# DESIGN METHODS

Second Year - Second Semester
2022 - 2023

# Design Process & Strategic Thinking in Architecture

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# Design Process & Strategic Thinking in Architecture

- **Design can be viewed as a strategy of problem solving in which creative ability utilizes arts & science to generate solutions to problem situations.**

- **Designers solve problems in many different ways; however, they go through a pattern or sequence of steps that they have previously found effective for achieving their designs from conception to completion.**

# Nature of Design Process

**In his book (Design Methods: Seeds of Human Future) 1980 Jones, J. Christopher cited that the Design process does not represent the process of creating,**

**but based on the principle of derivation of the final structure of elementary introductions depends on three primary operations:**

# Nature of Design Process

## 1- Gathering information:

**Include the collection of information along with how to organize, analyze and make sure they relate to the design position, and that such information be integrated in the image.**

# Nature of Design Process

## 2- Testing:

**Include the design decisions through the process of representing the intellectual capabilities and intuitive, and personal experience of the designer.**

# Nature of Design Process

## 3- Evaluation process:

**Include judgment on the suitability of these decisions to the problem of design.**

# Nature of Design Process

**Christopher Jones described also the Design process as a very complex process which contains two types of intellectual activities:**

**1- Unconscious intellectual activities: which related to the designer's intellectual and creative abilities.**

**2- Conscious intellectual activities: This related to the designer's rationality and logical abilities.**

# Intellectual-Ideological Approaches for Design Process

**It means the intellectual method that is used by the designer in dealing with any design problem, and the intellectual approaches for the design process can be divided into three ideological approaches that are (Jones, J. Christopher, 1980):**

**1- The Logical Rational Model**

**2- The Creative Intuitive Model**

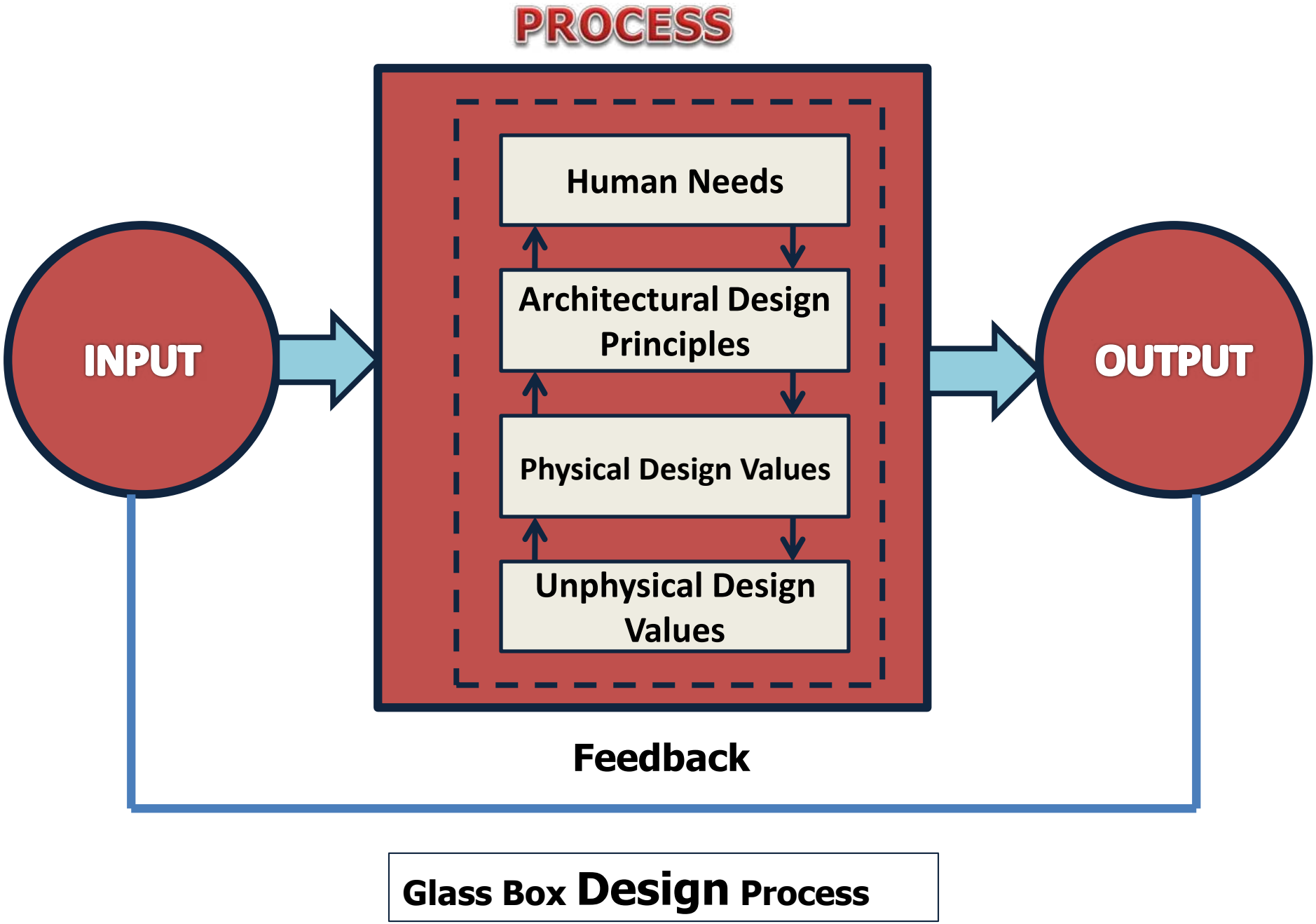
**3-The Participation collective Model**

