper. What is more, the Hollander could produce much more paper pulp, which brought the increase in production capacity. This, in turn, forced Heller to build a new and spacious drying room, erected after 1743 by the eastern wall of the existing mill. Anton Benedikt became proud of the enhanced quality of his paper. Sheets manufactured by him were presented to the officials of the Prussian king. To confirm his appreciation for the properties of paper from Duszniki, in 1750 Frederick II



Portrait of Anna Franziska Heller, née Wallprecht, Anton Benedikt Heller's wife, by Caspar Rathsmann

the Great awarded Heller with the title of king's court papermaker, which constituted a great distinction, facilitating the selling of paper to state offices. The event of unprecedented importance for the history of the mill was king's visit on August 16th 1764. In turn, on July 22nd 1769, flood was recorded in Duszniki, inundating part of the town together with the paper mill. Several modifications were introduced in the course of removing the results of this natural disaster. One of them was the construction of the entrance pavilion together with bridge over the Bystrzyca Dusznicka river. Anton Benedikt Heller died in 1772 and the business was inherited by his son-in-law **Johann Joseph Ossendorf**.

Heller's son-in-law originated from a famous family of papermakers who settled in northern Bohemia in the 17th century. Johann Joseph was the youngest son of the owner of paper mills in Benešov as well as Horná Ves near Chomutov. His older brothers were supposed to inherit their father's

*Watermark of the
Duszniki paper mill
during Anton Benedikt
Heller's times
(1737-1772), photo
of the diapositive
and redraw*



legacy. As a young boy, he would acquire the experience in the paper mill in Horná Ves, from where he arrived in Duszniki ca. 1761 and married Antonia Josepha Heller. In the course of time, he became main assistant of his father-in-law and gained his trust. By taking the paper mill over he also became the heir of king's court papermaker's title. When his father-in-law passed away, Johann Joseph already had a well-established position and was considered a representative of higher social levels in the town of Duszniki. His important position among local community is proved by the fact that he became the godfather of as many as 58 children of local inhabitants, including the representatives of bourgeois elite.

Wall paintings which can be found in two rooms in the attic of the paper mill, described in details in the next chapter, probably date back to Ossendorf's times. Caspar Rathsmann, painter from Duszniki, is their alleged author. The same painter is the author of three paintings presenting papermakers from Duszniki: Anton Benedikt Heller, his wife Anna Franziska Heller as well as their son-in-law Joseph Ossendorf. Similarly

to wall ornaments, these paintings were probably commissioned by Ossendorf. The funding of artistic projects is considered Johann Joseph's greatest achievement. His further activity was interrupted by his premature death at the age of 46 on January 1st 1779, only 7 years after formally taking over the mill in Duszniki.

From 1779 the mill was managed by Ossendorf's widow **Antonia Josepha Ossendorf**, Anton Benedikt Heller's daughter and the third person to take pride on the title of the king's court papermaker. During her times, high level of production was maintained, annually reaching 440 bales of different paper types, i.e. ca. 2.2 million sheets. In the 1780s, the facility used to employ as many as 40 workers, which ranked it among the biggest paper mills in Silesia. In 1787 Duszniki suffered the effects of flood again, with the paper mill being inundated, too. Probably at the turn of the 18th and 19th century, Antonia Josepha Ossendorf undertook next investment projects, consisting among others in the performance of decorative facades of the paper mill. The owner also supervised the quality of paper. She would strive for the possibility to bleach the pa-



*Portrait of Joseph Ossendorf, owner of the mill
in Duszniki-Zdrój in the years 1772-1779,
by Caspar Rathsmann*

per with lime burnt with the use of wood, which, contrary to lime burnt with coal, did not contain sand particles. He also cared for regular supplies of raw material for the manufacturing of paper, making persistent efforts aimed at the extension of the privilege of rag collection within the Ziębice and Żąbkowice districts.

Similarly to her parents and husband, this owner was also a representative of tied Duszniki elite. For this reason, numerous inhabitants of the neighbourhood would ask her to become the godmother of their children. A.J. Ossendorf thus received this kind of request as many as 120 times. The way in which the owner of the paper mill was addressed changed as well, from "Mrs."

to a nobler "Madame". In 1802, when A.J. Ossendorf died, the paper mill was inherited by her fourth daughter, **Josepha Antonia Susanna** (1773-1826).

The last owner of the Duszniki paper mill to represent the Heller family was **Johann Leo Königer**, husband of Josepha Antonia Susanna, daughter of Johann Joseph and Antonia Josepha Ossendorf. The marriage of Josepha Antonia and Königer was not successful. Already in 1811, he had a daughter with another woman who later gave birth to two more Königer's children. On the day of her death, Josepha Antonia Susanna was divorced. Königer's management of the paper mill from 1806 cannot be treated as successful either. He was not a papermaker, but a merchant, and most probably due to this fact, he was unable to supervise the manufacturing process appropriately. Complex family situation could have been making it hard for him to perform the responsibilities of a paper mill owner as well. Therefore, it is necessary to take into consideration that the times during which he was running the business were exceptionally hard. Prussian defeat in the war with Napoleon coincided with deep economic crisis which, in turn, came to its end within a few years and Prussia entered the path of rapid development. However, Königer failed in this field and the condition of his business would deteriorate gradually. Another problem that the paper mill had to face was the repealing of all privileges referring to rag collection, as a result of which the mill in Duszniki had to compete for obtaining raw material. In 1822, the paper mill was put up for auction. Having lost his property, Königer moved to Wrocław, where he died in 1846.

The Wiehrs' era

In 1822, the paper mill became the property of the Wiehr family for 117 years. **Joseph Wiehr**, born in Wolibórz near Nowa Ruda, was the progenitor of the last family of papermakers from Duszniki. Before his arrival to Duszniki, he lived for a short

paper mill was managed by **Ernst**, Joseph I Wiehr's youngest son. Joseph I Wiehr's second son **Carl I** allegedly managed the paper mill already from 1844, and for sure from 1856. His first wife was Theresia Freudenreich née Wenke, 11 years older than Carl. Two years after her death, in 1866, Carl remarried, this time Maria née Wiehr became his



Watermark of the Duszniki paper mill during Joseph I Wiehr's times (1822-1842), photo of the diapositive and redraw



time in Ząbkowice, performing a milling job. Under his management the paper mill was operating without major investments being made. It is worth to add that in Silesia, first factories using machine production technique would emerge at that time. What is more, several other paper mills operated in the Kłodzko land and Wiehr had to compete for raw materials with them. These circumstances would have a negative influence on the functioning of the paper mill in Duszniki. Joseph Wiehr died in 1842 aged 61 and left the mill to his widow Veronica née Löffler, mother of his five children: Veronica, Joseph (II), Carl, Ernst and Johanna. All three sons were skilled papermakers who got involved in managing the paper mill.

Joseph II Wiehr married Maria Under in 1836. She was a daughter of the inn owner, so he also got involved in running the business inherited by his wife. Innkeeper's duties might have resulted in his decreased involvement in managing the paper mill. In the years 1842-1844 and 1853-1856 the

wife. She was as many as 31 years younger than Carl and was her distant cousin (the couple had to obtain church dispensation to be able to marry). He had three sons with his young wife: Carl (II), Theodor and Alfred. Carl I Wiehr managed the mill as long as until 1899.

