

PICTURE INDEX OF ART AND ARCHITECTURE

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Prototype of Picture Index for Art and Architecture in the Internet: bildindex.de

1. Summary

Two world wars, the turbulent reconstruction in West Germany, and insufficient care in East Germany have caused irreparable damage to art and architecture in Germany. Many monuments have been irreversibly lost or destroyed, while others have been substantially altered, calling their authenticity into question. The federalist structure of the German state and the division of responsibility for its cultural legacy have only exacerbated the problem, making it more difficult to preserve and study the heritage of visual art in Germany than in any other country in Europe. For this reason, the development of a national picture archive of art and architecture in Germany, accessible to all at no cost in the World Wide Web, is a task of primary significance—one that can be fulfilled by building on the foundation of the “Marburger Index.”

The Marburger Index is a systematic, constantly expanding preservation filming and microfiche publication of 1.3 million photographs of art and architecture in Germany. Over the last 20 years, photographs have gradually been borrowed from historic preservation agencies, museums, and libraries (Dresden, Cologne), catalogued, filmed onto microfiche in accord with the highest quality standards, and returned to their owners. This procedure alone has made it possible, both culturally-politically and economically, to develop a national picture archive on the basis of the irreplaceable historic holdings of important institutions, above all West German historic preservation agencies and two libraries in East and West Germany. This picture archive, in turn, preserves a cultural legacy that sadly no longer physically exists in Germany. About 80 % of the photographic documents, some of them dating back to the beginnings of photography, are irreplaceable due to changes that have occurred since they were taken.

Appropriately for a national picture archive of art and architecture, the reproductions in the Marburger Index are topographically organized. Within each individual location, the works of art are systematically arranged.

In recent years, new processes have made it possible to serially digitize microfiche images at a quality level usable for scholarship (2300 x 2800 pixels, 256 gray scale) for a reasonable price (95 Pfennig gross). Tests have shown that the loss of quality from photographic negative to photographic print to microfiche image to digital image is so negligible that later redigitization at a higher resolution would result in no significant gain of information. This observation would hold true even if funds were to permit the direct digitization of negatives of differing size (35 mm to 24/30) scattered throughout numerous institutions.

The digitization of the Marburger Index will make a national picture archive of art and architecture in Germany available over the Internet, accessible to all interested persons free of charge. This archive can and will be developed cooperatively by scholars in historic preservation agencies, museums, archives, university departments, and research institutes as a future-oriented example of electronic publishing.

The Deutsche Forschungsgemeinschaft (DFG [German Research Association]) has approved funding for the project (January 1, 1999 – December 31, 2001) in the amount of DM 1.93 million (DM 1.31 million for digitization, DM 300,000 for a scholar, DM 270,000 for five student assistants, and DM 50,000 for software adaptation).

2. Description of Holdings

In reaction to heavy losses in historic building substance during the rapid reconstruction of the cities after 1945, a process of reevaluation was initiated in the early 1970s. The federal states gradually began to make new historic preservation laws, while the significance of art historical documentary photography—with whose help destroyed or damaged monuments could perhaps be rebuilt or at least visually preserved for coming generations—became ever clearer. When the transfer of high-quality halftone photographs to silver-film microfiche succeeded for the first time in 1976, the time was ripe for the Marburger Index.

The Marburger Index is a preservation filming and microfiche publication of documentary photographs of art and architecture in Germany. At present, it contains 1.25 million images ranging from masterpieces in all artistic genres to applied and folk arts, from cities to villages, from cathedrals to worker settlements, from the Rhine to eastern Germany (boundaries as of 1937). With the completion of the fourth alphabetical series in 2000, the Index will comprise 1,325,000 photographs.

