

WINDS CONCEPTS

COST C 21

FIRST TOWNTOLOGY WORKSHOP

Emmanuelle P. Jeanneret

07.11.2006

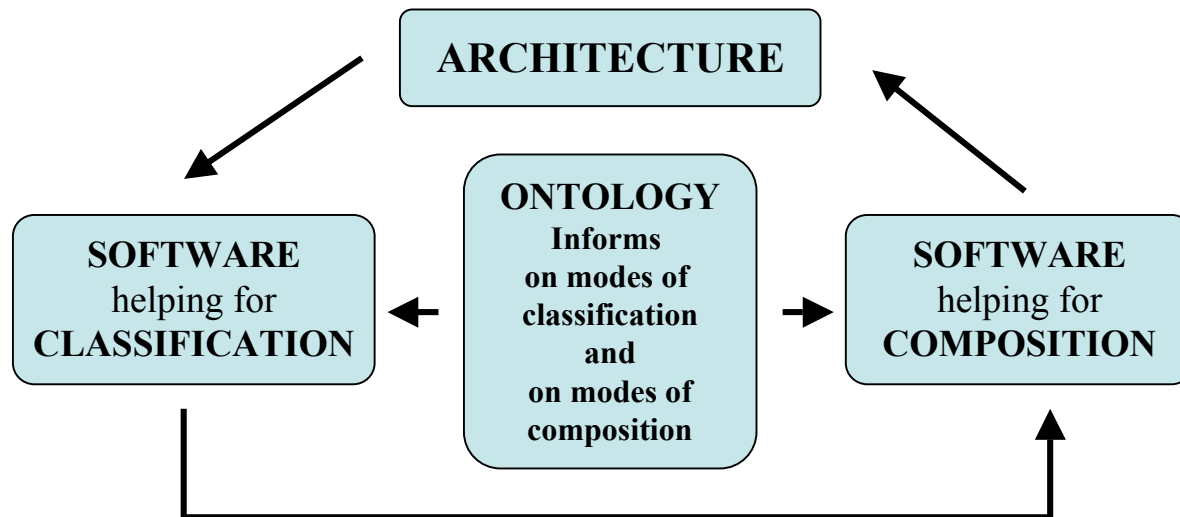
2 – AN INTELLIGENT ONTOLOGY

Conceived as:

- **Instrument** intended for helping a designer during the process of elaboration of the forms of a project.
- **Interface** between a software of classification and a software of composition.

Based on:

- An epistemology of architecture.



3 - OUTCOMES

- Architecture is a language ; each designer speaks in a language.
- In its semiotic, architecture isn't a product completely determined by a given context, by a physical or a cultural geography ; produced from a free will, architecture is producer of meaning.
 - Then, for a specific problem, it exists a multiplicity of solutions.

4 – STARTING POINT OF OUR ONTOLOGY

- Vitruvius' definition of architecture.

*'In architecture, as in every other science, we can notice two things ; the thing that is **signified**, and the thing that **signifies** : the signified thing is the thing expressed, about what we speak, and the thing that signifies is the demonstration we make through the reasoning of the science'.*

5 – DOUBLE OBJECTIVE OF ONTOLOGY

- TO DESCRIBE A HIERARCHY OF CONCEPTS
- Centered on *references*

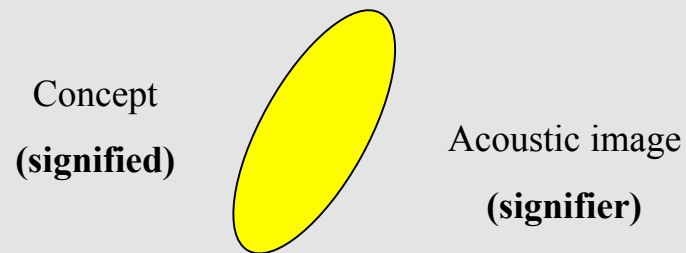
- TO BE THE SUPPORT OF A REASONING STRUCTURE
- Centered on *inferences*

