Organisation der Vereinten Nationen für Bildung, Wissenschaft und Kultur

Harz - Braunschweiger Land - Ostfalen UNESCO Global Geopark

Landmark 20

Museum Schloß Salder

GEOPARK®
Harz . Braunschweiger Land . Ostfalen

Salzgitter
KINDER FÖRDERN UND FAMILIEN UNTERSTÜTZEN

Organisation der Vereinten Nationen für Bildung, Wissenschaft und Kultur

Harz - Braunschweiger Land - Ostfalen · UNESCO · Global Geopark

On the 17th of November, 2015, during the 38th UNESCO General Assembly, the 195 member states of the United Nations resolved to introduce a new title. As a result, Geoparks can be distinguished as **UNESCO Global Geoparks**. Among the first 120 UNESCO Global Geoparks, spread throughout 33 countries around the world, is Geopark Harz · Braunschweiger Land · Ostfalen.

UNESCO-Geoparks are clearly defined, unique areas, in which locations and landscapes of international geological importance are found. They are operated by organisations which, with the involvement of the local population, campaign for the protection of geological heritage, for environmental education and for sustainable regional development.

As early as 2004, 25 Geoparks in Europe and China had founded the Global Geoparks Network (GGN). In autumn of that year Geopark Harz · Braunschweiger Land · Ostfalen became part of the network. In addition, there are various regional networks, among them the European Geoparks Network (EGN). These coordinate international cooperation.

In the above overview map you can see the locations of all UNESCO Global Geoparks in Europe, including UNESCO Global Geopark Harz · Braunschweiger Land · Ostfalen and the borders of its parts.

1

Landmark and Geopark Information-Centre

Municipal Museum Schloß Salder

David Sachse, a colonel of Braunschweig (Brunswick), built a castle in the style of the Weser-Renaissance on the property of the family Von Saldern which was mortgaged in 1608. The prince later becoming Duke August Wilhelm von Braunschweig purchased the castle in 1695. It was originally used by him as a summer and hunting residence, but later became the dower house of his third wife. Later, Duke Karl I included it in the dukedoms demesnes. Following the 1st World War it was taken over by the State of Braunschweig and became the first independent demesne of the State in 1920. The so-called Reichswerke, a large steel-producing company owned by the Reich, purchased the complete property in 1939; it subsequently became seat of the Greater German Relocation Agency. The company Salzgitter-AG as formal successor of the Reichswerke sold the castle for the symbolic price of 1 Deutsche Mark to the town of

Platypterus hercynicus (ichthyosaurid)

Ice Age Garden

Salzgitter. The demesne stayed in operation until 1968, however, the castle became the seat of the municipal museum of Salzgitter in 1962. The collections of the museum include the 5 m-long skeleton of a Cretaceous ichthyosaurid, large tusks of mammoth and bones and artifacts of Neanderthals'. Information on the way of life of the Neanderthals' may be found in an adjacent Ice-age Garden where steppe vegetation, boiling pit and a hut made of fur take visitors back to life in stone-age times. The remains of a primitive smelter from Lobmachtersen are evidence that the Germanic tribes had already started processing iron ore in this area at the time of Christ's birth. Remains of cloisters and castles from the area are evidence for the medieval history of the Salzgitter-area housed in the museum.

Geopoint 2, Lichtenberg Castle, is reached by leaving Salder via the Museum- and Mindener Straße and later following the K40 to Lichtenberg. Here, the Burgbergstraße should be followed to the edge of the forest where a small paved road leads to the castle.

www.salzgitter.de/stadtleben/kultur/museum

2 Castle of Henry the Lion
Lichtenberg Castle

The visitor first reaches the lower part of the castle with Restaurant and Hotel "Burgberg". A short ascent (which is not following the medieval path) leads to the area of the former gate. Here, old traces of wagons and carriages are cut into the Middle Triassic Muschelkalk limestone and lead into the upper part of the castle. The foundations of the Palas (main dwelling) and other residential buildings and working quarters may still be recognized; the rampart and a 60 m-deep well are preserved. There is a hexagonal tower which was built on top of the remains of the kennel. It is used for an exhibition showing objects from the castles varied history and offers a magnificent view into the northern foreland of the Harz.
The castle was built on top of a steep-sided hill with an elevation of 241 m above sea level and originally owned by Duke Henry the Lion (Heinrich der Löwe, 1129-1195)

