

SIT FOR THE CONSERVATION OF ITALIAN HISTORICAL CENTRE

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ABSTRACT

In the last twenty years the conservation of historical centre has become an important and interesting theme topic of debate not only to national level. The predisposition of a specific SIT is the result of a long-standing research lead into the Architecture's Projecting Department of the Politecnico in Milan; in particular this is the result reached through the Atheneum research about Cultural Heritage (Predisposizione di un sistema informativo finalizzato alla conservazione dei centri storici lombardi, 1998-2000, person in charge Prof. Marco Dezzi Bardeschi) and then a MIUR co-financing (1998-2001, National coordinator Prof. Marco Dezzi Bardeschi, MI; persons in charge of centre Prof. Giuseppe Cruciani Fabozzi, FI; Prof. Paolo Alberto Rossi †, Giulio Mirabella Roberti; RC) whose aim is the planning and projecting improvement about the existing architectural heritage improperly defined "historical centre". The research objective was to make automatically available quantitative and qualitative data acquired through the building investigation. The system realized in this way can be implemented by Public Administration, so that it will be a great postponing data-bank about cities. The study cases used to test the informative system were chosen in order to satisfy three different requirements. The case of Bosisio Parini (Lecco) allowed to verify the possibility to make operator not particularly specialized survey using the beginning indications and the cognitive cards. The case of Palazzolo Acreide (Siracusa) is the meaningful and complete because of a great part of the material turned out available base: the aerial-photogrammetry, the vectorial geometric survey. The knowledge of the built (and the system) has been extended on a portion of it. These operations made possible to improve the relieves and the cognitive cards, integrated with more information, above all qualitative data, and have been carry out the rectify-images of the foreheads to road, the concrete investigations and the plaster and mortar sampling. The case of Certaldo Alto, finally, has been inserted to test an ulterior system capacity: an hypothetical building's management that means to implement the system with the authorizations, concessions and the other similar documents required by public Administration.

The SIT here introduced, is the result of a inter-disciplinary unchanged the singular aspects that characterize them, so also the research carried out from 1999 whose objective is to systematize plan of the new, but also too often mimetic. The research takes the planning and the projecting of the Italian ancient centres in note that the interventions in the ancient contexts are mostly of the optical of conservation of the whole architectural buildings restoration (about the existing) and of typological-formal "remake" forming them. The research takes note of the alarming phase of (about the new adjustment/part). The research aim is to produce a intervention (lacked and/or

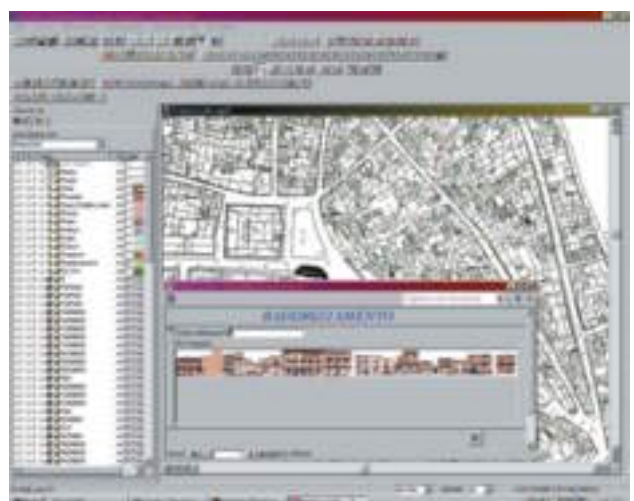
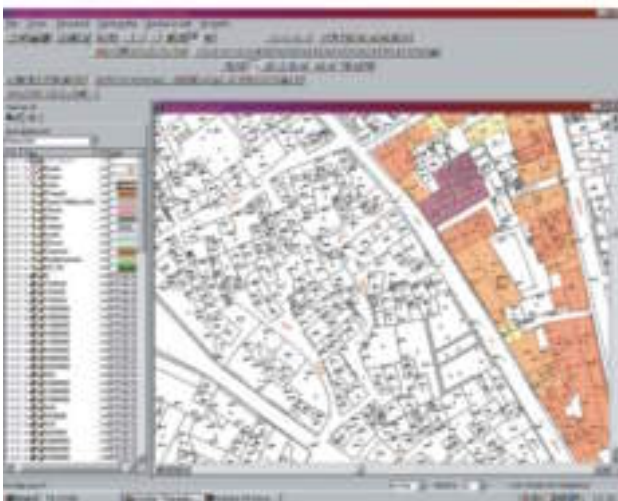
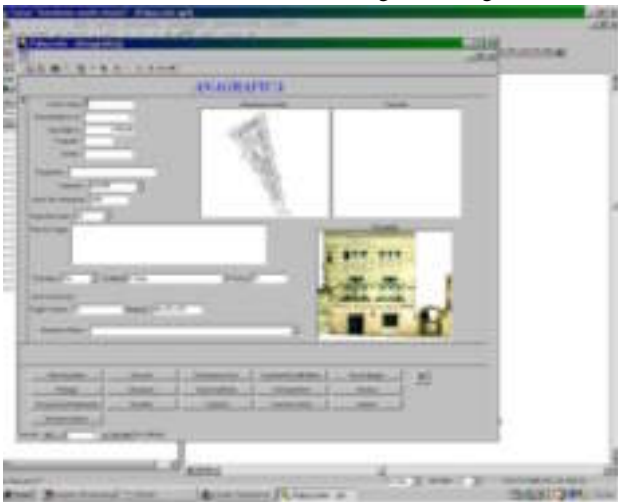
distorted) above the historical centres reasonable and agile instrument, of easy improvement and use for which were disregarded the conservation, the recovery of the that can constitute for the planner/designer a kind of departing previous building volume and the successive revitalization, which grid. Moreover it can be an instrument of documentation in is finalized to render them still alive and habitable maintaining perennial increase for the Administrator, delegated to the performance, within find out as fast as possible historical data (ancient and recent) of what is the more ancient constructed observed.



