

# 05.2 Metropol.X Odessa

**Hidden Qualities  
of Cheryomushki**

**Documentation  
MA Seminar  
WS 2018/2019**

# Content

## Part 1

<b>Introduction</b>	Prof. Barbara Engel / Nikolas Rogge / Sabine Tastel	4
<b>Student works</b>		
Buildings Reflecting the Origin of Odessa's Center	Meimuna Kahf / Solange Querinjean	10
Odessa's Morphology through its Growth	Antonio Herrero / Rasmus Zirlewagen	26
Transformation of the QUarter on the Evreyskaya Street over Time	Ksenia Khodykina / Viktor Kochkin	44
The (Mis)usage of the Catacombs in Odessa	Fotios Kontogiannopoulos / Nikolai Babunovic	58
Post-Soviet Infrastructure of Federal Sport and Universities	Aurelius Tauer / Maria Tumureeva	72
How Markets in Odessa Evolved into a Mix of Tradition and Modernity	Xinyi Zhang / Yuxing Huang	84
Landmarks - How Does Odessa Present itself and How is it Perceived	Diren Kaygisiz / Yuxing Huang	114
How International Marriage Agencies Operate in Odessa	Daniel Kientsch / Dennis Sugg	126
Jewish Integration in Odessa	Anucia Dixon / Janine Schöttinger	144
Little Hanoi on the Outskirts of Odessa	Almira Dilmukhametova	164
How did the Harbor Develop?	Saskia Janz / Sonja Bauer	178
<b>Imprint</b>		198

## Part 2

<b>Introduction</b>	Prof. Barbara Engel Nikolas Rogge	4
<b>Student works</b>		
The Kiosk Phenomen along the Streets of Cheryomushki	Antigoni Retsa / Aurelius Tauer	10
Cheryomushki – A Settlement of Multi-Adapted Streets	Samantha Vinueza / Thu Thuy Nguyen	20
Living Matchbox for Modern Cell of Society	Almira Dilmukhametova / Katharina Saharov	36
From Which Panel(s) was Cheryomushki Built and Which Constructive Location-Related Modifications Can We Observe?	Anna Piazzolo / Meimuna Kahf	56
Cheryomushki – A Settlement of Socialist Housing under Market Economic Conditions	Anna Grimm / Chris Soltysiak	80
Socialist City Planning Rules	Elisa Hägle / Nanett Flicker	100
Open Space Typology Research in the Modernist City	Yuxing Yang / Junbo Xu	114
<b>Imprint</b>		130



01.

# Cheryomushki- a District of Hidden Qualities

Large Settlements from the 1960s and 70s pose both more qualities and problems than apparent on first eyesight. The political and economic system, the state socialism, had a huge impact on the appearance, their structure short their urban and spatial qualities. Equally important to their development is the first reemerging of modernist ideas after they had been abolished in the Eastern Bloc under Stalin who had proclaimed a localist-nationalist vernacular architecture. Arguably most important for their appearance and structure is their industrialized prefabricated construction which was both state of the art and also the assumed to be cheapest mode of construction and led besides others to the unit-based construction of the settlements.

This booklet presents the results of the seminar, organized complementary to the urban design studio "The Future of Modernist Housing in Odessa". In this research-based seminar students observed, mapped, critically evaluated and visualized various aspects of Cheryomushki in Odessa. Aim was to look beyond the classic layers of infrastructure, housing, identity, culture, greenery or public space and to identify the specific features in this Ukrainian neighborhood.

## Cheryomushki

Cheryomushki is the biggest of the large housing estates in Odessa, located in the south-west of the city. The name "Cheryomushki" came from a similar district of modernist buildings in Moscow around Cheryomushki village near Moscow. Territorially, the neighborhood is a part of the Malinovsky and Kiev district of Odessa. The area has an advantageous location, connecting the city and the fountains and being equally distant from the beaches of Arcadia and the industrial zone, of the Zastava. In Cheryomushki live about 160.000 people.

Today the asset is a lively urban area with a developed trade, transport and engineering infrastructure, compact layout and comfortable scale yards and public spaces. Still, housing is the dominant function which is well supported with a dense network of schools and kindergardens throughout the entire district. Although this area could be attractive to live in, it faces significant problems, the lack of environmental comfort and visual appeal are significant fostering the already bad image of the district.



## Task

In this research-based seminar students observed, detected, studied and mapped different layers of the contemporary city landscape of large settlements from the 1960s and 1970s, taking Cheryomushki in Odessa as an example. The intention of the seminar was to compose an atlas of Cheryomushki that presents and explains the specific features of this pre-fabricated settlement.

The fieldtrip to Odessa in fall 2018 gave the possibility to gather valuable information and insights of the settlement. Back in Karlsruhe students continued to study “remotely”, from the distance. This distant view, separated by multiple borders, time difference, language barriers and cultural misunderstandings, offered additional layers of information of the city through books, articles, films, websites, and other selectively accessible forms of data. Through mapping elements of the urban landscape had to be transmitted into a visual shape and open the possibility for new interpretations. While working on illustrations and building an atlas, a lot of questions were



addressed: What happens if we look through certain focus on an urban structure? What does the data that you find (or don't find) tell you in a neutral way? Which form and media translate the perception of your maps into a visual shape? How can you present your narrative in an atlas?

Topics were chosen by the students according to three thematical groups – Prefabricated buildings and cities, The socialist city, The modernist city – and eight topics: Topology, Typology, Structure, Form/Morphology, Image, Unit(y)/Element, Atmosphere, Adaptability /Appropriation.

## Mapping

The abstract and artistic approach of mapping and understanding the parameters within in which the transformation of the settlements take place can help to get an additional theoretical background and helps to conceptualize the design approach. The drawing of the abstract maps creates unconventional perspectives and enriches thusly the design process. The independent design output of the mapping, reveals a positive contradiction



to the analytical approach of an urban analysis. Although apparent frictions can't be directly translated into design solutions maps can go beyond what is apparent and try to be open for unexpected turns and insights.

The collection of maps forms this atlas on hand. The individual chapters summarize various observations and findings, including personal editing of the collected data, their critical evaluation and conclusion – all in an accessible, popularly scientific form. The graphical outcome of this booklet is subject to the individual interpretation of each student. The elaborated different topics draw a unique picture of the urban landscape of the large settlements.







# The Kiosk Phenomenon along the Streets of Cheryomushki

Odessa used to be the main port of Russia on the Black Sea and is known as a city of trade (cf. Council of Europe, 2017). In Cheryomushki, although it was designed as a residential area, the commercial function is highly visible, when being there, but not seeable on a map. A relatively important amount of the public space is appropriated by kiosks either attached to a building or as separate construction. These constructions show how people satisfy their needs by adapting the built environment.

Having in mind that in the old town of Odessa Kiosks have to follow strict rules in terms of positioning and appearance and that in several districts of Moscow kiosks get violently destroyed in order to create a nicer appearance of the streets (Kinetiq Solutions, 2016, Why is Moscow Demolishing Kiosks?), these observations had led to the questions:

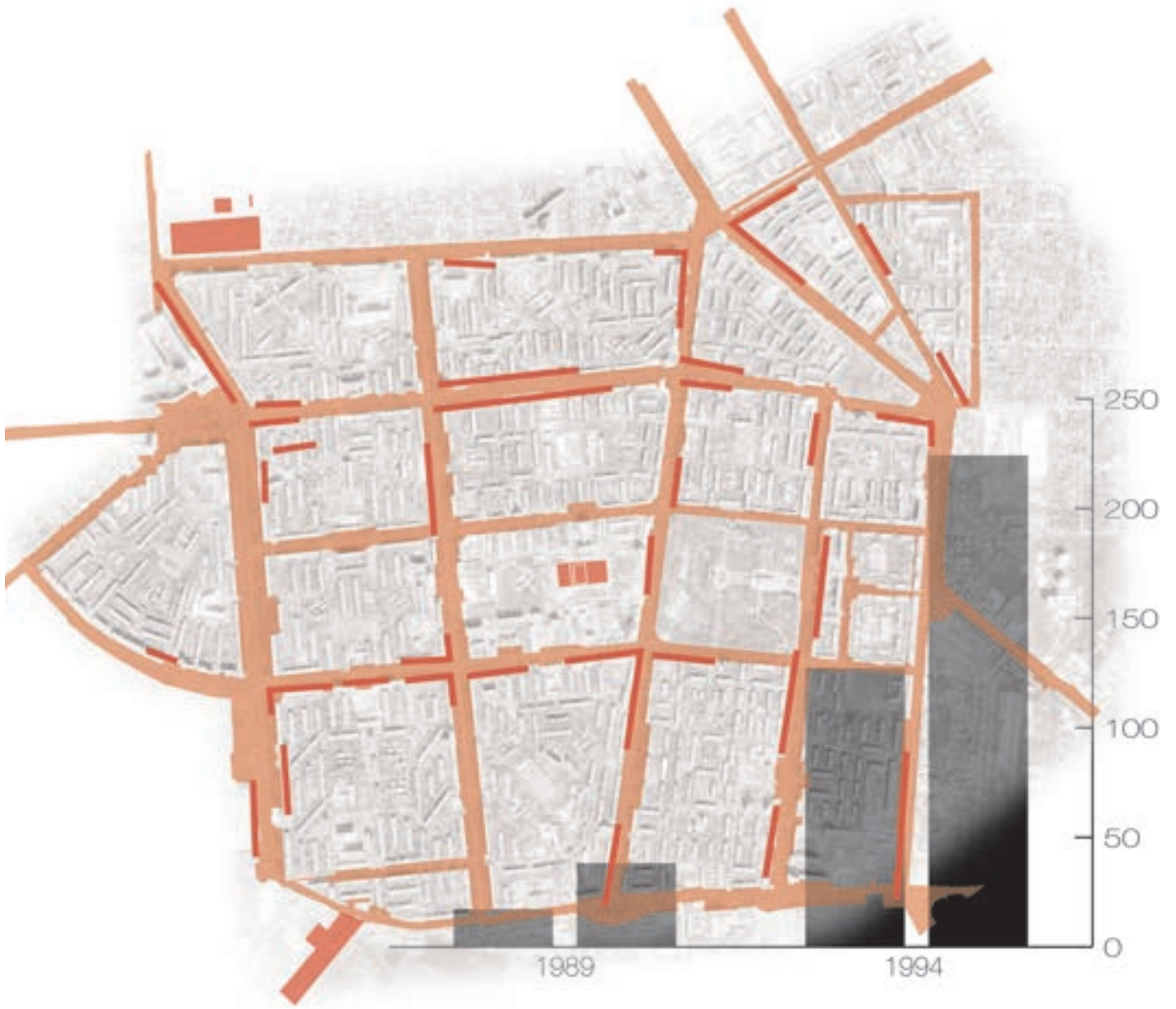
'Why did kiosks appear and where are they located in Cheryomushki? How do they influence their surroundings and what are their qualities?'

## Kiosks in General

A kiosk as you find it in Cheryomushki is a makeshift, although sometimes carefully crafted, measuring usually two to five meters in length and one to three meters in width, resting on either a makeshift uncemented plinth foundation or a wheel base, located on a regular sidewalk, a city square, a blind alley, raised slightly above the passing public (cf. Schneider-Sliwa, Rita, 2002, pp. 161).

Kiosks are kind of "mediators of the new market economy" in post-soviet countries (Papadopoulos, Alex; Axenov, Konstantin 2006). After the political change especially low educated people from rural areas saw their chance of an income and as a solution to the lack of spaces in which private entrepreneurship was conducted in USSR they built up the kiosks in public space.

The kiosks constitute a built form very familiar to the soviet people and their appearance predates the Bolshevik revolution. Already since the nineteenth century the sale of all sorts of commodities from portable trays



02.

Space of the street  
Positioning of commercial functions

02 Commercial Functions in the Streets, Aurelius Tauer, 2018

was well established (Gohstand, Robert, 1983, p. 355). Nevertheless, after the shift of the regime there has been noted a significant raise in the number of the kiosks (Harlan Walker, 1996, p. 164), as the graphic in 02. shows the difference of the amount of kiosks at two Metro stations at St. Petersburg from 1989 and 1994 (cf. Schneider-Sliwa, Rita, 2002, p. 170).

**The Kiosks of Cheryomushki**

Kiosks exist either in big markets or along the streets as separate constructions in a linear array. From the map (graphic 02.) it appears that kiosks become denser approaching the corners of the blocks. Comparing in graphic 03. Kosmonavtiv Street with and without kiosks it becomes more clear that kiosks are located mostly at the corner of the blocks where most of the bus stops are located (graphic 03.) or next to crosswalks – spots of infrastructural value like the metro stations of St. Petersburg. As Alex G. Papadopoulos and Konstantin Axenov explain the reason is that kiosk owners prefer to place their kiosks in locations of high pedestrian traffic.

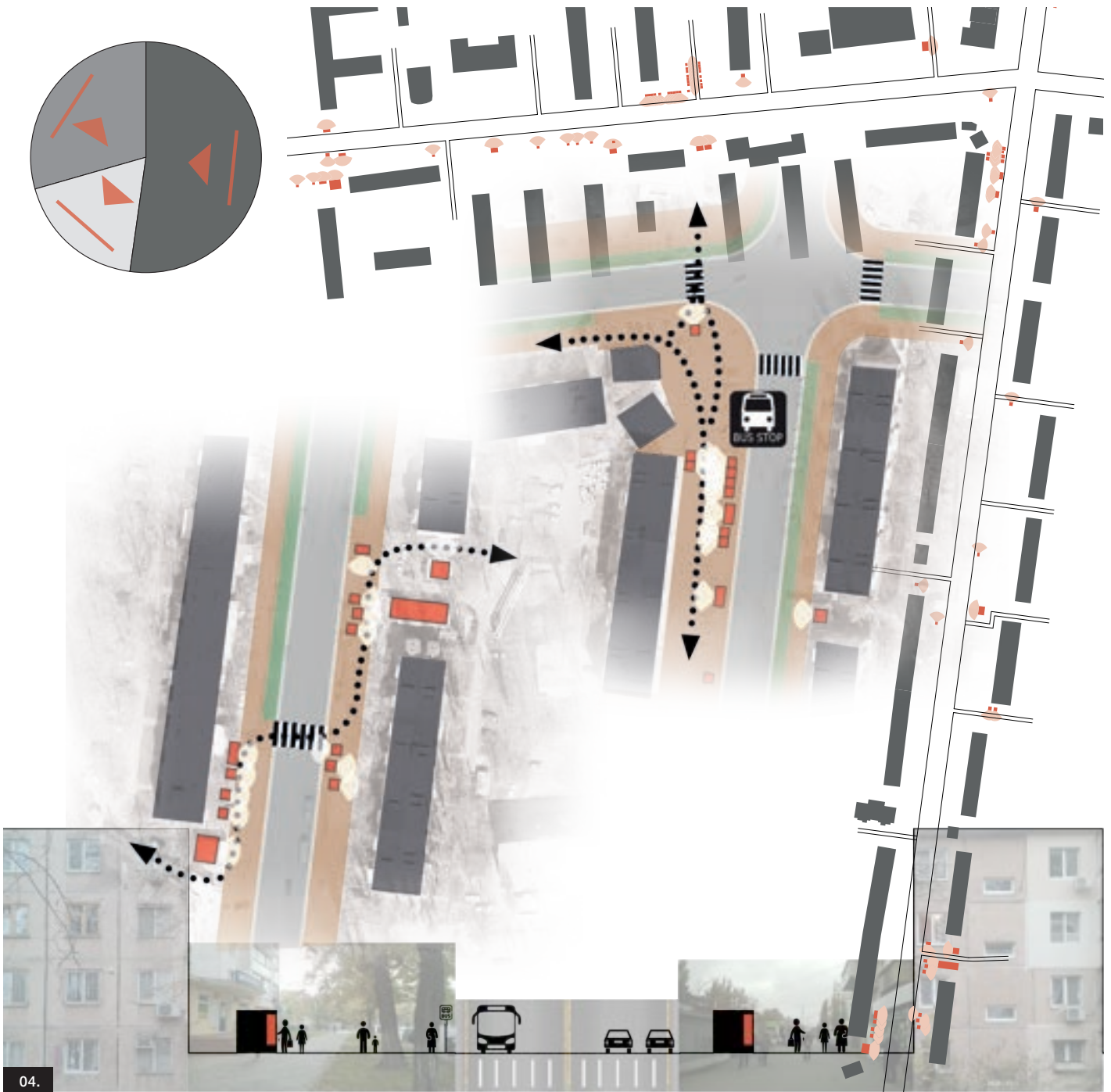
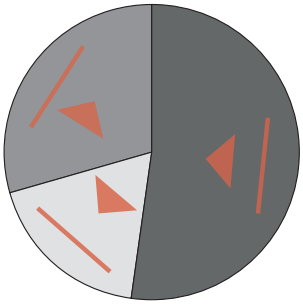


03.

There are also some kiosks where smaller roads enter the micro rayons making use of people's daily routes, activating prospective regular customers. By mapping the orientation of the kiosks in a part of Henerala Petrova Street and Kosmonavtiv Street in graphic 04, it becomes evidently that kiosks aim only to the pedestrians, since they are facing always the pedestrian flows of the sidewalk regardless if they are located next to a building or next to the road. The kiosks along the streets create a linear commercial zone between the big roads and the housing buildings. They change the scale of the district into a more human scale. Furthermore, in cases when there are kiosks on both sides of the sidewalk, they create small linear introverted markets and reformulate the way that the sidewalk is experienced into a commercial area with high vitality that creates an identity spending atmosphere.

- Location of Kiosks
- Pedestrian space

03 Location of the Kiosks in the Streets, Aurelius Tauer, 2018



### Importance of Supply

Kiosks are important for the supply as they sell a great variety of products and their number and opening hours outrun the official shops. During the day, everyday goods are offered like cigarettes, newspapers, coffee, food, fruits and vegetables, flowers and tools. At night people can still find kiosks that are not closed, selling mostly cigarettes and alcohol during this time. The prices of the products are usually lower than in official shops, because they pay no rent and also because often, they sell products directly from the production, with no need of intermediaries. In a scenario without this kind of supply the amount of supermarkets and shops would need to rise in order to keep up the given variety as well as the infrastructural efficiency since the spatial distances of the district are huge and the pedestrian ways naturally offer the amount of space needed for the kiosks.

- Kiosks
- Pedestrian space
- Kiosk orientation
- Exemplary pedestrian route

04 Orientation of Trade, Antigoni Retsa, Aurelius Tauer, 2018



05.

### Impact of Kiosks on the Image and Atmosphere of Cheryomushki

In graphic 06 there are mapped the well-kept kiosk and the kiosk that are in a worse condition. Well-kept kiosks shine with a firm surrounding surface, has a well joint construction, is clean and has an overall calm and settled image. On the other hand, the kiosk that are surrounded by trash, not repaired, rust and dirty are considered as kiosks in a bad condition. More of the kiosks mapped are well-kept and they are scattered uniformly in the public space without forming areas with higher densities in terms of condition.

Except from their importance in the commercial function, kiosks give life to the streets and play an important role in the social interaction of the residents. Luise Perotta (1995) describes shopping from kiosk as an important part of life in a micro rayon. As seen in Cheryomushki people stop by and get into conversations either with the salesman or other customers. The diverse appearances of kiosks as seen in graphic 05 of course plays a big role in terms of atmosphere as well – only a well-kept kiosk creates a

- Better condition
- Worse condition

05 The Quality of Appearance, Antigoni Retsa, Aurelius Tauer, 2018



06.

positive atmosphere around. However, at night they can change their image and become a pole of attraction for drinking people, who are yelling and fighting and creating displeasing areas in the streets (Anna Fedorenko, 2018).

### **What is overall so special about the Kiosks of Cheryomushki?**

Kiosks as a representation of the decentralization are a part of the soviet culture (cf. Papadopoulos, Alex, Konstantin Axenov, 2006). As the result of adaptability of public space, they reveal in what terms people identify themselves in it. Although at a first look they may create a chaotic image, but when they are well-kept, they constitute a decoration of soviet streets and give life to them.

When planning in Cheryomushki the task is to integrate kiosks into a planned structure and to prevent an anarchic appearance. They should be considered as an integral part of everyday life of the residents, as a hidden quality of the district, rather than a problem that should be eliminated.





07.

07 Shift of Atmosphere during Day and Night, Antigonis Retsa, 2018

List of References:

- COUNCIL OF EUROPE. (2017). City of Odessa Intercultural Profile [online]. [accessed on 14.02.2019] available at: <https://rm.coe.int/odessa-intercultural-profile/1680759d6>
- FEDORENKO, Anna. (2018). Odessan Citizen, interview by author, Karlsruhe, 01.12.2018
- GOHSTAND, Robert. (1983). The Geography of Trade in Nineteenth Century Russia, p. 355)
- KINETIQ SOLUTIONS. (2016). Why is Moscow Demolishing Kiosks? [online]. [accessed on 14.02.2019] available at: <https://vostokian.com/why-is-moscow-demolishing-kiosks/>
- PAPADOPOULOS, Alex, Konstantin AXENOV. (2006). St. Petersburg [online]. Kiosks as mediators of the new market economy [accessed on 14.12.2018]. available at: [https://www.researchgate.net/publication/226756202\\_St\\_Petersburg\\_Kiosks\\_as\\_mediators\\_of\\_the\\_new\\_market\\_economy](https://www.researchgate.net/publication/226756202_St_Petersburg_Kiosks_as_mediators_of_the_new_market_economy)
- PEROTTA, Louise. (1995). Consumption and Urban Space in Post-Soviet Moscow [online] [accessed on 14.02.2019] available at: <http://etheses.lse.ac.uk/1412/1/U084487.pdf>
- SCHNEIDER-SLIWA, Rita. (2002). Städte im Umbruch. Neustrukturierung von Berlin, Brüssel, Hanoi, Ho Chi Minh Stadt, Hongkong, Jerusalem, Johannesburg, Moskau, St. Petersburg, Sarajewo und Wien, Reimer, ISBN 978-3-496-01245-0
- WALKER, Harlan. (1996). Food on the Move: Proceedings of the Oxford Symposium on Food and Cookery, p. 164

List of Figures:

- 01 A Forest of Kiosks, Aurelius Tauer, 2018
- 02 Commercial Functions in the Streets, Aurelius Tauer, 2018
- 03 Location of Kiosks in the Streets, Aurelius Tauer, 2018
- 04 Orientation of Trade, Antigni Retsa, Aurelius Tauer, 2018
- 05 The Quality of Appearance, Antignoni Retsa, Aurelius Tauer, 2018
- 06 Supply of everyday Needs, Antigni Retsa, Aurelius Tauer, 2018
- 07 Shift of Atmosphere, Antigni Retsa, Aurelius Tauer 2018
- 08 The Variety of Cheryomushkis Kiosks, Aurelius Tauer, 2018





01.

# **Cheryomushki – A Settlement of Multi-Adapted Streets**

When we first visited Cheryomushki, the streets made a noticeable impact on us. We were faced with unusually wide main roads for a housing district and we were confronted with the unorganized roads inside a micro district. Therefore, we asked ourselves where the roots for the planning and the design of Cheryomushki's streets came from.

