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Information System of Cultural Heritage of the Republic of Croatia TEUTA

1. INTRODUCTION

Information system of cultural heritage TEUTA has been developed in the Ministry of Culture primarily to ensure efficient protection of cultural heritage, but also to serve the wider professional community as well as the general public via the open public access through the Internet.

The system has three main purposes: the first and the fundamental one is to ensure an insight into the complete stock of cultural monuments of the Republic of Croatia; the second one is the creation of «knowledge base» necessary for fulfilling the tasks of cultural heritage protection by the way of offering the insight into the existing documentation on a certain monument; and the third one is the preservation of cultural heritage in the most literary way – the digitizing of documentation collections, which are already by themselves cultural heritage, is the most efficient way of their protection.

The project of developing the universal information system of the cultural heritage has been defined in 2000/2001, and the software development started in the autumn of 2002.

By comprehensive IT works already existing digital documents (databases developed in the dBASEIV programme package, a few «homemade» MS Access applications) were successfully migrated to the SQL server and unified into universal relational database and Access user interface was developed. Nowadays we manage multi-user information system which enables data changes tracking as well as the automatic network communication, bug reporting, automatic network system upgrading, and permission assignment at the level of the individual user or the group of users.

Although the skeleton of the system is the database of the *Central inventory of the cultural heritage of the Republic of Croatia*, the system also comprises

documentation collections from the field of cultural heritage (photo library, photoCD library, plan library, microfilm collection, press clipping collection), Register of cultural properties of the Republic of Croatia, conservation works programmes, address book of persons and organisations relevant to cultural heritage protection, and the whole range of auxiliary databases, necessary for the efficient functioning of the conservation service.

The interoperability of the system has been ensured by the application of international standards and guidelines (Council of Europe, ISO) in respect to data content and structure, and technical platform.

While defining the system concept and later on during the development of the system, the special attention was given to the experiences of other countries in the field of documentation and inventory creation of cultural heritage, primarily to the *Historic Buildings, Sites & Monuments Database*, developed by English Heritage and the French system *Mérimée*, developed by Ministère de la Culture et de la Communication, Direction de l'Architecture et du Patrimoine. Contacts with neighbouring countries have been established as well, first of all with the Republic of Slovenia, whose information system is similar to the Croatian and also complies with the European standards, which makes necessary preconditions for the systems' interoperability.

In the next phase the inclusion of geospatial data into the system and development of geographical information system (GIS) of cultural heritage in Croatia is planned, which will ensure a high-quality basis for physical planning and interpretation of cultural heritage in its natural surrounding as well as an interdisciplinary approach to its preservation.

Finally, the whole system will be integrated with the information system *BREUH*, i.e. the database of the registered works of art in the process of restoration, developed by Croatian Restoration Institute, by sharing the same web-oriented platform based on XML standards, which has been recently developed.

2. DATABASES WITHIN THE INFORMATION SYSTEM OF CULTURAL HERITAGE TEUTA

As it has been already stated in the introductory paragraph, the information system "Teuta" comprises of the whole range of databases from the field of cultural heritage protection, which are divided in several basic groups in order to be easy-to-consult as much as possible:

- 1) **Central inventory of cultural heritage** (*Historic buildings and monuments; Historic ensembles; Archaeological sites; Movable objects; Mosaics; Organs*)

- 2) **Administrative databases** (*Conservation works; Register of cultural properties of the Republic of Croatia*)
- 3) **Documentation collections** (*Photo library; PhotoCDlibrary; Plan library; Microfilm collection; Press clipping collection*)
- 4) **Database of Croatian cultural heritage monuments and sites damaged in war 1990-1995**
- 5) **Auxiliary databases** (*Official list of places and towns in Croatia; Address book of people and institutions relevant for the protection of cultural heritage; Thesaurus of monument types*).

2.1. Central inventory of cultural heritage of the Republic of Croatia

Central inventory is a list or a catalogue of the whole monument stock, be it immovable or movable, on the territory of the Republic of Croatia. It is divided in six (6) databases - *Historic buildings and monuments, Historic ensembles, Archaeological sites, Movable objects, Mosaics and Organs* – for the reason that such different categories of cultural heritage cannot be documented and described through the uniform data structure, but certain modification of core data structure is demanded for each of them.

Data structures for each of the mentioned databases have been developed upon the European standards for documentation and inventory creation of cultural heritage. Already existing data, compiled during the previous recording activities, have been preserved and supplemented with the new ones, recommended by the said European standards¹.

Regarding the quantity, *Historic buildings and monuments* are the most represented category of immovable heritage in Croatia (ca 8400 objects). For that reason the respective database was the starting point for the development of the whole information system, to which all the following databases have been linked subsequently.