In this and in the next pages, some screen's images of SIT: the first page (at left); Bosisio Parini, the earth's plans sections with the building unities.

In Italy, the legislative references on the historical centres are constituted from Law 1150/1942, from the successive L. 457/1978 with the relative explaining norms and integrations, as well as the successive regional Laws. The awareness about the spread of instruments (such as Plans of colour, Handbook of recovery and Codes of practical) which regulate the transformations of the historical centres through methods that do not consider the peculiar characteristics of each of them, has involved a critical review about the actual theoretical and practical approaches to the planning of the historical centres problems. Such critical review, together with the increasing demand, above all in professional ambit, of lines – guides to intervene on the constructed, emphasize the necessity to realize a prescribing instrument regulating the plan and the control of the interventions (urban and architectonic) inside the historical centres. This instrument does not want to impose the rules of the plan, but to construct a qualitative course to which the action must answer. The conservation of the existing, its oneness and its stratification are proposed and suggested through the location of the essential qualifications to which the plan must answer. The innovations deriving from the research regard both the method of approach to the problems above the interventions on the existing, and the management of the cognitive data and the plan, rendering communicating the various levels of knowledge between them, from the territorial scale to the architectonic one of the single building.

The realized informative system is a modular articulated instrument that has as fundamental requirement the ability to interconnect alphanumeric and geometric data for the characterization of the informations, allowing the realization in automatic rifle of the thematic papers (destinations of use, state of consistency, etc). The research, and consequently the imprinted SIT, takes note of the attempts on course of performance (from single private services society and only partially from Public agencies of research) for the systematization of the historical building's interventions and first of all for the difficulties found out – for example – about the production/administration costs questions. From the closely operating point of view, the priority issue faced by the research has been the one of the choice of the computer science program to use for the realization of the SIT. From a preliminary verification of the main programs in commerce for the realization of systems was been found not negligible problems: above all the high equipments and management costs, considered excessive for communal Administrations (of small dimensions) to be able to be faced in the short period; insufficient flexibility of the existing programs; and finally difficulty in the use and in the instruction of the staff assigned to the insertion data and to the management of the planning. These premises have deeply conditioned the predisposition of the SIT and have led to the first operating choice not to entrust the formation of the SIT to the famous programs commercialized even though in use widely, above all in the search centres. The Sit had to be easily transferable to informative systems characterized of minimum requirement, and at the same time had to guarantee the possibility to automate processes of planning/projecting which are too much long and of difficult management. The bet was therefore, on the one hand, to supply a product that answered to complex characteristics of management of data and, on the other characteristics of low costs system and management, of flexibility in the use, the possibility to implement without difficulty the logical model of the SIT, and of management's facility from the future operator. For this has been realized a personalized technology (the SIT "*CO*nservazione-*GE*stione centri storici" come from Autodesk programming) that however adopt instruments of collection and elaboration data commonly use (Word, Access, Autocad, etc.) and for this much diffuse.



