

# RULING FREEDOM

ADVANCED  
PARAMETRIC  
DESIGN

23/24

CARLO DEREGIBUS + EMANUELE CAVAGLION / ARCHITECTURAL AND URBAN DESIGN

FABIO FAVOINO + MILAD HEIRANIPOUR / BUILDING PHYSICS

ANDREA TONIN + MARCO CAPRANI / ARCHITECTURAL DRAWING

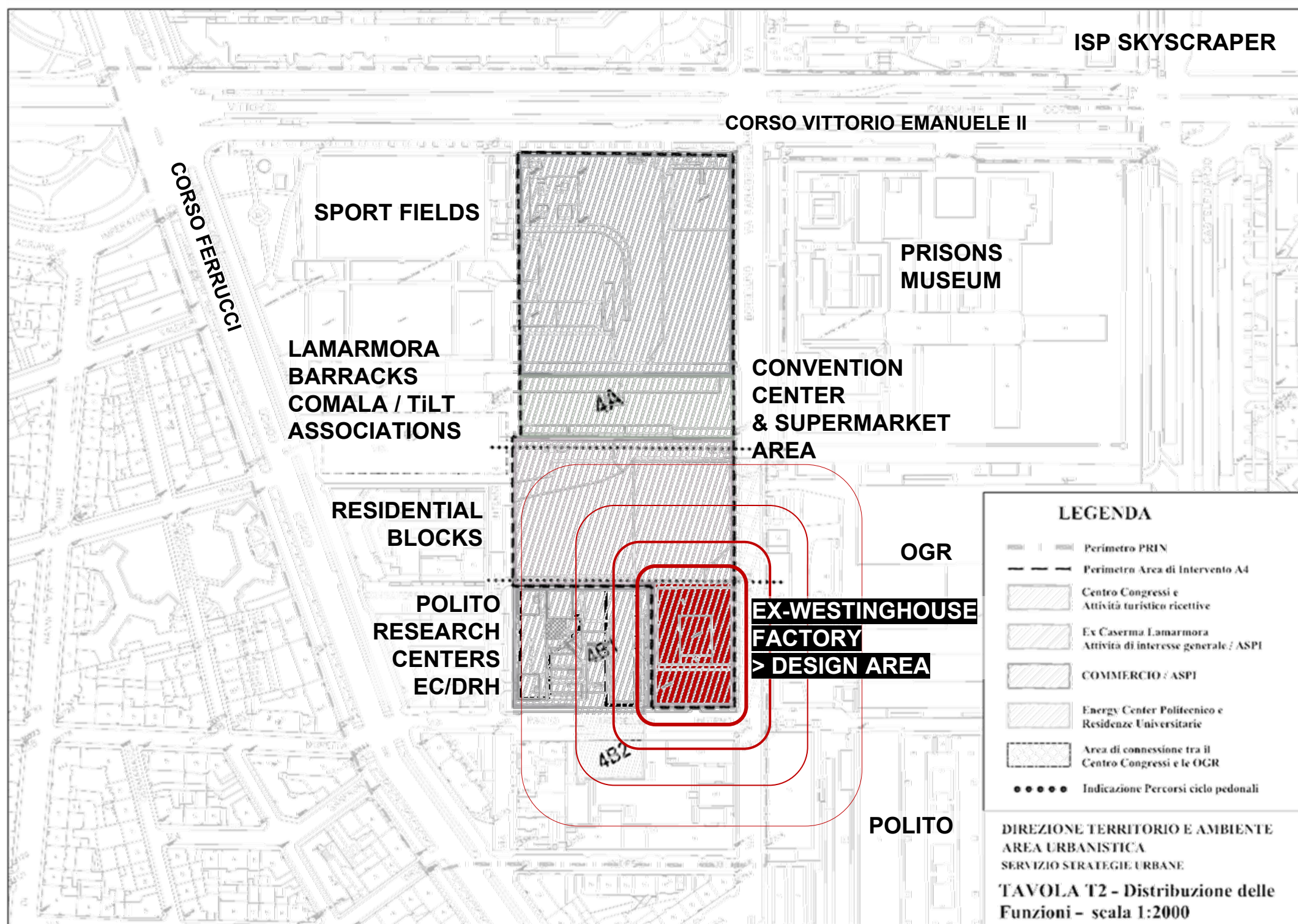
# YOUR MISSION

DESIGNING AN 8.000sqm HOTEL WITH 180 ROOMS IN THE EX-WESTINGHOUSE LOT, IN TORINO, JUST NEAR THE FUTURE CONVENTION CENTER.