## 1- The Logical Rational Model:

**This approach is based on the fact that the design process is a logical process and can be explained which Christopher Jones called Glass Box,**

**It depends on analyzing:**

- **all the design problems and attitudes to a group of minor problems**
- **and elementary molecules that are easily analyzed to basic components and solving each part separately,**
- **and then assemble these molecules once again well to create the best solutions.**




Glass Box **Design** Process

# Design Is A Process

## 1 DEFINE THE PROBLEM

Identify a need your idea meets.

Translate the identified need into a problem to be solved.

Refine the problem by identifying requirements that the problem must address.

## 2 BRAINSTORM POSSIBILITIES

Think of ways to make your idea a reality. Include related approaches, ideas and/or possible solutions.

## 3 COLLECT AND STUDY RELATED IDEAS

Critique related approaches, solutions artifacts, systems, environments.

Collect information about possibilities for your idea.

Compare and contrast alternatives you collect. Pick the best ones to further analyze.

I have an idea!

## 4 DEVELOP A DESIGN / PLAN

Make a choice. Choose what to work on based on your studies.

## 5 MAKE A MODEL

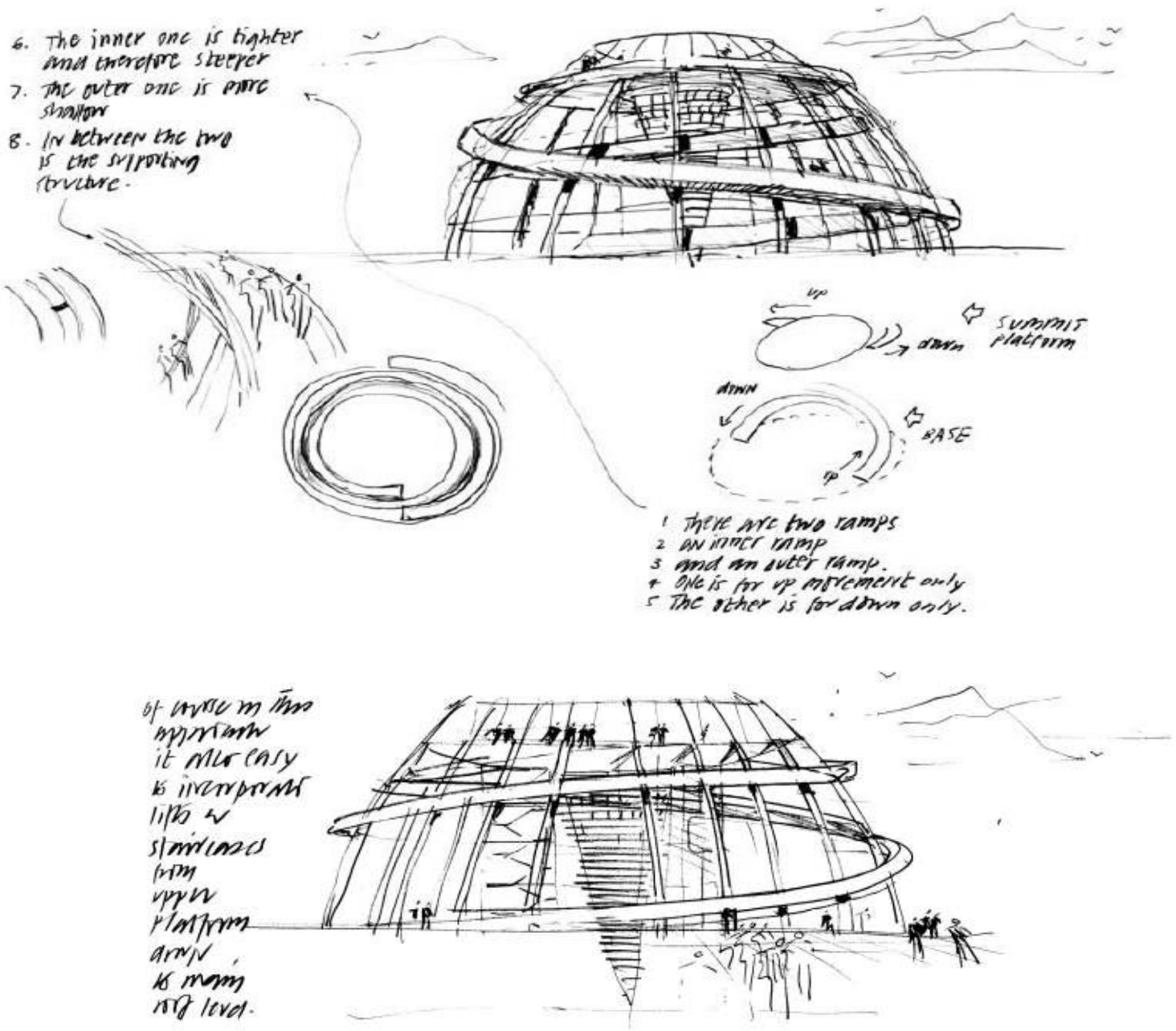
Carry out your idea.

