
OSTRAVA WORLD OF TECHNOLOGY EDUCATIONAL CENTER

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Introduction

The former iron processing and manufacturing center in the Lower Area of Vítkovice in the Ostrava region, which was closed down in 1999, is now a National Cultural Monument. The plan is to use its premises in a new way. As a result, the entire area is becoming a unique place of culture, social events, and education.

New conference and congress premises have been built in the reconstructed gasholder built in 1924. Besides the “Gong” hall, which is the present name of the gasholder, the building of the former 6th Energy Central Station has also been reconstructed. In the building there is the interactive U6 Science Museum U6 and the U6 training center – “The Small World of Technology”. Behind the original building a brand new building for the *World of Technology – Science and Technology Center* is being built. This will become a popular science center that will make science, research, and technological fields more accessible.

U6 Museum Exhibition

The U6 interactive exhibition – Technology Exhibition for All Age Groups – is situated in the large and masterfully used premises of the former 6th Energy Central Station. The scenario of the exhibition is closely connected with both the history and present of the industrial area of Vítkovice. All of the eight sections of the exhibition, which are inspired by Jules Verne’s adventurous books, present the development, innovation, and modernization of technologies and the essential impact they had on the development of industry. The exhibition that is focused on the gradual transition from machines operated by people to steam engines and electric combustion engines serves as one example.

A guide walks the visitors through the exhibition and describes the particular technological periods and their connection to the development of industry and the entire society. The story of the weaver’s loom can serve as one example: to meet the large demand for fabrics and to make quicker and more effective work possible, the technology and techniques had to be revolutionized. The exhibition is further centered on the industrial revolution and steam engines, manufacturing and processing of iron, generation of electric power, acoustics and oscillation, water-turbines, aviation, and astronautics.

The exhibition allows the visitors to physically interact with the exhibits. There are mechanical models, levers, pulleys, models of the steel processing, or motorcycle, automobile and aviation simulators at their disposal. To mention some of the attractive exhibits: the Nautilus submarine, the engine of the MiG-21 jet, or a locomotive engine room.

U6 Training Center

Besides the interactive exhibition, there are also classrooms of the educational and demonstrational center “The Small World of Technology”. Free education of the second level elementary school students and students of high schools takes place in the classrooms. The three-hour accredited educational blocks offer an interesting teaching method of mathematics, physics, chemistry, biology or ICT. The latest educational tools, such as animation or simulation, are part of the education process. Tablets, interactive boards, and touch screen or 3D televisions are also part of the equipment of the classrooms. The Advée and LEGO Mindstorms robots provide both entertainment and information.

Besides the lessons for pupils and students, there are also free certified education trainings for the pedagogues. The programs are centered on the more effective use of ICT in the teaching process and the popularization (in the form of an entertaining form) of the natural science subjects.

World of Technology – Science and Technology Center are the premises that are being built behind the U6 building. The goal of the project is to revitalize the Lower Area of Vítkovice. The goal should be accomplished by establishing the popular science center for kindergartens, schools, and the general public. The center will have interactive exhibits, the purpose of which is to explain (in an entertaining and comprehensible way) to visitors the world around us. Completion of the building and its opening is planned for the fall 2014.

ICT Educational Modules

Under the supervision of the warrantor Jana Kapounová, the employees and students of the ICT department of the Pedagogical Faculty of the University of Ostrava have participated in the creation of educational courses for the pedagogues of elementary and high schools. These courses are centered mainly on the use of the ICT as an innovative and interesting teaching method. The educational modules are designed to help teachers master the digital technologies and incorporate the acquired methods into the teaching process.

The modules deal with office software, freely available graphic software, cloud computing, school magazine editorial system, and computer network security. The form of education is individual depending on the particular course. However, the most common forms are the full-time education, the dialog-based education, or the computer-supported education.

More Beautiful Microsoft Office

The course is aimed at the basics of Microsoft Word and Excel. A number of practical examples, such as formatting of the classification sheet, are part of the course. Lukáš Noskievič is the author of the module.

Secret of Curves

The course is aimed at work with computer graphics. The lecture is centered on the principles of raster and vector graphic. The course includes working with the freely available vector graphic editor Inkscape. Tomáš Javorčík is the author of the module.

Cloud Computing Made Easy with Google Tools

Google offers a broad spectrum of office software that uses the possibilities of information sharing on the Internet. These applications can be used for more effective team work at school. The aim of the course is to clarify the meaning of Cloud Computing and present the advantages and limits of its practical application by both teachers and students. Pavel Kapoun is the author of the module.

School Magazine with Wordpress, Quick and Easy

In the course teachers become acquainted with the ways of creating an online version of the school magazine with the help of the WordPress editorial system. The lecture is further aimed at the work of the editor's office, particular user roles (administrator, editor, reader) and the possibility of students' engagement in the editorial board. Jiří Hoffmann is the author of the module.

Network Security

The latest of the six accredited courses for pedagogues is the module centered on the essence of dangerous cyber phenomena and the Internet security. The lecture is focused on computer criminality, encryption, software handling sensitive data, and useful advice on the right configuration and security of the WiFi network. Tomáš Javorčík is the author of the module.

Conclusion

The Ostrava World of Technology Educational Center is at the beginning of its activity and the main goals still lies ahead of it. Moreover, the cooperation between the Center and the ICT department of the Pedagogical Faculty of the University of Ostrava is evolving, too. There are countless possibilities to utilize the ICT in the extracurricular and supplementary education, be it in didactic games or in museum pedagogy. It is a question of creative ideas. Considering the courses that are focused directly on the teaching of the ICT, now in the time of multimedia there is an enormous demand for vector and raster graphic, digital photography, and video and sound editing. These are the points of further cooperation between the University and the Center.

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