Lichtenberg Castle

until it was besieged by imperial troops in 1180. This was the consequence of previous disagreements between the emperor Friedrich I Barbarossa and Duke Heinrich der Löwe with the latter not supporting and following the imperial troops. As a consequence, Heinrich was banned by Barbarossa and lost his dukedoms of Bavaria and Saxony. Literally squeezed between the interests of the surrounding lords of Goslar ("Staufer"), Braunschweig ("Welfen") and the cathedral chapter of Hildesheim, the castle frequently was in the centre of political conflicts until Staufer and Welfen became reconciled in 1235. The castle lost its territorial importance at the end of a feud (Hildesheimer Stiftsfehde, 1519-1523). Being strongly fortified and regarded as impregnable the castle was finally destroyed by troops of Duke Volrad von Mansfeld of the Schmalkaldic League.
The material used for the construction of the castle was quarried nearby from Middle Triassic Upper Muschelkalk crinoidal limestones ("Trochitenkalk").

www.salzgitter.de/tourismus/sehenswertes/burgruine.php
www.fv-burg-lichtenberg.de

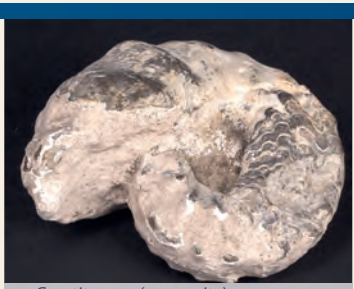
3

Following the Traces of Muschelkalk Times
Geopath Lichtenberg

The remnants of Lichtenberg Castle are the starting point for an 8 km-long Geopath which runs through the beech forests on top of the Middle Triassic Muschelkalk in the protected landscape of the Salzgitter Ridge. Even after 200 million years the rock still shows traces of life in the ancient sea. Most frequent are the remains of crinoids, brachiopods, ammonites and bivalves. The calcareous soil offers an optimal substrate for beech trees, but also for “noble wood” such as ash and sycamore. The herbaceous layer is rich in spring flowers. European badger, red fox, roe deer and wild boar as indigenous in these forest.

Following the signs for the Geopath Lichtenberg the old quarry at the Kruxberg is the first to be reached. It shows up to 10 m of the crinoidal limestones (“Trochitenkalk”, mo_1) of the Upper Muschelkalk which

Old Kruxberg-quarry



Ceratites sp. (ammonite)

forms a morphologically distinct ridge. These limestones frequently show the disk-shaped elements of the stems of the crinoid *Encrinus liliiformis*. To the north they are succeeded by the *Ceratites*-limestones (mo_2) and underlain to the south by the marly layers of the Middle Muschelkalk (mm). Quarrying of the “Trochitenkalk” for building purposes started in medieval times and left a 900 m long and up to 70 m wide quarry at the Hardewegforst.

The forest road ends at the county road. On the opposite side of the road, the trail is continuing upward to the starting point. Driving back along K 40 through Salder, Gebhardshagen is reached with its castle after 600 m.

www.salzgitter.de/rathaus/fachdienstübersicht/umwelt/naturatlas.php
www.salzgitter.de/tourismus/downloads/01lichtenberg_19nov_1.pdf

4

One of the Oldest Castles of the Greater Braunschweig Area

Castle of Gebhardshagen

The castle of Gebhardshagen has been founded at the eastern edge of the Salzgitter Ridge at the crossing of two old military roads. The oldest parts of the present ensemble are from ca. 1200, however the castle is thought to be older and therefore represents one of the oldest castles of the greater Braunschweig area. It is thought that the Von Hagen family built the castle initially; the first written record of the fortification is from 1186. According to the description of Matthäus Merian in his 'Topographica Germaniae' from 1654 the castle had a size of 25 X 45 m with a Red Tower and a Grey Tower, both of them no longer existing. The part preserved is the 80 m long northern wing with the entrance building, the castles' barn and the ca. 30 m long and 10 m wide Palas. When the Von Hagen family died out in 1280, the castle was taken over by the dukes of Braunschweig. It became the dukes' court

Castle of Gebhardshagen

Entrance building of the castle

and the seat of the authority of Gebhardshagen in 1539. Starting with 1671 the castle became a demesne of the dukes. Buildings had to be altered and stables needed to be constructed; the Palas became a barn for cereals. In 1938 the demesne was purchased by the Reichswerke. Large parts of the estates were needed for the construction of shafts, industrial installations and housing for workers. The demesne was later owned by Salzgitter-AG and continued until 1986. Since then it is owned by the town of Salzgitter and managed by a supporting registered society.