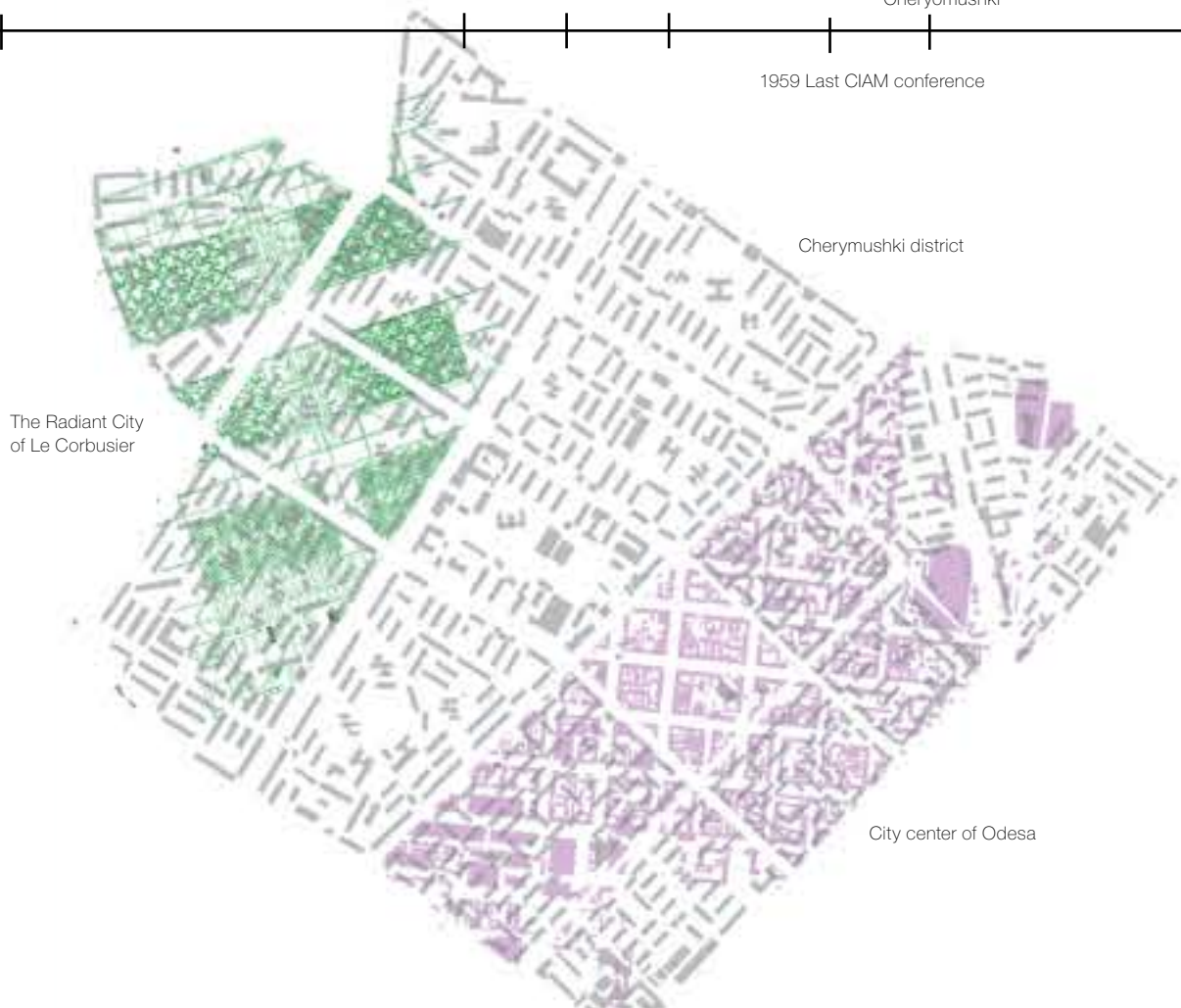
Did the ideals of the transportation structure of the 'Modernist City' influence the planning of Cheryomushki's streets? How does the system work and how was it supposed to be planned? What has been changed or adapted? Who are the users and how do people daily use the streets in Cheryomushki?

In this chapter we are going to focus on the transport system of the district and its connection to the modernist ideals. To begin with, we did a research on the principles of the "Modernist City" and their influence on the planning of Cheryomushki. Then we mapped the implemented modernist features of the circulation in the district and after that, we compared the streets in the district with the modernist ideals. Subsequently, we mapped the roads of users and finally, we looked at the changes of the circulation in the district to see if they meet the needs of the residents.

## **Modernist Principles and Odessa's Structure**

The modernist ideals played an important role for designing new residential buildings after the Second World War. They were developed by the CIAM from 1928 to 1959 and were established in the "Athens Charter" in 1933 (Mumford, 2000). The ideas were a reaction to the bad housing conditions, the overpopulation and the pollution in the cities caused by the industrialization and the rise of the automobiles (Hilpert, 1978). The principal claim of the CIAM was summarized in the "Functional City".

It describes the strict functional segregation of urban elements such as housing, working, recreation and circulation to enhance the living conditions in the city (Mumford, 2000). The principle of circulation states that roads should be designed to meet the requirements for each mean of transport and they're divided by the speed they travel to. The modernist circulation should provide efficient ways of transit and solve the inorganization of roads at that time (Tyrwhitt, 1946).



02.

In the illustration 02 you can see a collage of three different maps and their corresponding street view: the green-colored map illustrates the “Radiant City”, an unrealized masterplan by Le Corbusier which describes his ideal modernist city: a well-ordered, symmetrical grid structure with a strict segregation of different housing areas. The corresponding green drawing of the street view in the Radiant City’s depicts the separation of pedestrian paths above ground and the vast underground system which only transport automobiles. The pink-colored map shows the symmetrical, square grid of the city center of Odessa which was built around 1790s. The gray-colored map features Cheryomushki, a typical Soviet district, which was built between 1966 and 1972 and consists of 18 so-called “microrraion”. Looking at the map, you see clear axes which are not as strict as the grid structure of the Radiant City and the city center. The clear axes are for a better orientation and for fast travel one point to another. Focusing on the size of the grid, you notice the huge block size of Cheryomushki which is ten times bigger than the block size of the Radiant City and the city center. If you compare the streets views with one another, you can also see differences

**Building structure**

- Villa Radieuse by Le Corbusier
- City center
- Cheryomushki district













02 Building structure of Odessa, Nguyen/Vinueza, 2018



ideal functional segregation



today (2018)

● Odessa Opera (city center)	● Main station	● Airport
  	  	  
35 min 7.4 km	17 min 7.4 km	28 min 5.1 km
	9-22 min 5.1 km	34 min 9 km
8-20 min 4.1 km		
		
4   7   9   11   18   117   121   124   128   137   145   149   150   168   175   197   208   210   214   220A   221   232A   280	3   10   13   26   27   31	7   9   10   11   12
marshrutka	tram	trolleybus
		bus 162

travel distance and duration / public transport number routes














03.

of the width of streets. The streets in the city center and in Cheryomushki have four lanes and are narrower than the street in the Radiant City which has ten lanes. To sum up, there is a clear structure in Cheryomushki although it does not have the same block size and is not symmetrical like the modernist structure. The clear structure offers a good orientation for car drivers and makes it easier to travel faster to a destination.

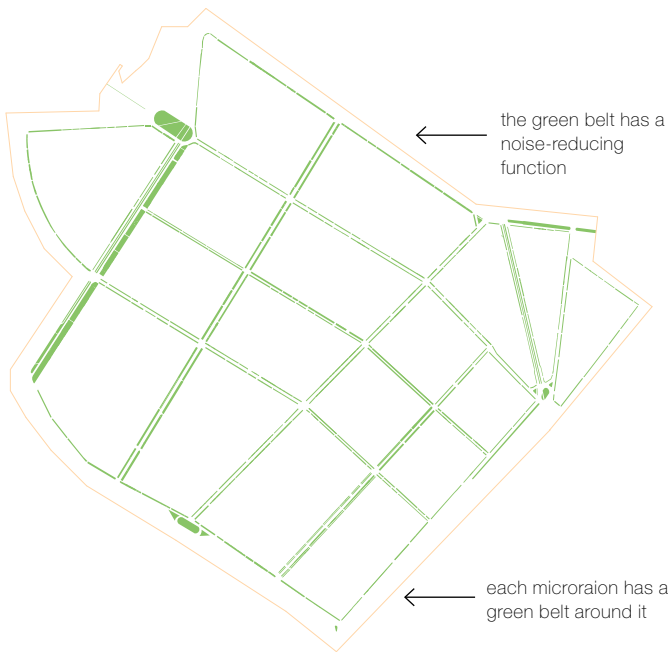
### Functional Segregation and City Center Connections

The illustration 03 shows a comparison between an ideally functional segregation in Cheryomushki and the actual functional division in Cheryomushki nowadays. The map of the ideally functional segregation proposes the idea that each microrraion should have one function. For instance, one microrraion has only the educational facilities, one has only the working places, one or more have only residential housing, etc. Consequently, the functions in an ideal modernist city are strictly separated. The actual functional division in Cheryomushki today is not as strictly separated as

### Modernist segregation

-  highway
-  main road
-  rail
-  tram
-  routes
-  recreation
-  grassland
-  industry
-  education
-  trade, business
-  administration

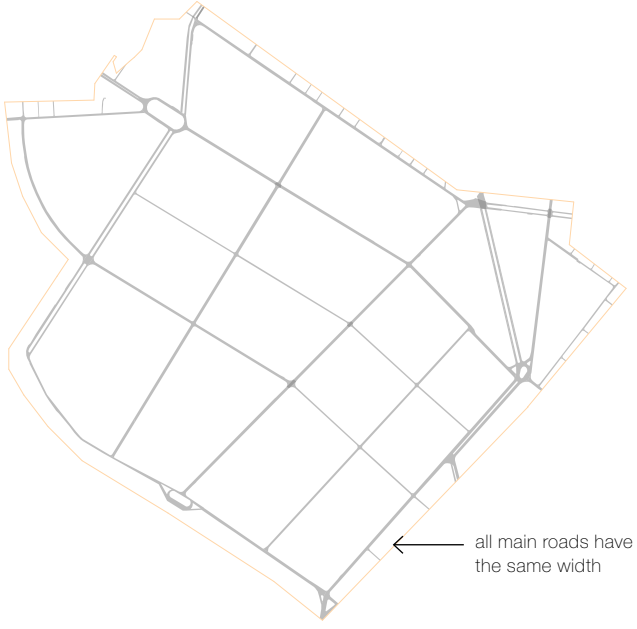
03 Modernist segregation and today's Cheryomushki, Nguyen/Vinueza, 2018



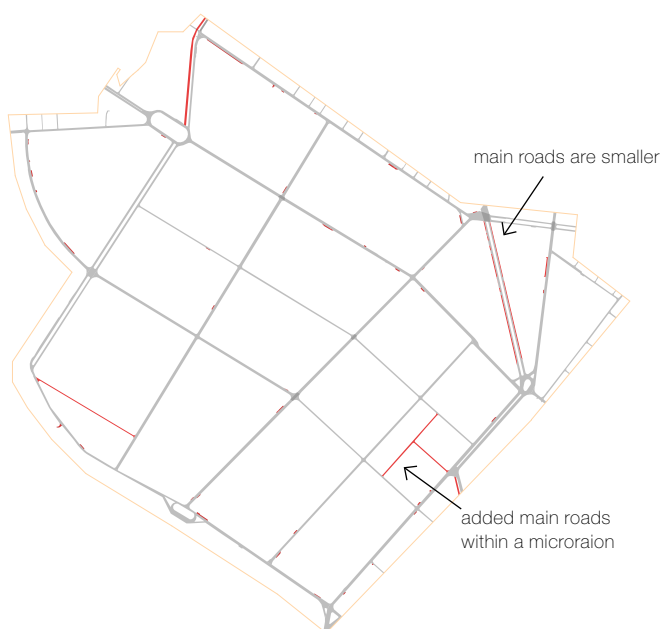
green belt if ideally planned



changes



main road if ideally planned



changes

**Modernist principles**

- Most frequently used main roads
- Often used main roads
- Normally used main roads
- Green belt
- Modernist principles
- Changes

in the modernist city: within a micro district you find a variety of functions such as housing, schools, administrations buildings and other public buildings. When you compare the roads of the ideal segregation with today's situation, you realize that in both maps each mean of transport has their own path: you have the train, the tram and the car roads. However, there is a hierarchy of car roads in today's situation while the streets in the ideal modernist map are all equal.

When you go to Cheryomushki, the easiest way is to travel by car. For example, the fastest way from Henerala Petrova Street to the city center takes 17 min by car (7.4 km) as seen in the chart "travel distance" (ill. 02). You can also use the well-connected public transport system which has a lot of transport routes and a variety of public transport vehicles. You can opt between buses, marshrutkas, trams or trolleybuses. Going on foot and by bike is difficult because the walking distance is too long and there isn't a bicycle lane. To conclude, you can see that there is a separation of tram, train and car roads in Odessa, but the car roads are used by a lot of different vehicles e.g. bus, marshrutkas etc.

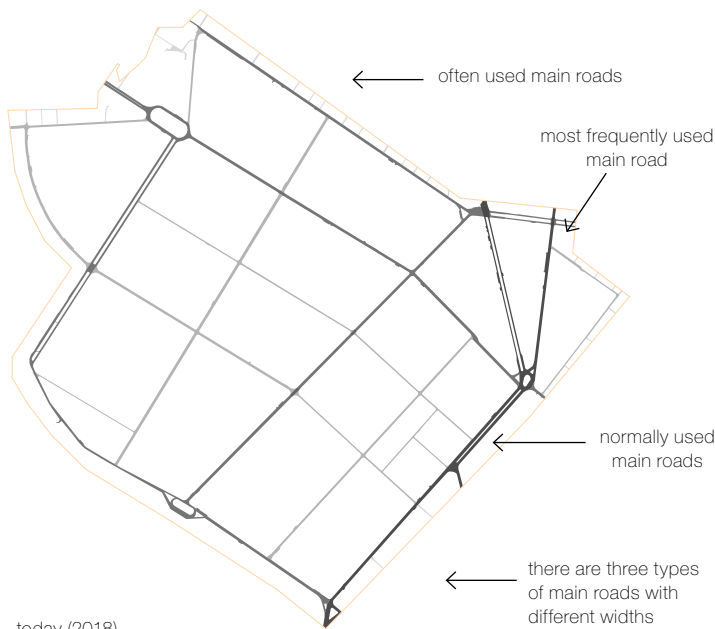




today (2018)



seperation of streets if ideally planned



today (2018)



today (2018)

04.

## Modernist Ideas Implemented in Cheryomushki

The illustration 04 shows how Cheryomushki would look like if it was planned with the modernist ideals and how these ideals were actually implemented. It also highlights these differences and changes. The first modernist principle is the green belt around the blocks which separates the pedestrian paths from the highway routes for automobiles and works as a noise-reducing function. The ideal plan suggests that every micro district has a consistent green belt along the borders of a microrraion but today's situation shows that some blocks have partly removed the green belt and some have added a green belt within the block.

The second modernist principle is about the clear axes which are used as transit streets to connect Cheryomushki to the city center. While the ideally planned main roads are all equal, today's main roads have a hierarchy. There are frequently-used main roads which are marked with black, often-used main roads marked with dark gray and normally-used main roads which have a light gray color. Depending on the frequency of usages, the streets

04 Modernist principles implemented in the planning of Cheryomushki and today's situation, Nguyen/Vinueza, 2018

have four or six lanes. Furthermore, today's transport system has added more main roads, the width of roads is smaller in some areas and bigger in other areas. The added streets are a result of the need for a further main circulation network.

The third modernist principle is the strict separation of means of traffic by speed in automobiles, tram, pedestrian and cyclist. However, the principle has not been consistently implemented in Cheryomushki today: The district has in fact separated tram, automobiles and pedestrian paths but they do not have bicycle lanes and the cars and busses share the same streets. As a consequence, a cyclist would share the roads with the pedestrian or the cars. Overall, the implemented modernist principles are still visible today although they were altered in some areas. The reasons for the changes are caused by various factors: the scale of street space, the adaption of streets and the appropriation of space because of the changing and lacking needs and the citizens' ignorance and convenience which we are going to take a closer look into in the following.

### Width of the Streets

One of the reasons for the changes of the streets is their width. The illustration 05 exemplifies one street area in Cheryomushki and demonstrates how the streets are used by different road users today and how the it is supposed look like after the modernist principles. The modernist principles are split into two rules: Modernist principle 1 describes the idea if cars are allowed in a micro district and modernist principle 2 considers the idea of a car-free micro district. The reason for two alternatives is the unclarity of how the streets inside a block were planned. As you can see in the first section "Cheryomushki 1-1", the sidewalk and the housing streets are shared by pedestrian and cars.

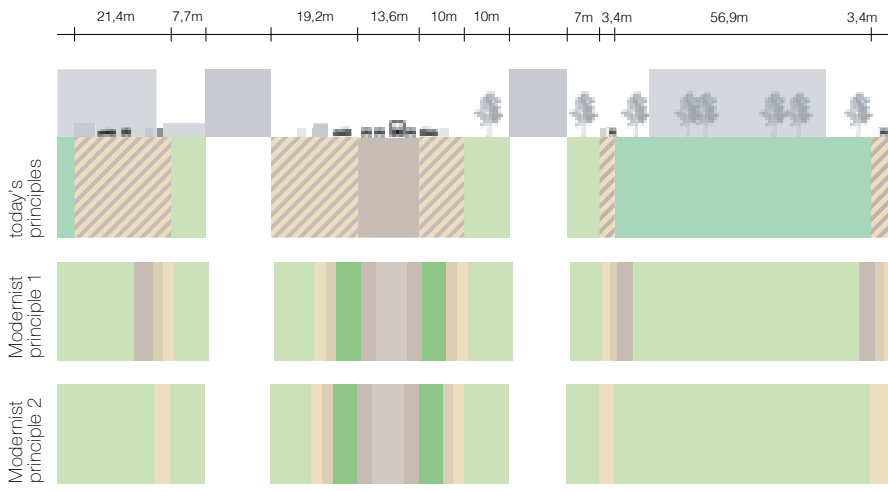
You can also find small buildings and parking cars on the pedestrian paths. Section "Cheryomushki 2-2" depicts today's shared housing street with parking lots and section "Cheryomushki 3-3" illustrates the fragmented pedestrian paths. However, according to the modernist principles, the roads should be separated for each traffic participant. Therefore, a bicycle lane should have been added and busses and cars should have their own lane. Measuring a housing street, you get 4m wide streets. If the width of the street was to be kept, the modernist principle 2 would be the best fit. Therefore, we can assume that the housing streets have been only planned for the pedestrians. In reality, however, these roads are shared as there were not planned car roads. In addition to that, many parking lots, garages and wild parking have emerged since people needed space for their cars. The fragmented paths in the green park resulted from the lack of connecting paths and thus the residents create their own unofficial paths to travel faster.

We notice that Kosmonavtiv Street is really wide. It has 4m wide pedestrian paths, 13.5 m car roads and a 5.5 m wide green belt. In our opinion the proportion of the main streets is not appropriate for a mainly housing district since it does not evoke intimacy, comfort or a quality of walk-ability for pedestrians due to the heavy traffic. Moreover, the main roads dimensions all look similar so that they create a monotonous atmosphere and they don't have another function besides the regulation of traffic. Visiting the district, you also experience the void, the bad maintenance and the difficulty to cross the streets. All in all, the width of streets can indicate which roads were planned for a specific user group after the modernist ideas. In the case of Cheryomushki, you have an outside circulation which is only reserved for cars and an inside circulation planned only for pedestrian, but modified to be a shared street.

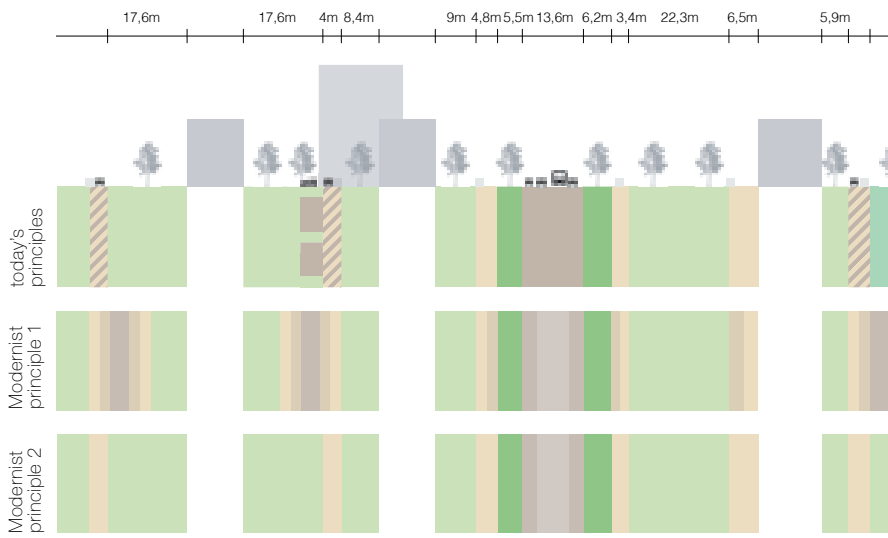
#### Street widths

- Car
- Bus
- Bicycle
- Shared space
- Pedestrian
- Green Belt
- Public greenery
- Greenery

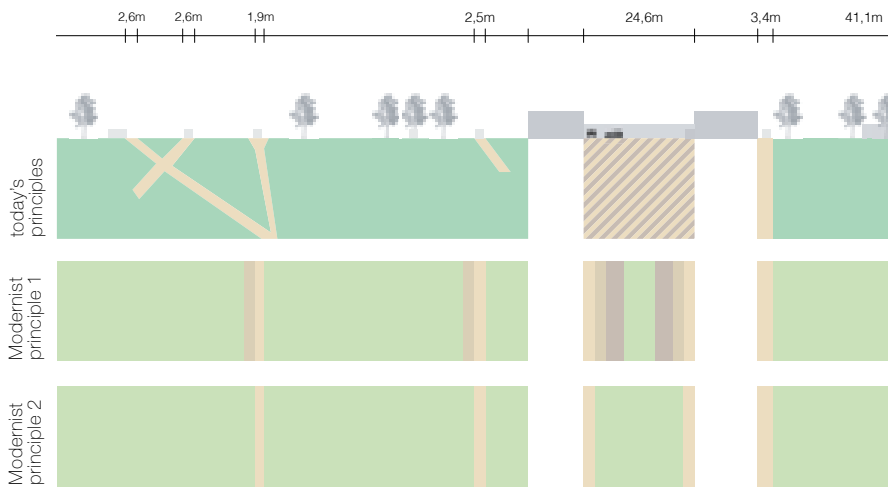
05 Street widths of Cheryomushki, Nguyen/Vinueza, 2018



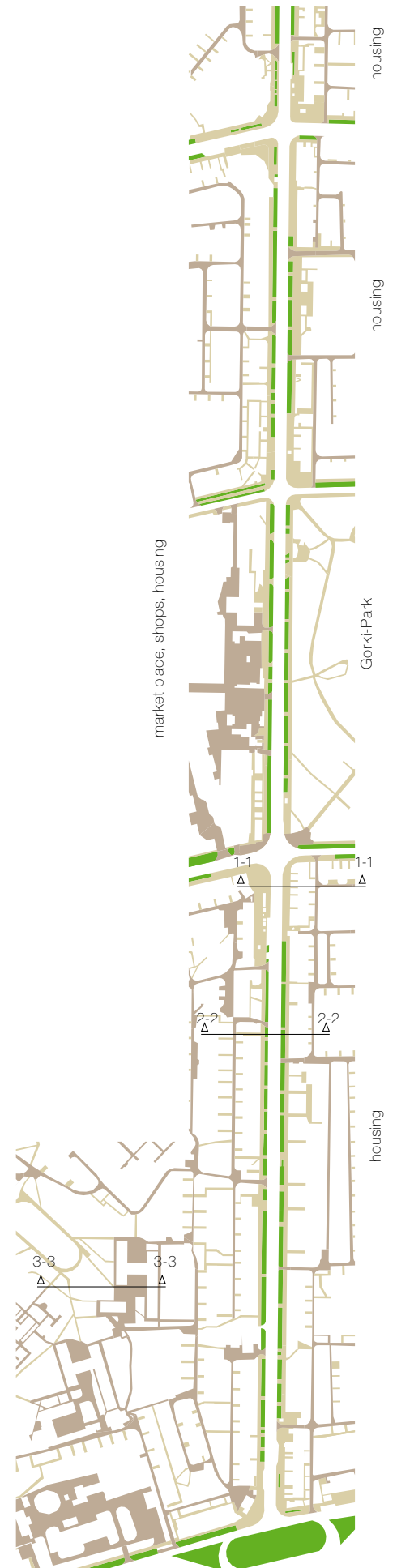
Cheryomushki 1-1  
Kosmonavtiv Street and unnamed housing streets



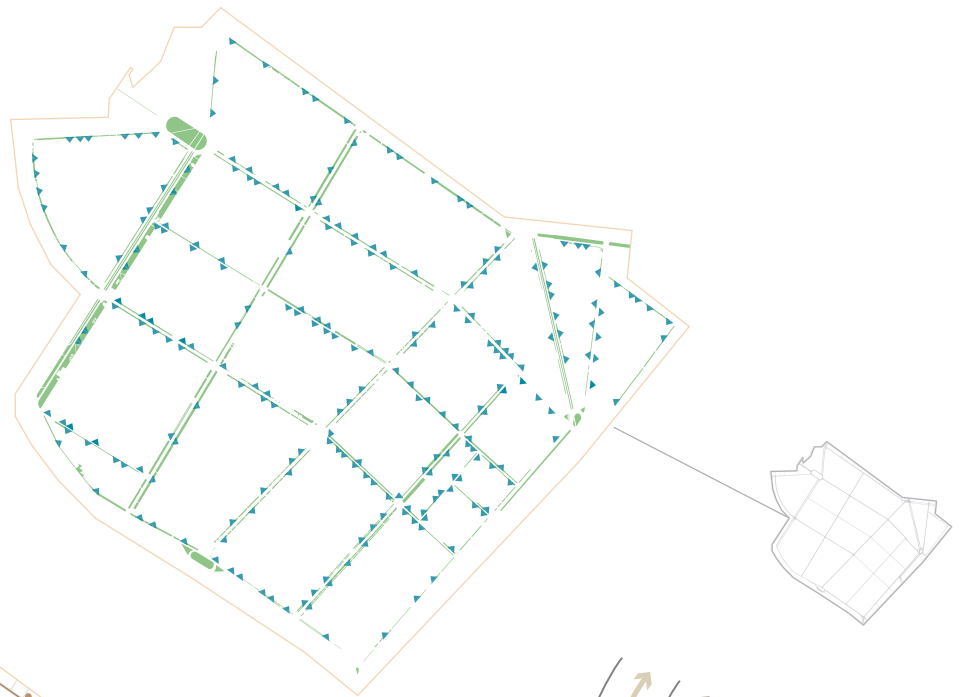
Cheryomushki 2-2  
Kosmonavtiv Street and unnamed housing streets