2.1 Origin and Quality of the Photographs

The 1,325,000 photographs collected in the Marburger Index are drawn from the following institutions:

State historic preservation agencies:

Schleswig-Holstein (Kiel, Lübeck)	45,000
Bremen	10,000
Hamburg	20,000
Lower Saxony	50,000
Berlin	25,000
Rhineland-Palatinate	40,000
Baden-Württemberg	55,000
	245,000

Museums:

Braunschweig, Herzog Anton Ulrich-Museum	5,000
Cologne, Römisch-Germanisches Museum	10,000
Nuremberg, Germanisches Nationalmuseum	70,000
	85,000

Picture archives:

Berlin, Landesbildstelle	10,000
Dresden, Deutsche Fotothek	280,000
Koblenz, Landesbildstelle	5,000
Cologne, Rheinisches Bildarchiv	240,000
Marburg, Bildarchiv Foto Marburg	460,000
	995,000

As this tabular survey shows, the Marburger Index contains photographs from 15 institutions: seven state historic preservation agencies, three museums, and five picture archives.¹ Seventy-four percent of the material is drawn from the three major art-historical picture archives in Dresden, Cologne, and Marburg. This material may be described as follows:

¹ These numbers may seem small; yet despite the interest of other institutions in contributing to the Marburger Index, it has not been logistically possible to borrow, catalogue, integrate, film, and publish more than an average of 66,000 photographs per year (in alphabetical order!).

The Deutsche Fotothek, a division of the former Sächsische Landesbibliothek (State Library of Saxony), originated from the old provincial photo archive of Saxony and thus possesses valuable historic holdings for that region. After 1945, it was established as the central institution for art historical documentation of the German Democratic Republic and thus documented art and architecture in East Germany. The Deutsche Fotothek also served as the museum photo archive for the Dresdner Kunstsammlung; accordingly, the holdings in the Marburger Index drawn from this source are quite thoroughly documented.

Cologne, Kunst- und Museumsbibliothek

The Rheinisches Bildarchiv, a division of the Kunst- und Museumsbibliothek (Art and Museum Library) of the city of Cologne, was founded in 1924 by a former staff member of the Bildarchiv Foto Marburg with the intent of creating a similar archive for the Rhine region, focusing particularly on Cologne. In accord with this goal, the archive possesses a collection of old photographs of the Rhineland, some of them dating back to the beginnings of photography. The second focal point of the archive consists of photographs of the holdings of museums and exhibitions in Cologne since the 1920s.

Bildarchiv Foto Marburg of the Philipps-Universität

Since its founding in 1913, Foto Marburg has primarily photographed monuments that were threatened by decay, change, or even destruction; negatives from other archives were also purchased and integrated according to the same criteria. Typical examples include the photographs of the Ministry of Propaganda, taken in 1942–44 in preparation for reconstruction after the war, as well as thousands of new photographs taken by Foto Marburg documenting the condition of the most important architectural monuments immediately following 1945.

Secondly, Foto Marburg has sought to obtain photographs of works accessible only with difficulty (private collections, temporary exhibitions, manuscript illuminations, etc.). Thirdly, it has provided systematic photographic documentation where the administrators of portable and non-portable works of art were unable to do so. Finally, many of the photographs stem from large and small-scale research projects.²

Viewed as a whole, therefore, the collection of art historical documentary photographs in the Marburger Index has a certain random or fragmentary quality. Many monuments have been almost continuously documented since the 19th century, while other, no less important examples are entirely missing. The 4,000 photographs of hand-crafted Rhenish carnival medals may seem strange, while the 150 images of 19th-century artists' ateliers in Munich may elicit enthusiasm. 30,000 photographs of art and architecture in Berlin may seem too many, 10,000 of medieval manuscript illuminations far too few. These imbalances, however, can only be corrected when the Marburger Index is digitized, opening the way for expansion with the help of modern technology. In this way, a national picture archive within a distributed digital library can be created in a sensible manner, an archive containing the valuable historic holdings of institutions that have not yet been integrated into the Index as well as new (color) photographs³ showing the current condition of the works.

² The ca. 900,000 photographs of art and architecture from other European countries contained in the Bildarchiv are compiled according to the same criteria.

³ In view of the current commercialization of German museums, museums will most certainly be interested in offering their new photographs for sale not only via their own museum servers, but also in the national picture archive.