It was an increasingly challenging period for paper mills relying on historical manufacturing technique, which resulted in the collapse of nearly all paper mills. Rapidly developing industry and facilities relying on more and more efficient paper machines would win the clients and raw materials previously intended for the paper mills. The unification of Germany took place during Carl I Wiehr's times and this event opened new perspectives for conducting business. German economy accelerated a lot and it was to a large extent thanks to war tribute paid to the German by France after its defeat (1870-1871). In the 1870s and 1880s, dozens of new papermaking companies were established in the Silesia region,

organized in various cooperation forms. In the Kłodzko land, modern paper factories were at the time constructed in Nowa Bystrzyca near Bysrzyca Kłodzka, Młynów near Kłodzko as well as in Szczytna near Duszniki. At the time, a papermaker from Duszniki was only a small entrepreneur, unable to carry out investment projects. The fact that, in spite of such great difficulties, Wiehr would continue his business activity is to be considered a big success.

When Carl Wiehr I died, his widow **Maria Wiehr** became the owner of the paper mill, but their oldest son **Carl II** would assume the function of property manager and he owned the paper mill until 1939. Maria died in 1905, and thus it was the latest possible year when Carl formally became the owner of the business as well. The greatest investment projects undertaken by the Wiehr family were carried out in 1905. It was the year when round-sieve machine for the manufacturing of cardboard was imported by the old paper mill, constructed by famous European company H. Füllner from Cieplice. It was allegedly also the time when the mill wheel was replaced by a modern 20-horsepower Francis turbine. Handmade paper, probably coming from the paper mill inventory, was for some time available for purchase from the Duszniki enterprise. According to the data as of 1914, Carl II Wiehr used to offer handmade paper and cardboard useful for document covers in the quantity of 400-500 kg per day. In this time he used to employ 15 staff members. Apart from the abovementioned paper machine and one tub for hand manufacturing of paper, Wiehr would operate as many as 3 Hollanders, a wheel crusher, a rag cutter and two paper smoothing devices.

In the 1920s the Duszniki paper company was considered profitable and Wiehr as an entrepreneur enjoyed good reputation. In order to increase its profitability, apart from handmade paper and cardboard, wrapping and filtration paper as well as



Portrait of Carl II Wiehr, owner of the paper mill in Duszniki-Zdrój in the years 1905-1939, drawing by M. Lemejda

paper for veterinary cataplasms were manufactured at the facility. Nevertheless, growing difficulties in finding the demand for paper forced Wiehr to undertake additional activity. In order to keep his employees, he got involved in the manufacturing of shingle and wooden boxes. What is more, in 1922 he reconstructed a barn, where he established a glass-cutting workshop. Condition of the company deteriorated importantly as a result of great economic crisis which broke out in 1929. In 1936 manufacturing machines were sold, which brought the end to any form of the company's activities. Due to growing debts, Carl II Wiehr decided to sell the paper mill for public purposes. He hoped for a museum to be established there. In the interwar period the old paper mill was more and more often perceived as a monument with important historical



Paper mill in the 1930s

value and the museum function constituted a good solution both for Wiehr as well as the building itself. After long negotiations, in spring 1939, the town of Duszyniki-Zdrój became the owner of the historical paper mill, taking out a loan to finance its purchase. Interestingly enough, the last instalment was to be paid by the town hall in 1986, which as a result of WW2 and the events that followed never happened.

Having sold the paper mill Carl II Wiehr still lived there together with his immediate family. The outbreak of WW2 thwarted the plans of creating a museum in the historical building and the town hall would finance only the most urgent renovation works. German conservation authorities, at the time extending their custody over

the paper mill, presented the idea of re-launching hand papermaking facility. Nevertheless it turned out that apart from Carl Wiehr, no one remembered what historical papermaking art consisted in. Former owner of the paper mill did in fact promise to support the realization of the project but, with his death in 1941, he took historical know-how with him to the grave. Dreams of the last papermaker from Duszyniki about establishing the museum within the former paper mill and plans for reactivating hand manufacturing of paper came true many years after WW2 thanks to financial involvement of Polish state papermaking industry. First exhibitions were inaugurated in 1968 and hand papermaking facility was launched in 1971.

Private owners of the paper mill in Duszyniki

Ambrosius Tepper: ? –1562

THE KRETSCHMERS

Nicolaus Kretschmer: 1562–1588

Gregor Kretschmer: 1588–1619

Samuel I Kretschmer: 1619–1640

Susanna I Kretschmer: 1640 – ca. 1645

Samuel II Kretschmer: ca. 1645–1656

Susanna II Kretschmer: 1656 – ca. 1665

Christian Wilhelm Kretschmer: ca. 1665–1689

Susanna Katharina Kretschmer: 1689–1691

Anton Franz Rosenburg: 1691 – ca. 1697

Wilhelm Kretschmer: 1697–1706

THE HELLERS AND THE OSSENDORFS

Johan Anton Heller: 1706–1737

Anton Benedikt Heller: 1737–1772

Johann Joseph Ossendorf: 1772–1779

Antonia Josepha Ossendorf née Heller: 1779–1802

Josepha Antonia Susanna Königer née Ossendorf: 1802–1806

Johann Leo Königer: 1806–1822

THE WIEHRS

Joseph I Wiehr: 1822–1842

Joseph II Wiehr: after 1842 (alternating with his brother Ernst)

Ernst Wiehr: 1842–1844 and 1853–1856

Carl I Wiehr: 1856–1899

Maria Wiehr: 1899–1905

Carl II Wiehr: 1905–1939



Decorative element of the bridge leading to entrance pavilion

Architecture of the paper mill

The paper mill in Duszniki-Zdrój constitutes an architectural complex consisting of three totally different parts: residential and manufacturing building with a drying room in the attic, a separate drying room constructed on the foundations of another, older structure as well as a polygonal entrance pavilion.

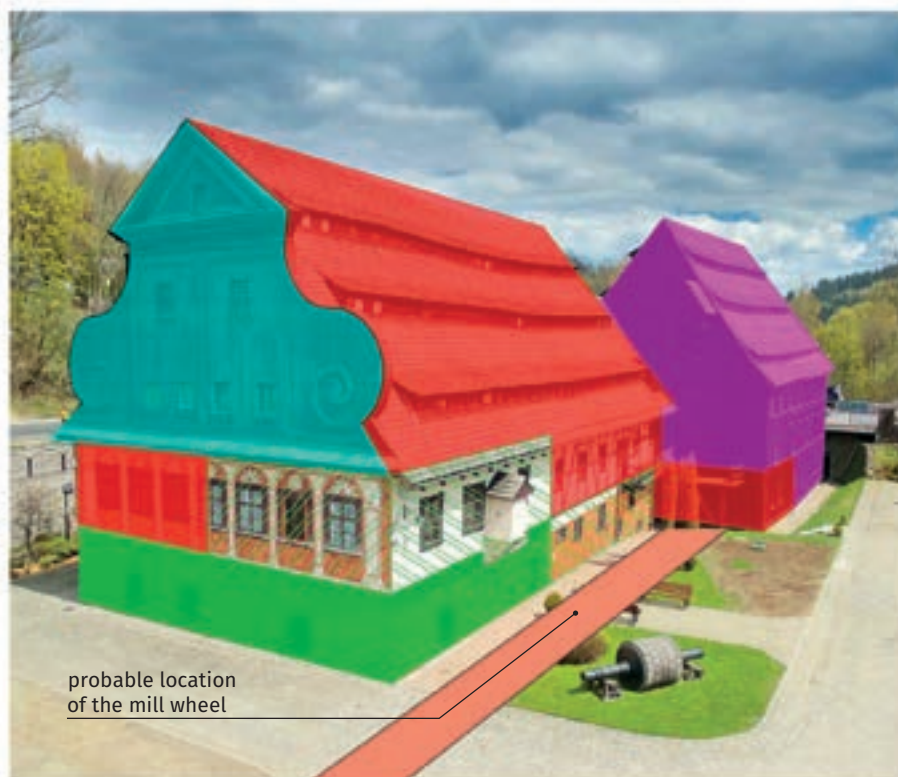
The diversity of buildings erected partly from stone, partly according to the wattle and daub technique and partly from wood, enriched with a bay window relying on stone cantilevers and gable roof with characteristic vents, brings it close to the oldest representations of such buildings in other European countries. Paper mills in the Lower Silesia region looked similar, but they were not preserved. They are represented for example by the paper mill in Świdnica or in Kępa Mieszczańska, in the vicinity of medieval town centre in Wrocław.