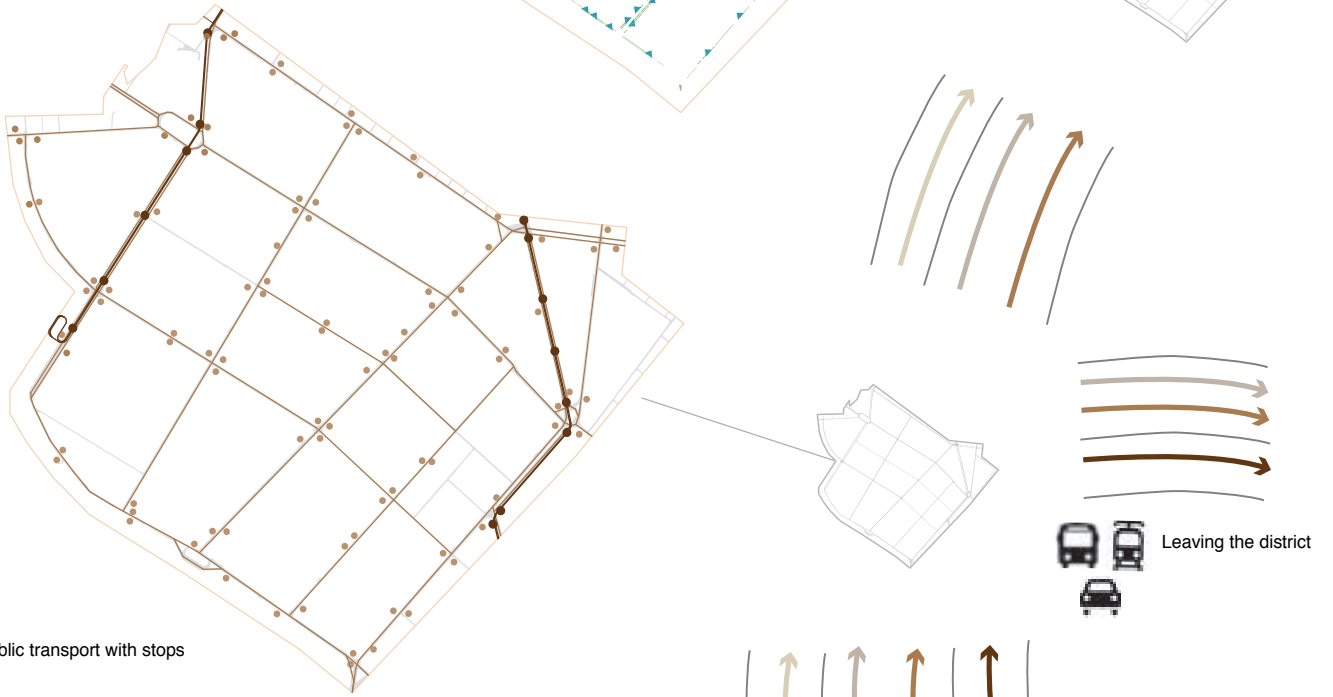
Cheryomushki 3-3  
unnamed housing streets and green place



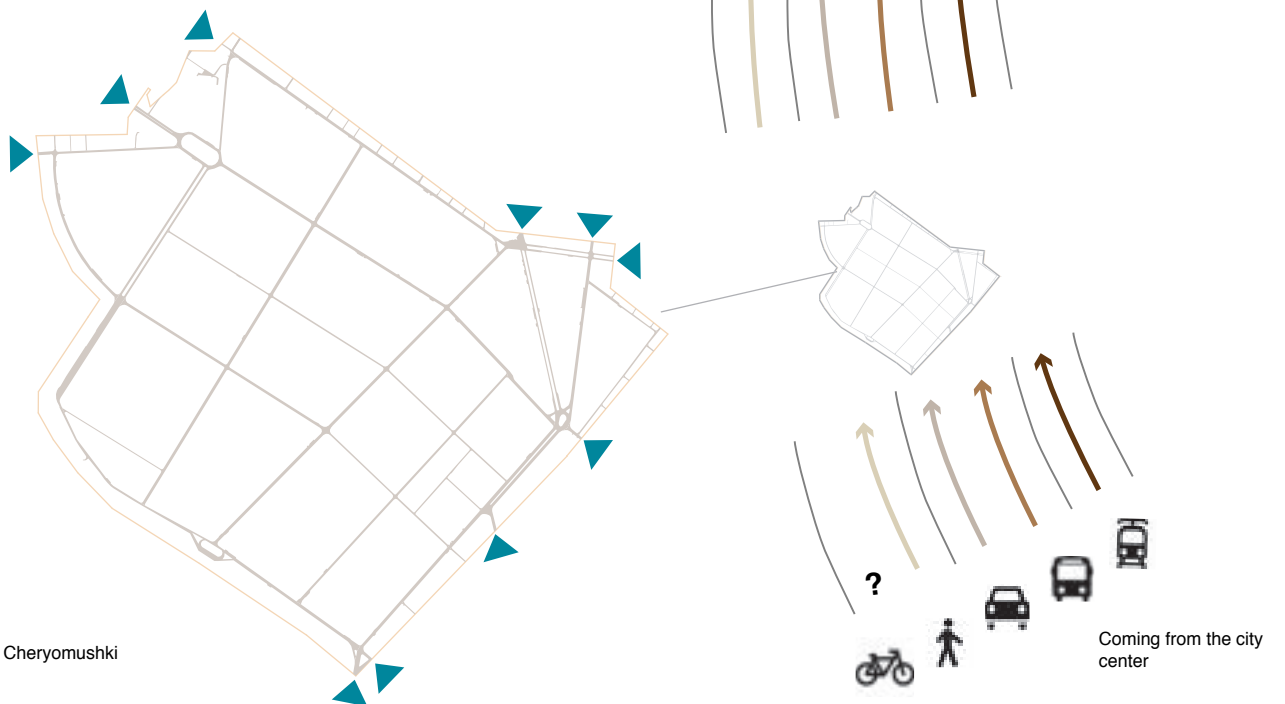
Entrances and the green belt

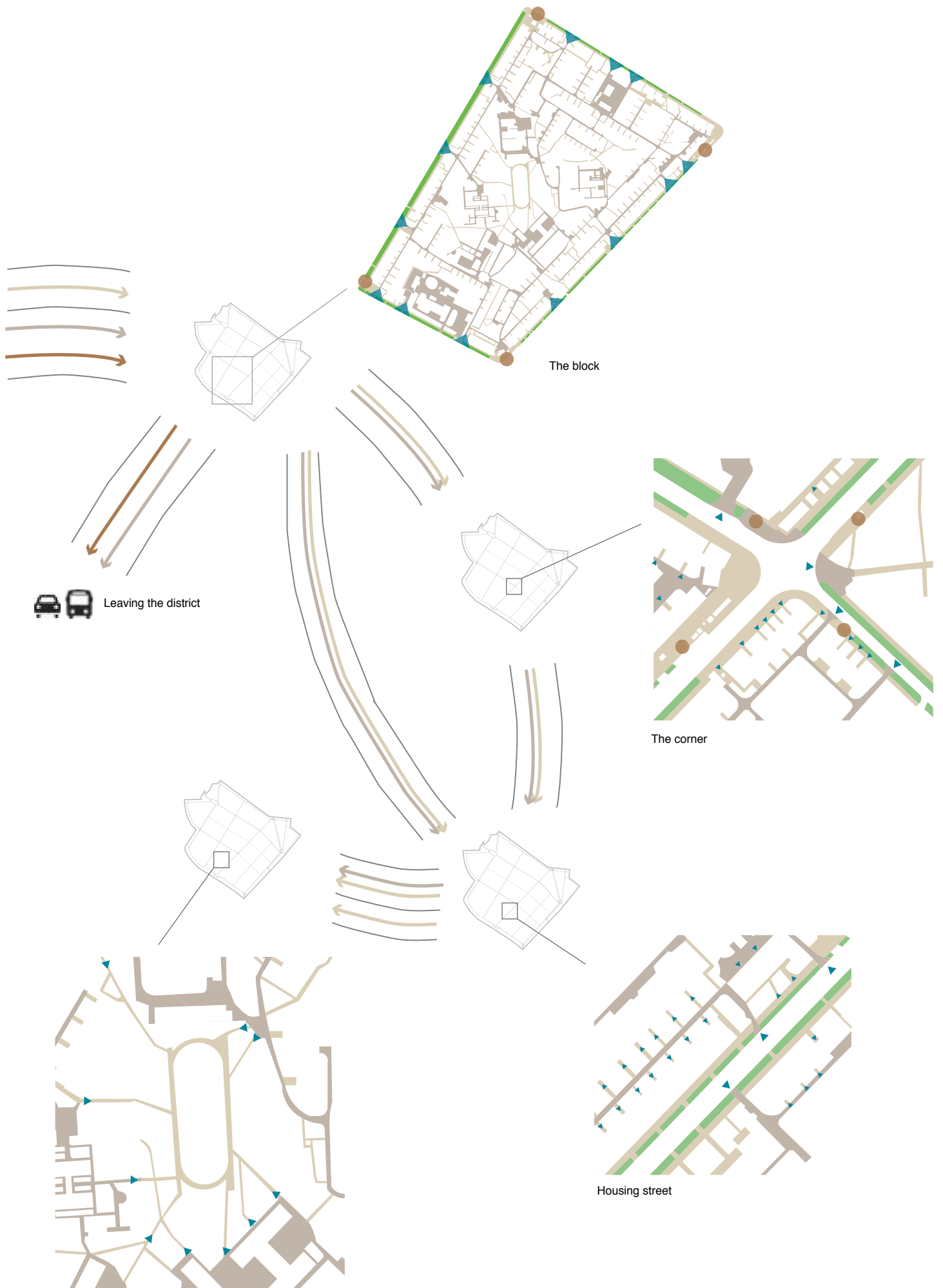


Public transport with stops



Entering Cheryomushki





Neighboring place with sports field

## Routes of Road Users in Cheryomushki

The shared space becomes evident in the map 06. The map is an illustration of possible ways of how different groups of traffic participants move to and within Cheryomushki as well it demonstrates which roads are shared or separated. Coming from the city or airport, there are nine main entrances for cars, buses, and pedestrians and only two entrances for the tram. While cars and busses share the same roads, the tram and the pedestrian have their own path. Bicycle lanes do not exist. As a person using the public transport system, you get off at the borders of the district by using the tram. When you go by bus, marshrutkas or trolley bus, you are likely to get off at a cross road since there is a high amount of bus stops in Cheryomushki.

One visible feature of the modernist ideas is the green belt when traveling along the main road. As a resident, you opt between a lot of entrances to one micro district. The main entrances to the microraiion are used by pedestrian and cars. Moving within the block, the paths are shared until the residents reach their entrance to their house or the green park in the center. Here, the paths are only used by pedestrians.

To sum up, we can say that if the roads are separated for each specific road user, modernist ideas have been involved in the planning of streets. If the roads are not shared, there might have been a lack of designing those roads or those roads were not considered in the planning as the needs for the people at that time were different. We think that the shared space a result of changing needs of the residents.

## Depiction of Modernist Elements and Adaptions

The following maps 07 and 08 show more detailed images of the changes and adaptations of the roads. We compared the principles of the modernist city with the current structure of the district to see what kind of changes have been made and to try to explain why it happened. Green-colored sketches represent modernist ideas while red-colored sketches represent the changes made by the residents.

The first illustration describes the situation at the corners of a block. Today, you find a lot of small kiosks along the main roads which provide local supply for the residents. We observe that the kiosks were built at the corners of every microraiion and along the main roads since they have a high frequency of passerby. The green belt has partly disappeared as a result of these emerging kiosks. But the demand for local supply has been fulfilled. The second image shows the road to the entrance of a housing area. You can see that nowadays the road is shared by pedestrians and cars. There are also additional paths on the green lawn. However, the shared space contradicts the idea of the modernist ideal. We think that with the rise of automobiles the car drivers have started occupying the roads of the pedestrians. Therefore, the pedestrian had to walk on the green lawn to avoid the cars which caused the fragmented paths over time.

The third image shows today's use of streets in a housing street in a micro district. You notice again the shared space and appropriated front yards used as parking lots or as private gardens defined by a hedge. Hence, the situation today differs a lot from the modernist principle of a car-free housing area. We assume two main reasons for this image today. First, due to the design of pedestrian paths, the roads are so broad to the point that cars can easily drive into the housing area as well as there were not any barriers or rules to stop the cars. Secondly, because of more and more residents have begun to buy their own cars they needed space for them ignoring the planning of the district and the modernist principle that

### Paths of road users

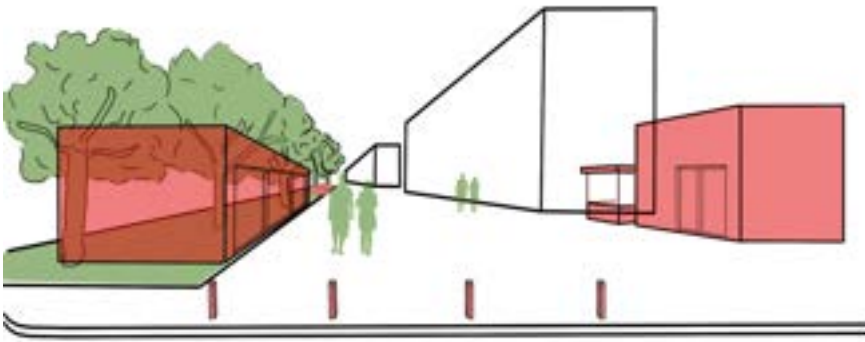
- Bus stops
- Corners
- Mixed roads
- Pedestrian roads
- Entrances
- Green belt

### Corner and block entrance

- Highway
- Housing street
- Green spaces
- Modernist principles
- Changes

06 Routes of road users to Cheryomushki's dwellings and open places, Nguyen/Vinueza, 2018

07 Depiction of corner and block entrance, Nguyen/Vinueza, 2018

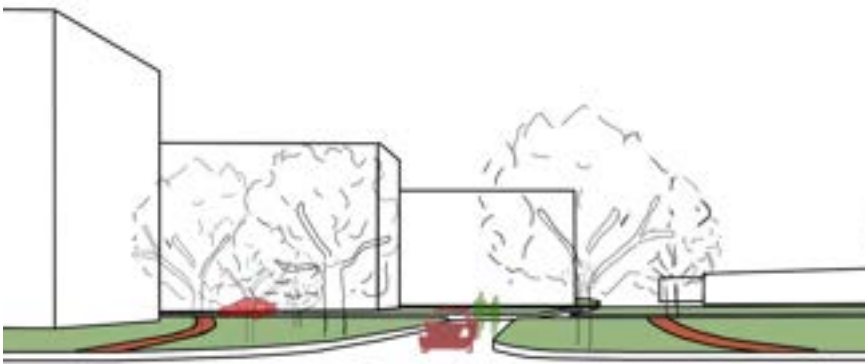


Modernist Principles



Changes

**1 Corner**

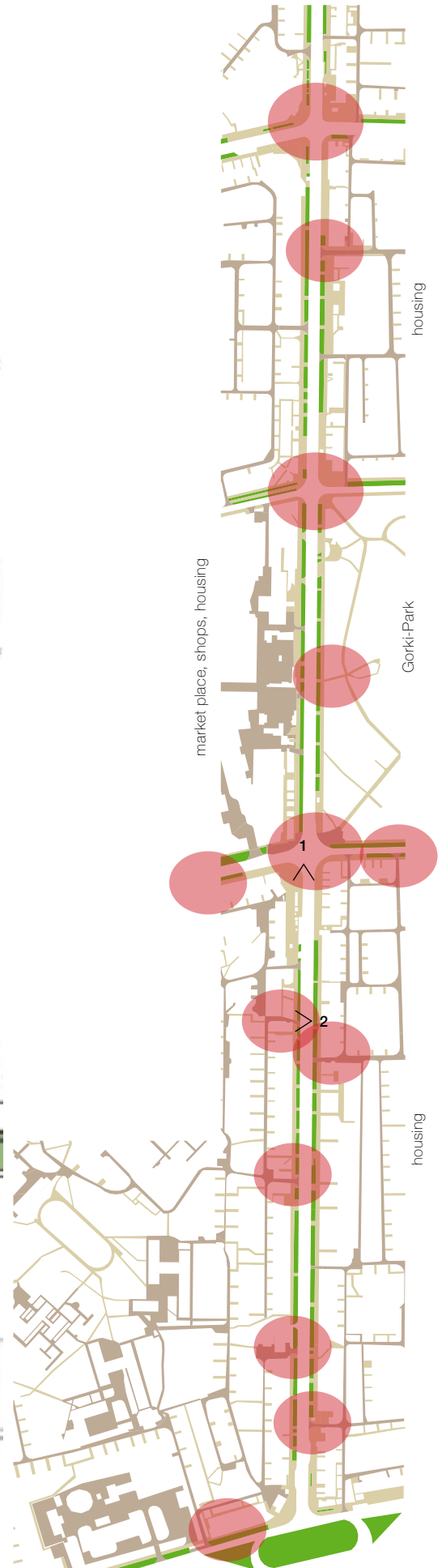


Modernist Principles



Changes

**2 Block entrance**








the green spaces around the buildings should be available for everyone (Hilpert, 1978). The fourth illustration displays the situation of a public greenery. The public space is surrounded by public institutions such as schools and kindergartens. Today you can perceive fragmented paths and weird-looking items which mostly happened to be tires in all kind of forms and usages. We can state that the fragmentations and weird items are caused by the residents. For one, the people have created new roads to shorten the distance between destinations as the original plan of Cheryomushki did not provide enough ways to cross the park and as people have started appropriating the space, they also occupied the public space to meet their needs. In this case, the build borders in form of fences between the green park and the playground.

To finish, the changes and adaption have been implemented over the years to meet the lacking needs of the residents. Wild parking cars, emerging fragmented paths, appropriated space and shared space are visual appearances of how the residents have solved their lacking needs.

## Conclusion

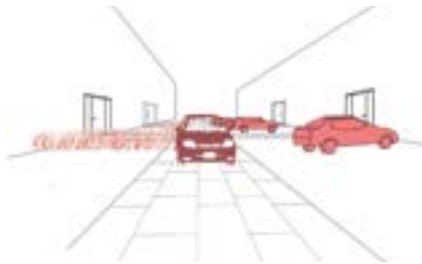
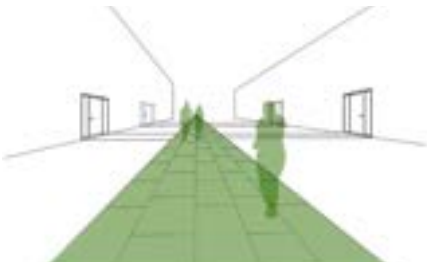
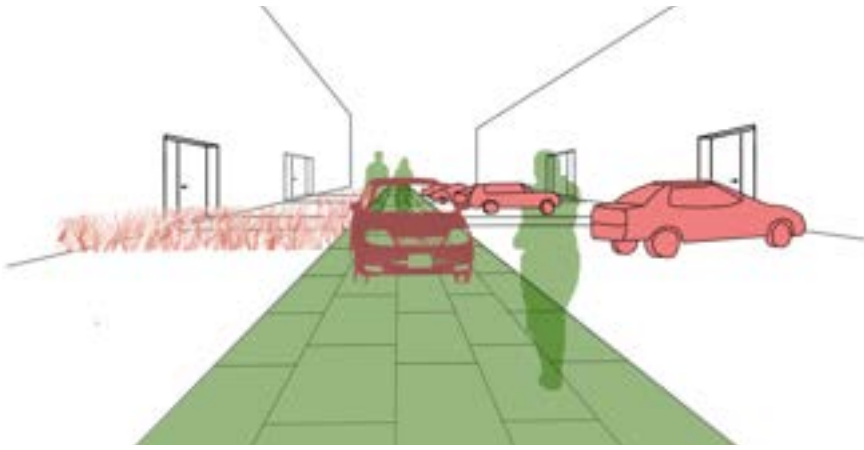
By analyzing the transport structure of Cheryomushki, we found some connections to the modernist ideals. The green belt and the clear axes are the most clearly recognizable features of modernist implementations. The green belt still works as a noise-reducing function and conveys a very green image when visiting the district and the clear axes with their broad streets and multi-lane tracks create a car-friendly transit structure and makes it easier to travel. Also, the public transport system works fine thanks to the high number of public transport routes and stops. But the modernist principle of a car-free microrail does not seem to work in the block since it has been replaced by shared streets due to the changing demands of the people. In addition, new pedestrian paths inside a block have arisen. The sufficient width of roads and the lack of roads played an important role for causing the changes. There is also new functional structure that meet the needs of the residents: kiosks as local supply, appropriated spaces as private areas and parking areas for the cars. With the addition of these functions, places like the corners, the public space, the housing street have changed a lot. It seems like the kiosks haven been randomly placed, the only aspect that has been kept in mind was the location of them, at the corners that are highly frequented because of the bus stops. We believe that there will be a continuity of adaptations and changes in the district since the living style and needs of the residents are likely to change in the near future – especially in those open, empty spaces with no functions. In our opinion the changes which were made by the people are quite chaotic and could lead to conflicts between the residents, e.g. a shop owner and a resident could argue about the occupied green space or the wild parking in front of the houses. Therefore, it is important to reorganize the general structure in Cheryomushki to avoid such arbitrary modifications. Speaking of the circulation, we think that the shared space in the inner block seems to work in Cheryomushki's case because we have observed that pedestrian and car drivers took notice of each other and were mostly considerate. However, these shared areas should be marked as such to achieve clarity how to behave particularly for visitors or children. While shared space could be a potential for further development, Cheryomushki should also consider building bicycle lanes as they have been totally ignored in the planning of the district.

