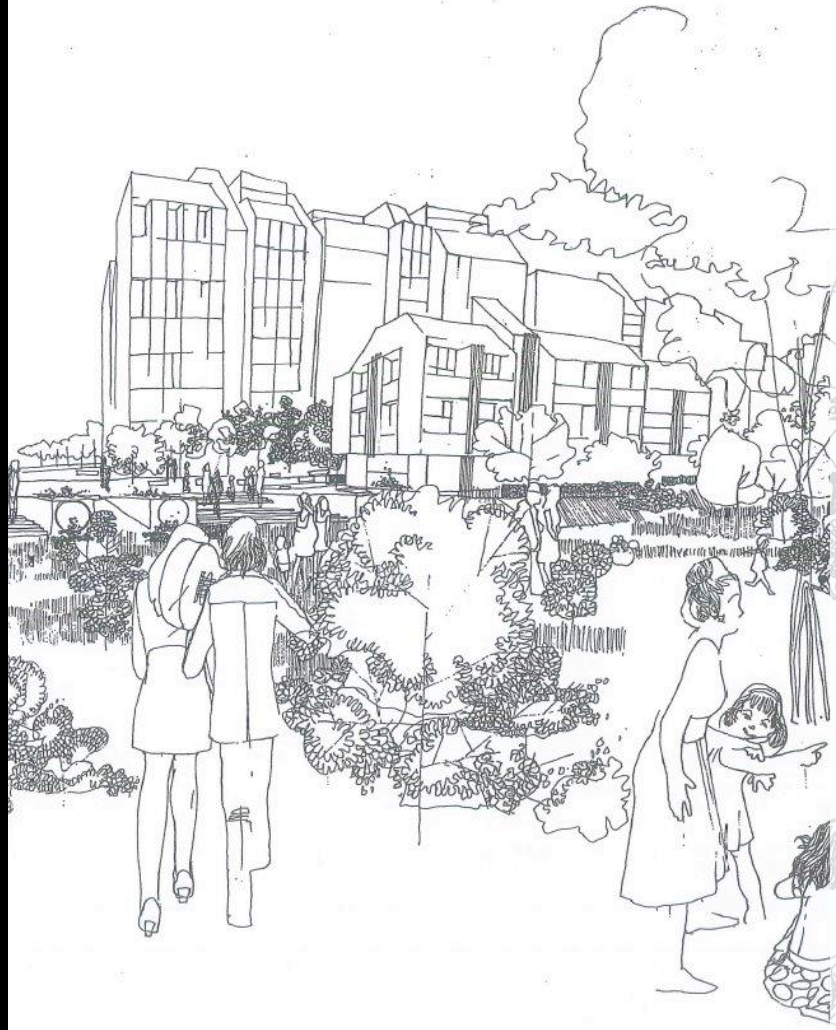
# MORPHOLOGICAL DENSITY AS A PLANNING FRAMEWORK FOR SOCIAL HOUSING: RESIDENTIAL ENSEMBLES OF THE TWENTIETH-CENTURY SKOPJE

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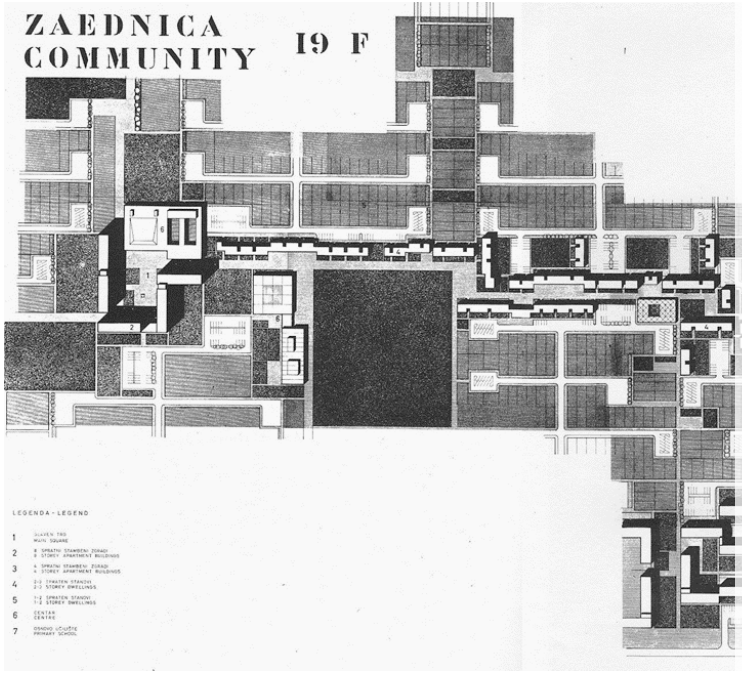


