

# DESIGN METHODOLOGY

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OF DEPT. OF PUBLIC BUILDING DESIGN

- ✦ PROGRAM OF SEMESTER COURSE
- ✦ 0. PREFACE - WELCOME - INTRODUCTION
- ✦ 1-4. WAY OF DESIGN
  - ✦ - COMPONENTS,
  - ✦ - METHODS,
  - ✦ - APPROACH
- ✦ 5. DESIGN FACTORS
- ✦ 6. DESIGN PHASES AND MEMBERS
- ✦ 7. ARCHITECTURE AND THE ARTS
- ✦ 8. SUSTAINABILITY IN ARCHITECTURE
- ✦ 9. DESIGN WITH ARCHITECTURAL MONUMENTS
- ✦ 10. SUMMARY, NEW CONCEPTS OF DESIGN

## ✦ 1. WAY OF DESIGN

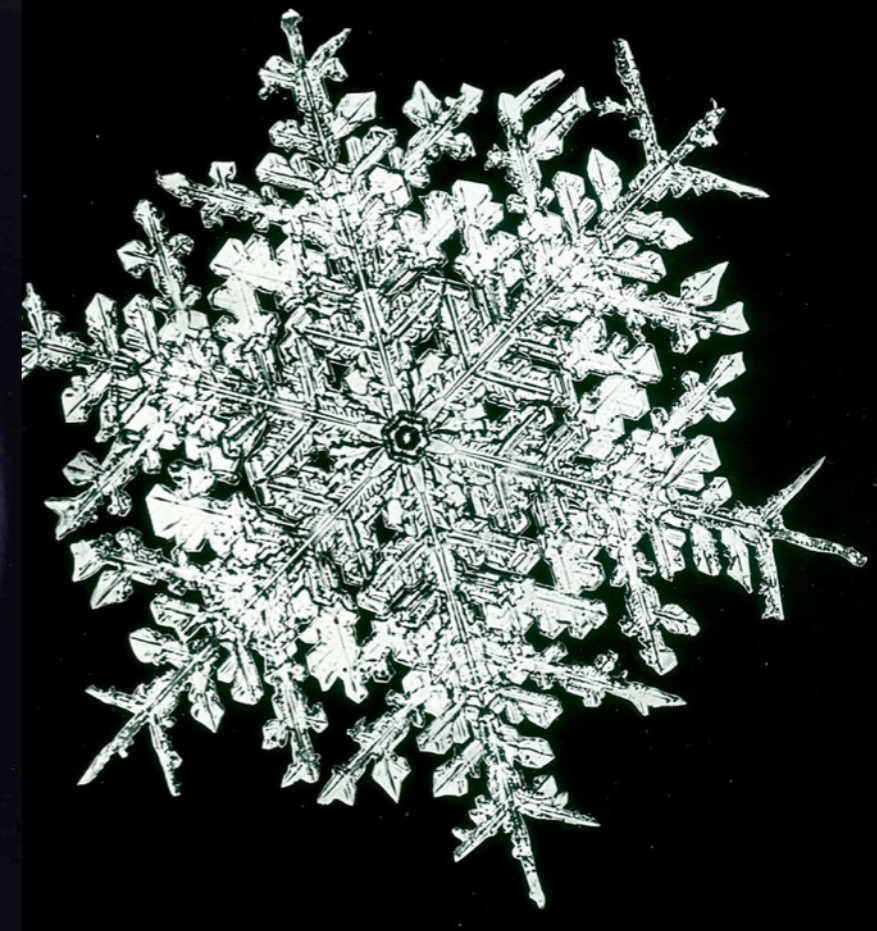
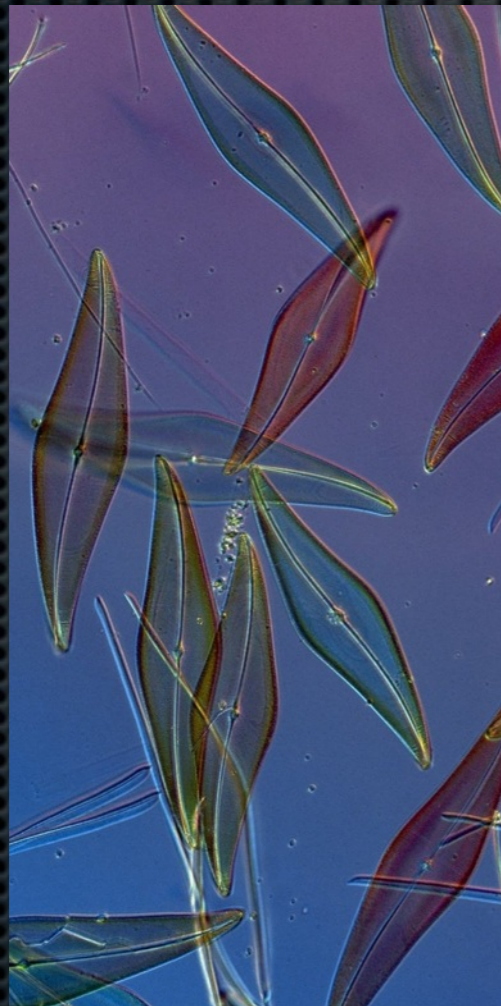
spirit		material	
components	art emotion	science ratio - sense	- works of Santiago Calatrava - Fallingwater House
methods	analogy intuition	analytics conclusions	- Sidney Opera - works of Michelangelo
approach	subjectivity universality global the whole	objectivity specialization local a part	- works of Frank Gehry - works of Alvar Aalto - works of Carlo Scarpa
harmonic cooperation			

