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An Information System for the Analysis of Historic City Centres and Areas: The Programme of the Region of Sicily

Francesco Bocchi, Fernando Lugli*

Modern technology makes it possible to deal with cognitive problems of ever greater dimensions and, allowing the processing of data in »real-time«, makes it possible to develop working methodologies which bring together sources and information of various kinds.

The study of forms of settlement (cities and territory) is by its very nature multidisciplinary and suggests, as a common instrument for the utilisation of sources, the correlation between each piece of information and the territorial area to which it refers.

In Italy, the relationship between the planning of a given area and the history of that area is very strong: the identification and application of appropriate development models presupposes, however, that the historical information about the birth and evolution of settlements be made accessible with the methodology and technology currently used for planning.

For this reason, the public bodies responsible for territorial planning have an interest in the systematic acquisition of historical information in order to evaluate the environmental impact of new developments.

In this context, a programme has been approved by the Italian Prime Minister's Office for a special data census of the environmental and cultural heritage of the Region of Sicily which will constitute the initial nucleus of a data base and will at a later stage be further developed by the authorities responsible for environmental protection and planning.

The specific aims of the programme are:
- to carry out the mapping of the territory in order to localise the information and represent the themes in the data bank;
- to provide the necessary professional training for the young people employed in the special census and to promote the creation on their part of firms which, at a later stage, will continue to operate in various sectors included in the programme;
- to create new materials to be used for educational purposes in primary

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and secondary schools and to promote tourism;
- to identify and promote new criteria and methods of conservation of the cultural and environmental heritage and to plan the professional retraining necessary for those involved;
- to constitute the initial nucleus of a permanent information system accessible, both, to public and private institutions.

To achieve these aims, a thousand mostly young people will be employed, some full-time, some part-time or on an occasional basis. Half of the 50 billion Italian lire invested will be made available by the national government and the other half by the Region of Sicily.

Those employed will be organised in small-scale units of no more than 15 to 20 people, each of them will be self-managed and responsible for carrying out individual parts of the programme, each unit or firm being fully independent in terms of organisation and management. 70% of the sum invested will be used to pay staff, 10% to purchase equipment, a further 10% to cover the cost of training, 5% for office expenses and the remaining 5% for planning and coordination.

The completed programme will give rise to two categories of product:

* the first, aimed at the public sector or, by agreement, at the private sector, includes:
  - the telematic network with terminals in each province;
  - the information contained in the data bank;
  - the complete mapping of the region on a large scale or, for smaller centres, on a small scale:
  - the experimental plans and programmes already applied;
  - the working models tested during the programme;
  - the training courses and audiovisual aids;
  - the exhibitions, conferences and publications included in the programme.

* the second category of products, aimed mainly at the private market, includes:
  - the professional experience of the young people employed;
  - the structure of firms, the interrelations set up and the publicity developed;
  - the hardware and software developed;
  - the trademarks and patents on the products and on the methods, the publishing concerns set up, copyright on publications;
  - collateral activities worked out during the programme;
  - royalties on the agreements for the use of products in the first category.

At the end of the programme, the firms of the young people employed will be able to offer a series of marketable products and the know-how
necessary for the creation of other projects. On this basis, the investment of public money in the form of grants will act as a multiplier of the wealth produced and will reduce the necessity for further support.

The operational phases are rather complex and it will not be possible to go into them in detail here. What interests us now, is to show what the survey will focus on.

After a preliminary census of all the sources, necessary for planning the later stages and to estimate their consistency, the complete mapping of the region will be carried out on a large scale. The sources surveyed will be localised on these maps and represented on the basis of the characteristics revealed. At a later stage a sample area will be chosen for each of the nine Sicilian provinces. The choice of the sample areas will be based on the desire to apply operative models which are sufficiently integrated and multidisciplinary. Therefore, preference will be given to areas of a limited size but which represent the greatest variety of sources and historical elements still in existence. For each area, small-scale mapping will be carried out in order to localise each piece of information collected. The basic unit of information will consist of a building with its plot of ground.

At this stage a systematic examination of the historical archives will be carried out along with a campaign of geometric and photographic surveys, the diagnosis of the state of conservation of the materials by advanced technological means and the classification and cataloguing of all the historical remains.