### Housing street and green space

-  Highway
-  Housing street
-  Green spaces
-  Modernist principles
-  Changes

08 Depiction of a housing street and green area, Nguyen/Vinueza, 2018

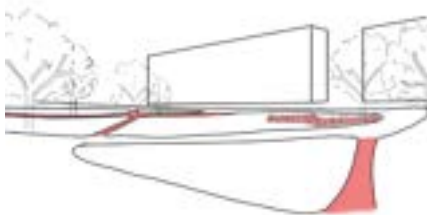
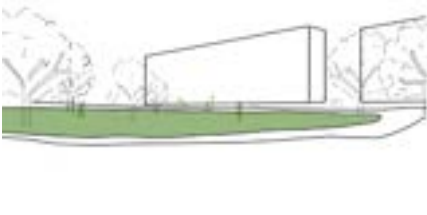
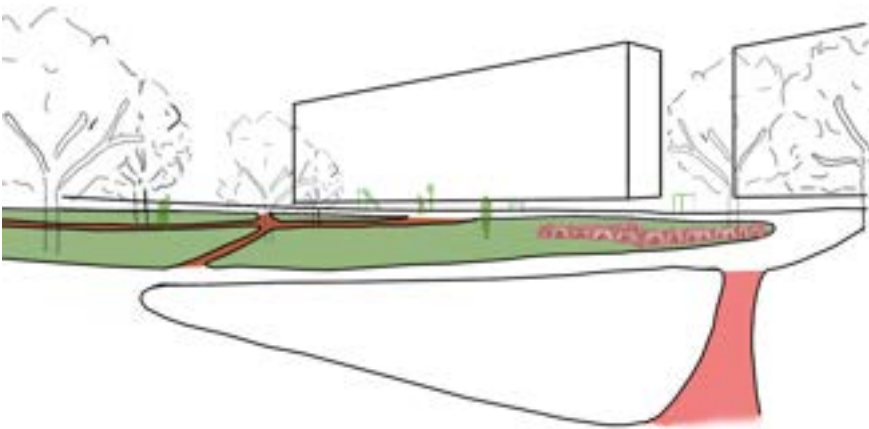




Modernist Principles

Changes

**3 Housing street**



Modernist Principles

Changes

**4 Green space**



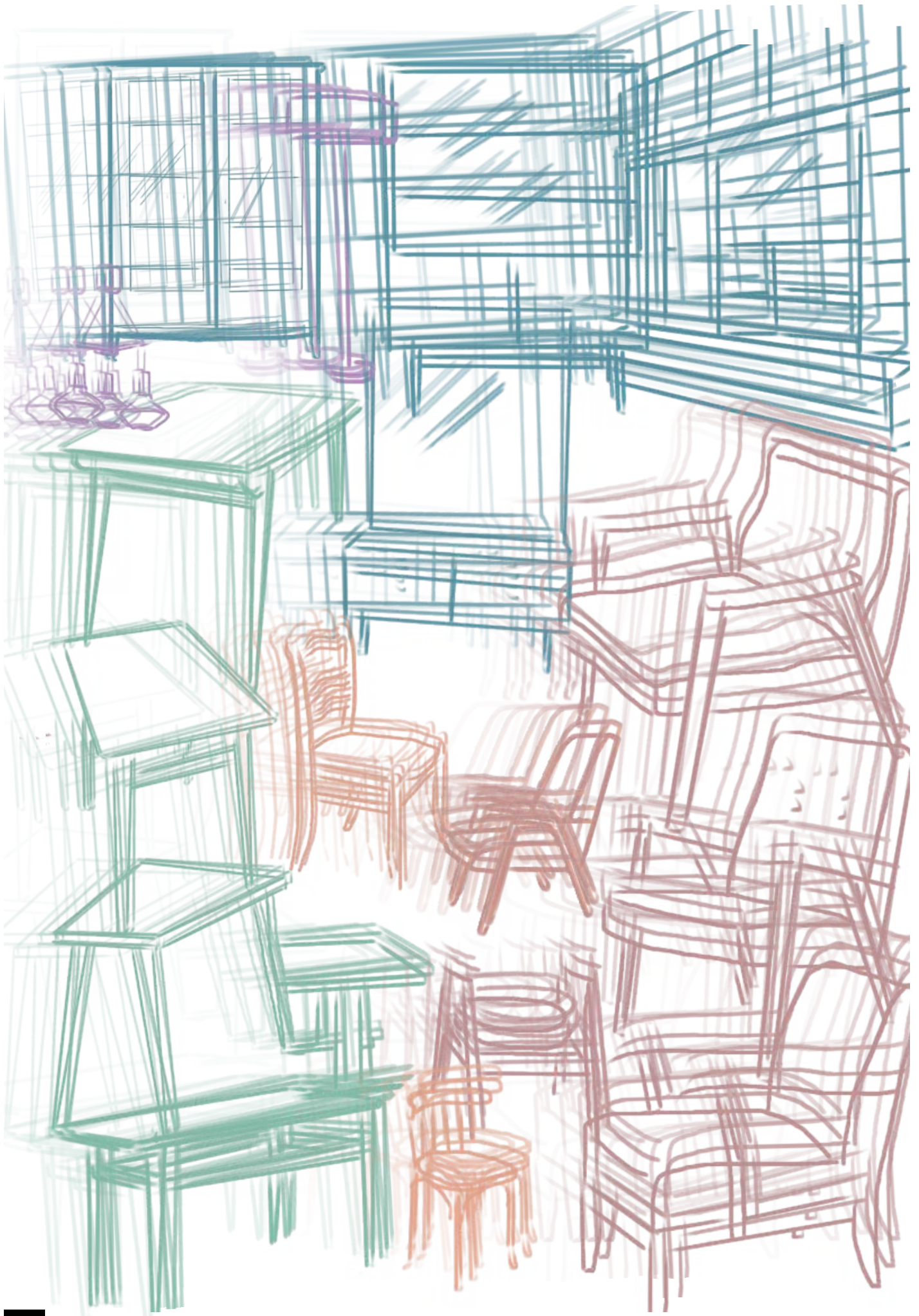
#### List of References:

- HILPERT T. (1978). Die funktionelle Stadt: Le Corbusiers Stadtvision; Bedingungen, Motive, Hintergründe. Kritische Neuausgabe, 2. Auflage. Braunschweig ; Wiesbaden : Vieweg. ISBN: 3-528-18756-5
- MUMFORD E. P. (2000). The CIAM Discourse on Urbanism, 1928-1960. XV, 375 S. : Ill. Cambridge, Mass [u.a.] : MIT Pr. ISBN: 0-262-13364-4
- WOLFRUM S. (2007). Reader Einführung in den Städtebau. 4. Auflage / 199 S. : Ill. München: Technische Universität.
- EASYWAY. (2018). Maps of transport routes in Odessa [online] [accessed on 02.12.2018]. Verfügbar unter: <https://www.eway.in.ua/en/cities/odesa/routes>
- MERIN GILI. (2015). Clásicos de Arquitectura
- PLATFORMAARQUITECTURA. (2015). Le Corbusier, VilleRadieuse [online]. [accessed on 09.12.2018]. <https://www.plataformaarquitectura.cl/cl/770281/clasicos-de-arquitectura-ville-radieuse-le-corbusier>
- ODESSA CITY COUNCIL: DEPARTMENT OF ARCHITECTURE AND URBAN PLANNING. (2000-2019). Maps of Odessa [online] [accessed on 25.11.2018]. Verfügbar unter: <https://service.ombk.odessa.ua/portal/apps/webappviewer/index.html?id=b31cc5f267c740aca33f5893c3dc9c45>
- OPENSTREETMAP - MITWIRKENDE. (2018). Map of Odessa [online] [accessed on 05.12.2018]. Verfügbar unter: <https://www.openstreetmap.org/relation/1413934>
- THE LIBRARY OF THE GRADUATE SCHOOL OF DESIGN, HARVARD UNIVERSITY (Hrsg.), Translated by J.Tyrwhitt. (1946). Congress Internationaux d'Architecture moderne (CIAM), La Charte d'Athenes, 1933. Paris, France [online] [Zugriff am 15.11.2018]. Verfügbar unter: [http://www.getty.edu/conservation/publications\\_resources/research\\_resources/charters/charter04.html](http://www.getty.edu/conservation/publications_resources/research_resources/charters/charter04.html)

#### List of Figures:

- 01 Heneral Petrova Street. Own photo, Nguyen T.T. & Vinueza S., 2018
- 02 Building structure of Odessa. Own graphic, Nguyen T.T. and Vinueza S., 2018
- 02 View of a street in Cherymushki, own photo, Nguyen T.T. and Vinueza S., 2018
- 02 View of the Radiant City. MERIN, Gili, 2015. Clásicos de Arquitectura: VilleRadieuse / Le Corbusier [online] [Zugriff am 09.12.2018]. Verfügbar unter: <https://www.plataformaarquitectura.cl/>
- 02 Moldavanka, Odessa, Odessa Oblast, Ukraine [Zugriff am 01.03.2019]. Verfügbar unter: [https://commons.wikimedia.org/wiki/File:Moldavanka,\\_Odessa,\\_Odessa\\_Oblast,\\_Ukraine\\_-\\_panoramio\\_\(7\).jpg](https://commons.wikimedia.org/wiki/File:Moldavanka,_Odessa,_Odessa_Oblast,_Ukraine_-_panoramio_(7).jpg)
- 03 Modernist segregation. Own graphic, Nguyen T.T. & Vinueza S.,
- 03 Icons for travel Distance and duration. FREEPIK COMPANY S.L., 2010-2019 [Zugriff am 01.12.2018]. Verfügbar unter: <https://de.freepik.com>

- 04 Modernist principles. Own graphic, Nguyen T.T. & Vinueza. S, 2018
- 05 Street widths. Own graphic, Nguyen T.T. and Vinueza S., 2018
- 06 Paths of road users. Own graphic, Nguyen T.T. & Vinueza S., 2018
- 06 Icons. FREEPIK COMPANY S.L., 2010-2019, [Zugriff am 01.12.2018].  
Vergüfbar unter: <https://de.freepik.com>
- 07 Corner and block entrance. Own graphic, Nguyen T.T. and Vinueza S., 2018
- 08 Housing street and green space. Own graphic, Nguyen T.T. and Vinueza S., 2018



The following research deals with the issue of modern average families of Odessa who are living in dwellings, that were built in the soviet times. According to Kiril Stanilov (Stanilov, 2007, p. 4) "the built environment of a city is much more enduring than its social structures".

Following this, people who live in the most typical soviet housing have already changed their habits and their lifestyle while the actual built environment has not changed for decades. We want to tackle different forms of changes in soviet apartments in relation to the newly emerged needs. How did the needs of residents of serial panel buildings develop over time? How does the built environment of family apartment respond to the current needs?

## Finding the Topic

Socialism as a strong political and economic theory of social organization had a crucial impact on spatial pattern of socialist cities and its living space. Socialism seeks to promote equality and eliminate social classes. One way to achieve the aim is the governmental control of production using the propaganda slogan "from each according to his ability, to each according to his needs" (Karl Marx, 1875, Part I). Therefore, needs in socialistic city are simply based on survival of equal workers. By doing this, a new form of society arouses. The most important unit or element in the socialist city is often considered as the cell of society in the theory of influential thinker Auguste Comte. Karl Marx changes it into the cell of family as a fundamental module in a complex structure. This element as an individual thing or person is regarded as single and complete but which can also form an individual component of a larger or more complex structure. That module which is a part of a bigger system coexisting with other equal units. In this type of society government provides the basic need for survival of the citizens.



average family in Odessa Region:  
married couple with a child younger  
than 18 years



average household  
consists of 3,2 Persons



5-7% own their housing



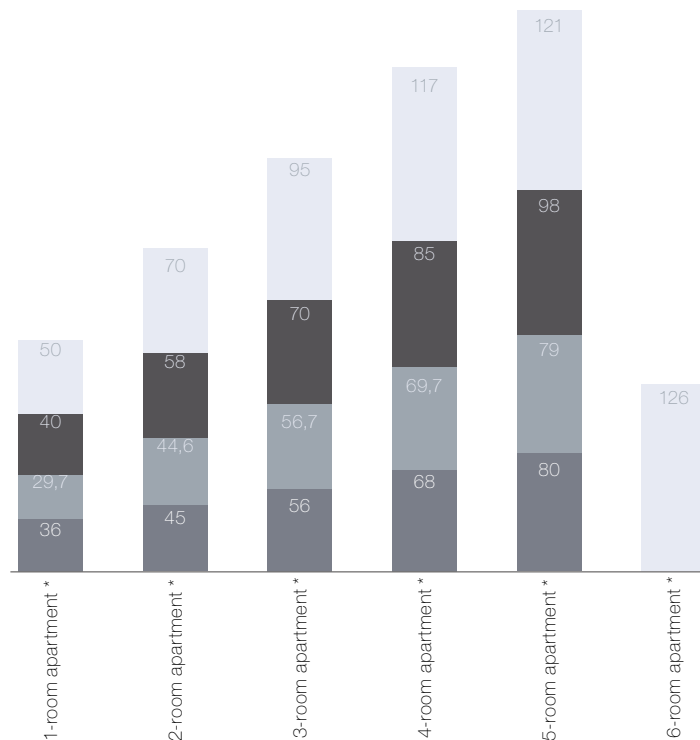
average household with  
one married couple is  
consisting of 3,5 persons



23% own a housing after  
have been living together  
for 5 Years



48,5% either live with their  
parents, rent a separate  
room in hostel/dorm (mostly  
student families) or rent an  
apartment



02.

## Definiton of a modern Family we want to concentrate on

So, according to Auguste Comte's idea family is the main module acting within this socialistic system. The All-Ukrainian population census 2001 shows that the average household size in urban structures consists of 3,2 people (not counting one-person household). An average household is one married couple with children younger than 18 years and also consists of 3,5 people. For this reason, we take a family of three members as a group of interest. Regarding average apartments with three-people household, each of them have 17 sq.m space available.

## Housing Standards

For the past hundred years there has been the concern for floor space standards in new housings. That was connected with the experience of low standards during Industrial Revolution. Rapid urban growth and movement of people to cities resulted poor housing conditions, lack of housing

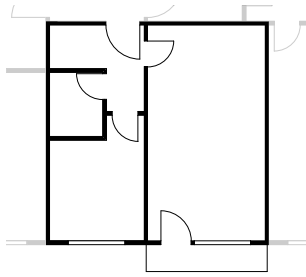
- London now
- Ukraine now
- London 1960
- Soviet 1960

\*max. space standards are taken

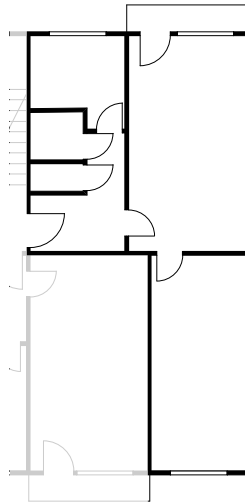
02 Family statistics in Odessa, comparison of norms  
in different States, own illustration, 2018

given:

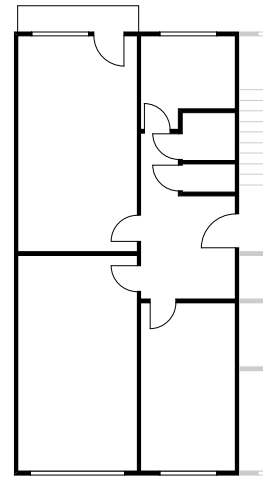
1-room apartment  
32,5 m<sup>2</sup>



2-room apartment  
47,65 m<sup>2</sup>



3-room apartment  
66,20 m<sup>2</sup>



required:

37 - 50 m<sup>2</sup>



61 - 70 m<sup>2</sup>



74 - 95 m<sup>2</sup>



In order to provide:



h

or



or



Requirements:

7,5 m<sup>2</sup>



11,5 m<sup>2</sup>



2,55 m



2,3 m



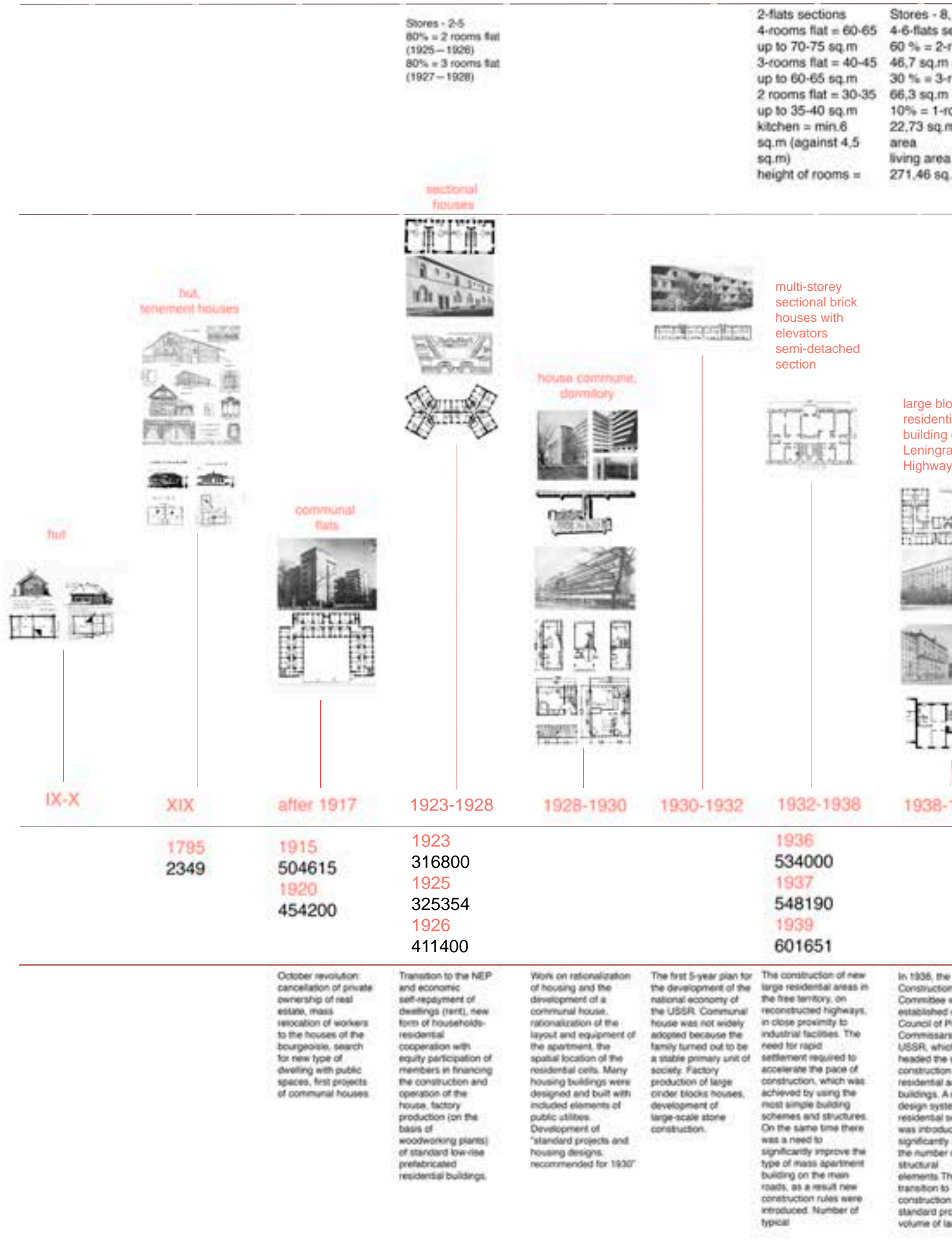
03.

infrastructure and overcrowding. In 1919 in England the question of floor space standards was raised for the first time. Since then regulations of housing have been changing up and down. In 1919 Tudor Walters Committee recommended floor space's minimum to be 79,4 sq.m for 3-bedroom house. Later in 1944 Housing Manual transformed standards into 74.3–83.6 sq.m and in 1949 another 9.3 sq.m was added. After WWI and WWII in the 1950s floor plans standards started to decline to maximum 83.6 sq.m for 3-bedroom dwelling by the decision of Harold Macmillan. By the end of 1950s Parker Morris Committee was established. In 1967 in report "Homes for Today and Tomorrow" Parker Morris established highest housing standards with importance of 'utility' and 'usability factors'. The report said that it was better to build flats that are too large, rather than too small: "Additional space is an important long-term investment, for if a house or flat is large enough it can usually be brought up-to-date as it gets older, but if there is not enough space improvements can be impossible, or at least unduly expensive."

### Comparing Soviet housings with NDSS requirements

03 Requirements for different apartment sizes, own illustration, 2018

# THE HISTORY OF PANEL BUILDINGS





# BUILDINGS IN SOVIET RUSSIA

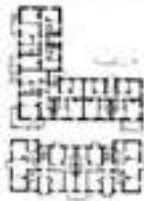
10, 14 floors sections rooms flat of of living area rooms flat of of living area room flat of n of of living	Stores - 2-3 (before 1948-1949) Stores - 4-8, 5-7 (from 1949) Stores - 8-14 (from 1950s)	Stores - 5 2-,3-,4-flats section Kitchen = 7sq.m (before) -> 4.5 sq.m (min.) Height-up to 2.5 m 1-,2-,3-rooms flat Average size of a room = 12-14 sq.m Kitchen= 5,9 sq.m	Stores - 5 3-flat sections 1-room flats (for 1 and 2 people) 2-room flats (for 3 and 4 people) 3-room flats (for 4-5 people) 4-room, 5-room (for families of 5-6 people)	Average size of a room= 14-15 sq.m (before) -> 12-13 sq.m Stores - 9-14-storey 1 section apartment buildings: 5-flats section Total living area of the floor = 186 sq.m	Stores - 14, 17 и 25 8-flat sections
---	--	--	---	---	--

flat features

ck  
al  
on  
dskoye



Typical section of mass housing construction of the series 201.



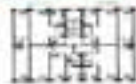
residential house in Kiev



Quarter 7-8 in Avtovo, Leningrad



A series of model projects of residential houses 1-454



View of Kiev



Moscow. Residential building on the Ominsky Drive



development of panel housing

1940      1941-1945      1945-1954      1954 - 1963      1963 - 1964      1965 - 1970

1956	1964	1967
607000	721000	776000
1959	1966	1970
667182	753000	892000

population

Due to the relocation of factories and the evaluation of population to the new industrial centers of Siberia, the Urals and Central Asia, there were a need of temporary housing (with minimal construction materials), as well as capital housing.	Industrial production of prefabricated wooden houses and standard parts - has been created. Production of concrete blocks for low-rise (2-3 floors) residential houses was established as a result of the destruction of numerous building materials enterprises and brick factories. Low-rise construction required the development of new standard projects. The serial type design method has been created. Transition to a modular design system and a combination of a modular system and a serial type design method. In early 1950s - transition to the construction of high-rise buildings - the task of architecture is to create the general mood of the rise and paths of the victory over fascism.	Later reinforced concrete frame, lightweight ceramic blocks and bricks were used. Work on the design of houses from large-sized elements using new so-called multi-layer wall panels continued. The framework has changed from metal to reinforced concrete. Resolution "On the development of the production of precast concrete structures and parts for construction" (1964) construction of large-panel frameless houses. Usage of prefabricated large-block and large-panel structures. Appearing of microdistricts and the use of elements of line and free planning structure.	Development projects improved series.	Transition to the design of typical block sections and entire buildings in a given catalog of factory products and building houses from bulk blocks. Improvement and landscaping of inner-city spaces acquired great importance for enhancing the expressiveness of residential areas during these years.
---	--	---	---------------------------------------	---

context

## 1960 Soviet Housing Regulations

Building norms and rules SNIP II-L.1-62 that were approved by State Committee on Construction of the USSR in 1963 establish design norm for residential buildings, including 'khrushchevki'. Soviet housing regulations vary according to different types of apartments. Standard useful area of the apartment in sq.m was established by number of rooms and for 3-bed apartment it was 45-56 sq.m. Besides the area of terrace and loggias is included in the useful area of apartments and the size should be no less than 4,5 sq.m with minimum width 1,8 sq.m and height minimum 2,2 sq.m. Minimum size for the living room was established between 15 sq.m and 18 sq.m, for bedroom area – 8-10 sq.m and up to 6sq.m for one of the bedroom in 3-5-bedroom apartment. The minimum kitchen area of 6 sq.m was also established for each apartment. Every apartment should have the household cupboard of the size of at least 0.6m x 0.4m and storage of at least 0.6 sq.m with a depth of at least 0.6m. Width of the entrance zone of the apartment should be at least 1,2-1,3 sq.m and of corridors between the rooms – at least 0,85-1,1m.

Considering 109 modern state building and housing regulations in Ukraine it is necessary to say that they mostly have grown from Soviet standard. For example, in current standard 3-bedroom apartment area is established to be 60-70 sq.m. Common living room area should be at least 15-17 sq.m, bedroom area – 10-14 sq.m, kitchen area – 7-8 sq.m. They establish also minimum area for working space – 10 sq.m. Bathroom with a toilet should be 3,4-3,8 sq.m, toilet – 1,2-1,5 sq.m. Innovation that is made is housing standard for disabled people. This standard establish that apartment for elderly and people with disabilities should be increased by 10-12 sq.m, with minimum widths: for balconies and terrace – 1,5 m, for kitchen – 2,3-2,9 m, for entrance zone –1,6 m, for apartment corridors – 1,15 m, for bathroom with toilet 2,0 m - 2,2 m and just for toilet 1,2 m - 1,6 m. Nevertheless, current National Described Space Standards (NDSS), that has come into force in 2015 in England and we compare in chart, is anyway higher than recent Ukraine standard.

## History of Serial Prefabricated Housing

In order to understand why that housing standard appeared in Soviet Ukraine we need to remember the social conditions of those times. After WWII the government needed to provide better living conditions during urbanization in Soviet Union, to minimize the cost of 1 sq.m of housing area and on the same time to keep the high speed of construction. Serial construction technology for prefabricated houses became a treatment and started to be widely used in most countries of USSR. Serial prefabricated residential buildings are houses, that were built according serialized types of projects. Those projects could differ by number of floors, number of sections, orientation and some details of the architectural decoration. According to the materials used in the construction, serial houses can be divided into reinforced concrete, block and brick. At the same time reinforced concrete structures for the construction technology can be panel, monolithic and prefabricated monolithic.

Serial dwelling historically rooted from typical projects based on traditions, way of livings, weather conditions, available building materials and etc. Tradition Russian hut ("izba") appeared in IX-X centuries and changed over times. It is divided into several types: 4-walls hut for poorest peasants, common 5-walls hut for middle-income families, cross-hit ("krestovik") for wealthy residents, that could fit large families and several families, and less common house "koshelem" and 6-walls hut. In the southern regions with

a milder climate, where there was no abundance of construction wood, so “mazanki” huts on a frame basis were set up, and among nomadic peoples easily separable tents ‘yurti’ were widely used.

Later in XIX century with development of industrial revolutions and flow of labor force to the cities the necessity to provide housing for all the workers appeared. The owners and landowners began to build housing with their own money and renting it out. On the outskirts of cities barracks or traditional manor-type huts of high density were built forming large workers’ settlements. On the same time apartment houses in the cities became the most common type of modern high-rise buildings, which active construction in Russia began in the 1880s. Like a modern house, apartment houses had a sectional structure but often was built on individual projects due to different construction conditions as limited size of the site or different customer’s capabilities. For the impoverished segments of the population, who could not afford to rent an apartment, corridor type houses (per night) or barracks type houses were built.

