IV. Compact City

Densification Strategies of the Built Space

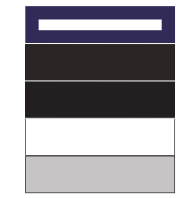
Enrico Prandi and Paolo Strina

The contemporary city must rethink itself in order to a regeneration of its built body. The compact city is the model to tend to as the only antidote to the extension of the urban form perpetuated until today, the main cause of the organic crisis of the European city and the land consumption phenomenon. At the base of the compact city there is a principle of economics concerning morphological and typological aspects, the relationship between the urban facts and the use of space. This economy is still legible within a precis urban portion that can be defined a merged city, the part of a city where physical continuity exists between its components. The development of the contemporary city has depended heavily on the so-called phenomenon of the peripheralization of historical city centers that originated from the advent of the nineteenth-century train stations. The city has therefore expanded by configuring urban areas that can be traced back to specific temporal thresholds, from garden cities to the fragmentation of the current extreme suburbs where the void space predominates over the full space. In this action framework, the SPINNER 2013 research, Design the built. New integrated quality models for the compact city, currently under revision, has experimented an intervention methodology on the merged city, opposed to the diffuse city, based on the densification technique of the spatial resource through the new urban centralities typologies. The anatomical analysis of the merged city, in respect of a transcalar vision, reveals a structure made up of centrality fields underlying potentially transformable spatiality that differ from the generic empty space by degree of accessibility, usability and visibility. The result is a polycentric city in which the new imaginable urban centralities, contextualised with respect to the project sites and the urban traditions of comparison, contribute to strengthening its structure, strengthening its public facilities and reshaping its form.

Panel I. The urban form
Scale 1:20.000 (1:66.666)

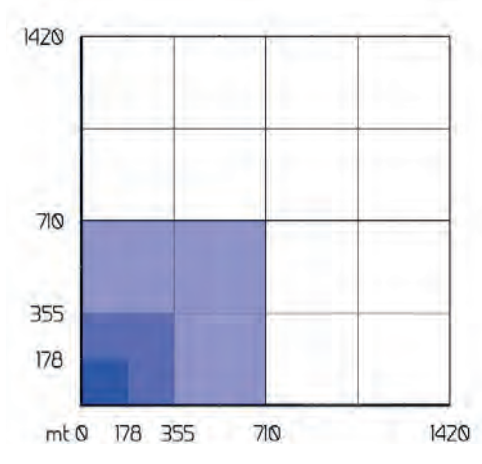
The city is defined by a legal borderline. Within this perimeter, two urban entities coexist: the merged city, in which a physical and functional continuity exist between the parts that compose it, and the widespread city that can be defined as an urbanized countryside. The merged city is still formally recognizable to the point that it can be rationally surrounded by modules and submodules set up on a 710x710 mt grid, reminiscent of the centurial mesh that generated the typical Roman foundation cities. The perimeter is instrumental to the identification and quantification of the available spatial resource within the merged city: empty space (covered surface without volumes and not covered surface), full space (covered surface with volumes), hybrid space (consolidated voids).

Merged city
Widespread city
Full space
Empty space
Hybrid space

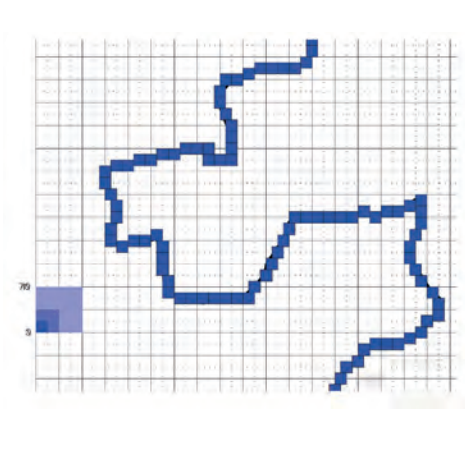


The graphic representation brings out the considerable presence of empty space within the merged city. This requirement is considered sufficient to assume the merged city as an ideal field for the experimentation of a reasoned and controlled densification of spaces suggested and deducible from an urban analysis of increasingly detailed scales.