The survey will focus mainly on:
- all the historical buildings in the sample area with their decorative elements and, in the most important cases, their furnishings and fittings;
- the museum and art collections;
- territorial resources, land use, infrastructure already in existence, geographical and territorial characteristics;
- the bodies appointed by the government for environmental conservation;
- the relative legal framework.

A particular methodology has been worked out to trace the perimeter of buildings and plots since it is clearly not always satisfactory to make use of the existing partition. In many cases, in historic town centres property has been divided up and buildings replaced; so the urban fabric has become more intricate creating problems in relation to town planning. To identify the areas to be used for the creation of the data bank and analysis will be made on the basis of existing maps and historical records of the consistency and conformation of borders and of points of discontinuity; a study will be made of repetitive modules; a classification will be made of topogra-
physical orientations and of types of street; the distances will be measured between the parcels and the elements of urban generation etc.

At the end of this study a map will be produced in which the graphic elements will be classified by typology and period of formation so as to highlight the most stable elements and the nodal points of the urban fabric.

New forms of technology worked out specifically for this programme will be tested, such as programmes for the diagnosis of the decorative elements of buildings or programmes for three dimensional restitution, based on the stereoscopic reading of colour phonograms. These forms of technology will use digitalized high-resolution photographic video recordings in colour as a source: the pictures will then be compared and contrasted with each other and analysed with the support of an image data bank which will show phenomena of degradation and the characteristics of all the component materials. These forms of technology have been developed on computers of medium/small size so as to be economically more accessible.

At the end of the programme the nine sample areas will become promotional centres for extending the project to other areas, both, within and outside the region; the regional coordinating office will form the nucleus of a new body the purpose of which will be to keep a record of models of settlement in Sicily and to work towards the conservation of the historical and artistic heritage.
CYCLICAL PATH FOR PLANNING CROMATIC SCALE OF HISTORIC TOWN PAINTING

AIMS

DATA PROCESSING

A. CATALOGUE OF KINDS
B. INVENTORY OF TECHNICS AND MATTERS
C. CHROMATIC SCALE
   (vgl. A)
D. RAPPORTO FORMA-COLORE
   RAPPORTO SITUAZIONE
   STORICO-ECONOMICA

INPUT

SOURCES

INVENTORY
CENSUS
ARCHIVES
USES AND COSTUMS
BUILDINGS

THAEMATIC CARTOGRAPHY

TYPLOGIE
USO DEI MATERIAI
COLORE E ACCOSTAMENTI

DATABASE

Ordinare le informazioni secondo chiavi di lettura e modi di aggregazione diversificati.
Elaborare i dati sintatticamente circa la scia di conservazione, le necessità di intervento, l'estensione quantitativa dei casi, ecc.

Nota
La banca dati ha la struttura spessa e si pone come strumento d'uso quotidiano sia nell'espansione delle pratiche sia in ordine alla documentazione di supporto. Ogni elemento nuovo (intervento di restiamo, ecc.) arricchisce la banca dati e consente alla modellazione della cartografia tecnica ed alle strategie di piano.

PLAN

PROMOTION

d. EXHIBITIONS
   TESTS

A. STANDARDS

B. DIAGNOSTIC SERVICE

C. INSTRUCTION FOR USE,
   TRADING SERVICE

85
STRUCTURE OF LOCAL SYSTEM INFORMATION
CARTOGRAPHY: INFORMATION LAYERS

1st Layer
Scale: 1:500,000
1:100,000
- Regions and Economy
- Geography
- Districts
- History
- Morphology

2nd Layer
Scale: 1:50,000
1:10,000
- Neighbourhoods and Fields
- Use of Ground Way and River System

3rd Layer
Scale: 1:5000/1:1000
- Buildings

4th Layer
Scale: 1:508/1:200
- Components of Buildings and Works of Art
- Matters and Technics

Attribute
- Scale: 1:500.000/1:100.000
- Neighbourhoods and Fields
- Use of Ground Way and River System
- Buildings
- Components of Buildings and Works of Art
- Matters and Technics

Register of Landed Property
- Mappe Territoriali
- Particelle