2.2 Quality of the Microfiches

From the beginning, the preservation filming of the photographs for the Marburger Index has been performed by the firm Herrmann + Kraemer (Garmisch) with the reduction factor 24x, subject to all applicable norms and strict quality control. The master fiches were placed in storage with Herrmann + Kraemer in climate-controlled vaults immediately after completion of the silver-film copies. Although in 1976 there was as yet no thought of digitization, for the most part the filming was performed in accord with the "Requirements for Film Quality and Film Organization with a View to the Option of Film Digitization" outlined in the final report "Digitization as a Means of Preservation" of the DFG committee on digitization and preservation.⁴ The high standard of quality and the consistent uniformity of the filming over a period of 20 years constitute the prerequisite for the planned digitization of microfiche images.

2.3 Organization and Identification of the Material

The original concept for the Marburger Index, approved by the Volkswagen Foundation in 1976, called for the preservation filming and publication of the estimated 500,000 photographs in the Bildarchiv Foto Marburg and the Rheinisches Bildarchiv in Cologne in accord with the topographical system of the Germany division in Marburg (see "Categorization System of the Marburger Index" of 1976 in the appendix).⁵ This concept has been maintained to the present, although the first series has now been supplemented by three additional alphabetical series, requiring users to look in four different places.

The information in the Marburger Index leads from the subdivider cards (an average of one card for every ten microfiches) to carefully differentiated titles on the individual fiches, to the photographic reproductions with their subheadings and more or less detailed identification. Obligatory elements of this identification are:

- site and exact localization of the object or object part;
- designation of object as precisely as possible;
- owner, negative number, and date of photograph.

Information concerning the title of the object, artist name(s), date, material, dimensions, and the like, as well as the conditions under which it was photographed ("before/during/after restoration," "collecting point," "auction photograph," etc.), are desirable, but not always obtainable due to the differing ages and origins of the identifying captions.

On the whole, the identification of the photographs in the Marburger Index is comparable to what scholars are accustomed to finding in scholarly photo archives: unfortunately, far too much outdated and erroneous information, but sometimes also surprisingly interesting notes made by other scholars on the mounting board before filming. Almost always, however, enough information is provided to render the photographs useful for scholarship and publication—even if only with the credit "unknown private collection, reproduced in the Marburger Index Microfiche No."⁶

⁴ ZfBB 44 (1997) 1, pp. 53 ff. A more detailed technical description of the fiche production is available upon request.

⁵ This project was funded by DM 1.4 million from the Volkswagen Foundation, since many of the photographs in the two archives existed only as negatives and had to be printed and identified before filming. After the expiration of the five-year funding, the situation had not essentially changed; even now, essential holdings must first be prepared in this manner before filming. The achievement of the Marburger Index consists not least of all in having necessitated and facilitated this process of identification en passant and secured its continuation.

⁶ An important advantage of the digitization of the Marburger Index will be that in the future, scholars will be able to communicate necessary improvements in the captions via e-mail, enabling Foto Marburg to easily incorporate them into the identification of the digital images.

2.4 Current Availability of the Marburger Index

According to statistics provided by the publisher K. G. Saur Verlag, at its height the Marburger Index had 202 subscribers in 145 locations, among them 102 institutions (59 locations) in Germany, 43 institutions (34 locations) in other European countries, 37 institutions (32 locations) in North America, and 20 institutions (20 locations) on other continents.

This dissemination of a product that appeared in 1977 at the almost prohibitive price of DM 10,000 and since then has become even larger and more expensive bears witness to widespread interest in the comprehensive documentation of art in Germany. On the other hand, it should also be noted that the Marburger Index has lost subscribers during its 20-year period of publication, so that today only 140 institutions subscribe to the microfiches. There are two possible reasons for this decline:

1. Due to its value and extent, many institutions placed the Index in their storage magazines where it was difficult to use;⁷ as a result, it began to appear dispensable.
2. The supplementary expansion of the Index in four series—the only option with microfiche—and the sole COM index available for years complicated usage to the point of scaring off potential customers.