## ✧ 1. WAY OF DESIGN

## ✧ 2. DESIGN FACTORS

- ✧ Basic elements - that determine or influence the design
- ✧ How to start?

- ✦ Relationship between architectural creation and the world
  - our world is a complex ecosystem - combination of living and material environment



- ✦ Relationship between architectural creation and the world
  - some living creature transform it's environment - creating new elements in the system



- ✦ Relationship between architectural creation and the world
  - to survive it has to fit to the environment



- ✦ Relationship between architectural creation and the world
  - to survive it has to fit to the environment



- ✦ Relationship between architectural creation and the world
  - if it fits - will become integrated part of the system



Rafael MONEO  
Town hall, Murcia

- ✦ Relationship between architectural creation and the world
  - if it fits - will become integrated part of the system,
  - if not - the system ejects it



landslip  
Japan

- ✦ Relationship between architectural creation and the world
  - precondition of integration is:

# HARMONY



- ✦ Relationship between architectural creation and the world
  - human being is also a part of the ecosystem but
  - human being abandons of the rest of the world
  - and permanently looks for new places



- ✦ Relationship between architectural creation and the world
  - architecture is a tool to find new places in the world



Skellig  
Ireland

- ✦ Relationship between architectural creation and the world
  - architecture is a tool to find new places in the world
  - purpose of architecture is:

HARMONY



Spa in Valls  
P. ZUMTHOR

- ✦ Relationship between architectural creation and the world
  - architecture is a tool to find new places in the world
  - purpose of architecture is:

HARMONY

if not

- the activity cannot be called architecture any more..

YHOMЯAH

To achieve

# HARMONY

we have to know

- ourself
- the system around us
- our tools

↓  
Cognition

## Cognition of the world

is based on reaction of two elements:

- the subject - the human being
- the object - the rest of the world

## Way of cognition:

- empiric - based on
  - experiences
  - experiments
- yes
- or
- no

## Way of cognition:

- empiric - based on

- experiences

- experiments

- yes...

- or

- no...

- theoretic - creates new connections between experiences

- if yes...

- or

- if no...

