

An aerial photograph of a city grid, showing a dense pattern of streets and buildings. The image is used as a background for the text.

**Urban Design
Year 5
Week 4**

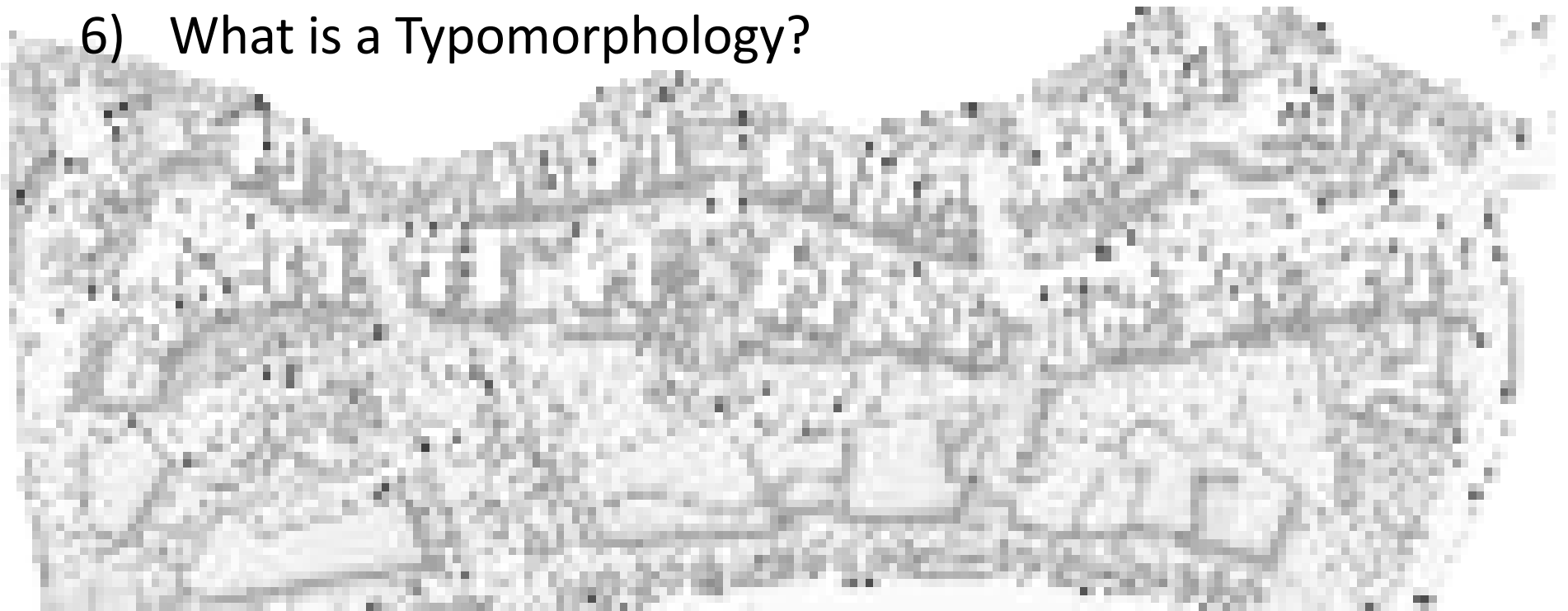
**Tuesday
2nd**

The Morphological Dimension of Urban Design

By: Urban Design Staff

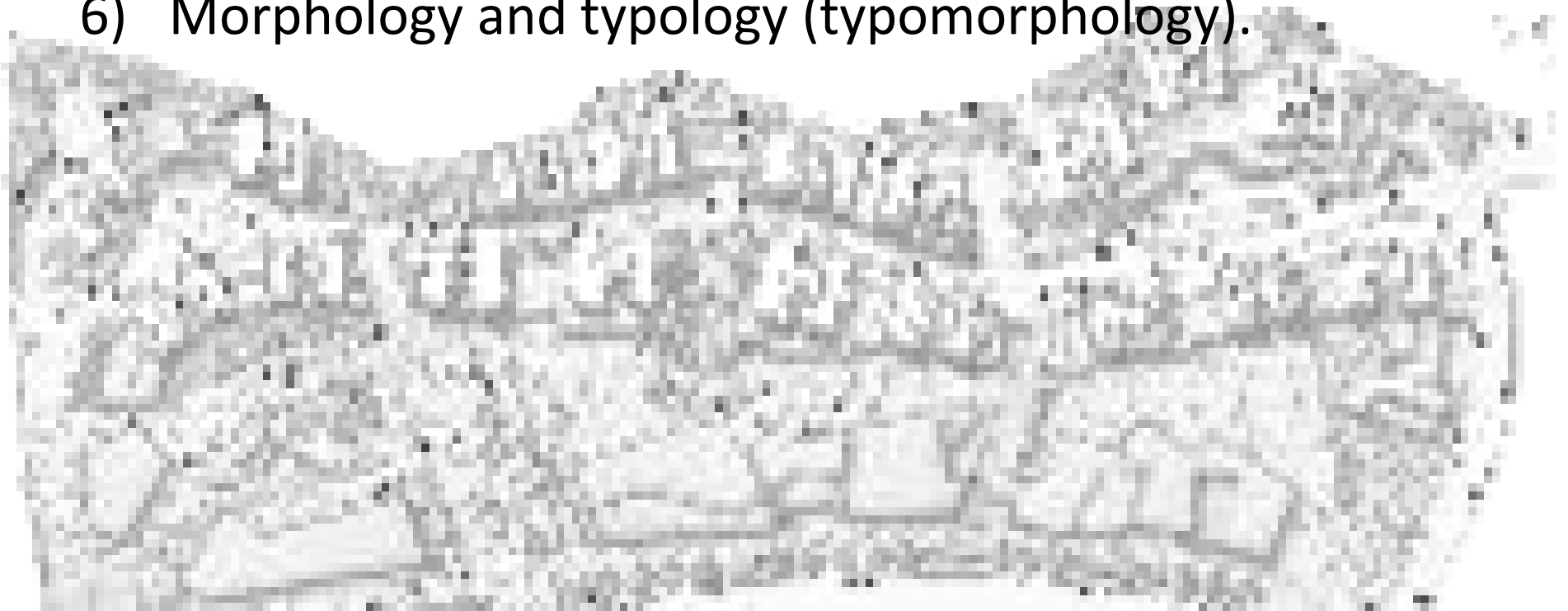
The Morphological Dimension of Urban Design

- 1) What is Urban Morphology?
- 2) Why is it important for urban design?
- 3) What are the different schools of urban morphology?
- 4) What is Urban form?
- 5) What are the physical elements of urban form?
- 6) What is a Typomorphology?



The Morphological Dimension of Urban Design

- 1) Definitions and terms.
- 2) Different thoughts on urban form.
- 3) The objectives of urban morphology.
- 4) The physical elements of urban form.
- 5) The different schools of urban morphology.
- 6) Morphology and typology (typomorphology).



