Creative Process Representation:

Extending the CIDOC CRM for describing and
integrating data around the creative process

Anais Guillem, UC Merced,
George Bruseker, Takin.solutions
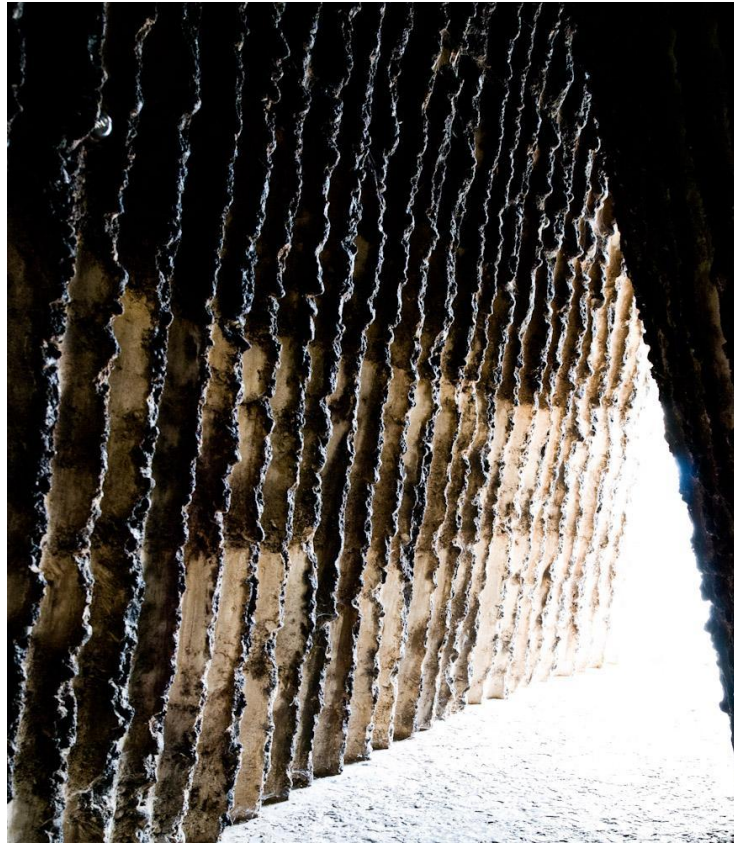CIDOC 2020, Geneva, Switzerland
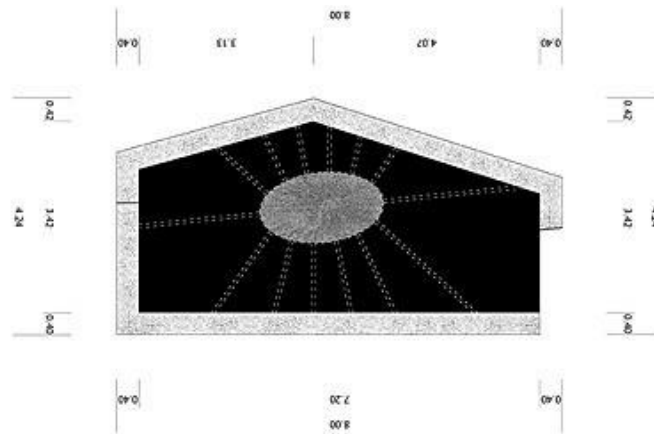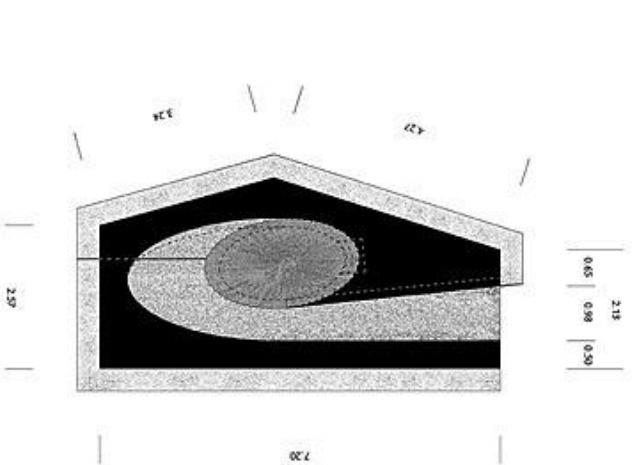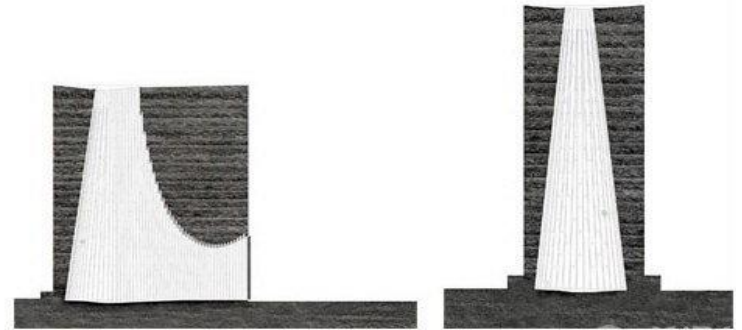
The problem

Through one example: what is architecture?

