

# ARCHITECTURE AND COMPUTATIONAL DESIGN

Politecnico di Torino

**MACC** MASTER ARCHITECTURE CONSTRUCTION AND CITY

2023/24

Architectural and urban design

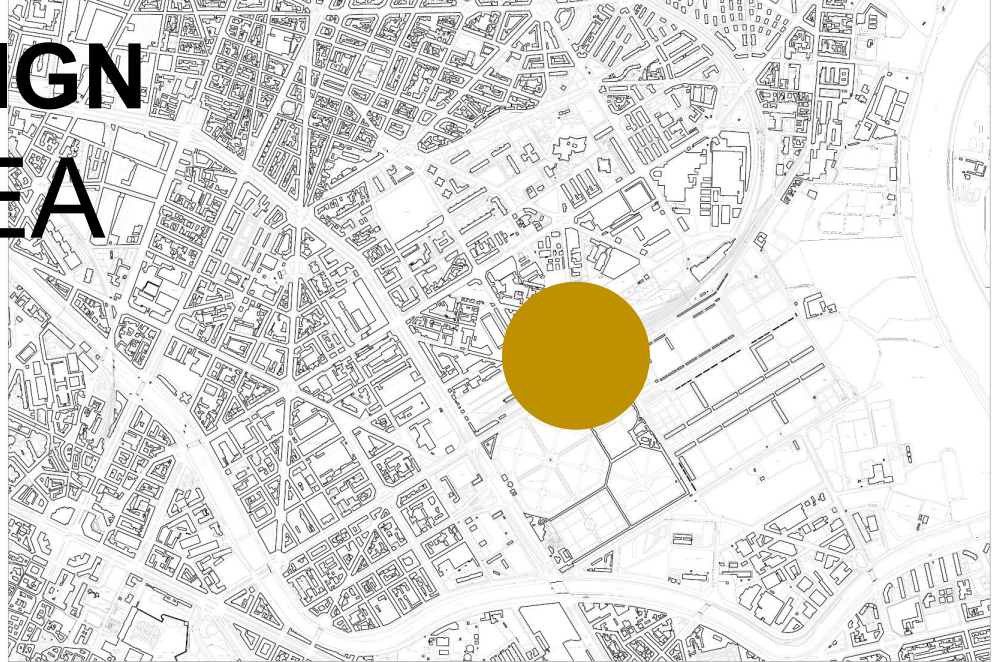
**NICOLA MARZOT** | MARTINA CRAPOLICCHIO

