

**BROWSING  
ARCHITECTURE**  
METADATA AND BEYOND

EAAE *Transactions on Architectural Education* no. 40

edited by *Matteo Zambelli, Anna Helena Janowiak and Herman Neuckermans*

produced by *MACE Consortium*

powered by *Collaboratorio*  
*EAAE European Association for Architectural Education*

published by *Fraunhofer IRB Verlag*

supported by *European Commission, eContentplus Program*

Bibliographic information published  
by the Deutsche Nationalbibliothek  
The Deutsche Nationalbibliothek lists  
this publication in the Deutsche Nationalbibliografie;  
detailed bibliographic data are available  
on the Internet at <http://dnb.d-nb.de>.  
ISBN 978-3-8167-7770-0  
printed by *Fraunhofer IRB Media Services*

© by Fraunhofer IRB Verlag, 2008.  
All rights reserved  
Fraunhofer-Informationszentrum Raum und Bau IRB  
Postbox 80 04 69, 70504 Stuttgart, Germany  
Nobelstrasse 12, 70569 Stuttgart, Germany  
phone +49 (0) 711 970 2500  
fax +49 (0) 711 970 2507  
e-mail: [irb@irb.fraunhofer.de](mailto:irb@irb.fraunhofer.de)  
[www.irb.fraunhofer.de](http://www.irb.fraunhofer.de)

**graphic design**  
*studiovisuale.it*

**cover illustration**  
*Moritz Stefaner*

**printing**  
*Fraunhofer IRB Mediendienstleistungen, Stuttgart*

**typography**  
*Csuni (Carattere Senza Un Nome Importante/  
Typeface With No Important Name)*  
by Molotro (Luciano Perondi, Federico Zerbinati)

**paper**  
cover *Schneidersöhne Luxo Satin* 250 g/m<sup>2</sup>  
pages 1-320 printed with 1 colour  
on *Schneidersöhne Luxo Satin* 135 g/m<sup>2</sup>  
pages 321-368 printed in 4-colours  
on *Schneidersöhne Luxo Satin* 135 g/m<sup>2</sup>

## table of contents

7	<b>introduction</b>
<hr/>	
9	FOREWARD <i>Herman Neuckermans</i>
13	BROWSING ARCHITECTURE. METADATA AND BEYOND: The concept <i>Furio Barzon, Anna Janowiak, Matteo Zambelli</i>
21	<b>mace</b>
<hr/>	
22	1 MACE: Connecting and Enriching Repositories for Architectural Learning <i>Moritz Stefaner, Vittorio Spigai, Elisa Dalla Vecchia, Massimiliano Condotta, Stefaan Ternier, Martin Wolpers, Stefan Apelt, Marcus Specht, Till Nagel, Erik Duval</i>
50	2 MODELS OF DESIGN ACTIVITIES: Towards Effective Design Scaffolding <i>Mario De Grassi, Alberto Giretti, Roberta Ansuini</i>
62	3 MACE: Enabling Legacy Repositories <i>Stefan Apelt, Christian Prause, Mathias Casaer, Ann Heylighen</i>
72	4 EVERYVILLE INSTALLATION: MACE at La Biennale of Architecture <i>Interaction Design Lab and Interface Design, University of Applied Sciences Potsdam (FH P)</i>
81	<b>e-learning</b>
<hr/>	
82	5 TEXTIDATTICA: Saggio Teaches Information Technology in Latin <i>Antonino Saggio</i>
94	6 INDEXED AND BROWSED: A New Didactic Approach Towards the Orders of Columns <i>Susanne Schumacher</i>
104	7 HOUSING@21.EU: Integrating Learning Spaces and Architectural Repositories <i>Leandro Madrazo, Paul Riddy, Luca Botturi</i>
118	8 BEYOND DIGITAL REPOSITORIES: Architectural Information Presentation <i>Verdy Kwee</i>

- 126 **9** TOWARDS USING DIGITAL MODELING SYSTEMS:  
The Context of E-learning  
*Nada El-Khoury, Giovanni De Paoli*
- 136 **10** QGD: Keeping a Record of Learning Paths  
on Digital Graphics Representation for Architecture  
*Adriane Borda, Neusa Felix, Luisa Dalla Vecchia, Janice Pires*
- 144 **11** VIRTUAL STUDIO:  
A Digital Repository in Architectural Education  
*Andy Earl, Carl O'Coill, Joss Winn*
- 156 **12** GOING DIGITAL IN THE CLASSROOM:  
Lessons from the Integration of Wikis in an Architectural History Course  
*Francesca Torello, Marie Norman*