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Reference: Bruder Klaus field chapel : Peter Zumthor : Mechernich-Wachendorf, Germany

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Reference: Bruder Klaus field chapel : Peter Zumthor : Mechernich-Wachendorf, Germany

Present State of Affairs

Ill fitting standards and information systems

- Ubiquity of ad hoc solutions in Spreadsheets/Access/FileMaker
- Problem of Standards BOTH enabling and limiting expression
- Lack of knowledge of knowledge organization

Specific Issues in the field of Architecture

- Early adoption of formats
- Disparity between the manner of archiving and use in the field
- Graphical representation of results and not method
- Graphical representation without metadata
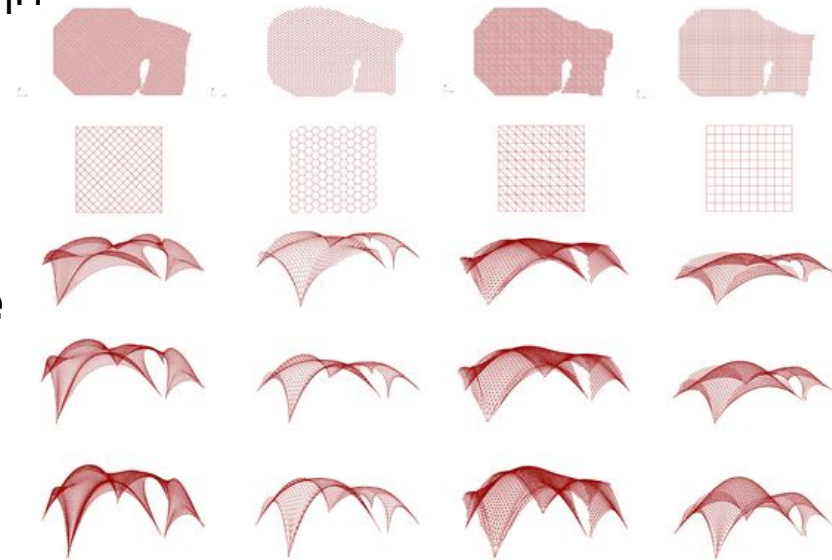
Chilton, J. & Chuang,
CC. Nexus Netw J (2017) 19: 763

Modelling Architectural Creative Process

Rendering facts tractable for a 'digital' humanities

In our information age, there is opportunity to support and make more accurate and efficient the process of gathering and establishing facts through tools that would enable:

Scholarly development, contestation and deployment of facts

Through provision of appropriate software and information models that allow the proper level of expressivity:

Accurate, flexible, adapted to purpose

To build a solid ground of facts in a digital space, we need tools in scholarship that are fit to purpose and allow the accurate and efficient representation of facts
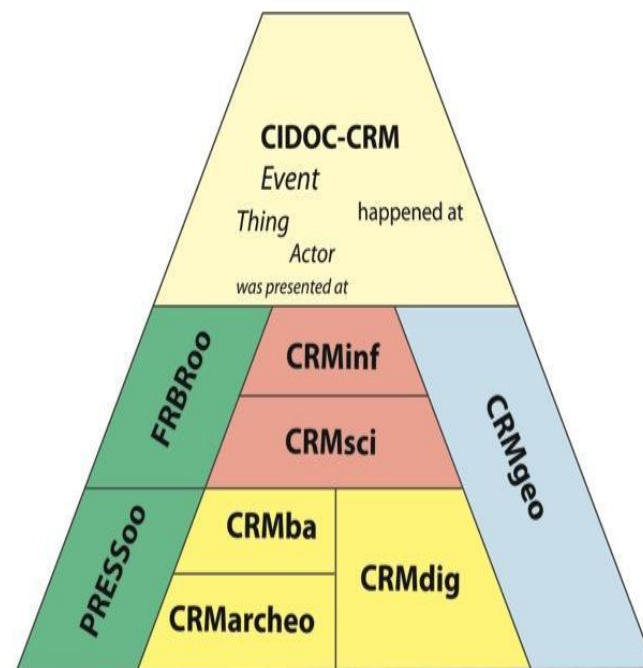
The Polysemy of Architecture in Semantics
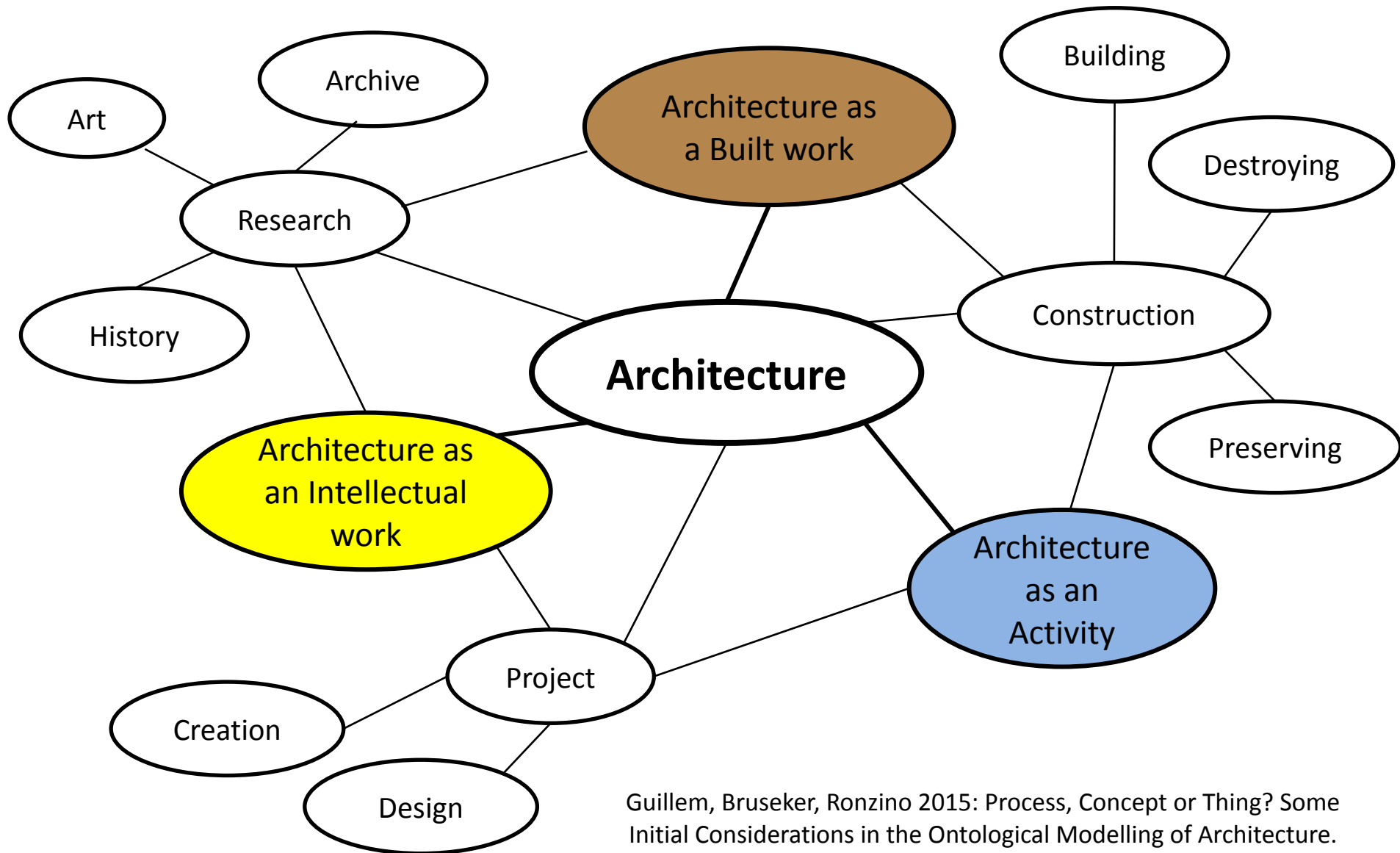
Guillem, Bruseker, Ronzino 2015: Process, Concept or Thing? Some Initial Considerations in the Ontological Modelling of Architecture.