## 6 TRY IT OUT! / TEST IT!

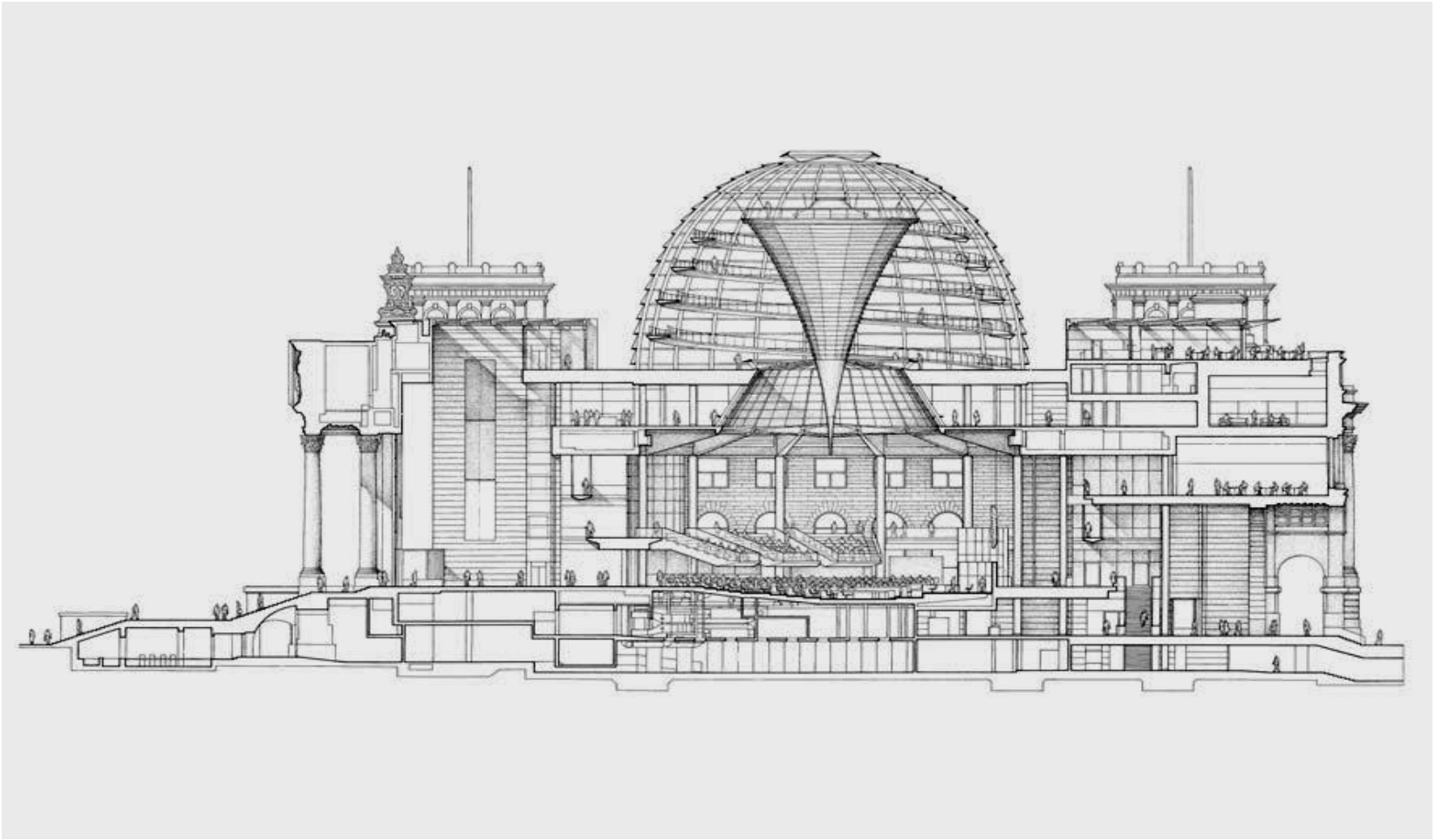
Does the model meet the requirements established in the problem?

Does the model communicate your ideas effectively?