The Morphological Dimension of Urban Design

1- Definitions and terms

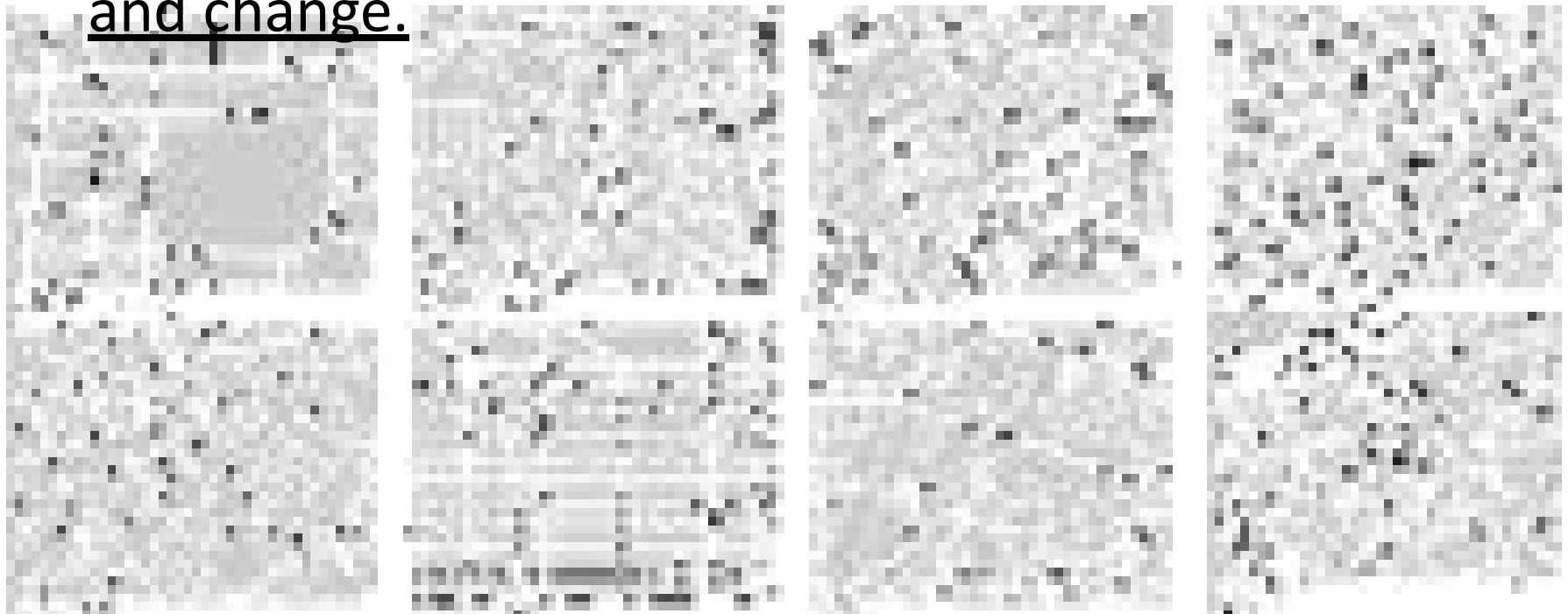
Urban

Morph

logy

Urban morphology is the **study of change** in the **physical form** and **shape of settlements over time**

It focuses on patterns and processes of growth and change.



The Morphological Dimension of Urban Design

1- Definitions and terms

Urban Morphology

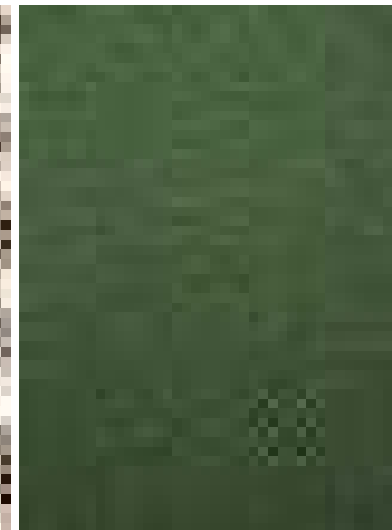
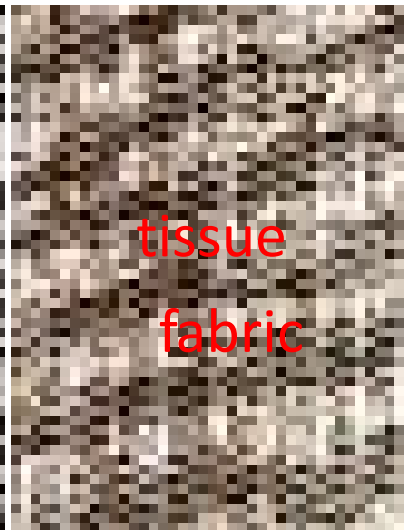
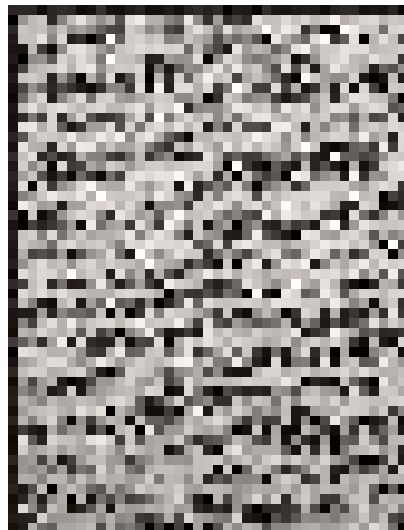
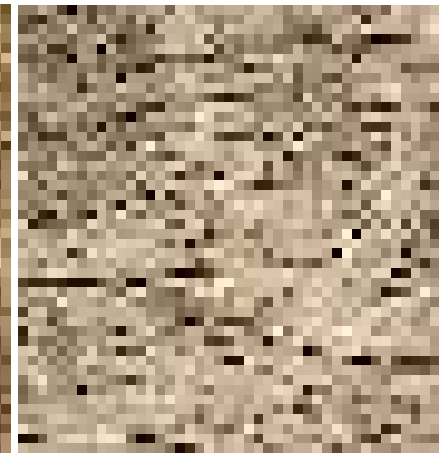
- Urban morphology is the study of the form of human **settlements** and the process of their formation and transformation over time.
- Urban morphology is considered as the study of urban **tissue**, or **fabric**, as a means of discerning the environmental level normally associated with urban design.
- “Urban form” and “urban morphology” are always linked to each other.
- It mainly means investigation on the physical form.

The Morphological Dimension of Urban Design

Urban

Morph

logy



The Morphological Dimension of Urban Design

Urban

Morph

logy

tissue

fabric

grain

pattern



the layout and width of streets, land parcelation, and the spatial arrangements of zoning ordinances.



Orientation

Location

Size

The Morphological Dimension of Urban Design

- Urban form: is a description of the physical characteristic of the urban (urban context) object which would be identified by the variables of:
 - 1) Setback (Building line);
 - 2) Plot coverage;
 - 3) Street width;
 - 4) Building type;
 - 5) And building height.

