Cultural Heritage, Public and Architecture in the time of new information and communication technologies

by Marc Grellert, Technical University of Darmstadt, Department CAD in Architecture

The use of information and communication technology for cultural remembrance is a main factor in teaching and research in the special field CAD in Architecture at the Technical University of Darmstadt. Three-dimensional computer simulation has revolutionized the possibility of the presentation of lost architecture and brought it back to mind for a greater public.

Since 1994 synagogues have been computer reconstructed with the intention of recording the cultural loss of the destroyed buildings by means of visualization, of calling to mind their architectural importance and of contributing to the admonishment and remembrance of the Nazi regime. Up until now, 15 synagogues have been visualized.

On November 9, 2002, the anniversary of the Reichspogromnacht, the Synagogue Internet Archive was opened and can be found under www.synagogen.info. With this online archive, the over 2000 German synagogues that were closed, desecrated or destroyed during the Nazi period are to be remembered. At the same, information will be given about what became of buildings still existing after 1945 and also about former locations of synagogues. Besides calling up information, users worldwide can add information to a chosen synagogue in the form of eyewitness reports, comments, bibliographical tips, images or links. The archive will grow through the participation of its users. Using the synagogues as an example, the potentials of the new media in the sector of cultural remembrance shall be presented.

## CAD and cultural heritage

Architecture has at all times belonged to the important cultural achievements of mankind. From ordinary buildings to prestige buildings, architecture portrays a substantial part of the cultural heritage of human societies. Through the centuries much architecture worldwide was lost. Digital technology, such as three-dimensional computer simulation, has revolutionized the possibility of the presentation of such lost architecture and brought it back to mind for a greater public.

First I would like to briefly outline the great variety of these digital possibilities on the basis of selected virtual buildings and projects. These virtual projects were developed in the digital labs of Prof. Manfred Koob from the Technical University of Darmstadt, Department CAD in Architecture - projects that fascinated me years ago and prompted me to go on these digital travels to other times and cultures. Thus I was involved in most of these projects. However the focus will be on a project, which I initiated in 1994 at Darmstadt Technical University. It is the computer reconstruction of the destroyed German synagogues. Second I would like to cover the potentials of the Internet in context to cultural heritage, using again the synagogues as an example.

With the 3D-CAD reconstruction of Cluny in the end of the 1980s and the showing of the simulation on TV, it was suddenly evident that a powerful fascination had been generated. This had never been achieved by drawings and architectural models before. Architecture that no longer existed could now be presented as moving pictures to a large public through the mass media television. In the 1990s this insight also reached museums and exhibition halls.

Now there was also the chance to present ideas that had never been built. An example is the so-called "Wolkenbügel" by El Lissitzky.
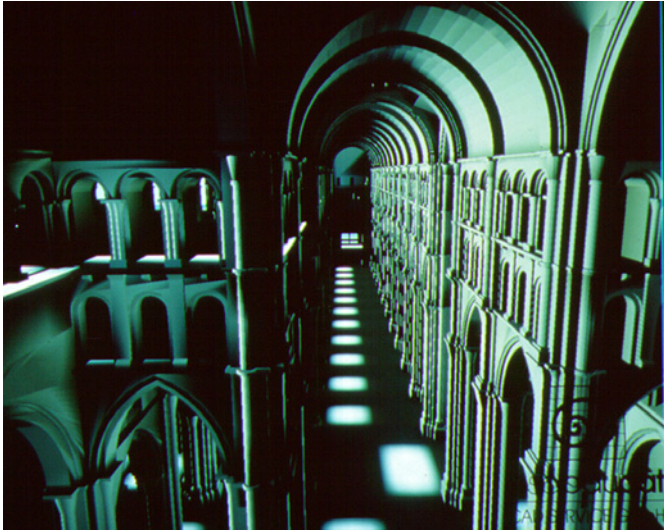




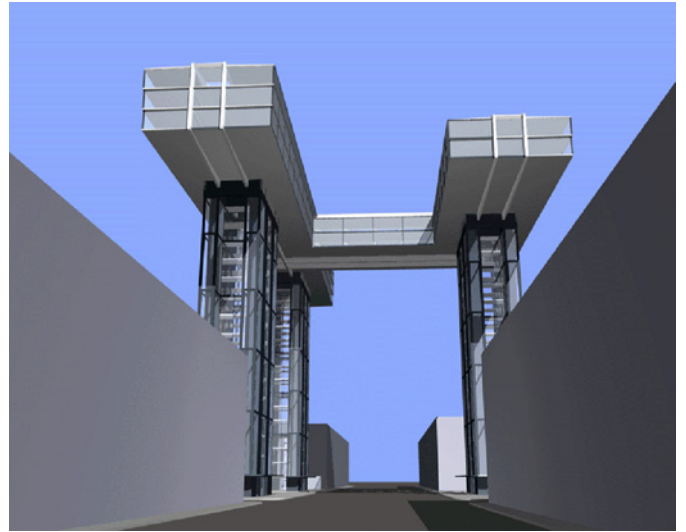*Illustration 1 - Cluny 3, 3D-CAD simulation*

*Illustration 2 - Wolkenbuegel by El Lissitzky , 3D-CAD simulation*

Also technical processes, for example, construction work in the Middle Ages, can be excellently illustrated. Machines can be shown in action. The Romanesque cathedral of Speyer documents this.





