

Rudapithecus now! Synergie of Cultural, Natural and Industrial heritage

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Abstract

This paper is one of the stages on the path to the realisation of a large-scale landscape design project.¹ The research, which is founded in praxis (Narmer Architecture Studio Budapest) and based in part on work done by the faculty of the BME Doctoral School of Architecture², deals with one of the most underdeveloped regions of Hungary, located on the northeastern border of Borsod-Abaúj-Zemplén county. The natural landscape, and the cultural and historical sites of the region have considerable potential, especially if they are properly integrated into the economic and touristic life of the county. The unexploited possibilities in the character of the area are in great contrast with the current situation. The protection and the appreciation of the industrial past does not draw nearly as much attention as the protection of kinds of other historic buildings, so its survival is endangered. The quick demise of the heavy industry that was built in the communist era left the landscapes marred by defunct factories and the remains of mines that have long been out of use. Nonetheless, in many cases the abandoned and decaying industrial buildings that belong to the region's past bear significant architectural value.

Keywords: *Rudapithecus, Cultural Heritage, Natural Heritage, Industrial Heritage, landscape design, visitor centre*

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² <http://dla.bme.hu/>

The story and its background

This unusual story began in 1965, when Gábor Hernyák, a geologist of Rudabánya, found a fragment of a jaw bone in the territory of a mine. Two years later, paleontologist Miklós Kretzoi realized the importance of this discovery. He studied the finding for a few days, and on October 10, 1967, an article was printed in the daily *Magyar Nemzet* (Hungarian Nation) announcing the news to the public. According to the article, the bone was part of the remains of a creature that had lived 6-10 million years ago. This anthropomorphic creature had not been an ape. Rather, it had been a member of a species that had begun to evolve and resembled *Homo sapiens*. Kretzoi named it the *Rudapithecus hungaricus*. The locals still refer to the site where the bone was found as ‘monkey island’. Since the initial discovery, researchers have uncovered some 300 remains of other extinct species, including hominoid remains. As professor László Kordos writes, “*Rudapithecus and the findings at the site are part of Hungary’s culture because they were found on the territory of Hungary. They are part of the history of the world because they are clear evidence of the origins of mankind, of Homo sapiens. Naturally, there are findings of similar age and significance in other places, in Europe primarily in Spain and Greece, in Africa primarily in Kenya and Namibia.*” (Kordos, 2015). As the articles published in the meantime discuss, in the course of the excavations that have been undertaken since the first discovery, hundreds of vertebrates and other creatures have been identified, and this information has done a great deal to further our understanding of the region as it was some 10 million years ago (Kordos, 1997; Kretzoi, 2002; Bernor, Kordos and Rook, 2005).

The project site

Rudabánya is a city in Borsod-Abaúj-Zemplén County, about 15 kilometers from the city of Kazincbarcika. It has had a rich history thanks largely to mining. The iron ore and other noble metals found not far from the city were mined in ancient times. By the end of the fourteenth century, it had become one of the seven mining cities in Northern Hungary. Primarily copper and silver were mined. Beginning in the 1500s, mining was pursued only irregularly. However, with the introduction of large-scale industrial works, by the nineteenth century mining again was a major part of the economic life of the region. By the end of the nineteenth century, the city had become home to one of the most modern mining works in all of Europe. After World War II, it again began to develop rapidly. In 1985, the mining and enrichment of iron ore was brought to an end because it was no longer economical (Garami, 2004). In the meantime, the mine pit had filled with water, and today

it is one of the deepest bodies of standing water in Hungary.³ The lake is approximately 300 x 80 meters and roughly 80 meters deep. It is used by both amateur and professional divers for training and practice. Many suggestions have been made concerning the re-cultivation and use of the area around the mine, but whatever suggestions were adopted, they were only partially implemented. After the mine had been closed, some landscaping was done, but nonetheless, one can still clearly see the terraced embankments of the land used for mining. With the exception of steep crags, the surface is now forested. The area where the discovery was made is now under the management of the Aggtelek National Park. The lake and the surrounding area have become a popular destination for people looking to take excursions, though it is not easy to reach the area because of complications that arose in the wake of the privatization of some of the land and roads.

