

# INFORMATION SYSTEM OF THE OPEN-AIR MUSEUM IN VYSOKÝ CHLUMEC

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## **Abstract:**

*The Open-Air Museum in the village of Vysoký Chlumeč was founded in 1999. Now there are 14 traditional folk buildings on an area of 3 hectares. The museum's recent web presentation is very simple - it contains only one web page basic information supplemented with photos. Contact information and opening hours are mentioned at the end of the page.*

*The main aim of this project is to create a new information system for the Open-Air Museum in the village of Vysoký Chlumeč providing information for both the visitors and for specialists. It is created as a set of dynamic web pages allowing easy object editing, including editing basic information, adding photos and as well as videos. The information system's innovation introduces 3D models of buildings as a form of java application generated in the program WireFusion.*

*Selected technology and the web page content are the result of surveying the available information systems at home and abroad. The information systems use mainly the technology of scripting language PHP connected to MySQL database. The web pages are styled by cascading style sheets (CSS). New information system is divided into several parts – the main page includes the header with the logo and panoramic photo slide-show, next there are the menu, sidebar, and content part, and, finally, the footer including the login link. The separated part is the editing interface. The system uses Java Script applications such as a 360° panoramic viewer, lightbox for display photo gallery, etc. A very important object of the information system is an interactive map displaying the spacing of buildings. Each building on the map is linked to a new page with detailed information.*

*This information system should replace the existing web pages of the Open-Air Museum in the village of Vysoký Chlumeč or will serve as a model for creating such system by professional web designers. At present you can find the information system on the Laboratory of Photogrammetry server - <http://lfgm.fsv.cvut.cz/dp/bila/index.php>.*

## **1. INTRODUCTION**

The first open-air museum was established by Arthur Hazelius in Stockholm in 1880. Since that time many open-air museums have been created all over the world. The main aim of these museums is to document earlier forms of life, ways of living, and cultural habits, and folk customs.

The development of web technology opened up new possibilities of presentation. Information systems can contain basic information about the history of such a museum, about its individual buildings, and they also allow browsing through a photo gallery. The most modern way of presentation can be in the form of virtual tour or using panoramic views.

This article deals with the creation of an information system for the Open-Air Museum in the village of Vysoký Chlumeč. This system should show various ways of data presentation and allow their basic editing.

Before creating this new information system, a survey of the available information systems at home and abroad was made [3]. It has shown how the information system will look and what it will contain. The survey has also shown that none of the surveyed information systems offers spatial presentation of a museum or single buildings in the form of 3D model.

## 2. OPEN-AIR MUSEUM IN THE VILLAGE OF VYSOKÝ CHLUMEC

The open-air museum was established in 1999 in the village of Vysoký Chlumeč situated 35km east of Příbram. The Mining Museum in Příbram bought a 3 hectare area for the museum from the Lobkowicz Family. Since that time many folk buildings have been transferred to the museum, being thus saved from destruction at their original places. The main area of interest is the Příbram District and, in particular, the Sedlčany Region.

The first transferred object was house No 4 from the village of Obděnice near Petrovice in the Sedlčany Region in 2000. At present, visitors can see 14 buildings, such as farmers' homesteads, cottages, small houses, farm buildings, a technical construction driven by water, and some religious objects - most of them dating back to the 18 th, 19 th, and 20 th centuries [1].

### 2.1 Current information system

The current information system of this open-air museum is in the form of one web page including all information. This style is the same for all departments of the Mining Museum in Příbram. This simple web design does not make the information system attractive. It is not divided into thematic parts. The map of the area is only a schematic picture. The contact information is mentioned at the end of the web page.

In summary, the information system does not offer more than a piece of text information with pictures. There are no panoramic views, no video record, and no interactive map.



Figure 1: Current information system

### 3. NEW INFORMATION SYSTEM

Due to the simple appearance of the website, the new information system was created. The technology used, its appearance and content are described below.

#### 3.1 Technology

Many of the information systems are based on the technology of scripting language PHP and the database MySQL. The same technology was chosen for the new information system of the open-air museum.

