An Intelligent Assistant for architectural design studio.

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Design Process, Collaborative Design, Knowledge Engineering, Object Oriented Programming.

Statement of objectives.
Conscious design: explication of constraints and their consequences. Collaborative design: interaction among KB of operators involved in architectural design.

Introduction.
It seems by now fairly accepted by many researchers in the field of the Computer Aided Design that the way to realize support tools for the architectural design is by means of the realization of Intelligent Assistants.
This kind of computer program, based on the Knowledge Engineering, finds his power and effectiveness by the Knowledge Base on which it is based.
While this kind of tools is leaving the research world, it appears evident that the modalities of dialogue between the architect and the computer, and among architects and operators in the field of building industry, are inadequate to support the exchange of information that the use of these tools requires.
The use of the KB furthermore, presupposes that the conceptual model of the building often realised by other that the architect, must be made entirely comprehensible to the architects.
Nowadays many efforts at international level are in progress to define tools in order to make easier the multiple exchange of information in different fields of building design.
Concerning this point, languages of structured information interchanges constitute the first steps in this sense, i.e. these under standardisation by ISO (STEP).

Materials and methods.
The Knowledge Base has been codified by using the formal structure of frames, and has been implemented by using the Lisp computer language. All elements of KB are objects.

Summary of results.
The Laboratorio CAAD of Dipartimento di Architettura ed Urbanistica per l'Ingegneria - Università di Roma "La Sapienza" - has carried out a software prototype based on Knowledge Engineering in the fields of hospital building, and of building for aged people.
The software is composed by: an Interface; a Knowledge Base; a Data Base; and

Constraints.
The software doesn't check constraints after that design activity has been carried out, but during the design activity, also if it has not been completed in each its parts.
The software will make it possible to select and to analyze the instances created, and to understand the results of elaboration done, according to selected choices and activated constraints.

Conclusions.
This approach is able to gather heterogeneous data in KB developed, and to interact with other KB for collaborative design.