Social housing is an urban planning question. Social housing provides residential common spaces because affordable shelter alone is insufficient for human well-being; physical common spaces are the structural tool used to achieve the social and community goals of public housing policy.

## Dwelling provision →

## Residential ensemble

**Public unbuilt space → Collective spatial resources**




The planning of social housing extends beyond the provision of dwellings towards the formation of urban environments capable of supporting collective life, accessibility and long-term liveability.

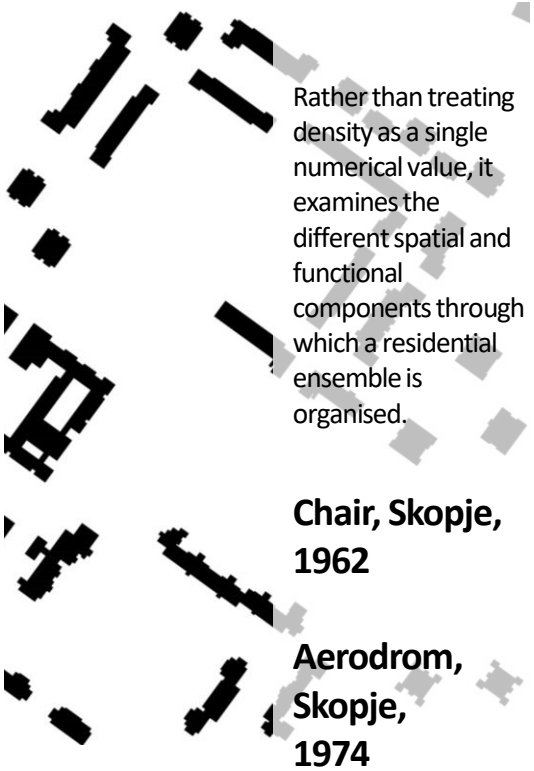
**Neighborhood unit for Aerodrom, Skopje, Doxiadis Associates, 1965**



Broader planning question: how does the organisation of a residential ensemble establish the spatial conditions within which everyday activities and collective practices may take place?

**Karposh IV, Taftalidge, Skopje**





Rather than treating density as a single numerical value, it examines the different spatial and functional components through which a residential ensemble is organised.

**Chair, Skopje, 1962**

**Aerodrom, Skopje, 1974**



Residential morphology is not independent of its planning context.