6 – FROM A BIFACIAL CONCEPT TO A TRIFACIAL CONCEPT

- BIFACIAL UNDERSTANDING OF A CONCEPT

- *F. de Saussure*

- *SIGN*=

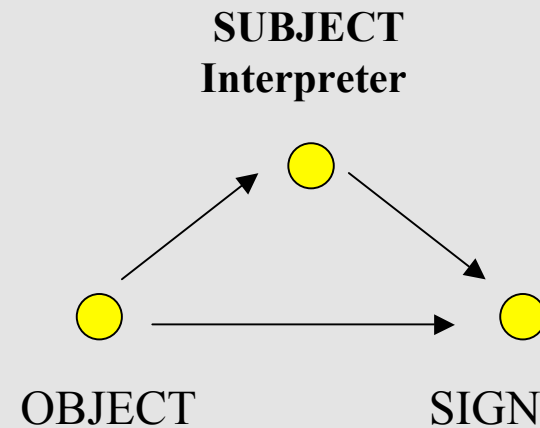


- *The relation between the signified and the signifier allows to give the meaning of the sign*

- *This definition doesn't take into account the subject to constitute the sign*

- TRIFACIAL UNDERSTANDING OF A CONCEPT

- *Ch. Peirce*



- *The relation of the interpreter to the object allows to give a meaning to the sign*

- *This definition is appropriate to modelize the mechanisms of invention*

7 – STARTING POINT OF OUR ONTOLOGY

- Vitruvius' definition of architecture.

*'In architecture, as in every other science, we can notice two things ; the thing that is **signified**, and the thing that **signifies** : the signified thing is the thing expressed, about what we speak, and the thing that signifies is the demonstration we make through the reasoning of the science'.*

8 - METALANGUAGE AND CONNOTATION

Vitruvius' interpretation

- **METASEMIOTIC LEVEL**
- **'Speaking about architecture'**
- *To produce metaconcepts allowing to speak about an other language (to describe the architectural language of the plan).*
 - *Allows to describe the building as an instrument endowed with an utility*
- **CONNOTATIVE LEVEL**
- **'Speaking architecture'**
- *To use (meta)concepts in a personal way*
 - *To build the tool, to make it for a certain utility*

SIGNIFIED

*Description
(with the help of the
reasoning of the
science)*

METALANGUAGE

Description

SIGNIFIER

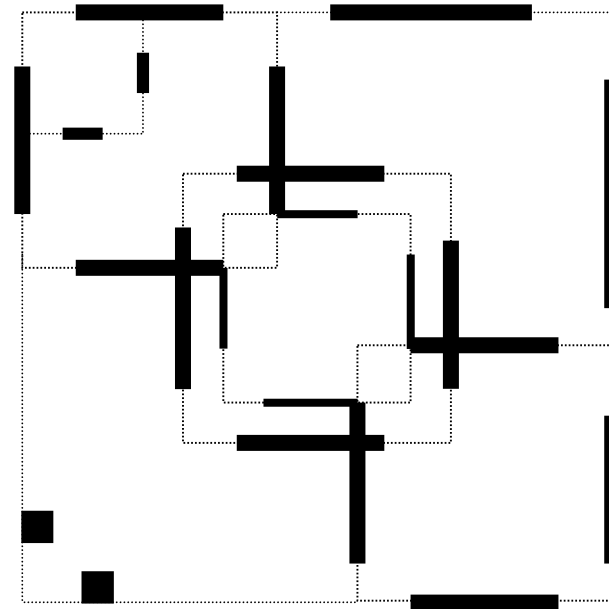
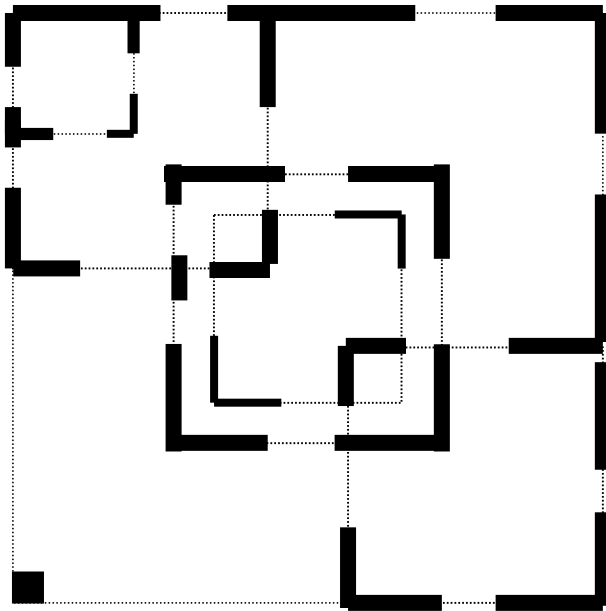
*Demonstration
(with the help of the
reasoning of the
science)*

