

# **The Potential Useful Applications of Digital Tools for the Commemoration and Preservation of Jewish Heritage**

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## **Abstract**

Projects combining art history, architectural preservation, and new technology have been carried out at the Fachhochschule Wiesbaden (FHW) in relation to many different historical buildings for over ten years. Student groups have been very much involved in the assessment of technological aspects. They also had to keep in mind the user groups: how they can be confronted and how knowledge can be transferred. Three of our projects concerned Jewish heritage. This meant intensive research and cooperation with other universities. An important source of information was the 'Active Museum Spiegelgasse for German Jewish History in Wiesbaden'. Jewish Heritage is not part of the official curriculum, but we as non-Jews teach it within the context of our subjects.

The following examples of our work show that such projects result in the transfer of knowledge and in emotional involvement.

- 1) Virtual reconstruction of the destroyed Synagogue of Wiesbaden, which was partly funded by the city of Wiesbaden. The animated film won the Animago 3D Award 1999/2000 ([www.memo38.de](http://www.memo38.de)).
  - information: exhibits in various spaces, City Hall, website

- commemoration: large scale presentation on original site
  - emotion: reaction of Jewish and non-Jewish audiences
- 2) Regensburg 1519—3D-visualization of the medieval Jewish Quarter and synagogue in Regensburg, which was funded completely by the European Commission. The animated film won the Animago 3D-Award 2001.
- integration of the medieval Jewish past: film showing complex town history, multimedia
  - commemoration and tourist aspects: exhibit at authentic site
- 3) Save the Synagogues in Alsace!
- About 90 synagogues in Alsace are in danger. Some of them have been turned into garages, cinemas, etc. Most of them are simply empty and have fallen into ruin. This loss of very important cultural Jewish heritage has to be prevented. Our pilot project ‘Synagogue Westhoffen’ was a teaching project without any outside funding. It has shown that much can be achieved:
- new awareness: exhibition with new media presented in original building, website
  - local decisions: this synagogue will be saved with new content

Our experience opens the perspective to the future, using new technology to preserve cultural heritage. Colleagues and students at the University of Applied Sciences are ready to volunteer their time and expertise, but external costs need to be funded. We call on the international community to promote, sponsor, and fund efforts to save the synagogues in Alsace as an important part of European Jewish culture.

## **Who We Are and What We Are Doing**

Projects combining art history, architectural preservation, and new technology have been carried out at the Fachhochschule Wiesbaden (FHW) in relation to many different historical buildings for over ten years. Student groups have been very much involved in the assessment of technological aspects. They also had to keep in mind the user groups: how they can be confronted and how knowledge can be transferred.

Three of our projects are concerned with Jewish Heritage. Carrying out these projects meant intensive research and cooperation with other universities. An important source of information was the 'Active Museum'. Jewish Heritage is not part of the official curriculum, but we as non-Jews teach it within the context of our subjects.

## **Introduction**

There are many aspects to our usage of modern computer technology for the research and preservation of cultural heritage, no matter of what specific cultural tradition or from which time period. In our approach, the preservation of cultural heritage begins with analysis and description of the object and its condition. Digital measuring, tachymetry, 3D photography, computer aided analysis, etc. Computer tools and virtual models are very helpful for the next steps: scientific research and discussion and the bringing about of new insights. Using the digital tools all the way through, results can be put to use directly for documentation, database creation, archiving etc. Also, any results can be communicated easily by email, DVD, CD-ROM; and be posted on the Internet.

Uninterrupted digital processing has its advantages and while all stages could be presented for discussion, here we concentrate on: **virtual reconstruction and media presentation.**

Our topics range from the virtual reconstruction of non-existent buildings, as in archaeology and Holocaust (as with our ‘memo38’ project), to war-related destruction, via ruins or other remnants due to changes to objects basically intact (as with the Westhoffen project). Often only certain aspects, such as the interior appearance of a building, have to be recreated. Why do this virtually? To transmit facts that otherwise cannot be easily understood, and to include non-cognitive, even emotional elements. Presentation in various media can range from museum exhibits to events, from classical printing of posters and books to new media like DVD, interactive CD-ROMs etc., to websites and multimedia events. Virtual visual presentation may be used at the very end, with various media, resulting both in knowledge transfer and emotional effects with the observer.