## Historic urban tissue evolution

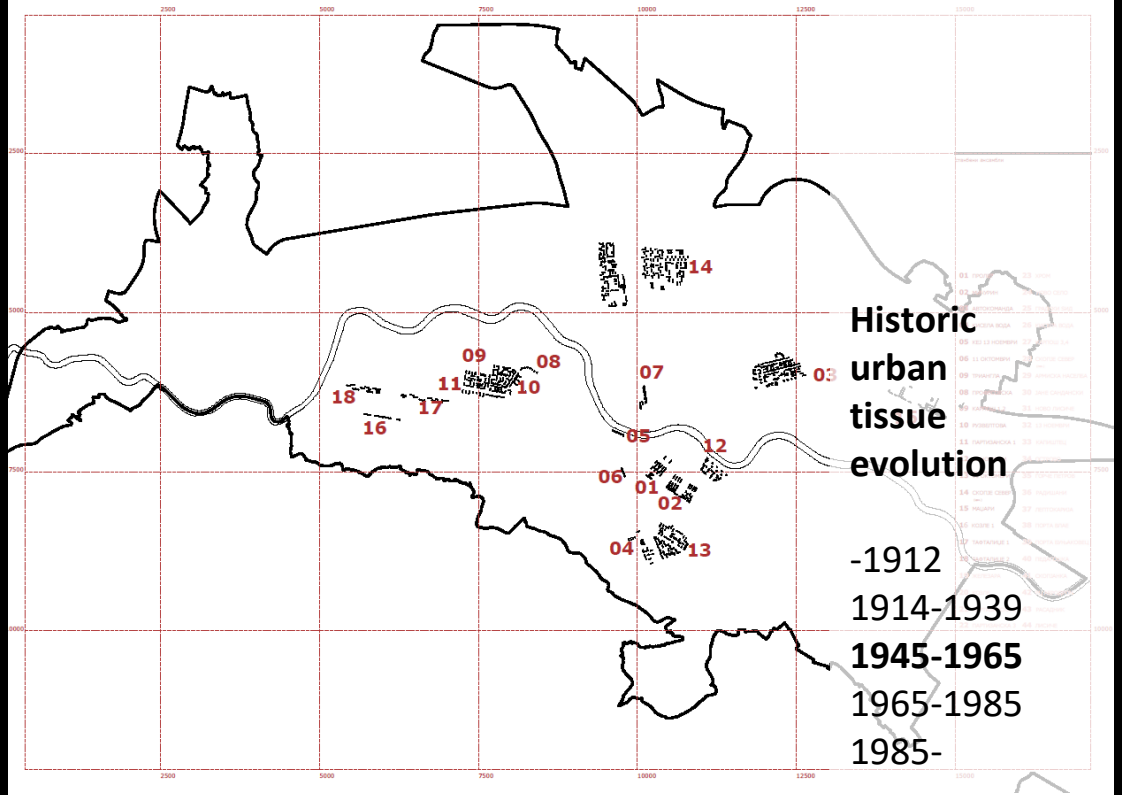
-1912
1914-1939
**1945-1965**
1965-1985
1985-



The residential ensemble represents a significant scale of planning, mediating between the individual dwelling, the neighbourhood and the city through the organisation of built and open space.

