

Telc, a World Heritage City, in the heart of Moravia. The town thrived in the 16th century thanks to Zacharias de Hradec, the owner of silver mines and one of the highest officers in the kingdom, and in the 17th under Vilem Slavata, governor of the kingdom. Milos Dradcky has been at the head of the Municipal Architecture Office for the last 6 years. That's him on the top of the steeple of the St. James Parish Church. He also coordinates the European Arcchip programme.

Milos Drdacky
Coordinator Arcchip
Director
Institute of Theoretical and Applied Mechanics
AV CR, UTAM
Czech Republic

The Arcchip programme consists of organising different activities related to cultural heritage problems or issues. The bulk of the programme is made up of workshops where we try to bring people together from eastern and western European countries. In the research part, we focus on the links between research on cultural heritage issues and the way to apply the results in contemporary life in society.

At the foot of this tower stands the Telc castle. The current form of the building dates back to the 16th century. This is one of the monuments that is monitored by the Arcchip programme.

Milos Drdacky

A proper explanation of cracking and damage incurred by historical objects requires long-term monitoring of the manifestation of the damage, plus records of humidity and temperature. This is an example of what we do for several historical sites in the Czech Republic.

For a second concrete example, we move to the Czech capital, Prague. On the heights of the city stands Prague Castle with its famous and beautiful St. Vitus cathedral. 700 years of history are present in these walls. Construction of the cathedral began in 1344, but it was only finished at the beginning of the 20th century. Inside the church, some of the artwork is endangered.

Milos Drdacky

You see, this is a very fragile component. There are some defects in the material and some in the manufacture of the elements. And due to the

change in temperature and humidity in the cathedral and the structure itself, which of course is not the same everywhere, internal forces cause damage to these elements.

The researchers working with the programme have analysed the cracking inside the cathedral and are monitoring the way the damage develops and propagates. The conclusions are surprising.

Milos Drdacky

Sustainable management of the cathedral is only possible by reducing the number of visitors. But of course, this has some unpleasant consequences. You see the queue – people have to wait for their visit. But it's absolutely necessary.

But Arcchip's work is not just done in the historical sites themselves. It is also carried out in laboratories, for example. Now we move to the Institute of Theoretical and Applied Mechanics located in northeastern Prague. Today, Milos Dradcky has an appointment with Bo Kasal. Since June 2001, Bo Kasal has been working with Arcchip specifically on earthquake resistant structures, subjected to strong vibrations for this test. This particular project involves Italy, Germany and the Czech Republic.

Bo Kasal
Visiting professor
Technische Univeristät Dresden
Germany

That frame is tested specifically for earthquake loads, which means that the goal is to build earthquake resistant structures that can be used in heavy construction, like airport corridors or schools, where we need high levels of safety and reliability. We used a fibreglass composite to reinforce the joints and we made the material denser to increase its capacity.

This technique is meant for new buildings, but it also has applications in the preservation of cultural and historic heritage, particularly for old wooden structures. The application process is called retrofitting.

Bo Kasal
Visiting professor
Technische Univeristät Dresden
Germany

That means we try to fix defects from the past, to increase the load bearing capacities of the old construction so that it can survive future loads or serve new purposes. For example, you may want to use a building for a library. When it is used as a library, it is a public building and the load from people coming and going will be greater. A structure that was not used for that purpose for the last 300 years will require certain measures to increase its capacity.

Back to Moravia, this time in Trest. In addition to the research done in the laboratory and the monitoring of historical sites, Arcchip is a marvellous human network.

Milos Drdacky

We can visit one of our workshops that make up a substantial part of our activities in the Arcchip programme. 24 participants from 20 countries discuss recent research developments in the field of new conservation technologies for safeguarding cultural heritage.

Milos Drdacky

Around the table: Romania, Lithuania, Estonia, Poland, Hungary, Latvia, Slovakia and the Czech Republic have joined Austria, Israel and the countries of the European Community. This type of workshop is helpful for everyone.

Vasilike Argyropoulos
Associate professor
Dept. Of Conservation
Technological Educational Institution of Athens
Greece

I came here to see what else is going on in Europe, what new materials are being used, and how these new materials are tested on objects. I wanted to see what is happening and to find new collaborators for further research in this field.

Ingval Maxwell
Director
Technical Conservation, Research and Education
Historic Scotland
Great Britain

We all have the same problem. Perhaps we may have to deal with it in different ways relative to our country's approach and the operating

machinery. But here, this workshop on multi-disciplinary fields of interest—with geologists, architects, chemists, engineers—gives us an opportunity to see how effective we are in dealing with these common problems and how we may be able to work together for better results in the future.

Astrid Brandt-Grau
Deputy director
Research and technology mission
Ministry of Culture
France

It is very important to share best practices, because we are building up a new process of integration. The non-member States have been involved in the field of preservation of cultural heritage for many years and we hope that they will contribute their experience and help us strengthen this field inside Europe.

For a year now, at a rate of one workshop per month, Arcchip has been reviewing a good many problems and has created virtual gateways for cooperation and exchanges of information between countries.

Milos Drdacky

The Centre of Excellence Programme is a unique, very well designed programme. It opens doors for many eastern European research facilities to be involved in European research. We all expect that this kind of support will continue in the future.