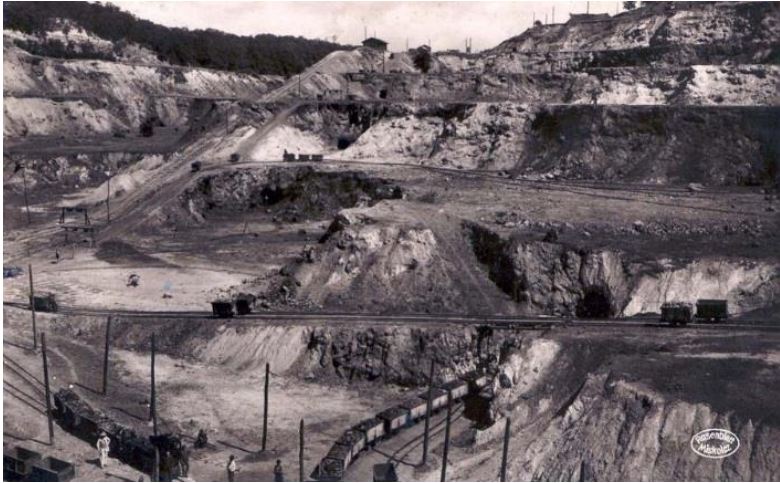


Figure 1: The iron ore mine near Rudabánya in the 1920s (courtesy by the Mining History Museum Rudabánya)

The BORSOD2050 project and the evaluation of the idea

In 1977, a protective roof was put above the site of the discovery. A larger area was enclosed with a fence, and a parking area and small bar were added, along with some minimal infrastructure. In time, however, the establishment was essentially abandoned because of the difficulties of maintaining it. By the beginning of the new millennium, with the exception of the protective roof, one found only a few traces of the park area that had

³ The site pro forma belongs to Rudabánya, cadastral it is part of Felsőtelekes.

been created. In 2011, the question of doing something with the area, or, more specifically, creating a new presentation site was raised again.



Figure 2: The first “visitor centre” at the Rudabánya site opened in 1977 (courtesy by Prof. László Kordos)

At the time, in response to an invitation for project applications by the Swiss Contribution Programme, an application was submitted for the revitalization of an old nursery school in the city and the renovation of an abandoned peasant house that was valuable from the perspective of vernacular architecture. The former nursery school became home to an indoor and outdoor playhouse with *Rudapithecus* as its theme. The peasant house became a so-called folk house, i.e. a kind of museum piece item serving as an example of part of a traditional way of life. The work on both projects was completed by 2015. In the meantime, thanks in large part to the assistance provided by Prof. László Kordos and the leaders of the settlement, a new conception of how to present and protect the site of the discovery had taken form. We invited four students from the Doctoral School of Architecture at the Budapest University of Technology and Economics to participate in the project, students who were looking for an opportunity to pursue research on the heritage of industrialization.⁴ In other words, the task that was underway at the time became a case study for the thematic years of the doctoral program with the motto “Community and

⁴ The research team consisted of the following members: Gabriella Antal, Veronika Borzsák, Tibor Tánzos, Piroska Varga, consultant: Zsolt Vasáros DLA, for further reading see: borsod2050.hu