The Morphological Dimension of Urban Design

2- Different thoughts on urban form

A.E. J. Morris

Organic and Non-planned pattern

Planned pattern



The Morphological Dimension of Urban Design
2- Different thoughts on urban form

A.E. J. Morris

“Natural-world” determinants



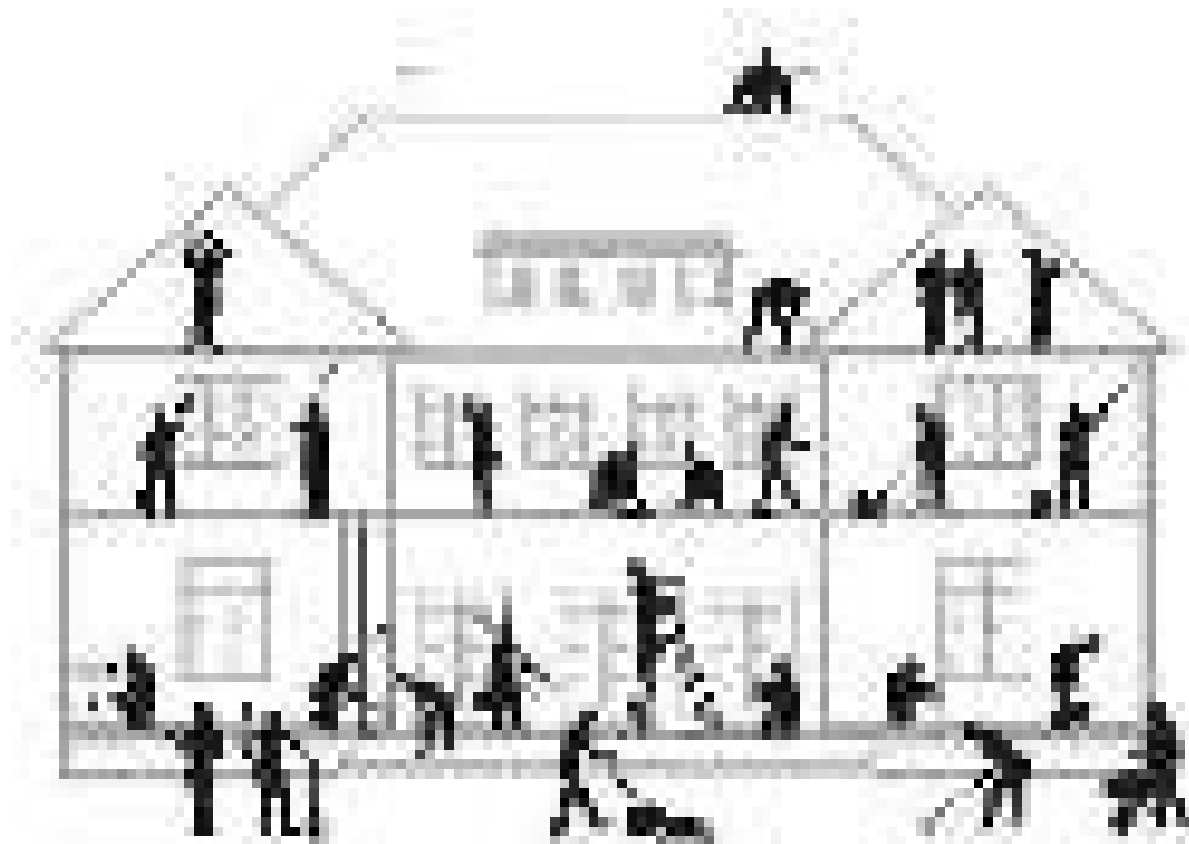
The Morphological Dimension of Urban Design

2- Different thoughts on urban form

A.E. J. Morris

“Natural-world” determinants

“Man-made” determinants



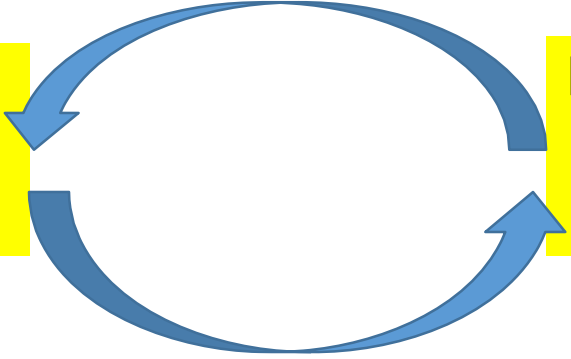
The Morphological Dimension of Urban Design

2- Different thoughts on urban form

Amos Rapoport

People

Physical built environment
(Urban form)



