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Historical rock mining. Geosites and their geological engineering assessment

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At the beginning of the 2010 the Vistula River Valley Geopark was established and its located mainly within Lublin province. The Geopark was formed in response to an idea to link geological heritage with the local economies – to protect geological monuments in a way that would also protect the local community as well. This two years project (2010 – 2011), is being developed in partnership with the University of Warsaw together with the Maria Curie-Skłodowska University and Polish Geological Institute. The project includes the comprehensive assessment of rock slope and massifs stability and geological trails, the adaptation and revitalisation of geosites for visitants, tour guides, and the creation of a geological guide and an audiovisual documentary of the Geopark. Fundamental part of this project is promoting the education about Earth Sciences, history of rocks, minerals, fossils and landforms to the wider public and the geological heritage conservation in simplified way to improve awareness of role of geology in historical development of the region. Historical development of the Vistula River Valley Geopark is connected with historical rock mining industry. The region represents a unique example of co-existence of mining, building industry and rock workings. The roots of nowadays industries in Geopark reach far back as medieval times and even further back – the Paleolithic. Cherts from chalky limestones in the Vistula River Valley, until the beginning of Iron Age, were the basic supply for various tools and weaponry. Prehistoric artisans, knowing the mechanical properties of chert-bearing rocks and knowing how to mechanically tooling hard cherts, became precursors of today's geomechanics. Availability of common Upper Cretaceous and Neogene carbonate rocks made a significant impact on the building industry. The defense heavy fortresses, sacral monumental buildings and magnificent residential and common buildings are typically made of white, chalky and siliceous limestone blocks all over the Vistula River Valley and adjacent areas. In the XIX century the Lublin region was pioneering in the cement industry. The poster outlines geological contemporary aspects and geomechanical assessment of historical rock resources that recently represent geosites. Under special consideration is the vulnerability of rock to physical deterioration, rock slope and massifs stability with the passage of time. The geomechanical comprehensive assessment of geosite was exemplified by Bochotnica geosite