Architecture” (Antal et al., 2012) and “Small is beautiful” (Antal et al., 2013). The students extended our investigation to cover the larger area of the Borsod region. Our goal was to study sites and collect items of value from the perspective of industrial, natural, and cultural heritage, including perhaps destinations that could form a kind of thematic study trail. Furthermore, we sought to arrive at concrete suggestions for plans for future uses of the region. After several dozen analyses of the sites had been performed, concrete suggestions were made concerning the city of Ózd, Esztramos Hill, and Rudabánya. The suggestions and the findings of the research that was done on site were presented in a traveling exhibition and in roundtable discussions, and preparatory work was also done on some publications. The Narmer Architecture Studio had already begun planning the protective buildings and the visitors’ center.⁵ The plan devised by the doctoral students was added to this. The doctoral students envisioned the creation of a study trail around the lake. Thus, Rudabánya became an unusual case study. The enthusiastic support of the locals and the contributions of scholars harmonized well with the intentions of the planners and always helped sustain interest in the project and momentum. Rudabánya became the model for the entire research project. The industrial heritage of the city and its surroundings had fallen into almost complete ruin. It was our intention to present an unusual and even unique slice of history (and ancient history) in a beautiful, partly manmade, partly natural environment on the basis of remains only traces of which can be found today. The next chapter in the story began in the autumn of 2012, when we submitted an application for funding through ÉMOP⁶. Regrettably, we were not awarded the entire amount requested for the project. This decision became clear in the autumn of 2014. The ambitious leaders and representative body of the settlement nonetheless decided to undertake a more modest version of the original project and to offer additional assistance. Plans were drawn up with the cooperation of the Narmer Architecture Studio, the doctoral students who had taken part in the creation of the earlier plans,⁷ and new member of the design team.⁸ In the spring of 2015, following a successful public procurement, construction began⁹, and by the fall of 2015 it essentially had been completed. The completion of the exhibition and the study trail and the creation of some of the elements of the infrastructure are planned for the autumn of 2016, as is the general opening for the public.

⁵ www.narmer.hu, the design team (architecture and structural engineering) consisted of the following members: leading architect - Zsolt Vasáros DLA, architects - Zsolt Megyesi, Áron Sasvári, Anikó Somlai, Gábor Nagy, Anna König, Ágnes Eiszrich, Emőke Bandur-Juhász, structural engineering - Norbert Blasius (building permit plans), Olivér Kovács (building realisation plans), special concrete specification - Péter István Varga DLA

⁶ Észak-Magyarországi Operatív Program/Operative Program for Northern Hungary

⁷ Gabriella Antal, Veronika Borzsák and Piroska Varga architects, doctoral students

⁸ Bence Török architect, doctoral student

⁹ Building contractor: Euro Campus Kft

The architectural concept

From the perspective of the architectural concept, the first task was to designate the sites for construction. We studied all of the earlier plans for the revitalization of the area, including plans that had never been implemented. Professor Kordos and the staff of the Rudabánya Museum provided us with archival photographic materials, which offered important details concerning the area of the mine and the potentials and possibilities for presenting the site of the finds.¹⁰ The conversations that we had with Lajos Szobota, the mayor of the settlement, proved extremely important. Szobota had once worked as an engineer in the mine, and thus he was able to provide us with advice that was extremely useful to our work. With regards to the precise layout of the study trail, it was particularly important to us to ensure that the trail harmonize with the natural surroundings, whereas with regards to the creation of the *Rudapithecus* exhibition we considered it essential to use the actual site of the find. The sites for the three lookouts that are part of the study trail were chosen very carefully, as were the sites of the jetties and the resting places. They were chosen in order to emphasize dialogue with the surroundings, vistas and views, the history of the mine, and the natural and industrial heritage of the area. The information signs, of which there are several dozen, present the geology, industrial history, geography, and paleontological and natural history of the area. The visitors' centre and the protective building contain the materials on *Rudapithecus*. Naturally, once the questions concerning the specific functions of the buildings had been resolved, the structure and form of each building were also important considerations. Understandably, the local government wanted us to design buildings that would be "vandal-proof", given the size of the area in question and the difficulty of keeping it under watch. We had to accept this logic. As planners, we felt that it would only be possible to design vandal-proof buildings that would also be interesting architecturally if we created a harmony between the building material, the building site, and the structure of the edifice. In the end, we chose monolith iron-reinforced concrete cast on site. We also planned to use reddish pigment in the cement mix, in part as a reference to the colors of the iron ore which used to be mined at the site in huge quantities and which is visible in many places today. In the case of the lookouts and the smaller elements, we chose smooth, unstructured surfaces, while the façade of the visitor centre building and the protective building is reminiscent of the familiar trapezoid-sheet exteriors used in industrial architecture (thought it too is made of reinforced concrete). The revolving entry doors to the visitor centre building and the protective building are also made of reinforced concrete, as