Design Idea2.c/o Tam 5/3/2000




unified German **Parliament (Bundestag) – Glass Dome by Norman Foster**



unified German **Parliament – Glass Dome by Norman Foster**

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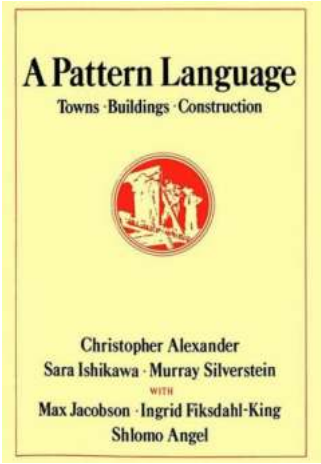
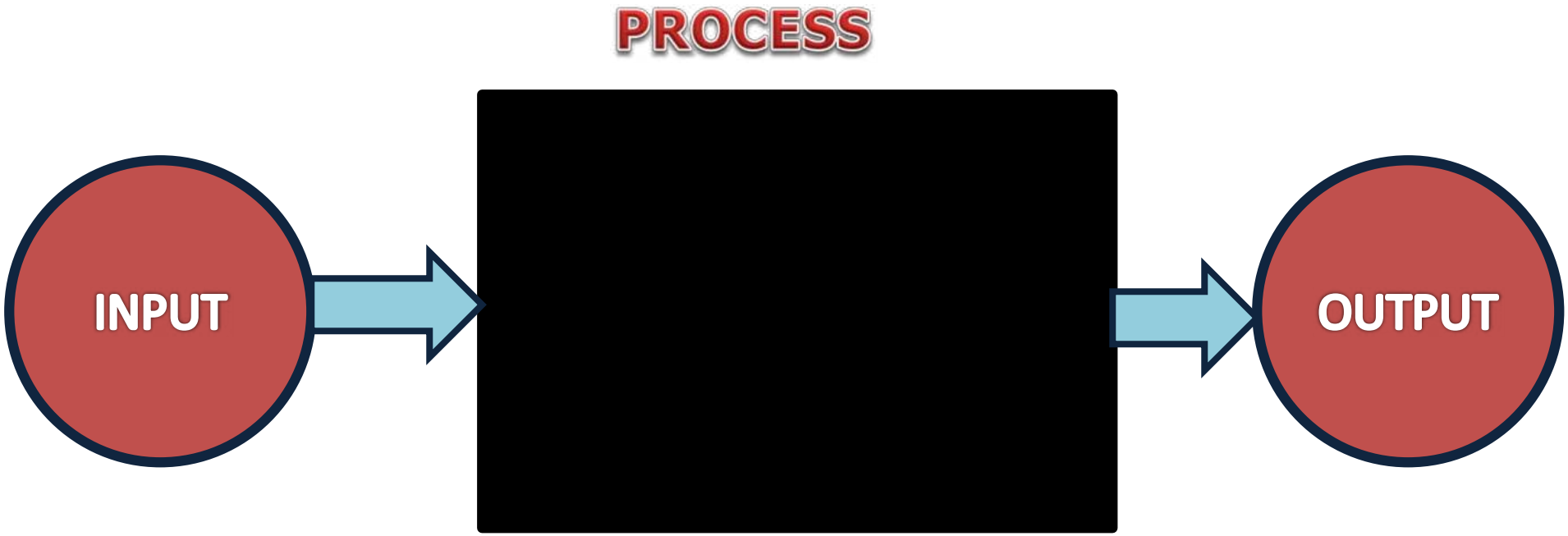
# 2- The Creative Intuitive Model:

It represents the development of language patterns formulated by Christopher Alexander, so that they become more flexible and detailed for the **creative thought** of the designer, which he described as the **black box**, where the most creative ideas are inside the mind of the designer, in an involuntary way **inside a dark box that contains the store of knowledge and previous experience of the designer.**

**Christopher Alexander**, 1936-2022, Christopher Wolfgang John Alexander was an Austrian-born British-American architect and design theorist. He was an emeritus professor at the University of California, USA.

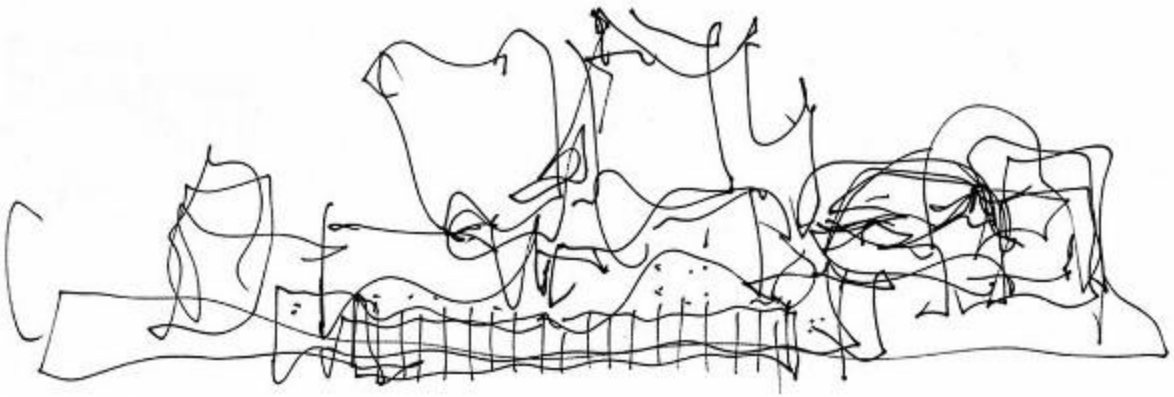





**Black Box Design Process**

**Black Box Thinking- Frank Gehry Concepts**

**Gehry's Dancing House in Prague**



**Walt Disney Concert Hall / Frank Gehry**

**Walt Disney Concert Hall / Frank Gehry**

# 3- The Participation collective Model:

**This approach represents the development for the two previous approaches, where can activate the user role or group designer in the design process,**