### **knowledge + emotions = remembrance**

The following three examples of our work show that such projects result in the *transfer of knowledge* and in *emotional involvement, aiming at remembrance and preservation.*

#### **Project 1: memo38**

Virtual reconstruction of the Wiesbaden Synagogue

The reformed Michelsberg Synagogue in Wiesbaden, inaugurated in 1869, was totally destroyed in 1938/39. Post-war city planning ‘buried’ the site under a

traffic overpass that was torn down only in 2001. In March 1998 Interior Design students began to work as a team on the computer reconstruction project entitled 'memo38'. The name 'memo38' evokes memory, memorial, commemoration and 'post-it'. The project was divided into two parts: By November 1998 the exterior was reconstructed and presented; during the following year, the interior of the synagogue was finished and integrated. Both parts were shown as a computer animated film.

### *Purpose*

The content of our project is not an abstract architectural object. This film is a visible, virtual, and enduring memorial to the Jewish congregation of the Wiesbaden Michelsberg Synagogue. It is meaningful as well to anyone interested in architectural and social history. What began solely as an undertaking of computer reconstruction broadened into a significant historical and sociological research project. It is of immense value not only for us as the creators of the project but also for anyone who is confronted by our work. Computer technology and the Internet may prove to be an effective tool in communicating and commemorating historical events, buildings, and artefacts. Out of the shards of history, this CAD animation revives and recreates memory.

### *Research*

Since the construction files with plans and drawings have been lost completely, the research for "memo38" depended on information provided by historical institutions and archives and on collecting photographs from local townspeople, and on non-conventional sources.

One photo turned up at the Jewish Museum in Paris; it was particularly valuable because it had been taken before a redecoration of the interior around 1904. The ornaments matched the few sketches by the architect Phillip Hoffmann, which survived in his family and are now part of the historical collection of the Wiesbaden Museum. Since these drawings and watercolours are the only information of the colour scheme that the architect designed, they could then be the basis for our texture colours. Now is the very last moment to receive authentic information from personal recollections and photos. Some of them, especially of the interior, had been saved abroad with emigrants and fortunately were discovered by personal communication. The most precious ones were from Marthel Hirsch who played the synagogue organ from 1936-38. She opened her photo album for us and provided two unique images: the organ table and an inside view of the dome. Also very important was to consult with members of the local Jewish community, both of the former congregation and the one of today. Their recollections helped us with more accurate colouring of the tiles and other details. Being told by someone who actually still remembers the original synagogue was very important. Thus the students learned about the passing of time. Some questions we couldn't answer with the documents found for Wiesbaden, so we tried to solve them by studying similar buildings. We looked for example at the Berlin Synagogue that was build just three years earlier in the same style and where, in contrast to Wiesbaden, good drawings still exist.

### *Reconstruction*

Previous research by P. Jesberg provided geometrical studies for the proportions; close analysis of the photographs permitted us to determine scales and measurements.

Next we divided the building into separate segments. Each student was assigned a different part for editing. An intensive analysis of each element and its ornaments with a magnifying glass followed.

### *Digitalisation*

Once we completed the modelling of each segment, we reassembled them to form a single wire-frame model. Then we mapped textures over the frame and supplied exterior finishes to create the building's skin. By using the architect's original water-colour sketches we developed a RGB-colour range to create the most realistic colour impression of the interior decoration. As a next step we discussed the storyboard, checked different camera tracks and created the scene design, lights, and atmosphere. After rendering, the computer animation was edited at a postproduction studio in Frankfurt. The result is a ten-minute video of professional standards; it took of more than 12,000 hours of work.

### *Results and Presentation*

The results are stunning and the film was displayed for commemoration on November 9 in 1998, 1999, and 2000 on a large screen directly at the site. It also received wide press and media coverage. A construction container was used as a temporary exhibition space on the site on several occasions. In 2000, an interactive exhibition was designed and shown to many visitors in the 'Active Museum'. Since August 2002 the film and an updated format of this exhibit has been presented in Wiesbaden City Hall. The video has become an important teaching tool in schools, colourfully enhancing the otherwise theoretical content. The music plays an integral role in this

effect. Thus a non-existing and long-forgotten building is ‘back in town’—people wonder about it, look at the site, and ask questions. Media have taken the topic to state-wide attention; plans for a new design of the site are on the agenda.

