The Situation in Germany: Overview on Activities in Cultural Heritage, with Special Respect to New Materials

Dr. Hannelore Römich

Fraunhofer-Institut für Silicatforschung (ISC), Bronnbach Branch, Germany (roemich@isc.fhg.de)

1. Introduction

Research, practice and training in the field of cultural heritage in Germany is very diverse. Therefore, the statements made in this paper can not be more than a simplification, describing the situation from the personal point of view of the author. The overview on new materials will be limited to applications in the field of stone and metal conservation, which have been defined as two major topics in this Ariadne workshop.

The general situation in Germany is characterised by the fact, that Germany is a federal country, consisting of 16 "Bundesländer". Many topics, e.g. all administrative affairs concerning the preservation of historic monuments, belong to the responsibility of the Bundesländer, not to the central government. In some respect this weakens the position of cultural heritage preservation in Germany, since there is no centralised institution, which may have the power to influence political decisions. Research projects, however, are supported by the federal government or by foundations, which are operating on national (not on regional) level.

2. Research organisations

The numerous research organisations active in the field of cultural heritage (e.g. for the conservation of stone and metals) can be devided roughly in three types:

- Universities: these can be faculties dealing with topics closely related to cultural heritage (e.g. concerned with material science or construction engineering) or faculties (mostly belonging to Institutes of Fine Arts), which are explicitely specialised in training of conservators.

  Examples: University of Dortmund (Lehrstuhl für Bauforschung und Denkmalpflege), Technical University of Aachen (RWTH, Geologisches Institut and Institut für Bauforschung), active in research on historic building matrials or Fachhoschule Köln (Fachbereich Stein), specialised in stone conservation.

- Non-profit research organisations: there are several research organisations in Germany, which have a mission connected with applied research or material testing. Their activities in cultural heritage are mostly only side effects, compatible with their core competences.

  Examples: Gesellschaft für Korrosionsschutz e.V. (Frankfurt, www.gfkorr.de, concerned with corrosion protection) or Fraunhofer-Institut für Silicatforschung (ISC, Bronnbach Branch, providing new materials for protective coatings on metals), Fraunhofer-Institut für Bauphysik (IBP, Holzkirchen, www.hoki.fhg.de, involved in research on building materials).

- Laboratories connected to museums: although many museums have a restoration department, only few museums in Germany have laboratories, which provide analytical services or which are involved in research activities on new materials.

- *Examples*: Rathgen-Forschungslabor, connected to the Staatliche Museen Preussischer Kulturbesitz, Berlin (stone and metal) or Deutsches Bergbaumuseum, Bochum (industrial heritage).

3. Cultural heritage management organisations

Administrative affairs concerning cultural heritage are managed by "Landesdenkmalämter", which means that there is no central organisation, but the responisibility is delegated to the "Bundesländer". The Landesdekmalämter have a substructure, delegating some decisions to the regional level. Only one Landesdenkmalamt has a laboratory of ist own (Bayerisches Landesamt für Denkmalpflege, BLFD, Munich, www.blfd.bayern.de).

Whereever possible, the "Landesdenkmalämter" would influence the decision about the application of new materials on monuments and survey their performance. BLFD was even leading the development and testing of stone conservation materials in several research projects.

There are several organisations, which are concerned with management of cultural heritage and which represent the national level. All of them take care of special types of objects, for example "Verband der Landesarchäologen, e.V.", which is responsible for archaeological heritage.

4. Education and training

The profession of a conservator (in Germany called "Restaurator") is not protected by law. In former times conservators were trained as craftsmen in a profession connected with the specific type of art objects. For example, most people working in stained glass restoration were trained as glass painters or as glaziers. More and more, the academic training programmes are requested or at least recommended for all fields of conservation.

Training for conservators is provided by Universities (example: Technische Universität München), by Universities for Applied Science ("Fachhochschulen", example: Fachhochschule Köln) or by Academies for Fine Arts (example: Staatliche Akademie der Bildenden Künste Stuttgart). Each institution is offering only a limited variety of topics. For stone conservation, training courses are offered in Erfurt, Hildesheim, Köln, Potsdam, for metals only in Erfurt. In addition, there is a possibility to inscribe a long-distance training course at the FernUni Hagen.