¹⁰ The Mining History Museum Rudabánya was represented by Andrea Papp (director of the Museum) and Sándor Hadobás (former director of the Museum) to whom I am much indebted for kindly facilitating the research work on the site.

are the pieces of landscape furniture. Two elements of the ensemble presenting the site of the discovery were completed. A third building and a protective roof that had been planned had to be scrapped after the project began because of technical considerations. In the course of the excavations that began in the early stages of the implementation of the construction plans, we discovered foundational structures which we had not been able to anticipate finding in the planning stages on the basis of the information at our disposal, so some aspects of the plan had to be abandoned. The visitor centre and the protective building were completed, as were the ramps connecting them. While additional plans and surveys were being made in the course of the project, further examinations of the ground were made from the perspective of soil mechanics, and additional excavations were undertaken. A geoelectric study was also done, in part to determine the site of the finding more precisely and in part as an element of the preparatory work for laying the foundations.

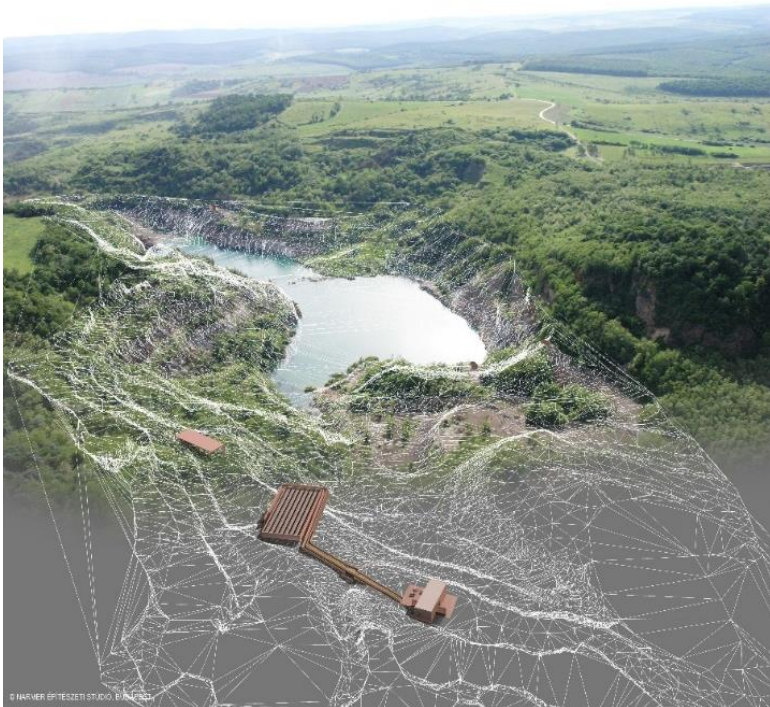


Figure 3: 3D image of the architectural concept. The visitor centre (at the bottom), the protective building (at bottom left), the not realised roof (to the left) and the lookout points around the lake (courtesy by the Narnar Architecture Studio Budapest)

Thus, in the end significant changes had to be made to the original plans submitted for permission, both structural changes and changes to the façades, and it was necessary to resubmit the documents with modifications. The visitor centre contains only the most basic things, indispensable to tourists, such as plumbing, a snack bar, and an information centre. Apart from this, the building, which is in operation year round, contains only rooms and spaces necessary for operation, and the temperature is maintained using geothermal heating and cooling. The water is drawn from the quarry lake using special equipment that both pumps and cleans it. The equipment is powered by a 50 kW solar cell, which will later be placed on the roof of the protective building. One exits the visitor centre and goes from the terrace of the bar towards the building with the materials presenting the site of the finding. One can chose from two systems of ramps, one of which leads to the roof of the building, while the other leads to the entrance to the protective building. Both are completely free of any obstacles. There is an incomparable view of the quarry lake and the surrounding landscape from the roof (the lower lookout offers a similar view from a bit lower down, though it looks primarily on the foreground of the exhibition and presentation space).