IN THE DESIGN AREA THERE IS AN HISTORIC BUILDING TO BE MAINTAINED AND INCLUDED IN THE DESIGN.

THE NEARBY AREA WAS DESIGNED IN THE LAST-YEAR ATELIER > RESULTS WILL BE YOUR SCENARIOS

THE DESIGN SHOULD STRESS THE PARAMETRIC APPROACH IN ALL SENSES, USING EVALUATION TOOLS.





# ARCHITECTURAL AND URBAN DESIGN / MERGING CONCEPT, SHAPE AND PERFORMANCE AT ALL SCALES

JEAN NOUVEL / THE HOTEL



ZAHA HADID / THE OPUS



QUERKRAFT / IKEA





# BUILDING PHYSICS / PROVIDE METHODS AND TOOLS TO TAKE INFORMED (PERFORMANCE-BASED) DESIGN DECISIONS

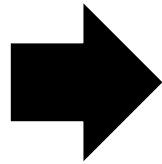
## WHAT / OBJS

0. Climate analysis

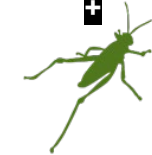
1. Climate based urban space performance

2. Climate based façade morphing / performance

3. Performance based design of indoor space (daylight / Energy / Comfort)



Rhino

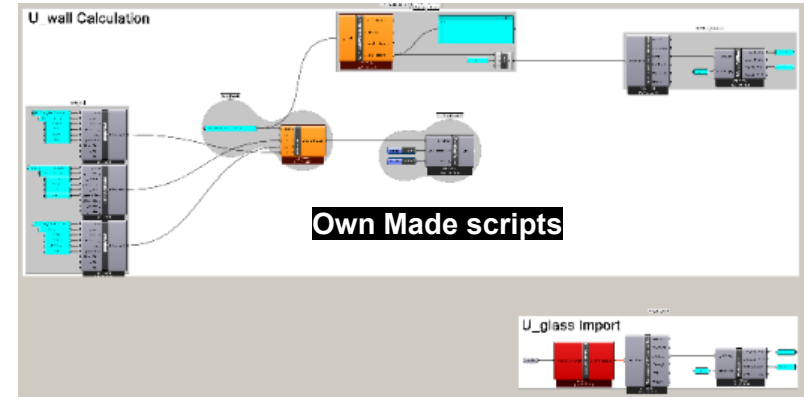
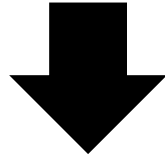