CONNOTATION

Invention

9 – CONNOTATIVE USE OF METACONCEPTS IN THE PROJECT

- **Metaconcepts : virtual/actual**
- Squared figures are virtual.
- Walls actualize only one part of the squares.
 - Complete figures connote the opening of the space and its relative closing

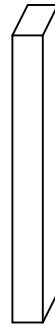


*Squares are erased in the angles,
allowing thus to open widely the plan.*

*Squares are erased on their sides;
plan is less strongly articulated to the
outside.*

10 – FROM CONNOTATION TO METACONCEPT

- In the beginning, in architecture,
we have got a concept:
COLUMN



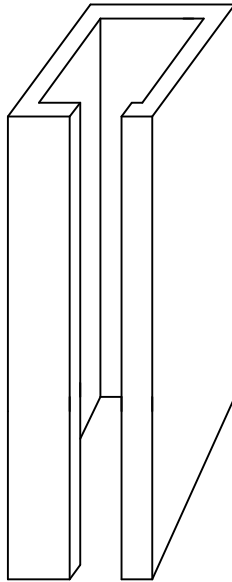
Kahn adds new properties:

- + ToBeEmpty
- + ToBeUsable

He invents:

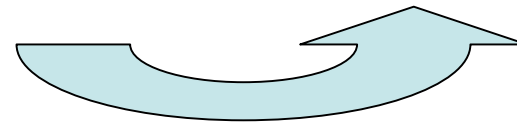
= HOLLOW COLUMN

[He describes it with the
help of a metaconcept:
SERVING SPACE]