If the Marburger Index consisted of a journal with a few thousand articles, its current dissemination would suffice. Articles could be obtained with a minimum of effort from one of the libraries subscribing to the Index. But since the Index consists of a collection of 1.3 million photographs—of the sort that scholars and interested persons all over the world are always looking for but can hardly order interlibrary loan without having seen it—its availability is insufficient.

2.5 Copyrights for Photographs and Data on the Works of Art

Since its founding, the Marburger Index has consisted of a preservation filming and microfiche publication in which legal questions have played virtually no role. The copyright for the publication is held by Foto Marburg; for the first two of the four alphabetical series, it shares the copyright with the Rheinisches Bildarchiv in Cologne, for the fourth series with the Deutsche Fotothek of the Sächsische Landesbibliothek in Dresden. The name of the owner appears beneath each published photograph in the Marburger Index. Although no written contracts exist between the institutions participating in the Marburger Index, unspoken consensus requires unquestioning respect for conventional scholarly rules of behavior.

Artistic copyrights for the reproduced works of art could be disregarded since the Marburger Index is a catalogue that serves to prove the existence of the individual photographs in the various institutions. Photographic copyrights could be disregarded since without exception, they are held by the institutions that provided the photographs to the Marburger Index. Property rights for the reproduced works of art could be disregarded because they have never been asserted against the public institutions participating in the Marburger Index.

In the context of the digitization of the Marburger Index, the following rights must be considered:

1. The copyright on the Marburger Index. The two owners of copyrights for portions of the Marburger Index—the Rheinisches Bildarchiv in Cologne (1st and 2nd alphabetical series) and the Deutsche Fotothek of the Sächsische Landesbibliothek (4th alphabetical series)—are familiar with the project and have agreed to the digitization of the Marburger Index.
2. To the extent that they have been consulted, the owners of the photographs reproduced in the Marburger Index—the historic preservation agencies, museums, and archives—have agreed to digitization. The institutions that have not yet been consulted will likewise agree, for the following reasons:

⁷ To this day, many institutions still keep the Index in the boxes in which it was delivered. Almost never is it set up in a room with a reader-printer, although this is the most effective solution.

1. They will receive free copies of the picture files and thus will no longer have to themselves digitize their valuable historic holdings.
2. Foto Marburg will offer them no-cost care of their digital picture holdings (backup and migration).
3. If desired, Foto Marburg will provide them with cost-free homepages for the separate presentation of their own share of the national picture archive of art and architecture in Germany, either on their own server or that of Foto Marburg.
3. While the inclusion of reproductions of copyright-protected works is of course desirable, it is not indispensable for the national picture archive of art and architecture in Germany, intended primarily to document lost holdings and previous conditions. Accordingly, for economic reasons questionable reproductions will be digitized along with the others, but will only be integrated after clarification of whether the so-called catalogue privilege comes into effect or whether permission must be obtained from VG Bild, other copyright representatives, artists' estates, or individual artists before reproductions are shown in the World Wide Web.
4. In the event that, contrary to all previous experience, public owners of reproduced works of art demand usage fees, they will be offered the opportunity to integrate their own and usually more current photographs of their objects into the national picture archive and thus attract potential customers. Otherwise, the reproductions of their works will be removed from the picture archive—resulting in their absence from the largest image pool of its kind.

Legal questions thus represent no obstacle to digitization. To the extent that they have not yet been clarified, they can be discussed during the project, since they are not critical for the final product.