Figure 4-5: The visitor centre during the construction (courtesy by the Narmer Architecture Studio Budapest)



Figure 6-7: The protective building and exhibition space in April 2016 (courtesy by the Narmer Architecture Studio Budapest)

At the suggestion of Prof. Kordos, an area roughly twice the size of the area that has already been excavated (which is some 17 x 20 meters) was covered (i.e. an area 17.8 x 39.3 meters). According to the research that has been done, new excavations may well uncover additional findings in the area to the south-east of the area that has been excavated (extending roughly the same length). However, these findings would probably not reveal anything new. Thus, the new protective building covers and presents the area that has been excavated, while also protecting the area that has not been excavated from harm for future generations to study, using new methods and tools, possibly tools that allow them to gather information without actually breaking the soil. Visitors can approach the approximately 18 x 40 meter area on grating that is fixed to the walls (and does not have any internal supports underneath it). They can also observe this important site in the history of the evolution of *Homo sapiens* from the bridge that divides the spaces in half. According to the vision of the planners, the hypothetical story of *Rudapithecus* will appear as an animated film on the walls of the interior space, along with the characteristic features of the surroundings at the time. The site of the find contains an exhibition on the most important details of the discovery. When one leaves the exhibition space, one proceeds on the ramp on the west side towards the park, where the stairs from the upper lookout also lead. Thus, someone who begins to explore the area from above can continue by examining the exhibition. The architectural conception gave rise to many debates and compromises. This is hardly surprising, since there is always more than one good solution to any challenge. In the initial planning stages, we decided to use tinged cement surfaces, which provide protection against vandals and also allude to the industrial architecture that was once characteristic of the settlement.



Figure 8-9: The interior of the exhibition space during the construction (courtesy by the Narmer Architecture Studio Budapest)

The coloring also conjures the shades of the iron ore and other distinctive geological features of the area. At the same time, there is something unusual, simple, monolithic, one might even say timeless in the character of the forms we chose.



Figure 10: The protective building in the landscape (courtesy by the Narmer Architecture Studio Budapest)

This is particularly important, since when planning, we keep in mind functionality, and thus we plan in today and for today. In the presentation of a historical era, in the best case scenario we can give expression to a new world that harmonizes well with the old world, or we consider the old world important and we attempt to restore it. The era to which we have endeavoured to allude in Rudabánya was the world 8-10 million years ago. This is not a step back in human history, but rather a trip back in geological time. Thus, the architectural frame, the form that welcomes the visitor today, had to be commensurable with this. In our view, this simple, tectonic world is a suitable medium. Architects seek points of orientation and reference, not as an act of self-justification, but rather to ensure that the edifices they design fit into a larger scheme. In the case of Rudabánya, this endeavour to fit into a scheme is more a matter of concepts and principles than concrete examples. The wounded strip of land (now wooded), the mine (now transformed by nature into a lake), and the site where *Rudapithecus* was discovered¹¹ create stark contrasts that can only be resolved, or at the very least combined in a single frame, by forceful architectural intervention.

¹¹ Now part of the Aggtelek National Park, which itself is a UNESCO World Heritage Site.



Figure 11-13: Views of the ramps around the protective building (courtesy by the Narmer Architecture Studio Budapest)

Results, dissemination and future

The site that will open in the autumn of 2016 is not simply one of many interesting features of the area. In Rudabánya, thanks to the support and generosity of the aforementioned Swiss Contribution Programme, a landscape house and a playhouse were opened. The city is home to the Mining History Museum in Rudabánya, and part of what was once a tremendous Gothic church is used today as a Calvinist church. The future holds many possibilities. One can still walk through the underground mine-tunnel from the city centre to the lake shore (i.e. the quarry). Repairs should be made to ensure its safety, but it would be an astonishing experience to go through it directly from the city to the lake. A permanent centre could be made near the lake for diving training and practice. The compressor house, which is in ruins, could be used as an information point and a monument to the industrial culture that once thrived here. In the summer of 2015, a survey of the remaining industrial monuments of the city continued with the participation of students and teachers of architecture at the Budapest University of Technology and Economics.¹² The mine car repair station, the central workshop, and the entrance to the mine-tunnel were documented, as were the other buildings of the surrounding area. Hopefully, these sites will not be demolished and in the near future they will be put to use. Pages with notes concerning many other touring routes, attractions, and leisure-time and educational programs can be found in the drawers in offices of the local government, developers, and planners. Without