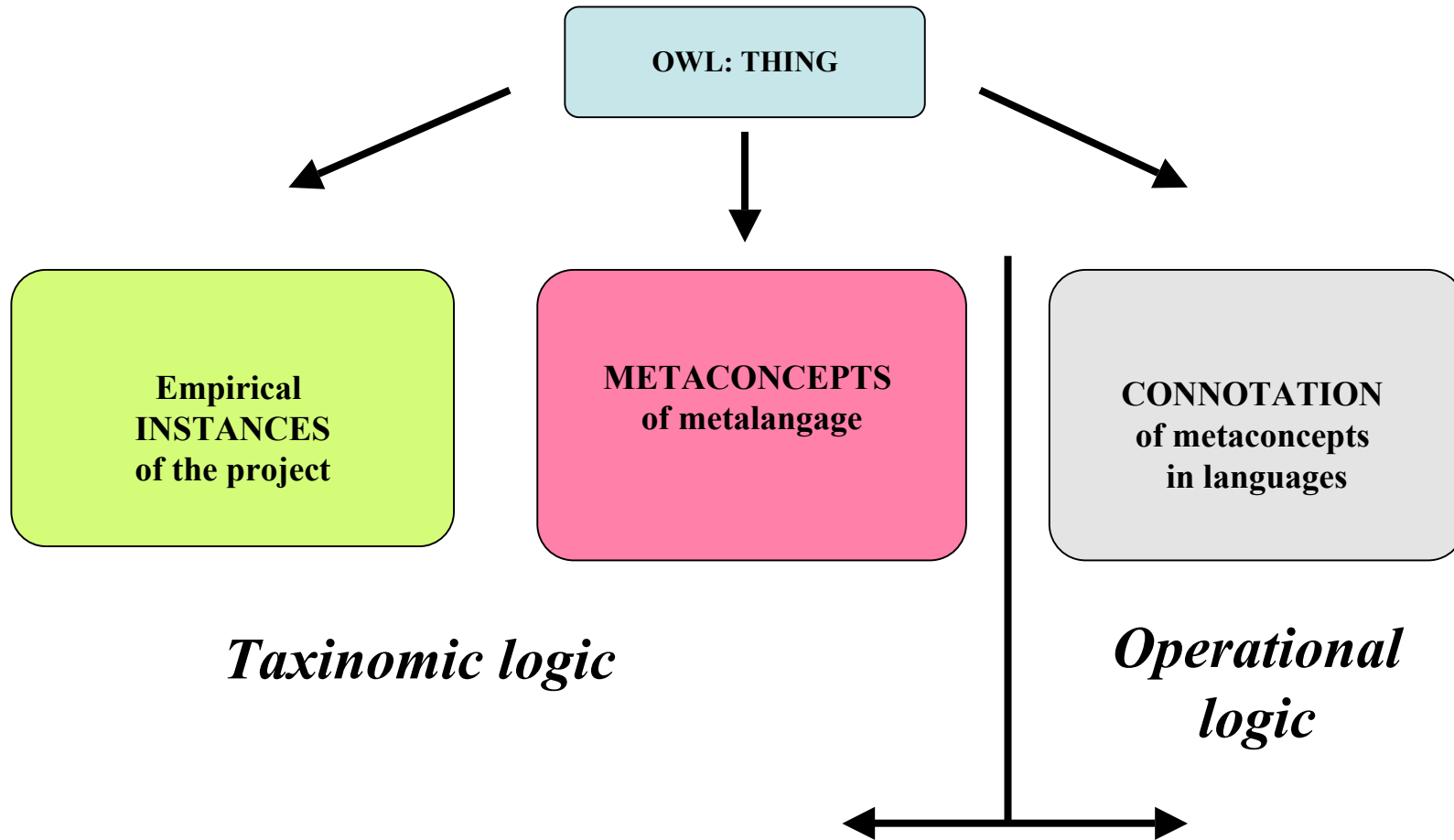


Hollow column becomes a
universal METACONCEPT

- *Hollow column can connote
other architectures*



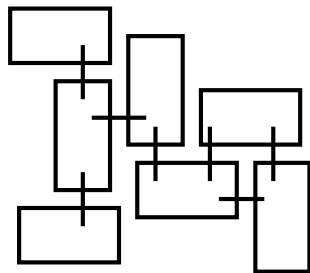
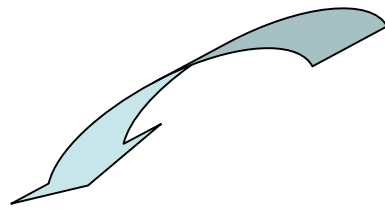
11 – ORGANIZATION OF CONCEPTS



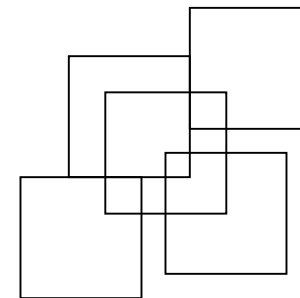
12 – CLASSIFICATION, COMPOSITION, CONNOTATION
IN THE PROCESS OF PROJECT

REASONING

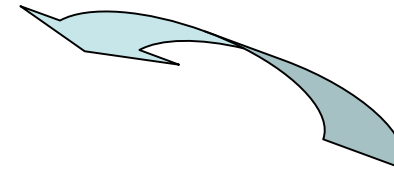
Metaconcepts allow to demonstrate the utility of what is implemented in the composition



Phase of
CLASSIFICATION

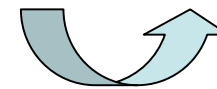
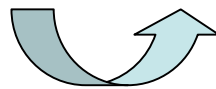