Palazzo Acreide: on the top the screen's image of personal identifying data; on the left the thematic map about the building dating and on the right the rectify-images of the foreheads to via G. Garibaldi.

THE INTERDISCIPLINARY NATURE

In the course of the years the search has been going on amplifying the number of the involved interlocutors. Obviously, if on one side this fact has been wide positive about the objectives (the conservation of the existing), on the other side the involvement of research areas only apparently far among them has provoked the continuous review and the successive enlargement of the SIT that laboriously was going on developing.

This fact coincided with the first phase of predisposition of the informative system: rendering, as much as possible exhaustive the repertory of information collected according to any necessities coming from single group of research. For example, while it seemed clearly the reference to the NOR.MAL as far as concerned the identification of degradation's pathologies, much complex was the insertion (and the language) referred – for example – to the issue of the earthshattering risk assessment, for which were demanded quantitative and qualitative information above the existing to correlate to mathematical models of factories behaviour in case – exactly – of earth-shattering event.

THE CONSERVATION OF THE EXISTING

The state of art in the sector, both for single architectural buildings and for complex city contexts, is such that the conservation plan was not (and is not) regulated in order to render the phase's procedure and the preliminary investigation sufficiently rigorous. So for this purpose it must be done the right, but unavoidable reflection that regards just the conservation plan and the preliminary phase of knowledge which is basilar. Every single architectural building owns unique peculiar characteristics, an own history often made of over-writing, mutilations and additions, and an own singular physical consistency. The predisposed Sit had not, neither has the ambition (wrong) to generalize this complexity; in fact it is not specifically addressed to the action on the single factory, but it wants to check the huge disaster that characterizes our existing architectural heritage, which is subordinate with amazing regularity to operations of remake "to the ancient one"

and by now in a great part sacrificed on the altar of the restoration of a fantastic and initial state of grace. Today the cognitive data demanded from the SIT have been considered as the minimum data which have to be considered in the phase of planning on the so-called historical centres in the optics of one them real conservation; they address and nearly force the planner to consider the physical consistency of the built and therefore not to let carried away by *pindarici* flights going backwards (such as, just in phase of realization of the search and predisposition of the SIT, for the Plan of historical centre of Palermo, finalized to physically and literally reconstruction of the 1876's city).

It has been thought – and I said "in tune" with all the disciplinary foreheads involved – that is necessary to proceed "for small steps", supplying a system in a position to managing and facilitating the writing of the plans for the historical centres critically set up on according to principles of conservation. A cheap system, easy to implement, but directing, a sort of "do ut des". The attempt is that one to render how much is possible "objective" acquisition of the cognitive information that lead – inexorably – the planner towards a planning that makes load of the existing (and not of something there is more...) in its specific peculiarity.

THE SIT

The SIT has been constructed on a system of data's collection that, leaving from the experiences and the specializations of the various groups involved in the search and from knowledge of the already existing cards (like those realized by the Central Institute for the Catalogue or from the national Group of the defence against Earthquakes); it tried to offer a method that has to be easy to use and understand, and that guaranteed a scientific rigor that allowed it to correlate with the norms and the recommendations in forced to national level. This has involved that the job for the predisposition of the system of data's collection to insert inside the GIS took in consideration two equally fundamental aspects.