The next point of the route leads to the rock trail ("Gesteinslehrpfad") in the park. It is reached by turning right towards Gustedt from the street "Vor der Burg" and later following the signs to the "Gesteinslehrpfad".

www.salzgitter.de/tourismus/sehenswertes/wasserburg
www.wasserburg-gebhardshagen.de

5 Rocks from the Harz and its Foreland
Rock Trail

The footpath in the park starts as a tree trail ("Baumlehrpfad") which is extended each year by planting the Tree of the Year. The rock trail ("Gesteinslehrpfad") presents rocks of Palaeozoic, Mesozoic and Cenozoic age. It starts with large fragments of the Scandinavian basement which were transported to the area by the advancing ice during Pleistocene glaciations and left here as erratic boulders when the ice melted away. Next are blocks of Mesozoic sedimentary rocks from the slopes of the Salzgitter Ridge. They are mostly marine in origin and have been quarried as building stones until the 19th/20th century. Sedimentary and magmatic rocks from the Harz Mountains finally conclude the trail.

Old quarry in the Lower Muschelkalk

6 Quarry in the Lower Muschelkalk West of Gebhardshagen

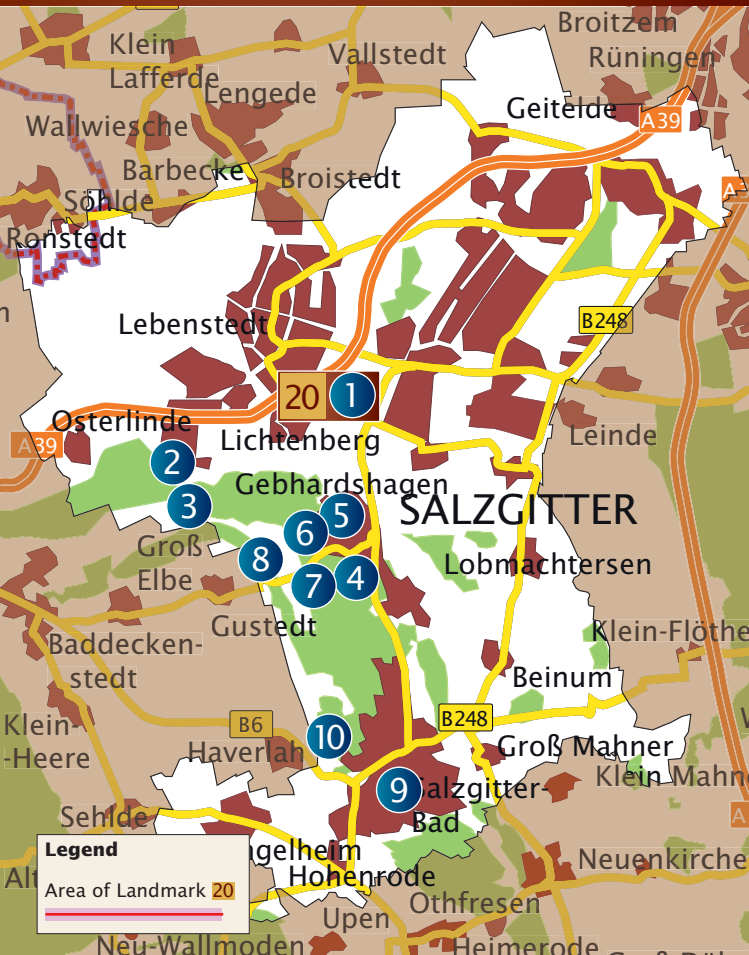
Driving back to L 670 and continuing towards Gustedt, a disused quarry is found on the right side behind the "Glückaufhalle". It shows steeply inclined rocks of the Lower Muschelkalk starting with the basal dolomite at the boundary to the Lower Triassic Buntsandstein ("Upper Bunter"). The sequence continues with oolitic layers, wavy limestone ("Wellenkalk"), foamy limestone ("Schaumkalk"), yellow limestone ("Gelbkalk") and terminates with a terebratulid limestone ("Terebratelkalk"). During Lower Muschelkalk times the sea flooded the so-called Germanic Basin ("Germanisches Becken") from the south and formed a shallow marine basin covering large parts of what is now central Europe. Interruption of the connection to the open sea led to increased salinity which could only be tolerated by few organisms. However, those adapted developed in extreme numbers. A well-known example is the brachiopod *Terebratula* (now *Coenothyris*), the shells of which form distinct beds.

