DIGITAL ARCHIVES AND STUDY OF HISTORICAL TOWNS

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ABSTRACT:

The basic aim of this work is to create a multimedia data-base (an electronic-graphical system containing dimensional, qualitative and graphical data) and to make data available on the Internet as their representation evolves..
The theme of the work is thus on the one hand the study of harbour towns and the identification of the system of historical architectures that represented the physical place that connected historical town and harbour area, and on the other the survey of the structures and services that link the sea to the town and the hinterland.
The study documents the type of harbour (shaped by geographical constraints), its distinctive architectural features, and the mode of expansion of the town in relation to this water-covered area, which cannot be landscaped in the same way as dry land. The outcome of the analysis has been the identification with an interesting range of architectural events related to the individual town-harbour apparatuses.

1. GENERAL DESCRIPTION OF THE PROJECT

Ever since the industrial revolution, harbour towns have undergone radical tranformations of their waterfronts and technical facilities, eventually resulting in a fracture between city and harbour and consequently between city and water. Thus cut off, many of these areas, which still bear important traces of the past and of a once viable relationship between harbour and town, experienced a slow decline.
The waterfronts of historical towns have changed as a result of *construction alterations*. With time, such changes became barriers against the city itself; as water areas were gradually filled up and built, the interface between land and sea was redesigned and the various functions that harbour towns exerted over time (refuge, maritime city, merchant town, free port) became to all effects lost *.
This project addresses the reconstruction, by way of their study and cataloguing, of the more significant harbour areas of the Adriatic to provide a common reading key through the analysis of the area and the specific study of the landscape and architecture of the individual districts.
The main goal of the project is the creation of a database whose contents could be used for the revitalisation of the "water edges", which have been acquiring a growing role in urban development and can also become useful instruments in programmes of environmental promotion and in the framework of initiatives of a more social nature. In particular, the project aims at identifying, studying and advancing proposals of architectural forms that suit better the new functions of harbour basins; these hinges of land-sea systems exist on different levels: that of the sea and the structures materially linked to it, that of the services that relate sea to town, and that of the harbour town with its historical buildings and architectures.

figure 1 . Cultural heritage

figure 2 . Natural geographical data of Adriatic coast

* F. Pugnaloni, *Premessa* in F. Pugnaloni (ed) *Orli d'acqua. Il disegno della costa e della città porto*, Anniballi Grafiche, Ancona, Italy, 2002

The work we present here addresses the Adriatic coast as a natural geographical data, with its different regions endowed with diverse morphological features of land, harbours and landing places, and with a historical heritage that reflects the different cultures and characters of the hinterland. The analysis starts with the study of the modes of development of coastal towns and centres and of the kinds of historical settlements that arose there with a view to outlining a series of "types" also taking into account the naturalisation of the coastal landscape in which the towns first developed and then went on to lose the very reasons underlying their origin and growth. It is thus an investigation of harbour towns to identify the system of historical architectures constituting the elements of the physical hinge between historical cities and harbour basins, as well as of the structures and services connecting sea, town and hinterland. The investigation is directed at understanding some significant aspects of the relationship between town, sea and land, possibly paving the way for future interventions in terms of the protection and redefinition of a role for these areas that has tended to become obfuscated.
A critical phase of the study is the identification of suitable methods to acquire a knowledge and comprehension of the historical-cultural heritage permitting to evidence their complexity and to favour their recovery.
It is a sort of reacquisition of these places and of their evolution by reading and describing them through visual material; in this context, the creation of an electronic database for the analysis and representation of such complex physical environments-where the various epochs do not coincide with definite and precise, but overlapping, zones, and where tradition and the history of the places become, as ever, architectural materials for the acquisition of knowledge-is an ideal tool to give substance to disarticulated notions within the model of investigation selected, which is flexible and dynamic and sensitive to expanding knowledge.

