GENERAL INVENTORY
OF
ISLAMIC ARCHITECTURE

COMPUTER-AIDED RESEARCH

by   **Ce.S.A.D.A.**
(Centro Studi Automazione Dati in Architettura)

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EARLY DATA COLLECTION

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Note about the origin and development of the project

In 1980 Nino Pellò, a businessman in Novara (Italy), had the idea to create a general inventory of all the known examples of Islamic Architecture.

In spite of the difficulties that such a project implied because of the quite new approach to the problem, the enormous volume of material to be examined, and the difficulty in finding experts willing to collaborate, the arduous preliminary phase started. The project of a computer-aided systematic inventory of Islamic Architecture, backed by the Oriental Studies Department of *La Sapienza* University in Rome, was introduced by the Italian National Committee of UNESCO at the General Conference of UNESCO held in Belgrade in 1980. About thirty countries positively welcomed the project. Consequently UNESCO urged the realisation of the project and allocated a small fund to allow the drawing up of a "feasibility model".

But unfortunately, even this attempt was soon abandoned. The nations that had favourably welcomed the project consulted experts, who thought it was too complex, and doubted it could be put into practice.

At the beginning of 1981, Ce.S.A.D.A. (Centro Studi Automazione Dati in Architettura) in Novara, a non-profit private organization that was established by Nino Pellò to support his project, created a model for a "monument card" and determined the automatic processes needed to compile and to order them in any form of list. Then he asked the experts if this operational hypothesis included sufficient information to represent monuments singly and in their wholeness, and if those processes would allow to carry out specific research. Finally the experts were invited to offer their cooperation to the project.

The project started and at the end of 1981 the first Monument Cards began to arrive at Ce.S.A.DA. headquarters in Novara. By 1986 the General Inventory had more than 10.000 Monument Cards and the automatic mechanisms for the arrangement, distribution and classification of data were consolidated. When the project reached 30.000 Monument Cards, Ce.S.A.D.A. once again contacted UNESCO in Paris, where the first proposal of an inventory of Islamic Architecture had been addressed. The experts of the United Nations Educational, Scientific and Cultural Organisation examined the whole corpus of the work and considered it worthy of patronage.

Because of the death of Prof. Paolo Cuneo the project was discontinued for many years.

Ce.S.A.D.A. and the II Facoltà di Architettura- Dipartimento Casa-Città del Politecnico di Torino held a convention in July of 2000 to readjust and publish the Early Data Collection of the Inventory and allow scholars to access such a lot of data, although not yet finished.

The completion of the Inventory will provide the updating and the integration of existing data and maps. At the same time will also provide photographic evidence of the actual conditions of the monuments, in the event of their inclusion in national/international preservation or restoration programmes.

Scope and purpose of the research

The main purpose of the Inventory is to expand the knowledge of an important and numerically substantial portion of the global historical-architectural heritage scattered in several countries of the three continents that formed the Old World.

This heritage, known to the greater public only through a small number of " major " monuments, in fact includes a series of important architectural systems corresponding to various geographical-cultural areas influenced by Islamic Architecture. Each of these areas is rich in undisputed masterpieces and contains many less notable works, which also possess historic value. Especially in the past few decades this architectural heritage in its entirety as well as various regional productions, that have not yet been studied thoroughly, have attracted the attention of several international or regional institutions, organisations, or single researchers. The approaches and the purposes of the researchers are diverse, and nearly every day they contribute new information and publications on this subject which enrich our knowledge.

The Inventory aims to offer an orderly catalogue of the data and information derived from these sources, including elements essential to the identification and localization of the monuments in the relevant urban or territorial context. Moreover, the cards provide information of a chronological, architectural and technical nature; they include some elements of graphic representation and they cite the sources of all the information mentioned.

Another ambitious purpose of the Inventory is to save from oblivion several monuments that form part of a heritage that is almost unknown or known only locally and incompletely or studied exclusively by a restricted group of experts.