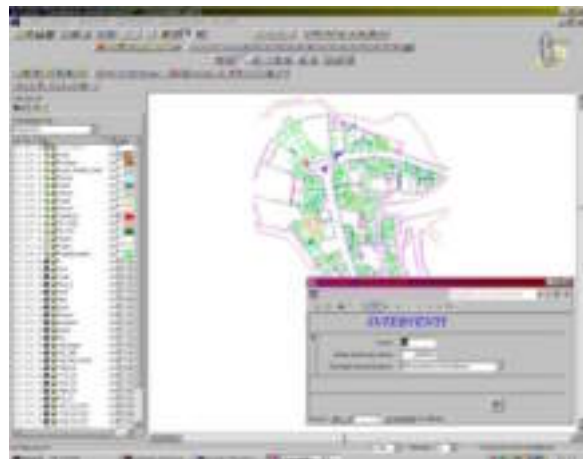
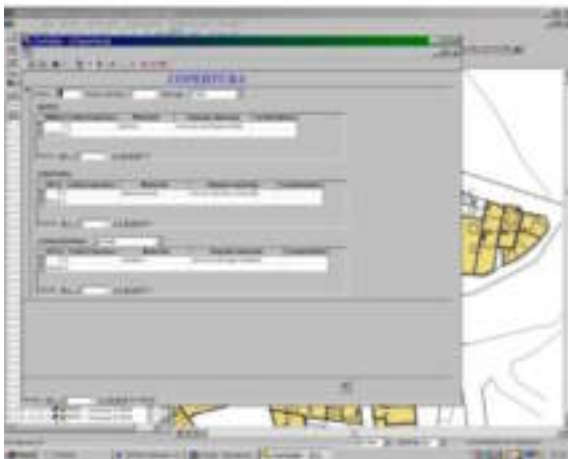
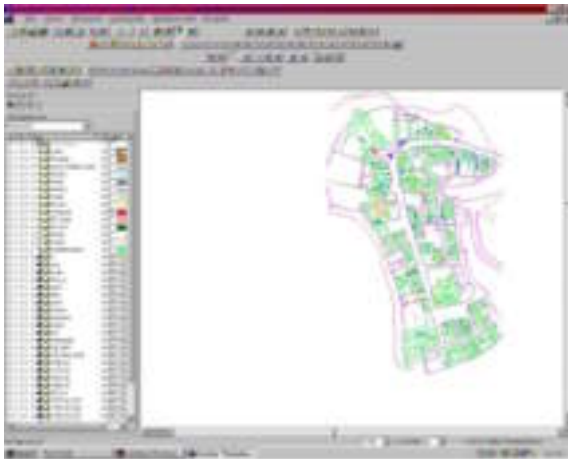


On one side the necessity to construct an exhaustive system of file that held in consideration the scientific rigor of the definitions and the correct headword's use, who are already predisposed from the norm and the recommendations (when this is possible) or of the terminology recognized from the various scientific disciplines; on the other side the necessity to render the same cards relatively simple, so that the so-called paper-support of the system, could easy to be used from the reliever which, a lot often, are constituted from staff not specialized, but trained to the scope and for the occasion in which it becomes necessary. The SIT is shaped on various levels, the first one contains the system of general and specific data banks, inherent the basic knowledge for the realization and the conduction of the geometric relief and the historical research, the national Laws' texts of reference with relative explaining notes; the fundamental bibliography about the argument; all the information already known on the examining Historical Centre (historical cartography, land office's data, etc.) and the contents of the past practical on the single building. Obviously the part of the specific data bank which is to mount of the informative system is implementing every time at the beginning of a new job with the specific single situation's data (PRG, Landscape's Plans, special Laws, etc). The second level, which contents the data of the single factories, divides into two ulterior levels of cognitive deepening, constituted from survey cards. The cards of first level are predisposed for the relief of the single real/building units and contain the quantitative and qualitative data of first knowledge on the consistency of the single factories and can be compiled from not particularly specialize operating, while those of second level, that regard the qualitative

deepening of the material degradation and of the ruins, must be compiled from specializes technicians (about structure, geologic, etc). Also these cards are organized in an identifying part, directly connecting to the "mother" card of first level, and to a sure number of headword reported to different types of materials and to their degradation. The cards of the materials (wood, metallic material, ceramic materials, masonries, conglomerates, stones, etc.) and those of the structures have been predisposed with reference to the national norm, recommendations NOR.MAL, UNI-EN and to the directives of the national Group for the defence against earthquakes. The cards predisposed for the collection of the data are articulated essentially of three parts. The first ones collects the environmental and territorial data about the portion of homogenous territory to which the centre belongs: climatic, hydro-geologic, helio-thermo and seismic. The second part takes care of the no-building spaces of the same centre and of the infrastructures characteristics (roads access, public squares, private and public courts, parking areas, or green, in the outskirts of the unit). The third part collects the informations above the single real/building unit: personal identifying data and land office's data, burdening bonds, constructive and structural characteristic, material and structural degradation, technological systems with indication of their operation, relief and dimensioning of the area of the single unit, the spread of the ruin and the diffusion of the degradation's phenomena.