¹² The survey team consisted of the following members: Kata Kovács, Klára Lovas, Viktor Tóth, Imre Ferenc Szűcs and Júlia Pokol undergraduate student, and Piroška Varga, Veronika Borzsák, Zsolt Vasáros DLA supervisors, architects.

mining, the settlement has few prospects for growth or development in the future. This was partly why Rudabánya and this project are of such value as a model for doctoral research. The regional surveys and assessments drew attention to the potentials of many sites, but Rudabánya stood out among them, in part but not exclusively because of the story of the world-famous Rudapithecus, but also because of the active support provided by the leaders of the settlement. We would like to express our sincerest thanks to everyone for the successes of the project so far.



Figure 14: Façade of the protective building (courtesy by the Narmer Architecture Studio Budapest)

Summary

Our aim was to explore the potentials of the area, introduce visions for the future, and help provide inspiration for new projects. In addition to the revitalization of the whole former mining area, we suggested a new site museum and visitor centre for the site where Rudapithecus was found (cca. 10 million years old), which has already been completed and includes a study trail. Over the course of the last 3 years, we have obtained permissions to build and support for the implementation of our plans, and now we are beginning to execute them. We therefore suggested a possible development strategy for the region, which aims to build upon the legacy of this industrial past by letting the public explore and understand the region through a thematic route across these sites. As part of this design, and in particular in the area of interventions in the cultural field, this project presents a unique opportunity to experiment with innovative planning principles and new methodologies and to reflect on what synergy means. The project aims to raise public awareness about these values by sharing visions and providing inspiration for the future, primarily with regards to industrial

heritage and architecture. Creators described a possible trajectory of development that does not wipe out the traditions of industrial history. They defined a thematic road that will lead to better knowledge and understanding of the region. Certain stations on this road are already complete in the form of architectural plans. The project includes the organization of an exhibition-roadshow that will present an abstract of the information collected so far and also the architectural plans of stations of the “Industrial land tour” regional thematic road for the public in Ózd, Miskolc, Rudabánya, and Budapest.

Literature

- [1] Antal, G., Borzsák, V., Táncoz, T., Varga, P. (2012). Hajrá Borsod ipari táj! /Ipari táj rehabilitációja az észak-magyarországi periférián/. In Szabó L. (ed.), *Közösség és Építészet/Community and Architecture. Yearbook of the Doctoral School of Architectural Design*, pp. 12-19. Budapest: BME Építőművészeti Doktori Iskola.
- [2] Antal, G., Borzsák, V., Táncoz, T., Varga P. (2013). BORSOD 2050 – Ipari táj rehabilitációjának lehetőségei Észak-kelet Magyarországon/BORSOD 2050 – Go Borsod Industrial Landscape! In Szabó L. (ed.), *“A kicsi szép” / “Small is beautiful”*. *Yearbook of the Doctoral School of Architecture*, pp. 14-23. Budapest: BME Építőművészeti Doktori Iskola.
- [3] Bernor, R. L., Kordos, L., Rook, L. (eds.) (2005). Multidisciplinary Research at Rudabánya. *Palaeontographica Italica 90*, pp. 1-313. Pisa.
- [4] Garami E. (2005). *A rudabányai vasércdúsító-mű története. Érc- és Ásványbányászati Múzeumi Füzetek 34. (Hadobás S. ed.)*, Rudabánya.
- [5] Kordos, L. (1997). Environmental and Hominoid History in the Carpathian Basin During late Miocene. *Climatic and Environmental Change in the Neogene of Europe. ESF Workshop*, pp. 13-14. Siena.
- [6] Kordos, L. (2015). Rudapithecus Hungaricus: egy nemzeti érték ötven éve. *Magyar Tudomány 10*, pp. 1226-1235. Budapest.
- [7] Kretzoi, M. (2002). *The Fossil Hominoids of Rudabánya (Northeastern Hungary) and Early Hominization*. Budapest: Hungarian National Museum.