Architectural drawing

**MARCO CAPRANI** | SARA GIAVENO | MICHELE CAMMARANO



**DESIGN  
AREA**

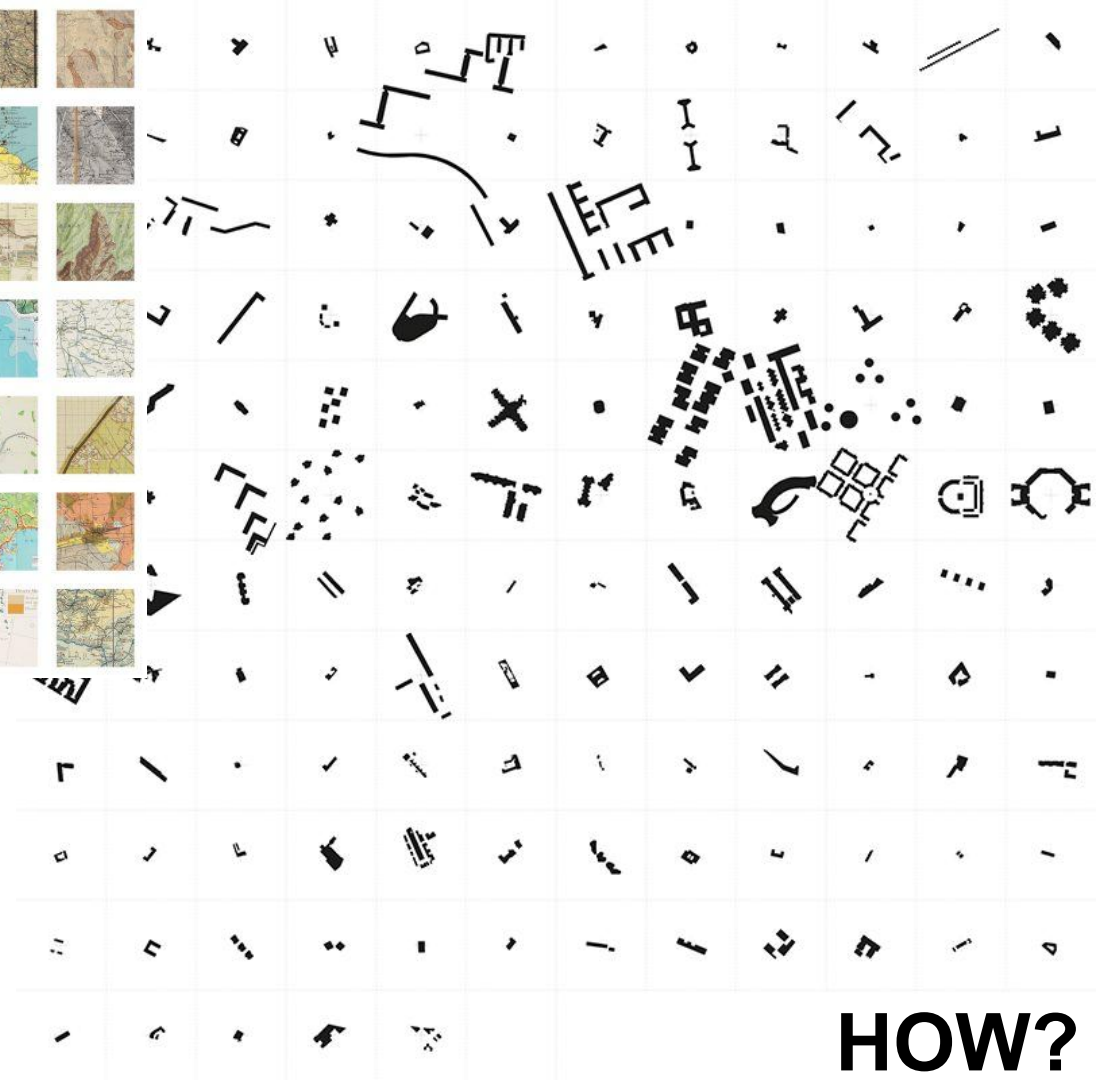


**SCALO VANCHIGLIA  
TORINO**

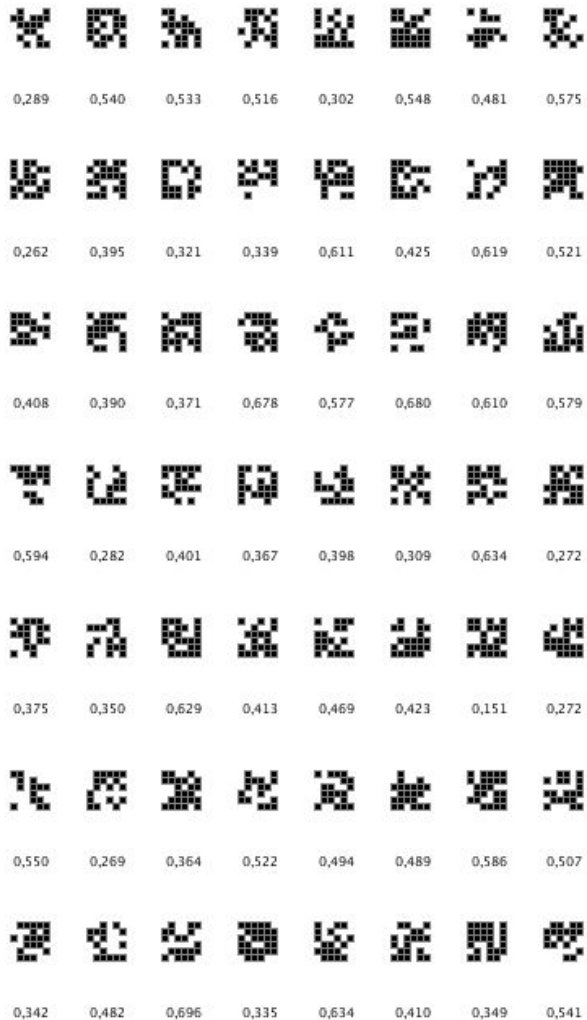
**WHERE?**



**STUDYING URBAN FABRICS**  
**RECOGNISING TYPOLOGIES**  
**ANALYSING PATTERNS**  
**DRAWING UP MAPS**



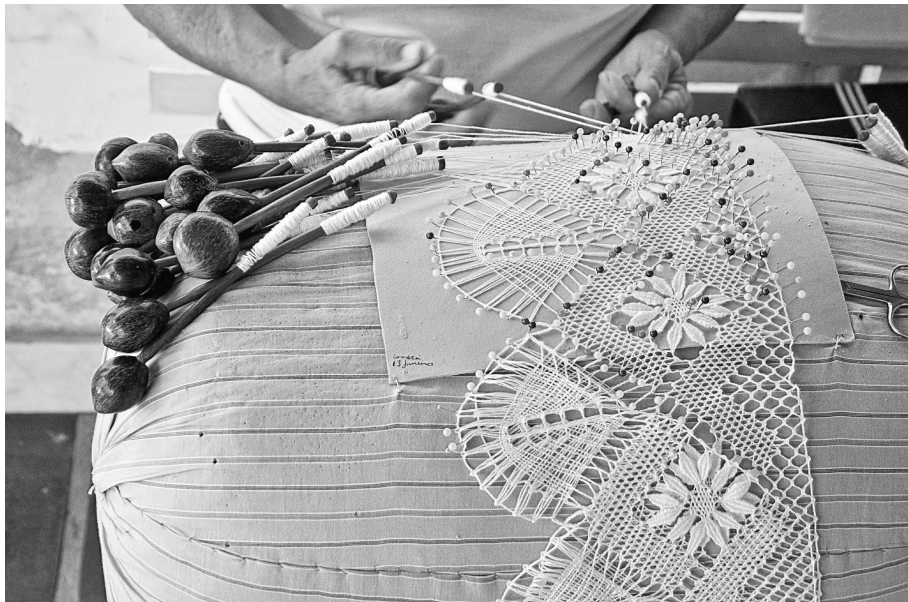