167 **archives**

---

- 168 **13** BUILDING UP DIGITAL COLLECTIONS:  
From Policy to Implementation  
*Patricia Alkhoven*
- 178 **14** THE ON-LINE CATALOGUE OF THE GIANCARLO DE CARLO ARCHIVES:  
An Attempt to Integrate Paper-Based and Digital-Born Documents  
*Riccardo Domenichini*
- 186 **15** ELECTRONIC DOCUMENTS IN AN ARCHITECTURAL PRACTICE:  
Graphics Creation, Maintenance, Selection and Preservation  
*Elena Triunveri*
- 196 **16** IMAGE ARCHIVE:  
A Hybrid Structure for the Enhancement of Architecture Videos  
*Paola Ricco*
- 204 **17** THE FACETAG ENGINE:  
A Semantic Collaborative Tagging Tool  
*Emanuele Quintarelli, Andrea Resmini, Luca Rosati*
- 218 **18** COMPUTER INTEGRATED BUILDING SYSTEM:  
Preliminary Thoughts  
*Hong Zhang*
- 224 **19** SAVE THE BUBBLE:  
The Architectural Archive in the Digital Age  
*Bernhard Franken, Berthold Scharrer, Suemri Nina Michaela Vogel*

238      20      A CLASSIFICATION SYSTEM FOR CONSTRUCTION UNITS AND PRODUCTS:  
Methodological Hypothesis and Application Testing on Pre-Modern Building  
*Sara Scapicchio*

250      21      THE PROBADO FRAMEWORK:  
A Repository for Architectural 3D-models  
*Ina Blümel, Harald Krottmaier, Raoul Wessel*

261      **websites**

---

262      22      MIMOA:  
An Interactive Architecture Guide  
*Mieke Vullings, Naomi Schiphorst*

280      23      NEXTROOM:  
The European Hub for Contemporary Architecture  
*Juerg Meister, Helga Kusolitsch, Stephan F. Haupt*

290      24      THE LAFIS PROJECT:  
Managing Publicly Induced Data into a Scholar Environment  
*Francisco Agostinho*

298      25      A DATABASE OF ARCHITECTURAL REPOSITORIES:  
Criteria for Selection and Evaluation  
*Stefan Boeykens, Herman Neuckermans*

306      26      CULTURAL HERITAGE REPOSITORIES:  
Digital Archives for Conservation and Management  
*Alonzo Addison, Mario Santana Quintero*

319      **images**

---

320      collection of essays' images

364      index of terms – folksonomy

367      colophon

# 6

## INDEXED AND BROWSED: A New Didactic Approach Towards the Orders of Columns

- › e-learning
  - › indices
  - › matrix of terms
  - › media-database
  - › orders of columns
  - › visual browsing
- 

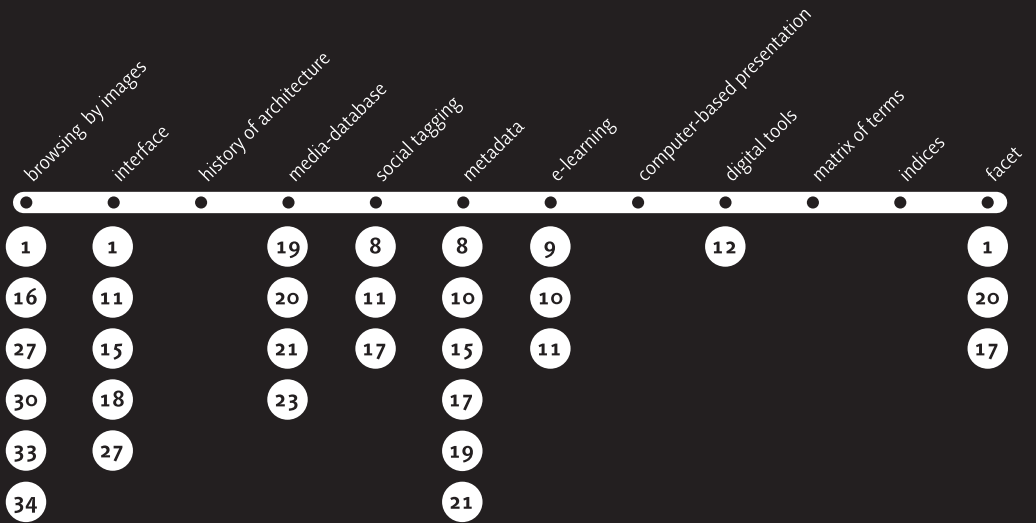
The “Index-Browser” is a digital tool that supports a visual access to a thematic collection of images in a database. Its strong didactic potential can be demonstrated for instance by its practical application in the E-Learning Project “Orders of Columns”. In this context the Index-Browser helps to gather, share, order and understand images related to the topic of the orders of the columns. Supported by a five parted index that covers five perspectives on a thematic field, the Index-Browser enables a novel approach to the collection of image material: Firstly, it makes digitally stored images visible for quick and direct access. Secondly, it generates unexpected connections between images with respect to the content through visual browsing. Thirdly, it offers the procedure of concept formation in detail, because it creates a comparison between the abstract meaning of a term and its visual expression.

The Index-Browser is part of the media-database developed at the Zurich University of the Arts (ZHdK). The e-learning project “Orders of Columns” is located at the University of Zurich (UZh) in the Institute of Art History.