A number of Jews from Wiesbaden and their families had the opportunity to see the film. The most touching moments occurred with visitors who had prayed and sung in the beautiful sanctuary and now came to see our work-in-progress or, a little later, the results. We have experienced some of them moved to tears. They appreciate that young people in Wiesbaden spend so much energy and time with this project. The ‘Active Museum’ has collected, taped, or filmed statements from women and men who still remember the beautiful building.

The innovative approach to a topic of Jewish tradition caught the interest of scholars, experts of heritage protection, and archaeologists. We were invited to conferences and presentations at various universities and research institutes. The quality of the film design and the use of music were acknowledged by the Animago 3D-award 1999 and 2000. By applying CAD to the topic of German Jewish history, we confronted the visitors of technology fairs with the theme of commemoration.

## **Project 2: The Jewish Quarter in Regensburg**

Visualisation of the Jewish district destroyed in 1519

The medieval history of Regensburg is very significant: the Jewish quarter is considered one of the oldest in Southern Germany; it existed from the 9<sup>th</sup> century to 1519, when it was totally destroyed by pogroms. Only in 1995, during underground construction on the *Neupfarrplatz*, did a work crew accidentally come across parts of old cellars and foundations. Archaeologists were alerted, and excavations brought to

light, among other finds, important elements of the old Jewish quarter. The discovery of parts of the gothic synagogue built on Roman foundations was classified as a historical sensation.

### *Purpose*

Since it was clear that the site had to be closed again, parts of the discovered cellar within the old Jewish quarter were to be restored by the city of Regensburg and turned into an underground museum—the so called ‘document Neupfarrplatz’. The idea was to transform the history of the Neupfarrplatz into a virtual reconstruction and to present this visualisation in the museum. It was the Fachhochschule Wiesbaden, University of Applied Sciences, Department of Interior Design, that was commissioned by the city of Regensburg and the Bavarian Monument Protection Office to produce this virtual presentation.

### *Research*

A fascinating joint venture project was designed connecting Prague, Vienna, and Regensburg and financed by the European Union Programme ‘Raphael—Maintenance of European Culture’. A number of institutions, university institutes, and other research agencies co-operated. The Jewish Museums in Prague and Vienna and the city of Regensburg were each to receive virtual presentations of research results for the Jewish Middle Ages.

The CAD reconstruction of the synagogue is based mainly on the only two existing images of the interior of the synagogue. These two copperplates engravings by Albrecht Altdorfer have been analysed by a group of students from the Technical

University of Darmstadt. Together with curators and scholars in Regensburg, a series of streets (streetscape) of the Middle Ages were reconstructed in a two-dimensional design, then transformed by computer into a 3D CAD system, eventually to be visualised. Data digitally collected by ArcTron during the excavations was vital for some details of the visualisation.

Besides experience and material from the archives of the city of Regensburg, references and publications from the synagogues in Prague, Speyer, and Worms turned out to be a very helpful basis for reconstructing the synagogue in Regensburg. Nevertheless, one always has to bear in mind that a virtual reconstruction can only be an attempt to represent the original situation of the buildings within the former Jewish quarter.

### *Results and Presentation*

The results of the reconstruction show a 3D presentation of the gothic synagogue as well as old streets and interior and outside views of Jewish houses, all easy to understand even for non-professionals. The Jewish history is integrated into the larger picture. Video and CD-ROM are available. A program of events has been developed, making use of the underground spaces. The presentation both evokes emotions and gives knowledge to the visitors, who could be local students or adults as well as tourists.

### **Project 3: Save the Synagogues in Alsace!**

Reconstruction of the Westhoffen synagogue as an example for the documentation of the Jewish heritage in Alsace

### *Background*

Until the Second World War, the region of Alsace was the homeland of many small Jewish communities. Their specific history and the rural social structure in Alsace left a distinct architectural heritage. Before, during, and after the Holocaust, numerous Alsatian Jews immigrated to England, the US, South America, and Australia. Many fled to other parts of France. The remaining Jews were persecuted and many were murdered by the Nazis in concentration camps.

During the German occupation, a few of their synagogues were destroyed as well—the great synagogue in Strasbourg, for example. But most of the buildings stayed more or less unharmed during German occupation. Because most of the surviving Jews moved to Strasbourg, Paris, or other cities after the war, only a few of the remaining synagogues are used by religious communities today.