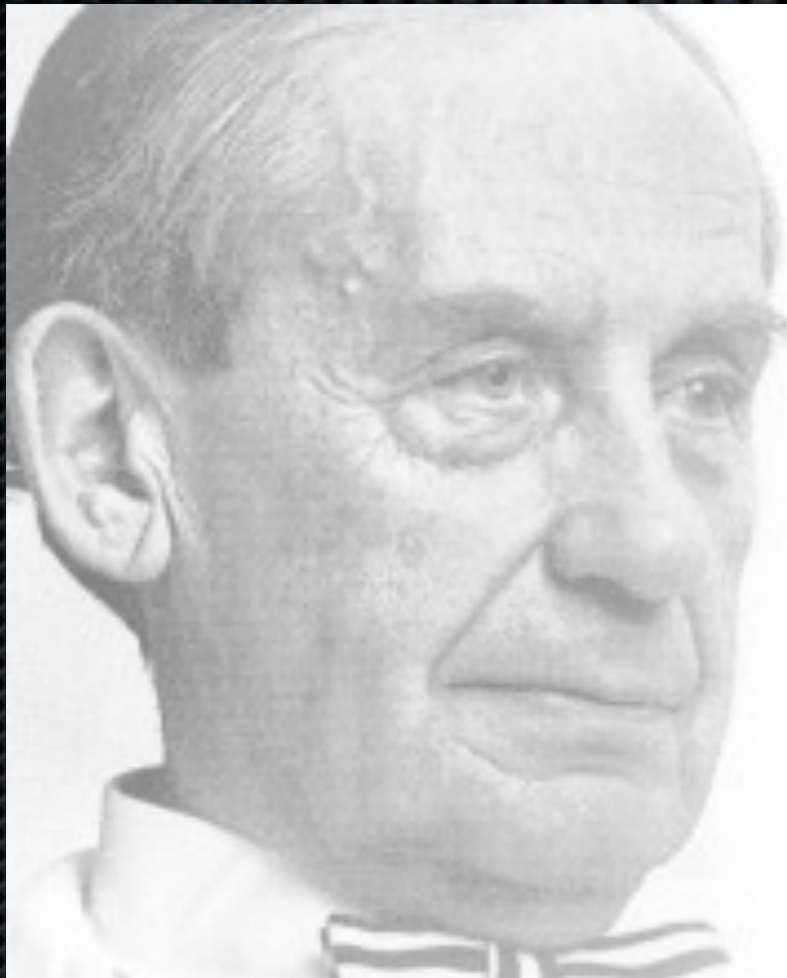
## Methods of cognition:

- analogy
  - creates subjective theories of experiences
  - creates philosophy starting from the whole
- analytics
  - produces laws and standards based on results of experiments, scientific discoveries
  - creates philosophy based on parts

Sample from architecture:

BAUHAUS

# BAUHAUS 1919-1933....



**Architecture begins  
where engineering ends.**

Walter Gropius

Walter GROPIUS

## Cognition of the world

is based on reaction of two elements:

- the subject - the human being
- the object - the rest of the world

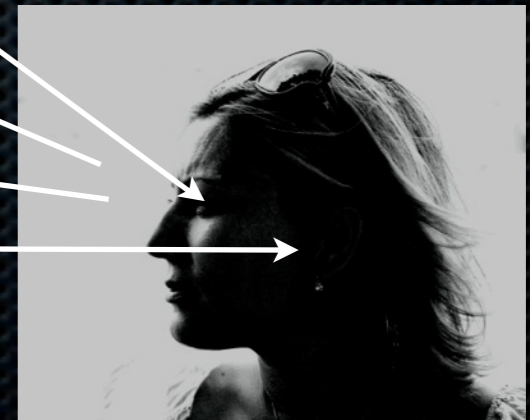
## Way of cognition:

- empiric
- theoretic

## Methods of cognition:

- analogy
- analytics

## Tools of cognition



## Tools of cognition:

- perception (recognition of sensation)

## Effect on design

- |            |       |
|------------|-------|
| - to see   | ***** |
| - to hear  | **    |
| - to smell | *     |
| - to touch | ***   |
| - to taste | *     |

## Tools of cognition:

- perception
- observation
  - registration and conclusion of sensation -  
(one of the most important observation is  
the localisation - definition of position of the  
object (the mass) in the space...)

## Tools of cognition:

- perception

- observation

- confidence or belief

the creative fantasy that builds up  
philosophy - image of the world.

It stimulates us for new observations.

## Tools of cognition:

- perception
- observation
- confidence or belief
- understanding  
peak of cognition

To achieve

# HARMONY

we have to know

- ourself
- the system around us
- our tools



Cognition

Effect on design

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- 
- A black and white photograph showing a coastal property. On the left, a large, light-colored house with a dark roof and a chimney is visible. A concrete seawall runs along the shoreline, separating the property from a sandy beach and the ocean. The sky is overcast with heavy clouds.

- the system around us - starting points
- location (Genius Loci) - WHERE ?
- age
- HOW ?