**SUSANNE SCHUMACHER**  
 Zurich University of the Arts  
 Zurich, Switzerland  
[www.zhdk.ch/pages/en/home](http://www.zhdk.ch/pages/en/home)

Susanne Schumacher M.A. has researched, taught and developed for 10 years in the field of “Art History and Information Technologies”. Currently located in Zurich, Switzerland, she lectures at the Zurich University of the Arts and the University of Zurich and is completing a PhD at the ETH Zurich. For details and publications see: <http://people.zhdk.ch/susanne.schumacher>



## INDEX-BROWSER – CONCEPT AND IDEA

---

### indices

#### history of architecture

#### browsing by images

1 17 19 21  
22 26

---

The "Index-Browser" is a tool that creates an intuitive system for working with images in the media-database of the Zurich University of the Arts. It offers a visual access to the content of the image collections by means of browsing led by images. This novel interface is enabled by the use of specific indices; one such index is parted into five categories of terms, which offer a matrix of words for tagging images. In the context of the E-Learning Project "Orders of Columns", located at the University of Zurich, Institute of Art History, the Index-Browser has adapted this fundamental system for the topic the history of architecture. A "Column-Index" presents the categories "Order", "Epochs of Art History", "Elements", "Context" and "Media" with the relevant terms.

This Index, like others in the media-database, is a mix between a scientific thesaurus and the idea of social tagging. On the one hand, it includes the top-down conceptualization by an expert in the field, but on the other, it adopts the bottom-up principle of participation by all proficient users. In this way attentive users can help to create a thoroughly considered index during the process of application.

## THE INDEX ORDERS OF COLUMNS

---

### interface

1 3 11 22 24

---

### media-database

19 20 21 23

---

### metadata

1 8 10 15  
17 19 21

---

### social tagging

8 11 17

---

The five categories of the Index cover five important perspectives on the topic of the orders of columns. The first category ("Order") obviously picks up the canonical distinction between the five orders (Tuscan, Doric, Ionic, Corinthian, and Composita), but additionally, the principle arrangement of an order is mentioned (superimposition of columns, colossal order, etc.). The next category ("Epochs of Art History") relates the examples roughly to a specific epoch like ancient Egypt, the Gothicism or neoclassicism. In contrast to this, the third category ("Elements") goes into detail, because the definition of the orders is strongly connected to a regulated arrangement of clearly defined elements. Even in ancient times a convention regulating the form and name of elements existed, such as capital, pedestal and plinth, which are listed in this row. The fourth category ("Context") tries to identify in which context the shown image appears. This could be an archaeological find, a treatise on architecture, or a triumphal arch. The terms in the last category ("Media") are also very varied. In this category the user can select between building materials like stone or stucco, or between techniques like etching, cutting or rendering (Tab. 1). Obviously these index-data differ from normal metadata. Metadata cover information like author, title, place and year. This data common to all historical databases is also collected in the database. In addition to this, we try to accumulate more categorical information with the index-data. When focusing on one object this data may seem quite vague, yet to a certain degree the data allow the user to cluster the images according to their content.

This structure allows two novel ways of representing images in the interface of the database. One is an image-based browser and the other is a matrix of terms. Both the Index-Browser and the Index-Matrix enable an alternative access to the content of the media-database.

Before describing how these Index-Tools work and what the didactic effect is let me introduce the specific context of its application.



Ordnung	Stil-Epoche	Elemente	Kontext	Medien
Alle Ordnungen	20. Jhdt	Andere	Andere	Andere
Andere	Altes Ägypten	Atlant	Archäolog. Fundstück	Animation
Dorika	Andere	Basis	Architekturtheorie	Film
Gemischt	Barock	Dienst	Architekturtraktat	Fotografie
Ionika	Byzantinisch	Gebälk	Dekoration	Glas
Kolossalordnung	Etruskisch	Halbsäule	Geografische Karte	Grafik
Komposita	Gotik	Intervall	Konstruktionsanweisung	Holz
Korinthia	Griechische Antike	Kapitell	Kunsth Handwerk	Keramik
Supraposition	Klassizismus	Karyatide	Möbelbau	Klang / Ton
Toskana	Mesopotamien	Krepis	Modell	Malerei
	Mittelalter	Modul	Monument	Metall
	Moderne	Palladiomotiv	Musterbuch	Rendering
	Postmoderne	Pfeiler	Nachschlagewerk	Stein
	Renaissance	Pilaster	Öffentliche Architektur	Stich
	Rokoko	Plinthe	Palast	Stuck / Gips
	Romanik	Postament	Plan	Text
	Römische Antike	Säule	Privatbau	Vasenbild
	Seit 1990	Schaft	Profanbau	Zeichnung
	Spätantike	Stele	Rekonstruktion	
	Unbekannt	Stütze	Repräsentationsbau	
		Travée	Ruine	
		Tympanon	Sakrale Architektur	
		Volute	Säulenlehre	
		Wandvorlage	Skulptur	
		Ziersäule	Tempel	
			Urhütte	
			Wiss. Fachliteratur	

Tab. 1: The Index "Orders of Columns" arranges a matrix of terms.