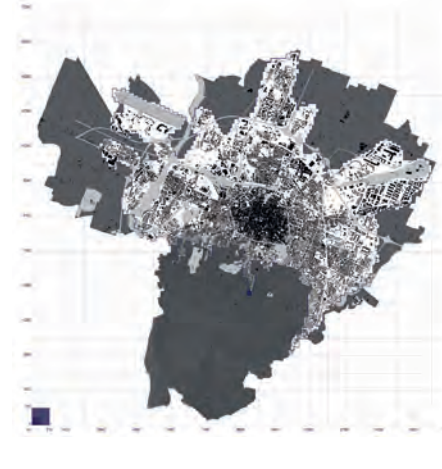
The empirical identification of the merged city



The centurial pixel as an instrument for measuring and profiling the merged city



The rationalization of the merged city



The merged city in the case study of Bologna

Panel II. The polycentric city
Scale 1:10.000 (1:33.333)

Within the merged city, a public city and a private city coexist. The first is composed of the functional endowments that qualify public life. They are real centrality factors that generate, as a function of their proximity relationship within a radius of no more than 600 meters, so-called centrality fields. Each field can assume a different urban role (metropolitan, urban and neighborhood) depending on the type of centrality factors that compose it and the flows it engages.

Centrality factors
Centrality fields

The derivative of the mapping is a polycentric city in which each centrality field is defined by boundary conditions dependent on morphological discontinuities, infrastructural breaks, functional divergences. Polycentrism is the basic characteristic of the contemporary city on which urban development tending towards the compact city must be based. Between each centrality field is interposed an intermediate fabric, binding between them.

Panel III. Consolidated centrality / Panel IV. Centrality in power
Scale 1:2.000 (1:6.666)

Within the centrality fields there are persistent centrality spaces on the voids with a high usability, accessibility and visibility. These central spaces contain centrality in power or consolidated centrality. Centrality means an urban composition of architectures that conform the public space according to the principle of polyfunctionality and quality.

Space of centrality

Within the historical center, the maximum example of a compact matrix city, consolidated centralities dominate such as Piazza Maggiore in Bologna or the Katschhof in Aachen. These consolidated centralities are demonstrative of how the space conformed according to the logic of compactness can be reworked for projects in spaces of centrality in power, as in the case of the Ex Mercato Ortofrutticolo in Bologna, or the Driescher Hof in Aachen, both vast and currently not conformed.

UNIPR Università degli Studi di Parma

Main Coordinator: Enrico Prandi
Scientific Staff: Carlo Gandolfi, Marco Maretto, Carlo Quintelli,
Riccardo Rapparini, Paolo Strina, Giuseppe Verterame
Students: Andrea Bosio, Isabel Chiesa, Davide Fabbi,
Ernesto Mario Frigerio, Camilla Garagna, Martina Ollari, Filippo Piloni,
Irene Di Santo, Victor Solonaru, Giorgia Tomasello, Antonio Villa

The areas of the merged city
and the centrality factors

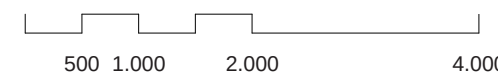
The relational systems among the centrality factors (cluster and poli-cluster)