The Inventory could also reveal potential lacunas in the study and in graphic documentation, in surveys, dates, attribution of specific sectors or areas of the heritage; therefore it could stimulate further research. This particularly holds true for examples of the so called " minor " or relatively recent buildings that usually attract the attention of a smaller number of researchers.

Among the various aims of the work, is the opportunity to supply information and comparative and/ or quantitative reference which could be useful to research institutions involved in plans and projects to safeguard and restore the monuments.

Moreover, the computer programme allows very rapid comparisons on specific topics or issues that are

represented by several artistic examples or published only on documents difficult to access; it also proves particularly useful if the working place of the researcher is not equipped with adequate informative systems.

Note about Ce.S.A.D.A. and working organisation

The Ce.S.A.D.A. (Centro Studi Automatione Dati in Architettura) is a non-profit private organisation in Novara, via Verbano 144, (Italy). It was established by Nino Pellò in 1981 to support his project.

To carry out the Inventory, Ce.S.A.D.A. asked a large number of experts to collaborate. They worked free of charge, and were organized in three groups:
- *Scientific Board* proposed formulations, scientific analysis and control;
- *Editing Staff* organized activities and data processing;
- *Operative Group* (subdivided according to different countries) located and collected the source
   (publications and papers), completed a first analysis of data and possible cross checking.
The members of the above-mentioned groups were:

  Scientific Board

Paolo Cuneo   senior member
Aquila University
Umberto Scerrato   senior member
La Sapienza University, Roma
Bianca Maria Alfieri   member
La Sapienza University, Roma
MicheleBernardini   member
Istituto Orientale, Napoli
Yildiz Demiriz   member
Istanbul University
Eugenio Galdieri   member
IsMEO, Roma
M. Adelaide Lala Comneno   member
Basilicata University
Attilio Petruccioli   member
M.I.T. - Boston and Ferrara University
Juan Zozaya   member
Archaeological Museum, Madrid

Editing Staff
Nino Pellò   editor
Paolo Cuneo   senior editorial executive
Michele Bernardini   member
M. Adelaide Lala Comneno   member
Iacopo Fasolo   member
Roberto Ruggerone   member

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Nanny Corrà Vesling
Paolo Cuneo
Yildiz Demiriz
Franca Filipponi
Bruna Fiorentino
Eugenio Galdieri
Khalil Abdel Hadi
Maria Adelaide Lala Comneno
Pedro L. Lavado
Gabriella Manna
Alessandra Molinari
Nino Pellò
Manuel Retuerce
Umberto Scerrato
Giovanna Veltrone Vassallo
Juan Zozaya

The members of Ce.S.A.D.A., at November 2003, were:
Nino Pellò, businessman (founder-member and Chairman)
Roberto Ruggerone (vice-Chairman)

Iacopo Fasolo (member)
Maria Adelaide Lala Comneno (member).
Nino Pellò died in novembre 2003 and Roberto Ruggerone replaced him as Chairman.

Methodology

Cultural approaches

The compilation of the Inventory followed a set of preliminary considerations that can be summarized as follows.
All the existing cultural heritage represents an integral part of the global heritage of mankind. Its depositories have the right and the duty to protect it. Hence the necessity to make public any information about the monuments themselves and their conditions and locations.
As is in the nature of any project of this kind the Inventory avoids any prior selection as well as categorical critical judgements, opinions and so on. Neither does the Inventory report judgements and opinions about restorations and renewals.