Thanks to the location of the paper mill on the north-eastern border of the town of Duszniki by the southern bank of the Bystrzyca Dusznicka river, the building was the first element to be noticed by visitors arriving at the town from Kłodzko, while its impressive western volute gable constituted a specific counterpart of the baroque gable of the parish church, visible to all those heading towards Kłodzko from the direction of the Bohemian town of Nachod.



The oldest known view of the paper mill, basing on the lost drawing by F.B. Werner, F.A. Pompejus, Reinerz aus der Vogelschau 1737, lithography, 1862

In order to be able to imagine the entire immediate neighbourhood of the paper mill from the past, it is also necessary to mention the Holy Cross Church, not preserved until present times, which had stood to the north from the paper mill and had been partially funded by Gregor Kretschmer, the papermaker. His first wife Joanna was



probable location
of the mill wheel

by 1562 after 1562 ca. 1605 1732 1743 Course of the millrace, buried in 1959

*Chronological stratification of the paper mill complex, Wrocław 2017,
authors: R. Eysymontt, R. Gliński, A. Szeląg*

buried in the church in 1619, while Gregor himself on September 13th 1623.

The mill wheel is missing in today's image of the facility. It used to be situated by the southern wall of the manufacturing zone. It was powered by the millrace, at the time passing under the former drying room. Initially, the wheel was powered with water flowing below (the undershot wheel). In 1719, water stream was directed up towards it in a narrow bed (the overshot

wheel) in order to enhance drive capacity. The document as of September 13th 1728 clearly refers to the construction of a water canal for the new device. The millrace was buried in 1959.

History of the Duszniki paper mill is perfectly reflected in the shapes of its buildings. Subsequent stages of its establishment were confirmed by architectural and dendrochronological research carried out in 2017.



*View of the paper mill from south-west, photo
from the interwar period*

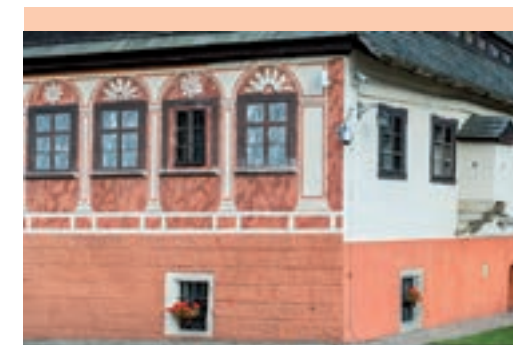
Paper mill

The oldest part

Former mill – a residential and manufacturing building with a drying room in the attic – consisted of two parts. The western one, erected from brick within the first stage, then extended with the use of stone, might have been serving the storage function in the basement, while on its upper levels it was a residential area. Interiors in the basement were covered with vaults. The second level was brick and stone only from the south, there was one window from the west and one door opening in stone Renaissance framing. Northern section of the second level was probably timber or half-timbered and as late as in 1604, it was transformed into a stone structure.

The oldest western part of the building is also distinguished by its thicker walls: external western wall – 110-120 cm, external southern wall – 90 cm (to the east from the bay window). This part of the mill may date back to the period before 1562, constituting the remnants of the first paper mill. A latrine bay window, supported on stone brackets with three-step rounded profile,

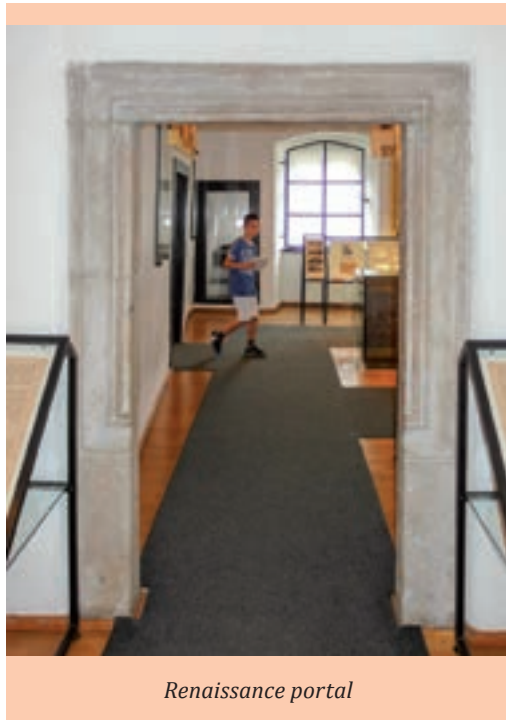
constitutes a very archaic element, referring even to the medieval tradition. Similarly, groin vaulting situated in this section of the building, with sharp edges and referred to as the “vault with spouts”, in fact constitutes some continuation of the structure of Gothic rib vault. The portal preserved on the second level of the mill should be considered a Renaissance component. Southern part of the paper mill, thanks to its thicker walls, was probably this section which had survived the flood in the early 17th century. The structure of the building had also probably been reinforced with massive arcades, placed at the level of not preserved water wheel. In this part of the building western gable wall had ini-



*South-western corner of the paper mill
– probably the remnant of the
first paper mill*

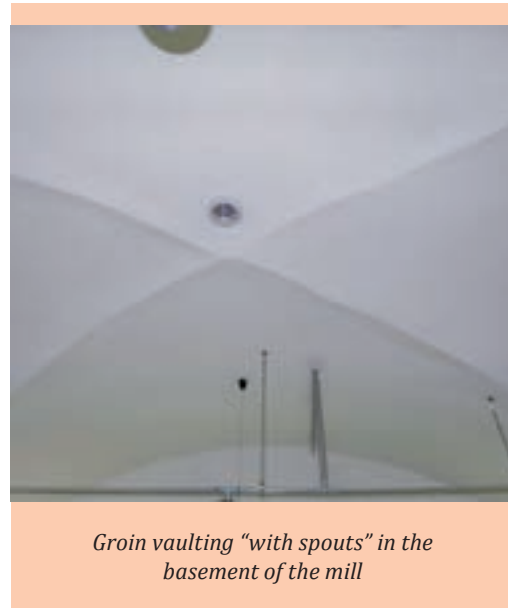


*Latrine bay widow in southern
facade of the mill*



Renaissance portal

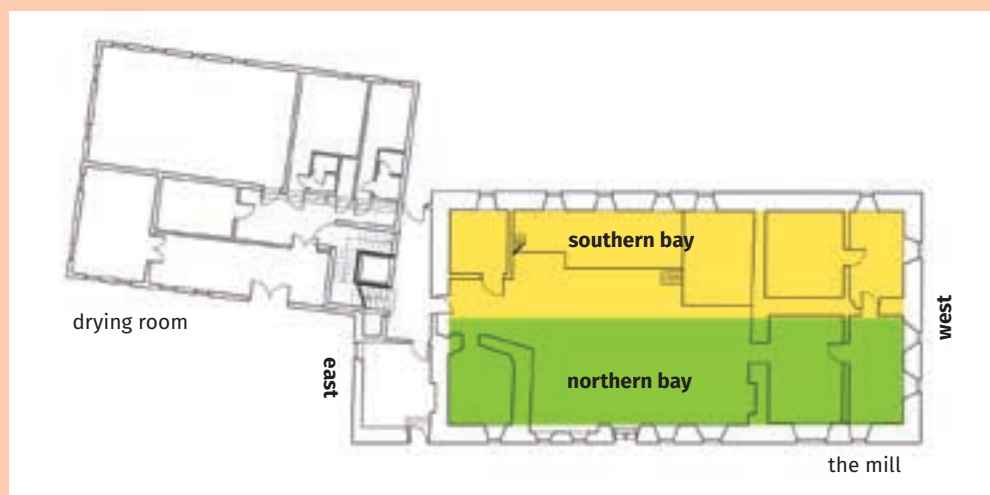
tially referred to different façade sections, which can be concluded from internal window openings which do not match current windows.