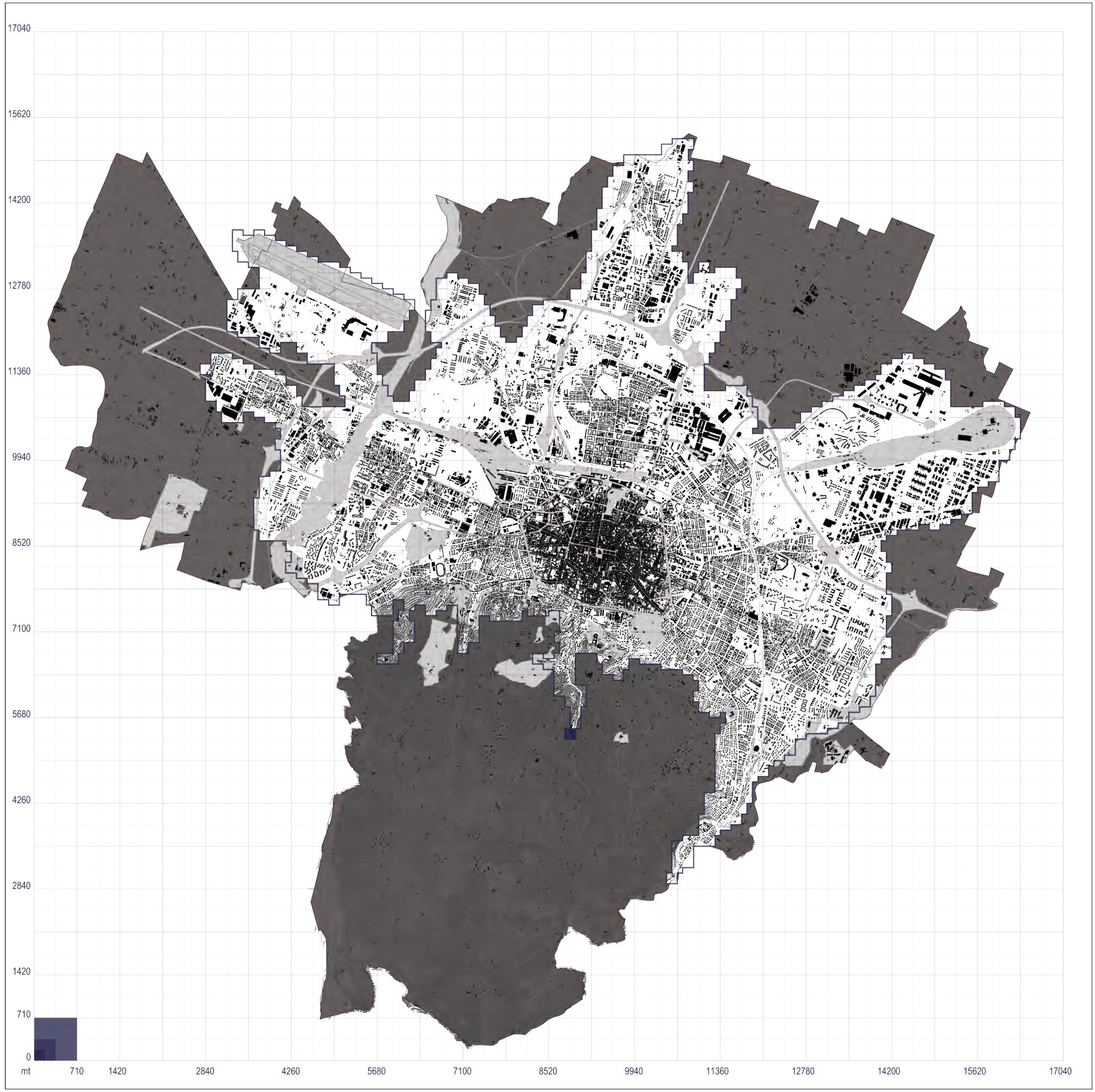
The profiling of the centrality fields

The space of centrality within the centrality fields

IV. Compact City
Densification Strategies of the Built Space

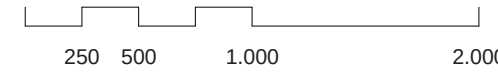
Bologna, the urban form
scale 1:66.666 (original scale 1:20.000, plan size 90x90cm)