## THE E-LEARNING PROJECT ORDERS OF COLUMNS

### Topic

#### computer-based presentation

#### e-learning

9

10

11

This e-learning project "Orders of Columns" originated from a students initiative at the Institute of Art History at the University of Zurich. They were searching for alternative ways to deal with questions around the morphology of columns and the context of their usage in the history of architecture. Indeed, this point of view offers a number of perspectives into the transcultural history of architecture. How were the renaissance architects able to interpret the books of Vitruvius by inspecting the ruins and spolia in Rome? What idea of the ancient world did they shape out of these relicts? And can the development of the antique temples even be seen as a reinterpretation of Mesopotamian or Egyptian rituals and forms? These enigmas questions have occurred throughout history up until present times. Why does the concept of the orders of columns have such a normative power, not only with renaissance architecture, but also up until neoclassicism? And what kind of transformation can we rediscover in modernity and within postmodern comments? In conclusion, the investigation of the orders of columns means to question the impetus of architecture.

The task of the project is to develop a visual form of a computer-based presentation

following a vivid didactic concept that is close to the diverse material. It intends to broach the issue of columns by using a set of down-to-earth questions and practical thought. The content of the planned e-learning module is currently being developed by students. In a seminar they learn about the topic of the orders of columns, as well as how to use three different computer tools to present the work. In December 2008 a prototype will be completed.

## Structure and tools

---

### digital tools

12

---

Since e-learning projects mostly rely on a range of competencies the Column-Project is a cooperation between the Institute of Art History with the media-database of the Zurich University of the Arts and the e-science-network "HyperImage" (Humboldt University of Berlin and University of Lüneburg). This allows the use of three different digital tools that have all developed in the academic context to deal explicitly with the medium of text, the medium of images, and to combine both in an interactive presentation.

1. tEXtMACHINA: a text-orientated web-based platform developed by University of Zurich / Germanic Faculty.

In the context of the column-project, tEXtMACHINA is used to collect textual material and required reading lists. It also supports additional collaborative writing. Furthermore tEXtMACHINA assists the scientific and technical communication between the members of a group of students as well as the administrative needs of the course.

<http://www.textmachina.uzh.ch/khist/index.jsp> (access only with login)



*Fig. 1: tEXtMACHINA, web-based platform to work collaboratively with texts (p. 329).*

2. Media-Database of Zurich University of the Arts: a database with an intuitive interface that helps to organize visual materials.

We use the media-database to collect images of columns of the different historical epochs and to group this data thematically for shared usage. In addition, the aforementioned index for the topic of orders of columns was developed. This index enables the use of a visual browsing tool to assist the concept formation.

<http://dilps.zhdk.ch> (access only with login)



*Fig. 2: Media-Database of ZHdK provides a platform for saving, grouping and sharing of images (p. 329).*

3. HyperImage: a digital tool that transfers the concept of hypertext to images in order to realize interactive e-science networks. HyperImage is currently being developed at the Humboldt University of Berlin and the University of Lüneburg. The HyperImage Editor helps to realize the multimedia e-learning module. Within this program, visual arguments and elements of images can be linked in a collaborative workflow. The comparison of images, a strong art based historical method, is supported by the program up to the level of details of images. HyperImage allows the user to create linked and indexed networks of images and to publish them online or offline.

<http://www.hyperimage.org>



*Fig. 3: HyperImage, an editor to compile interactive presentations (p. 330).*

To precisely explain the title of the paper I'm now going to describe the method of the application of the Index-Browser in the thematic field of the e-learning project "Orders of Columns".

The "Column-Index" and the "Column-Browser" are the core tools in the phase of gathering, sharing, ordering and understanding the visual collection on the topic of the orders of columns.

First, we will look at the Browsing-Tool based on the Column-Index; let us call it "Column-Browser". Then we will investigate the matrix of terms in this field, in analogy the "Column-Matrix".

---

### The Column-Browser

#### browsing

1


The Column-Browser is the visual expression of the concept introduced at the beginning of this paper. This browsing tool offers, in relation to the five categories, five bands of images, which are linked to the topic of columns. The first selection of images is randomly generated. With the mouse pointer one can scroll these image-bands to the left and to the right in order to discover more image options. To start the browsing process the user selects one of the thumbnail images with a mouse-click. This action activates a new set of images that fills the bands. The selected image is displayed in each of the five bands at the same position as a reference for all other images.



Fig. 4: Column-Browser, starting situation with randomly filled image-bands (p. 330).

In other words, after the browsing process has started with the first "query by image" the pictures in each band are sorted according to their contents. For example, with a mouse-click we can activate the thumbnail of Sebastiano Serlio's plate from "Regola generali di architettura" (1537, book IV) leading to four possibilities of positioning a column in relation to a wall (freestanding or connected with a wall by different usages of a pilaster). As Serlio used the Dorica to show its systematic considerations, in the first line ("Order") other illustrations of the Dorica are displayed. The examples are exclusively related to the topic Dorica; ranging from a colored reconstruction of the entablature of the Parthenon on the acropolis in Athens, to a photo of the palazzo Chiericati by Palladio in Vicenza, also encompassing other renaissance treatises discussing the construction of the Doric order, so within this band of images one can also see different formulations of the very old concept of the doric style. The second band presents examples related to "Epochs of Art History". As Serlio's treatise is a Renaissance book, all the other presented examples of built architecture, theoretical concepts, paintings or etchings in this line are also considered to belong to this epoch, so the user can broaden his or her view to find out how the orders of columns were formulated. In the next category ("Elements") connections related to details are displayed. Here, elements like column, half column, pilaster and engaged pier are shown in a substantial range of pictures. This image band offers a wide selection of examples when looking for material to compare different possible solutions in these architectural details. As previously mentioned, the fourth row is labelled "context". Because Serlio's plate belongs to the context of the theory of the architectural orders the other listed examples are mainly taken out of renaissance treatises. Finally, in the fifth image band ("Medium") many other woodcut illustrations are presented, this

fifth category allows an uncomplicated investigation into the illustration facilities of this technique. This detailed explanation makes the functionality of the Column-Browser clear.