Finally, the "Brandenburgische Technische Universität Cottbus" shall be mentioned. Here, a training programme is running, which leads to a masters degree in "world heritage studies". The students should have already a degree in a connected dicipline. The language is English (www.tu-cottbus.de).

Sort-term training for conservators with practical experience is offered by several institutions, for very specific topics (example: "Training center for monuments preservation", Görlitz,).

Concerning new materials, the author suggests that the training programme should include systematic studies on the evaluation of possibilities and limits of new developments and objective comparisons with "traditional" materials. Only with this knowledge the students may lateron be able to question scientific results and take a strong position, if companies are promoting their product on the market, without adaptation to the individual objects.

5. Grant agencies

Before 1995, research for conservation in Germany was supported by the Ministery of Research (BMBF in Bonn) or by the Environmental Agency (Umweltbundesamt, Berlin). The research projects were integrated in special programmes, e.g. concerned with stone conservation or with environmantal impact on materials. At the moment, the German government finances research for conservation only on a very low level, e.g. in the programme "Naturwissenschaft in den Geisteswissenschaften" (natural science for arts).

The major grant agency for conservation of cultural heritage in Germany is the "Deutsche Bundesstiftung Umwelt" (DBU, Osnabrück, www.dbu.de), a German foundation for the environment, with a special section dedicated to cultural heritage. Since its foundation in 1991, the DBU has supported 190 projects, since 1999 17 projects, connected to cultural heritage. The research has to be dealing with damage caused by environmental factors. The practical restoration works have to have a "model" character, demonstrating new methods on one object, which are transferrable to others. Within several projects pilot studies for new materials have been realised, including new transparent protective coatings (waxes, acrylics, heteropolysiloxanes, polyurethanes) for industrial heritage. The projects always include an extensive documentation of the pilot application, which should provide lateron a profound basis for scientific evaluation of the performance of the treatment.

Several other grant agencies offer the possibility for exchange of staff with groups from other countries, e.g. the "Deutscher Akademischer Austauschdienst" (DAAD, Bonn), offering grants for co-operations on an academic level.

The "Deutsche Stiftung Denkmalschutz" is supporting mainly practical restoration of selected monuments. In certain cases pilot applications of new materials can be included.

6. Journals, data bases and other activities

In Germany there are two major journals (written in German) distributing information about cultural heritage topics: "Kunsttechnologie und Konservierung" and "Restauro". They are widely distributed, also on international level, and an excellent source of information.

The journal "Restauro" publishes a year-book "Restauratoren Taschenbuch" with all updated addresses for schools and organisations dealing with cultural heritage. Most of the institutions mentioned here are listed in this yearbook (publisher: Callwey Verlag, Munich, www.restauro.de).

Besides, the database MONUDOC (MONument DOCmentation) shall be mentioned, which distributes information concerning the restoration of historic monuments (www.irbdirekt.de). This includes for each listed monument the restoration history, the methods and materials applied during restoration, connected literature, the team involved and a contact person. Since many pilot applications for stone and metal conservation have been documented here, this information shall facilitate further evaluations of the treatment with new materials in the future and shall support a restoration campaign if a material has failed.

International trade fairs are held in Germany, anually or every two years, where private companies and public organisations can advertise their services (e.g.: MUTEC in Munich, concerned with museums technologies or DENKMAL in Leipzig, concerned with monument conservation). This is a good occasion to get an overview about new materials advertised on the market.

7. Ongoing and completed national projects

One of the major research projects on national level was running from 1988 to 1996 (financed by the German Ministery for research, BMBF, Bonn), entitled "Steinzerfall und Steinkonservierung" (degradation and conservation of natural building stone). It also included research for stained glass windows. This project has gathered all major organisations (research institutions, administrations and private companies) in an interdisciplinary project. The major results were summarised as "annual reports" (Jahresberichte Steinzerfall – Steinkonservierung, publisher: Verlag Ernst & Sohn, Berlin).

