

Indoor Climate and Tourism Effects: The situation in Romania

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1. Introduction, backgrounds

Romania has a numerous, diversified and valuable cultural heritage, some of it being also part of the World Heritage. The historic monuments are partly in build area, partly isolated in the landscape. The indoor condition of those in towns is more exposed to atmospheric conditions, the microclimate of monuments in natural surroundings is usually affected by higher RH level and all its side effects, especially if the historic building is once in a while or not at all used. The mobile heritage of the country is partly state property, located in museum collections, partly property of the different churches, mainly Orthodox, but also Catholic, Greek catholic and Protestant, functioning in the respective buildings. Private property is insignificant. The microclimate of the objects is usually more suitable in museum environment as in spaces belonging to churches.

In the 70's, ten Zonal Conservation Labs were established and entrusted mainly with object preservation. In each lab at least one, but sometimes up to four conservation scientists were employed, beside the restorers and conservators. They were in charge mainly with object investigation, but also with research work and microclimate control. The labs they worked in could be considered fairly well equipped for those times. Conservation scientists had a degree in natural sciences (chemistry, physics, biology or geology), and had attended special postgraduate training courses organized by the Ministry of Culture, consisting in one and a half year (about 400 hours/ 10 weeks pro year) of theoretical instruction, followed by an 18 months practical training in different research institutions of the country. Most of them had the opportunity to attend specialization programmes abroad, in European conservation research labs (1-3 months). But further contacts with the international conservation research were very difficult and the access to conservation books and periodicals was practically cut off until 1990. These conservation scientists are retired or close to the age of retiring now, and the handing on of their experience and skills was poorly organized, but the labs still exist. The younger conservation scientists follow the same training programme, those interested can find themselves offers for qualification abroad (unfortunately, best people choose not to return). Moreover, the existing equipment is quite out of date and funding possibilities for new equipment scarce. The technical literature of these labs is defective and obsolete, it is difficult to raise funds for the purchase of new books or conservation periodicals.

In architectural conservation the situation is worse. In 1977, the Committee for Historical Monuments was dissolved, which meant no central professional control over the intervention on monuments and no special training in this field until 1990. Although the Committee was reorganized after the significant political change in December 1989, still no lab or research institute for monument preservation was established. Conservation scientists in museum conservation labs took over some aspects of scientific investigation for monuments. Since 1996, architects and building engineers involved in monument conservation can benefit of a two years special postgraduate training, but there is no training for conservation scientists in this direction.

It may also be important to know, that Heritage Law was reconsidered both for mobile heritage and monuments, and adopted by the Parliament in its new form last year.

The picture is completed by the effects of the fundamental political and economic changes the country is going through, among which the collapse of the national research network. Under these circumstances, it is obvious that there is neither enough funding, nor special institutes, suitable equipment and a reasonable number of specialists for an appropriate conservation research in any direction. Yet, partly with international funds and collaboration, partly with internal resources, positive results in solving microclimate problems have been obtained.

2. Indoor climate

2.1 Measurement and control in museums

Almost every museum is equipped with thermohygrographs to register the temperature changes and RH or thermohygrometers (also digitals) to measure them. However, the equipment for calibration is rather difficult to be found, and few of the labs have the financial possibilities or the know-how to intervene, if the measured values are out of the optimal limits. The museum deposits, badly organized in overcrowded rooms with poor ventilation and high humidity rates used to be the main climate problem for conservation specialists. Today, the effects of the new heating systems add new problems to the old ones.

In Bucharest, at the Museum of the Romanian Peasant an indoor climate monitoring in deposits and exhibitions has been introduced since 1994, consisting of 12 control stations registering the T, RH and visible light level. The data are radio-transmitted to and stored in a digital database. Unfortunately, there is no climate control in these spaces, however the new deposits now in construction will have a proper climate control system.

Also in Bucharest, at the National Art Museum a permanent exhibition was organized between 1994-96 using up to date techniques. The climate is under control, the T, RH, UV and VIS levels are measured and kept within normal limits.