Event Modelling Inspiration from FRBRoo

idea

Intellectual
processes
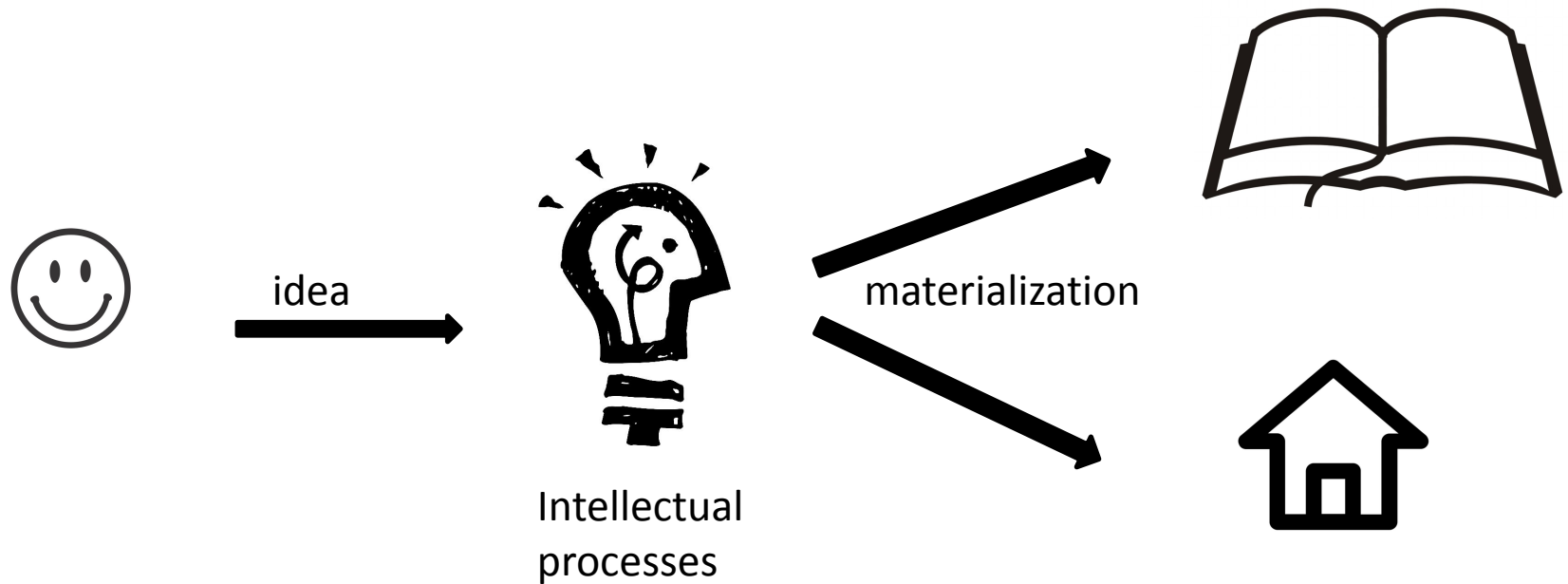
materialization

FRBRoo: CIDOC CRM extension for bibliographic information and intellectual processes
Ref