Villa in Teheran  
Arash PIRAYESH

- the system around us - starting points
  - location (Genius Loci) - WHERE ?
  - age - HOW ?
  - human - WHOM ?



- the system around us - starting points
  - location (Genius Loci) - WHERE ?
  - age - HOW ?
  - human - WHOM ?
  - task - WHAT ?



- the system around us - starting points
- location (Genius Loci) - WHERE ?
- legal situation
  - property
  - building code
  - local regulations

## BUILDING CODE OF THE CITY OF NEW YORK

Plus Reference Standards and Selected Rules and Regulations of the Department of Buildings

Local Law No. 76 Effective December 6, 1968  
Includes Amendments to October 1, 2004

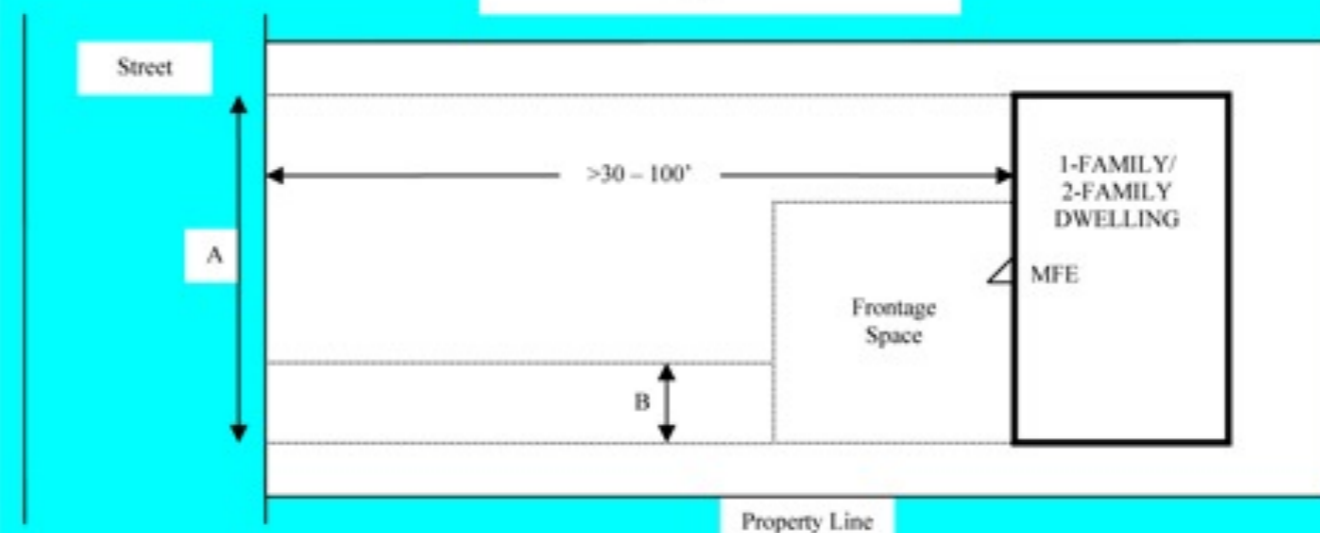
Michael R. Bloomberg  
Mayor

Patricia J. Lancaster  
Commissioner  
Department of Buildings

Martha K. Hirst  
Commissioner  
Department of Citywide Administrative Services

Title Page

Figure 3



MFE = main front entrance  
Location of frontage space shown is illustrative only.  
A: Fire apparatus access road required by FC503.2.1 (30' - 38' wide)  
B: Driveway/FAAR alternative authorized by interim guidelines (width subject to DOB approval).

- the system around us - starting points
  - location (Genius Loci) - WHERE ?
    - legal situation
    - morphology (topology, landscape, context)
      - natural
        - plain
        - slope
      - artificial
        - moulded
        - urban



- the system around us - starting points
  - location (Genius Loci) - WHERE ?
    - legal situation
    - morphology (topology, landscape, context)
    - climate
      - air
        - temperature
        - wind
      - water
        - rain
        - snow
    - sun

- **the system around us** - starting points
  - location (Genius Loci) - WHERE ?
  - age - HOW ?
    - trends, style
    - traditions
      - experimental
      - spiritual (culture, religion, philosophy)
      - expressive (identity, philosophy, policy)