Criteria followed in the choice of monuments and information sources

From the earliest phases of the project the Inventory was based on the filing of printed literature, considered in a broad sense, with the explicit purpose of including the highest number of monuments, even they were "minor", inadequately documented, lacking precise information, partially destroyed, reduced to ruins or to archaeological traces.
Generally, whenever possible, we followed the criterion of including the buildings that have disappeared but that are sufficently documented, excluding those mentioned only by historical sources and no longer possible to locate.
In the case of information and documents acquired indirectly but nonetheless reliable, it was decided to include them, with the adequate precautions, quoting as sources and reference private archives or documents, and moreover to include buildings not documented in publications but studied *de visu* and sometimes *in situ* by single compilers. The general criteria adopted include also those buildings located in countries of Islamic culture but not founded by Islamic people. Among them we listed Christian churches transformed into mosques, and also temples of other faiths, such as synagogues and Mozarabic and Mudéjar monuments in Spain, Arab-Norman monuments in Sicily, fire temples in Azerbaijan and Iran, in keeping with stylistic reasons or typological persistence or topographical coplanarity.
Similar criteria were adopted to include fortresses and fortifications of pre-Islamic or non-Islamic origin, gradually destroyed or altered, even if lacking peculiarly Islamic additions or other structures mentioned by historical sources or reported in inscriptions.
We did not neglect those monuments or buildings belonging to typologies less frequently examined in historical-artistic publications such as, for instance, those with a utilitarian function (bridges, aqueducts, noria, underground canals, wells, windmills, pigeon lofts and so on).
We also recorded topical continuing Islamic settlements, comparing them with those which are characterised by topographical or architectural persistence of previous cultures, reutilizing archaeological sites, walls, spolia and other architectural structures.

As a chronological limit we obviously chose the date of Hegira, with the exception of pre-existent structures later reutilized.

Moreover we followed the general rule of including buildings erected iust before the radical transformations of the modern world, usually between the second half of the XIX century and the first decades of the XX century. Where satisfactory documentation was available, it also recorded recent events, both of rebuilding or restoration of damages due to natural disasters or wars.

Moreover buildings belonging to traditional or vernacular architecture, or modern architectural structures created with traditional styles and materials, were included.

Sources of information analyzed for the compilation of Inventory were the following:

- printed matter such as general encyclopedic works, specific or monographic texts, articles, essays included in anthologies, conference proceedings, entries of encyclopedias, ancient or modern guidebooks (known for their reliability), administrative and registry sources such as Gazetteers (in Indian subcontinent, Afghanistan for instance);

- other sources such as typewritten reports of proof, accounts or notes of explorative missions, unpublished theses, lists of protected monuments, data inferred from field-work, brochures and booklets, ancient and modern geographic, topographic and cadastral maps.

Structure of Inventory

The data about Islamic monuments is organized and presented on Monument Cards, to represent the monument or the complex of monuments in its entirety in all different aspects: historical, cultural, political, geographical-topographical, typological both in terms of use and architectural, technical and decorative outlines. The source of data is always shown in one or two bibliographical references.

Each Monument Card contains some essential and compulsory (at least six) data, others being optional (up to a maximum of fifteen), besides a final section for additional data.

The compulsory fields are:

- *Code* - code number of the Monument Card, usually corresponding to the chronological order of compilation;

- *Town* - name of the city, the town, the village or the isolated site where the monument or the complex is located;

- *Reference place* - code number and name of the most significant town in the area including the monument; country name and its code number and the abbreviation; concise country map with reference places position;

- *Name* - monument name as quoted by the main source, usually anglicised, with the exception of Turkey, where it is always written in modern Turkish form; the same criteria is followed in the case of countries whose monuments have preserved the names in use locally; in the case of Persian and Arab names it was chosen to adopt the simplified international transcription, without diacritic signs, of the literary form; these criteria have not been followed in cases of names that are now commonly used and consolidated;

- *Type* - code number and English denomination of type and typology of the monument;

- *Bibliography* - two bibliographic references, one compulsory plus one optional; code number of bibliographic reference, family name of main author, publication year, publication title, indication of the pages (p), of the possibile figure/photographs/tables (f), of the plan or graph (pl).