Architectural design as process of creativity ie. a materialization of thought
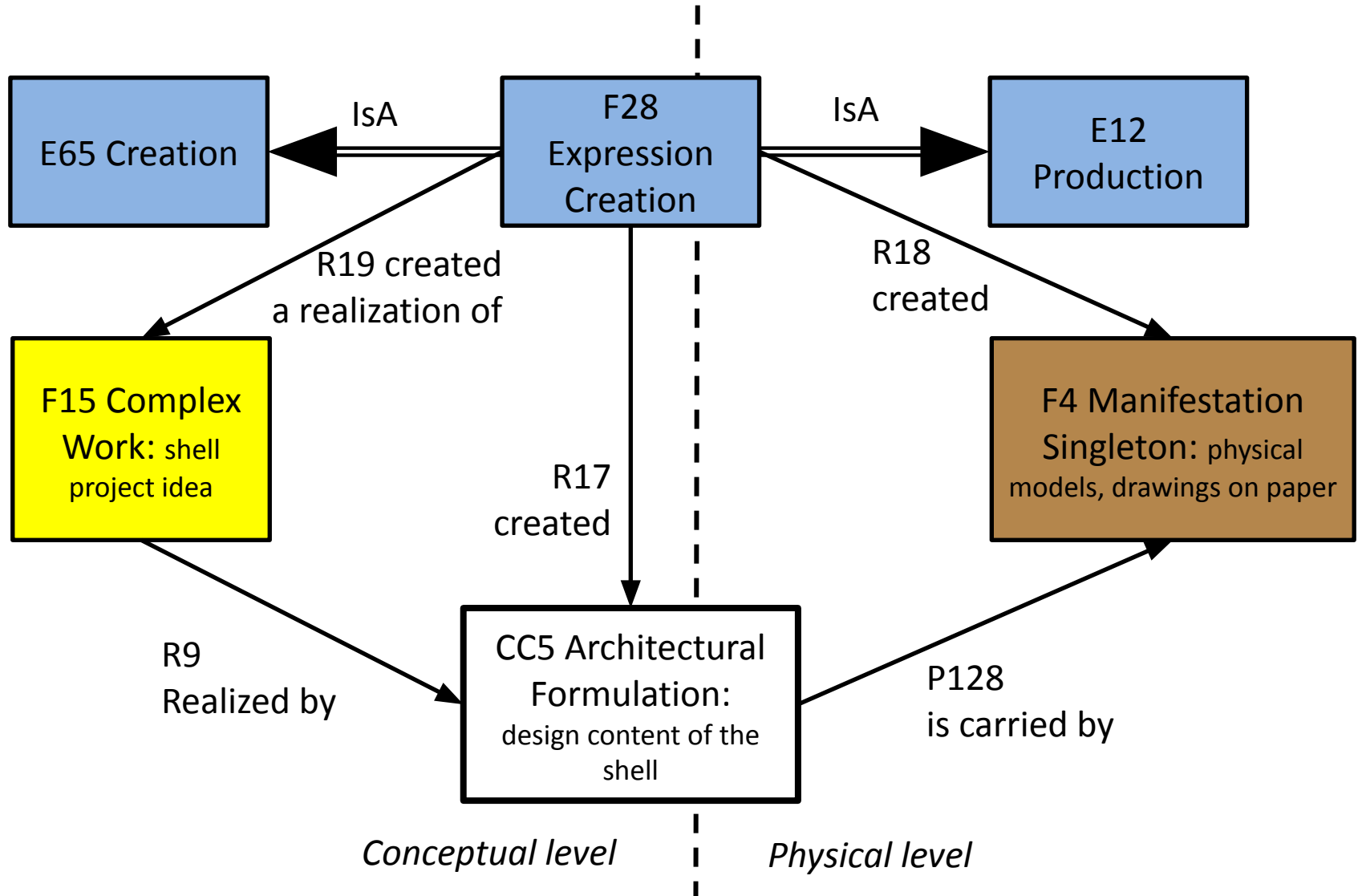
Creative Processes, Major Phases

Development process of an architectural project →

Connection with FRBRoo model	Programmation phase	Design phase	Construction Planning Phase	Construction Phase
F1 Work	CC17 Projective Requirement	CC13 Design Concept	CC3 Execution Concept	
F27 Work Conception	CC14 Programmation	CC15 Design Conception	CC16 Construction Planning	CC2 Construction
CC5 Architectural formulation	CC6 Architectural Program	CC1 Architectural Model	CC4 Construction Plan	

Iterating Architectural Ideas into Precise Forms

"The propositional content contained in an architectural formulation provides information which represents particular architectural concepts proposed for a certain project and which may provide information on how to realize these concepts into concrete objects."
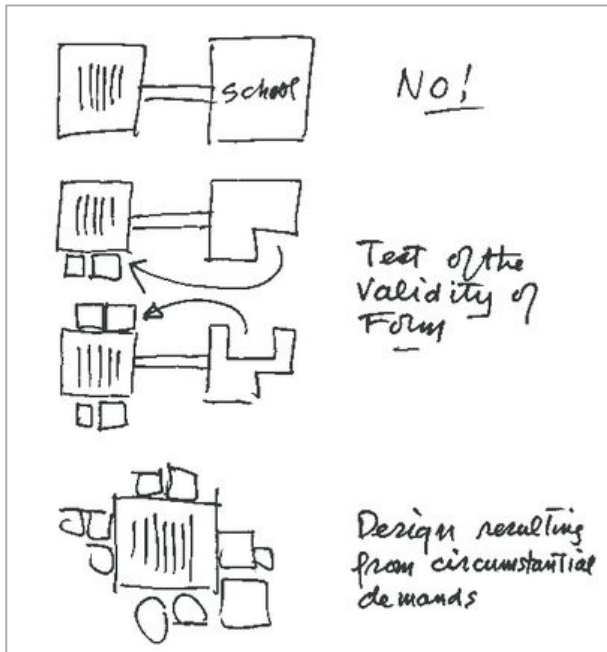
(Kahn, Unitarian Church sketches)

E29 Design or Procedure

F2 Expression

Activity Plan

CC5 Architectural Formulation

IsA

CC6 Architectural Program

incorporates

CC1 Architectural Model

incorporates

CC4 Construction Plan

CC14 Programmation:
Processes and Outcomes

AR9 Oeuvre

P9 consists of

CC7 MoA

P14 carried out by

CC14 Programmation

R16 initiated

CC17 Projective Requirements

R3 realizes

R19 created | realization of

F28 Expression Creation

R17 created

CC6 Architectural Program

R18 created

p128 carries

cc22 projects

E22 Human Made Object

CC12 Event Trigger Template

Scope:

"aims towards the formulation of user needs, wishes and requirements for a projected architectural work, be it design or construction."