PHP code is embedded into the XHTML source document and interpreted by a web server with a PHP processor module which generates the web page document. PHP enables connection with the MySQL database. Then the data can be obtained using SQL queries. The MySQL database of this system contains ten specific tables which are joined using primary and foreign keys. All the data are stored in this table as various type of variables for example text, int and varchar. The photos are stored in the own directory, and in the database there is only the path to the picture.

The web pages are formatted by cascading style sheets – CSS. The path to the CSS file is given at the head of the XHTML code.

#### 3.2 Appearance and content

For the background of the web pages a wood motive was chosen. The main reason for this choice was that wood is the main material used in the open-air museum. This new system is divided into several parts – the header, menu bar, sider bar, main content part, and footer. The menu bar includes the links for the main page, the page about the objects in the open-air museum, events, contact information, and the search window.

In this information system many existing JavaScript codes were used. For example, in the header part there is a slideshow of three panoramic views from the open-air museum. Another JavaScript code is used for the 360° panorama viewer which enables to inspect the area of the open-air museum approximately from its center. This viewer provides only horizontal movement with the arrows below the panorama.

On the main web page where the basic information about the open-air museum is mentioned and also on the pages focused on detailed object description there is a photo gallery in the form of a lightbox. After click on the photo thumbnail, a new window with a photo in its full size appears and the rest of the web page gets dark. In the new opened window we can browse the whole photo gallery.

One part of the system is an interactive map. The basis of the map is a picture showing a layout of the individual buildings. Each building on the map serves as a link to a new page with detailed information about the object. After the mouseover a small box with the photo and name of the object appears.



**Figure 2:** Interactive map of the Open-Air Museum in the village of Vysoký Chlumec



Úvod | Objekty | Akce | Kontakt |

Hledej... 

**Skanzen Vysoký Chlumec**  
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## Skanzen Vysoký Chlumec

### Muzeum vesnických staveb středního Povltaví

Oblast středního Povltaví je jedinečná v rámci středních Čech poměrně značným počtem zachovaných objektů lidového stavitelství z 18. až počátku 20. století. Výjimkou nejsou ani památky podstatně starší, například kamenné stavební články z pozdního středověku a kamenné brány ze 17. století. Tento region je zajímavý typem lidového domu povodí Berounky a Středočeské pahorkatiny s mnohými charakteristickými rysy. Lze na něm dokumentovat stavební vlivy okolních regionů a slohových stylů. Zachované lidové obytné i hospodářské stavby vypovídají také o historii osídlení krajiny. V muzejních sbírkách regionu se dochovaly předměty z vybavení venkovské domácnosti, lidový oděv, zemědělské a řemeslnické nástroje a náčiní i další předměty dokládající rolnické hospodářství.

Vzhledem ke změnám způsobu života na vesnici, dále novým zemědělským postupům výroby i moderním požadavkům na bydlení, a vlivem řady dalších důvodů, mezi něž patří v poslední době i jiné majetkoprávní vztahy, pozbyla část hodnotných vesnických staveb smysluplného využití. Bez minimální základní údržby jsou tyto objekty odsouzeny k zániku. Bohužel tento trend pokračuje do současnosti. Proto vznikla iniciativa odborných pracovníků - etnologů a pracovníků památkové péče, jejímž hlavním záměrem byla záchrana hodnotných dokladů lidového stavitelství v oblasti středního Povltaví, které není možno zachovat "in situ". Transferem těchto objektů do muzea lidových staveb (skanzenu) je možné zachránit značnou část ohrožených unikátních staveb a dokumentovat na nich bohatou historii tohoto regionu.



### Fotogalerie



Bohatý soubor fotografií ze skanzenu naleznete na [www.skazeny.eu](http://www.skazeny.eu).

Reportáž z pořadu Toulavá kamera si můžete prohlédnout [zde](#).