2. DATA STRUCTURING AND PROCESSING

The organisation and structuring of the database envisaged three distinct phases.
The first consisted in the search for basic bibliographic and iconographic material in the libraries, historical archives and townhalls of the towns included in the study. The iconographic material is heterogeneous and regards both the large-scale coastal areas and views, plans, prints of the towns and harbours. In this phase, we collected documents indispensable to reconstruct the history of the Adriatic waterfronts, the transformations of the land and the evolution of the relationship of town and water. We then defined the content areas for the first level of cataloguing and subdivision of the texts, some of which were rewritten as critical texts while others were translated into diagrams or images. This phase of study and processing of the material ended with the drawing up of introductory and more specific critical texts for each topic, and of legends to the images selected, citing references and sources. The material thus prepared was digitalised and organised into archives structured on the basis of a title index (e.g. historical town, present-day town, waterfront) which are maintained in the organisation of the pages of the database. This structure works like a reference index to which work areas and in-depth study of the individual topics are reached by successive approximation and growing detail.
The next phase consisted of designing the various pages, including the arrangement of the images, the size of the fonts, the links and hypertext leaps to interconnect them, and then

figure 3. Archive structure

figure 4 . Example of reading and describing of harbour town

figure 5 . Example of reading and describing of harbour town

the main menus, the submenus and the buttons to visualise the navigation tools within the application. The design of this multimedia structure is still that of a system of boxes connected through static routes, which the next phase transforms into systems of dynamic interconnection among the different subjects. In practice, the utilisation of a consequential structure, required in the design phase, is not maintained or evidenced in the final result, where, according to the logic of the hypertext, the user can go from one page to the next by leaps. For the graphic layout of the pages we used a personalised software which allowed to transform texts into a sequence of displays integrated by images and heterogeneous graphic material. It is an experimental phase suspended between design and realisation and characterised by a mixture of empirism and research which is resolved only at the time of drafting.

In the third and final phase, we connected the individual elements making up the database using hypertext links. For the structure of the database we chose that of typical Web pages, which allow for easy and immediate consultation. Owing to the complexity of the database, a double cataloguing scheme of the Web pages was adopted whereby they are both pages for navigating in the database and containers of information. Using the animated gif tool, the total number of pages was conveniently limited and images and texts are visualised as a multi-level system, i.e. detail records can be accessed without having to go through successive pages. This method was used, for instance, to realise the section of in-depth analysis. With the second scheme, a tree-shaped structure was created where subjects are subdivided into macroelements: for example, the single harbour towns are large containers of all the detailed information regarding each theme addressed. The tree structure is conceived as a large archive where the main subject is fractioned into subgroups, which in turn are divided into theme units.

For easy consultation of the material in the database hypertext methods have been implemented *.

Three main subjects are addressed: Adriatic harbours and landing places, Waterfronts and historical towns, and In-depth analysis. Consultation is free. The hypertext structure allows to choose different reading routes, for instance, beginning with transverse reading on a topic developed in the section of ***In-depth analysis*** to proceed to the pages that address the specific subject ***Waterfronts and historical towns***. Consultation can thus begin with the "historical and cultural notes" recalled by Waterfronts, i.e. harbour infrastructure like lights, or the historical architectural heritage, like villas, churches, fortified villages, which ideally, or visibly, from the sea, mark the landscape and the area's patrimony to be requalified and connected in view of a general project of enhancement that goes beyond the coastline. This structure proposes a reading model underpinned by an in-depth historical analysis, especially of the Marche area.

figure 6 . Example of reading and describing of harbour town

figure 7 . Example of cultural heritage

* Hypertexts are sets of documents connected so as to form structures. Passage from one information unit to another requires to "leap", "go beyond" the individual text unit. Indeed, hypertexts admit of non-linear reading: the user can go back, take a collateral routeor leap from one text to another. Navigation from one point to another in these structures can be done without following a single or a linear route.

This model has highlighted the close relationship obtaining between the coastal towns and those standing on the hills behind, as a large number of the former in fact constituted the harbours of the latter, like Porto San Giorgio for Fermo and Porto Recanati for Recanati.
An alternative reading route is, for instance, that which starts from the central subject, ***Waterfront and historical town***, where some topics are addressed specifically, like cartography and the relationship between the harbour structure and the town, its evolution and architectural quality, and goes on to reach ***In-depth analysis*** and successively ***Harbours and landing places***. The three general subjects can thus be considered as parallel routes, but also as successive levels of specification and analysis.

figure 8 .Historical representation of Adriatic coast