Groin vaulting "with spouts" in the basement of the mill

Reconstruction after the flood in the early 17th century

In 1605, the residential and manufacturing section was extended in the form of a brick and mortar building to two bays and covered with a new roof. In this time, the entrance led from the north via the portal in the basement, dated 1605. 17th-century modification phase is, however, not uniform,



Current plan of the paper mill basement with its division into bays

which is proved by the framing of window openings in the basement, representing various styles and forms. After this extension, dimensions of the paper mill were similar to its current ones. At the time, the basement together with the eastern section of the second level served the manufacturing function. The attic was occupied by paper drying room. The most spacious basement room probably included the stamp mill and rag lofts, where rags were washed and boiled and then thrown down from the sorting room placed above through ceiling apertures. Rags were macerated in the vaulted area of the basement. They were heated in the adjacent rag loft (remnants of smoke duct were preserved here) and next to it, also under the vault, the gluing room and dry press were supposed to be located. The millrace powered the mill wheel driving rags processing machine.

In 1619 and 1623, the value of the paper mill amounted to 4 thousand Meissen sixties and it could compete only with two other paper mills – the one in Oława and the one in Orłowice. Silesian chroniclers and travellers refer to the success of this undertaking.

In 1625, Georgius Aelurius in his "Glaciog- prahy" mentioned a beautiful paper mill in Duszniki, where one could easily purchase paper.

The success of the paper mill is reflected in its structure – during this time, two-bay brick and mortar building got the characteristics of a Renaissance nobleman's seat, typical for manors in the Kłodzko county. Their recurring rectangular plan including the division into two bays would probably constitute a model for a detached facility represented by the paper mill together with its residential area. Plaster decoration imitating bossage, present in Silesia already from ca. 1580, represents another stage of modifications carried out within their 17th-century phase. Double windows are also characteristic for manor architecture of the turn of the 16th and 17th century. The ornamentation of timber ceilings and walls dates back to early

17th century and its fragments are currently exhibited in the museum section. It demonstrates artistic ambitions of the then owners of the paper mill, with its manor-like character being perfectly justified by the fact that in 1607, papermaker Gregor Kretschmer was awarded with the coat of arms and soon after with the nobleman's title.



Southern half-timbered wall

Half-timbered part of the building

Eastern part of the paper mill including a thinner beam wall with timber frame filled in with brick and a passage on the second level is free from brick and mortar internal divisions and from the very beginning must have been serving manufacturing and storage purposes. It was covered with timber ceilings, unaltered during the future reconstruction.

Paper drying room was located in the attic. Based on the dendrochronological studies it can be concluded that in this section of the building, ceilings do not belong to the first paper mill from before the year 1562. This part of the interior was divided into three bays and, referring to the structure preserved until today, into three separate rooms.

Staircase

The staircase, representing fan-shaped arrangement of treads supported on a single column, probably dates back to the early 17th century. Stair column, with the year 1727 carved in its upper edge, was manufactured from a single elm trunk, cut down after the year 1566. This precious tree might have been installed later, as other timber species were used for the remaining stair elements. Interesting elements attracting the attention are stringers with convex-concave underside cut-outs as well as balusters cut out from boards forming part of flat railing and referring with their form to similar three-dimensional components of Baroque staircases.

Drying room in the attic

Ca. 1604 the entire building was covered with a high roof including a three-level attic. Its outstanding roof truss structure has

been preserved, including numbered rafters. The elements must have been erected one directly after the other, which is proved by repetitive dates of cutting spruce wood (1602-1603) that perfectly match the year (1605) known from the inscription on the northern portal.

On the first and second level, sloped roof surface was intersected with walls including windows, which resulted in stepped arrangement of the roof. It can thus be concluded that rooms located in the northern section of the attic might have served residential purposes. The top level did not include any windows, but a row of ventilation holes making it possible to adjust the air flow, which would make it an appropriate area for drying paper. On all levels, southern part of the attic, except its south-western corner, was used for drying paper and on this side, roof surface has ventilation holes installed instead of windows..



View of the paper mill from the north with its original stepped arrangement of the roof, photograph from the interwar period

Residential zone in the attic

Western section of the first attic level included a residential zone, where one of timber beam walls is covered with painted winding flower ornaments. The beams were cut after the year 1598, while the oldest preserved fragments of the ceiling date back to the early 17th century (wood cut in 1604). In this room, painted beam ceiling including the motif of tree branch serpentines is currently covered with younger panel ceiling with decorative painting dating back to the late 18th century.

This part of the paper mill used to serve the function of a representative hall, a parlour where commercial negotiations might have been conducted and which reflected how broad the horizons of the papermakers from Duszniki were. For this reason, these rooms underwent important modifications in the late 18th century, when outdated painted beam ceilings and beam walls were covered with timber panels and illusionist as well as symbolical paintings. In one of the interiors, decorative painting was supposed to create the illusion of a vault.

Decorative paintings discovered under the coating in 1969 represent absolutely unique character. Richly ornamented ceilings and walls were preserved in two halls. The paintings by Caspar Rathsmann date back probably to the 1770s. However, some ele-

ments of the painting composition resemble in their form classicist ornamentation of paper mill façade, dating back to ca. 1800.

In the northern hall, called Joseph's Hall, on its northern wall, one can admire decorative painting with architectural, landscape and figurative motives, referring to theatre scenography compositions. Architectural elements were presented in an illusionist way on the eastern wall, together with the portrait of Frederic II the Great, King of Prussia and probably the silhouette of the owner of the paper mill Joseph Ossendorf. The western wall presents the Old Testament scene of Joseph tempted by Potiphar's wife, based on 16th-century graphic templates, aimed at testifying the owner's good moral conduct. The ceiling is divided into 16 square-like fields filled with plant ornamentation.

In the southern hall, called Hall under the Dome, ornamentation of the western wall dates back to the 1770s, while the ornamentation of the northern wall to as distant period as the early 17th century. Older ornamentation with plant motives can be juxtaposed with similar Silesian decorations of painted ceilings from the turn of the 16th and 17th century. The more recent ornamentation dates back to late 18th century and consists of the framing of realistic and illusionistic windows painted alternately and including the motives of chequered regency pattern, pincers



Fragment of the original polychrome ceiling covered by the future ceiling of the Hall under the Dome



Painting presenting the biblical scene of Joseph being tempted by Potiphar's wife, fragment of polychrome on the western wall of Joseph's Hall



Polychrome ceiling in the Hall under the Dome

and campanulas. Ceiling ornamentation is also extremely interesting here, based on late 17th-century patterns by Andrea Pozzo, famous Baroque illusionist painter. It was supposed to optically enlarge the room covered with flat ceiling, on which illusionistic dome was painted.

Reconstruction of the mill in the 18th century

The most important element of this construction phase is constituted by the western gable of the paper mill, being at the same time its most characteristic feature. The gable was added to the older roof truss, which can be concluded from the way in which it had been erected. According to the date of cutting the tree from which horizontal beam forming its basis was constructed, the operation took place in the years 1732/33.