 *Fig. 5: Column-Browser: browsing situation: a reference image and related examples to the left and to the right (p. 331).*

Based on the aforementioned principles the browsing-tool only reveals its full potential in the continued process of selecting a reference image with a mouse-click and the subsequent investigation of the new set of images. With this function the Column-Browser is conceived for endless browsing through the compilation of material for the e-learning project. This process of browsing is certainly not aimless nor finds its conclusion within itself. For the members of the e-learning project, this creates great stimulus in two main areas: the content and the workflow.

---

### The content: browsing architecture!

The inspiring combination of thumbnail-images in a line under the headline of one or more predefined terms has already been emphasized. This generates more than simply unexpected neighbourhoods of images; it also forces an active examination of the visual expression of a term. I will call this process “visual concept formation” and underline it as one of the additional benefits of the Index-Browser.

Visual concept formation is an active confrontation of one term and several dedicated images. In order to precisely represent the term one may need to add or delete images, or one may prefer to find another term that better represents a particular compilation of images. This is a highly conceptual procedure that requires deep knowledge of the topic terminology as well as the visual material.

To aid visual concept formation a tool called “basket” is provided to rearrange and to re-index images by drag and drop.


---

### The workflow

#### facet

1 17 20

A second facet of the Index-Browser is its a novel way of handling the content of the database. First of all there is the visual access to images. While in common databases the user has to start the query by typing specific words in a mask, the activated query in this database is a directed search where the user already knows what he or she is looking for. The result of this query is as appropriate and as accurate as the metadata in the database. In addition to this, the index-browser offers a visual, and thus more associative and more inspiring access to images. Consequently, the process of browsing is an undirected search that makes the content of image collections visible and supports the user with correlating images. The previously mentioned basket helps to collect, group and share images.

 *Fig. 6: The metadata field opened out of the Index-Browser. Showing on the bottom of the screen a “basket” to collect and group images by drag and drop (p. 331).*

## The Column-Matrix

---

### matrix of terms

### term-based

1

The Column-Matrix is a tool for a term-based exploration of collected material. In this modus, instead of five image-bands, the interface offers five columns of terms. Their names and contents have already described at the beginning of the paper. This matrix of terms supports the user in the process of a query.

Similar to the Column-Browser, the reference term is visually selected by a highlight and correlated terms are coloured. The coloured terms signify the existence of images that are related to both the highlighted and the coloured term. The number after each term displays how many images are connected to this term. These discreet labels enable the user to estimate the result of their query.

But while the Column-Browser always offers an open field of images for browsing, the query with the Column-Matrix is a successive process for narrowing down the scope of searching.

 *Fig. 7: Column-Matrix: five columns of terms. Refinement of the search by marked terms (p. 332).*

### The didactic effects

---

To sum up these new possibilities and to extract their didactic effects we return to the Column-Project. The participating students contribute their images to a joint collection. They develop a pool of images where everybody has to add images, but can also take advantage of everyone's entries. As one can imagine, concepts where everybody has to share do not work in practice in the same way as in theory, but the overall outcome is definitively worthwhile. The field of terms, namely the Column-Matrix, helps the students to place their images in a field of meaning as well as in the overall context of the history of the orders of columns. Furthermore, only indexed images go into the Column-Browser producing a simple selection process that means only indexed images are viewable. It is very satisfying to see how the collection grows and consequently how the output of the Column-Browser gets more and more detailed and versatile. While compiling the definitive e-learning module in HyperImage, the browsing tool will constantly help to detect demanded images.

### Sustainability

---

The collection of images of the orders of columns will be accessible for students even after their project is finished. Students will be able to use the Column-Browser to prepare for a typical art history examination, as the system randomly presents images thus a student can classify the objects to check his or her knowledge. Beyond this, the Column-Index is extendable for archaeologists for example; they can use and complete the term to describe for example temples. Additionally, other more general indices such as an Architecture Index will be installed and could intertwine with the Column-Index.

So the application of the Index-Browser in the e-learning project "Orders of Columns" is not only a proof of concept, but also a starting point for further extensions in the field of the History of Art and Architecture.

PROJECT TEAM



**PROJECT TEAM**

## Index-Browser

Idea and Concept: Susanne Schumacher.

The Index-Browser is part of the media-database of Zurich University of the Arts developed by Departement of Design and Informationstechnologie-Zentrum (itz), <http://dilps.zhdk.ch>.

## E-Learning Project

Scientific supervision: Prof. Dr. Hubertus Günther.