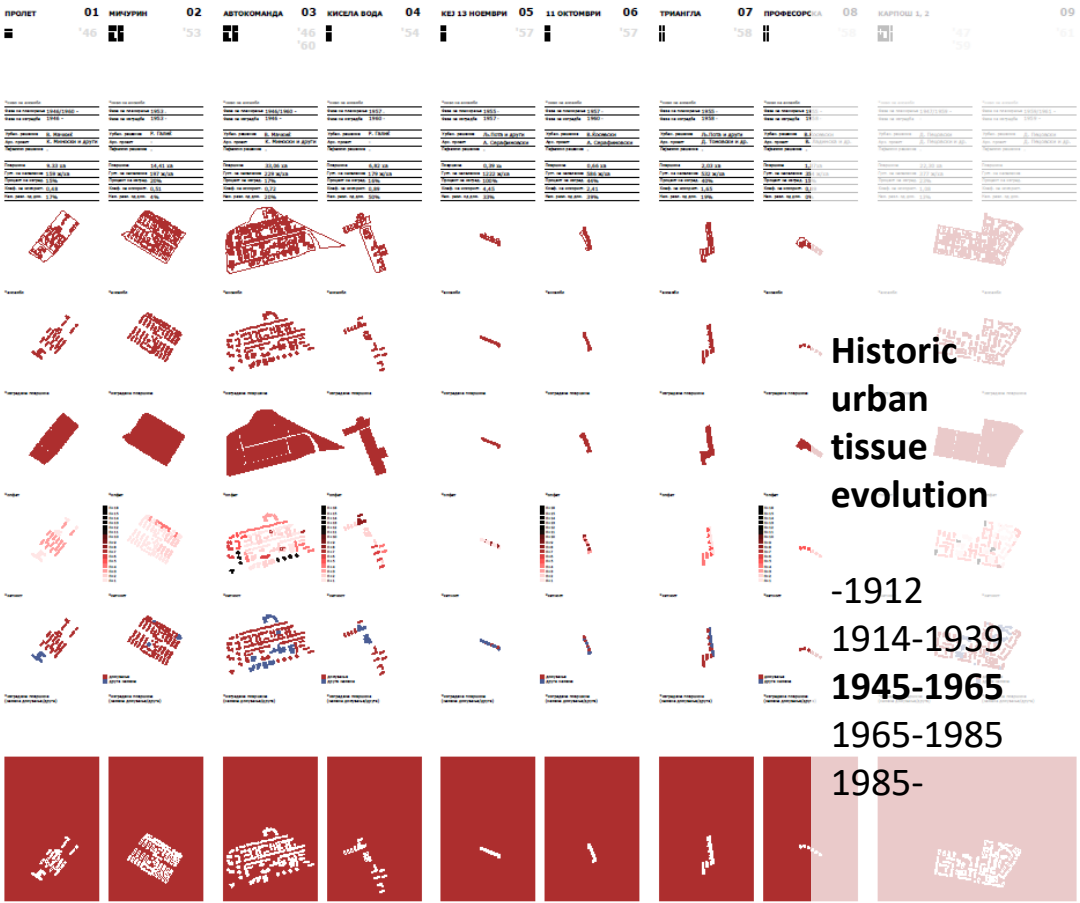
## Historic urban tissue evolution

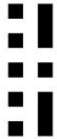
-1912
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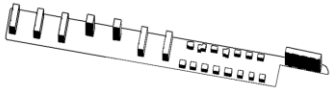



**Historic urban tissue evolution**

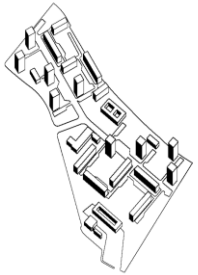
-1912
1914-1939
**1945-1965**
1965-1985
1985-


ПРОЛЕТ 01 '46
МИЧУРИН 02 '53
АВТОКОМАНДА 03 '46 '60
КИСЕЛА ВОДА 04 '54
КЕЈ 13 НОЕМВРИ 05 '57
11 ОКТОМВРИ 06 '57
ТРИАНГЛА 07 '58
ПРОФЕСОРСКА 08
КАРПОШ 1, 2 09
Historic urban tissue evolution
-1912
1914-1939
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1985-