TO CONSTRUCT AND TO TEST THE SYSTEM TROWGHT THREE APPLIED CASES

The informative system could not have been directly constructed applying to some cases the possibility of automating "the mainly laborious" operations of the planning: the automatic restitution of the raster data and vectorial ones. The three applied cases have been chosen first of all basing on localization, just in order to verify the correspondence of the system in areas geographically different both from geologic point of view, and from acclimatize point of view them from that institutional one. In second struck in order to verify the SIT about various requirements: the facility of survey and implementation (Bosisio Parini - LC); the possibility to proceed to the writing of the third cognitive level (Palazzolo Acreide - SR); the management of the practical buildings to definitive approval of the Plan (Certaldo Alto - AR).

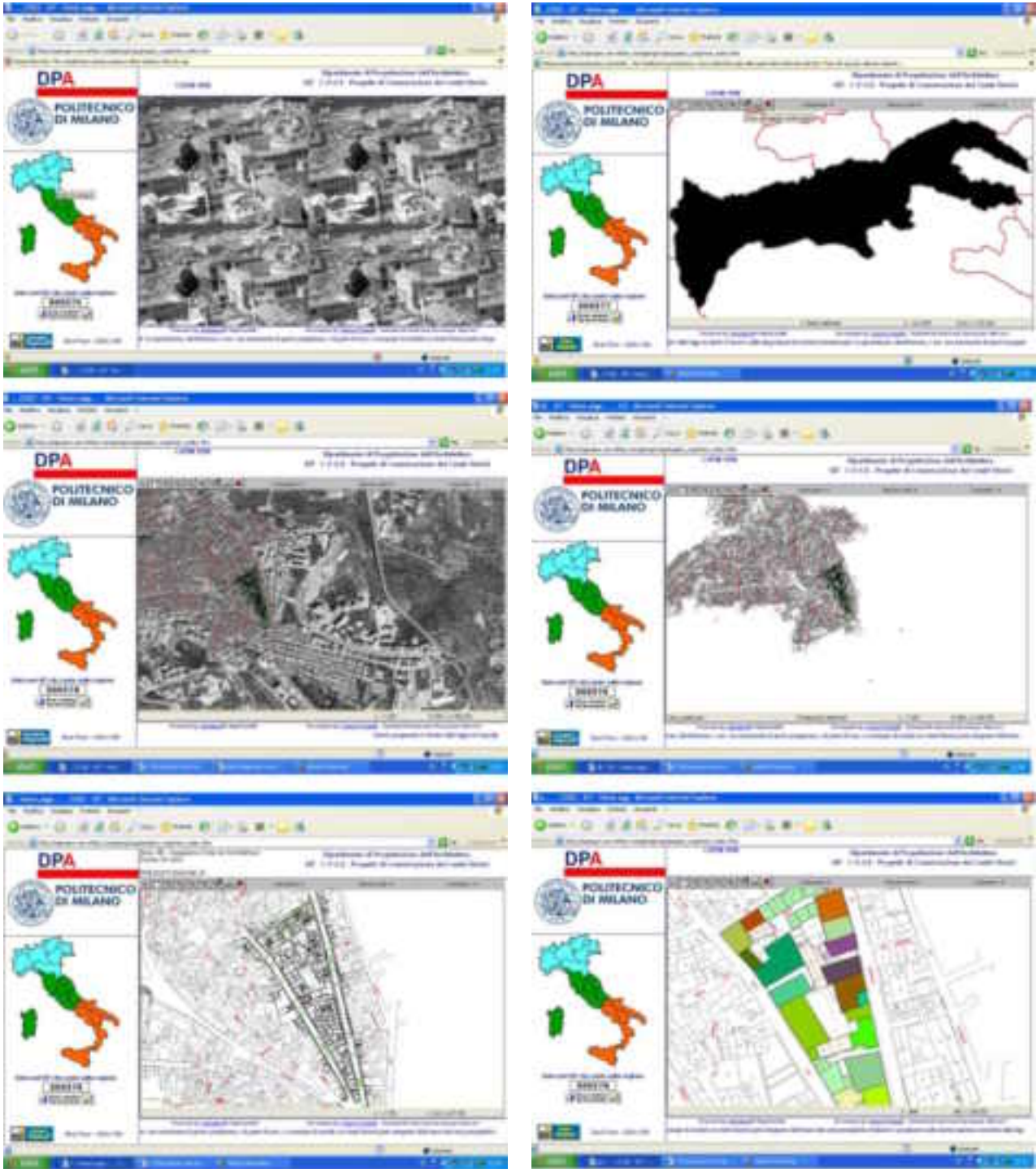


Cartaldo Alto: on the top the earth's plans sections of the historical centre; on the left the screen's images about a roof's relief and, on the right, the slide about previous interventions on a building unity.

Bosisio Parini

The ancient constructions of the small common in province of Lecco were characterized (1997) from the presence of almost untouched and “minor” architectural heritage, excepted for some sporadic case of intervention. This “case” is served above all in order to test the facility of compilation of the SIT. Following a thesis of degree that has made available the earth’s plans sections of all the historical centre, has been inserted and verified in the system some isolates by the students of IV year

of the Architectonic Restoration Laboratory (a.a. 1999-2000). Really the system’s cards of first, second and third level had been already predisposed, but the test on the feasibility of the informative system by the not just expert operator on survey and its compilation became just necessary in order to verify the system agility. The students therefore have supplied to the phase of survey of the quantitative data (the relieves, Autocad) and qualitative ones (the slides, Access) and to the successive adjustment in the system of the found out data.



The SIT: some screen’s images selected from the Web site (http://sigmapro.serverhttp.com/gismg/coge/pagine_coge/new_index.htm)

Palazzolo Acreide