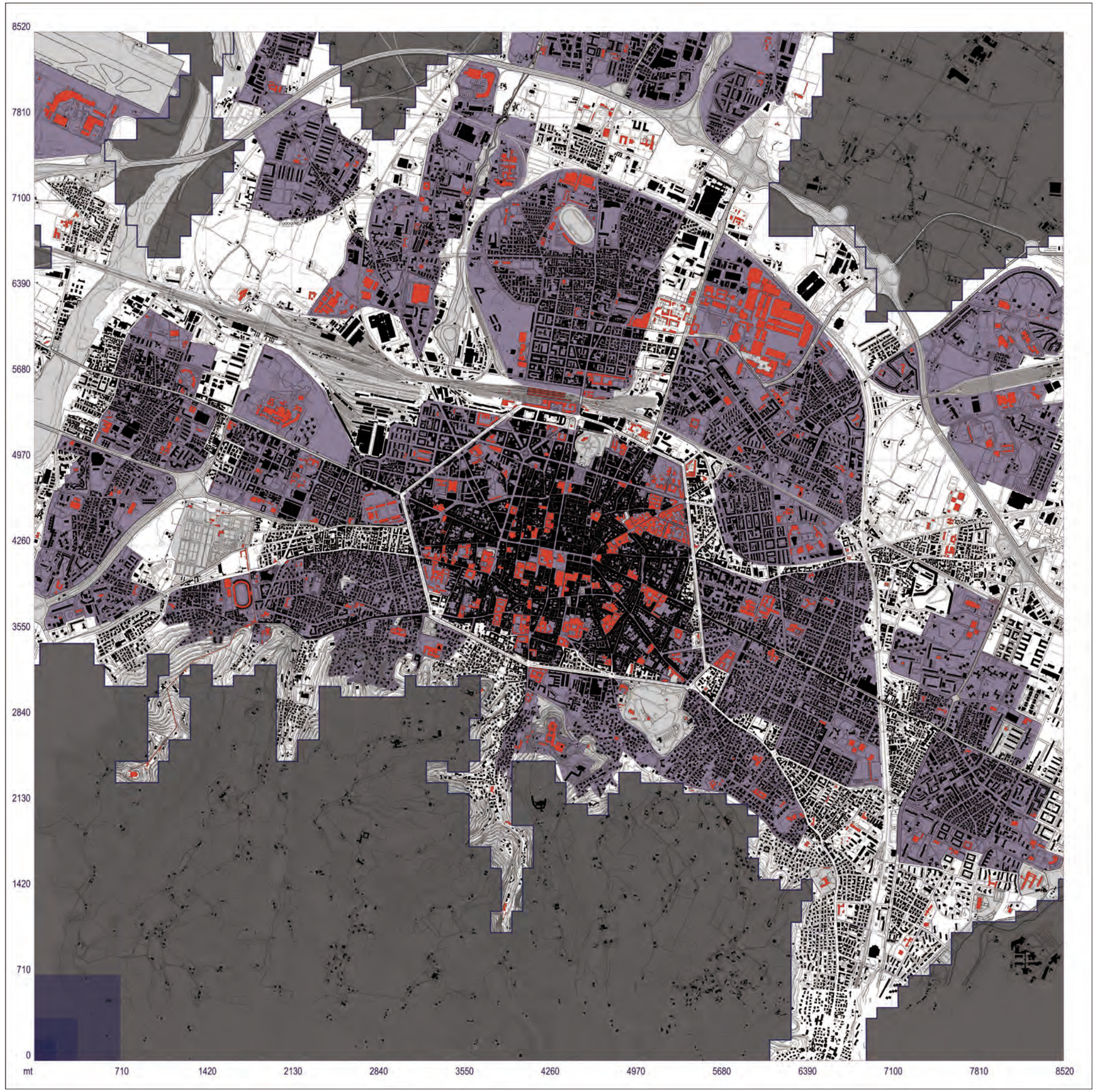



17040
15620
14200
12780
11360
9940
8520
7100
5680
4260
2840
1420
710
0
mt
710
1420
2840
4260
5680
7100
8520
9940
11360
12780
14200
15620
17040

IV. Compact City
Densification Strategies of the Built Space

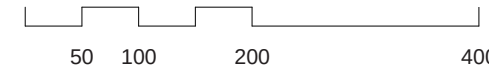
Bologna, the polycentric city
scale 1:33.333 (original scale 1:10.000, plan size 90x90cm)




8520
7810
7100
6390
5680
4970
4260
3550
2840
2130
1420
710
0
mt
710
1420
2130
2840
3550
4260
4970
5680
6390
7100
7810
8520

IV. Compact City
Densification Strategies of the Built Space

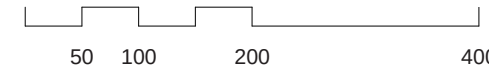
Bologna, city center, consolidated centrality
scale 1:6.666 (original scale 1:2.000, plan size 90x90cm)




1420
710
0
mt
710
1420

IV. Compact City
Densification Strategies of the Built Space

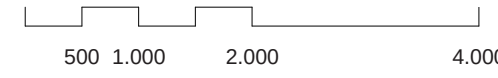
Bologna, Bolognina, centrality in power
scale 1:6.666 (original scale 1:2.000, plan size 90x90cm)