Positive examples also exist in the National Complex ASTRA Museum, Sibiu. In 1998 and 2000 two new exhibition rooms were opened to the public. They are situated in the basement of two of the museum buildings located in the medieval city, and were unusable before the restoration process. Correctly planned and executed restoration was performed at this level of the monument (where also parts of the first medieval town walls exist) and after the microclimate became stabile, the museum started using them as exhibition spaces for a permanent exhibit of old stove tiles and for special temporary exhibitions. Both spaces have a special charm. Their walls are below ground level, so higher RH level occurs, but it is immediately brought to normal with dehumidifying equipment. Forced ventilation is possible and used, and the supervisors of the exhibition rooms got quickly used with the control of temperature by regulating the quantity heat. The corresponding light level is assured because of the tiny windows.

Another good example in Sibiu is at the Evangelical Archives under organization, where the walls and windows were well isolated, so no heating is necessary during winter for having a temperature over 8-10°C and during summer a lower one as 22°C can be kept. The spaces are adequately ventilated, excess of humidity is removed with dehumidifying equipment, the appropriate light, storage and dust protection is assured.

2.2 Measurements and control in historic buildings

Measurements of indoor climate conditions must be done during every intervention of restoring wall paintings, altars or any other inside element of a monument. Usually the T and RH are not recorded continuously, just at two or three particular hours of the day, the measurement devices are not always calibrated, unsuitable values are not necessary adjusted.

Some examples of indoor monitoring will be presented in the following. One was performed in the inside painted wooden church in Desesti (Maramures region) in collaboration with the English firm HUTTON and ROSTRON, after the restoration of the

entire monument. In 1997-96 sensors for T, RH and humidity in timber was installed on and in the walls to observe the humidity effects. The values were registered every hour and their change observed over one year. The final conclusion: the restoration was well done, the stabilized microclimate was in conformity with the needed one.

In Agapia monastery (in- and outside painted church in North Moldavia) the indoor climate was monitored about two years by Mihai Lupu, conservation scientist of the National Art Museum in Bucharest. The 12 Swiss sensors available in Romania were displayed horizontally and vertically to register the climate parameters every two hours. Knowing these values and their changes the involved specialists tried to figure out what other interventions were necessary on the building. Unfortunately the everlasting problem, money, stopped these measurements before the restoration was completed.

At Probotă monastery, (also in North Moldavia, with a valuable inside painting) an UNESCO Restoration Program was carried out, its details will be available in a book that will be published on the subject and on the internet site www.probotamonastery.ro.

2.3 Other aspects

There was not a big variety in the materials used in exhibitions and deposits in the last 40 years and their effects were observed, the unsuitable materials eliminated. The new materials used today to make showcases are rarely tested, however there is a good tendency for using acid free paper and textiles for packing objects.

There are institutes for observing the pollution level of the environment, still I have no knowledge of their measurements being used for the study and control of indoor pollution. There is a lack also in the evaluation of internal pollutants. Special internal pollutants of the orthodox churches are candles, still very much in use in most of them.

No monitoring of archeological sites was made.

3. Tourism effects

The increasing interest in Romania brings more and more tourists to the cultural heritage of the country, and this rises new problems also in the conservation of this heritage. Studies must be carried out, in order to find the best solutions in protecting the works of art without closing them up for visitors. Unfortunately, until the result of these studies will show up, a lot of damage will be probably done, because the number of those wanting to take a benefit – as big as possible – from tourism is much higher, than the few who know what must be done with our cultural heritage.

4. Future perspectives

According to the new Heritage Law, two central research institutes, one for monuments and one mobile heritage are going to be established and equipped soon. These will have to take over the research also in indoor climate and tourism effects problems, to adapt the results of the international research in this field for our problems, or to find new solutions for the special situations.

I hope there is going to be enough awareness, financial and intellectual resources, to find the best methods for the sustainable conservation of our special, dear heritage.