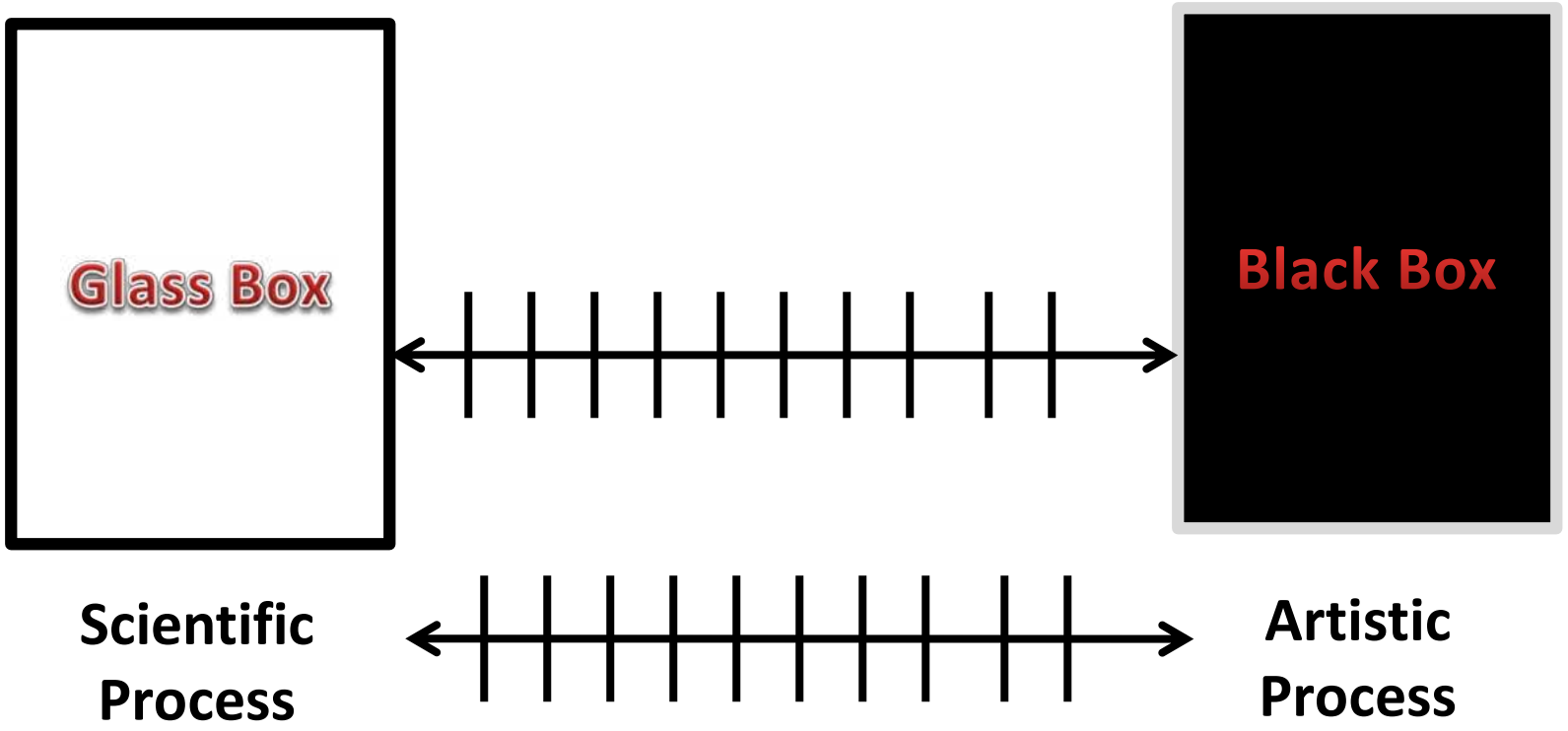
**and it highlight that the participation of the user in the design process and decision making also is a must, and it has been used in different ways and a variety of methods such as questionnaires that contribute to the explanation of the design positions to the users (Charles Jencks,1991, in: The Language Of Post-Modern Architecture).**

**From studying these three Intellectual Ideological Approaches for Design Process,**

**We can conclude an important fact that the Architectural Design Process is located on a linear scale between two opposites, Scientific and Artistic Processes, one of them considers this process as completely opaque, and the other considers it as completely transparent (John Peterson, 1980, Information Methods for Design & Construction).**