Grasshopper

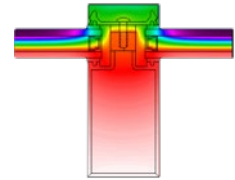


Ladybug / HoneyBee / Dynamo

## TOOLS

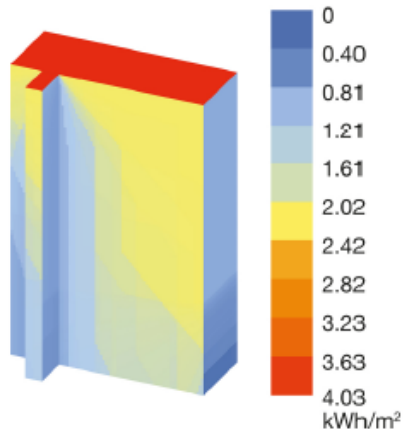


Own Made scripts

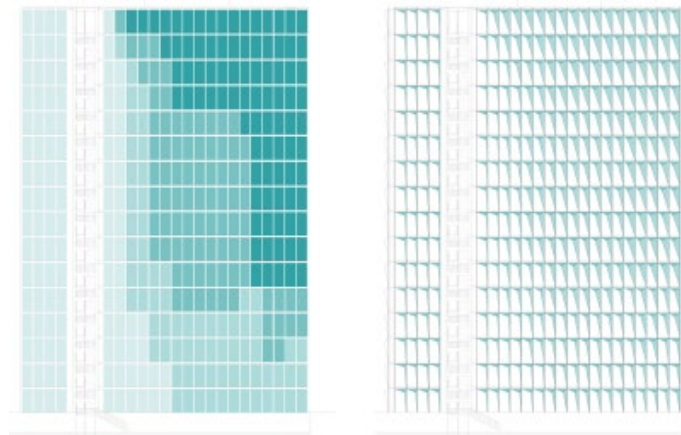


External SW (Examples: Therm / Window / Winshelter / Involucro etc...)

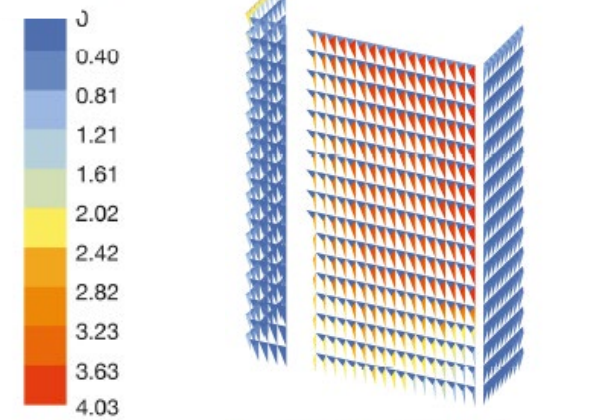
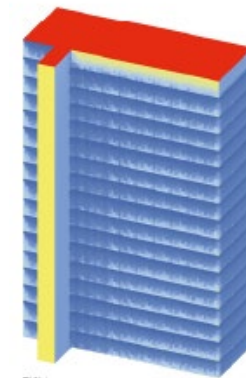
## METHODS / PROCESS