The Morphological Dimension of Urban Design
2- Different thoughts on urban form

Amos Rapoport

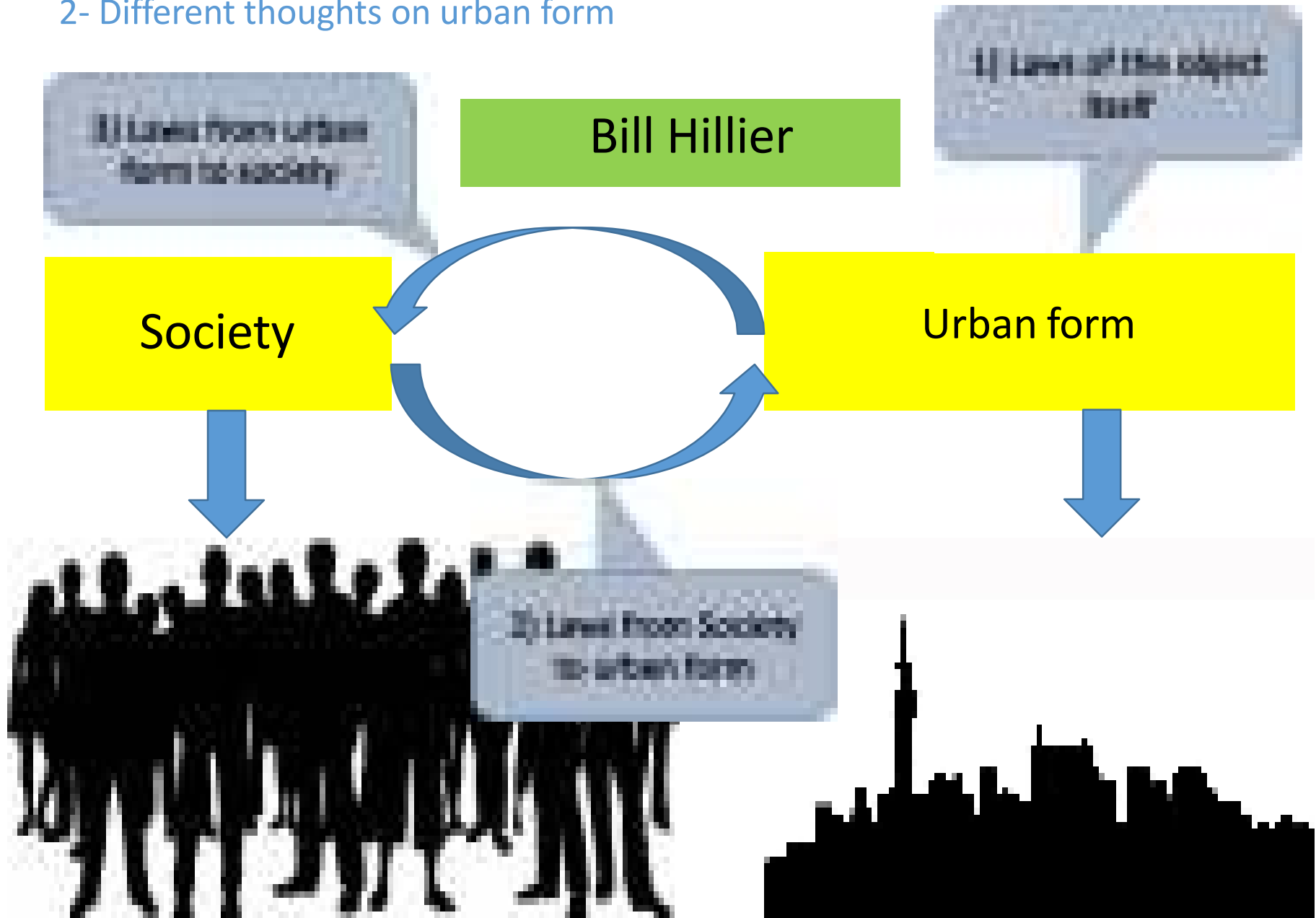


The Morphological Dimension of Urban Design
2- Different thoughts on urban form

Amos Rapoport

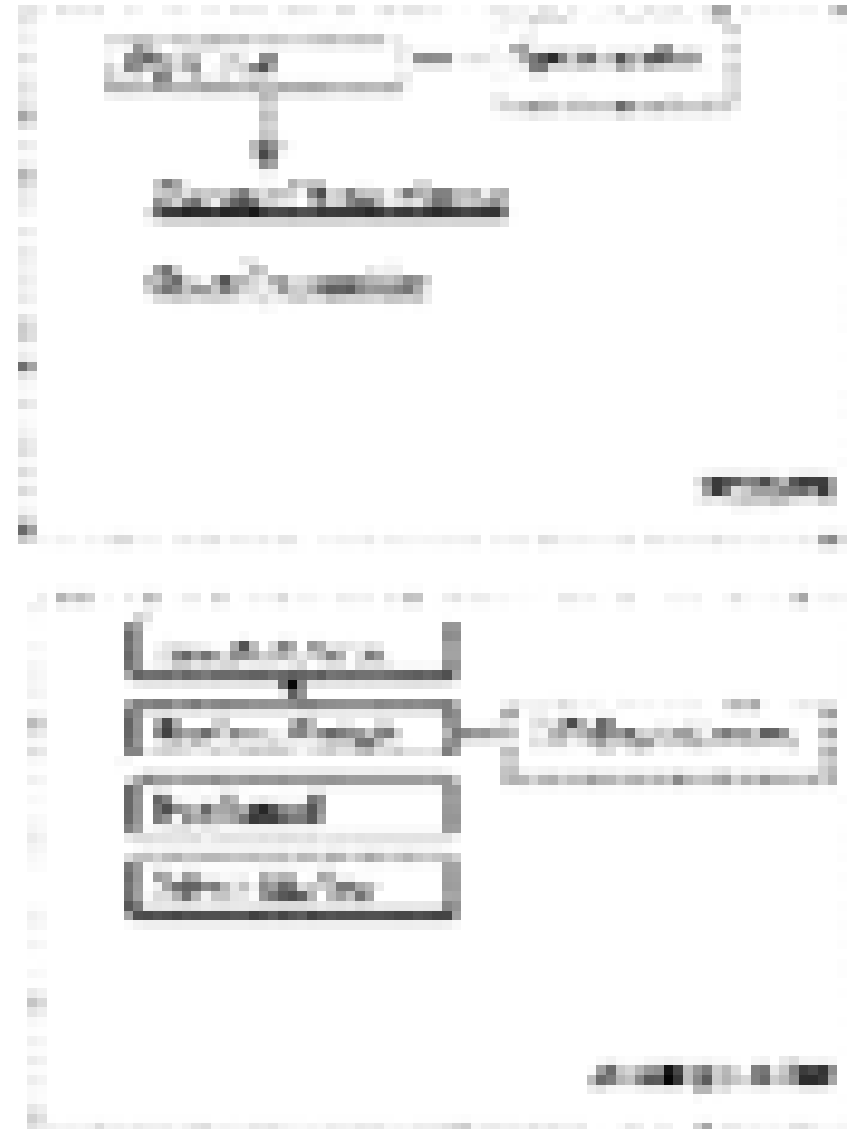


The Morphological Dimension of Urban Design
2- Different thoughts on urban form



The Morphological Dimension of Urban Design

2- Different thoughts on urban form



The Morphological Dimension of Urban Design

3 The Objectives of Urban Morphology

The objectives of urban morphology.

- To inform appropriate urban interventions to promote sustainable urban development.
- The concepts and approaches to the study of urban form are multidisciplinary. Relevant subject fields are ranging from human geography, urban planning, urban design, architecture, and sociology to cultural studies.
- Urban morphology usually benefits urban management, design and planning, urban conservation and regeneration, as well as urban policy-making in general to contribute to social economic and environmental sustainability.

The Morphological Dimension of Urban Design

The physical elements of urban form

The physical elements of urban form.

There are four main elements that define the physical urban form:

- Plot,
- Street,
- Constructed space,
- And open space.



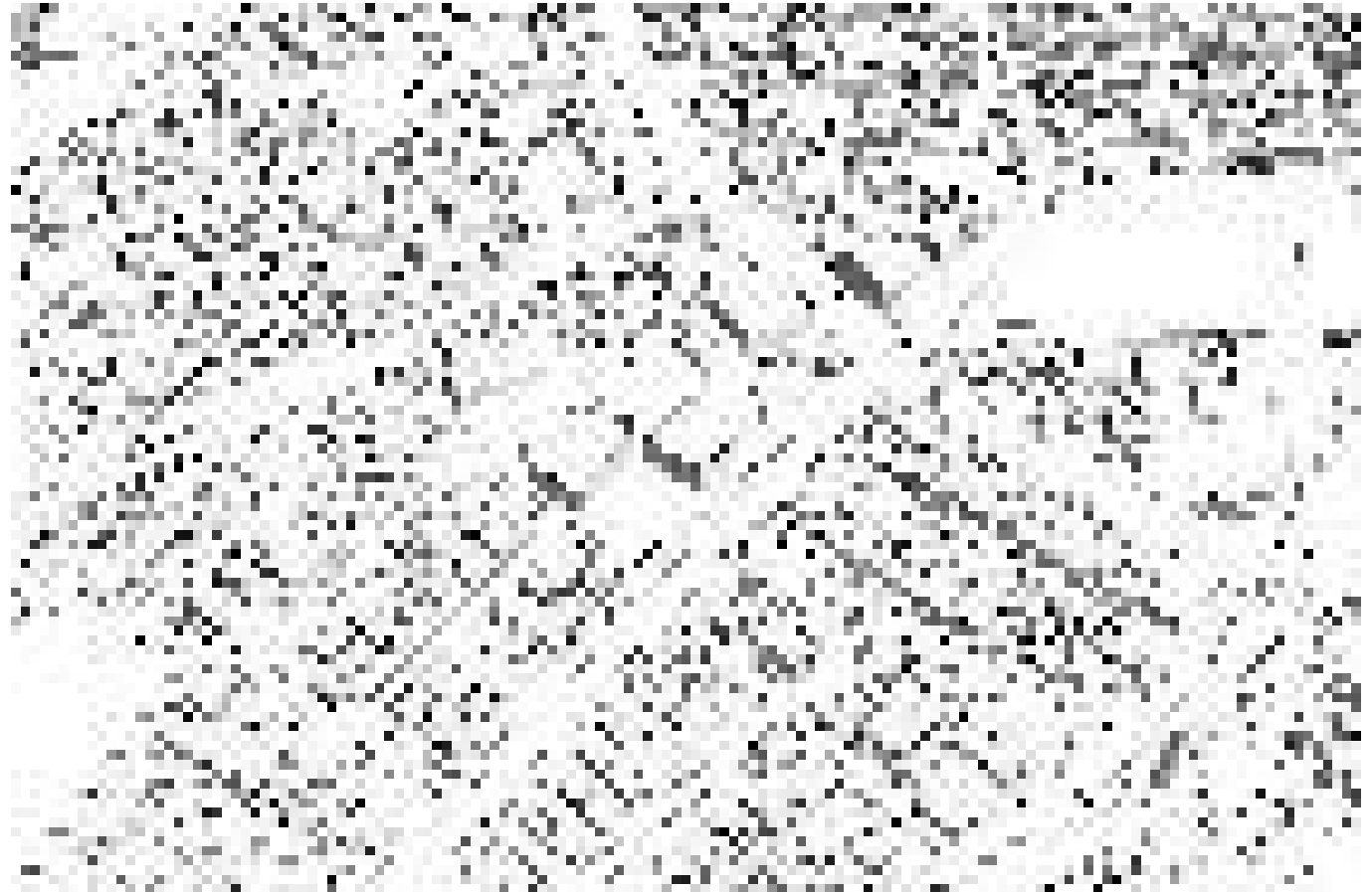
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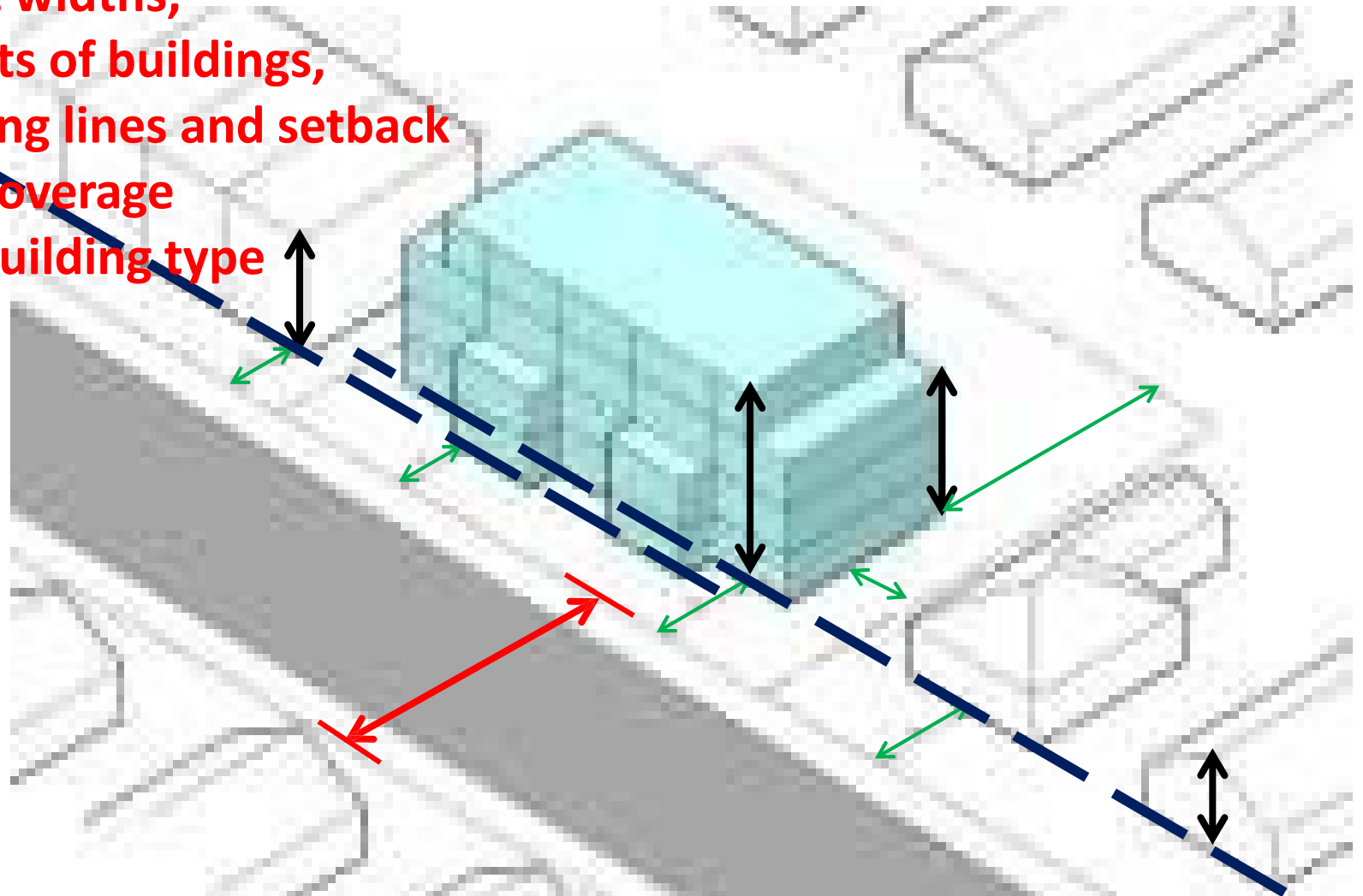
The Morphological Dimension of Urban Design