Glossar

Landmarks (“Landmarken”) are physically prominent spots and/or well-known places which have been selected as being representative for a certain area. They give their name for the area and may serve for a first orientation within the second-largest geopark of Europe. More than 20 of these landmarks and the areas around have been described in detail by a flyer, such as the present one.

Geopoints (“Geopunkte”) are spots of special interest within the areas of the Landmarks. As prominent examples they illustrate the geological and cultural history and heritage of the respective area. They are consecutively numbered for the area of each Landmark and may be combined to individual **Geo-Routes**. Geopoint 1 always is the name-giving place for the Landmark.

The map below may help for planning your individual Geo-Route around the town of Salzgitter and the Castle of Salder.



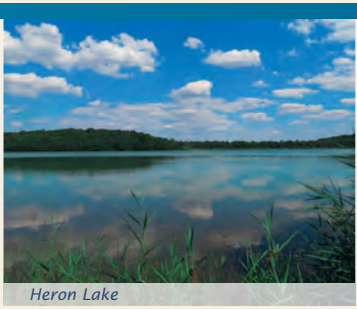
7

Clearing Tank II – Designed for Processing of the Ore

Heron Lake

South of the quarry County Road L 670 has to be crossed. Turn left behind the bridge of the former railway line which served for transporting ore from Haverlahwiese. The “Reihersee” (“Heron Lake”) is reached after a steep ascent through old beech forest. It was originally constructed as a clearing tank for settling the mud which originated from rinsing the iron ore with water in the ore washing plant “Calbecht” and was in use from 1944-1952. The remaining lake extends over 52 hectares and the water level is at 195 m above mean sea level. A thick layer (several meters) of mud accumulated at the bottom of the pond due to settling of the fine grained material which was washed in and started consolidating. The water in the pond is shallow all over, however, it shallows towards the shoreline. Due to the character of the substrate only few aquatic plants were able to colonize the pond with the remarkable exception of rough stonewort which is otherwise extremely rare in the southern part of Lower Saxony. The species forms extended meadows at the bottom of the pond which are the habitat, substrate and source of food for snails, insects, fish and other aquatic animals. Most of the shoreline is occupied by reed, especially along the southern edge of the pond. In spite of natural recolonisation by trees, there are still open areas existing around the shoreline where rare plants, such as some species of orchids and showy centaury may be observed when hiking around the pond (expected time ca. 1 h).

Grey heron



Heron Lake

The route is continuing along L 670 from the parking lot at the shooting range towards the former iron ore mine Haverlahwiese. Few of the buildings of the old mine still exist, such as the hall for payment of the workers (“Lohnhalle”) and the so-called “Zechenhaus”. Starting here you may walk along the street until turning right to the former opencast pit. The pit may be circuited in 2 to 2.5 hours, but please keep in mind that you must stay on the trail.

8 The Iron Mining District
Haverlahwiese

The Lower Cretaceous, ca. 120 million year old iron ore was deposited along the western flank of the structure now forming the Salzgitter Ridge. The ore has been exploited 2 km west of Salzgitter-Gebhardshagen by opencast and subsurface mining at Haverlahwiese. Being up to 100 m deep and extending over a length of 3 km it was the largest opencast iron ore mine in Germany in its time. 14 million tons of ore with a mean iron content of 33% have been dug out here from the beginning of ore extraction in 1938 until the end in 1962. Only subsurface mining continued until iron ore mining ended in Salzgitter finally with the closure of the mine at Haverlahwiese in 1982. Following the demolition of the shaft-building only few surface installations have survived as a reminder of the mining, such as the "Lohnhalle" and some other buildings.
The deeply incised former opencast mine is now almost

Hall for the payment of workers ("Lohnhalle")