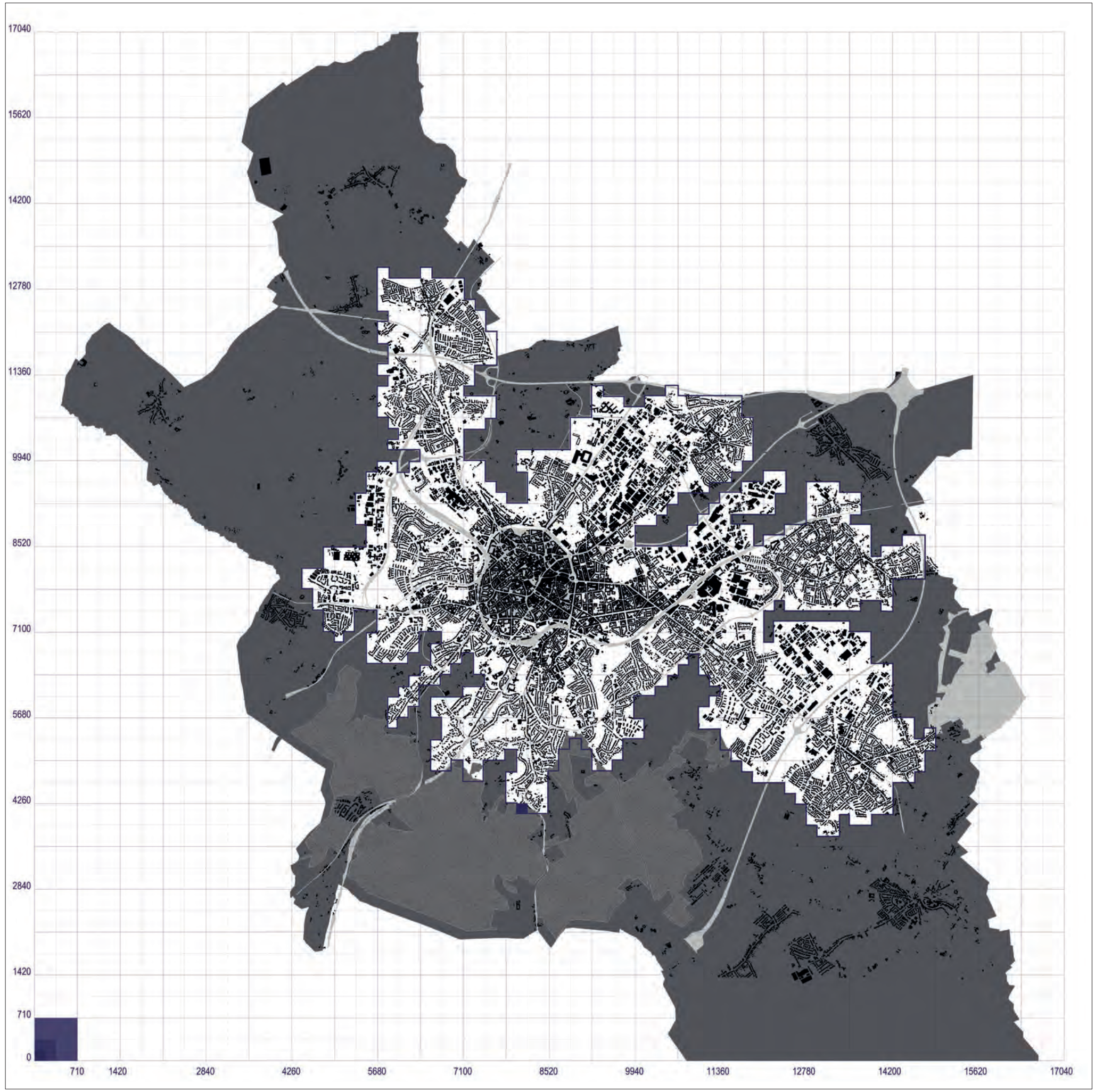



1420
710
0
mt
710
1420

IV. Compact City
Densification Strategies of the Built Space

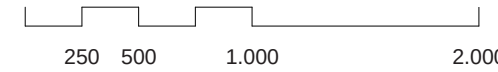
Aachen, the urban form
scale 1:66.666 (original scale 1:20.000, plan size 90x90cm)