Phase of
COMPOSITION

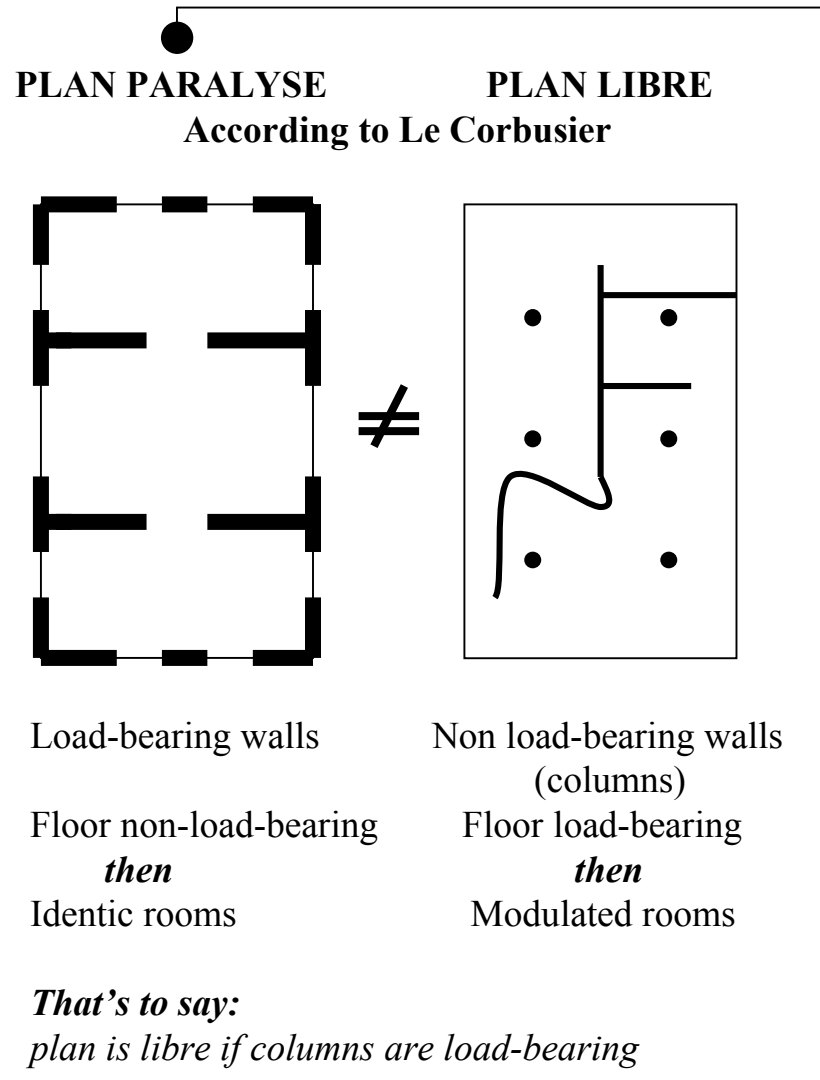


ANALYSIS

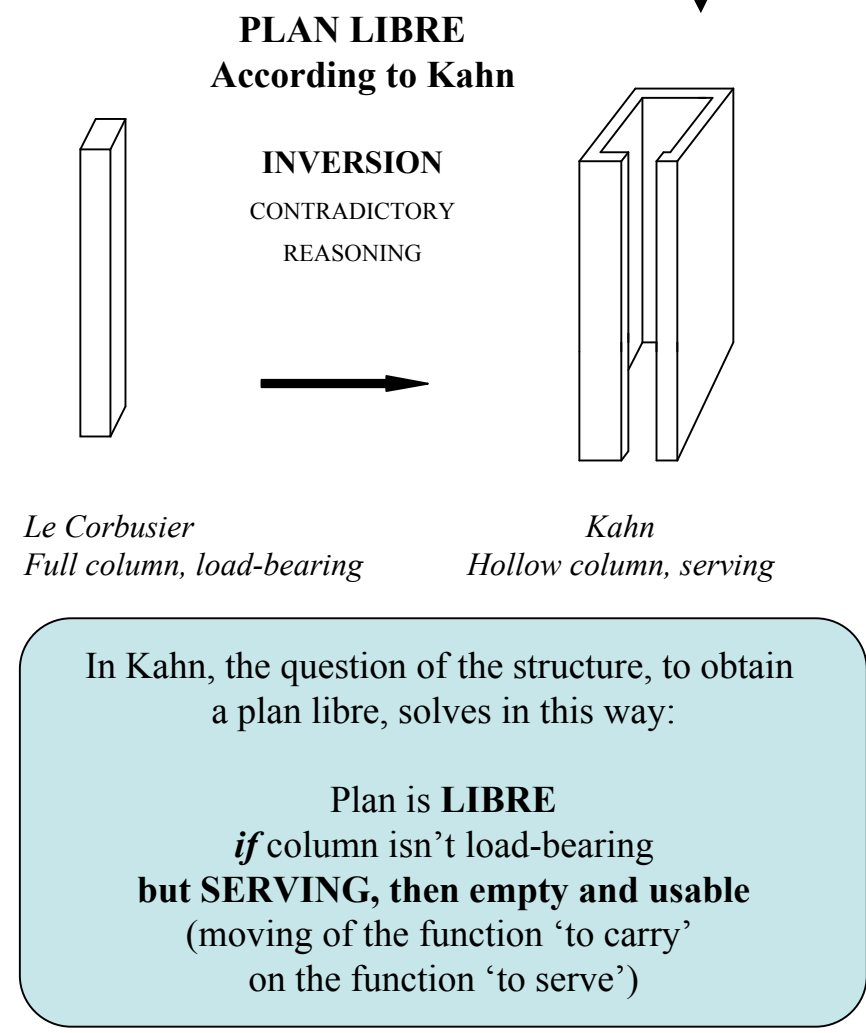
With the help of metaconcepts on composition (whole and parts)