About 90 synagogues in Alsace are in danger. Some of them have been turned into residences, garages, cinemas, barns, etc. The oldest, the Synagogue of Pfaffenhofen, has been restored with the financial support of the World Monuments Fund Jewish Heritage Grant Program; a few others have been restored as museums. Most of them are simply empty; some of them are already more or less dilapidated. It seems that if nothing happens, most of them will fall into ruin. This is sad and incomprehensible because we will lose very important monuments/documents of our European cultural heritage.

### *Purpose*

Students at the Wiesbaden University of Applied Science, Department of Interior Design, developed new design concepts for making new use of the Synagogue of Westhoffen. The empty building has been fully documented. Animated 3D visualisations transmit the former beauty and preciousness of the interior.

Once there was an important Jewish community in the small village of Westhoffen; eminent Rabbis and a famous politician—Léon Blum—came from the village. The synagogue was erected in 1865 in the Egyptian style and wasn't destroyed in the war. Since it was already larger than needed in the first part of the 20<sup>th</sup> century, and since only a few Jews returned after the war, this synagogue has not been used for religious activities for many decades.

In March of 2002, stimulated by and in co-operation with the Cultural Department in Paris, the regional agency for the Conservation of Historic Monuments in Strasbourg, and the mayor's office in Westhoffen, the Wiesbaden University of Applied Sciences, Department of Design, started a pilot project.

### *Research*

Participants in the project had the relevant expertise for both the architecture and art history of historical Jewish buildings and for CAD and visualization. There were twenty-four students involved in the Westhoffen project. In several excursions, they spent days in the building and the village, thus learning not only the techniques but also about Jewish history, religion, and culture. The last Jew living in Westhoffen, Roger Cahn, took an active part. He was very helpful as keeper of the keys of the Synagogue and the cemetery and as a source of information on buildings and their

former inhabitants. There was generous support and advice from Dorothee Lottmann-Kaeseler of the Active Museum of German Jewish History in Wiesbaden.

The project was divided into three parts:

**Part 1:** Documentation of the synagogue (including historical facts, photos, videos, drawings and measurements)

**Part 2:** Development of new concepts of use for this historical building

**Part 3:** Production of a 3D-computer visualization.

### *Results and Presentation*

**Part 1:** After one year of work and several excursions, the documentation was finished. We thus had an exact 3D-data model of the inside and the outside of the synagogue. It was made using a 3D-measuring system (tachometric) by Leica. The damage is described and there are many photos of all details.

**Part 2:** The students assembled a lot of ideas and concepts for the future use of the building: museum, library, town hall, nursery school, restaurant, memorial hall, etc. Drawings and models describe the concepts and design solutions. One student coined the phrase ‘Silence and Joy’.

**Part 3:** Jürgen Eckhardt, a former student of the Wiesbaden University, produced a very impressive 3D computer visualisation. The short film shows the proud building with the complete interior and exterior.

In July 2003 the results of the project were exhibited in the Westhoffen synagogue. Many locals entered the building for the first time. The film was shown on a large screen, in immediate contrast to the dilapidated present state. Visitors had the opportunity to see the documentation and the ideas of the students. Afterwards, there

were many discussions about the future of the Westhoffen synagogue and of the other synagogues in Alsace. In contrast to a number of small towns like it in Germany, in Westhoffen there was no local initiative to save the building in a dignified manner.

*The emotional approach made the difference: for decades the problem existed in the village—now it came on the agenda at last. The mayor of Westhoffen has just informed us of an agreement with the Consistoire to buy the building for a symbolic price of one Euro and take over responsibility for its renovation and upkeep!*

### *Outlook*

Our project began as a pilot project; we were not paid for our work. The foundation was our motivation and the ideas and the perseverance of the students. We hope the problem will be heard by many people in France and Germany and elsewhere, so that there will be an opportunity to start a greater project 'Save the Synagogues in Alsace!' For this we need partners, co-operation with governments and institutions, and financial support.

Our experience opens a perspective to the future, using new technology to preserve cultural heritage. Colleagues and students at the University of Applied Sciences are ready to volunteer their time and expertise, but external costs need to be funded. We call on the international community to promote, sponsor, and fund the efforts to save the synagogues in Alsace as an important part of European Jewish culture.

For more information: <http://www.am-spiegelgasse.de>