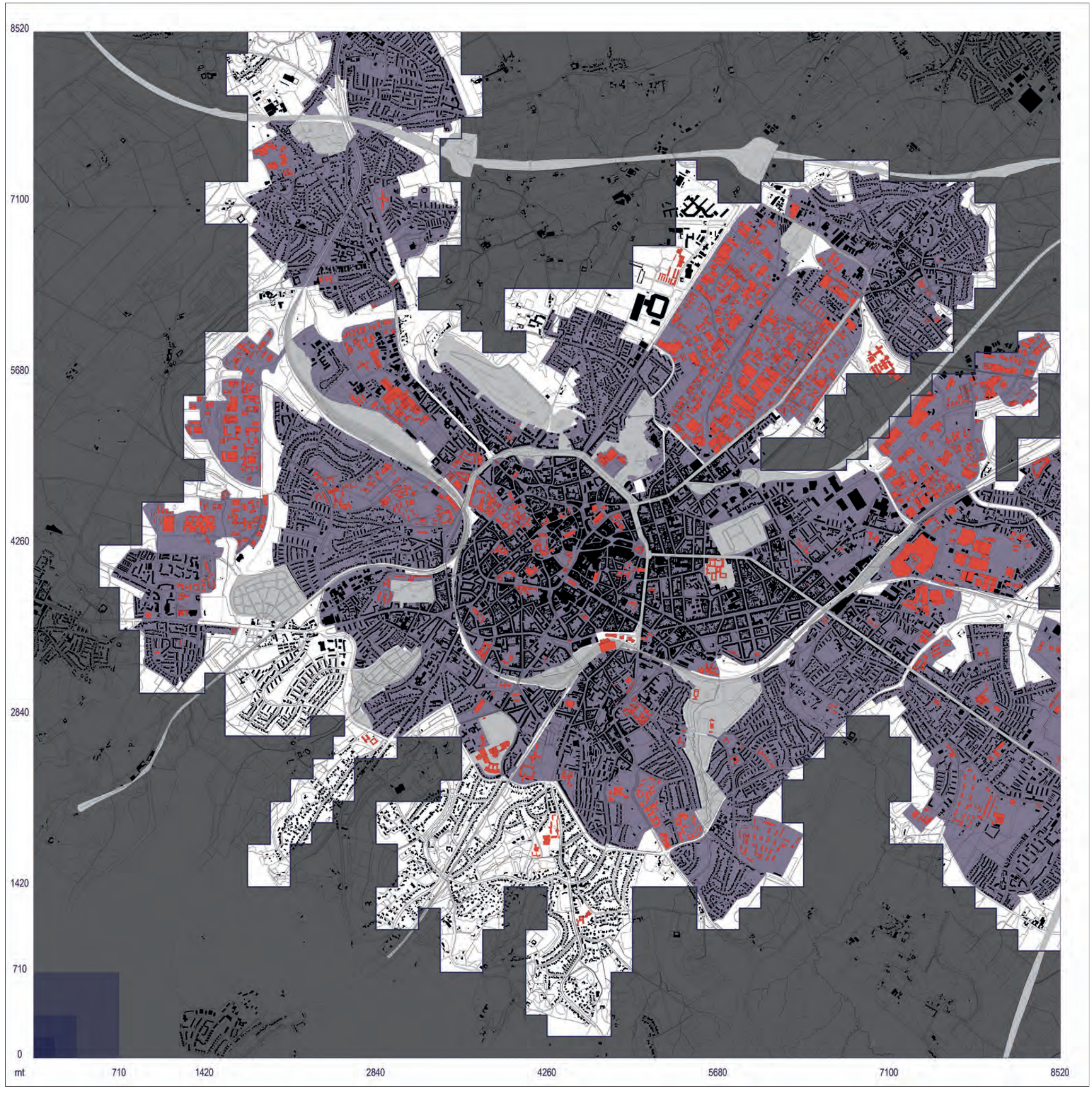



17040
15620
14200
12780
11360
9940
8520
7100
5680
4260
2840
1420
710
0
710
1420
2840
4260
5680
7100
8520
9940
11360
12780
14200
15620
17040

IV. Compact City
Densification Strategies of the Built Space

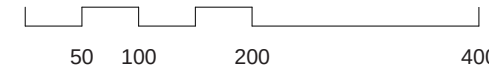
Aachen, the polycentric city
scale 1:33.333 (original scale 1:10.000, plan size 90x90cm)




8520
7100
5680
4260
2840
1420
710
0
mt
710
1420
2840
4260
5680
7100
8520

IV. Compact City
Densification Strategies of the Built Space

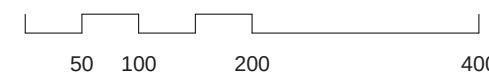
Aachen, city center, consolidated centrality
scale 1:6.666 (original scale 1:2.000, plan size 90x90cm)