Data structure of the *Historic buildings and monuments* was carefully defined in accordance to the Recommendation of the Council of Europe² on documenting historic buildings and their complexes (in other words, built heritage), and afterwards this starting model was adapted to meet the needs of documenting historic ensembles and archaeological sites, by consulting appropriate international guidelines as well.

¹ See:

The Council of Europe and cultural heritage 1954-2000 / ed. by José Maria Ballester. Strasbourg : Council of Europe, 2001.

Guidance on inventory and documentation of the cultural heritage / ed. by John Bold, Monique Chatenet. Strasbourg : Council of Europe, 2001.

² Core data index to historic buildings and monuments of the architectural heritage : Recommendation R (95) 3 of the Committee of Ministers of the Council of Europe to member States on co-ordinating documentation methods and systems related to historic buildings and monuments of the architectural heritage.

Core data on built heritage, i.e. on single buildings and their complexes, are divided in the following groups of data:

1. Name and references
2. Location
3. Functional type
4. Dating
5. Persons and organisations associated with the history of the building
6. Building materials and techniques
7. Physical condition
8. Protection/legal status
9. Notes (historical summary and monument description)

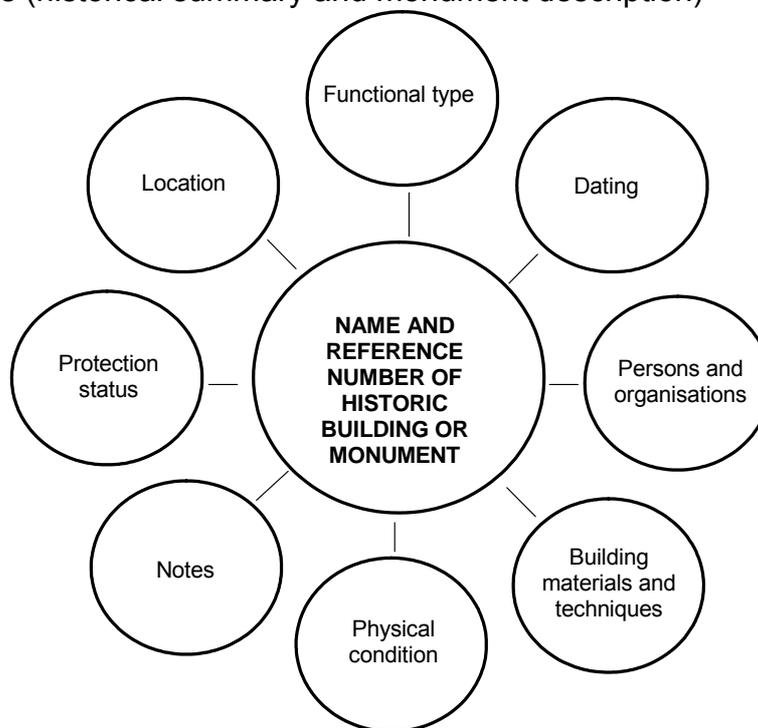


Figure 1 *Schematic diagram of a monument record structure*

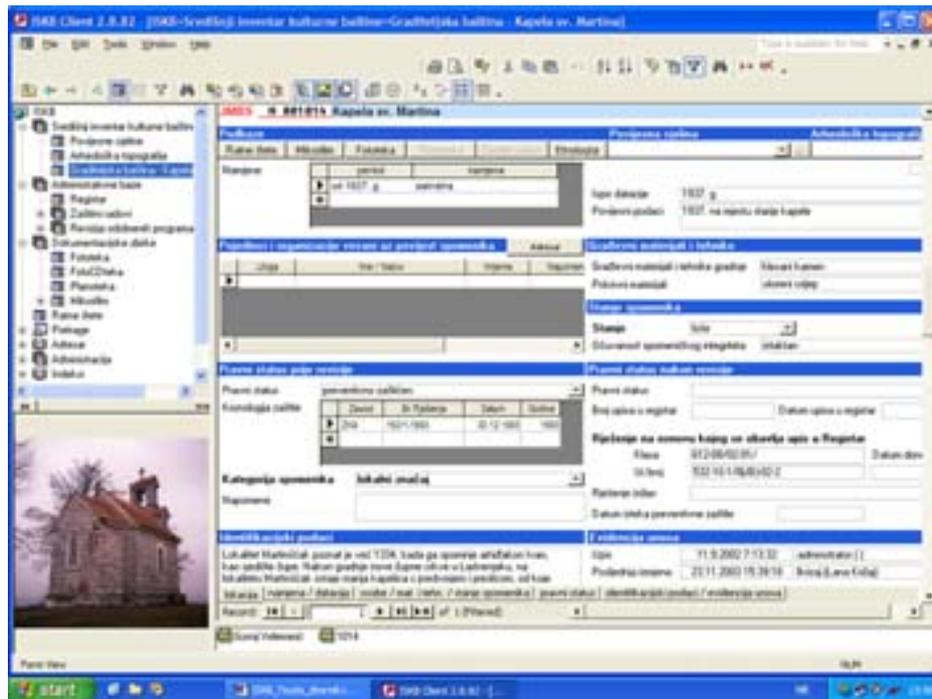


Figure 2 Architectural heritage – user interface

Such core data structure with certain necessary modifications was also applied to the other two databases of immovable heritage, i.e. to the database of *Historic ensembles* as well to the database of *Archaeological sites*.

2.2. Administrative databases

Administrative databases make another group of databases within the *Information system of cultural heritage TEUTA*. These are the database of *Conservation works*, which is intended for carrying out the administrative tasks regarding the procedure of collection and processing of the proposals for conservation works on the cultural heritage, and the database of the *Register of cultural properties of the Republic of Croatia*, which serves as a tool for the on-going project of the revision of the protection status of all monument stock on the territory of the Republic of Croatia. It is a comprehensive task of harmonizing the existing decisions on protection status with the current legislation. Namely, when the new *Law on the protection and preservation of cultural property* (OG, No. 69/99) came into the force in 1999, followed by *Regulations on the register of cultural property of the Republic of Croatia* (OG, No. 37/01) in 2001, the previous system of legal protection, established upon the old law from 1967, has been drastically changed. Since the “old” Register, set upon the legislation from 1967, was the basis for compilation of Central inventory, hence it is necessary to revise this data and harmonize them with the new legislation.

2.3. Documentation collections

Documentation collections, i.e. databases of *Photo library*, *PhotoCD library*, *Plan library*, *Microfilm collection* and *Press clipping collection*, form the next whole within the information system *TEUTA*. Actually, these are computer-aided tools for inventory creation and cataloguing of documentation from the field of cultural heritage protection, which are the property of the Ministry of culture. These are:

1) *Plan library, old maps and graphics collection.* It comprises plans, projects, drafts, architectural drawings, etc. dating from 1800 to 1970, in total number of 8154 items.

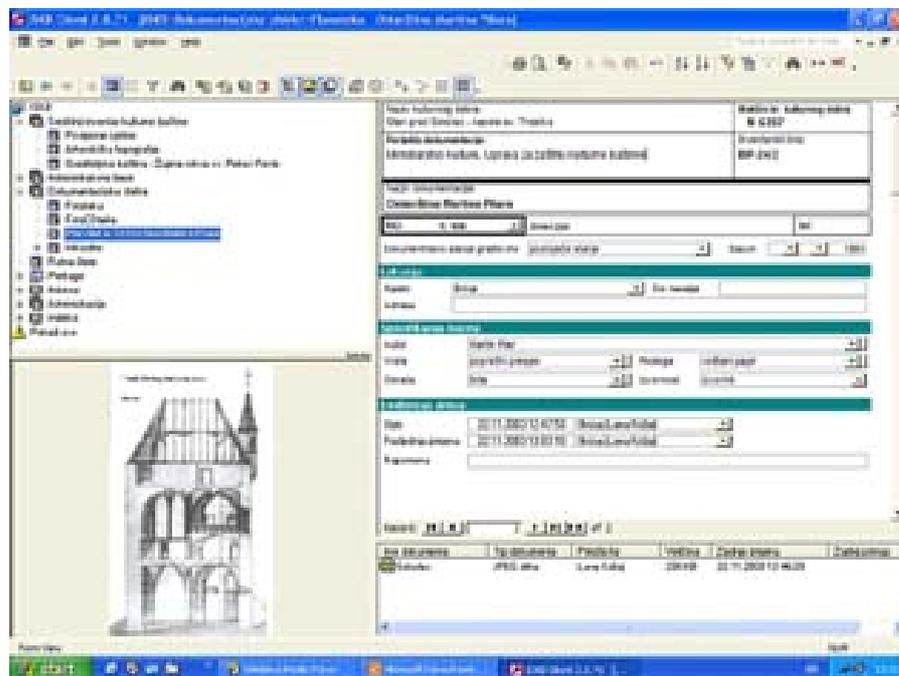


Figure 3 *Plan library – user interface*

2) *Microfilm collection* contains microfilmed technical documentation (mainly architectural drawings and plans) of cultural heritage, whose originals are stored in the plan libraries of conservation offices³ and other institutions from the field. Technical documentation has been microfilmed since the year 1979. Until nowadays about 94.000 items has been microfilmed, which can be divided in two thematic wholes: documentation from plan libraries of different institutions and microfilmed inheritances of certain renowned architects. At the moment, about 32.000 items have been entered into the microfilm database.