After October revolutions of 1917 the ‘housing redistribution’ took place in Russia. That mean that all the rich apartments were requisitioned, many social and financial barriers to the poor were removed, the policy of industrialization strengthened. All these led to a new flow of migration: working population moved from villages and town to the cities. Existing housing stock did not respond to the new social conditions, because rich huge apartments could only be used as a communal housing. Since massive construction of new buildings and redeveloping old ones required high expenses or was technically impossible, many communal flats appeared. From this time search of new types of housing were began with various unsuccessful attempts to create houses-communes. In towns and cities standard design two-stores houses started to build. They were farmsteads of block structure consisted of 4–8 apartments. On the same time in villages traditional log houses were predominated. From 1924–1925 sectional construction has been revived and the first typical residential section for multi-storey construction appeared in Moscow. Apartments in new houses were mostly uncomfortable and at some point, were again settled on communal basis. Serial design and construction were significantly increased in the years of first Five-years-plans in around 1928–1937; the law as a list of economic goals of the USSR. It was the time of population’s growth by almost 40 mln., another wave of movement of people into the cities, the need to replace old housing stock and mass housing construction. A lot of construction bureaus were created, prefabricated building technologies and high-speed housing construction methods were being developed, the optimal sizes and layout of apartments were being formulated.

In 1940s, housing construction in the USSR had started to be focused on standard design projects for industrial construction. Another change in urban planning policy was the transition from individual emerging of the residential houses to building the whole districts and quarters with essential social, cultural and health care infrastructure. This switch required the development of series of standard housing projects with general construction technology, building materials and architectural style.

During World War II housing construction was stopped until 1943, industry resources were devoted to support the army. During these times almost 50% of the housing stock had been destroyed and housing question has again become hot. The serial design methodology was finished, projects of whole series of buildings, differing in the quantity of apartments, layout, and on the same time building elements were planned for centralized industrial production.

New standard project provided the main type of housing per family, household and houses with communal apartments for small families of 2 people and single person households with common kitchen and bathroom. In the early 1960s the housing policy was revised and it was decided to completely abandon the communal apartments and to maintain the speed of construction by increasing the housing economy, reducing its cost. Main change was connected with switch from brick to panel construction, reduction area of apartments, lower floor height and minimizing the cost of exterior decoration. The price for the apartment decreased by 35%, which allowed for full family resettlement with the same construction costs (Rudakov P.G., Fedorov E.P., 1964). Simultaneously with the construction of large panel houses, serial houses from 'blocks' (the same as panels, but not the size of the entire wall) began to appear in the cities.

Main turning point of the mass construction based on industrial blocks and panels was the act 'On measures for further industrialization, improving quality and reducing construction costs' (1956) and 'On the Development of Housing Construction in the USSR' (1957). The main task for the architects and builders was by the end of 1956 to develop low-cost housing projects that would be affordable to working people. This way famous housing named 'khrushchevki' was appeared by the name of Nikita Khrushchev who was leading those times. The project goal was to make each Soviet family meet communism in a separate apartment by 1980.

However, this plan did not succeed and only 85% of families had separate apartments by the mid-1980. So, in 1986 next soviet leader Mikhail Gorbachev postpone this goal for another 15 years with the slogan "Every Soviet family has got a separate apartment by the year 2000" (Naryshkin, 1986, p. 193). Despite the fact that in 2000 the USSR did not exist anymore; panel residential buildings still do. So how did those apartments look from the inside?

### **"Matchbox" for Living**

Not only the sizes of serial housing were only standardized, with all necessary material and supplies production, but also the interior design and furniture. The famous Soviet movie "The Irony of Fate, or Enjoy Your Bath!" by Eldar Ryazanov perfectly illustrates this example. After New Year Eve celebration main character mistakenly goes to Leningrad. Believing that he is still in Moscow he takes a taxi and goes home. The street name, building, apartment number and even the way an apartment complex looks (as typical Soviet-type 'economy' architecture) – all the same. It means that economy of soviet time was producing limited quantity and standardized quality of construction materials.

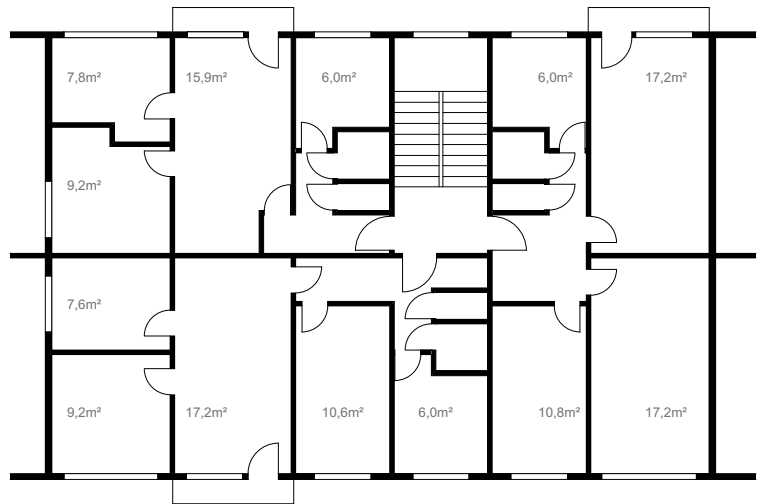
Considering the photos of interiors of four apartments that we took as an examples of typical soviet flats we observe the same pattern and same design. One photo is achieve photo of 'khrushchevki' flat of 1963s, another two – serial panel housing apartments that perfectly saved the atmosphere of soviet times till now and the last one – renovated 'khrushchevki'. Soviet kitchen furniture, tables, couches and beds, chairs and armchairs, wardrobes and cupboards, treillage, curtains, chandeliers and even small decorations, TV and carpets on the floor were everywhere the same.

## **Typical Cheryomushki**

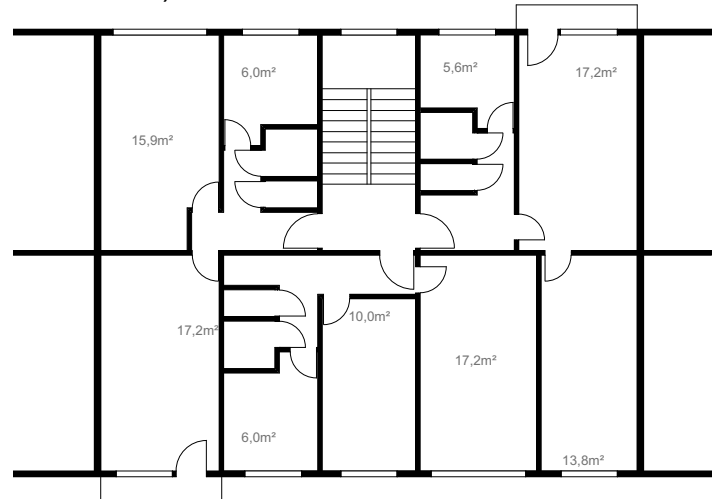
05 "Old Cheryomushki", photos by Maksim Mirovich, 2018, floor plans, own illustration, 2018



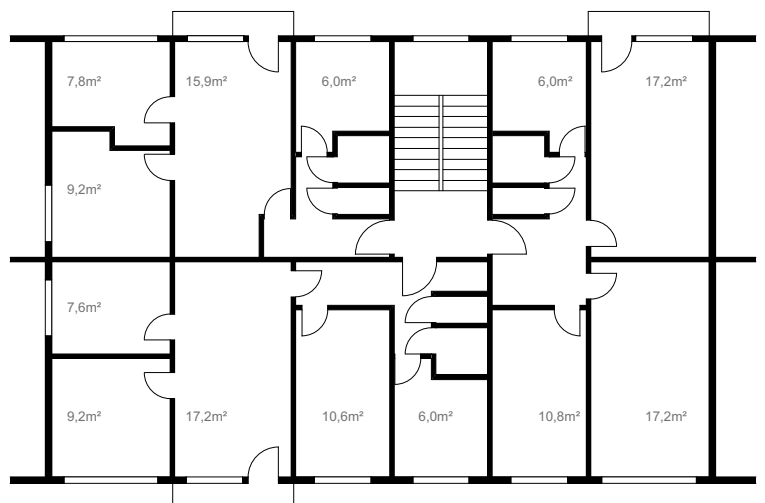
Series 464-A c.)

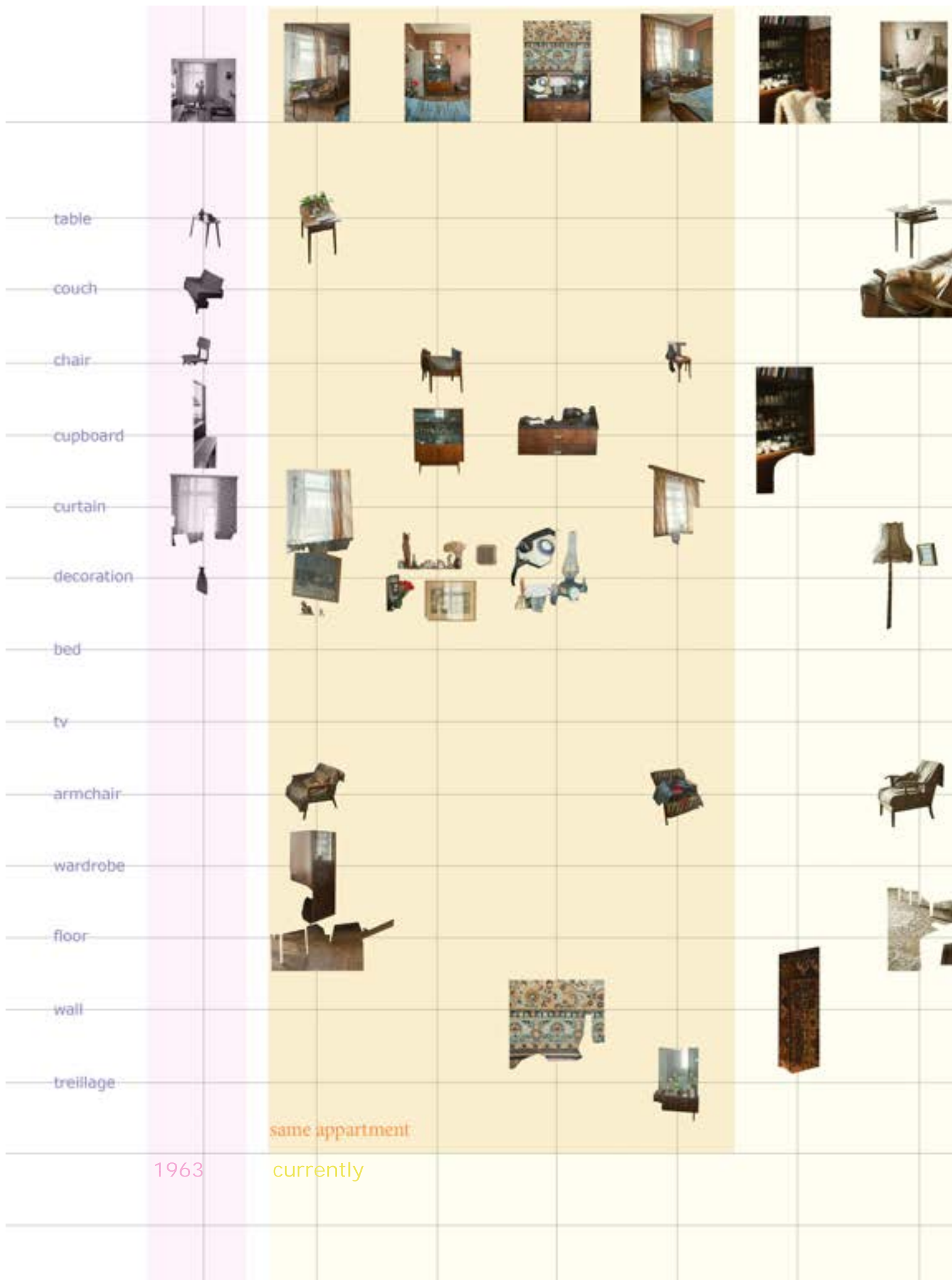


Series 464-A b.)



Series 464-A c.)







same room

same apartment

currently after renovation

We looked at the microrayon Cheryomushki and were amused to find a housing complex that is called 'New Cheryomushki'. The plot lays within the microrayon of old Cheryomushki and is still under construction. Did they learn something from the old Cheryomushki? Did something change? The new complex consists of two u-shaped high-rises forming an enormous courtyard. According to the concept, in the center one can find a church surrounded by greenery. From the first sight the biggest difference is the height of the building. Compared to buildings of old Cheryomushki 7 storeys were added. The use of reinforced concrete panel construction was upgraded by balconies with organic shapes. Considering the fact that former balconies only had 1,8 m width offering a total area of 4,2 sq.m it might be an improvement of living standards.

An online renting platform showed us three types of dwellings counting one-, two- and three-room-apartments. All three of them offer bathrooms with a bathtub. Taking the two-room-apartment as our exemplary, there is also a second restroom with a toilet. When it comes to the size of the living rooms, 'New Cheryomushki' offer 19,8 sq.m while in old Cheryomushki one can find a maximum of 17,2 sq.m. That's 2,6 sq.m less than in the 'New Cheryomushki'. Additionally, the geometry of a more quadratic room allows you a more comfortable furnishing. Thinking of requirements published by the association COBE, most families lack in space in the kitchen. Due to this deficiency, fridges were placed in the hallway to enlarge the overall working space in the kitchen. With double the size you have enough space for a dining table and a bigger working surface in the all new Cheryomushki. And again, there is also a balcony inviting you to an outdoor breakfast. But storage space is probably the main difference comparing the dwellings. In soviet housing you will only find household cabinets with a depth of 0,6 m which are mostly located in the kitchen next to the door. But never is there a separate box room as big as in the 'New Cheryomushki'. They offer you an extended storage room as well as a hallway of 16,5 sq.m where you can easily place a big wardrobe. If we think about the many different attachments you can find at almost every serial building of the soviet time 'New Cheryomushki' might be a fitting solution to the storage issue according to the pictures and plans provided by the real-estate platform.

One must add, the situation given on these pictures shows a typically refurbished apartment. Usually, such work is done by interior designers or companies. Therefore, the owner must be willing to invest in his living situation. Consequently, we see this two-room-apartment not only as an average three-person-household according to 17 sq.m per person described at the beginning of our research but also as a realisation of modern needs within conditions of serial production.

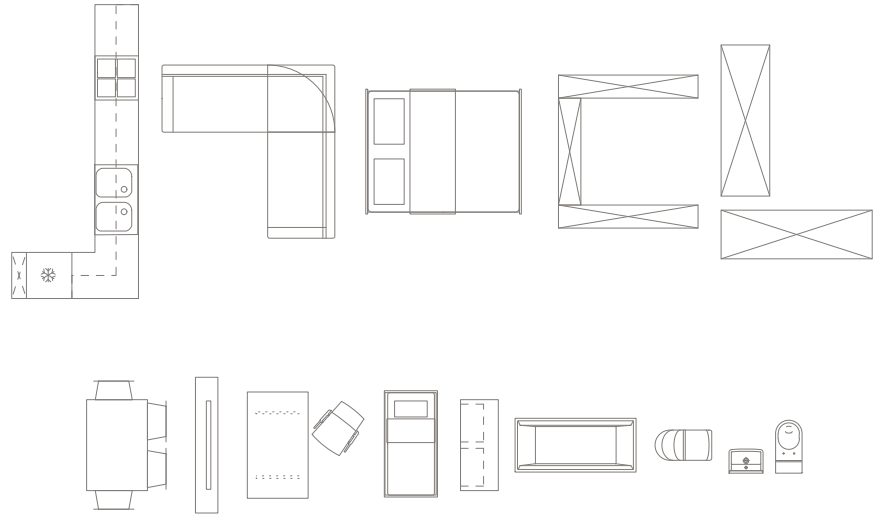
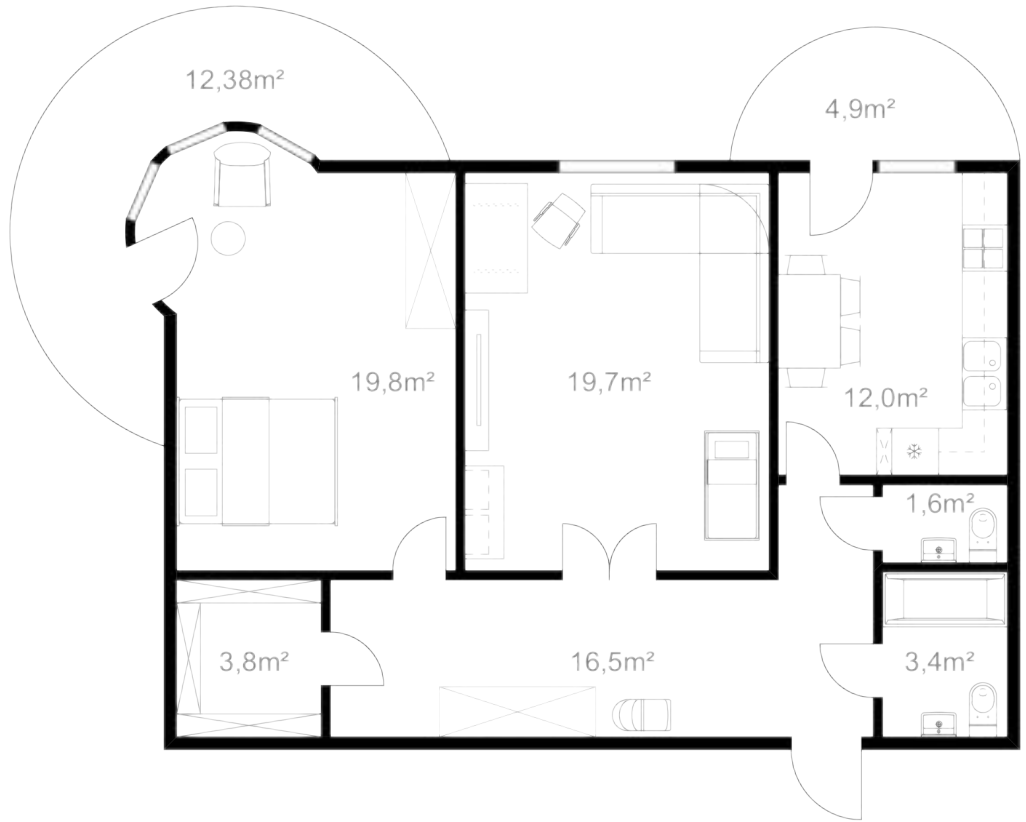
These modern needs are also represented by the extracted furniture seen below the floor plan of 'New Cheryomushki'. We see a fully equipped corner kitchen, a dining table for up to 6 people next to it, big furniture such as the corner sofa, probably a queen-sized bed and many additional cupboards for clothes and household items. As in Soviet times production was controlled by the government which planned production based on plain survival, people possessed only few items for household and living. There was no linking between production and consumer thus people lost motivation for wealth and competition. But over time, the system changed and so did consumption. People filled their apartments with different cupboards replacing the huge wall cupboards typical for the Soviet time. Flat screens appeared demanding more open space in the living room. It is also assumed that those box rooms stand for a higher consumption of goods that need to be stored.

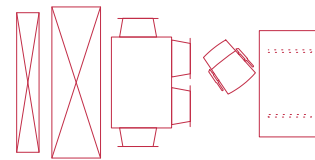
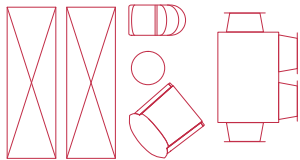
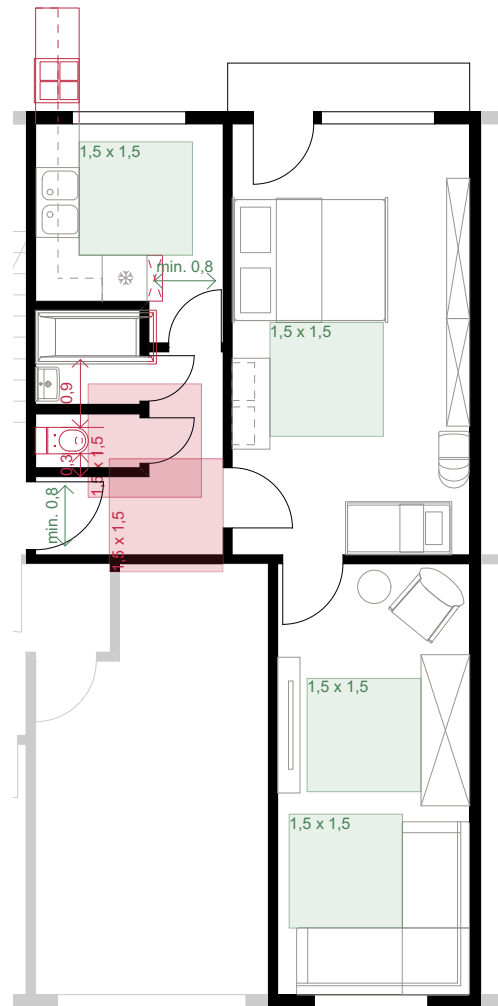
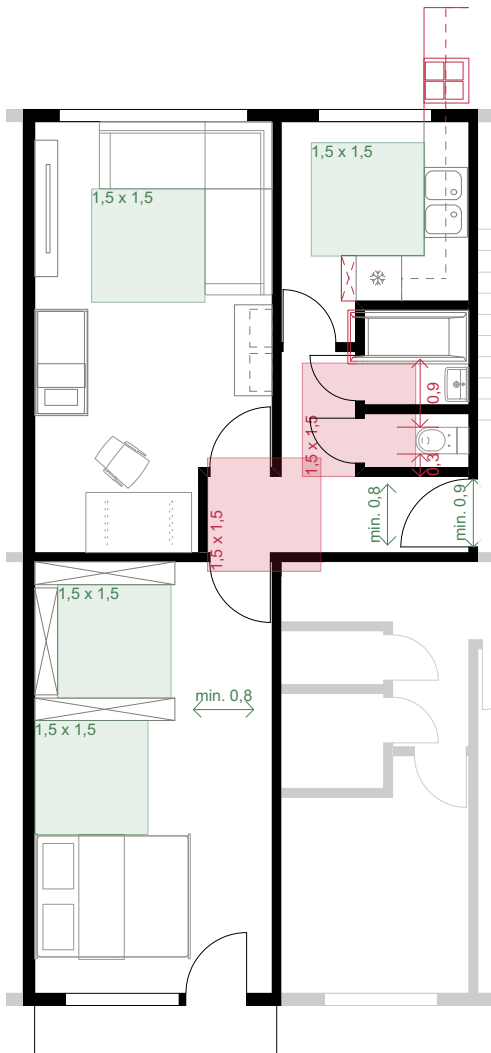
## New Cheryomushki

06 Furniture by category, own illustration, 2018

07 Residential housing complex "New Cheryomushki", photos by obyava.ua, 2018, floor plans, own illustration, 2018







08.