Allows documentation of: Architectural Program(s)

- Features Defined in Program
- Actors involved in program definition activities
- Events of Program development/evolution
- Comparison point for eventual designs / construction [intention vs. realization]

CC14 Programmation Example:

Palais des Nations

XSD:Date
April 1926

XSD:Date
May 1927

P82a begin of the begin

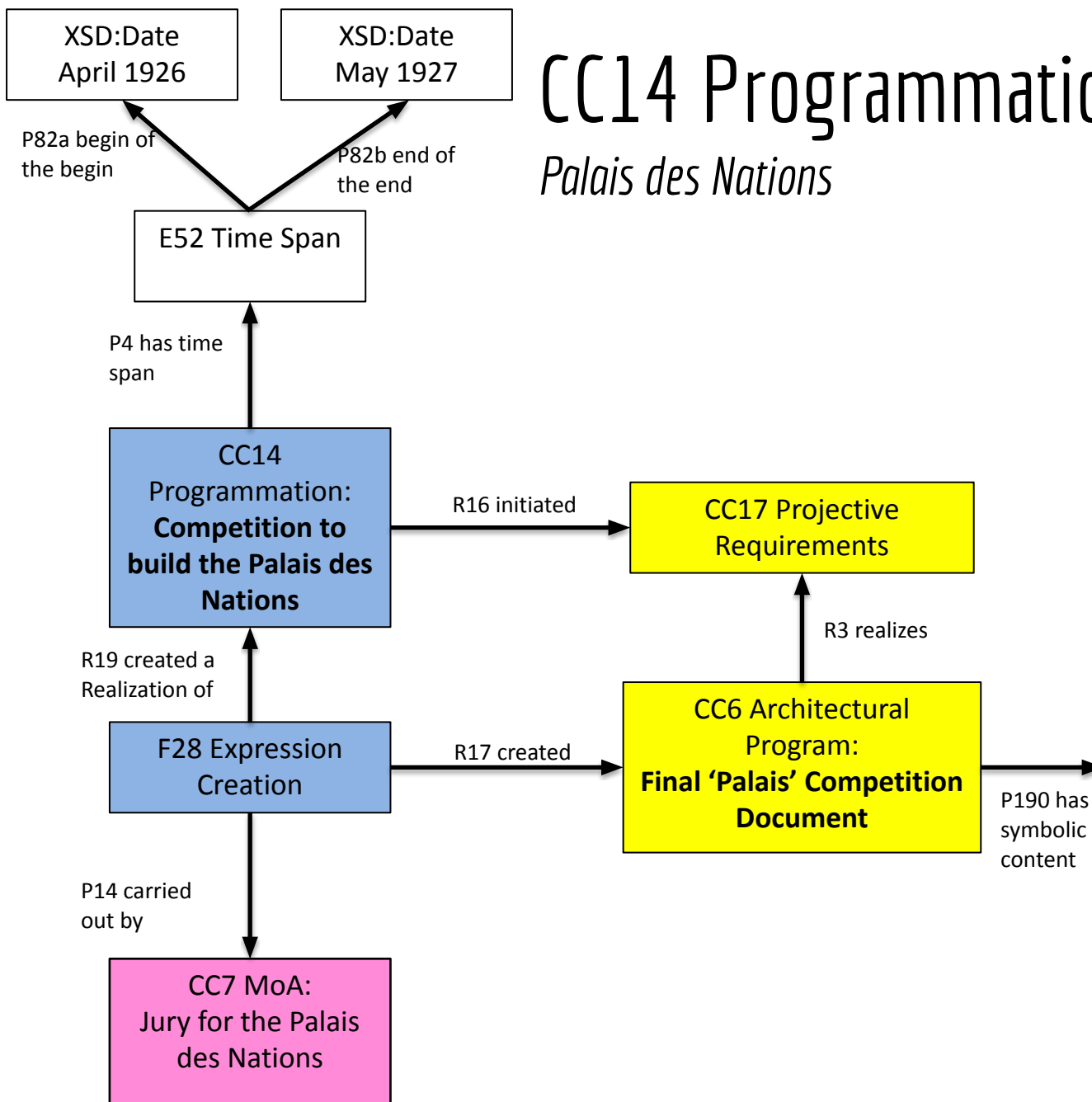P82b end of the end

E52 Time Span

P4 has time span

CC14 Programmation:
Competition to build the Palais des Nations

R16 initiated

CC17 Projective Requirements

R3 realizes

R19 created a Realization of

F28 Expression Creation

R17 created

CC6 Architectural Program:
Final 'Palais' Competition Document

P190 has symbolic content

P14 carried out by

CC7 MoA:
Jury for the Palais des Nations

"The Palais, whose construction is the object of the competition, is intended to house all the organs of the League of Nations in Geneva. It should be designed in such a way as to allow these organs to work, to preside and to hold discussions, independently and easily in the calm atmosphere which should prevail when dealing with problems of an international dimension."