The physical elements of urban form

The physical elements of urban form.

There are five variables that significantly affect the urban form:

- **Street widths,**
- **Heights of buildings,**
- **Building lines and setback**
- **Plot Coverage**
- **And building type**



The Morphological Dimension of Urban Design
5- The different schools of urban morphology

The different schools of urban morphology.



English (Conzenian)

- The smallest element (plot) constructs the larger object.
- Morphogenetic and revolutionary approach from geographic and planning background.
- Mainly uses cartographic drawings.
- Levels of urban form are interrelated.
- Cultural dimension is not the main focus.
- Introduced new technical terms (form complexes, morphological frame, morphological region, burgage cycle, Fringe belts, morphological units,...etc.) and uses them precisely.

Italian

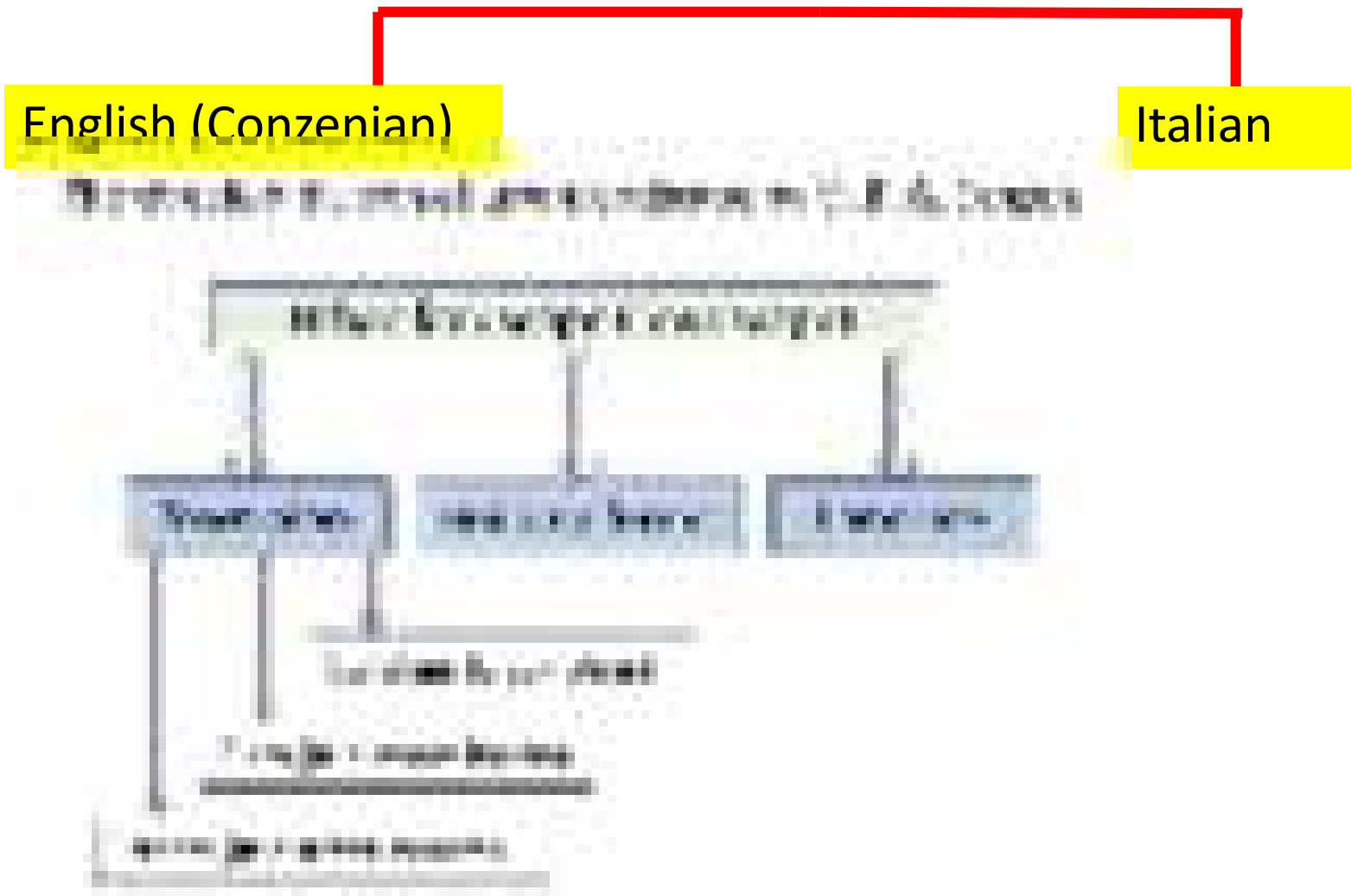
- The smallest element (building) constructs the larger object.
- Typological approach (type generates form) from architectural background.
- Uses 3 dimensional drawings.
- Levels of urban form are interrelated.
- Cultural behaviour leads to the formation of type.
- Focuses on coherence which modernism lacks.
- Parts are dynamic and changing but monuments are not and stay in the collective will.
- History informs the future.