Preliminary analysis



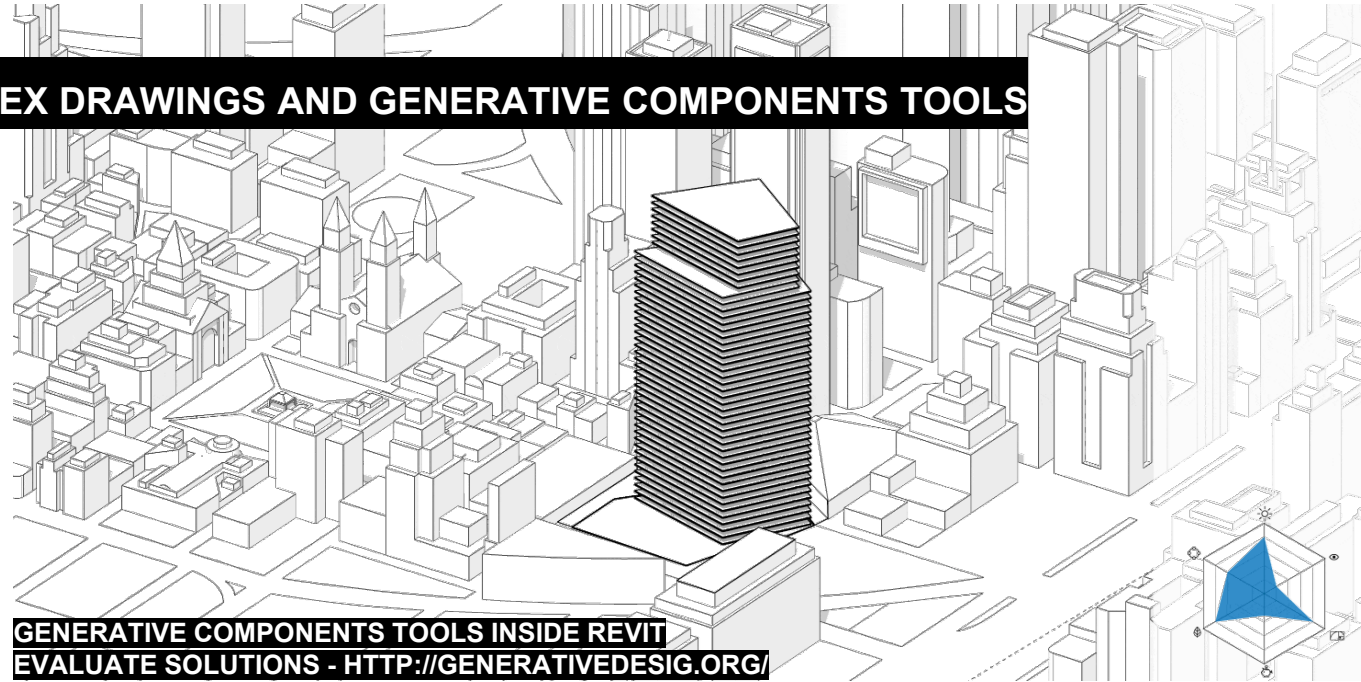
Concept / Discretisation / Modelling



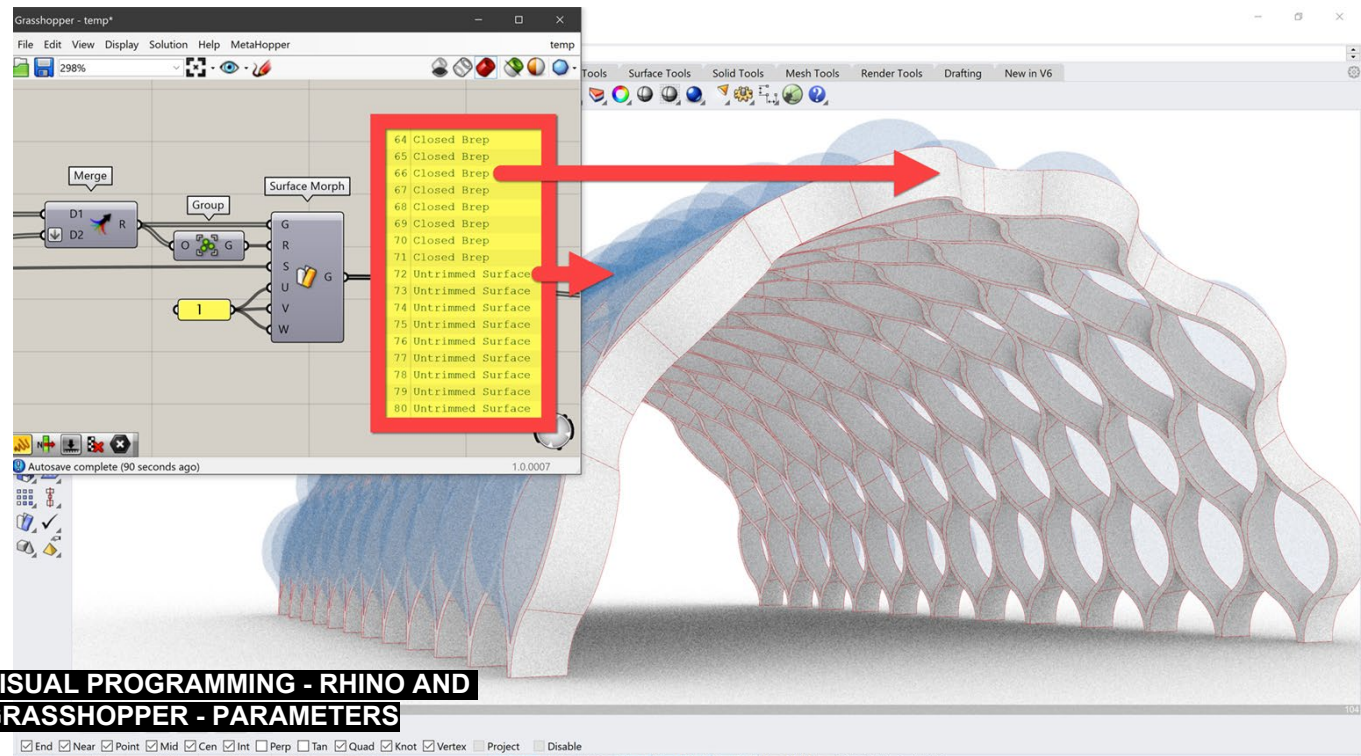
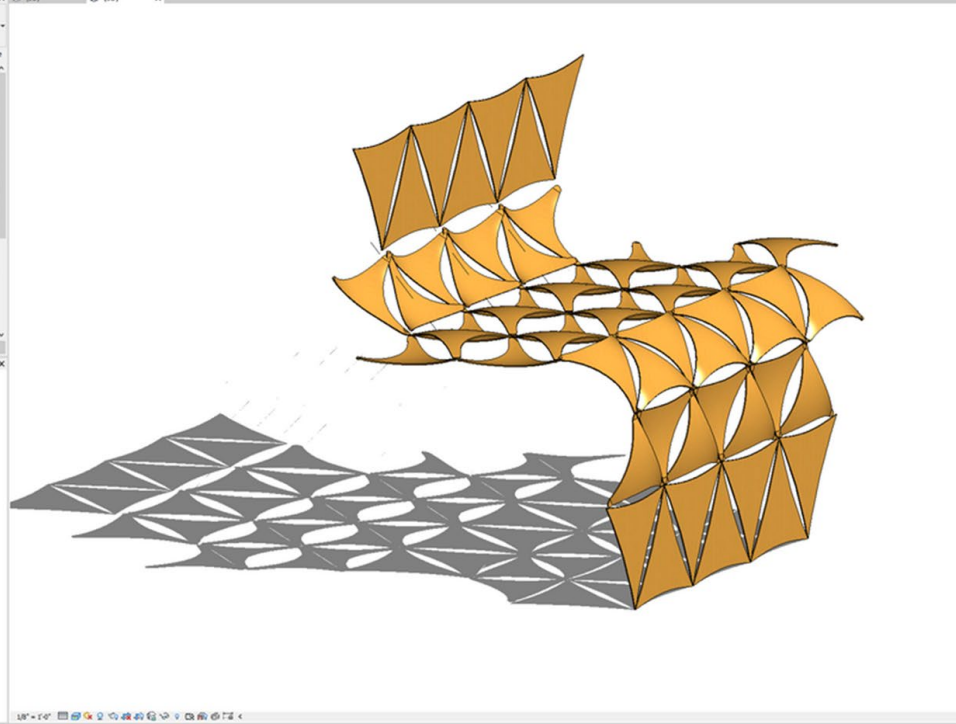
Evaluation of concepts

