World Heritage Foundation Mines of Rammelsberg, Historic Town of Goslar and Upper Harz Water Management System: Two examples of object evaluation and condition measurement using a Webapp in accordance with EU standard 16096

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Introduction

The Upper Harz Water Management System became an integral part of the UNESCO World Heritage Site Town of Goslar, Ore Mine Rammelsberg and Upper Harz Water Management System in 2010. By doing this a world cultural heritage site was created which covers more than 200 square kilometers. An industrial cultural landscape was thereby integrated into the foundation in addition to the already established world cultural heritage sites of „the Old City of Goslar“ and the industrial monument „Rammelsberg mine“. Visitors can learn about important topics such as the mining sector, production of energy, architecture, settlements and the changing landscape. The unique features of the various sites are presented. For example, the Ottiliae shaft has the world’s oldest shaft tower made out of iron. The story of this tower and a discussion of the significant changes which mining has caused to the landscape is told here.

In awarding this title the UNESCO imposes certain requirements. In general there are two fundamental conditions: to promote cultural and educational issues. The conservation of the

historical structures and the transfer of knowledge to future generations follow consequently from that.

The goal of the project of object evaluation and condition measurement was to plan and execute a sustainable conservation strategy as a basis for future work. To achieve this it was necessary to develop a digital documentation system allowing detailed condition surveys for each building or other object. The Consulting Office for Conservation was assigned to develop this documentation system, put it into practice in a way which can be used as a model for similar projects.

The project was realized in five subsequent steps:

1. **Collecting information in digital form from various sources.**

   There were various sources of data. For example there were a great variety of objects which had to be recorded as a photo or video at the Ottiliae mine shaft: the shaft tower, machines, furniture, the contents of a cellar, a one man bunker and ruins. In addition there were plans and historical photographs.

2. **Creating an exemplary digital system for documentation of architecture and non-architecture objects, which can be used for any object and any location.**

   An existing web application program at the Consulting Office was modified and extended for the demands of this project. This system can

   - manage groups of sites with a variety of different characteristics.
   - register as many buildings as desired with no limit to the number of rooms they have.
   - document objects and their conservation.
   - create a timeline to tell the history of the site.

- present all the sites in an overview map and give a variety of information through the use of overlay transparencies.

3. **Carrying out a condition survey according to EU standard EN 16096:2012 "Conservation of cultural property – Condition survey and report of built cultural heritage"**

The standard EN16096:2012 was used because its scope matched the goals of the project. The scope of this European Standard is:

- to identify maintenance measures;
- to define procurement needs and the requirement for detailed specification;
- to provide a unified method of obtaining comparative data when carrying out a condition survey for a group of buildings or a region.

Using EN 16096:2012 results in an overall recommendation grading: An overall recommendation class for the built cultural heritage as a whole is specified based on the risk assessment and recommended measures for all the components. The overall recommendation class is specified by evaluating each component, its condition and risk. For this purpose tables for „condition", „risk" and „recommendation" were integrated into the system as a pull down menu.

4. **Putting the system into practice in an exemplary way: Evaluation of the urgency of conservation at Ottiliae-Schacht and Knesebeck Schacht**

Detailed information was gathered on the two locations to demonstrate the functionality of the system: each location was divided in separate schedules, including a condition

survey according to standard EN 16096. From the data an evaluation of the urgency of conservation was derived as well as a recommendation of prioritization of required conservation measures resulting in a recommendation class for each location.

5. Implemention

The system was installed on the server of the “Gemeinsamer Bibliotheksverbund (GBV)” and the staff of the foundation was instructed to use the developed system independently. After logging in, anyone can use the system. An instruction manual was written which explains how data should be gathered on the sites and how the system has been designed. The instruction manual uses a step by step approach and includes a chapter for Frequently Asked Questions (FAQ). The system is designed so that it can be used by people with all levels of experience. They can gather their data at the various sites and feed them directly into the system. The instruction manual exists in the system as a PDF data file and can be accessed at any time.