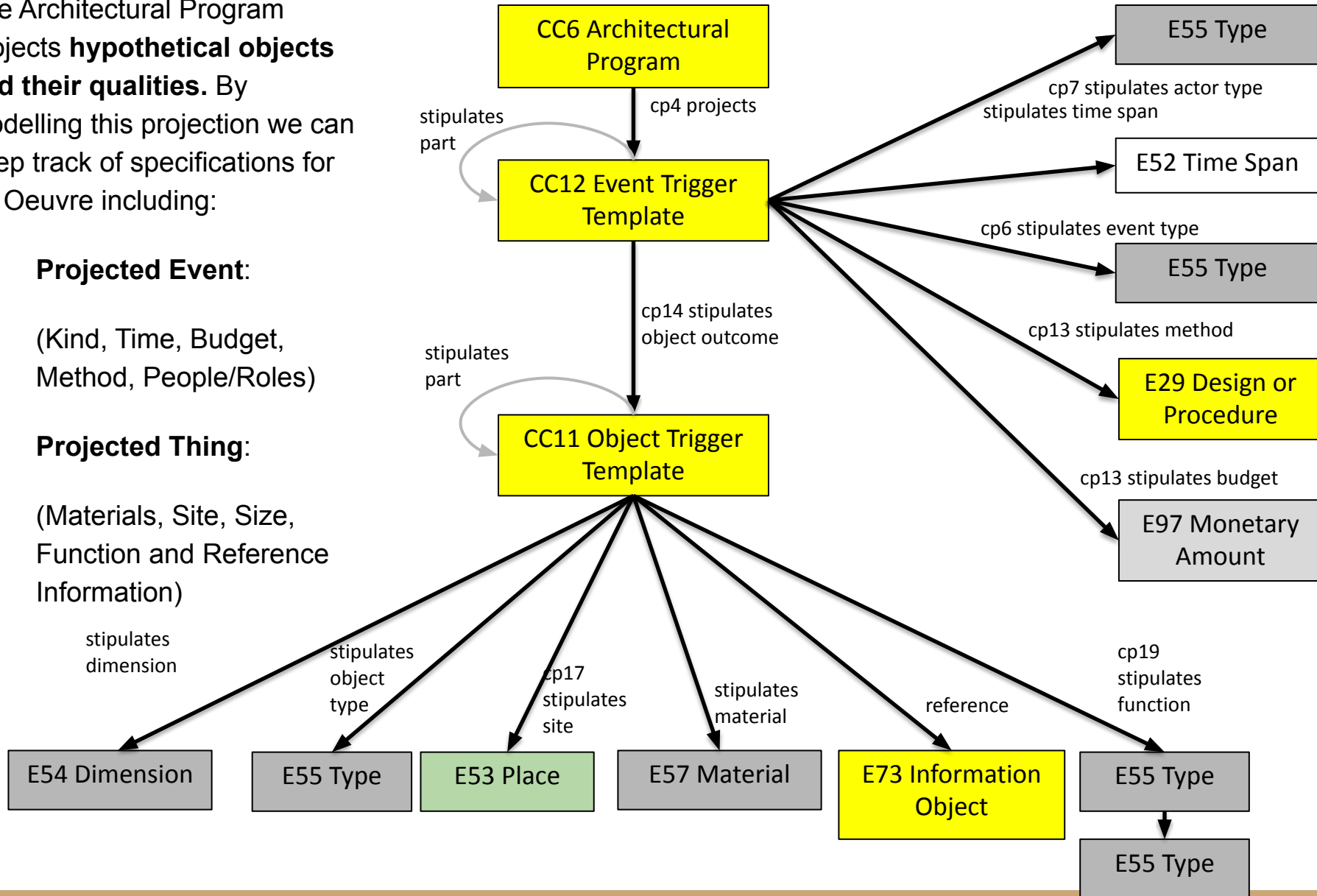# CC6 Architectural Program: Projecting Requirements

The Architectural Program projects **hypothetical objects and their qualities.** By modelling this projection we can keep track of specifications for an Oeuvre including:

- **Projected Event**:

  (Kind, Time, Budget, Method, People/Roles)

- **Projected Thing**:

  (Materials, Site, Size, Function and Reference Information)

CC6 Architectural Program
cp4 projects
stipulates part
CC12 Event Trigger Template

cp7 stipulates actor type
stipulates time span
E55 Type
E52 Time Span
cp6 stipulates event type
E55 Type
cp13 stipulates method
E29 Design or Procedure
cp13 stipulates budget
E97 Monetary Amount

cp14 stipulates object outcome
stipulates part
CC11 Object Trigger Template

stipulates dimension
stipulates object type
cp17 stipulates site
stipulates material
reference
cp19 stipulates function

E54 Dimension
E55 Type
E53 Place
E57 Material
E73 Information Object
E55 Type
E55 Type

CC6 Architectural Program Example:

Original Requirements of Palais Competition

CC6 Architectural Program:
Final Palais Competition Document

— cp4 projects → **CC12 Event Trigger Template**

cp7 stipulates actor type → **E55 Type Member of League of Nations**

cp6 stipulates event type → **E55 Type Construction Design**

cp13 stipulates budget → **E97 Monetary Amount 13 Million Francs**

cp14 stipulates object outcome → **CC11 Object Trigger Template**

cp17 stipulates site → **E53 Place Moynier and Matholoni Estates in Secheron**

cp19 stipulates function → **E55 Type International Headquarters**

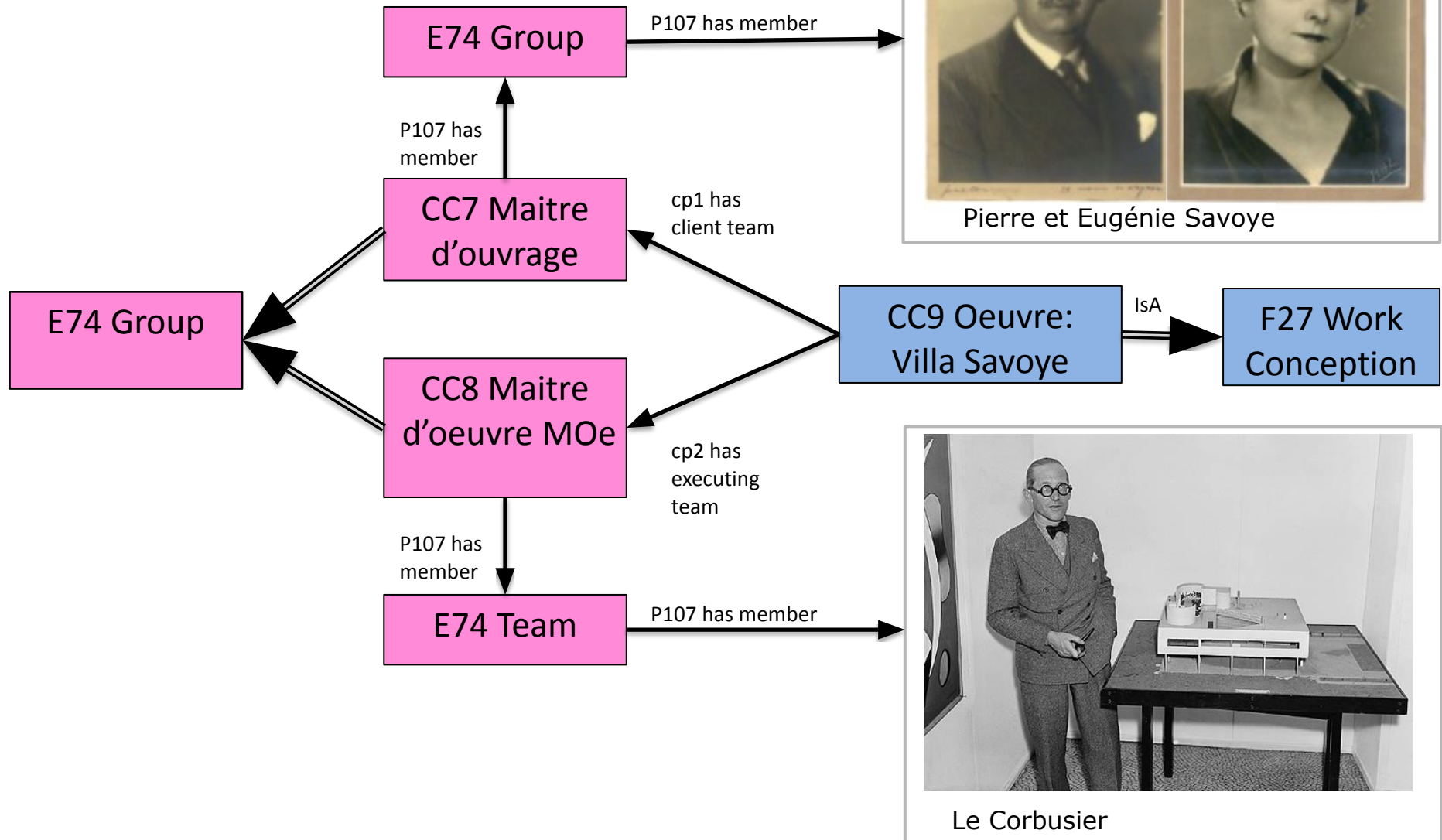*© Histoire et architecture du Palais des Nations de Jean-Claude Pallas; 2001*

- Three hundred and seventy-seven 'projects' submitted
- 9 Prizes but no design selected (deadlock on agreement over program)
- 5 architects chosen to realize actual design
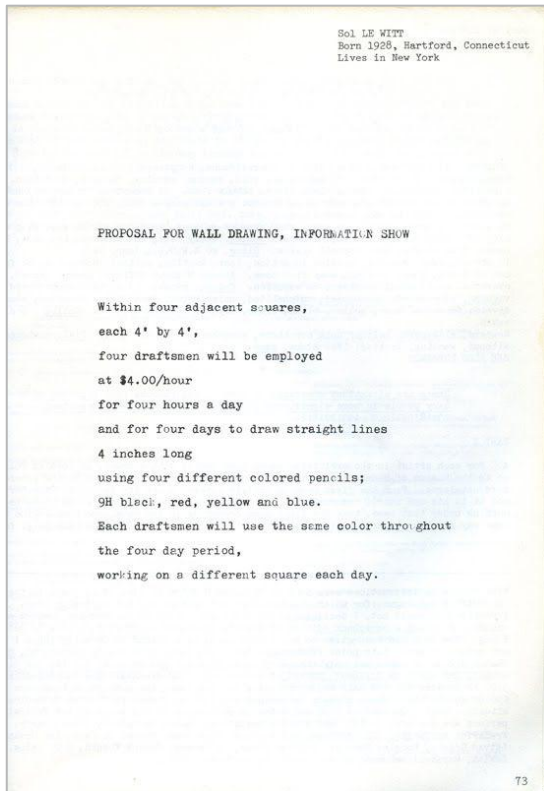- Eventual site of realized Oeuvre changed to the Ariana Plot