³ These are Conservation Departments within the structure of Administration for cultural heritage protection of the Ministry of culture, previously known as Regional institutes for monument protection. Today, there are 11 such departments, situated in the regional centres throughout Croatia, in Dubrovnik, Karlovac, Osijek, Požega, Pula, Rijeka, Split, Šibenik, Varaždin, Zadar, Zagreb.

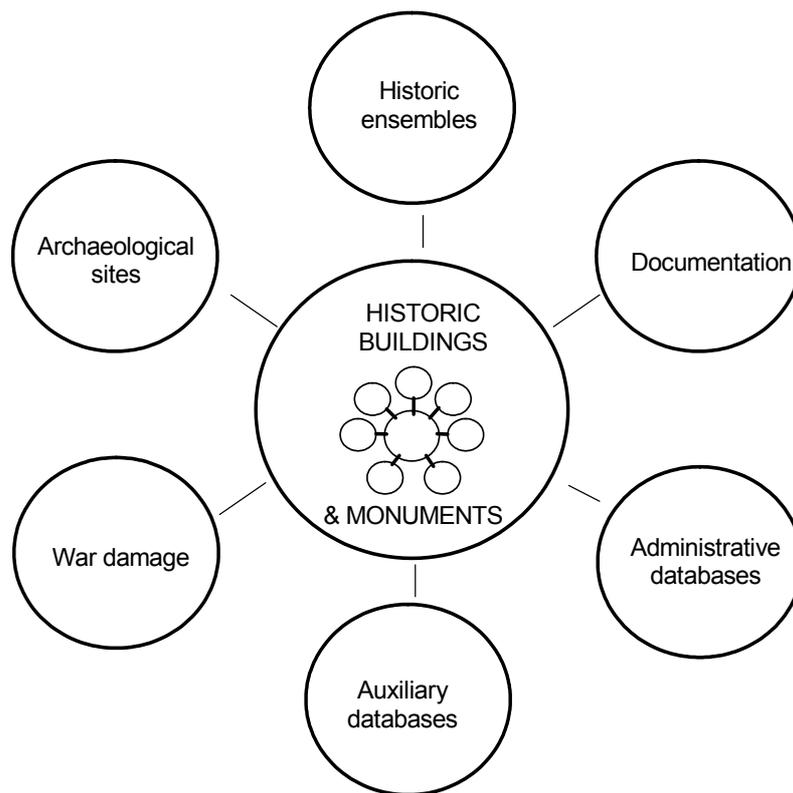


Figure 5 Relationships between core monument records and related information

2.4. War damage database

Project of *Recording and evaluation of war damage to the immovable cultural heritage*⁴ resulted in the *War damage database* which contains 2423 records, cross-referenced to the database of *Historic buildings and monuments*.

2.5. Auxiliary databases

The rest of databases within the *Information system of cultural heritage TEUTA* are auxiliary databases, such as *Address book of persons and organisations relevant to the cultural heritage protection*, *Official list of places and towns in Croatia*, as well as the *Thesaurus of monument types*, as the extremely important part of the whole system.

The necessity of the establishing the universal terminology and classification of the cultural heritage has been long recognized in Croatia as the major precondition for the creation of consistent conservation and restoration documentation. Therefore, on the basis of ISO standards for the development

⁴ See: Ukrainčik, V. ; Uršić, B. Ratne štete na spomenicima kulture. // Godišnjak zaštite spomenika kulture Hrvatske. 24/25 (1998-99), str. 7-55.

of monolingual⁵ and multilingual⁶ thesauri and relevant foreign thesauri⁷ as well as on the basis of Croatian experiences⁸ so far, complex application for the thesaurus compilation has been developed in the frame of the information system *TEUTA* and the work of the terminology compilation has been launched. Until nowadays approximately 700 terms have been added to thesauri, which have been checked and processed from both the lexical and the conservationists' aspects. Currently, the indexing is under way of the records within the database of *Historic buildings and monuments* by the terms from the thesaurus. This is expected to result in better consistency of data and possibility of much more refined data retrieval.