# ARCHITECTURAL DRAWING / MANAGING COMPLEX DRAWINGS AND GENERATIVE COMPONENTS TOOLS

**WHAT IN USE:**  
**REVIT**  
**RHINO**  
**GRASSHOPPER**



**GENERATIVE COMPONENTS TOOLS INSIDE REVIT**  
**EVALUATE SOLUTIONS - [HTTP://GENERATIVEDESIG.ORG/](http://generativedesig.org/)**



**VISUAL PROGRAMMING - RHINO AND GRASSHOPPER - PARAMETERS**



# EXAMPLE BOARDS FROM LAST YEAR ATELIER

**01**

Master of Science - Architecture / TU Delft  
 Project: [illegible]  
 Client: [illegible]  
 Location: [illegible]

**04**

Master of Science - Architecture / TU Delft  
 Project: [illegible]  
 Client: [illegible]  
 Location: [illegible]

### BEYOND BIGNESS

**Spatial metaphor**

Static Accidents  
 Thrown floor accident  
 Fluctuation Adaptation

**Strategy**

Action  
 Missing principle

**Global energy performance**

**03**

Master of Science - Architecture / TU Delft  
 Project: [illegible]  
 Client: [illegible]  
 Location: [illegible]

**05**

Master of Science - Architecture / TU Delft  
 Project: [illegible]  
 Client: [illegible]  
 Location: [illegible]