Mental
logical
ideology

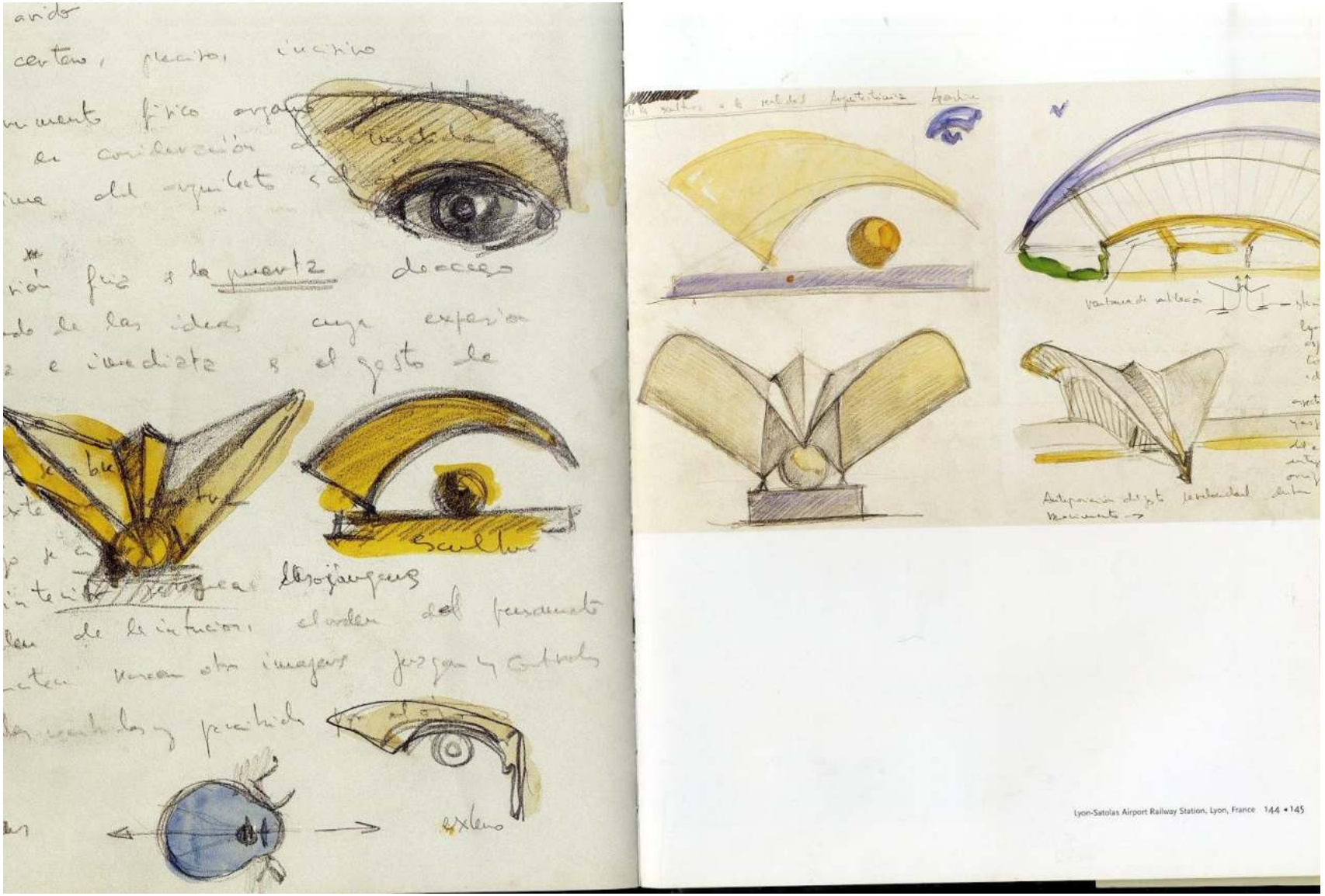
Intuitive
creative
ideology



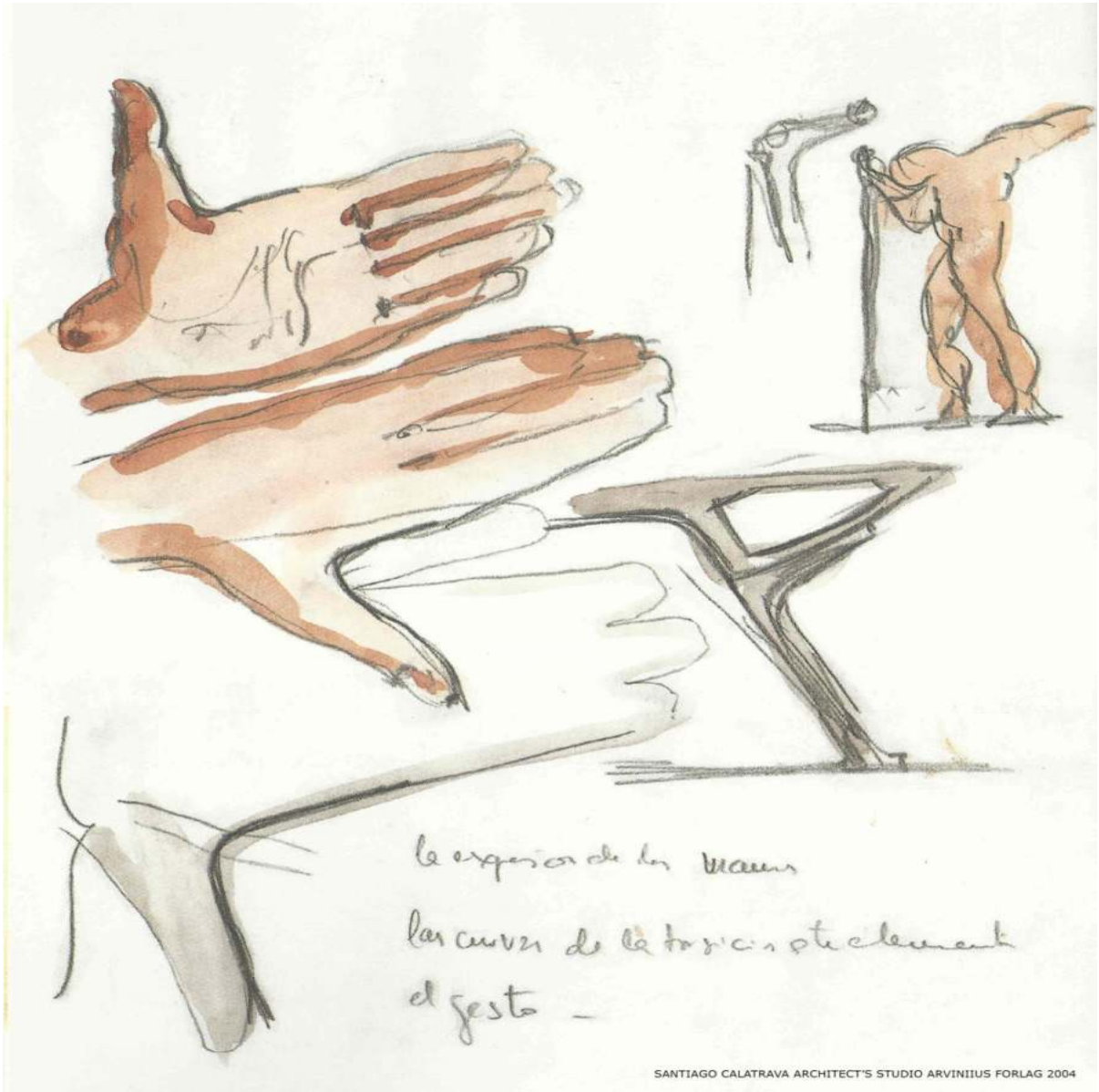

Scientific
Process

Artistic
Process