Large excavator in the mine (1939)

completely surrounded by forest. Shrubs and trees, mainly alder, have colonized the slopes. Extended areas covered by grass and other herbaceous plants alternate with areas with only few plants or even devoid of vegetation. The lake in the western part of the former mine and a number of little ponds are an ideal home for amphibians, such as great crested newt and natterjack. The dump in the middle of the mine is mainly composed of excess material from shaft "Konrad" near Braunschweig and sparsely vegetated. It is a refugium for extremely rare species, such as blue winged and slender blue winges grashopper but also dragonflies, butterflies and spiders. On the ground you can find common lizard and blindworm.
The route continues from the "Lohnhalle" along L 670 back to the street named "Vor der Burg". Then it continues on the "Nord-Süd-Straße" toward Salzgitter-Bad. Here, the signs to the historic centre ("Altstadt") and the Rose Garden ("Rosengarten") should be followed.

www.salzgitter.de/stadtleben/kultur/museum/bergbau.php
www.salzgitter.de/rathaus/fachdienstuebersicht/umwelt/naturatlas.php

9

White Gold

Following the Traces of Salt

One of the most concentrated brines of Germany comes to the surface in the historic centre of Salzgitter-Bad. It is the basis for the city being approved as a national brine spa continuing the tradition from 1879 of using the highly concentrated salt water for medical treatment. A pavillion has been constructed in 2009 in the Rose Garden on top of the brine spring for inhaling the salty breeze which has positive effects on the respiratory system. The 22-25% brine which is originating at a depth of 222 m is transported by underground pipes to the different installations of the spa next to the accompanying spa garden (“Kurpark”).

The rock salt which is approaching the surface today in the salt dome of Salzgitter was deposited about 270 million years ago in Upper Permian (“Zechstein”) times. This is the reason for salt springs to occur in

Graduation Pavillon in the Rose Garden

Spa Garden at about 1900

the swampy valley of the Warne creek. There is archaeological evidence for salt production starting in early medieval times, the first written record of the salt springs is from 1086. The salt was the reason for calling the region around Ringelheim and Gitter “Salzgau”. Initially the brine was heated in funnels made of clay (“Tiegel”), iron pans came into use starting with the 14th/15th century. A graduation plant (“Gradierwerk”) was constructed in the 16th century for pre-concentration of the brine by evaporation. It is estimated that up to 3 million tons of salt were produced at Salzgitter until the production ended in 1925. When following the “Salzroute” (=”Route of the Salt”) through the centre of town 10 marker posts which have been placed at historic points offer information on salt production and the history of the salt producing town.

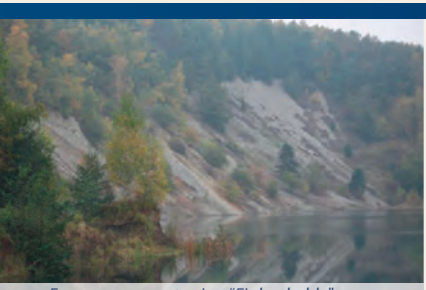
Touristinformation www.tourismus-salzgitter.de
Thermalsolbad www.thermalsolbad.de

10

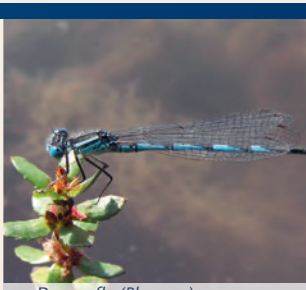
150 Million Years of Earth History

Geopath Salzgitter

The Geopath starts at the Bismarck-tower ("Bismarckturm") with its inn and leads for about 6.5 km through the Salzgitter Ridge. The platform of the tower, which was built in 1900 in honour of the former German chancellor Duke Prince Otto von Bismarck (1815-1898), offers a wonderful panoramic view of the Harz Mountains with the Brocken and the foreland of the Harz. More than 150 million years of earth history are passed through when following the signs for the Geopath through woodruff and limestone beech forest. Starting with Terebratula-limestones of the Lower Muschelkalk on top of the Hamberg (272 m above sea level) the path leads to the outer flank of the ridge which is composed of a complete succession of Cretaceous rocks. The former quarry in the late Aptian "Flammenmergel" (literally translated "flame marls", kru_3) nicely shows silicification of the rock as



Former opencast mine "Finkenkuhle"