13 – KAHN'S REASONING WHEN INVENTING HOLLOW COLUMN



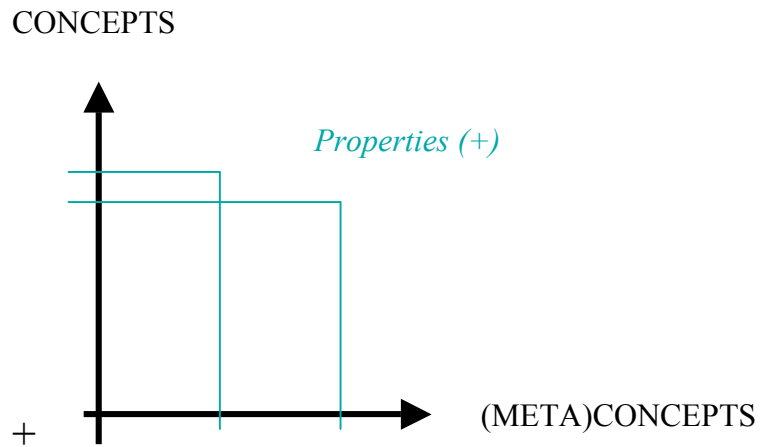
METONYMY



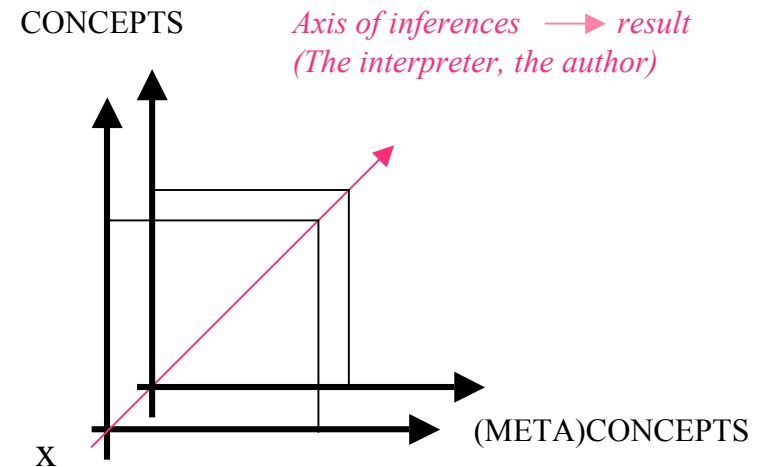
14 – INFERENCES

- Inferences :
 - **In Le Corbusier (according to Kahn):**
 - *If* FullColumn isGeneratorOf PlanLibre
 - *And if* FullColumn is Load-bearingSpace
 - *Then* Load-bearingSpace is Generatorof PlanLibre
 - **In Kahn:**
 - *If* HollowColumn isGeneratorOf PlanLibre
 - *And if* HollowColumn is ServingSpace
 - *Then* ServingSpace isGeneratorOf PlanLibre

15 – FROM A BI-DIMENSIONAL ONTOLOGY TO A TRI-DIMENSIONAL ONTOLOGY



- *Allows a procedure of description of buildings*
 - *Plan of properties*



- *Allows a procedure of description of reasonings*
 - *Axis of inferences*