**HOW?**



# DEVELOPING AN URBAN PROJECT

BASED ON DATA PROCESSING

**WHAT?**

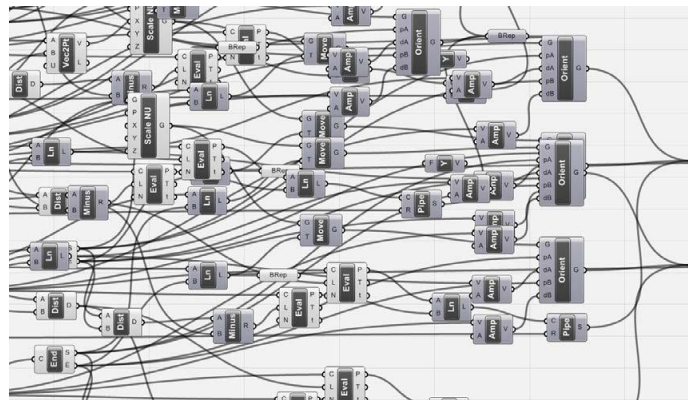


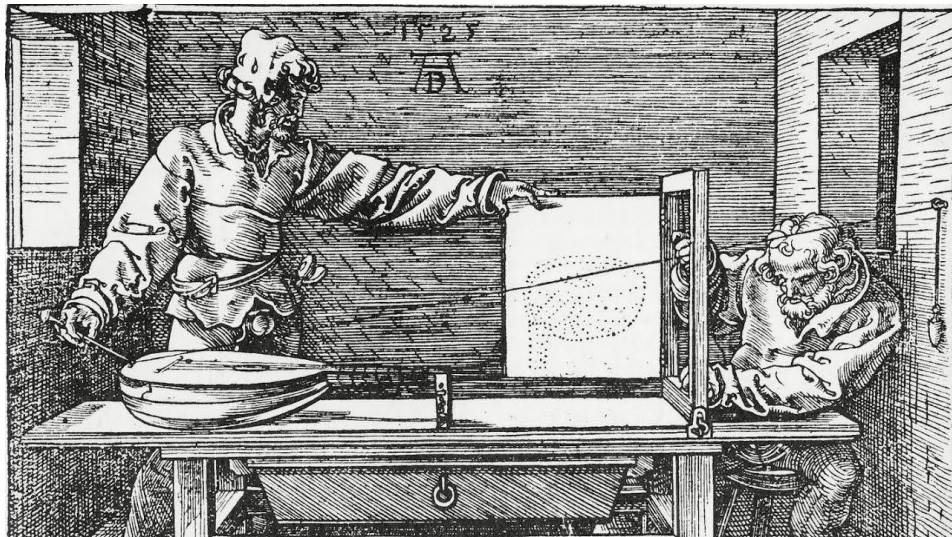
# ALGORITHMIC DESIGN

MASTERING  
COMPUTATIONAL TOOLS

**COMPUTER AS A LABORATORY**  
**A.I AS EXPLORATIVE TOOL**  
**3D MODELING AND SURFACING**  
**FLOWS AND GRADIENTS**

VECTOR FIELDS, ATTRACTORS, AND MORE...