### Capacity of Soviet flats

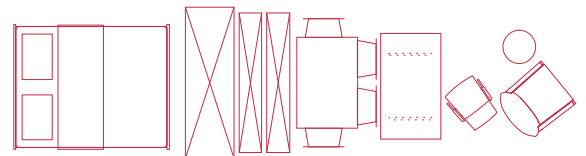
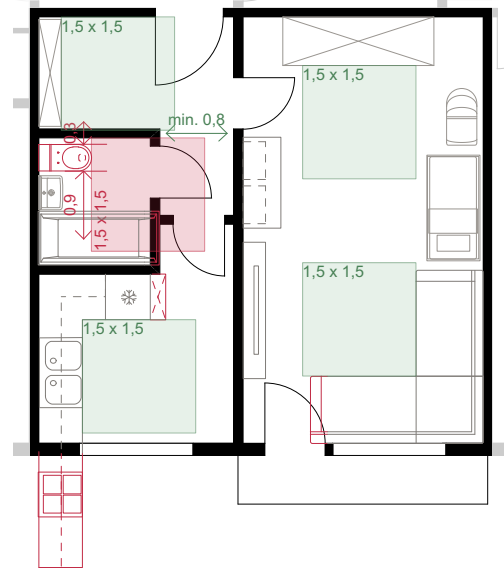
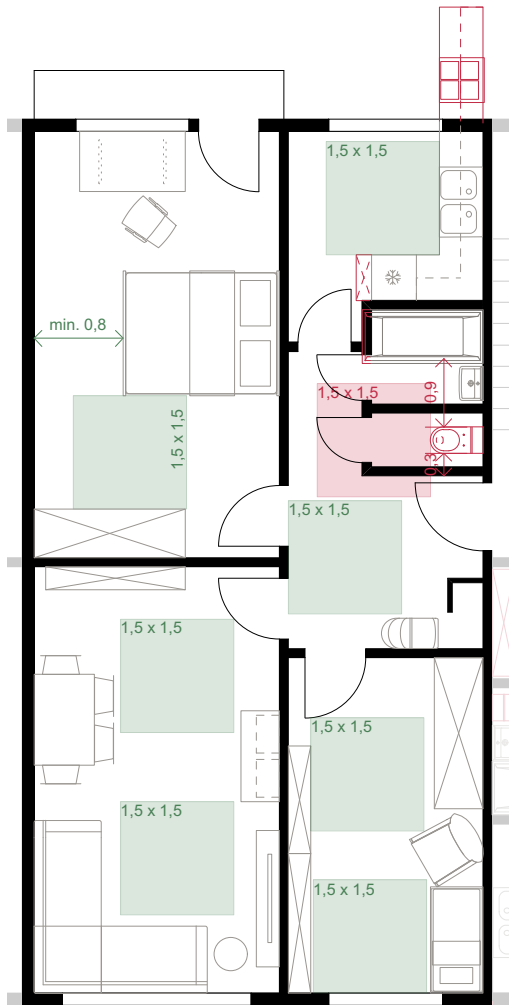
- fitted in furniture
- juttet out furniture

08 Soviet two-room-apartments series 1-464-A  
adapted to modern furniture, own illustration, 2018

As we talked about the modern furniture of ‘New Cheryomushki’ above, we will now take into account the space of old Cheryomushki. Our aim is to question those conditions of prefabricated serial dwellings and fill them with contemporary furniture that stands for a new home of a family living in Odessa.

The strategy is the following: We test four different apartments with different room numbers. Those are apartments built in the prefabricated series 464-A. We fill them with the extracted furniture found in the previous two-room-apartment of the new residential complex. Additionally, we want to find out, if there is space for elderly people and residents with disabilities moving through the apartment with a wheelchair. So, due to this condition, the furniture needs to be organized in a way that safes space and gives the opportunity to move freely through the rooms. Therefore, we included rules as moving areas of 1,5 x 1,5 m and passage width of 0,8 m following the German norm DIN 18040-2.

To achieve visible results on first sight, objects and moving areas that do not fit into the given space are marked with red color. In the same way,



09.

required moving areas that found space within the dwelling are shown in green color. Leftover furniture, that did not fit into the apartment at all, is listed in red color next to the floor plan. Obviously, the sanitary situation represents the poorest performance. None of the shown apartments fulfill the requirements for good mobility in the sanitary zone. Same problem do have the two-room-apartments at the entrance zone. One might assume that it is due to the standardized panel construction that no better position and size of the zones could be found. At the same time, the three-room-apartment entrance zone is enlarged thanks to the breakthrough of the grid. Beside the moving area, the required passage width of 0,9 m is only given at the entrance door. There is also an emphasis on the kitchen. In this case, a corner kitchen would leave less working space. Also, the moving area replaces the dining table. It is now up to the compromise between the table, a desk or more storage space that you accomplish in the other rooms. After all, a two-room-apartment of the old Cheryomushki cannot include all the furniture and functional zones taken from the modern residential complex of 'New Cheryomushki'.

### Additional reference

- fitted in furniture
- juttet out furniture

09 Soviet three- and one-room-apartments series 1-464-A adapted to modern furniture, own illustration, 2018



As we talked about the modern furniture of 'New Cheryomushki' before, we will now take into account the space of old Cheryomushki. Our aim is to question those conditions of prefabricated serial dwellings and fill them with contemporary furniture that stands for a new home of a family living in Odessa. The strategy is the following: We test three different apartments with different room numbers and each a kitchen. Those are apartments built in the prefabricated series 464-A. We fill them with objects found in the previous two-room-apartment of the new residential complex 'New Cheryomushki'. Additionally, we want to find out, if there is space for a disabled resident moving through the apartment with a wheelchair. So, due to this condition, the furniture needs to be organised in a way that saves space and gives the opportunity to move freely through the rooms. Therefore we included rules following the German norm DIN 18040-2. The objects and moving areas of 1,5 x 1,5 m that don't fit into the given space properly are marked red. Leftover furniture is listed red next to the floor plan. Required moving areas that found space within the dwelling are shown green. Also the required passage width was added to the conditions. The entrance door has to be 0,9 m wide. Passages within the apartment need at least 0,8 m width.

Since most of the elements used in serial dwellings are standardized there won't be any problem with the width of entrance doors giving a 0,9 m wide passage. But every other door is simply too narrow. Bathroom doors allow passage with only 0,6 m width. The kitchen doors are 0,685 m wide. And room doors offer about 0,8 m width. For a handicapped person these doors mean a huge limitation in movement.

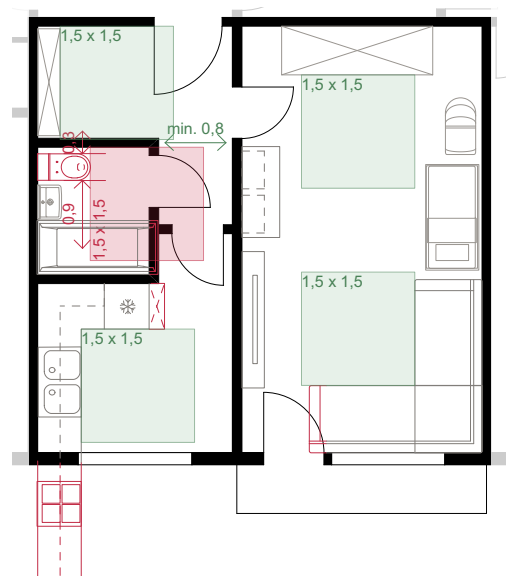
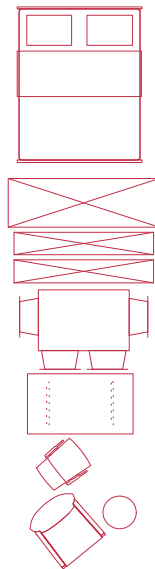
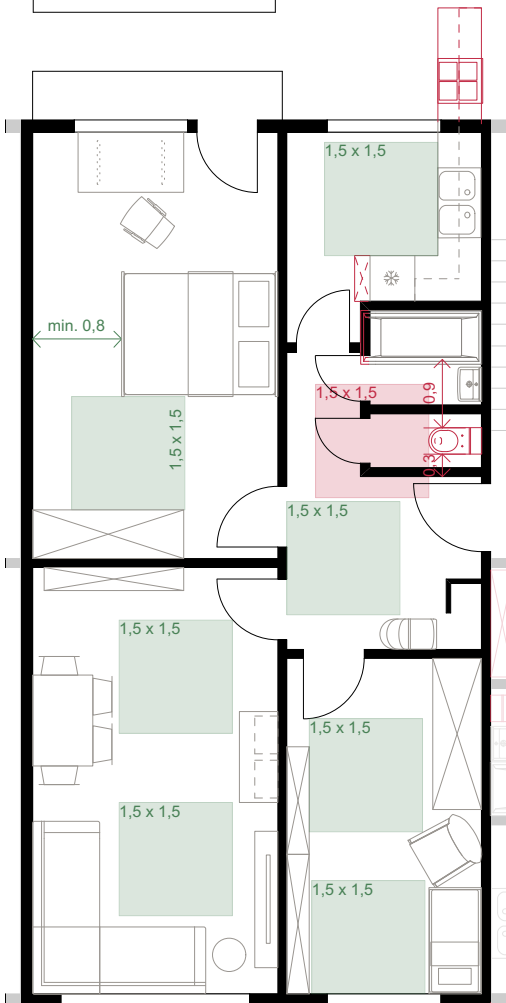
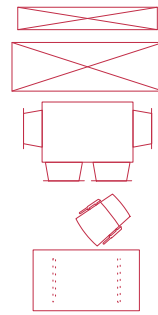
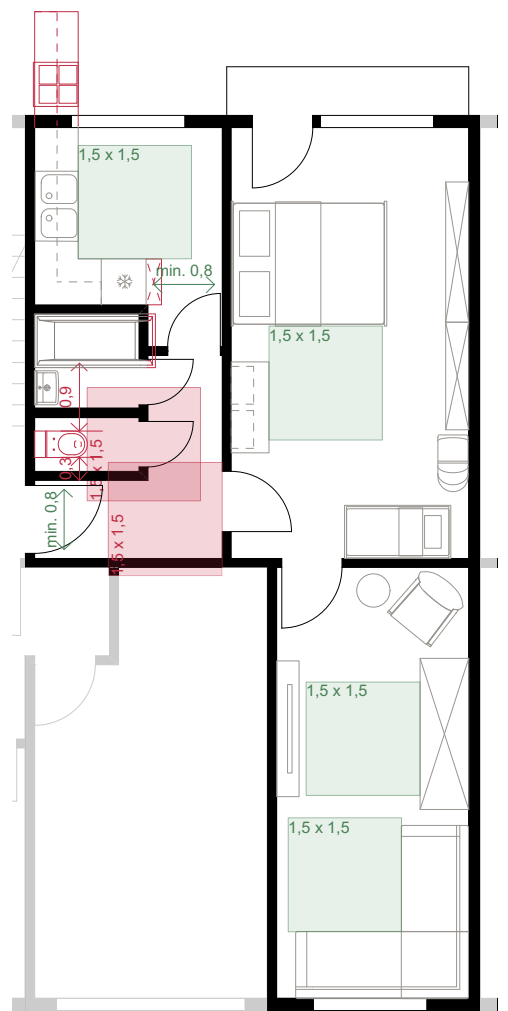
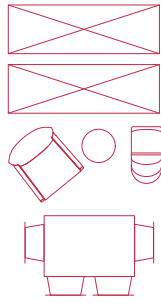
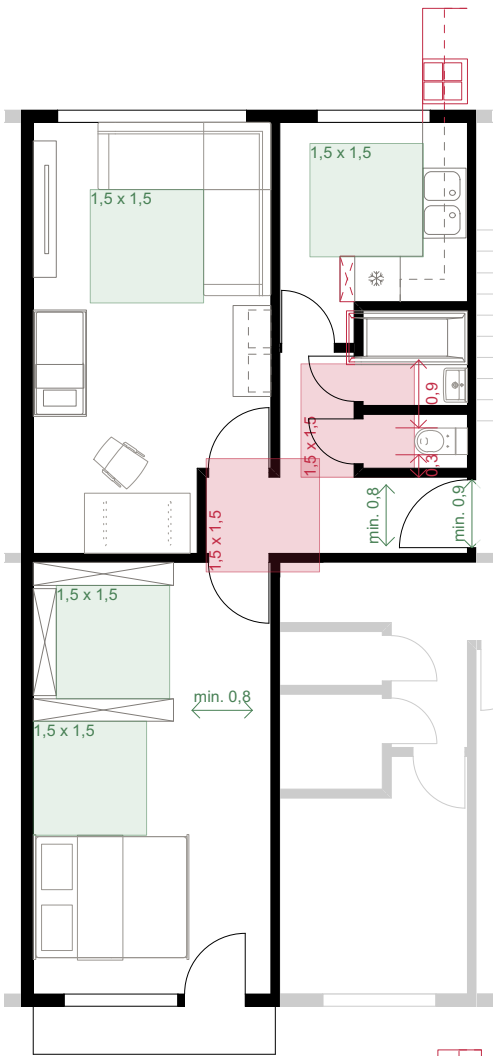
Next, we are looking at the bathrooms. Most of them are divided into two separated rooms, one with a tub and a sink, and one only with a toilet. The one-room-apartment is the only exclusion to the bathroom constellation offering one combined room for both tub, sink and toilet. And still the room itself is not big enough to include the required moving area. One must also add that the tub used in 'New Cheryomushki' also does not fit in any of the floor plans. That leads to the conclusion that sanitary objects have been replaced by more comfortable ones that fit the raised standards of a modern family. Back in old Cheryomushki the furnishings are completely inappropriate for someone in a wheelchair. According to DIN 18040-2, you must follow strict regulations concerning the distance between the toilet and wall as well as other objects. Also the tub is a huge problem for every disabled person. Alone one has no chance of using the bathroom. And even with help they need great effort to overcome the tub wall.

Coming to the living rooms now, we first take a look on the serial two-room-apartments at the left and right upper corner. Since the flat in 'New Cheryomushki' represents a two-room-apartment this was our starting point. Entrance zone, bathrooms and kitchen are identical, but flipped horizontally. Our red moving areas indicate that there is no space for a person with wheelchair. In this case, there is neither space to turn around, nor is there a way of using the bathrooms independently. Also is there no opportunity to include a wardrobe to hang up the jackets or take off your shoes. It would mean obstacles for movement in a wheelchair. Going further to the kitchen, it is obvious that no kitchen with about 6 sq.m could include a dining table and still allow moving freely in a wheelchair. Already the kitchen furniture itself doesn't fit into the corner. To have all objects such as the kitchen sink, a fridge and a stove available means to give away useful work surface. Due to the limited space that you need most for moving area it may seem a little bit empty as you can't really use the leftover space effectively. To arrange this room more comfortable you need to think more creative.

## Capacity of Soviet flats

-  fitted in furniture
-  juttet out furniture

10 Soviet floorplan series 1-464-A adapted to modern furniture, author's own illustration, 2018



#### List of References:

- COMTE, A. (1853). *Social Statics, or Theory of the Spontaneous Order of Human Society*. In H. Martineau (Trans.), *The Positive Philosophy of Auguste Comte*. 1, Book Edition. Cambridge: Cambridge University Press. Online ISBN: 978-0-5117-0146-7
- GUARDIAN. (2014). [online]. [accessed on 13.12.2018]. <https://www.theguardian.com/commentisfree/2014/jan/07/live-shoeboxes-housing-standards-minimum-space>
- NARYSHKIN, B.V. (1986). *CPSU in Revolutions and Decisions of Congress, Conferences and Plenary Meetings of the Central Committee Volume 9*. 9, Book Edition. Publisher unknown.
- NEWWORLDCYCLOPEDIA. (n.d.). [online]. [accessed on 05.11.2018]. [http://www.newworldencyclopedia.org/entry/Auguste\\_Comte](http://www.newworldencyclopedia.org/entry/Auguste_Comte).
- NOVISTIUA. (n.d.). *molodaya semya v sovremennoy ukraine sostoyaienie i problemy* [online]. [accessed on 13.12.2018]. <http://novistiua.net/stati/32272-molodaya-semya-v-sovremennoy-ukraine-sostoyanie-i-problemy.html>.
- MARX, K. (1875): *Marx/Engels Selected Works, Volume 3*. 1, Book Edition. Moscow: Progress Publishers. <https://www.marxists.org/archive/marx/works/1875/gotha/index.htm>
- PARKER MORRIS COMMITTEE. (1961). *Homes for Today and Tomorrow*. 1, Book Edition. London: Her Majesty's Stationery Office. ISBN 0-11-750126-3
- RUDAKOV, P.G., Fedorov, E.P. (1964). *City housing. Experience of using typical projects*. 1, Book Edition. Moscow: Stoiizdat.
- STANISLOV, K. (2007). *The Post-Socialistic City: Urban Form and Space Transformations in Central and Eastern Europe after Socialism*. 1, Book Edition. Dordrecht: Springer. ISBN 978-1-4020-6052-6
- UKRCENCUS, (n.d.). [online]. [accessed on 11.12.2018]. <http://2001.ukrcensus.gov.ua/rus/>.
- WIKIPEDIA, (n.d.). *Serii zhilykh domov* [online]. [accessed on 10.12.2018]. [https://ru.wikipedia.org/wiki/Серии\\_жилых\\_домов#Возникновение\\_доходных\\_домов\\_и\\_ночлежек](https://ru.wikipedia.org/wiki/Серии_жилых_домов#Возникновение_доходных_домов_и_ночлежек).

#### List of Figures:

- 01 Furniture by pattern, own illustration, 2018
- 02 Family statistics in Odessa, comparison of norms in different states, own illustration 2018
- 03 Requirements for different apartment sizes, own illustration, 2018
- 04 History of panel buildings in soviet Russia, own illustration, 2018 floor plans, own illustration, 2018
- 05 "Old Cheryomushki", photos by Maksim Mirovich, 2018, floor plans, own illustration, 2018
- 06 Furniture by category, own illustration, 2018
- 07 Residential housing complex "New Cheryomushki", photos by obyava.ua, 2018, floorplans, own illustration, 2018
- 08 Soviet two-room-apartments series 1-464-A adapted to modern furniture, own illustration, 2018

09 Soviet three- and one-room-apartments series 1-464-A adapted to modern furniture, own illustration, 2018

10 Soviet floorplan series 1-464-A adapted to modern furniture, author's own illustration, 2018

# I-464A



01.



# From Which Panel(s) was Cheryomushki Built and Which Constructive, Location-Related Modifications Can We Observe?

In our research work we focused on prefabricated concrete panels, as most representative elements in the construction process of large panel settlements such as Cheryomushki, Odessa. We concentrated mainly on constructive and technical details to understand the basic structure of the buildings and the urban layout of the settlement. Further we dealt with the central ideas of concrete large panel settlements, administrative processes and strategies of local adaptations concerning the composition, the climatic properties and the prefabrication process of these concrete panels. In the following maps and texts we focus on the panel series I-464A (the most represented one in our research district in Cheryomushki) and point out the production and installation process of the panels as well as the factors due to which the series was locally modified and adapted. The maps are arranged from the biggest to the smallest scale and show overall the lifecycle of a concrete panel.

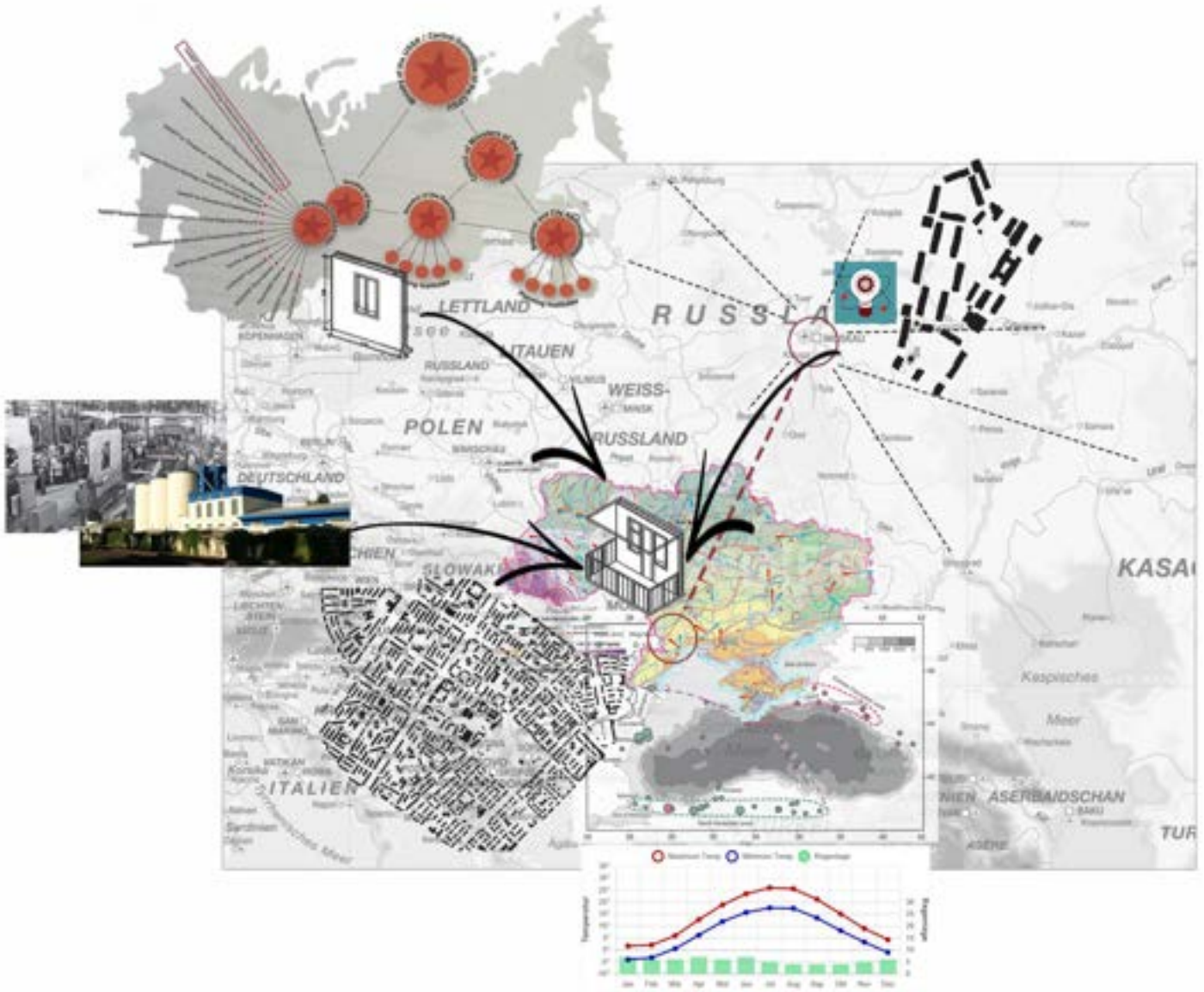
## Modifications and Influences on the Series I-464 in Odessa

Due to the lack of housing in Soviet cities in the post-war period soviet architects evaluated various technologies attempting to reduce costs and production time. Khrushchev (Premier Minister 1958-1964 of the Soviet Union) declared low-cost and quick constructions of housing and introduced an innovative movement of prefabricated mass housing relying on concrete panels in the former USSR. Therefore his governmental chief planner Lagutenko designed a 5-story-building, that became typical and spread over in the Soviet Union – the so-called Krushchovka. Soviet Housing was organized and planned centrally by the government in Moscow. “Official Design Institutes planned the series of the buildings and the State building concerns constructed them” (cf. Philipp Meuser, 2015). Using standardized filling cards enabled an efficient exchange for the entire Soviet Union and precise evaluations for a fast improvement of the planning processes in prefabrication.

Cheryomushki is a district in Moscow built in 1956 as an experimental mass housing settlement to investigate different prefabrication procedures and typologies. Cheryomushki became later a common word for such housing projects, such as our research district in Odessa. The responsibilities for housing in the entire Soviet Union lay at the “TsNIIEP Zhilishcha” in Moscow - the Central Scientific Research and Planning Institute for Standard and Experimental Design. Afterwards, Zonal Design Institutes were instructed for the detailed planning of serial mass housing and could implement slight modifications concerning balconies, entrances or facades.

01 A concrete panel façade in Cheryomushki, own photograph

# I-464A



02.

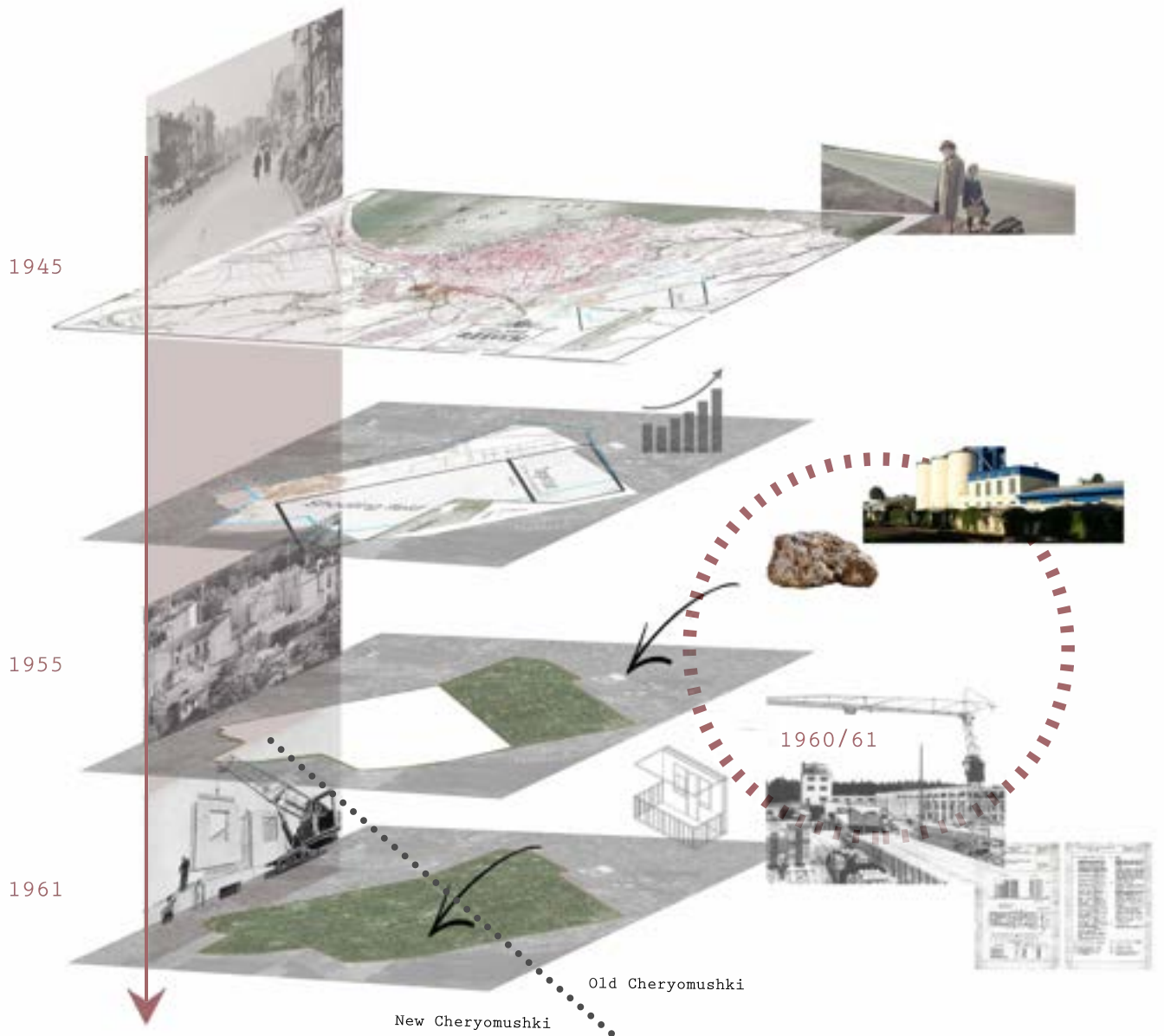
Later on, modified prefabrication systems were developed (e.g. Architecture Construction Technology System) where zonal series according to seismic and climate zones were introduced. Such more decentralized approaches allowed more individual buildings and the modification to three climate zones (south, central belt and north) as well as to additional soil types (permafrost, seismic region and subsoil). This separation of planning tasks and the integration of local levels led to a very confusing nomenclature of panel series.