Project-Management: Susanne Schumacher, Dr. Hanns Hubach.

Initiative and tutors: Urs Baumberger, Elisabeth Geiger, Sabine Vass.

This Project of the Institute of Art History/University of Zurich is supported by:

› E-Learning Center der Universität Zürich, [www.elc.uzh.ch](http://www.elc.uzh.ch);

› Mediendatenbank Zürcher Hochschule der Künste, <http://dilps.zhdk.ch>;

› HyperImage - Bildorientierte e-Science-Netzwerke, Leuphana Universität Lüneburg und Humboldt-Universität Berlin, [www.hyperimage.org](http://www.hyperimage.org).

## INDEXED AND BROWSED: A NEW DIDACTIC APPROACH TOWARDS THE ORDERS OF COLUMNS

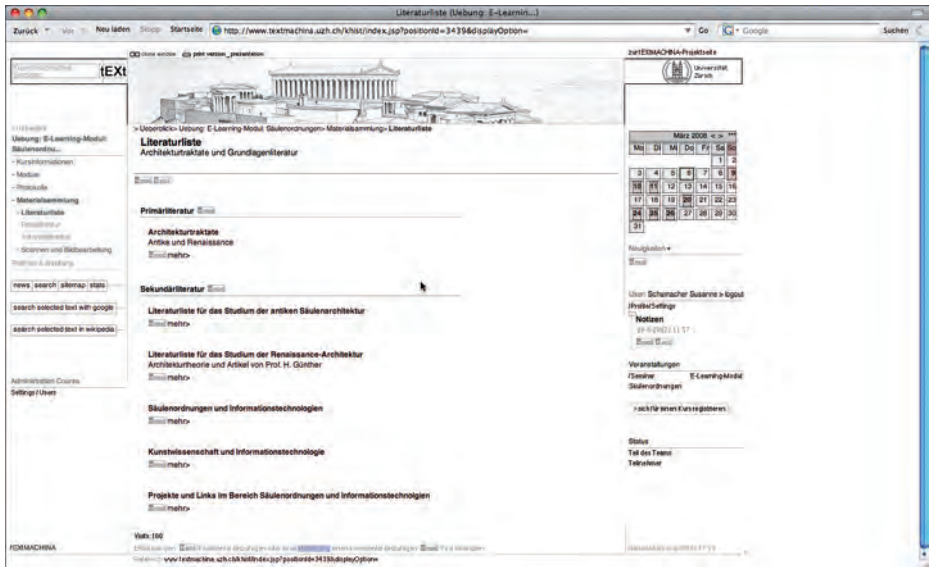


Fig. 1: tEXtMACHINA, web-based platform to work collaboratively with texts.

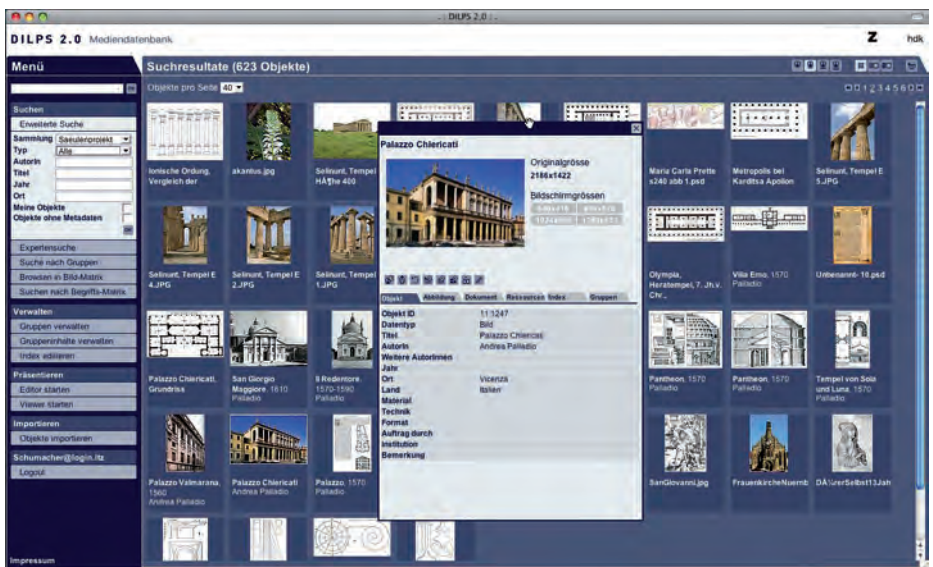


Fig. 2: Media-Database of ZHdK provides a platform for saving, grouping and sharing of images.