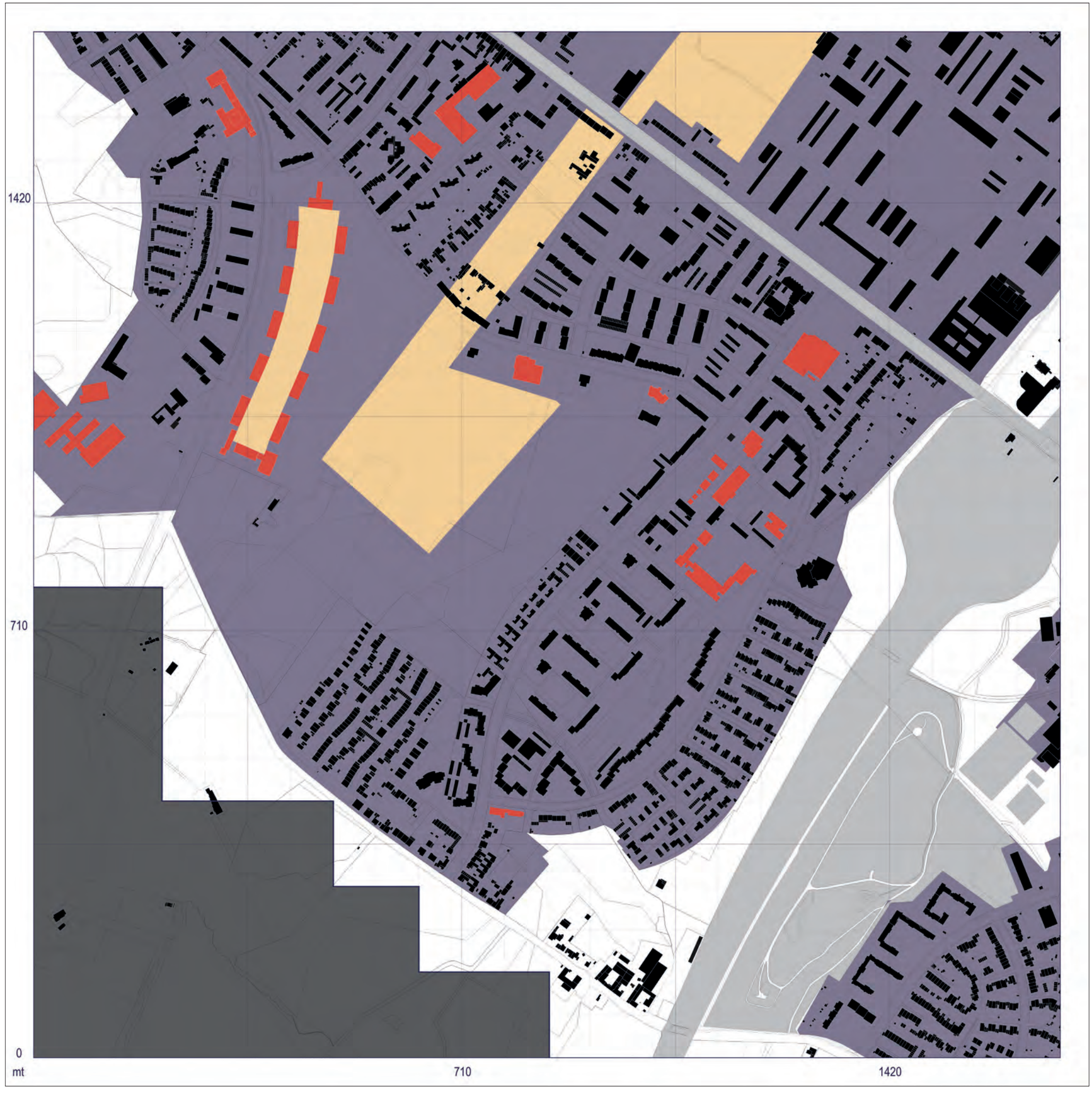



1420
710
0
mt
710
1420

IV. Compact City
Densification Strategies of the Built Space

Aachen, Driescher Hof, centrality in power
scale 1:6.666 (original scale 1:2.000, plan size 90x90cm)




1420
710
0
mt
710
1420