The structure was performed from spruce wood and generally served the function of paper mill facade, visible directly from the road leading to the town from Kłodzko. Timber gable is framed by flowing volutes characteristic for numerous brick and mortar tenement house from the late 17th or early 18th century. This gable type could also be seen in the former post office situated at the market square in Duszniki as well as in a building opposite the paper mill with similar crowning. The most important example from the Duszniki region is constituted by the gable of Saint Peter and Paul's Church



Western façade of the paper mill with Baroque volute gable from 1730s and ornamentation from the turn of the 18th and 19th century

erected within its Baroque reconstruction in the years 1708-1730. The church is situated at a short distance from the paper mill. The form of paper mill gable may also find its source in Bohemian or Austrian inspirations. It should not surprise anyone as the Heller family, present in Duszniki from the early 18th century, originated from the Bohemian town of Frýdlant. Typical Baroque gables of a similar character including the motif of flowing volutes have been preserved in the northern section of this town's market square.

The gable of Duszniki paper mill is distinguished by the application of timber boarding and carving curved-lined Baroque volute shape in this material. Timbered gables could be seen in the eastern section of the market square in Międzylesie from the front part, while on back façade on Kłodzka Street in Duszniki. Timbered gables are also present in other structures in the Silesia region. However, they have never become as monumental or complex in their form. It should also be added that extensive volute gable used to serve a specific purpose – it would protect air vents in the roof over upper level drying rooms against strong west winds, common in the area

Reconstruction of the building at the turn of the 18th and 19th century.

At the turn of the 18th and 19th century, the paper mill was enriched with decorative structures referring to the classicist period. Basic characteristics of the composition, symmetry and recurring elements, were applied during the reconstruction of western façade where, in order to maintain the symmetry, three blind openings replacing missing windows were applied. On the second level, walls are divided by painted pilasters supporting full arcs, thus forming kind of an arcade. Semi-circular plaques, serving the function of window over-sills, constitute the alternative filling for relief plaster motives of simplified rosettes and palmettes. The same ornament is also visible on the entrance pavilion. Silesian analogies to the abovementioned decoration date back to the early 19th century. Their creation can be confirmed by the year and the inscription “A.O.H. 1802” – Antonia (Josefa) Ossendorf Heller – placed in the framing of the northern entrance to the building.

Paper mill in the 19th and 20th century

During the 19th century, no major changes were introduced in the paper mill. However,



Northern entrance to the paper mill with dates important for the facility: “G.K. 1605”, referring to the reconstruction of the mill by Gregor Kretschmer and “A.O.H. 180” – Antonia (Josefa) Ossendorf Heller, documenting the rebuilding of the paper mill



View of the paper mill from the north, photograph from the interwar period

some works were conducted, confirmed by the year of obtaining fir wood for a robust beam over the level of today's hand paper-making area (1839).

Decline of the era of hand manufacturing and crafts and natural water energy replaced with electricity found in the Duszniki region their manifestation in three events from the year 1905. At the time, the construction of power plant began, railway line to Kudowa was inaugurated and machine production was introduced in the paper mill. Surroundings of the paper mill changed as well – in 1933, construction of the bridge over the Bystrzyca river came to its end by the eastern wall of the drying room. Modifications introduced in the 1940s refer mainly to the roof – unfortunately, the historical “stepped” character has not been preserved in the new structure.

After WW2, paper mill became the seat of the museum. Former manufacturing zones and drying rooms became exposition halls and hand paper manufacturing workshops. Surroundings of the mill would undergo further modifications. In the early 1970s, the ring road was built in Duszniki-Zdrój, with its eastern starting point located at the level of the paper mill, on the opposite bank of the Bystrzyca Dusznicka river. The new road was constructed about 1 meter higher than the old communication route and in this way, the paper mill can be seen from the cars passing by. In the course of time, the road received the status of international communication route (current E-67), making the paper mill easily accessible for tourists from all over the world.



View of paper mill buildings from north-east in mid-20th century, drawing by M. Lemejda

Drying room

In the 16th and 17th century, ready-made sheets of paper were dried in the attic of the mill. It can be deduced from the preserved hangers, placed within roof truss structure of the western section of the building. Together with the installation of the Hollander in 1737 and important increase in the capacity of the paper mill, the surface intended for drying became insufficient. A drying room was thus erected on the eastern side of the paper mill. Timber used for its construction dated back to the winter of 1742/43, but beams from late 16th century were also reused here.

Central part of the framed timber structure situated in its north-western corner was incorporated into the new drying room,



Wall inside the drying room made from logs harvested at the turn of 16th and 17th century



View of the drying room from the south

distinguished by its unique log structure. The facility, situated on the former millrace canal, would probably constitute rag washing room. This part of the drying room was erected from beams cut much earlier (1593 and dates from the turn of the 16th and 17th century).

The drying room, erected as a spacious three-level building, with the structure distinguished by its posts with specific struts, was covered by the roof with three levels of air vents. The building was covered with vertical boarding referring to the previous boarding of the western gable. Boards placed on two levels concealed the triple-level division of the interior.

Treating the façade in this way was probably intended to conceal the industrial character of the facility to some extent.

Entrance pavilion

In 1769, the paper mill once again suffered the effects of flood. While removing the damages, new bridge might have been erected, together with today's multilateral entrance pavilion which, according to chroniclers, was also constructed at the time. Building the "summer" pavilion, with the entrance leading directly to the second level, might have been connected with the necessity to separate the manufacturing section, with the entrance through northern portal in the basement, from upper, more representative halls including ornaments painted on timber walls and ceilings on the third level. At the turn of the 18th and 19th century, pavilion façade was performed, with simplified rosette and palmette motives placed over each of the six windows.



Entrance pavilion



Main entrance

The importance of Duszniki paper mill for the town and region results from the unique character of the building itself. It constitutes a perfect combination of nobleman's manor tradition of the Kłodzko land, patterns referring to Baroque bourgeois apartment building and Baroque sacral facility from Silesia and Bohemia. The entrance pavilion, in turn, is inspired by Italian Baroque garden architectural style.

The paper mill constitutes an extremely important component of the cultural landscape of Duszniki-Zdrój, a town which had represented mainly industrial character with some commercial elements, and from the early 19th century served mainly the sanatorium function. Local paper mill belongs to the oldest facilities of this kind preserved in Europe. It is at the same time one of the oldest industrial buildings in Lower Silesia region. Architectural diversity of the paper mill complex, unique on a European scale, is enriched with decorative paintings inside its residential section, uncommon for this type of building. The collection of portraits of subsequent owners of the paper mill with iconographic program that proves their artistic ambitions constitutes valuable complementation of the facility's decorative image. These characteristics place the mill in Duszniki on top of the hierarchy of all European paper mills taking into consideration their historical and architectural value.



View from south-east, 1960s

Touristic significance of the paper mill

Establishment of the Museum of Papermaking

In 1945, the town of Duszniki-Zdrój was incorporated into Poland, subjected at the time to the influence of Soviet Union. As a result, economic system based on state property was introduced in the country. All industrial plants were nationalized and became centrally managed. The paper mill in Duszniki, sold to the town in 1939, was nationalized after WW2 and transferred for management by the paper factory in Młynów. At the time, the facility was in poor condition and required major renovation. The then director of the Młynów factory conducted the most urgent renovation works and planned to launch hand manufacturing of paper. However, his intention was not fulfilled, as the factory revised its policy. Finally, in 1952 the town of Duszniki-Zdrój regained the ownership of the paper mill, but with no concept for using the historical paper mill in mind.