*Illustration 3*, Cathedral of Speyer, 3D-CAD simulation

*Illustration 4*, Cathedral of Speyer, 3D-CAD simulation





*Illustration 5 – Vatican Palace, Loggia of Raphael,* 3D-CAD simulation

*Illustration 6 – Vatican Palace, Stanza of Raphael,* 3D-CAD simulation

A computer model, such as one of the Vatican Palace, also provides the opportunity to show more clearly the spatial function and meaning of still existing historical buildings in cases where these can no longer be comprehended.

The sources used to make architectural cultural heritage visual again are not only archaeological findings and pictorial records but also written descriptions. The Kaiserpfalz to Aachen stands for the transformation of the word into the picture. The report made by Widukind von Corvey over a coronation in Aachen was visualized for the depiction of the interior.


*Illustration 7 – Kaiserpfalz Aachen,* 3D-CAD simulation


*Illustration 8 – Kaiserpfalz Aachen,* 3D-CAD simulation

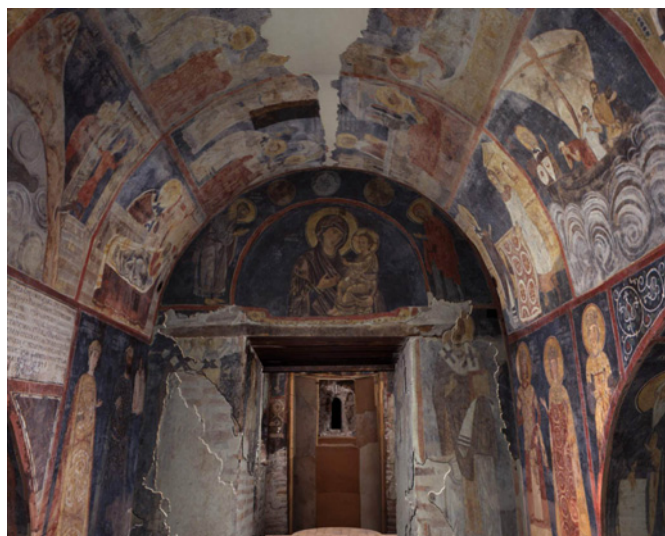
*Illustration 9 – Boyana Church,* 3D-CAD simulation


*Illustration 10 – Boyana Church,* 3D-CAD simulation

Buildings like the Boyana church near Sophia, which can only be visited by a few people each day in order to protect the important Middle Age frescoes, can thus, with the help of the computer, be accessible for many people.

The reconstruction on the computer, which shows all distortions, and the precise photographic portrayal of the entire church have made it also possible to simulate first on the computer the urgently necessary restoration work on the frescoes.

The castle in Berlin certainly belongs to the cultural heritage of Germany. For an exhibition in the German Historical Museum in Berlin, this castle was not to be shown as it was before it was destroyed but rather at the time of the Baroque renovation under Andreas Schlüter. With the help of digital image processing under the consideration of comparative models, the sparse records of the interior were able to be first put together like a digital puzzle and afterwards its appearance in the Baroque period was able to be depicted by the elimination, addition and modification in the digitalized original photographs.

The castle in Berlin also poses the question about dealing with cultural heritage in reality. A CAD model which could be continually added on to and accessible worldwide through the Internet could perhaps be a more honest, timely answer than an ideological overloaded facade built on the former location.



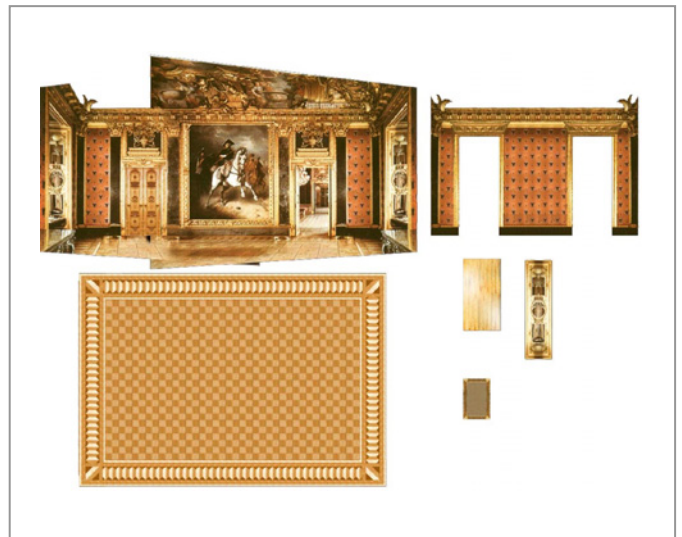Illustration 11 – Berlin Castle, "Digital puzzle of the ceiling"