The possible fields are:

- *Location* - topographic, toponomastic or geographic information, such as orientation and distance from the nearest main centre;
- *Local term* - code number and denomination of the type of monument in current language of the area where the monument is located, or inferred from local usage, or synonyms and/or shades of meaning existing in various languages spoken in the Islamic world;
- *Dynasty* - it indicates the code number and the name of the dynasty ruling in the capital or main town of the state or area where the monument is located, and also the dates (A.D.) of the beginning and the end of the comprehensive period, and the comprehensive area of the reign;
- *Date* - date of the beginning and the end of building works, in the double form Anno Domini and Hegira;
- *Structure 1, 2, 3* - code number and respective standardized information formulas usually concerning the characteristics of the layout (1), of the front view (2), of the covering (3) of the monument or parts annexed to the main building, and sometimes its state of preservation;
- *Material* - code number and denomination of the main materials used in the building;
- *Decoration* - code number and denomination of the main decorative patterns.

There are also three more fields and one button:
- *Additional information* - it includes possible additional information that can integrate that given schematically in previous sections);
- *Compilers* - code number and initials of compiler;
- *Plan* - in this field appears the sign Bibl.refer. when plan/graph of the monument exists; it refers to the bibliographic field where the location of the plan/graph is usually pointed out with *;
- *Map* – button, near the field of country abbreviation; clicking it a concise map of the concerned country appears with the location and the legend of its reference places; zoom and print are available.

The above-mentioned data are shown on two pages which can be opened by clicking on the labels in the upper frame of Monument Card.

Monument Cards contain some Auxiliary Cards, not to include in computation as monuments; their Type code numbers are n°. 100 and n°. 105, and their Type descriptions are respectively Cross Reference and General Plan. The Cross Reference Cards lead to other cards where the same town has a different name, the General Plan Cards contain maps of towns or regions.
The **General Archives of Monument Cards** consist in all of n°. 33906   cards of whom n°. 10184 with Bibliographic Reference of plan/graph, n°. 1079 Type code number n°. 100 and n°. 993 Type code number n°. 105.
All information and codification are collected in **Specific Archives**, useful for operating and doing research, as follows:
- *Dynasties* - it indicates, in tabular form, the code numbers, the description, the comprehensive periods of each dynasty quoted in Inventory (n°. 165) and the comprehensive areas where they rule;
- *Types* -   as above it indicates the code numbers and the description in English language of monument Types (n.° 107), as well as of Typologies (n.° 9);
- *Local terms* – as above it indicates the code numbers and the description (n.° 446) in the local languages shown in abbreviation in the successive column, and in English; double click on the line shows the respected card, where the full name of the local language appears;
- *Bibliography* – in tabular form of every bibliographical reference (n.° 3324) are shown in sequence the code number, the main author and the year of publication, the place of publication, the pages (possible) and the title of book or periodical; double click on the line shows the respective card with, in additional field, the full names of all the authors and the title of article in case of periodical, and the names (in abbreviation form) of the involved countries;

- *Reference places* – as above it indicates the code numbers and the description of reference places (n°. 962) and also the code number, the description and the name, also in abbreviation form, of the respective country; double click on the line shows the respective card with a button "Map", clicking on which a concise map of the concerned country appears with the location and the legend of its reference places (zoom and print are available);

- *Countries* - as above it indicates the code numbers, the names, also in abbreviation, of the Countries (n.° 109); double click on the line shows the respective card with a button "Map", clicking on which a concise map of the concerned country appears with the location and the legend of its reference places (zoom and print are available);

- *Structures* –it indicates the code numbers and descriptions of respective standardized formulas concerning the characteristics of the buildings (n.° 250); usually code numbers from 200 to 313 (concerning the layout) refer to Structure 1), from 400 to 468 (concerning the building) refer to Structure 2) and from 500 to 566 (concerning the covering) refer to Structure 3); double click on the line for the respective card;

- *Materials* – it indicates the code numbers and the descriptions of building materials (n.° 130); double click on the line for the respective card;

- *Decorations* – as above relatively to main decorative patterns (n°. 255);

- *Compilers* - it indicates the code numbers and the initials of the names of compilers (n.° 30); double click on the line for the respective card with their full name.