**Architectural Design Process views**




*Santiago Calatrava's Concepts and Sketches*

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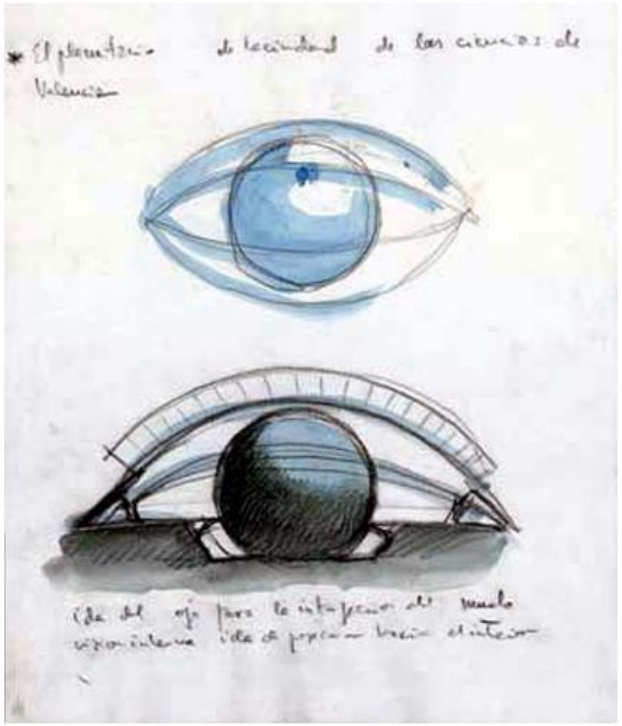