[Login](#)

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**Figure 3:** New information system

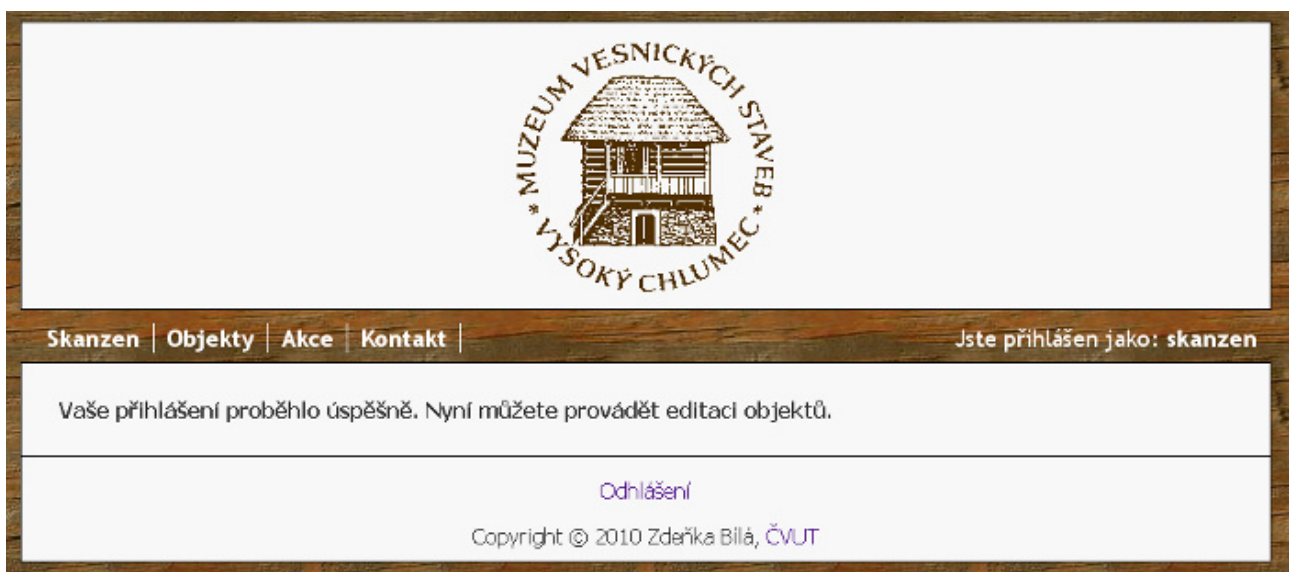
The main advantage of the new information system is that it provides the possibility of embedding the 3D model of a building as a java application from the program WireFusion. So far, one 3D model of a building from the open-air museum has been created in the above program – the timbered house from the village of Jíví, which can be seen in the figure below. Another 3D model – the water mill from the village of Radešice – is in the form of video record.



**Figure 4:** 3D model of timbered house from the village of Jíví

### 3.3 Editing interface

After successful login this dynamic system allows text editing, uploading photos, videos, sound records, and documents - the situation after login is displayed in Figure 5. The login name and password are to be filled in on the login page.



**Figure 5:** Editing interface

The editing interface is mainly created as a form with input fields like text, textarea, file upload, radio button and submit button. For text editing, the WYSIWYG editor TinyMCE is used – so the final text is saved in the database with the formatting.

The editing of the photos enables uploading to the database up to five photos at one time. The max size of each picture cannot exceed 2MB. The uploaded pictures are displayed immediately at the end of the web page with the possibility of deleting.

#### **4. CONCLUSION**

A new information system of the Open-Air Museum in the village of Vysoký Chlumec was created. This dynamic system offers many possibilities of editing. It includes an interactive map, photo galleries, and it also shows a 3D model.

The information system can serve as an example of how information systems can be designed. Its one possible use is that it will serve as a model for creating such system by professional web designers. Another possible use is that it will replace the recent information system. At present, the information system is available on the server of the Laboratory of Photogrammetry [4]. Currently, a 3D spatial model of the open-air museum is being created.

#### **5. REFERENCES**

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