Fortunately, Polish conservation authorities got interested in the paper mill and in 1956, it was included in the register of monuments, thus providing it with legal protection. The intention to establish a museum in the paper mill was frequently mentioned and in 1961, Municipal National



Paper mill in 1960

Council appointed the Organizational Committee aimed at establishing the museum of papermaking in the historical building. In the years 1962-1965, protective renovation was carried out in the paper mill thanks to the funds obtained by Voivodeship Monument Conservator in Wrocław. The arrival of Jan Michał Kowalski to Duszniki constituted key moment in post-war history of the paper mill, as he developed the concept of the Museum of Papermaking. Through its exhibitions, the facility was supposed to present the history of the papermaking industry. The creation of hand paper manufacturing workshop in the basement was also planned. The Museum was supposed

to employ 14 staff members, including 6 of them in the workshop. In 1965, J.M. Kowalski took the responsibility for organizational matters. Expenses connected with establishing the museum were too high to be borne by town authorities and as a result, it was finally decided that the facility would be managed by the Ministry of Forestry and Timber Industry through the intermediary of Cellulose and Paper Industry Union that managed all state-owned cellulose and paper factories. From the operational point of view, the museum was subjected to Cellulose and Paper Plant in Bardo – the enterprise located at the shortest distance from the historical paper mill.

After several years of preparations, on July 26th 1968, first exhibitions were opened to visitors. The museum became the passion of J.M. Kowalski's life; however, the founder died soon after its inauguration. His legacy was continued by Władysław Kazimierczak, also connected with the paper-making industry. In 1971, he launched the show presenting hand papermaking process, which in the course of time became main tourist attraction of the museum in Duszniki. An interesting exhibition organized within W. Kazimierczak's management of the museum was inaugurated in 1976



Main exhibition presented in the years 1968–1993

and it presented the achievements of paper processing industry, for example stationery and office paper products. Beautiful notebooks, pocketbooks or crayons would attract in particular the attention of children, as because of market difficulties in the era of socialist economy, the purchase of such "delicacies" in regular shops was virtually impossible. The most important event during W. Kazimierczak's era was the discovery of polychromes in two halls on the third level of the mill, made accidentally in 1969. However, the paintings had to wait nearly two more decades for their appropriate conservation and exposition.

When W. Kazimierczak retired in 1982, Zbigniew Strzygocki was appointed head of the museum for a short period of time. Already in February 1984, he was replaced by Bożena Makowska, who managed the facility for the next 22 years. One of the first projects carried out under the new management was the conservation of polychromes, funded by the National Culture Fund. Due to deep social and economic crisis of the 1980s, the interest of papermaking plants in their facility decreased and the museum became a branch of the Bardo Paper Plant, facing growing financial and technical difficulties. The events in Poland



*Ceremonial inauguration of the museum on July 26th 1968.
J.M. Kowalski third from the left*



Visit of Lech Wałęsa, President of the Republic of Poland; Bożena Makowska, Museum Director, standing next to the President, February 7th 1994

in 1989 brought the collapse of communist regime and the restoration of democracy, but the introduction of market economy principles was the source of many difficulties for the plant in Bardo, which affected the Museum of Papermaking subjected to it as well. The solution consisted in transferring the facility under the custody of the Ministry of Industry and Commerce which, thanks to Bożena Makowska's efforts, took place in the early 1992. The new owner provided the museum with appropriate funds for conducting renovation works and hiring the staff to take over the responsibility for preparing artifacts and organizing exhibitions. Transformation of the facility into a professional museum began.

In the years 1997–1998 the museum inaugurated a new permanent exposition, but right before ceremonial commemoration of its opening, at the night of July 22nd/23rd, flood came to Duszniki, inundating lower levels of the paper mill. Rapid current



The flood, water level in the morning of July 23rd 1998

had destructive power, with the most severe effects in the north-eastern corner of the drying room. Damages resulting from the flood were removed by the team led by Bożena Makowska for the next several years. In the early 1999, Poland underwent administrative reform, as a result of which the museum was subjected to the self-government of Lower Silesian voivodeship.

In the late 1990s, the museum was developing not only its exhibition projects, but also scientific activity. First scientific papers by museum staff date back to the 1990s, while in the year 2000, the first scientific monograph devoted to the history of the papermaking industry in the Silesia region was published. In 2001, the first Paper Festival took place in the museum courtyard. From that time, a big event is held every year in July with nearly 10 thousand participants who visit the exhibitions, prepare handmade paper as well as admire the historical paper mill. In 2004, the museum



2019 Paper Festival



2019 Paper Festival

organized the International Paper Historians Congress. Bożena Schweizer-Makowska retired with the end of 2005 and was succeeded by Maciej Szymczyk.

Last years were marked by numerous renovations and adjustments of many rooms in order to serve exposition purposes. In the years 2007-2008, new exhibition and conference hall was created in the attic of the paper mill. From 2009, reconstruction of the roof was carried out for 3 consecutive years, consisting in partial replacement of the truss and complete replacement of all shingle layers. Both projects were financed from government funds and subsidies of the Lower Silesian Voivodeship self-government. In the years 2014-2017, the museum was involved in the project worth PLN 10 million, financed from Norway Grants and the funds of European Economic Area as well as from the budget of Lower Silesian voivodeship. The aim of the task consisted in securing the mill with water mist extinguishing system as well as



Staff and friends of the Museum of Papermaking, 2019 Paper Festival



Paper mill awarded by the ministry of culture with the title of the "Well Preserved Monument". Photo from the left: Professor of the Institute of History of the Polish Academy of Sciences Magdalena Gawin, Ph.D.; Joanna Seredyńska, Maciej Szymczyk, Ph.D. with habilitation, Wojciech Szczurek, Ph.D., April 24th 2019, photo by A. Seredyński

adjusting drying spaces to serve the function of new exposition halls, storage rooms for artifacts as well as to be used for educational purposes. Investment projects were supervised by Joanna Seredyńska, Deputy Director. Thanks to them, in 2019 the museum won the competition organized by the

ministry of culture and was awarded with the title of the "Well Preserved Monument".

In the last years, the fame of the museum kept on growing. In 2009, Polish Tourism Organization considered the facility one of the biggest touristic attractions in the country and in 2011, President of the



Visit of Deputy Prime Minister Przemysław Gosiewski, August 18th 2017



Launching of the mist fire extinguishing system, 2017



Visit of Bronisław Komorowski, President of the Republic of Poland, on October 29th 2013

Republic of Poland awarded it with the status of the Monument of History, thus listing the paper mill among the most important Polish monuments. In connection with this distinction, the museum was visited by President Bronisław Komorowski on October 29th 2013. Also in 2013, the Museum of Papermaking was inscribed by the minister of culture into the State Register of Museums, including the facilities hosting the most important and extensive collections and managed in the most efficient way. In 2019, Prof. Magdalena Gawin, Deputy Minister of Culture, applied on behalf of the Republic of Poland for inscribing the paper mill in Duszniki on UNESCO world heritage tentative list.



The museum was visited among others by Professor Piotr Paleczny, outstanding pianist and music pedagogue

Museum exhibitions

The museum presents permanent exhibitions devoted to the history of papermaking in the world, in Poland and in the Silesia region as well as the exhibition on the history of the paper mill in Duszniki-Zdrój. Visitors can admire here historical sheets of paper manufactured at different paper mills on Polish lands from the Middle Ages until the 20th century. An interesting exposition is constituted by the collection of precious historical devices used for inspecting paper properties. The exhibition devoted to the history of papermaking is complemented by hand papermaking workshop, where visitors can see the show presenting how paper was manufactured with the use of the medieval technique.

Original historical elements of the structure and interior design of the paper mill in Duszniki provide precious background for the artifacts presenting its history. Nowadays,



Hand papermaking show

the facility is placed among the most beautiful monuments of technology all over the world. Visitors can admire its polychromes, which demonstrate the wealth and aspirations of former owners of the paper mill. The work which attracts a lot of attention is the painting presenting the Old Testament scene of Joseph being tempted by Potiphar's wife.