Amongst numerous publications about the research on stone conservation, only one more book shall be mentioned, which represents the proceedings of an international workshop held in Dahlem (near Berlin): Saving our architectural heritage – the conservation of historic stone structures (publisher: John Wiley, New York). The chapter "New materials and approaches for the conservation of stone" was written by a German representative (E.

Wendler, Fachlabor für Konservierungsfragen in der Denkmalpflege, Munich) and summarises the state of the art very effectively. Besides, the procedure for total impregantion of sculptures with acrylics, provided by a German company (IBACH) shall be mentioned.

Since 1991 a total number of 190 research projects funded by the "Deutsche Bundesstiftung Umwelt" (DBU, Osnabrück) cover a broad variety of topics, e.g. laser cleaning of natural building stones or stained glass windows, conservation of enamels in the museum environment, research on stone conservation or outdoor bronze sculptures, industrial heritage and archaeological topics. Many of those projects promote the development and testing of new materials. All projects are listed on the web-page of the funding institution (www.dbu.de).

8. Ongoing and completed bilateral and international projects

An important project on bilateral level was connected to the research on building stone and stained glass windows. The German-French co-operation programme, running from 1994 to 1996 tried to establish interdisciplinary co-operations, by selecting special objects (e.g. the cathedrals in Tours/France and Oppenheim/Germany) on which teams from both countries were working together. The project included research on new materials for stone conservation. The results were summarised in an extensive volume, written in French and German (ISBN 2-9507987-1-3).

Bilateral connections can also be established by special events, e.g. conferences. In December 2001, a German-Greek workshop on "New technologies for the preservation of cultural heritage" was held in Bronnbach, Germany and intended to launch co-operations by defining hot topics for research, which are relevant for both countries.

German research groups have participated in a number of EC-funded projects concerned with the conservation of marble and natural building stone (see CORDIS database of the European Commission). A new attempt for the conservation of outdoor bronze sculptures was made by the development of new organic-inorganic coatings (called ORMOCER, trademark of the Fraunhofer-Gesellschaft für angewandte Forschung e.V., Munich). The results are summarised in a final report (European Commission, Protection and conservation of European cultural heritage, research report No. 3) (free copies are still available; please contact the author of this paper).

9. Hot topics

Non-destructive testing methods for art objects shall be mentioned as one of the points in focus. With effective non-destructive testing methods the performance of new materials (e.g. protective coatings) could be monitored. Continuous control of the performance of pilot treatments on the real objects may facilitate the development of new materials and techniques e.g. for the conservation of stone or metals. New developments in this field have to consider environmental and safety issues, e.g. by proposing water-based lacquer systems. For the protection of outdoor bronzes, not only corrosion protection but also anti-grafitti coatings are required.

Besides, also topics connecting restoration practice with science and more ethical questions are gaining interest in this interdisciplinary area of work. A conference entitled "Rational decision making in the preservation of cultural property", held in Dahlem (near Berlin) in 2000 and organised by N.S. Baer (from USA) and F. Snickers (Sweden) was dealing with "values and society" and discussing decision making strategies for cultural heritage. Furthermore, topics like "risk assessment" for any kind of new technologies reflect the need to connect science, conservation practice and socio-economic approaches.

10. Final remarks

As stated in the beginning, this paper can offer only a short insight in the situation concerning cultural heritage in Germany, although the subject was focussed on stone and metal conservation.

A difficult topic to discuss in such an overview, is the involvement of enterprises in practical restoration work. There are many examples, each of them acting in a very specialised field, so that any kind of simplification would make a list of names particularly delicate. In general it can be said, that German companies are very competent in the development of new materials, especially in the field of stone conservation (e.g. water repellants, anti-grafitty coatings, stone consolidants). They are promoting their products successfully on the international market.

The names and addresses of the major public organisations dealing with conservation issues in Germany mentioned here are listed in the “Restauratoren Taschenbuch” (see www.restauro.de).

As a final remark it shall be stressed that, although national funding for cultural heritage in Germany is available only on a low level, the organisations in Germany are well prepared for international activities and would welcome further co-operations within Europe.