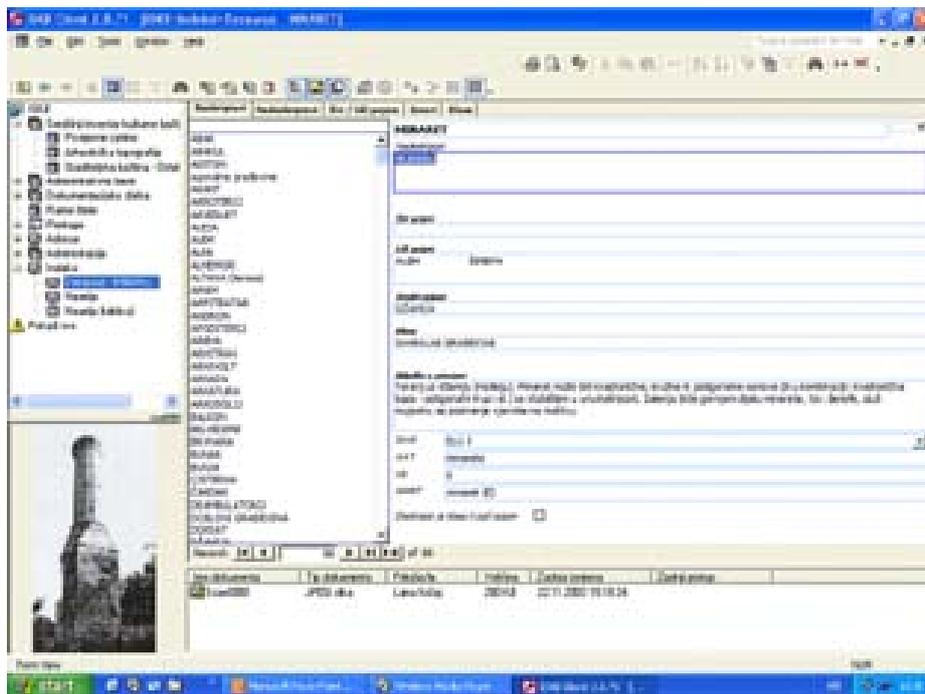


Figure 6 *Thesaurus of monument types – user interface*

⁵ ISO 2788 : Documentation - Guidelines for the establishment and development of monolingual thesauri. 2nd ed. 1986-11-15. Geneva : ISO, 1986.

⁶ ISO 5964 : Documentation - Guidelines for the establishment and development of multilingual thesauri. 1st ed. 1985-02-15. Geneva : ISO, 1985.

⁷ To cite just a few:

Thesaurus of Monument Types : A Data Standard for Use in Archaeological and Architectural Records. 2nd ed. Swindon : RCHME & English Heritage, 1998.;
Art and Architecture Thesaurus. Getty Information Institute.

http://www.getty.edu/research/conducting_research/vocabularies/aat/index.html (2004-02-27);

Ministère de la Culture et de la Communication - direction de l'Architecture et du Patrimoine. Base de données Thésaurus. <http://www.culture.gouv.fr/documentation/thesarch/pres.htm> (2004-02-27).

⁸ Maroević, Ivo. Model dokumentacije za izradu povijesno-umjetničke topografije na području Hrvatske s mogućnošću primjene automatske obrade podataka. // *Vijesti muzealaca i konzervatora*. 2-3 (2001), str. 82-117.

3. Further development

Information system of cultural heritage TEUTA is conceived as an open end system that will be systematically upgraded with new thematic wholes. For example, in the next phase the development of the intangible heritage database is planned.

Also, in the near perspective we are planning the inclusion of geospatial data and establishment of geographical information system (GIS) of cultural heritage of Croatia, as already described in the Introduction.

From the technological point of view, works on upgrading the system from the local area network application to the web-oriented one is under way. This will enable simultaneous work on the system in the conservation offices scattered throughout the country as well as the interoperability with the system BREUH. All these activities will, on the one hand, facilitate access to data for the professionals from the conservation and restoration field, and on the other hand, it is expected that the simultaneous work in the conservation offices distributed throughout the country would contribute to the quality and accuracy of data in the databases.

Simultaneously, the use of the web-technology will enable us, as a governmental body, to fulfil our obligation towards the general public by informing it on our activities. In turn this will contribute to rising the awareness on cultural heritage, to the affirmation of common and personal identity and it will encourage the interest for heritage in general, which all bring to its protection and preservation.

Therefore, we thrive on making our data accessible through the Internet to the widest public, but certainly bearing in mind the necessity of security measures. Situations, such as, careless publishing of data on the location of unprotected underwater sites in the Adriatic sea or unattended buildings with valuable inventories, should certainly be prevented. It is our task, thus, to avoid the endangering of the same heritage that we are trying to protect.