The panel series I-464 was a so-called All-Union-Serie, facing the challenge to take as many requirements as possible into account owing to different regional environmental factors. Odessa was classified in the climate zone III, in the subzone IIIB, which represents its average temperatures in winter and summer and its seismic profile.

Additionally, to administrative and climatic modifications, the prefabrication of the panels was mainly influenced by the concrete plants and factories in order to be produced in its entire complexity. Specific modifications in Odessa we observed in our first analysis were the equipment with balconies

- TSNIIEP Zhilishcha (Moscow)
- Climate Zone IIIB  
Jan: -5°C to +2°C  
Jul: +21°C to +25°C

02 Modifications and influences on the series I-464 in Odessa, own illustration



of each apartment, the reduction of window openings as protection from overheating as well as the provision of technical installation such as individual air conditioning or other cooling devices. Further, some apartments are double-sided orientated.

### Prefabricated Housing Development since 1945 in Odessa

Odessa, as it was heavily damaged and suffering from the 2nd world war faced a huge need for housing in the 1950s. The territory of Cheryomushki today offered the potential for a mass housing settlement due to its recent history as a shooting field and its serving as a military territory. The place was untouched while villages grew fastly around it.

Connecting the Fountains to the Citycenter and being in reach of the beaches, Cheryomushki turned out to be a fitting place for the future housing area. The construction on the building site started at the end of the 50s, implementing the new concepts of the Krushchovka – instead of former Kommunalikas – which meant private apartments for all inhabitants.

03 Prefabricated housing development since 1945 in Odessa, own illustration

The buildings located in the southeastern part of Cheryomushki, east of the Kosmonaktiv Street are built from traditional materials, such as rock shell/limestone bricks and are based on the role-model of the stalinki that form the old part of Odessa. As this construction method was slow and not efficient, a concrete plant was built in Odessa (Buldynka) in 1960, simultaneously to the construction process of the new settlement. Completed in 1961 the prefabrication of concrete panels started and was introduced in Odessa. Therefore the Kosmonaktiv Street is separating the “old” to the “new” Cheryomushki, where all buildings are built from prefabricated concrete panels. This jump of the construction process is still today readable at the facades.

### Influences of the Concrete Panel on a Microrayons' Layout

In the next step we had a closer look at the specific panel series of each building in our research district in comparison to the buildings of “old” Cheryomushki, located east to the Kosmonaktiv Street. The research district is part of new Cheryomushki, which is recognizable in its construction structure: all buildings consist entirely out of concrete panels - starting with the foundation panels.

In Figure 04 it is shown that the research district is mainly built from the series I-464A (1,2,3,14). On the other side of the Kosmonaktiv Street various panel series are existing, but common to all of them is that the 1st and 2nd floor are consisting of traditional bricks. The panels do not only influence the groundfloors and the construction of the buildings but change the entire layout of a microrayon. Comparing old and new Cheryomushki the lengths of the buildings, the arrangement and the character of the yards, the atmosphere and greenery to Kosmonaktiv Street are differing, and two different characters are visible. Also, thermal and acoustical conditions are diverse - the concrete panel buildings are suffering from overheating in summer, cold in winter and acoustical sensitivity. Some buildings fall out of the scheme in the research district what is linked to the development of modified generations of the panel series over time.

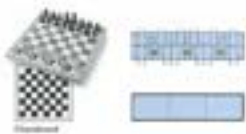
The first generation of the panel series (mainly represented in our district) was, in general, a basic design of residential housing that cannot be varied and has a fixed number of sections. The ground floors were fixed, and its principle is comparable to a chess board. In the second generation, the panel series was usually developed to an essential block section that can be altered at defined angles to each other, similar to dominoes. In the third generation, the basic module is an apartment. This module offers a vast range of variants. Flats can be altered like Tetris blocks and are flexible in a 3-dimensional way. A few buildings in our research district are built of the panel series I-464 in the third generation which is very obvious in their ground floors. All those modifications signed by different authorities led to a huge misunderstanding and confusion in the enumeration and description of the panel series: “Improvisation and contradiction had left their traces behind in the nomenclature of the serial mass housing.” (Vgl. Philipp Meuser, 2015) Further, there were no typewriters from 1950s-70s and handwritings made it hard to be clear by handing documents over. “I” was the sign for “residential” in the first generation but could later describe the load capacity or the generation depending on the region and the responsible authority. The group number was describing the type of apartment building. The suffix added to the serial number by the modifying Regional Institute was adapted and used for several different local conditions and factors such as S-seismic, A-modified, E-experimental, N-individual, m-modified/meridional orientated and so on. Each letter stands for a specific modification and varies from place to place.

■	1-437-9	(1960er)
■	1-437-6	(1960er)
■	1Y-438-5/6/9	(1st 2 floors bricks 3rd-5th panels)
■	1Y-438A (9 Geschosse)	
■	1-439A-40	
■	1-444-3	(1960er)
■	1-464A-1	(1960er)
■	1-464A-2	(1960er)
■	1-464A-3	(1960er)
■	1-464A-14	(1960er)
■	87 bricks	(1984)
■	commercial	
■	Kinderwerke Nr.171	
■	Kinderwerke Nr. 199	
■	Kinderwerke Nr. 189 - Fachschule Nr. 96	
■	2U-02-964 Schulnummer 46	(1967)
■	2Y-02-964 Sekundarschule Nr. 32	(1966)
■	no data	

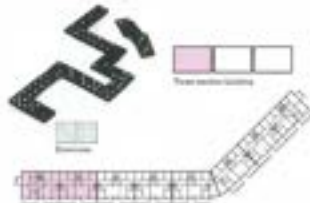
04 Specific panel serie and its generation of single buildings in the research microrayon, own illustration



1st generation 1955



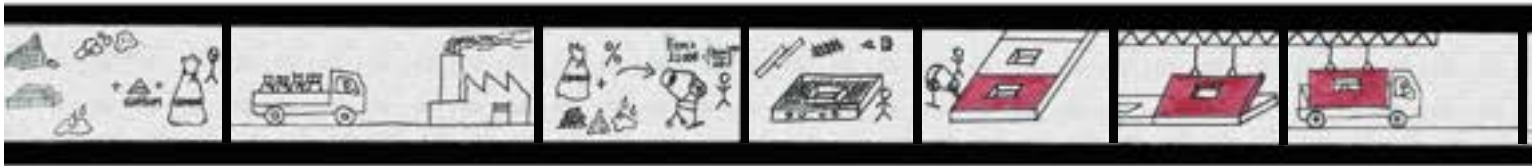
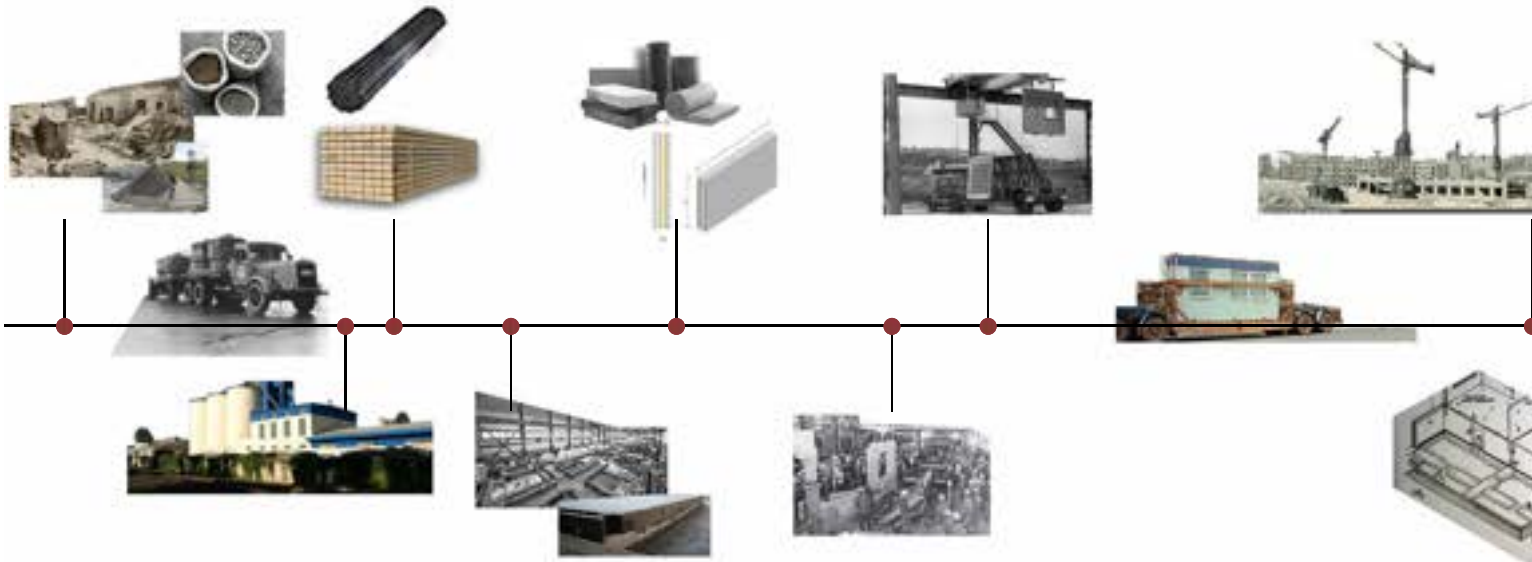
2nd generation 1964



3rd generation 1971



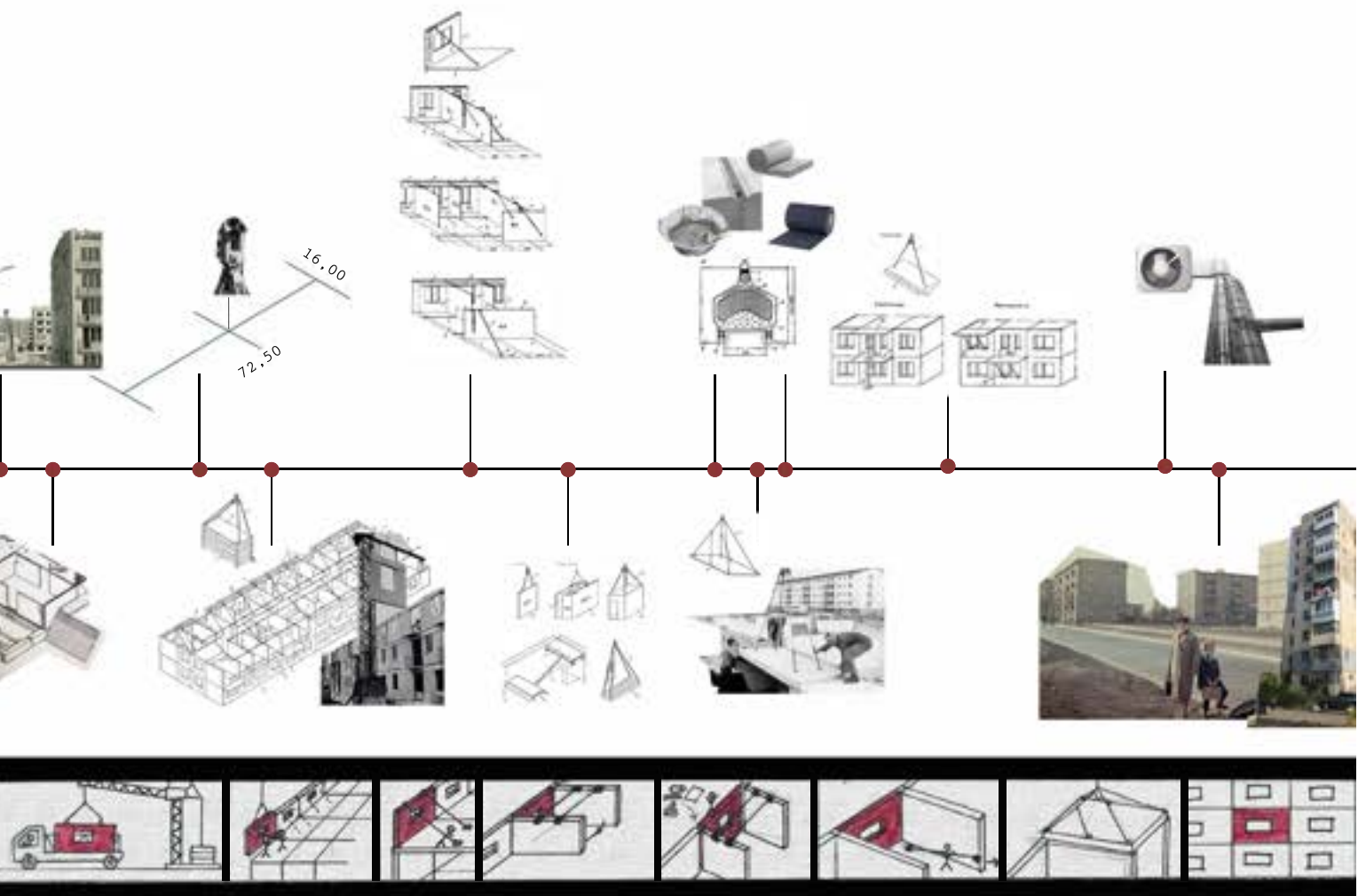
# I-464A



## The Production Process of Prefabricated Concrete Panels

To finally understand the series I-464A and its specific properties we analyzed a general prefabrication and installation process. Usually, most of the ingredients of a concrete panel are more or less mined and produced locally because of the specific know-how and the reduced transport costs. In the concrete plant the cement, the aggregates, the additives and water are mixed based on a concrete recipe according to the construction plan and local necessities. Afterwards, heaps of formworks are constructed equipped with reinforcement and prefabricated handles and ankers for the following installation on site and filled with concrete in industrial mass production. Machines are pouring concrete on an assembly line.

As I-464A is a prefabricated sandwich-panel, the two concrete walls get fixed together and filled with polysterol. The finished sandwich-panel can then be taken by its handles in a rail, brought to the trucks to be then transported to the construction site. On-site the foundation panels are put in the excavation. The floor panels are installed, and a theodolite measures the



05.

axes of the building so that the crane can position the wall panels. First, the longitudinal walls are placed, as well as the outer crosswise and the central walls. Then the wall panels get temporarily fixed with clamps and steel rods that are connected to the prefabricated handles and anchors. Exterior wall panels are installed first, then inner wall panels. Afterwards, the sanitary cores and stairways are placed. After closing all the gaps between the single panels with concrete, insulation, sealing and mortar to fix them permanently the ceiling panels are put on top of the walls. In the next step balconies and sills are installed as well as the electronic and technical supply. To finish the apartment for the move in of the inhabitants the roof is sealed up and floors and walls get plastered.

05 Production process of prefabricated concrete panels, own illustration

## The Series 1-464A in the Basic Nomenclature of Standard Design 1958–1960 in Comparison to them in Cheryomushki

In Figure 04 we could see that most of the panels in the research district are built out of the series 1-464A. After taking all the measures of the buildings and finding out the average size, we draw it to find out how many flats of which size are inside our buildings. Firstly we took a closer look at the prototype of this series as we can see in Figure 06 which shows their ground floors and views in the scale 1:500 (Zadorin, 2015, p. 200).

In comparison to that we took the average sizes we calculated out of the buildings and transferred the inner structure of the prototypes on the buildings in the research district. That way we had a more profound understanding of the way the inner structure works and how it is organized. The number after the series number 1-464A-X shows how the flats inside are scaled and which outside measurement a building has. So 1-464A-1 have the same building size as 1-464A-2, but the inside sections differ. In the first, there are at the end of the buildings a 1-room flat and three 2-room flats and in the middle part also three 2-room flats and one 3-room flat. In the second series at both ends of the building, there are two 1-room flats, one 2-room flat and one 3-room flat, and in the middle part, there is one 1-room flat, one 2-room flat and two 3-room flat. If we compare now the series 1-464A-1 to 1-464A-3, we see that the inner structure is the same, but the outside measurements are different. So instead of having a general structure of two outside parts (on the endings) and two inner parts (in the middle) as we have this in 1-464A-1 and 2, in 1-464-2, there is only one inner part in the middle which leads to the same building but with less length. When we look at the first series 1-464A-1 in Cheryomushki in comparison to the prototype we have a similar length of 72,40 m to 72,08 m. As composed to this the width is 10,61 m in the prototype building and 13,00m in the adapted one. Regarding this, we can notice that the units inside changed from a longish version to a more quadratic. Another remarkable point is the height of the building looking to the view which shows the backside of the buildings. Even though both are five-storey buildings, but the buildings in Cheryomushki adopted from 14,05 m to 14,80 m high. However, we can see that the ceilings are not higher. In the prototype, the ground floor is higher than the other ones, which could be interpreted that there is another function than living because there are also no balconies like in Cheryomushki there. Also, the split level system differs in Cheryomushki regarding the prototype a little. On the one hand in Cheryomushki the first half storey is higher, and there is no half storey at the top of the building. On the other hand in the prototype, the first half storey level is half of the high, but there is another part on the rooftop.

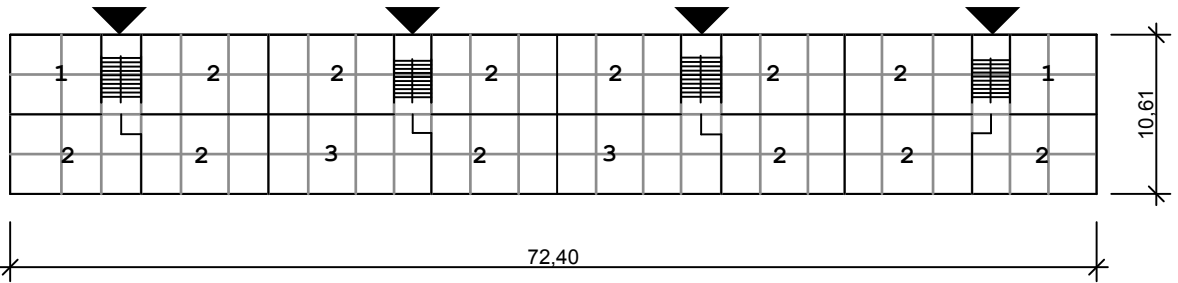
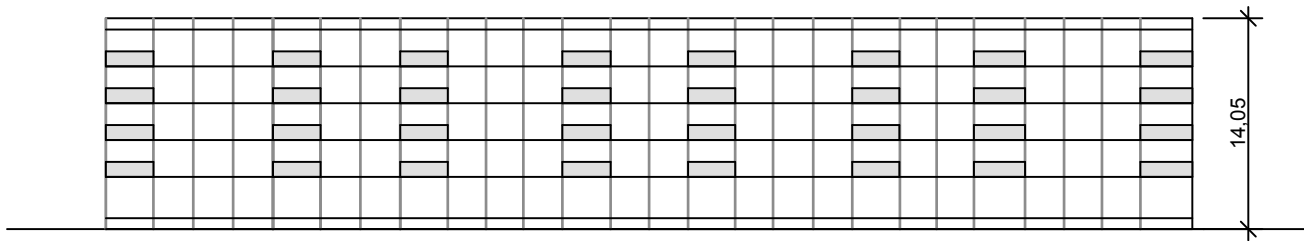
The prototype in the second series 1-464A-2 have the same measurements as the first one (length 72,40 m, width 10,61 m and height 14,05 m). Compared to the adapted buildings in Cheryomushki we came to the same results as in the series 1-464A-1. The length of 73,20 m is nearby the same. Indeed here the width is even more extended of 13,87 m which again leads to a more quadratic form of the elements in the inner structure. Also, the height is the same of 14,80m conducts the same interpretation as mentioned before. Finding out which building has which series number helped us understand that even though from the outside the buildings look the same but in the inner allocation they differ. So for Cheryomushki, we found out that most of the buildings do have inner structures with different types of apartments. Moreover, we learned about the buildings to conclude from the outside appearance which element belongs to which apartment and from how many elements one apartment consider and to know their measurements. Lastly focusing on the third series, we already noticed that the inner



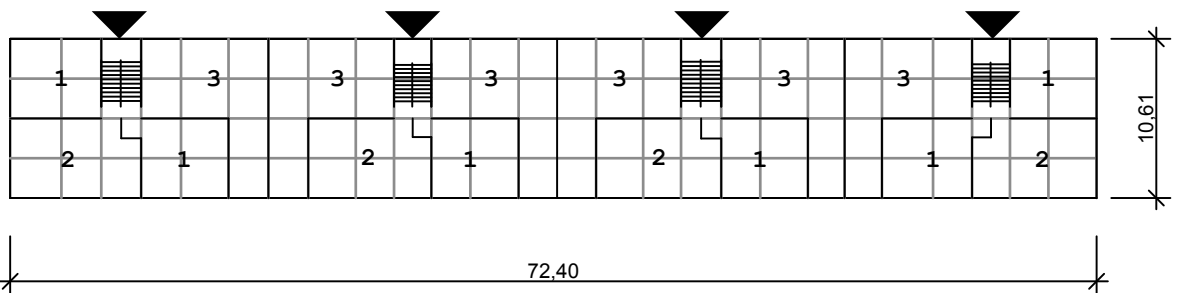
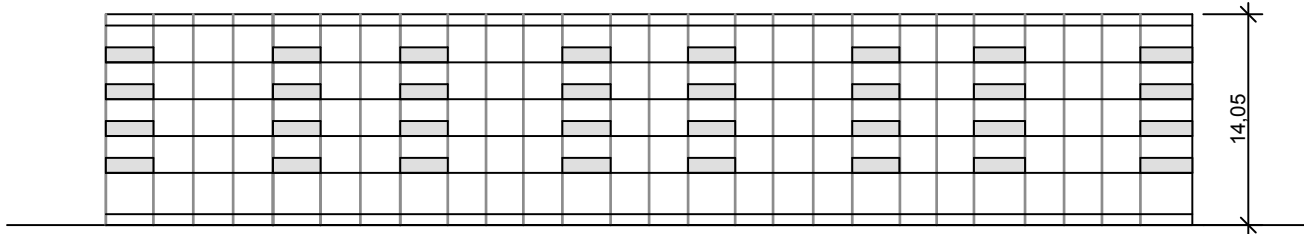
Series 1-464A-2 which is mostly existing in our research quarter

06 The series 1-464A-1, 1-464A-2, 1-464A-3 in the basic nomenclature of standard design 1958-1960 scale 1:500, Meuser, Philipp and Dimitrij Zadorin, 2015. Towards a Typology of Mass Housing. Berlin: DOM publishers

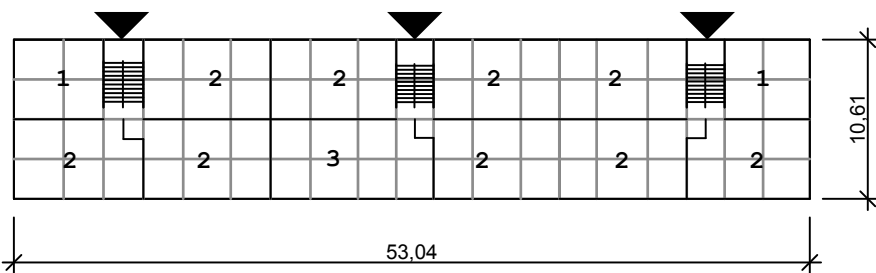
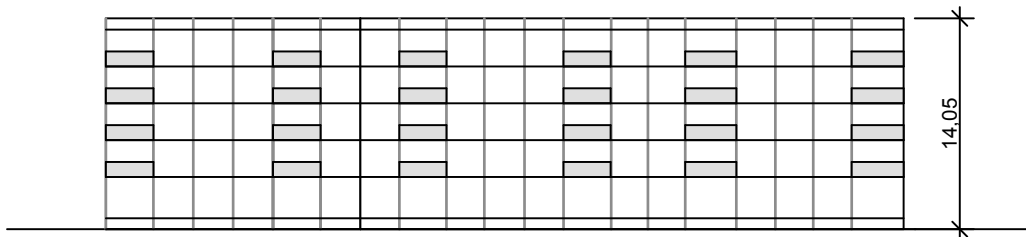




1-464A-1 prototype



1-464A-2 prototype



1-464A-3 prototype


structure looks the same as 1-464A-1 but the length of the building is not that long because we only have one inner part instead of two. The width and height are the same as in the two examples mentioned before (width 10,61 m and height 14,05m), but the lengths here is only 53,04 m. In comparison to the adopted building in Cheryomushki, the length is almost the same of 53,80 m as we found out in the two examples before. The width is again different with 12,94 m which is around 2,5 m distinctions. Coming eventually to the height again here it is the same of 14,80 m which leads to the same conclusion as in the first and second example.

