MOTIVATION

Despite their great cultural-historical importance, the situation of the archives attached to monumental buildings is often not satisfying:

Even if the archived documents have been digitized and are digitally stored, which is the aim of many research projects all over the world, retrieval based on structural neighborhood or similarity is only scarcely supported. There is practically no index or register relating the documents to the building’s structure. Similarly, it is close to impossible to systematically exploit the document base of a monumental building based on properties like the kind of damage occurring in structural parts of the building, given a certain architectural category or cultural style. The only way to find the desired information is to sequentially scan the entire archive which often means having to inspect thousands of physical documents.

MonArch aims at preserving the physical archives of monumental structures on the basis of digital archiving and documentation systems.

MONARCH AT A GLANCE

The MonArch Project is a joint research effort of the University of Passau and the University of Bamberg in cooperation with preservation agencies, cathedral works and other maintainers of monumental sites, both European and international.

Project topic
The overall goal of the MonArch project is to define a methodology for making accessible, catalogue, inventory, digitally secure, and preserve the archives of monumental built heritage. To this end, indexing schemes are designed and software tools are developed for describing and storing the digitized archivals based on their structural position within a building or site and on a rich semantical description of their contents.

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RESULTS

The MonArch framework consists of the two main components **MMSarchive** and **MonArch Digital Archiving System**. These components and a firm scientific basis in the field of preservation of monuments and historic sites secure the adequacy and sustainability of the MonArch approach.

The framework supports the graphical reconstruction of major features of the building or site, thorough thematic mapping, spatial and structure-oriented queries, context-based search and retrieval, as well as an extensible indexing scheme based on a multidimensional metadata model. Since the beginnings in 2003 several instances of the MonArch framework are in operational use by preservation professionals, master builders of various monuments, restoration scientists, architects and others. Currently, the MonArch approach is being applied to the extensive physical archives of the two cathedrals of Nuremberg - St. Lorenz and St. Sebald. The findings have a paradigmatic character and provide the methodological background for other buildings or sites.

**MMSarchive** supports the semantics-guided construction of graphical maps and the thematic mapping of various phenomena related to buildings. It supports the mobile mapping of environmentally caused damage on historic buildings and also the updating of maps with regard to damage assessments and measurement entries. The automatic interpretation of map material is a major aspect in this context.

The **MonArch Digital Archiving System** is a metadata repository designed for the storage and retrieval of digital documents, in particular digitized archivalss, according to their semantics described by metadata and their structural position within the building under consideration. The MonArch Digital Archiving System supports a graphical navigation along the structure as well as multidimensional search.

Both components can exchange their thematic maps and glossaries. Combining the various aspects such as graphical reconstruction and documentation, thematic mapping, spatial digital archiving and indexing in a new way, a unique expertise in the field of cultural heritage research using digital media is obtained.

THE MONARCH TEAM

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- Lutheran Parishes of St. Lorenz and St. Sebald, Nuremberg / Germany
- Cathedral St. Stephan, Passau / Germany
- Imperial Baths, Trier / Germany
- St. Kassian, Regensburg / Germany
- Francke Foundations, Halle / Germany
- Project Monuments and Context in Bukhara / Uzbekistan, conducted by the University of Bamberg