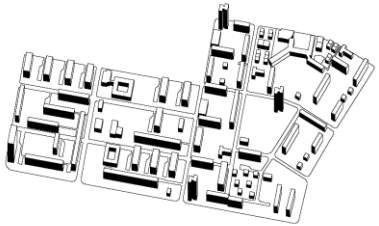










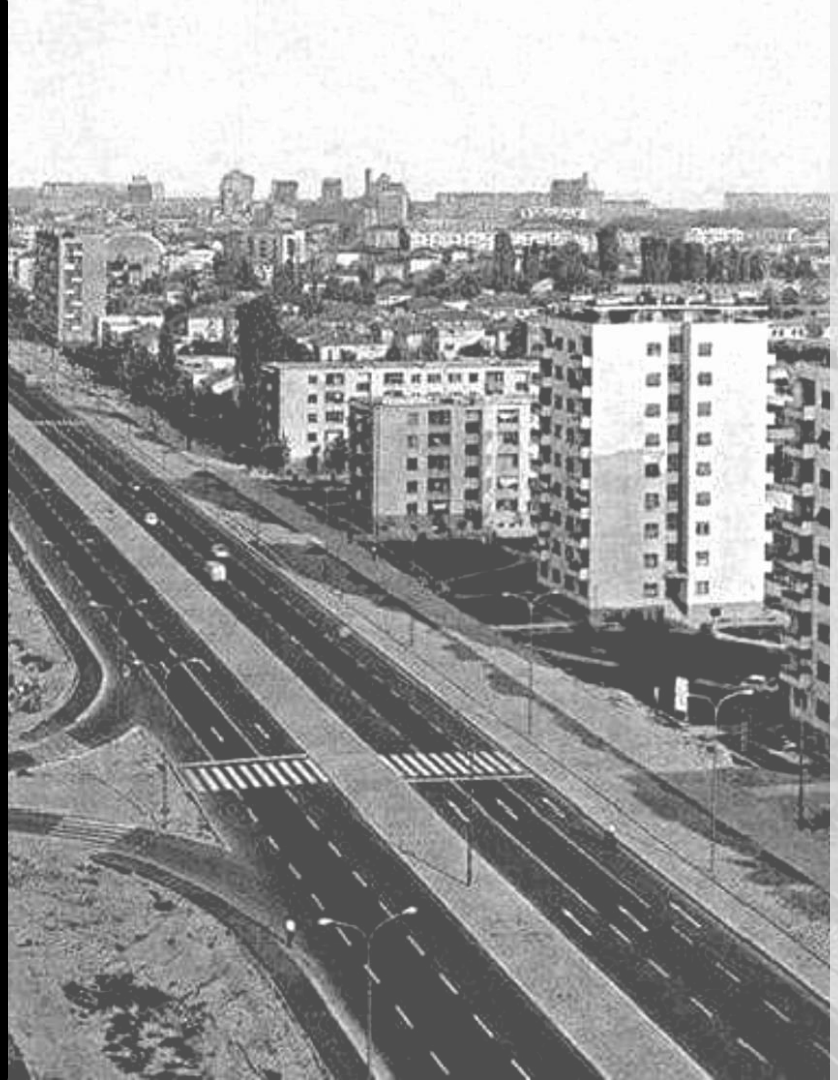


## Morphological types

**Linear Formation**

**Group Formation**

**System Formation**



**‘61**
**Partizanska I**

**Linear Formation**

Group Formation

System Formation



**‘61**
**13 Noemvri**

Linear
Formation

**Group**
**Formation**

System
Formation

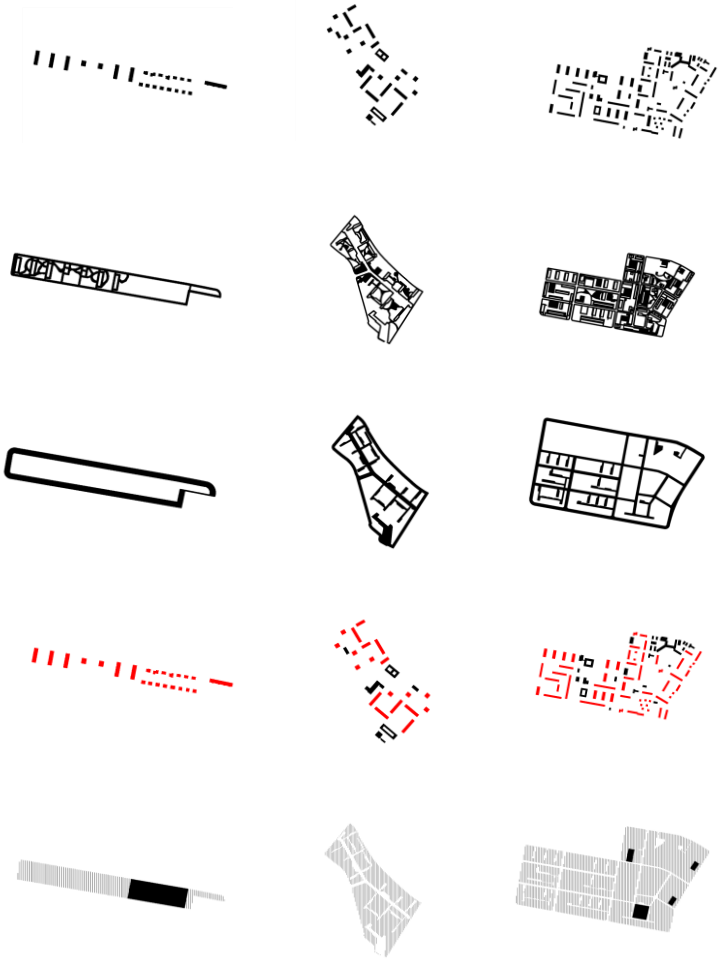


**‘47**
**Karposh I, II**

Linear
Formation

Group
Formation

**System**
**Formation**



## Structural Reading

Built / Unbuilt space

Pedestrian network

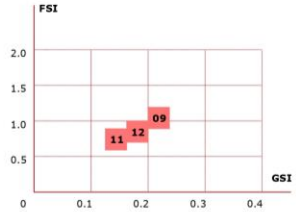
Car network

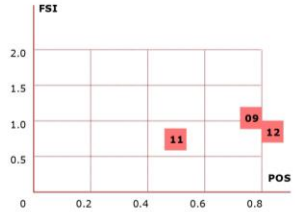
Social infrastructure

Property

11 12 09

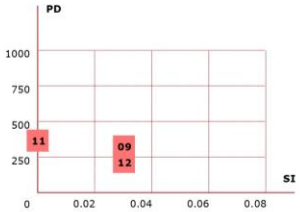


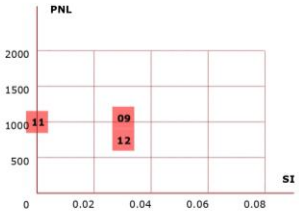


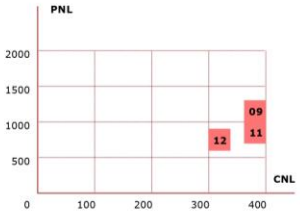










## Relational density for specific overview

**FSI** building intensity
**GSI** land coverage
**POS** public open space
**PD** population density
**SI** social infrastructure density
**PNL** pedestrian network length
**CNL** pedestrian network lenght

11

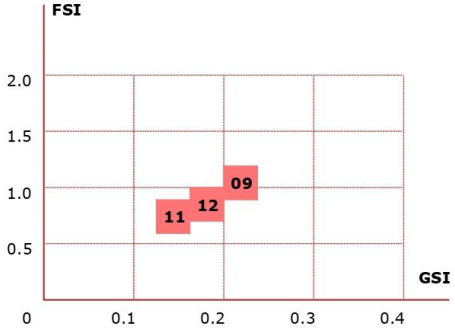


12



09






The upward-right diagonal trend typically indicates a transition toward a more compact, enclosed, or traditional urban block structure (like mid-rise perimeter blocks), rather than stacking all the extra density into a single, thin tower on a vast open lot (which would move vertically up but stay to the left).