3. Goals of the Project

- The project seeks to offer a national picture archive of art and architecture in Germany in the World Wide Web, accessible free of charge to all interested persons, widely used, and susceptible to distributed expansion. It is intended to support and facilitate the research, scholarly presentation, and practical care of art and architecture. In accord with the performance capacity of the Internet and current graphics cards and monitors, 100 KB picture versions will be offered in gallery mode, with 700 KB versions in single picture mode. In addition, 1.6 MB picture versions will be offered upon request as individual, customized WWW pages (on the technology see below). The identification of provenience on each photograph will make it possible to order a reproducible print directly from the owner, securing direct access to the entire body of photographs with their valuable cultural-historical visual information.
- The project is intended to provide an up-to-date, efficient basis for the cooperative electronic publishing and exchange of art historical data among historic preservation agencies, museums, archives, and institutes—a process that has been initiated in recent years—as well as to reach a broad range of new users, not least of all in the schools.
- The age of digital information opens up new perspectives and functions for historical works of art, with regard not only to their aesthetic appeal, but also to their importance as historical sources and witnesses of social development. This opportunity should be utilized and art supported as an essential element of collective social memory.
- In the course of the much-invoked process of globalization, a competition for cultural identity develops not only linguistically, but in the area of visual arts as well. Thus it is appropriate to take note of American and French precedents and strive for a comparable digital presence of art and architecture in Germany.

4. Digitization of Microfiche Image Fields

Since 1976, the preservation filming and production of copies of the Marburger Index has been entrusted to the firm Herrmann + Kraemer. Although estimates have repeatedly been obtained from other sources in the interest of reducing costs, up to this point no other firm has been able to scan microfiche images at the same level of quality. Thus in the following it will be assumed that only this same firm can be commissioned to digitize the Marburger Index. (Nonetheless, the Bildarchiv has stood firm in its price negotiations with Herrmann + Kraemer and has met with at least some success.)

The digitization of the microfiche image fields by Herrmann + Kraemer—who also participated in the tests for the above-cited report by the DFG committee on digitization and preservation—is being performed in accordance with the guidelines outlined in the committee report, with one exception: despite generally valid scruples concerning this procedure, the digitization is to be performed from the master fiches, stored in the firm's vault since their creation. This procedure will prevent loss of quality due to small, not excludable weaknesses found in the copies.⁸

After completion of a comprehensive series of tests, the digitization will proceed as follows:

Scanning mode:	8 bit with 256 gray scale, digitization with 6000 dpi
Scanning resolution:	ca. 2270 x 2840 pixels
Image refinement:	unsharp masking
Storage capacity:	TIFF uncompressed ca. 6.5 MB
Indexing:	Fiche number + coordinates
Storage medium:	CD-R, Kodak Writable CD with Infoguard protective coating, 650 MB

The decision to digitize with these values and media is based on the following considerations:

1. The resulting quality will correspond to that of average reproductions in printed works. Since heretofore the latter have successfully served the needs of scholarship, the former will do so in the future as well.
2. Digitization at this level of quality will produce a catalogue of photographs which, in the long term, will adequately protect scholars from mistaken orders resulting from unclear picture interpretation.
3. Whether made aware of works through printed or digital means, in the future scholars will still require photographic prints produced by the owners of the images in accord with individual research and publication needs. Such prints continue to possess the greatest evidential value and will therefore remain indispensable for scholarship.
4. As technology continues to develop, digital "prints" in ever higher resolution will be prepared upon request and increasingly stored in those places where the negatives of the photographs are also kept. Once the lines and monitors have the capacity to convey these prints effectively, they will be made available for subscription as the highest level of quality via the projected national picture archive for art and architecture. The development of a need-based availability of high-resolution images appears more probable than the assumption of a future total digitization.

5. Cataloguing and Systematic Presentation of Visual Material

The Marburger Index reproduces the art and architecture of Germany in topographical order from Aach to Zufflich. The works of art in each location, both portable and non-portable, are systematically organized on the basis of a simple set of rules that has been used successfully for the last 70 years.

⁸ This procedure, however, does comply with the recommendations of the committee insofar as it dispenses with one generation of images, those of the fiche copies.