Exhibition of paper crafts presented since 1997



Exhibition devoted to the papermaking technique in the 19th and 20th century presented since 1998

In 2017, two new expositions were inaugurated in the drying room, including various multimedia solutions. The first of them, dedicated to paper art, forms the only gallery devoted to this topic in Poland. The second exhibition – “Polish paper money” – is a comprehensive source of information on Polish banknotes. One can see here original banknotes issued from 1794 until present times. The exhibition includes a “laboratory” with devices for inspecting banknote security features, e.g. UV and infrared lamps and a microscope for microprints.

Outside the paper mill, large paper devices are displayed, including for example a grinder for mashing wood or a wheel crusher applied for manufacturing paper pulp from rags and waste paper), printing machines as well as a garden with fibre plants used in the industry.

Apart from permanent exhibitions, each year the museum hosts ca. 10 temporary

ones, dedicated mainly to topics connected with paper, ecology, history of technology and of the town of Duszniki-Zdrój. By the end of 2020, the institution organized 171 exhibitions of this kind. The most important were “Waste paper – raw material



Exhibition “Polish paper money”, available for visitors since 2017



New paper art gallery

of the 21st century” (2000), “Stories of people’s lives” (2006), “The paper on which I am writing comes from Reinerz. Fryderyk Chopin in Duszniki-Zdrój” (2010), “Passports of European Union Member States” (2011), “PaperK” – exhibition of paper art (2016-2017).

Educational and research activity

The Museum of Papermaking has been famous for years for its museum classes entitled “Paper handicrafts”. They start with a tour of the museum and then, participants manufacture sheets on their own, following the 13th-century technique and take them home. Everyone can feel like a papermaker from the historical paper mill in Duszniki.

School groups often participate also in classes on decorating paper or selected items with the use of the decoupage technique. The program entitled “Paper fantasies” enjoys big interest as well, consisting in performing postcards, Christmas tree decorations and other decorative items from handmade paper.

In 2017, a number of new theme-based classes were introduced, with the one en-



Impressing dry stamp during the exhibition “Polish paper money”

titled “Is your tenner authentic?” being the most appreciated. Participants of this class visit the museum, follow the history of paper money, banknote anti-counterfeit securities and then inspect real banknotes themselves.

Museum classes are addressed to organized groups, starting from kindergarten up to the university of third age. For private visitors (smaller groups, families or individuals), the museum prepared a range of workshops. The most popular ones include the hand papermaking workshop, during which participants make a sheet of paper with a watermark as well as impress their

hand in the paper. They take their works home as a souvenir.

Research projects carried out by the museum refer mainly to the history of papermaking on Polish lands. In recent years, in connection with beginning the attempts for inscribing the paper mill on UNESCO list, research devoted to the history of the paper mill has been intensified. Scientific projects are conducted in cooperation with leading experts in the field, among others from the University of Wrocław, Wrocław University of Technology or Lublin University of Technology.



Current watermark of the Museum of Papermaking based on the oldest known watermark of the Duszniki paper mill – application on the sieve on the left, watermark on the right



Classes at the museum



North-eastern façade of the drying room

Collections of the Museum of Papermaking

From the era of Michał Jan Kowalski's management of the museum, the institution has been collecting all items connected with the history of papermaking. The core of its collections is constituted by sheets including watermarks, manufactured from the late Middle Ages until the 20th century in many different paper mills on Polish lands. Many of those historical paper sheets constitute nowadays the only remnant of the already inexistent paper mills. The collection of 20th-century paper artifacts includes the patterns for manufacturing paper sheets and paper products. They constitute a perfect material for researching the history of papermaking in Poland. An important group of collections is constituted by papermaking devices, with paper moulds representing the oldest of them. More recent devices date back to the machine production period and they were used for preparing and purifying paper pulp. Due to their large dimensions, they are presented in the museum courtyard. A unique collection consists of 20th-century laboratory devices for examining the quality of paper raw materials and the paper itself. They were donated to the museum by many paper mills from all over Poland as well as scientific and research institutes from the city of Łódź. Collections representing the papermaking industry are



1000 zlotys – banknote from 1794 (collections of the Museum of Papermaking, sign MD 812 N)



*Devices examining the resistance to double folding from ca. 1920
(collections of the Museum of Papermaking, sign. MD 49 T)*

complemented by extensive iconography as well as various documents referring to paper mills and factories on Polish lands.

What is more, the museum got involved in collecting paper and paper-based items. Passports and documents donated by Andrzej Mazur, a collector from Wrocław, constitute one of the largest groups of objects of this kind displayed in Polish museums. In the recent years, the museum acquired from Andrzej Włodarski the collection of over 6 thousand 20th century bookplates. In the years 2015-2017, thanks to subsidies from the Ministry of Culture and national Heritage as well as self-government of the Lower Silesian voivodeship, the museum purchased the collection of Polish banknotes issued from the period of the Kościuszko Uprising to current times. The collection was extended thanks to donations from the National Bank of Poland as

well as the generosity of numerous individuals.

In the 1990s, the museum began to collect artifacts referring to the history of the town of Duszniki-Zdrój. One can find among them the designs of buildings, postcards and paintings with Duszniki landscapes as well as substitute money issued by municipal authorities.

Also in the last decade of the 20th century, first exhibitions of paper art were presented in the museum, with artistic works performed from paper and paper pulp that followed.

From the beginning of its collecting activity until present times, the museum treats artifacts connected with the paper mill with particular attention. They include the sheets of paper made locally (made both when the Duszniki paper mill was in operation as well as when it served the



*"The Paper Mill", M. Diduch, made from
paper pulp (collections of the Museum of
Papermaking, sign. MD 284 A)*



*Maciej Jabłoński, What will remain, three-
dimensional mask, newsprint, gypsum,
papier-mâché (collections of the Museum
of Papermaking, sign. MD 3164/1 A)*



*Joachim Tschacher, Ship of the dead, three-dimensional item, cellulose pulp, sticks
(collections of the Museum of Papermaking, sign. MD 19 A)*



P. Aust, Die alte Papiermühle in Reinerz. View of the paper mill from north-west, etched work, before 1912 (collections of the Museum of Papermaking, sign. MD 377 A)



R. Kant, Paper mill in Duszniki, oil paint on cardboard, interwar period (collections of the Museum of Papermaking, sign. MD 3146 A)



K. Langner, Alte Papiermühle in Reinerz. View of the paper mill from north-west, lithography, before 1912 (collections of the Museum of Papermaking, sign. MD 379 A)

museum function), priceless portraits of former mill owners, iconography presenting the mill (paintings, drawings, photographs) as well as manufacturing tools used in the Duszniki paper mill currently and in the past (among others moulds, paper drying hangers).

The museum's collection of books is strongly connected with historical and modern papermaking industry. The institution takes pride in its complete collection of Polish trade magazines issued after WW2 as well as numerous editions of foreign magazines, including weekly and monthly magazines in German, dating back to the period before WW2 and representing particular value for historical research on Silesian papermaking industry. Museum collections include also the catalogues of watermarks, particularly useful for identifying the place and time of producing subsequent sheets of paper. In the last years,

the significance of local book collection is increasing.

Numerous artifacts are displayed with in permanent and temporary exhibitions. An increasing number of their photos are available online thanks to digitalization projects in progress.

Paper mill in Duszniki-Zdrój on its way to UNESCO

2008

The Museum of Papermaking began the preparations of documentation connected with awarding the paper mill with the status of the Monument of History.

2011

Upon the ordinance of the President of the Republic of Poland, the paper mill in Duszniki-Zdrój was inscribed on the list of Monuments of History thanks to its unique and authentic character of the oldest paper mill in Poland.

2013

In cooperation with the National Heritage Institute, the Museum of Papermaking began to collect documentation for applying for the inscription of the paper mill on UNESCO list. Local self-government authorities of Lower Silesian voivodeship, the Kłodzko county and Duszniki-Zdrój commune expressed their positive opinion in connection with the initiative undertaken by the Museum of Papermaking. The application was submitted in the year that followed.