Illustration 12 – Berlin Castle, "Digital puzzle of walls"



Illustration 13 – Berlin Castle, 3D-CAD simulation



Illustration 14 – Berlin Castle, Schlüter Hof, 3D-CAD simulation

The virtual reconstruction of the destroyed German synagogues transports the cultural heritage of a social minority, which was discriminated, expelled and murdered. The visualization of the destroyed architecture is thus part of a general discussion of remembrance, the remembrance of the holocaust. The destruction of the synagogues denotes in this a beacon light. Those who destroyed the cultural buildings of a minority, want to exclude it from the society – with all consequences.

*Illustration 15 – Synagogue Nuremberg,* 3D-CAD simulation



*Illustration 16 – Synagogue Nuremberg,* 3D-CAD simulation

Thus the intention of this project was manifold:

- To show the cultural lost
- To bring back to the public the historical importance of the synagogue especially as a characteristic of the cityscape
- To convey to the public spatial impressions of an almost unknown architecture
- To give a representative overview of the architecture of synagogues in Germany
- To make aware that the synagogues are a part of a shared culture of Jews and non Jews ·
- To remember the circumstances of the destruction
- To remember the desecration and destruction of over 1,100 synagogues just in November 1938
- To ask what led to this and what happened afterwards
- To make a contribution to educational and commemorative work for the use in schools, universities and museums in connection with the Nazi period by using the new media

The idea for this project stems from the impression of an arson attack of a synagogue in Lübeck in 1994 by neo-Nazis, Thus the project should be also seen as a signal against anti-Semitism and racism, which were again gaining strength. We used an architectural selective criteria to select the synagogues. We chose large cities with the expectation that our intention would reach more people. And we selected the synagogues from the 19th and 20th century, because this was the time of the birth of the great synagogues in Germany.

One can classify the synagogues in the 19th and 20th centuries into three different groups: First, the Neo-Islamic synagogues which emphasized the independence of the Jews by using an extraordinary architectural style. For example, the synagogue of Kaiserslautern.
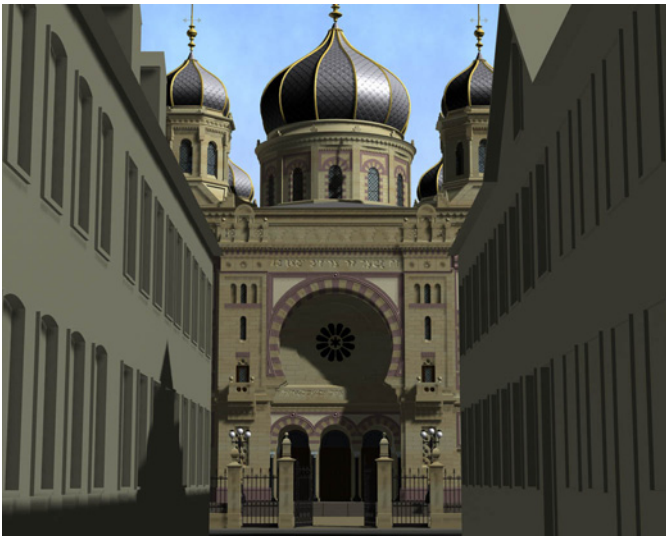
*Illustration 17 – Synagogue Kaiserslautern,* 3D-CAD simulation



*Illustration 18 – Synagogue Kaiserslautern,* 3D-CAD simulation

Second, the Neo Romanesque synagogues with an emphasis on the affiliation of the Jews with the German nation. For example, the synagogue of Munich. The Romanesque style was used for the old German cathedrals like Worms or Speyer.



*Illustration 19 – Main Synagogue Munich,* 3D-CAD simulation



*Illustration 20 – Main Synagogue Munich,* 3D-CAD simulation



*Illustration 21 – Synagogue Plauen,* 3D-CAD simulation



*Illustration 22 – Synagogue Plauen,* 3D-CAD simulation

Third, synagogues which follow contemporary or regional styles. For example, the Bauhaus synagogue of Plauen. These virtual synagogues were shown in the year 2000 in an exhibition at the Federal Art and Exhibition Hall of Germany in Bonn. Institutions and museums from all over the world showed great interest and there will be an exhibition tour, starting this year on the 9th of November in Tel Aviv which then travel to the United States in 2004.