The user of the Marburger Index encounters this system of organization first on the subdivider cards between the microfiches, then in their titles, next in the subheadings of individual picture fields, and finally in the pictures themselves, which present the individual objects in a systematic manner according to artist or according to type, chronology, and geographical origin (although unfortunately the corresponding descriptors are not always explicitly included in the captions). For example, where there are multiple documents of a single object—whether due to its special significance or to restoration—the detail views are arranged before filming in as meaningful and optically coherent an order as possible, enabling users to make correct interpretations even on the basis of the macro-photographs. The order established for the publication on microfiche will be adopted in the digital picture archive.

A not inconsiderable problem, but one that can be solved with technical skill, experience, and diligence, lies in the fact that due to its 20-year history, the Marburger Index consists of four alphabetical series which must now be combined into a single system within the digital picture archive. Accordingly, a light-desk station with a special program was developed, consisting of a PC with three 21-inch monitors. This set-up makes it possible to easily combine the images from four series.

The prototype for the presentation of the digital picture archive in the World Wide Web is oriented to the Shareware program ACDSee 3.0 (registration fee \$30). It consists of a screen with two frames whose separating line can be shifted at will with the mouse. The first frame shows the contents of the digital picture archive in the same way in which directories and folders are shown in Windows Explorer (with the simple, but practical system of plus and minus signs as an orientation help). In the second frame, the contents of the selected directory or file will be shown in the form of a gallery of pictures with the (likewise digitized) captions. The user can thus move from place to place as in a real, systematically organized picture archive and examine folders by clicking on them (city history, city plans, city fortification, etc.).

6. The Future of the Distributed Digital Research Library

The digitization of the Marburger Index will create a national picture archive of art and architecture in Germany with a total of 1.3 million photographs. With the support of the Deutsche Forschungsgemeinschaft, this resource will be available to all interested persons **free of charge** on the World Wide Web. Such an archive has no international precedent; it is to be hoped that its cost-free accessibility will set an example for others.

The question remains as to what role the archive will play in the distributed digital research library of the future and what opportunities exist to expand and access it with increasing effectiveness. This question can be answered reliably and positively if we consider the genesis of the archive:

1977–1981 Preparation and publication of the first 500,000 photographs on microfiche, supported by DM 1.4 million from the Volkswagen Foundation. The publisher Verlag Dokumentation (later K. G. Saur) covered the cost of the preservation filming (DM 80,000 annually), production of copies (DM 140,000), and marketing. For editorial work, it paid the Bildarchiv royalties in the amount of DM 100,000 annually, without (then or at any time later) claiming a copyright. Without the contribution of the publisher, the Marburger Index would not exist; if the publisher had not renounced the copyright, negotiations would now be necessary before the Marburger Index could be digitized.

since 1981 Continuous preparation, preservation filming, and publication of an additional 800,000 photographs from various institutions, funded by the Bildarchiv and additional royalties from K. G. Saur Verlag. This funding, continuing to the present, has totaled DM 2 million. Without these royalties, the expansion of the Marburger Index would have not have been possible, and thus a basis would not have existed for additional support of the project by the Volkswagen Foundation.