- **the system around us** - starting points
  - location (Genius Loci) - WHERE ?
  - age
    - HOW ?
  - trends, style
  - traditions
    - experimental
    - spiritual (culture, religion, philosophy)
    - expressive (identity, philosophy, policy)
  - level of development and innovation
    - technology
    - availability of materials
    - sustainability
    - durability

- **the system around us** - starting points
  - location (Genius Loci) - WHERE ?
  - age - HOW ?
  - human - WHOM ?
    - the client....
    - designer's attitude...
    - the authorities, jury...
    - special need
    - anthropometry

- **the system around us** - starting points
  - location (Genius Loci) - WHERE ?
  - age - HOW ?
  - human - WHOM ?
  - task - WHAT ?
  - recently = need
    - biological (propagation)
      - nest
    - physical
      - protection = incubation
      - comfort
      - providing food

- **the system around us** - starting points
  - location (Genius Loci) - WHERE ?
  - age
    - HOW ?
  - human
    - WHOM ?
  - task
    - WHAT ?
  - recently = need
  - now = program
    - functional
    - aesthetic
    - economical, financial

To achieve

# HARMONY

we have to know

- ourself
- the system around us
- our tools



Cognition

Effect on design

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- **our tools** - starting points
- drawings
  - sketches, croquis
  - technical drawings, etc.
  - CAD, BIM