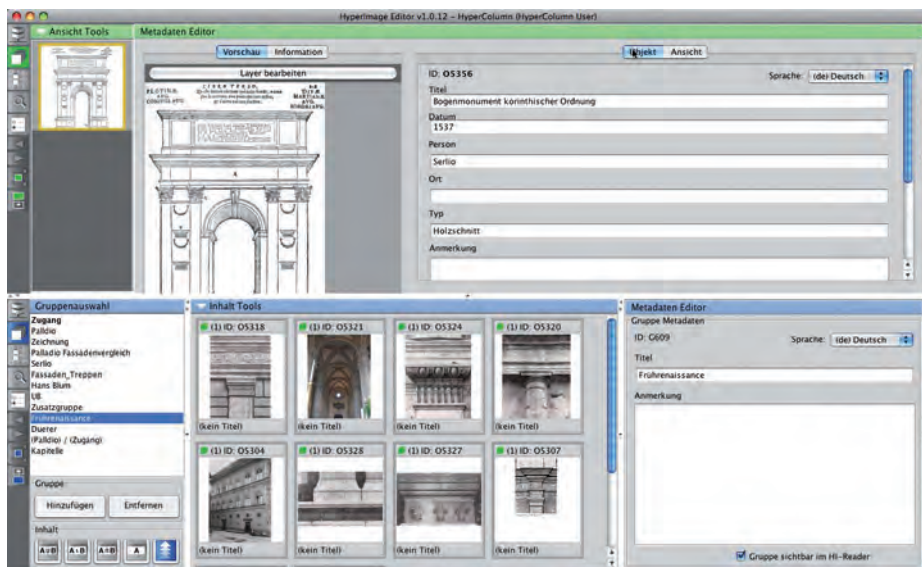


Fig. 3: HyperImage, an editor to compile interactive presentations.

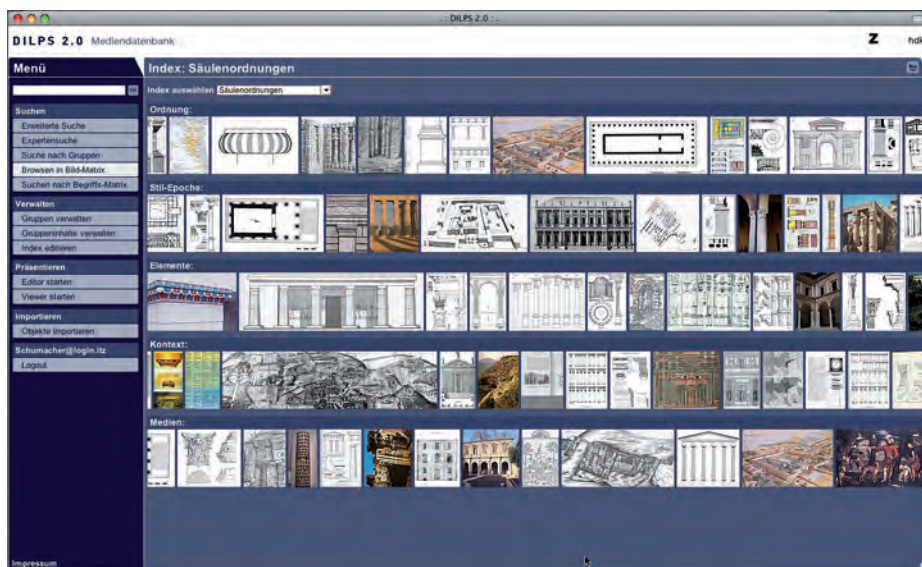


Fig. 4: Column-Browser, starting situation with randomly filled image-bands.



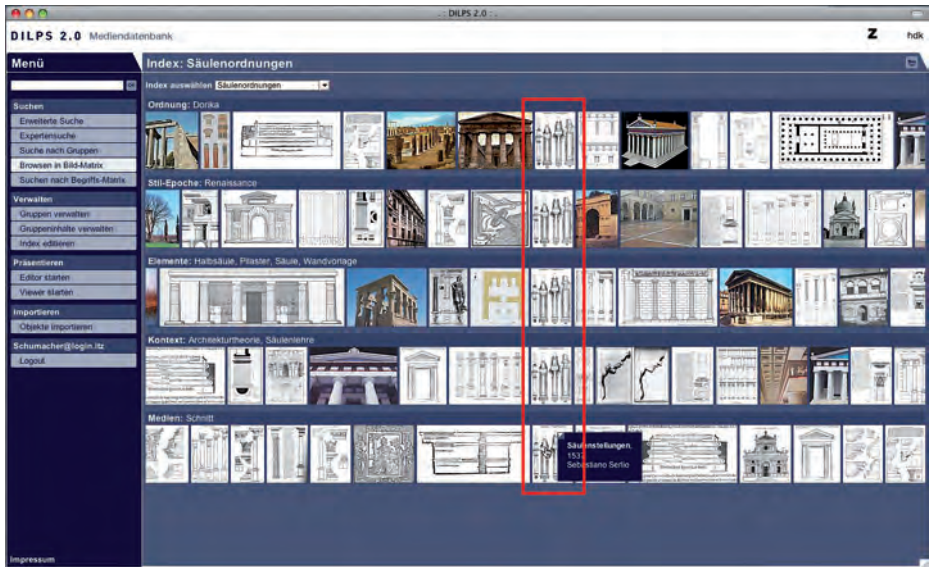


Fig. 5: Column-Browser. Browsing situation: a reference image and related examples to the left and to the right.