- 1981–1983 Development of the Marburger Informations-, Dokumentations- und Administrations-Systems (MIDAS) and expansion of computerized object cataloguing for accessing reproductions in the Marburger Index (in the context of an 18-month job-creating program for five scholars).
- 1983–1987 Cataloguing of 50,000 objects in context of the project “Register-Herstellung zum Marburger Index” (“Production of Indexes for the Marburger Index”), supported by DM 3 million from the Volkswagen Foundation. A relational databank was set up, which, in addition to the 50,000 object documents, contains an additional 40,000 (authority) documents (terminology, persons, societies, iconography, etc.). Between 1985 and 1990, K. G. Saur Verlag published, marketed, and paid royalties for 30 indexical catalogues with a total of 200,000 pages as Computer Output on Microfiche (COM).
- 1990–1993 In context of the program “EDV-gestützte Katalogisierung in großen Museen” (“Computerized Cataloguing in Major Museums”), supported by DM 3 million from the Volkswagen Foundation, seven museums adopted the cataloguing system and databank as an instrument for developing their own catalogues. **A production association was formed, which has continuously expanded the databank through the exchange of information every three months since 1990.** In 1995–96, ten digitally illustrated catalogues on compact discs were published with a total of 21,000 digital reproductions. The publisher K. G. Saur Verlag paid DM 100,000 production costs and DM 100,000 royalties to the museums. Without this contribution by the publisher, the publication of the DISKUS series would not have been possible.
- 1991–1994 In context of the program “EDV-gestützte Inventarisierung und Dokumentation des historischen Baubestands in Ostdeutschland” (“Computerized Inventory and Documentation of Historic Buildings in East Germany”), supported by DM 3.5 million from the Volkswagen Foundation, as well as a photo campaign supported by the Federal Ministry of the Interior, 100,000 new photographs were made documenting as much historical building substance as possible before the beginning of the construction boom in former East Germany. The historic preservation agencies adopted MIDAS and the databank. Due to the overwhelming practical burden of the state historic preservation agencies in the new German states, however, virtually no scholarly contributions were made to the shared databank.
- since 1995 In context of the program “EDV-gestützte Dokumentation in Forschung und Lehre ausgewählter kunstgeschichtlicher Universitätsinstitute” (“Computerized Documentation in Research and Teaching in Selected University Art History Departments”), supported by DM 4 million from the Volkswagen Foundation, eight departments in Germany and six abroad have adopted MIDAS and the databank in order to participate in its expansion in the context of study projects (see the directory of participating institutions and their projects in the appendix).

Thanks to the support of the Volkswagen Foundation and the contribution of the publisher, the Marburger Index has been successively transformed from a simple **product**—a publication on microfiche—into an innovative **means of production**, an illustrated databank. The increasing involvement of various museums, archives, and institutes—which have used the illustrated databank as a means of production in a tri-monthly exchange of information—as well as the cooperation of the publisher have facilitated the continuous, uninterrupted expansion of the Marburger Index. When the current, fourth series is completed in the year 2000, subscribers will be given the opportunity to continue their subscription in the form of access to a constantly expanding illustrated databank, based in the future on a national picture archive of art and architecture in Germany, freely accessible to all.

Since in this development model, those holdings that are accessible free of charge remain the same, while those subject to payment are constantly expanding, the model may seem to contradict the goals set by the Deutsche Forschungsgemeinschaft in its efforts to promote cheaper, faster, and non-commercial exchange of scholarly information through electronic publishing by scholarly

institutions. In fact, however, the Marburger Index has long accorded with these goals and considerations in that **since its founding, the illustrated databank has been available to all interested persons at no cost as a means of production and communication, as long as those persons were willing to seriously participate in the cooperative production.** Only this fact reveals the full significance of the digitization of the Marburger Index: digitization will transform the Index as a whole⁹ into a means of information and a forum for electronic publishing, available in the future to scholars everywhere at no cost.

In this light, the producers of the Marburger Index view future developments with both eagerness and trepidation. In the future, will libraries refuse to subscribe to the Marburger Index, reasoning that local departments could probably contribute at least enough to be accepted into the circle of free subscribers? Will publishers, schools, television corporations, or interested individuals, on the other hand, subscribe to the Marburger Index in order to gain free access to the foundational work with 1.3 million digital images?

Appendix: The Current State of Databank Expansion

The question arises as to why the so-called Marburger Index Databank¹⁰ cannot constitute an element of the free national picture archive of art and architecture in Germany in the future. This decision was made for the following reasons:

1. Of the 262,000 object documents in the databank, only 93,000 refer to objects illustrated in the microfiches of the Marburger Index.
2. The 93,000 object documents relevant to the Marburger Index comprise only 10–15 % of the ca. 800,000 objects illustrated in the Marburger Index.
3. The databank, which (as stated above) is available at no cost to anyone seriously interested in participating in its expansion, is the only product that can be sold to non-participants in order to raise the funds indispensable for its expansion.