French (Versailles)

The Morphological Dimension of Urban Design

5- The different schools of urban morphology

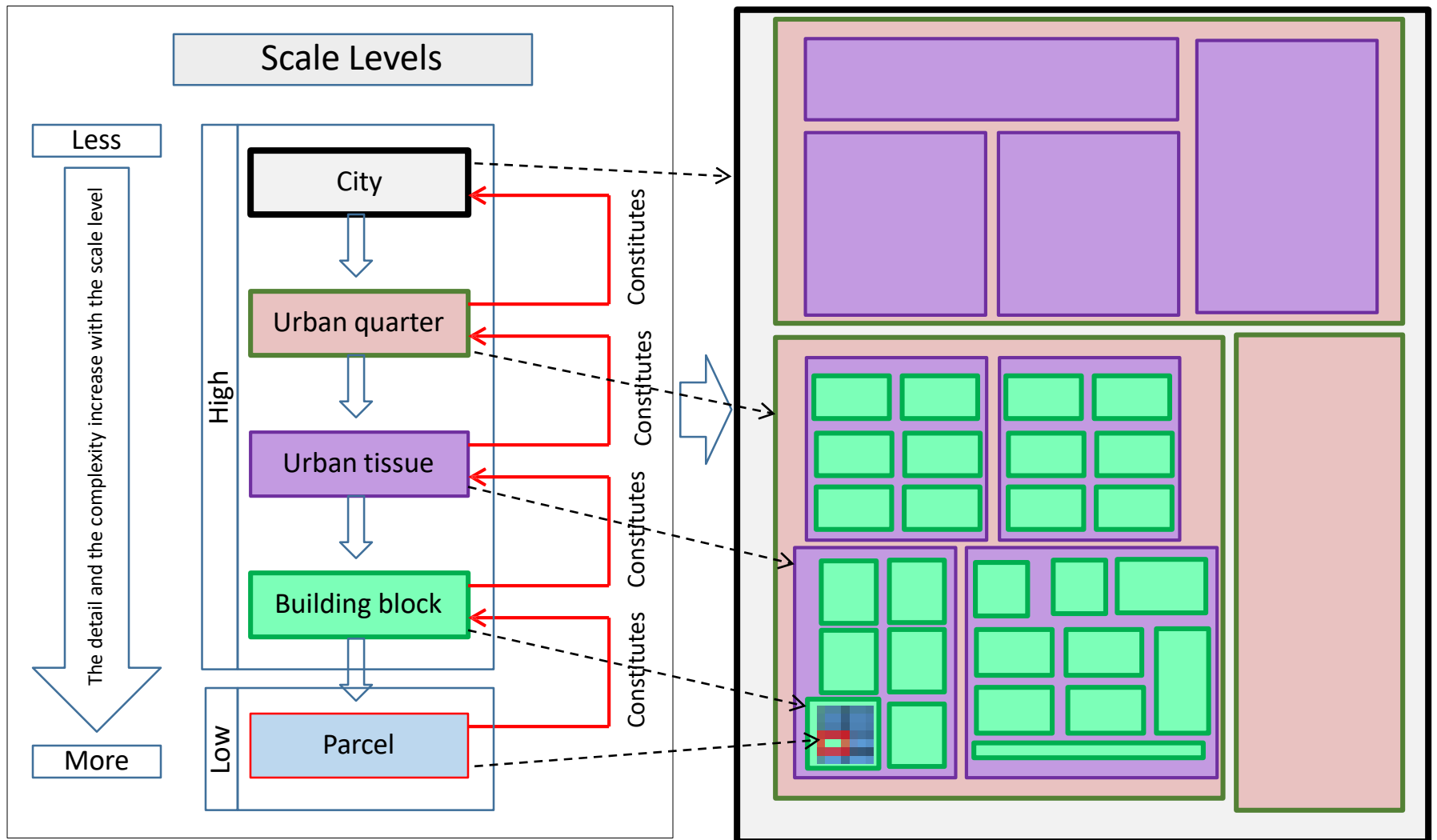
The different schools of urban morphology.



The Morphological Dimension of Urban Design
5- The different schools of urban morphology

The different schools of urban morphology.

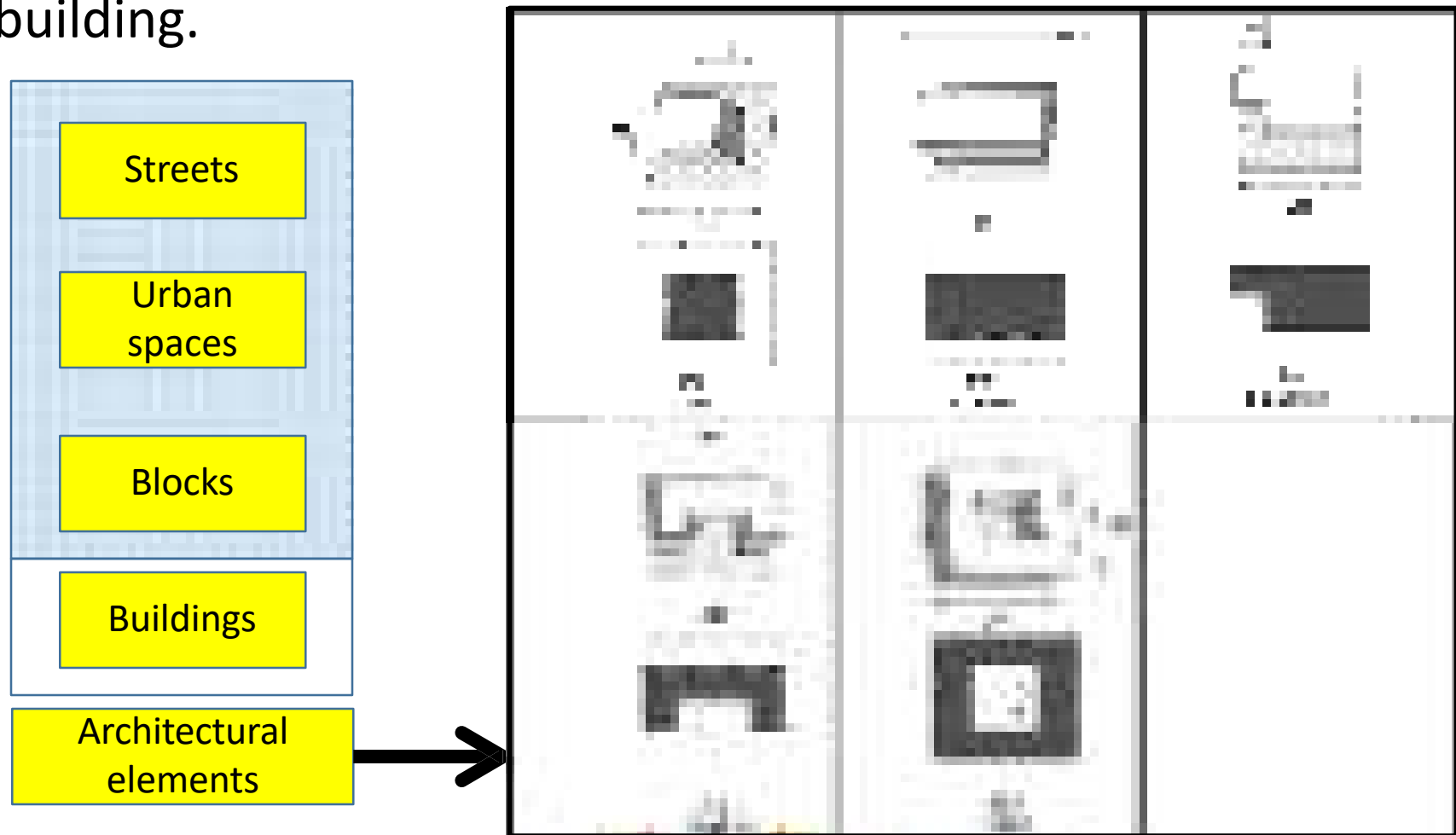
Italian School of urban morphology (Typo-morphology)(Cannigia and Maffei)



The Morphological Dimension of Urban Design

Morphology and typology (typomorphology).