Directions for use

Minimum Technical Requirement

WINDOWS
Pentium III
Windows Vista
Windows XP
512 MB RAM (1 GB recommended)
Screen Resolution 1280x1024

MAC OS
Mac Intel ® or PowerPC (G5 recommended)
Mac OS 10.4.5 or later 512 MB RAM (1 GB recommended)
Screen Resolution 1280x1024

Installation

Insert DVD-ROM in the drive,
- double click on the appropriate Operating System (Macintosh or Windows),
- open "Read me" and follow instructions.

How to use Inventory

The basic screen represents a view of Ulugh Beg Madrasa in Samarqand. In the upper part there is a bar with some Menu, in particular Archives.

- Clicking on Archives one list appears with ten Specific Archives and one General Archive, as shown in Structure of Inventory.
- Clicking on each Archive it opens and the data appears in tabular form.
- Clicking on the column-heading the data appears in alphabetical or numerical order.
- Clicking on the line it highlights; double clicking the respective card appears with all the data in full description;in the lower bar some buttons allow to move to a different card in the same Archives, or to come back to the tabular form of the Archives.

In the Specific Archives the lower bar contains the following buttons:

 Print - one click actuates the screen that allows the print;

 Query - one click actuates some windows; the research is limited only to specific Archives (click on *Master Table*), or widen to related Archives (click on *Related Tables*), or widen to all Archives (click on *All Tables*); select and click on the indications in the windows *Available Fields* and *Comparison* and also compile the instructions in the window *Value* ; all these information/indications shift to the upper window; the buttons of the two bars allow to complete the query;

 Select all records and **Select highlighted records** - one click to call back respectively the general table and the highlighted lines;

 Done – click to exit to basic screen.

The above mentioned operating modes are valid also in the General Archives of Monument Cards with the following additions/alterations made to facilitate the most common request.
The bar under the table has two buttons more than that in the Specific Archives:
Explore by Country/Town – clicking on it, appears four windows; in the first the Country code numbers, the name of the Countries and the relative quantity of Monument Cards are listed in sequence; clicking on the desired Country-line (or selecting with the window *Find Country*) the names of Towns and the numbers of relative Monuments Cards appear on the window right above; clicking on Town line the Monument Cards split into different Typologies; and so on, clicking till the Code number and description of each Monument Card appear; clicking on the line of single Monument Card it appears completely. Press *Cancel* to come back to General Table.
Order – Click to choose out of the four commonest modes to order Monument Cards. For instance *Type/Town/Date/Name* in one move allows to order Monument Cards first by Type, those with same Type by Town, those with same Town by Date and finally those with same Date by Name.
The other buttons of the bar have the same above-mentioned purposes or added/modified as follows:

 Print – Clicking three chances appear:
   - *Print with quick report*, as above shown in Specific Archives it allows the manual method to print, in guided manner when clicking on the button *Open Wizard*;
   - *Print cards by Country/Town/Type*, it allows to print a defined group of Monument Cards, in the marked order;

- *Print multiple Cards*, it allows to define a group of Monument Cards and to print it completely in concise form.

Clicking on the button *Print Card* (that appears when the Monument Card is open) to print one single Monument Card in standard form.

 Query – Clicking, the empty form of Monument Card appears; compiling the wished fields (not available Date field) and after clicking on *OK* it appears the table with the Monument Cards according to the marked requisites. To make compilation easier the fields that must be compiled with code numbers are preceded by a button in relief, clicking on which the respective Specific Archives opens; after highlighting the desired indication (one click) it will be shifted to the respective form field (one click more).

 The query is made on the whole General Archives; clicking on panel *Search in current selection* the query can be made only on the group of Monument Cards previously highlighted.

To make research as shown in Specific Archives it needs to click on *Query* and on *Shift* (Capital letters) at the same time.