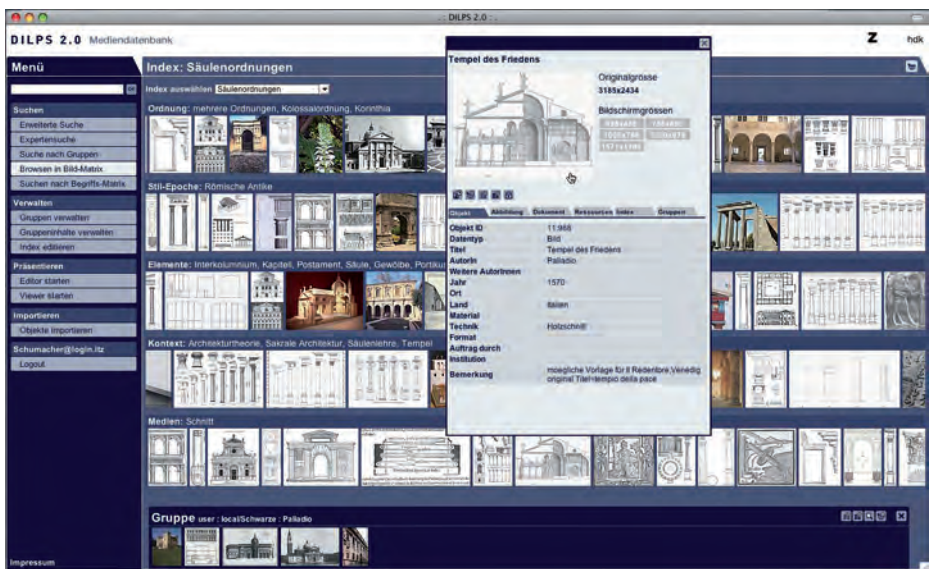


Fig. 6: The metadata field opened out of the index-browser. Showing on the bottom of the screen a "basket" to collect and group images by drag and drop.

The screenshot shows the DILPS 2.0 Mediendatenbank interface. On the left is a 'Menü' (Menu) with various search and management options. The main area features a 'Suchergebnisse (69 Objekte)' (Search results (69 objects)) section. This section contains a grid of search results, each represented by a small thumbnail image and a text label. The labels include terms like 'Gebäude des Parthenon', 'Mosaik Ansicht von Athen', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel, Modell', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel, Modell', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel, Farbmodell', 'Aegina, Aphaia-Tempel, Modell', 'Aegina, Aphaia-Tempel', 'Hypothetische Rekonstruktion eines 8. J. v. Chr.', and 'Olympia Zeus-Tempel, um 470 v. Chr.'. The interface also shows a 'Suchen' (Search) section with a 'Suchen' button and a 'Suchen nach' (Search for) dropdown menu. The search results are displayed in a grid format, with each cell containing a small image and a text label.

Fig. 7: Column-Matrix: five columns of terms. Refinement of the search by marked terms.

This book has been published on occasion  
of the International Conference  
*On-line repositories in architecture*  
Venice, Italy, 20-21 September, 2008

Curator of the International Conference  
*On-line repositories in architecture*  
Furio Barzon (Collaboratorio, Italy)

**Scientific Committee**

*Herman Neuckermans*, coordinator (EAAE, Belgium)  
*Markus Eisenhauer* (Fraunhofer FIT, Germany)  
*Alberto Giretti* (Università Politecnica delle Marche, Italy)  
*Erik Duval* (Katholieke Universiteit Leuven, Belgium)  
*Markus Specht* (Open University Netherlands, Netherlands)  
*Martin Wolpers* (Fraunhofer fit, Germany)  
*Mario Santana Quintero* (EAAE, Belgium)  
*Ezio Arlati* (Politecnico di Milano, Italy)

**edited by**

*Matteo Zambelli*  
*Anna Helena Janowiak*  
(Collaboratorio, Italy)  
*Herman Neuckermans*  
(EAAE, Belgium)

**produced by**

**MACE Consortium**

COLB Collaboratorio snc, Italy  
DFKI Deutsches Forschungszentrum für Künstliche Intelligenz, Germany  
EAAE European Association of Architectural Education, Belgium  
FHP Fachhochschule Potsdam University of Applied Sciences, Germany  
FIT Fraunhofer Institut für Angewandte Informationstechnik, Germany  
IRB Fraunhofer Informationszentrum Raum und Bau, Germany  
KUL Katholieke Universiteit Leuven, Belgium  
HUM Humance AG, Germany  
NAU Nautes srl, Italy  
OUNL Open University Netherlands, Netherlands  
POLIMI Politecnico di Milano, Italy  
UNIVPM Università Politecnica delle Marche, Italy  
IUAV University IUAV of Venice, Italy  
UPC Technical University of Catalonia, Spain

**powered by**

Collaboratorio, Italy  
EAAE European Association of Architectural Education, Belgium

**published and distributed by**

Fraunhofer IRB Verlag, Germany

**supported by**

European Commission, eContentplus Program

**thanks to**

*Alessandro Miniussi*, Italy (typesetting)  
*Nick Simcock*, England (English check)  
*Hans-Martin Barth* and *Klaus Kaiser*, Germany (publishing)

This book is part of the series

EAAE Transactions on Architectural Education no. 40



[www.mace-project.eu](http://www.mace-project.eu)