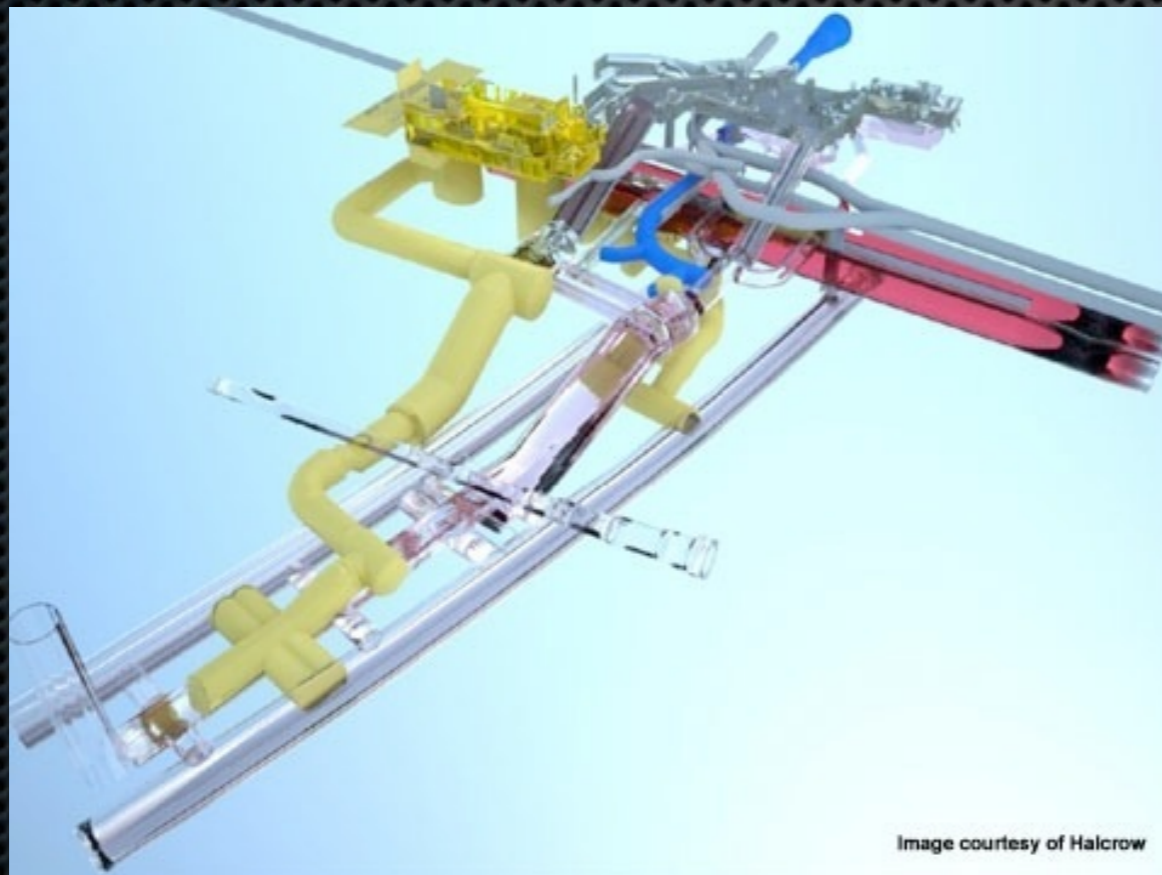
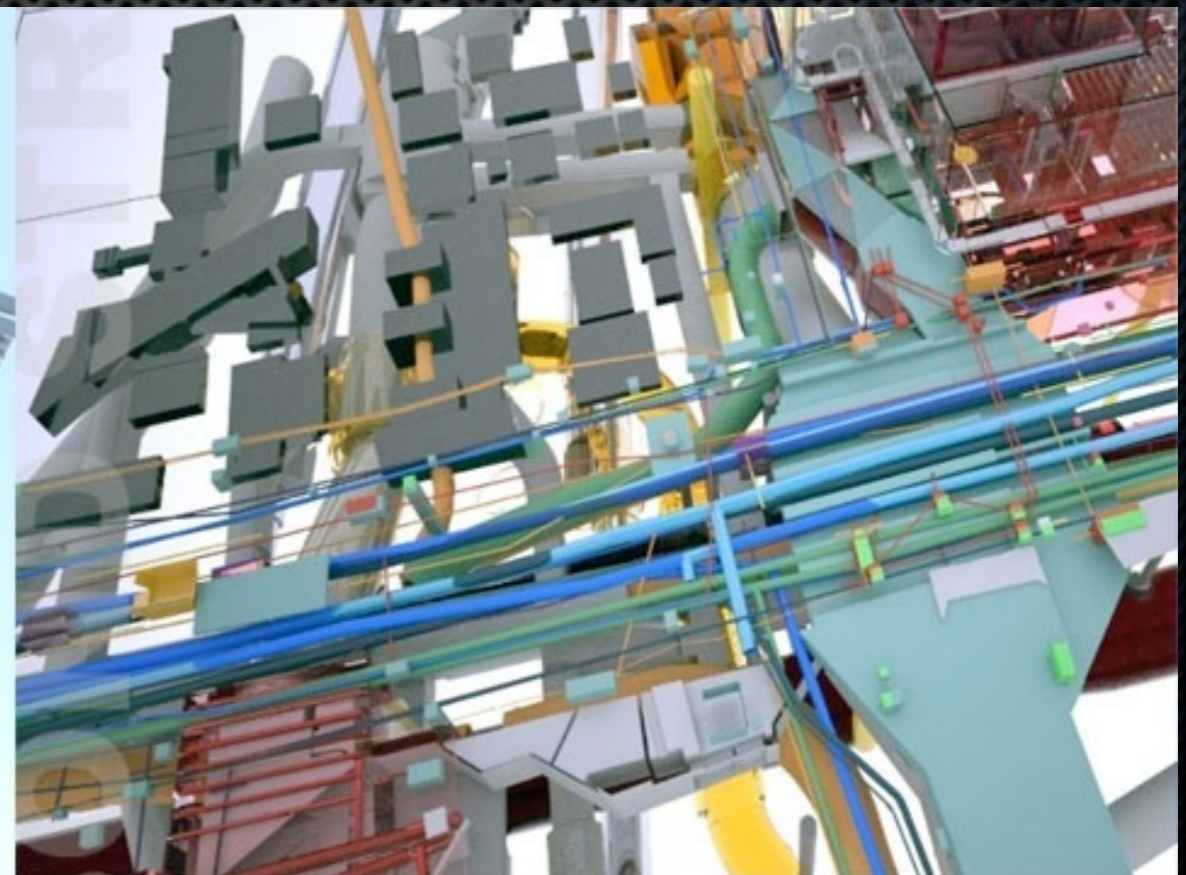