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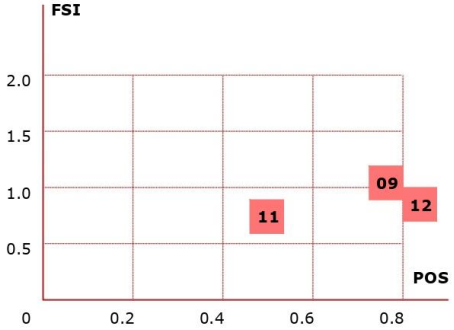


12



09



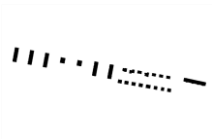



The layout shows that high building intensity (Block 09) does not automatically mean losing open space. By optimizing building footprints or building upwards, Block 09 and Block 12 manage to deliver substantial built space while freeing up large percentages of the ground for public use.

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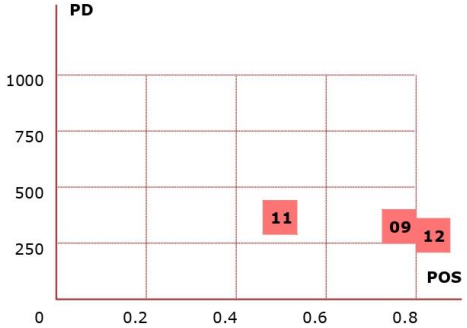


12



09






The chart shows a downward diagonal trend a direct trade-off between population concentration and public space: as population density decreases (from Block 11 to 12), the amount of public open space increases. Block 12 offers the most spacious environment per resident, while Block 11 prioritizes higher human occupancy at the expense of ground-level public space.

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11



12



09



**Infrastructure Resilience (High SI):**
At 3.5%, it provides the necessary spatial safety net. It ensures that critical public amenities like daycare, public health clinics, and schools are built directly into the neighborhood fabric.