The SIT is born from the experience carried out on the ancient centre of Palazzolo Acreide situated in Val di Noto. On the slopes of the Iblei, Palazzolo Acreide is in highest seismic risk zone and it is constituted from a singular architectural heritage of historical-artistic qualities. At the end of the planning phase of the "Detailed and regulator Plan of the historical centre", were made available elaborates already partially informative. In the wide historical centre it has been chosen a characteristic block on which it has been verified the SIT in all its levels of deepening: beyond to the relief of the cards of first and second degree, they have written up also those of third phase and, in this case, it has been possible to push the qualitative knowledge of the buildings until the samplings on the materials in work (plaster and armed concretes).

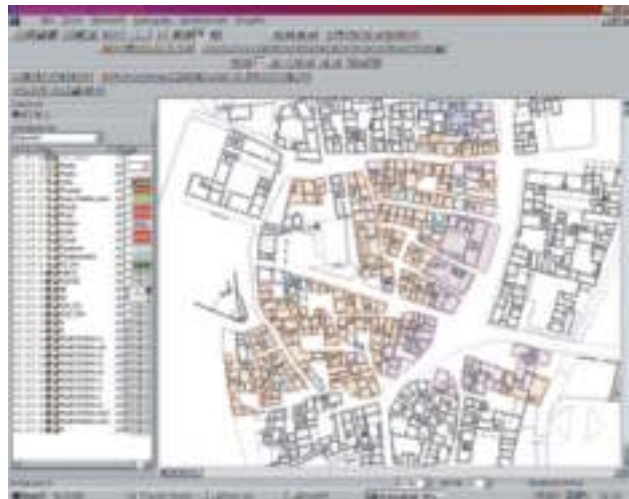
Certaldo Alto

The case of Certaldo Alto instead is served to verify the possibility offered from the system to manage the buildings practical opened after the approval of a Plan, that is the formation of one data bank in progress on the built up of historical centre. They have examined and put to system the practical buildings of 25 years of interventions on the ancient

nucleus. This is the demonstration that the SIT could become an enormous data bank in continuous modernization, and within to find out all the necessary information for an eventual planning.

CONCLUSIONS

As a matter of fact, after the exposed research of Athenaeum* and that ministerial** one, the SIT is newly used for the search on the historical centres (Saronno, Riva San Vitale***, etc.) and, still today, although the known research's difficulties, this continue to be "in progress", in continuous modernization, and definition. The job – as expectable – at all it is not concluded, but indeed new introduced situation seems to reopen the question, both it is the consistency of the building, or local legislation, or territorial location. It is for this reason that today the outcome of there research comes published in the actions of this convention. The hope that remains is that the interdisciplinary nature, exceeded the barriers and the prejudgments, constitutes the new frontier of an only by now unavoidable objective: the effective protection and conservation of the existing architectural heritage, as irreplaceable witness of our cultures and our time.