Dragonfly (Blue-eye)

caused by the remains of diatoms and radiolarians. The Geopath continues to the former opencast iron ore mine "Finkenkuhle" (literally translated "finch-pit"). Since mining terminated in 1958 the intensely used area of the mine and the accompanying shaft has been re-occupied by nature including an idyllic lake which became an ideal home for amphibians and insects. Surface and subsurface mining here yielded 7.73 milion tons of Lower Cretaceous (Hauterivian) iron ore in total. 200 m from the former opencast mine Albrecht's Spring ("Albrechtsquelle") is reached. The water was formerly used in Albrecht's brickyard for processing dark Lower Jurassic (Liassic) claystones and sold as healing water until the 1930ies. The water from the healing and mineral water springs of Salzgitter, the Irenen-Spring and the Plünnecken-Pit were sold as "Imperial Harzer Sauerbrunnen" in the 19th century and well known all over Germany.

www.salzgitter.de/tourismus/downloads/01salzgitter_bad_19nov_1.pdf

Salzgitter

Geological Development of the Area

Salzgitter is situated at the transition of the Central German hills and mountains to the plains of northern Germany. The area rises from the plains to the top of the Salzgitter Ridge with an elevation of 275 m above sea level. The plains are mainly covered by unconsolidated Quarternary sediments forming a thick cover of gravel, sand and loess in part of the Salzgitter area. Doming due to the rise of the 270 million year old Upper Permian Zechstein-salt resulted morphologically in the Salzgitter Ridge and the Lindenberg at Thiede. The salt came near to the surface at Salzgitter-Bad (brine-processing from medieval times), Lebenstedt, Thiede (mining of potassium salt 1885-1924) and Flachstöckheim (mining of potassium salt 1919-1924). Doming by salt caused the steep inclination of Mesozoic rocks with an age of 250-65 million years as can be observed at the surface along the flanks of the Salzgitter Ridge and the Lindenberg.

Since the area of today's Salzgitter was repeatedly covered by the sea most of the Mesozoic rocks are sediments of marine origin, such as limestones, sandstones, clays and marls. Iron ore was formed repeatedly in Upper Jurassic and Cretaceous times. Ferruginous oolites have been deposited along the shoreline during the Upper Jurassic (mined at shaft "Konrad" near Braunschweig) and sideritic concretions formed. Reworking of the concretions by tidal action led to the formation of debris-ore ("Trümmererz") especially along the western flank of today's Salzgitter Ridge. Furthermore, oolitic iron ore was formed both at the beginning and at the end of the Lower Cretaceous. 302 million tons of iron ore were produced in total at the surface and below ground in the area of Salzgitter between 1937/38 and 1975.

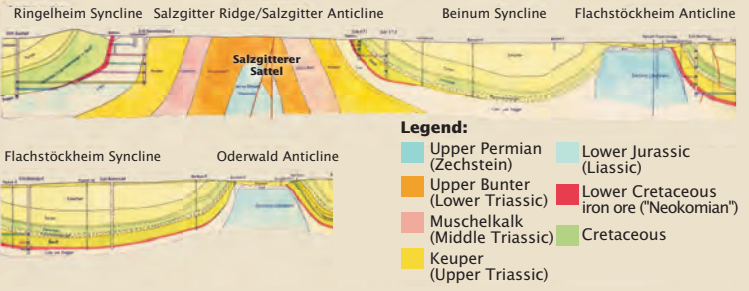


Figure: Cross section of the Salzgitter ore deposit

www.salzgitter.de/stadtleben/kultur/museum/geologie.php
www.salzgitter.de/stadtleben/kultur/museum/Vom_Erz_zum_Stahl.php
www.salzgitter.de/tourismus/stadtfuehrungen/werksfuehrungen.php

Selected places for information

Possibilities for stopping at an inn or to spend the night

A Restaurant „Schlosshof Salder“
Salzgitter-Salder
www.schlosshof-salder.de
05341 - 1888797

B Hotel „Ratskeller“/
RHO Real Hotel Operations GmbH
Salzgitter-Bad
www.ratskellersalzgitter.de
05341 - 301 320

C Café – Restaurant „Bismarckturm“
Salzgitter-Bad
www.helmut-stolze.de
05341 - 32869

Municipal Museum Schloß Salder

The municipal museum of Salzgitter in the Castle of Salder has existed for more than 50 years and became a Geopark Information Centre in 2007. It includes collections with material devoted to the history of the town, to the economic, industrial and technical history of the 19th and 20th century and to the history of childhood.

5000 m² of exhibition space offer interesting and fascinating information on the history of the earth and mankind as well as to the transformation of the area from an agricultural region to the third-largest industrial site in Lower Saxony.

Opening Hours: Thursday-Saturday 10 am – 5 pm
Sunday and Holidays 11 am – 5 pm

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