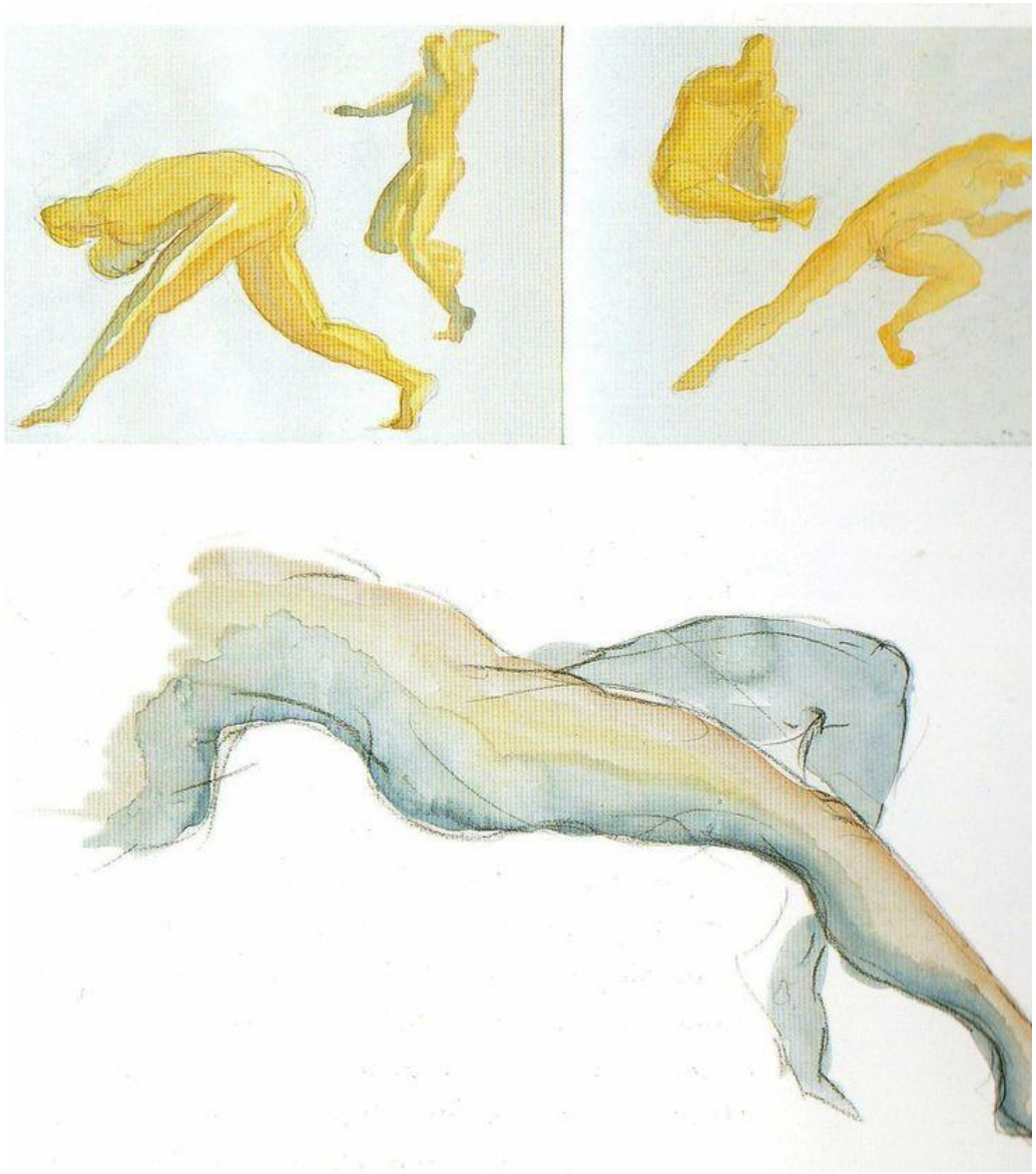

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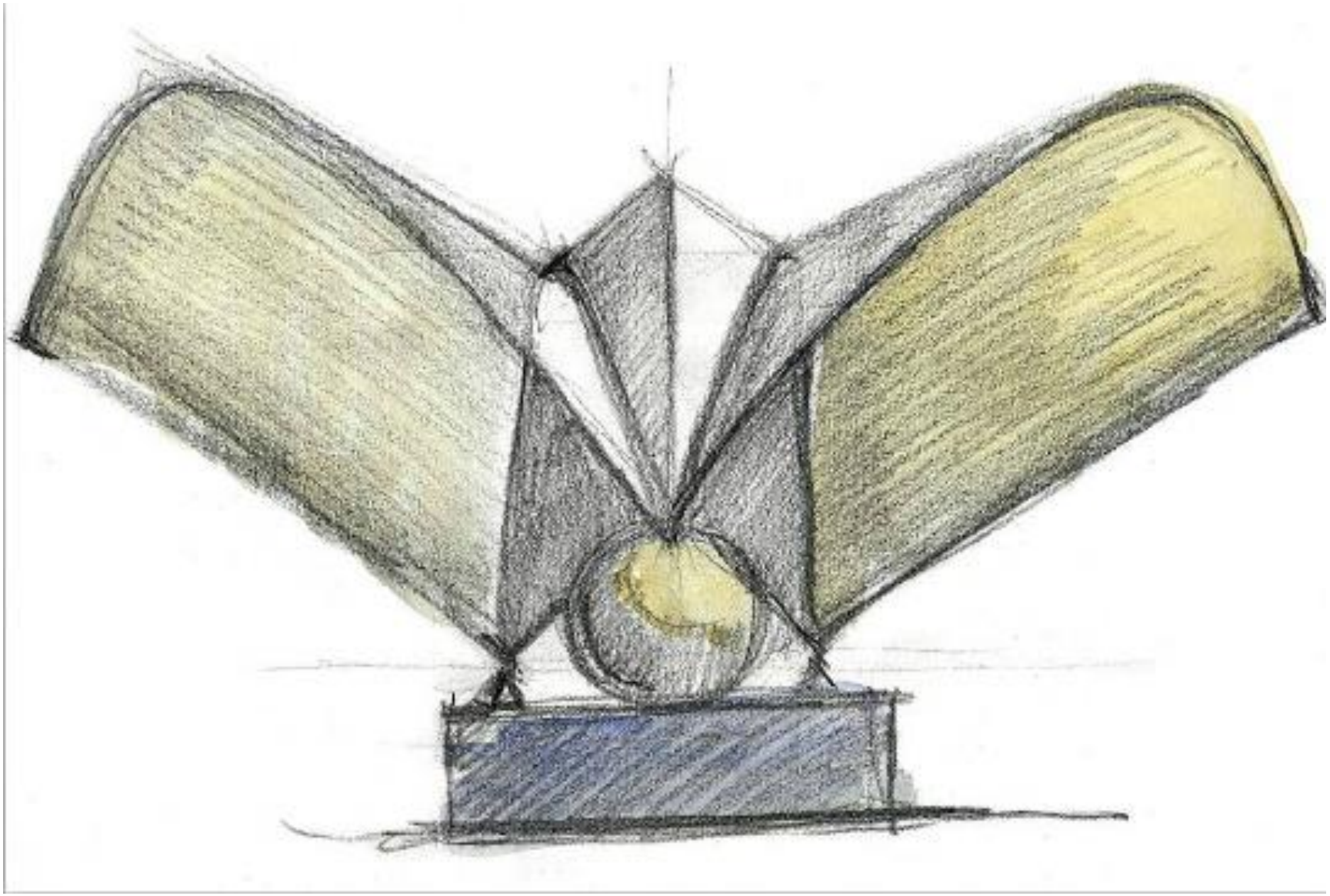

*Santiago Calatrava's Concepts and Sketches*

*Lyon-Saint Exupéry Airport Railway Station, Lyon*