2014

World Cultural Heritage Committee in Poland (subsidiary body of the Ministry of Culture and National Heritage) positively assessed the chances for inscribing the paper mill on UNESCO list, recommending at the same time to perform comparative analysis of European paper mills and prepare a trans-border appli-

cation together with the paper mill in Velké Losiny (Czech Republic).

2015

The letter of intent between the Museum of Papermaking in Duszniki-Zdrój and Ruční papírna Velké Losiny a.s. was signed in connection with joint efforts aimed at inscribing the institutions on the UNESCO list.

2016

On January 26th, Department of Foreign Cooperation of the Voivodeship Marshal's Office organized in Wrocław consultation meeting with the managers of museums in Duszniki-Zdrój, Velké Losiny and European Grouping of Territorial Cooperation NOVUM. As a result of the meeting, cooperation was established between the NOVUM Grouping and the Museum of Papermaking.

On October 6th-7th, international conference took place in Duszniki-Zdrój, entitled "On the route of common heritage", organized by the Museum of Papermaking and the NOVUM Grouping, financed from the subsidies of the Ministry of Foreign Affairs. Representatives of local self-government authorities took part in the conference together with scientists and journalists as well as the representatives of the National Heritage Institute and Národní památkový ústav. As a result of the event, the intent to undertake joint efforts aimed at inscribing historical paper mills from Poland and the Czech Republic was confirmed.

On November 30th, World Cultural Heritage Committee in Poland adopted the resolution which recommended including the paper mill on Polish UNESCO tentative list, representing two facilities: the Polish and Czech paper mills.

2016-2019

The team supervised by Professor Bogusław Szmygin developed the management plan for the paper mill in Duszniki-Zdrój.

In connection with the plan, the following studies of the paper mill began:

- 2016-2017 – Professor Rafał Eysymontt conducted architectural and stylistic analysis of the paper mill,
- 2017 – Professor Andrzej Kozieł examined wall ornamentations in the paper mill,
- 2017-2019 – Rainer Sachs studied the archives,
- 2017-2019 – a team of employees of the Museum of Papermaking continued the studies on the history of the paper mill and the museum.

2017

On November 30th-December 1st, the second conference devoted to paper mills was held in Duszniki-Zdrój, organized by the Museum of Papermaking and the International Council on Museums and Sites (ICOMOS). Among its participants there were representatives of local self-government authorities, monument conservators and the representatives of facilities inscribed on the UNESCO list and of the monuments of history. Letter of intent between the mills in Duszniki-Zdrój, Velké Losiny and Homburg (Germany) was signed during the conference. The Museum of Papermaking in Duszniki-Zdrój was appointed project coordinator by the signatories of the agreement.

2018

On May 16th-17th, third international conference dedicated to paper mills took place in Velké Losiny, organized within the framework of the Interreg V-A Czech Republic-Poland 2014-2020 program.

During the International Paper Historians Congress in Ghent (Belgium, September 19th-23rd), Professor Andrzej Kozieł presented his lecture concerning the polychromes in the paper mill in Duszniki-Zdrój.

In September, the “Monograph of the paper mill in Duszniki-Zdrój” was published, edited by Maciej Szymczyk, Ph.D. with habilitation.

2019

In October, first stage of the comparative analysis was completed. Groups of scientists, led by Professor Bogusław Szmygin as well as Professor Rafał Eysymontt, visited selected paper mills in France, Italy, Germany, Belgium, Switzerland and the Netherlands and prepared detailed documentation of their findings.

In the same month, the first stage of conservation works of polychromes in Joseph's Hall came to its end. It consisted of complete technical conservation of the walls and ceiling as well as thorough aesthetic conservation of the southern wall.

On October 16th, Professor Magdalena Gawin, Deputy Minister of Culture, submitted to UNESCO World Committee on behalf of the Republic of Poland the application for the paper mill to be inscribed on UNESCO Tentative List. On October 24th, the application was accepted.

On October 29th, fourth international paper mills conference was held in Homburg. Thanks to acquiring its next strategic partner by the Museum of Papermaking, being the paper mill in Ambert (France), letter of intent was signed within the framework of the conference between the paper mills in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert. Partners to this agreement authorized the Museum of Papermaking to submit to Polish Ministry of Culture and National Heritage the application for inscribing all cooperating paper mills on UNESCO Tentative List.

2020

Comparative analysis of European paper mills was continued.



Ceremony of signing the letter of intent between paper mills in Homburg, Duszniki-Zdrój and Velké Losiny (Duszniki-Zdrój 2017)



Ceremony of signing the letter of intent between paper mills in Velké Losiny, Amber, Duszniki-Zdrój and Homburg (Homburg 2019)



The paper mill in Duszniki-Zdrój, Poland



The paper mill in Homburg, Germany



The paper mill in Velké Losiny, Czech Republic



The Richard de Bas paper mill in Amber, France

LETTER OF INTENT

concerning the cooperation between

Muzeum Papiernictwa w Dusznikach-Zdroju
ul. Kłodzka 42, Lower Silesian voivodeship
Republic of Poland

and

Ruční papírna Velké Losiny a.s.
Velké Losiny 9, Olomouc region
Czech Republic

Museum Papiermühle Homburg
Gartenstraße 11, 97855 Homburg/Main
Main-Spessart county
Federal Republic of Germany

and

Moulin Richard de Bas
63600 Ambert
French Republic

PREAMBLE

European papermaking traditions reach the Middle Ages. In the past, numerous paper mills were located all over the continent, manufacturing the paper for writing and printing. Few historical paper mills have been preserved until current times, with those in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert constituting a unique example of industrial heritage of historical papermaking. They desire particular interest from state and regional authorities, local communities and tourists. Nowadays, their role consists in promoting the knowledge in the area of the history of technology and culture.

The Parties agree as follows:

§ 1

The aim of the present letter of intent is to:

1. Cooperate in order to strengthen the significance of paper mills in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert for cultural heritage of the Republic of Poland, the Czech Republic, Federal Republic of Germany, the French Republic as well as Europe and the world.
2. Jointly promote cultural, educational and touristic offer of the paper mills in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert.

§ 2

The Parties agree on the following priorities of their mutual cooperation:

1. Joint attempts aiming at inscribing the paper mills in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert on UNESCO World Heritage List as a trans-border serial entry. The Parties undertake to inform each other on all activities undertaken in this field.
2. Sharing experience connected with conservator's protection of paper mills.
3. Sharing experience connected with cultural, educational and touristic offer.
4. Mutual promotion.

§ 3

1. The Parties declare their willingness to organize the meetings in working groups in order to fulfil the provisions of the present declaration as well as to exchange experience.
2. The present declaration shall not result in any financial obligations for any of the Parties.

§ 4

Parties to the agreement authorize the Museum of Papermaking in Duszniki-Zdrój to apply to Polish authorities for submitting the application of paper mills in Duszniki-Zdrój, Velké Losiny, Homburg and Ambert for a serial entry on UNESCO Tentative List.

§ 5

Persons responsible for the coordination of activities resulting from the present declaration and other agreements are:

Maciej Szymczyk from Muzeum Papiernictwa w Dusznikach-Zdroju,

Petr Fouček from Ruční papírna Velké Losiny a.s.,

Johannes Follmer from Museum Papiermühle Homburg,

Sylvain Péraudeau from Moulin Richard de Bas in Ambert.

Muzeum Papiernictwa w Dusznikach-Zdroju

Maciej Szymczyk

Paper mills on their way to UNESCO, 2020





Panorama of the town of Duszniki-Zdrój from the east with the paper mill in the foreground

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The paper mill in Duszniki is also the venue of interesting meetings





ISBN 978-83-60990-58-2