**Economic Mobility via Walkability (Max PNL & CNL):**
With the highest pedestrian network length (1100m/ha), residents have safe, highly connected walking routes. Combined with strong street connectivity, this supports efficient public transit routing, ensuring low-income workers aren't stranded in "transit deserts.“

**Health and Well-being (High POS):**
Despite having the highest building intensity (FSI 1.1), it successfully frees up 77% of the ground for public open space. This proves that you can achieve the density required for affordable housing viability without creating a cramped, unlivable environment.

## Relational density for specific overview

**FSI** building intensity
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**CNL** pedestrian network lenght

| Morphological type / Indicator | Linear formation (**Partizanska 1**) | Cluster formation (**13 Noemvri**) | Composite formation (**Karposh 1, 2**) |
|---|---|---|---|
| Built tissue density | 1 (percentage below 30%, potential exists, but is low) | 1 (percentage below 30%, potential exists, but is low) | 1 (percentage below 30%, potential exists, but is low) |
| Density of public unbuilt space | 1 (percentage above 50%, potential exists, but is moderate) | 1 (percentage above 50%, potential exists, but is low) | 1 (percentage above 50%, potential exists, but is low) |
| Population density | 2 (321 inhabitants/ha, optimal density) | 2 (295 inhabitants/ha, optimal density) | 2 (266 inhabitants/ha, optimal density) |
| Residential unit density | 2 (93 units/ha, optimal density) | 2 (85 units/ha, optimal density) | 2 (77 units/ha, optimal density) |
| Pedestrian network density | 2 (935 m/ha, 71% dominant) | 2 (761 m/ha, 71% dominant) | 2 (1,083 m/ha, 74% dominant) |
| Vehicular network density | 2 (375 m/ha, 29% secondary) | 2 (321 m/ha, 29% secondary) | 2 (377 m/ha, 26% secondary) |
| Density of uses other than housing | 0 (monofunctional ensemble, predominantly residential) | 1 (other uses also present, mainly public functions, predominantly residential) | 1 (other uses also present, public and commercial functions, predominantly residential) |
| Density profile | 10 (potential exists, but is moderate) | 11 (high potential) | 11 (high potential) |

## Commoning as reference for a general overview

Built tissue density

Density of public unbuilt space

Population density

Residential unit density

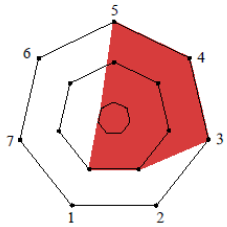
Pedestrian network density

Vehicular network density

Density of uses other than housing

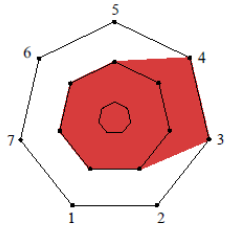
/8/

11



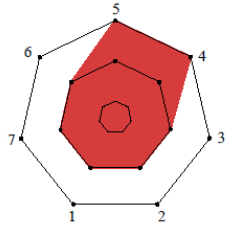

/9/

12




/9/

09




The radar charts evaluate the blocks across multi-dimensional urban density metrics, using "Commoning" as a qualitative morphological benchmark. In spatial theory, commoning measures how effectively the physical built environment supports collective resource sharing, social reproduction, and civic co-presence.

## Commoning as reference for a general overview

1 Built tissue density

2 Density of public unbuilt space

3 Population density

4 Residential unit density

5 Pedestrian network density

6 Vehicular network density

7 Density of uses other than housing

**Bivariate Analysis (Two-by-Two Cross-Examination):**

Seeing two things at a time, like matching up Population Density against Social Infrastructure, keeps things simple so we can see the direct trade-offs and mathematical cause-and-effect between two specific metrics.

**Multivariate Radar Charts (Typological Footprinting):**

Instead of looking at things in isolation, the spider nets bundle all seven density pieces together into one single shape. By looking at the final shape, we can instantly tell if a block is balanced and healthy (a well-rounded shape like Block 09) or off-balance (a warped shape like Block 11).

**Relational density for specific overview**
**+**
**Commoning as reference for a general overview**