The databank currently contains the following documents:

Terminology	23,800
Chronological entities	1,200
Geographical entities	29,000
Artists and other persons	71,200
Societies (collections, workshops, etc.)	500
Iconographical objects (ICONCLASS)	31,500
Objects ¹¹	262,000
Exhibitions	4,400
Bibliography	18,400
Dissertations and masters' theses	26,600
	468,600

The documents of individual entities and types of entities are linked with each other in accord with the Entity Relationship Model. To name only one example, it is thus possible to inquire as to artists

⁹ Up to this point, it has not been possible to provide a free set of Marburger Index microfiches to institutions and scholars interested in cooperation.

¹⁰ Marburger Index Databank on CD, 5th ed., Munich 1999, with 40,000 digital illustrations in thumbnail quality.

¹¹ The 262,000 objects consist of both simple and complex works; in the case of the latter, the parts (e.g. panels of a retable, miniatures in a manuscript, statues of a fountain, etc.) are separately accessed. If these parts are individually counted, the databank comprises 396,800 works.

who emerged from a particular school, later joined a particular artists' group, and represented a particular iconographic theme, although these indications are distributed over artist, society, iconography, and object documents in order to avoid redundancies and mistakes.

The 262,000 object documents consist of the following:

115,200 object documents developed in the Bildarchiv Foto Marburg, accessing objects reproduced on the microfiches of the Marburger Index

10,000 objects from foreign divisions (microfiche indexes from abroad)

44,700 object documents developed by cooperating museums since 1990, 14,000 of which are reproduced in the Marburger Index. Digital reproductions already exist for 38,000 objects (Kodak Photo CD).

20,000 object documents from the photo archive of the Bibliotheca Hertziana, comprising works of Italian art. Some of these works are now held in Germany and thus are illustrated in the Marburger Index; most of them, however, are located in Italy and are reproduced only in the photo archive of the Hertziana.

25,700 object documents from the photo archive of the Kunsthistorisches Institut in Florence; here the same situation exists as for the documents from the Hertziana. It is worth noting that 4,500 of these documents represent photographs from the DFG-supported special collections of the institute, developed in context of a DFG-supported project.

19,800 object documents from the Deutsches Historisches Museum. Of these, 13,400 digital reproductions are already available.

26,700 documents prepared by the Association of Thuringian Museums with the continuous support of the Bildarchiv. These are to be digitally illustrated; at this point, however, no further details have been determined.

The rest of the documents come from various other sources, above all from the Rheinisches Bildarchiv in Cologne and the projects pursued in context of the program "EDV-gestützte Dokumentation in Forschung und Lehre ausgewählter kunstgeschichtlicher Universitätsinstitute" supported by the Volkswagen Foundation, a program that will continue into the year 2000.

The databank is updated every three months. The cooperating institutions¹² deliver their data to the Bildarchiv, which in turn unifies it, establishes the necessary authority file documents (terms, geography, persons, societies, etc.), produces the new version of the databank, and delivers it within four weeks to the participating institutions. The latter integrate the data they have acquired in the meantime and continue their work with the new databank and the authority documents contained in it. In this way, the databank serves not only as the guarantor of data consistency, but also as an effective means of scholarly communication.

Whenever an institution catalogues an object for which reproductions exist in the Marburger Index, an indication of this fact is included. Hence over the years, the databank will provide ever better access to the digital picture archive of art and architecture in Germany.

Objects that could no longer be reproduced on microfiche due to the topographical-alphabetical organization of the Marburger Index have been digitally reproduced since 1995. Thus for some time already, the databank has been continuing in digital form a project that was begun on microfiche in 1977.

[translated from the German by Melissa Thorson Hause]

¹² The fact that the editorial office of the *Allgemeines Künstlerlexikon aller Zeiten und Völker* (formerly Thieme-Becker) and the ICONCLASS Research and Development Group (Utrecht/Leiden) belong to this production association ensures on the one hand the best possible source of artist-biographical information for the databank, and on the other hand makes possible worldwide communication with other ICONCLASS users and their data holdings.