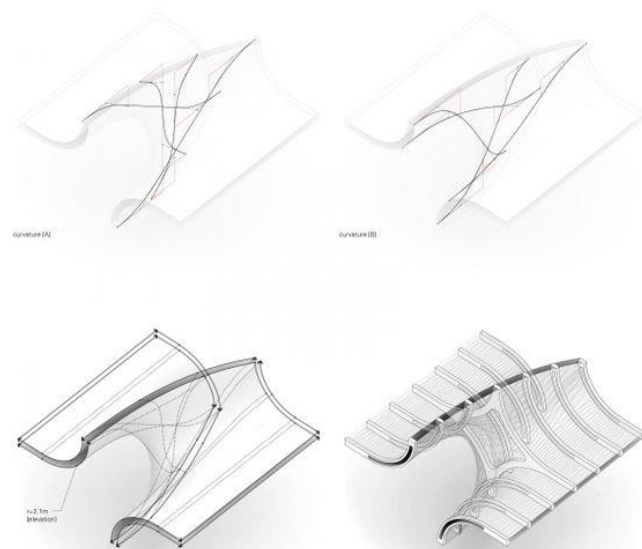


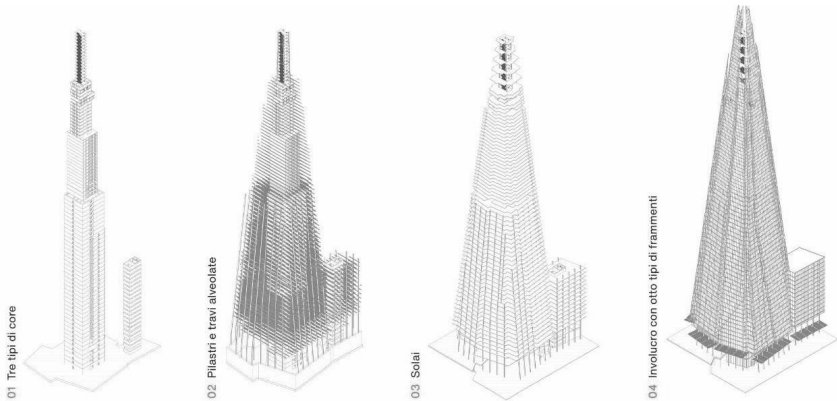


# DIGITAL STORYTELLING

DRAWING IN A DIGITAL MEDIUM

**CRITICAL DRAWING**  
**OPERATIVE DRAWINGS**  
**DRAWING FROM MODELS**  
**DIGITAL DRAWINGS**  
HATCHES AND MORPHING  
**PARAMETRIC PATTERNING**



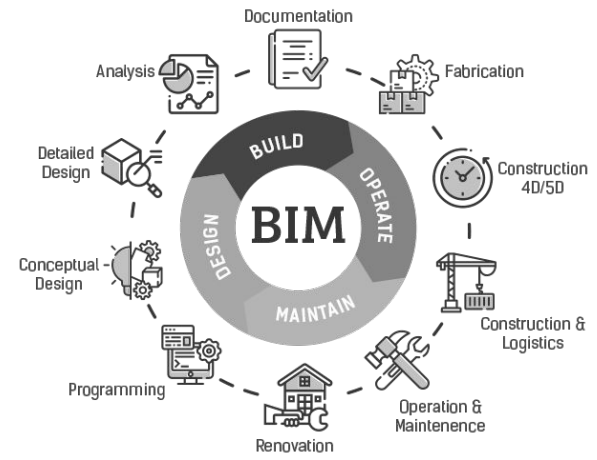


# BUILDING INFORMATION MODELING

IMPLEMENTING DATAS INTO MODELS



**EXPLORING INTEROPERABILITY**  
**TECHNICAL DRAWINGS**  
**MANAGING & EXTRACTING DATAS**  
**LODs**  
**DETAILING**  
**SCHEDULES, TYPES AND FAMILIES...**



# **MAIN OBJECTIVES:**

UNDERSTANDING ICONIC PROJECTS FROM THE LAST 100 YEARS

LEARNING TO DEAL WITH DENSITY, COMPLEXITY  
AND CONTRADICTIONS

EXPERIMENTING WITH POST-DIGITAL ARCHITECTURAL MORPHOLOGIES

**ACQUIRING SKILLS IN GENERATIVE DESIGN AND ALGORITHMIC  
MODELLING**

IMPROVING DESIGN STORYTELLING

MASTERING BIM MODELLING

## **WORK METHOD:**

GROUP WORK & FRONTAL LECTURES

**EXERCISES & EXTEMPORES**

STUDIO CRITICS & MID-TERM REVIEW

SITE SURVEY & FIELD TRIP