Project of architecture modeled as Oeuvre
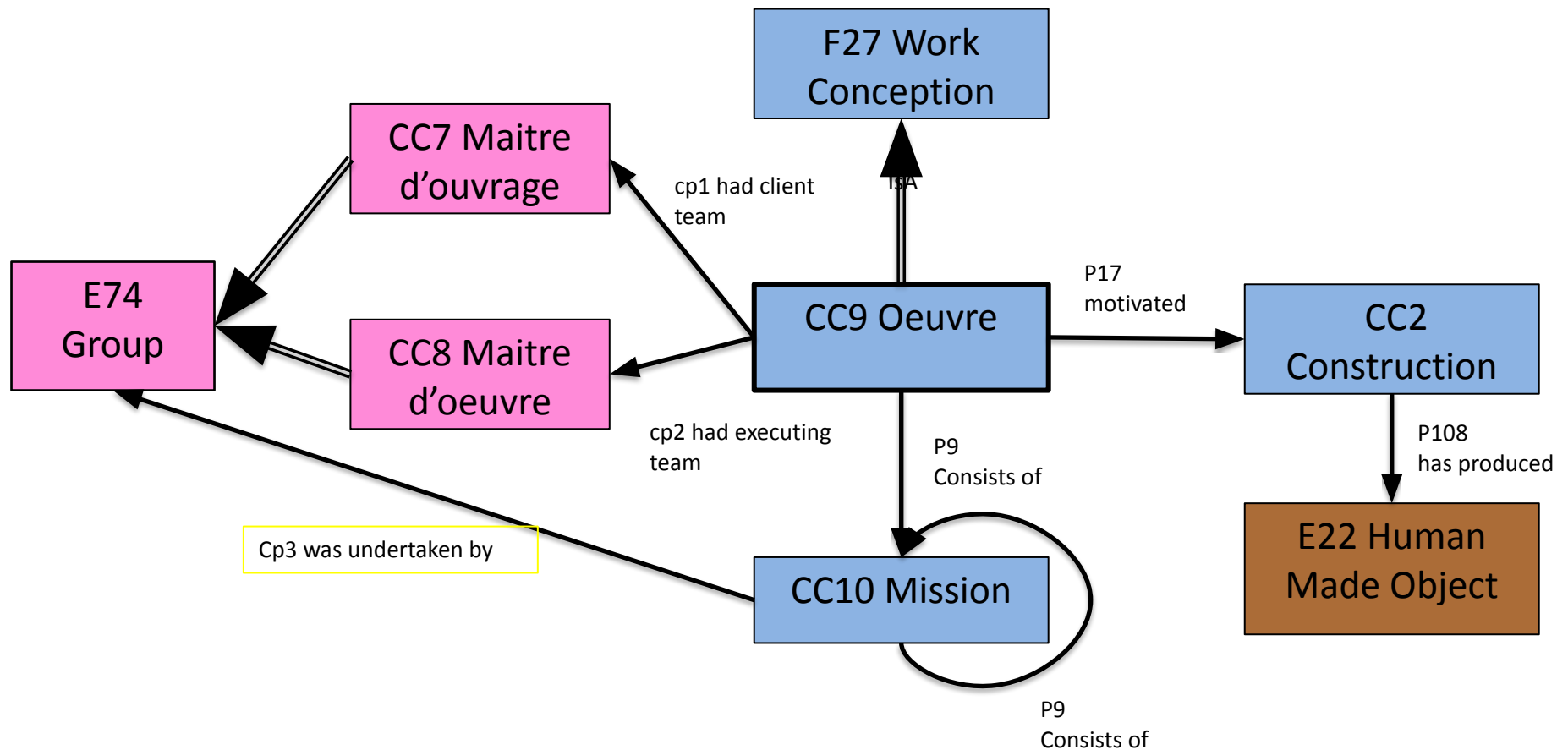
The relationship Designer [CC8]/Client [CC7]

E74 Group —— P107 has member ——▶

Pierre et Eugénie Savoye

P107 has member

CC7 Maitre d'ouvrage

cp1 has client team

E74 Group

CC9 Oeuvre: Villa Savoye —— IsA ——▶ F27 Work Conception

CC8 Maitre d'oeuvre MOe

cp2 has executing team

P107 has member

E74 Team —— P107 has member ——▶

Le Corbusier

Sol Lewitt and Conceptual Art

Sol LE WITT
Born 1928, Hartford, Connecticut
Lives in New York

PROPOSAL FOR WALL DRAWING, INFORMATION SHOW

Within four adjacent squares,

each 4' by 4',

four draftsmen will be employed

at $4.00/hour

for four hours a day

and for four days to draw straight lines

4 inches long

using four different colored pencils;

9H black, red, yellow and blue.

Each draftsmen will use the same color throughout

the four day period,

working on a different square each day.

73

"When an artist uses a conceptual form of art, it means that all of the **planning and decisions are made beforehand** and the execution is a perfunctory affair. The idea becomes a machine that makes the art."

Above: example of instructions for Wall Drawing.

Right: Wall Drawing #869B By Sol LeWitt consists solely that the artist produced for others to execute. Although the idea of the work is meant to be preserved, the work itself is ephemeral.

The CPR model at a glance

Type	Extension of CRM
Scope	Digital Humanities
Classes	19+-
Relations	25+-
Version	1.0
Maintained by	SARI
Access	
Used By	SARI
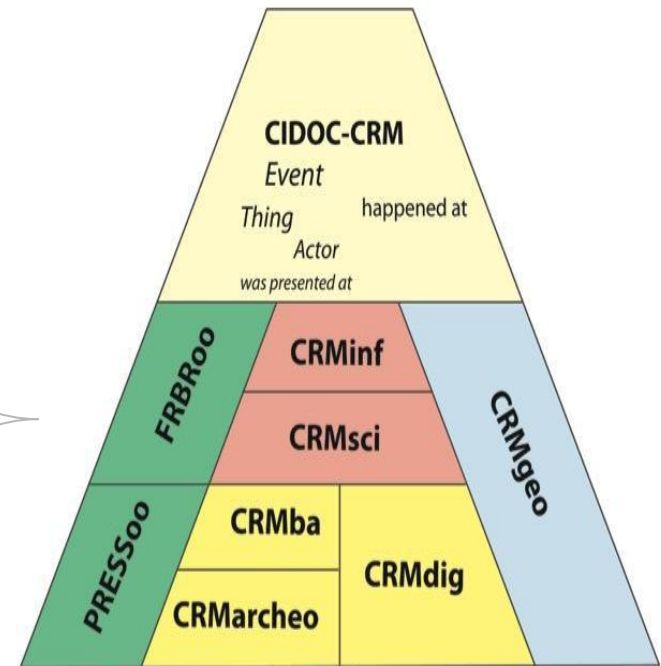
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Questions

Thank you

A special thank you for the team at ETH Zurich:
Thomas, Nicola, Matteo, Rainer, Giulia, Gregor