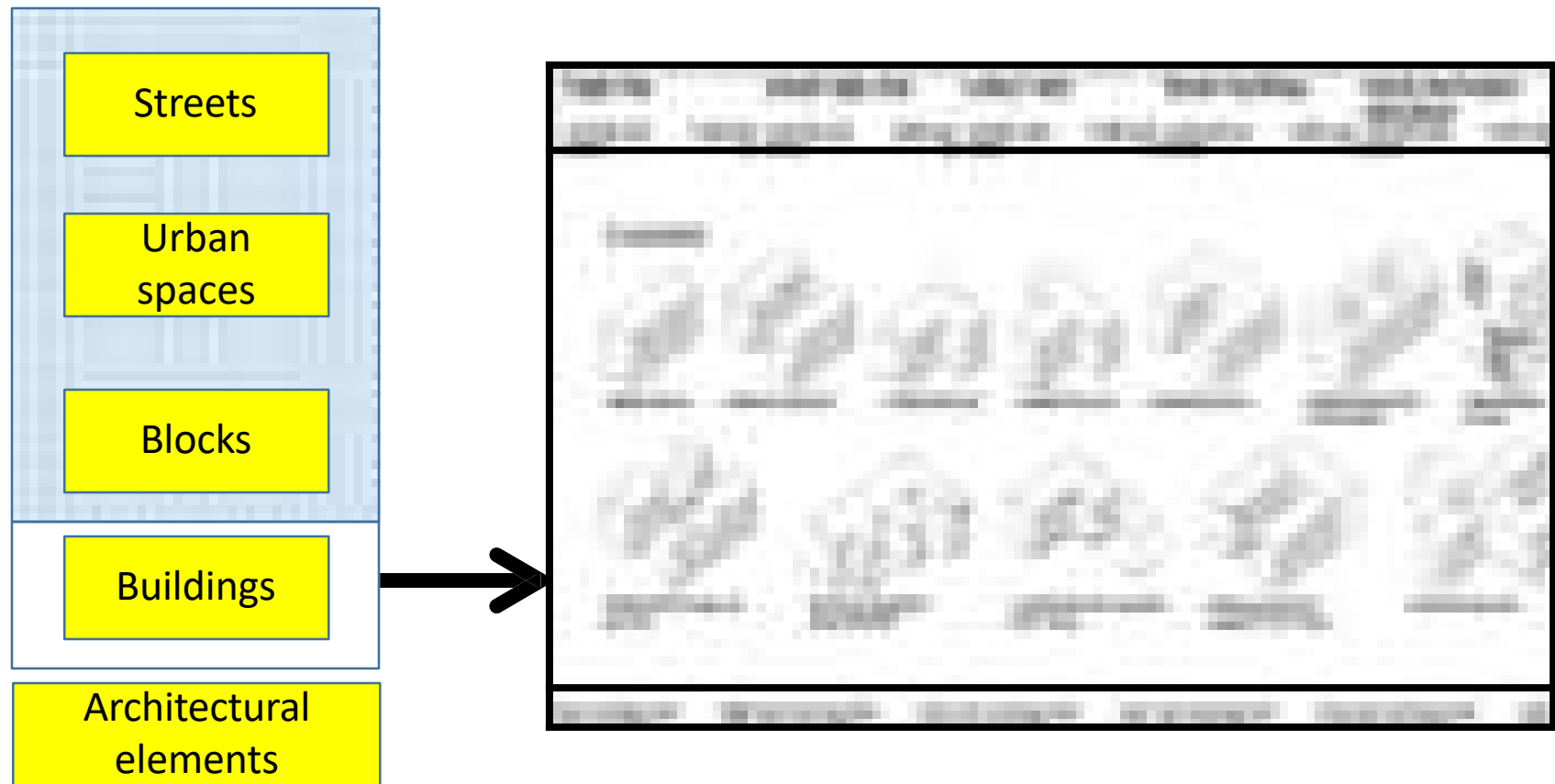
“**Type**” in its simple definition describes the abstract form of an object. It is a norm, an abstraction, not an actual building.



The Morphological Dimension of Urban Design

Morphology and typology (typomorphology).

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Urban Morphology and Urban Form
6- Morphology and typology (typomorphology)