One of the applied cases: Riva San Vitale (CH), the earth plan's sections and the automatic return of the using destinations' map.

* Degree thesis, Claudio Corti, Fabio Gerosa, Roberto Spreafico, Luisella Carolina Valsecchi, *Conservare l'esistente. Proposta di Piano particolareggiato del centro storico di Bosisio Parini (LC)*, a.a. 1997-'98, supervisor G. Guarisco.

**Atheneum Research, 1998-'99: *Predisposizione di un sistema informativo territoriale finalizzato al progetto di conservazione dei centri storici di area lombarda*; Gruppo di ricerca: prof. Marco Dezzi Bardeschi (coordinator and national person in charge with Gabriella Guarisco, Christian Campanella, Nora Lombardini, Sabina Scaburri, Grazia Tucci), prof. Maurizio Boriani with Susanna Bortolotto, Maria Cristina Giambruno, Lionella Scazzosi; prof.ssa Renata Ripa; prof. Piero Puddu with Corrado Biggi, Anna Crippa, Giovanni Dapri; prof. Giuseppe Cruciani Fabozzi; prof. Bruno Mazza, prof. Pietro Pedeferrri with Luca Bertolini, Fabio Bolzoni, Luciano Lazzari; prof. Vincenzo Petrini with Floriana Pergolani, arch. Alberto Drei; ing. Franco Guzzetti; prof.ssa Aurora Scotti; prof. Rosaldo Bonicalzi with Maria Pompeiana Iarossi, Domenico Iarossi, Ezio Miele. Specialistic contribution: prof.ssa Giovanna Alessandrini, prof. Bolzonetti. MIUR co-financing 1998

01: *Predisposizione di un sistema informativo territoriale finalizzato al progetto di conservazione dei centri storici italiani*. Politecnico di Milano, Dipartimento di Progettazione: Prof. Marco Dezzi Bardeschi (with Maurizio Boriani, Renata Ripa, Christian Campanella, Gabriella Guarisco, Lionella Scazzosi); experts: Francesco Santalucia, Antonio

Zavaglia, Alberio Artioli, Paolo Salonia; collaborator: Marco Bondani, Mariacristina Giambruno, Nora Lombardini, Sabina Scaburri, Gianpiero Toscani); Politecnico di Milano, Dipartimento di Scienze del Territorio: Prof. Piero Puddu (with Gianni Dapri); Politecnico di Milano, Dipartimento di chimica-fisica applicata: prof. Bruno Mazza, prof. Pietro Pedeferrri (with Luciano Lazzari, Luca Bertolini, Fabio Maria Bolzoni); Politecnico di Milano, Dipartimento di Ingegneria Strutturale: prof.ssa Chiara Molina (with Vincenzo Petrini, Alberto Drei, Edoardo Colonna); Università degli studi di Firenze: prof. Giuseppe Cruciani Fabozzi (with Osanna Fabozzi); Università mediterranea di Reggio Calabria, Dipartimento Patrimonio architettonico e urbanistico, Prof. Giulio Mirabella Roberti. SIT was predisposed by SigmaProgetti from Priolo Gargallo (SR).

*** Degree thesis Luca Barbatì, Silvia Migliorini, *Da Monte San Giorgio a Riva San Vitale: il futuro dell'ex Palazzo della Croce*, supervisor Gabriella Guarisco, Politecnico di Milano, Facoltà di Architettura civile di Bovisa, aa. 2002-03; Cristina Casero, Francesca Colombo, Simone Villa, *Proposta di riuso per la conservazione di Palazzo Visconti a Saronno: una casa della cultura*, supervisor Gabriella Guarisco, Politecnico di Milano, Facoltà di Architettura civile di Bovisa, aa. 2002-03; Stefania Cianni, *La rivitalizzazione del centro storico di Sanginetto (CS): il nuovo centro di didattica ambientale*, supervisor Gabriella Guarisco, Politecnico di Milano, Facoltà di Architettura civile di Bovisa, aa. 2003-04.