## Culture Heritage and Internet

The new information and communication technologies, especially the Internet, have changed and are changing many spheres of society. Using the Internet will be self-evident for the generations of the 21st century. This will have an influence on the culture of remembrance. I ask myself what are the potentials and possibilities of the new media for cultural remembrance. Which deficits of the traditional forms of remembrance could be compensated? What are the limits of the new media?

I believe
- the Internet can become a new form of cultural remembrance
- the Internet can develop new forms of sharing the process of remembrance
- the Internet can allow people all over the world to participate - independent of time or space
- the Internet can offer a framework for personal involvement
- on the Internet information can always be updated

In my research work I have developed various concepts, which include the remembrance of the  synagogues using the new media. One of these concepts is the Synagogue Internet Archive:

http://www.synagogen.info

Here one can
- call up information about more than 2000 German synagogues
- make external contributions and add eyewitness reports, images, comments and links to the individual synagogues, which are directly online.

With this Internet archive the German synagogues that were closed, desecrated or destroyed during the Nazi regime are to be remembered. At the same time, information is given about what happened to the buildings still remaining and the former locations after 1945. Starting point of this concept is the opinion that remembrance is very significant when people take an active part in it. As opposed to traditional forms of remembrance like monuments, where visitors normally only are passive, the Internet user can contribute to the expansion of the Synagogue Internet Archive.

This archive allows for the first time an overview about synagogues in all of Germany. And the Internet archive makes it easily possible to actualize information and to add information, which is a problem for other media, such as books. With this archive it is also now possible to obtain more exact quantitative information. For example that an unbelievable number of more than 350 synagogues and prayer rooms were torn down after 1945.

The Synagogue Internet Archive has tree main menus:
- Searching for synagogues

- Looking for new external contributions
- Background information


Searching for synagogues

Here either the synagogues of a federal German state are displayed alphabetically, for example, all synagogues in Bavaria or one can search for a particular synagogue in a city or on a street. The selected synagogue will be first presented by so-called base information, which is listed below:

- Information about the duration of the synagogue
- The date and the extent of the damage during the Nazi regime
- Details about a possible demolition
- Information as to what remains of the synagogue today
- Information about in what way the synagogue is remembered - what is now on the former location.

This information is based on bibliographical sources, which can also be found in the archive. This is the scientific part. First sources were used which give an overview about synagogues in a certain region or in a federal state. Thus a very large number of synagogues and prayer rooms could be included, while keeping the necessary amount of work within reasonable limits.

In the menu of the base information one can also see if there are any external contributions. For Bad Kissingen, for example, there are 35 images, 12 comments and 2 eyewitness reports registered. If one wants to call these up, one can choose the images, the comments or the eyewitness reports and a short list is displayed, from which one can select respectively. From this menu the user also can add information to the archive. For example, images that are called up over a personal file manager can be entered into the archive through the Internet. All entered external information is immediately online.


New Entries

A second main menu point is the display of newly entered contributions. These are shown sorted according to the date. The last contribution is always listed first. As an example, one can find an eyewitness report to the synagogue in Munich from a user from England or a link to the synagogue in Essen or an image from the burning synagogue in Darmstadt, which was part of an estate and has never been published before. As far as the links are concerned, first a short description is displayed and then a new navigation window with the respective site can be clicked.


Background information

The third main menu contains background information as a timetable to the Nazi regime, a short summary about the history of Jewish sacred buildings, a glossary and impressions from the virtual synagogues. There is also a guest book on this internet site.


A first analysis about the archive, which is now online for 6 months, has shown very satisfactory results. Until now there have been over 35,000 accesses of the starting page and about 560 external contributions have been received. The concept of the direct online publication of the external contributions has proved to be feasible because of high quality contributions. There were only a few technical errors on the part of the user and the small number of insulting and unqualified external contributions have been limited to the guest book and were able to be kept from publication without any problem. After the Congress in Vienna, a team was formed by Austrian participants of the congress who will expand the archive to include Austrian synagogues.

In closing one could say that the possibilities of cultural remembrance using the new media does not make it an unnecessary issue in the real world. There must be a parallelism of the sites. Historical authenticity at physical sites and immaterial remembrance in the immaterial digital sites. Both must play out their specific qualities.

One future possibility could be the combination of virtual buildings and authentic location. New forms of cultural remembrance do not lessen the obligation to think about what is to be remembered. Remembrance in context to society and the conveyance of cultural heritage always has something to do with a message for the next generation. In the case of the synagogues, this means the visualization of the loss as an incentive to reflect upon German history. I hope that this also strengthens the sensitivity pertaining to the exclusion of minorities today.



*Illustration 23 -* Synagogue Internet Archive, base information with external contribution, http://www.synagogen.info

## Illustrations

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