Image courtesy of Halcrow

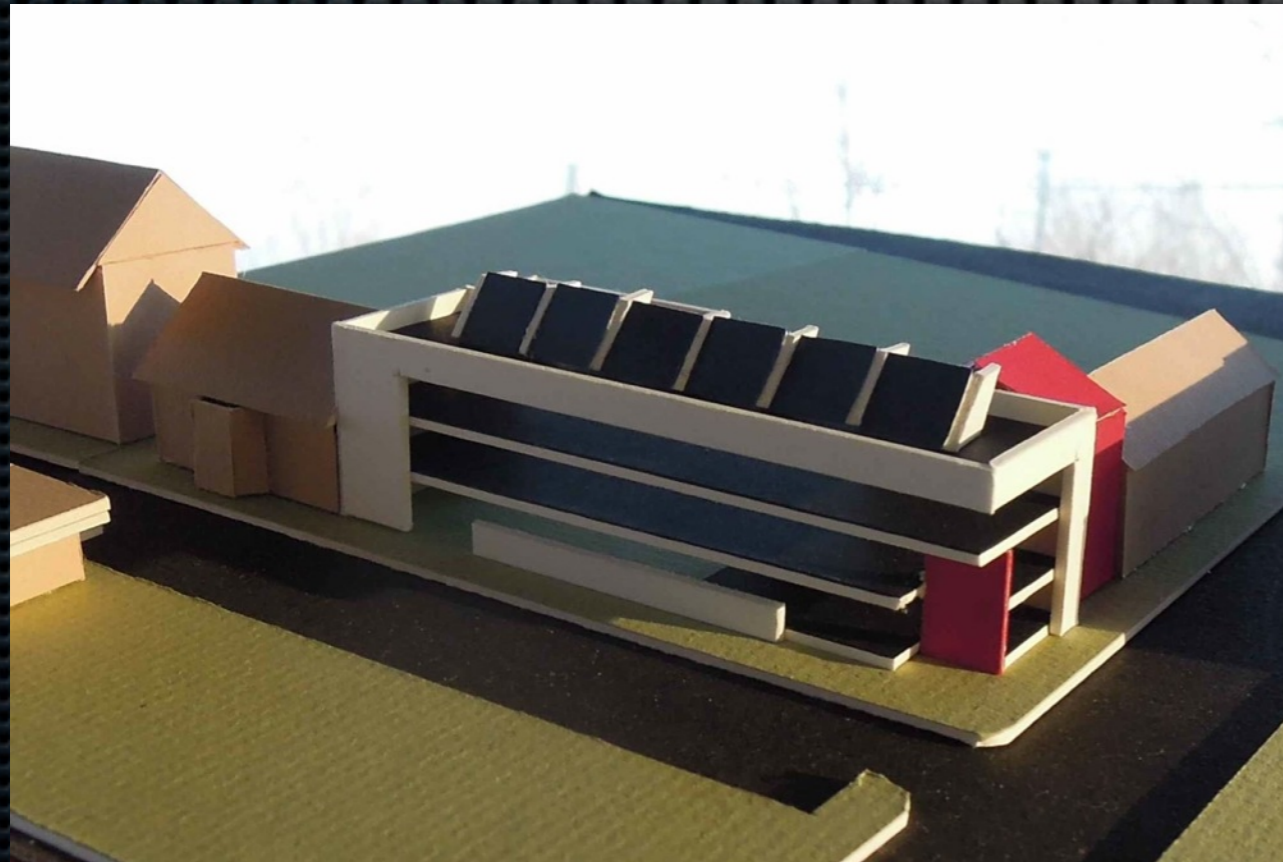


- **our tools** - starting points
  - drawings
    - sketches, croquis
    - technical drawings, details
    - CAD, BIM
  - model
    - virtual (visual renderings, video)
    - physical
      - sketch model
      - visualising model

- **our tools** - starting points
  - drawings
  - model
    - virtual
    - physical
    - sketch model



- **our tools** - starting points
  - drawings
  - model
    - virtual (visual renderings, video)
    - physical
      - sketch model



L.HODOSSY, Z.FÖLDESI, Z.SCHRAMMEL

- **our tools** - starting points
  - drawings
  - model
    - virtual (visual renderings, video)
    - physical
      - sketch model
      - visualising model



- **our tools** - starting points
  - drawings
    - sketches, croquis
    - technical drawings, details
    - CAD, BIM
  - model
    - virtual (visual renderings, video)
    - physical
      - sketch model
      - visualising model
- any other art...

My own quote for today:

In the design there is no bad idea,  
only unfounded decision...



ZOLTAN SCHRAMMEL 2017.