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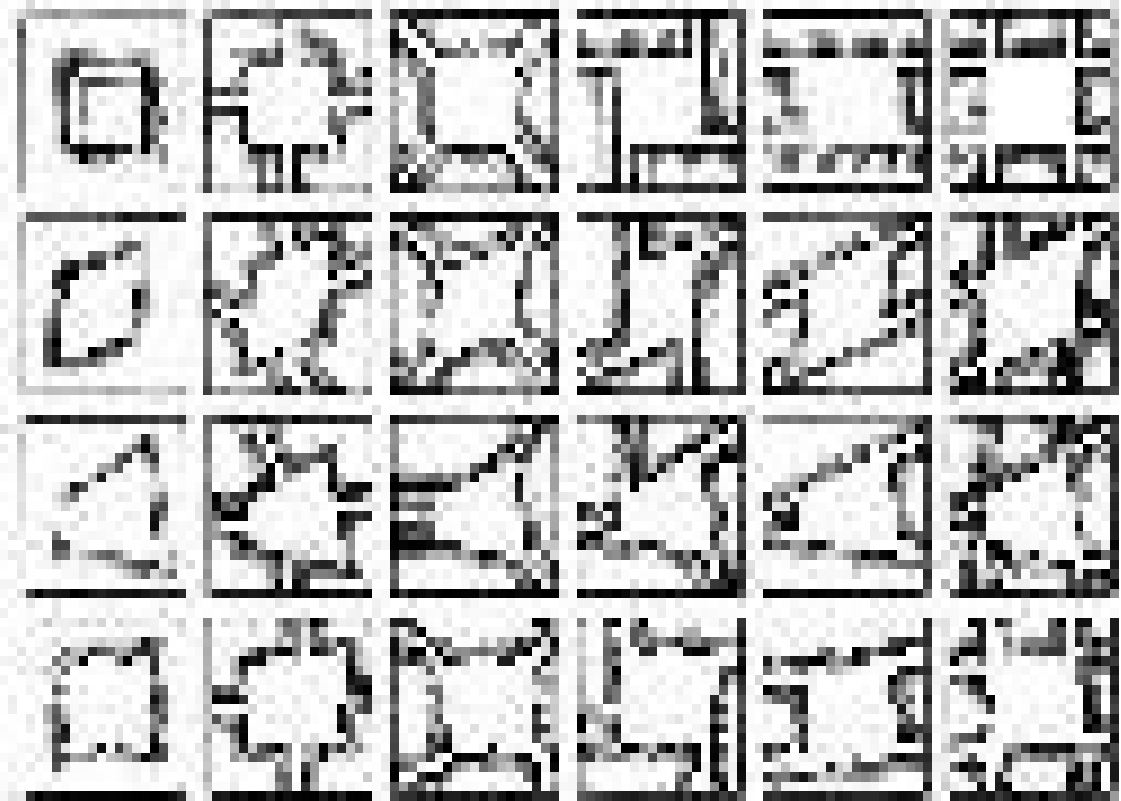
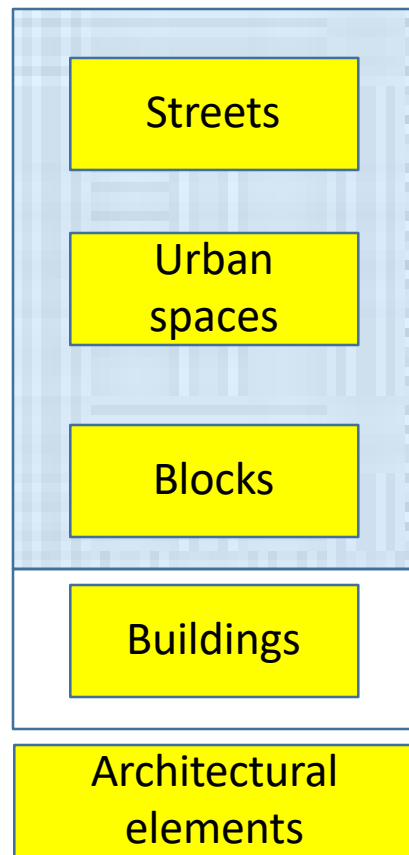
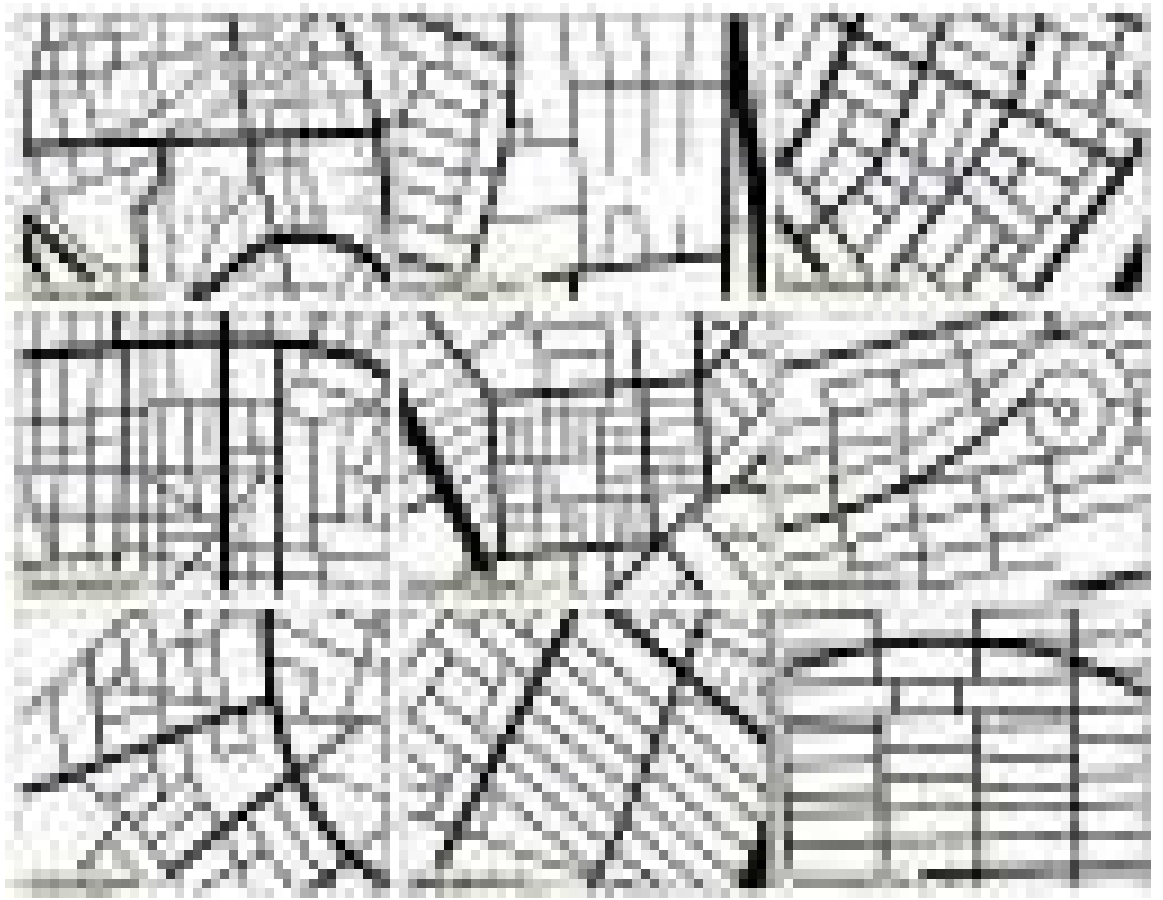
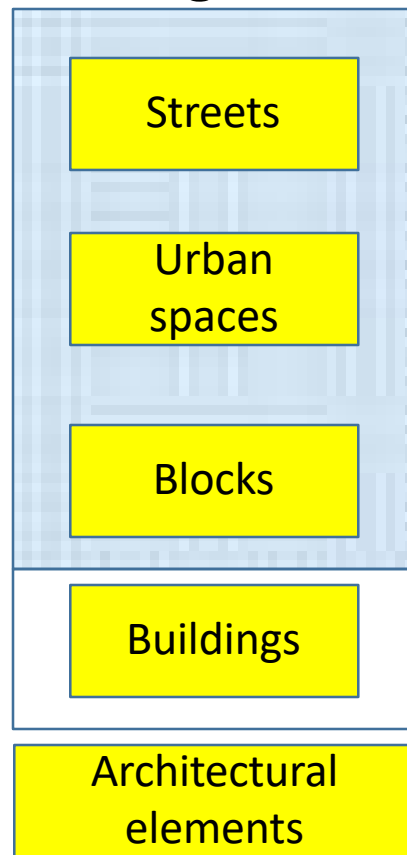


Figure 1.1: Typomorphology

Morphology and typology (typomorphology).

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Thank you





Urban Morphology and Urban Form-

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Urban Morphology and Urban Form-

7) Morphology and typology (typomorphology).

“Type” in its simple definition describes the abstract form of an object. It is a norm, an abstraction, not an actual building.

In the urban context, typology could concern in spaces which consists of squares and streets such as that is studied by Rob Krier or could concern in buildings such as the approach Muratori called “procedural typology”.

“Building type” as a term has been used to indicate any group of buildings with some characteristics, or a series of characteristics, in common.

In conclusion, typology is adopted in two approaches, either as a tool to understand and interpret the urban form of the city in the past periods or as an approach of design based on types derived from the former approach.

Moudon described “typomorphology” as a tool to “reveal the physical and spatial structure of cities”.

Urban Morphology and Urban Form-

6) The different schools of urban morphology.

there is a lack of integration, connection, and co-operation between those who work on urban morphology from different disciplines such as typo-morphologists in the architecture field, those who uses space syntax, geographers, and the scholars of spatial analysis, the different schools of thoughts have emerged

Each of these schools has its own focus and methods which differentiates it from the others. For example, the first aims harmonizing the new urban form with the old and they should be integrated in the context. This approach was a result of the challenge of fitting modern architecture into the existing context of Italian cities. The Versailles's concern is on developing and evolving social critiques through typo-morphological methods. However, the latter which has resulted in the establishment of the Urban Morphology Research Group in England, adopts analysing urban form and interpreting it by giving explanation.

Block

A "block" is a trace of land bounded by:

- streets;
- public parks;
- railroad rights-of-way, when located at or above ground level but not including sidings or spurs in the same ownership as the zoning lot;
- airport boundaries;
- Pierhead lines (or shore lines where no pierhead lines have been established); or
- corporate boundary lines of New York City.

Building

A "building" is any structure which:

- is located within the lot lines of a zoning lot;
- is permanently affixed to the land;
- has one or more floors and a roof;
- is bounded by open area or fire walls;
- has at least one primary entrance;
- provides all the vertical circulation and exit systems required for such building by the New York City Building Code without reliance on other buildings, including required stairs and elevators; and
- contains all the fire protection systems required for such building by the New York City Building Code without reliance on other buildings, including fire suppression or fire alarm systems.