Conclusively one adaption which is noticeable on the buildings in Cheryomushki is that they have similar lengths but are more widened than the prototype. Therefore the units are more elongated. Also, they are higher than the prototype both of them consisting of five floors. Another adaptation we have on the elements in Cheryomushki are the balconies on the ground floor. Last but not least, in both the prototype as well as the adapted version in Cheryomushki, the units on which are balconies are extended in width compared to the units without balconies. As mentioned before the series 1-464A-2 which is surrounded in red in Figure 06 and 07 are mostly existing in our research quarter. That is why in the next step we focused on this one more to understand how this prefabricated building is put together precisely.

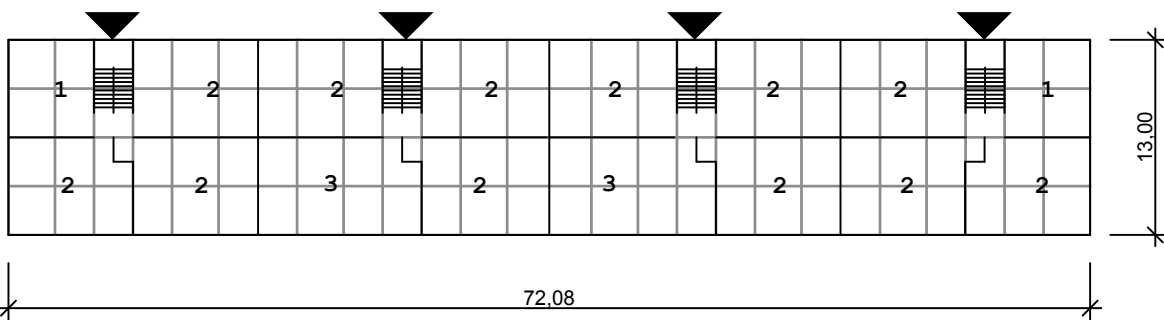
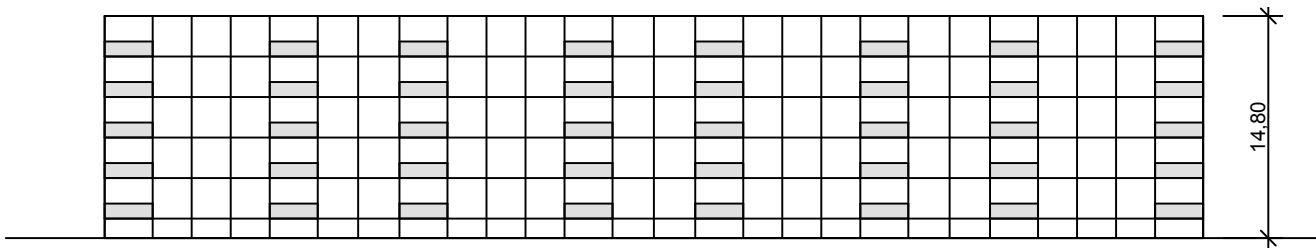
### **General Floor Plan for the 1-464A-2 Buildings in Cheryomushki**

In the next step, we focus on understanding the organization of an apartment and how the elements in the series 1-464A-2 were put together. That is why we went into a scale of 1:150 as we can see in Figure 08. Firstly we will go into detail describing the outside parts on the endings of the building and afterwards the apartments in the inner parts in the middle of the building. After entering the building from the front door, one enters the building hall which led a half story down to the basement and a half storey up to the first floor. Arriving on the first floor, there are four entries in the corridor for the four apartments on each storey. The apartment on the right side is the 1-room apartment. Mainly this flat is defined by two unities. In the first unit in which one enters there is the sanitary installation which is made from individual defined elements. The first unit has an opening to the second one, so one has to go through the first unit to pass to the second. In this flat actually, it is not a big problem because it is only a 1-room flat, but in the others, there is the same problem which leads to thoroughfare rooms. The flat on the left side is a 2-room apartment and have the same structure as the first one but with one unit more. As described in the first flat here one has to pass the first and second unit to enter the third one which is not practical. The two apartments in the front have a small difference. For having two entrances in one unit, it needed to take the entrance area for the left flat from the right flat. That is why the right flat has a bit less than three units. Nevertheless, both apartments are 2-room apartments. Here also both apartments do have the sanitary installations on the side right after the entrance. The left flat does have an entrance zone, but the right flat does only have an entrance floor. After passing the floor, there is the first room. The same way the other apartments were also sectioned in these two apartments one needs to pass the first room to get to the second and to pass the second room to get into the last one.

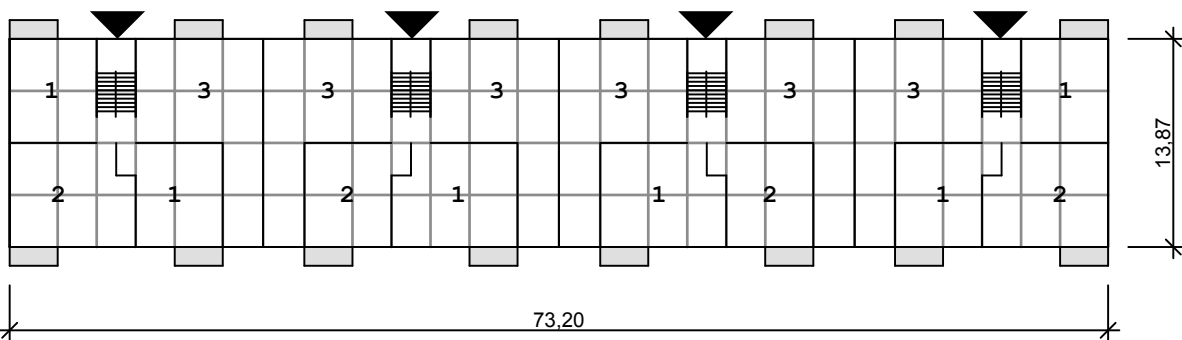
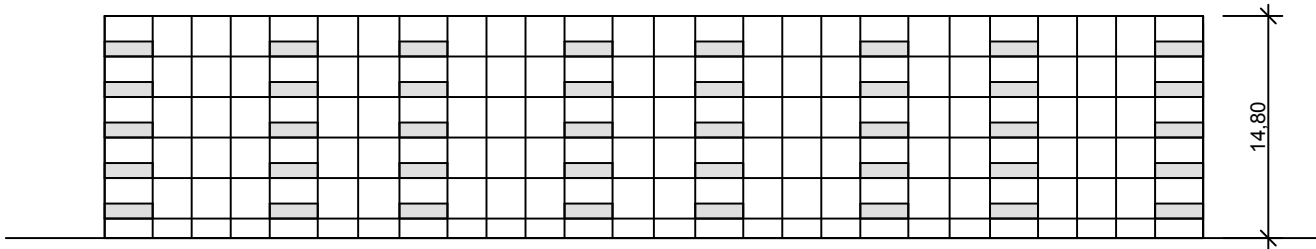
We noticed after going into this detail rank that the panels used for the sections with the balconies have more extended measurements and are extended of 3,2 m than the others of 2,6 m as we can see in Figure 08. Another aspect which we notice in the floor plan in this scale is the way the connections of the panel elements are and how they are connected

 Series 1-464A-2 which is mostly existing in our research quarter

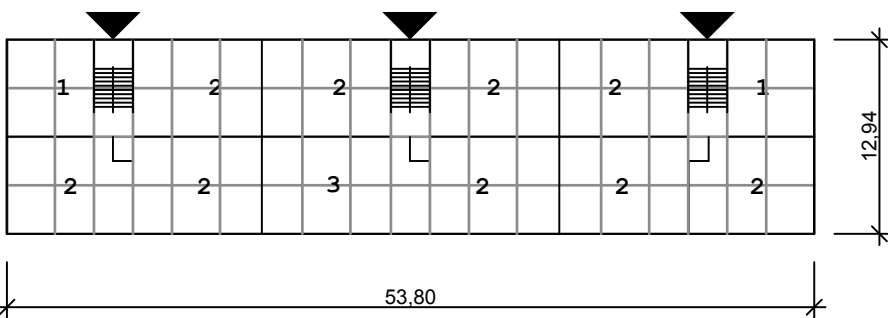
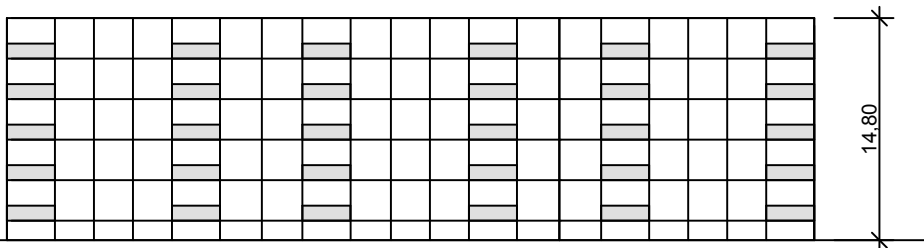
07 The series 1-464A-1, 1-464A-2, 1-464A-3 in Cheryomushki Odessa scale 1:500, own illustration



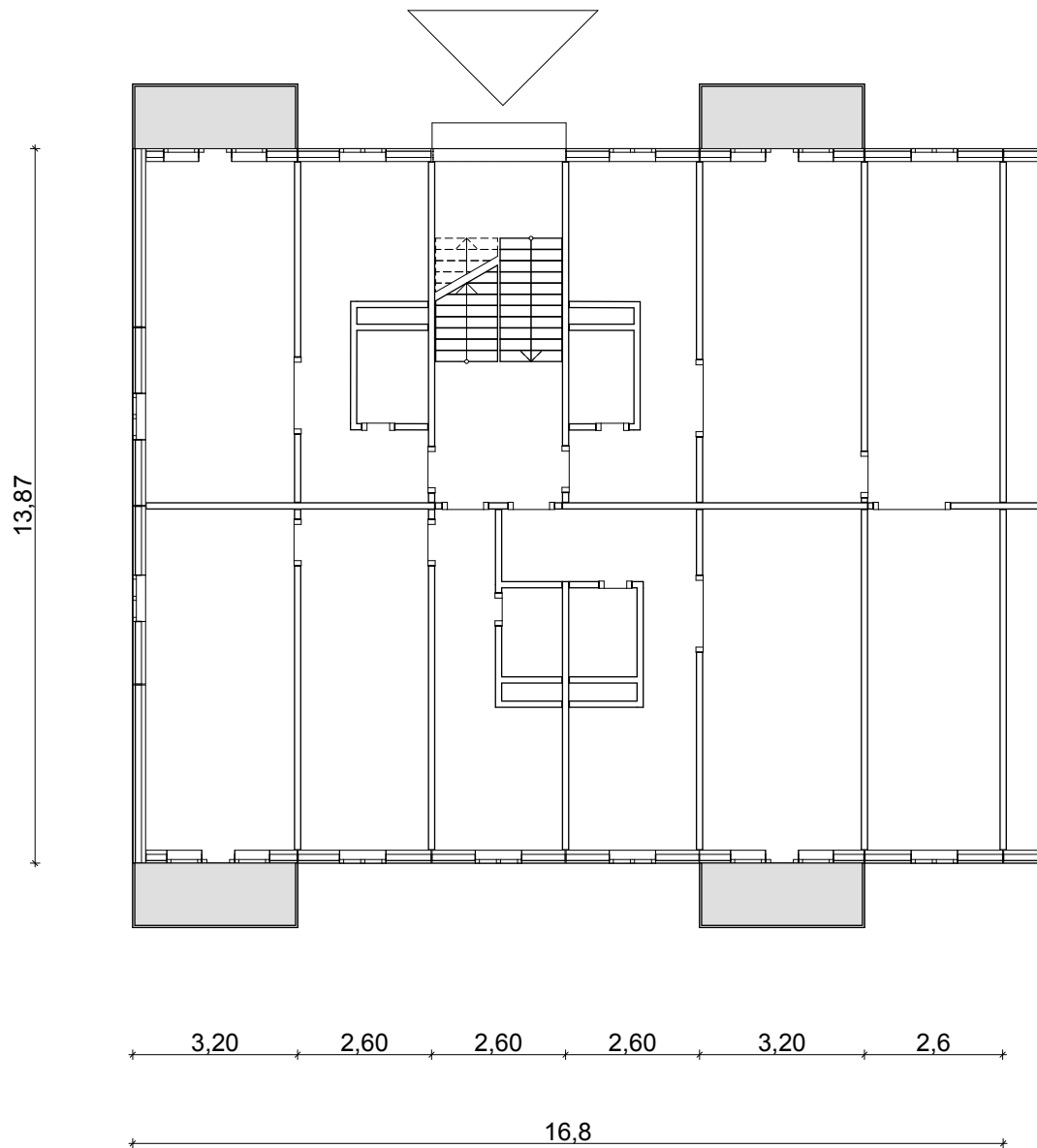
1-464A-1 Cheryomushki, Odessa



1-464A-2 Cheryomushki, Odessa



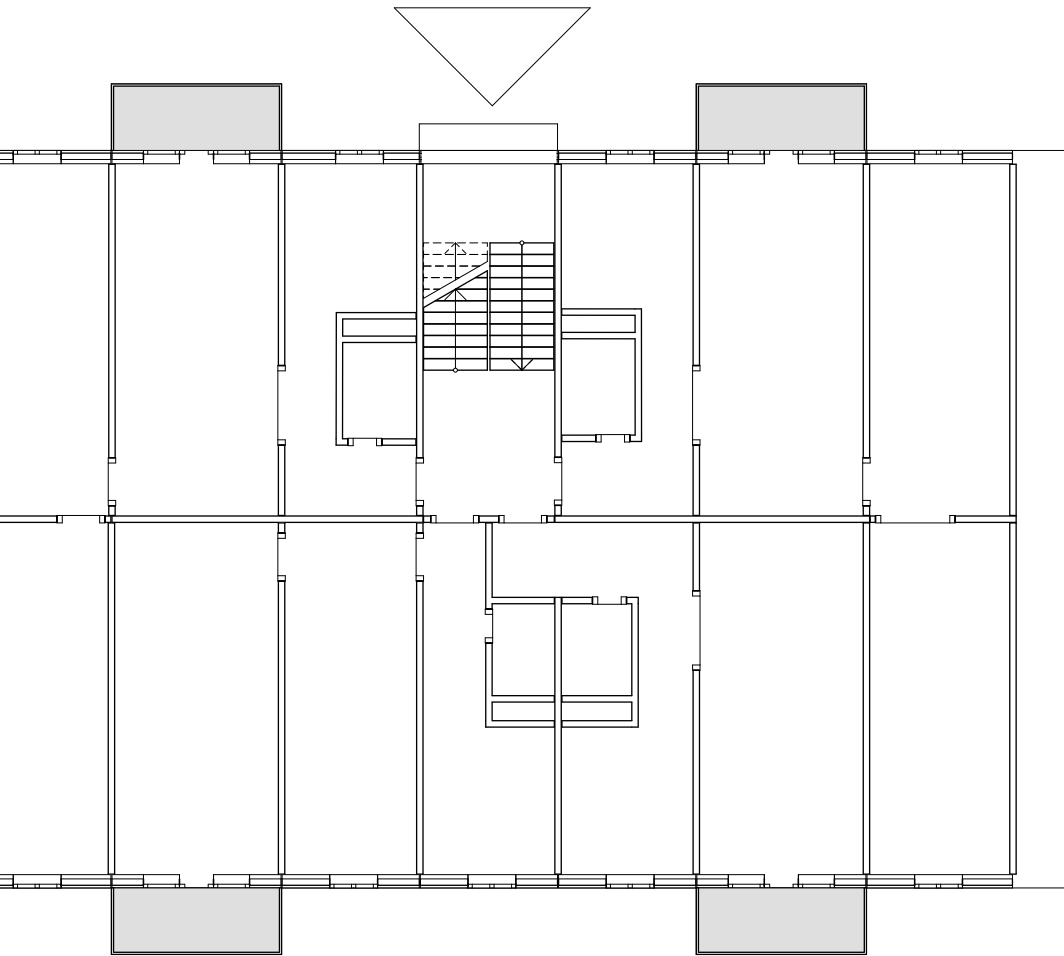
1-464A-3 Cheryomushki, Odessa



and put together. This also helps to understand how many different wall panels, for example, are in the inner structure. As we can see in the building structure, there are different elements we enumerated which were used to construct this building.

### **Catalogue of Basic Nomenclature of Articles 1958 in Comparison to 1-464A-2 Building Elements in Cheryomushki**

As a further step we took the catalogue of the basic nomenclature of article 1958 and tried to find out which elements we found in the segment we focused on in this research and to compare those two. Mainly there are the elements for the balconies in 09 (ground and gratings), the protecting entry roofing in 11, the stair elements in 15, 16 and 19 which differs in the ground floor connecting the basement on the one side and the first floor on the other side and the roof element in 13. Also, there is the standard concrete panel for the exterior walls 01-04 with different openings whether there are windows, doors or even with no opening at all and also with different

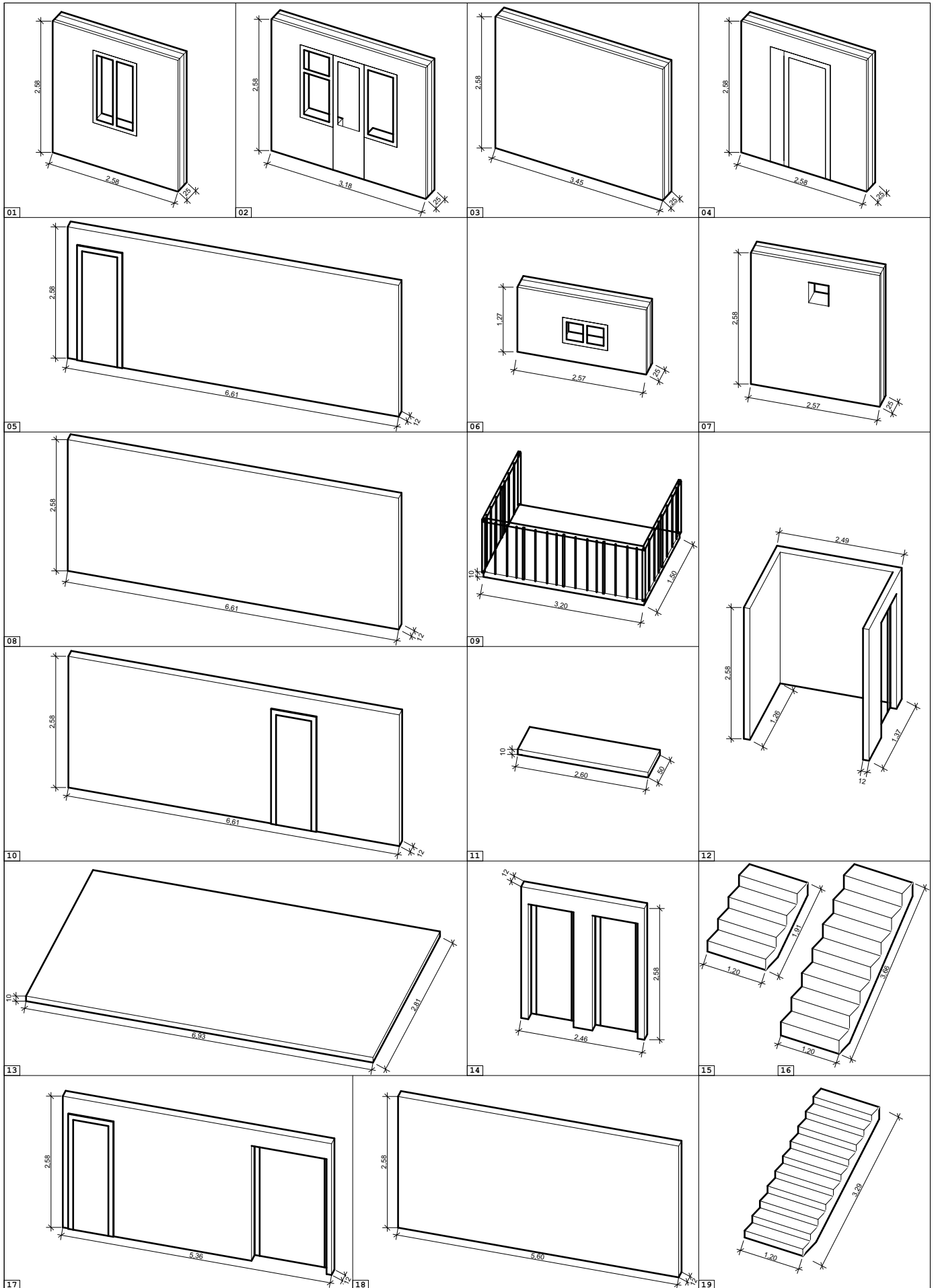


measurements (depending on the extended length of the balcony elements). 01 is the standard for the element with windows, 02 with balconies and in the photos as we can see in Figure 13 of the balconies we observed there is a 1/3 division of the left window. 03 is a final element and 04 with an entry door. For the basement and the part above the stairs (which are shifted and do not end with the floors), there are particular exterior elements as shown in 06 and 07. At least there are the elements for the inner structure in 05, 08, 10, 14, 17 and 18 which also have different opening for doors, no openings and different measurements and the wall elements for the sanitary installation in 12 which are put together as one in our catalogue but are actually made out of separated elements.

Comparing the two catalogue shows a lot of familiar aspects, in general, put going into detail there are lot more elements in the basic nomenclature catalogue shown because we only focused on the main ones and also the measurements of the elements differ. The last point we should mention is that for the thickness of the outside walls there were different measurements drawn in the construction plans (from 250 mm, 300 mm to 350

08 General floor plan for the 1-464A-2 buildings in Cheryomushki scale 1:150, own illustration

НАРУЖНЫЕ СТЕНОВЫЕ ПАНЕЛИ				
ВНУТРЕННИЕ СТЕНОВЫЕ ПАНЕЛИ				
ВНУТРЕННИЕ СТЕНОВЫЕ ПАНЕЛИ				ВНУТРЕНН ПЕРЕГОРОДКИ
ВНУТРЕННИЕ ПЕРЕГОРОДКИ			ПАНЕЛИ ПЕРЕКРЫТИЯ	
ЭЛЕКТРОКОРОБ	ВЕНТИЛЬ БЛОК	ПЕРЕЛЫЧКА	БАЛКОНН ПЛИТА	ЛЕСТНИЧНАЯ ПЛОЩАДКА
ДЕТАЛИ ПО ПОДЗЕМНОЙ ЧАСТИ				
НАРУЖНЫЕ СТЕНОВЫЕ ПАНЕЛИ ЦОКОЛЯ			ЛЕСТНИЧНЫЙ МАРШ	ФУНДАМЕНТН ПОДУШКИ БЛОКИ
ВНУТРЕННИЕ СТЕНОВЫЕ ПАНЕЛИ				



mm) and we took the 250 mm as an assumption as for the inner walls with the 120 mm because there is no isolation.

### **Axonometric Section of a Prototype of the 1-464A Series in Comparison to the Construction Structure in Cheryomushki**

The last two Illustrations which are shown are an axonometry in Figure 11 for the prototype with construction details which shows the way the building was built. In comparison to it there is an axonometry in the scale 1:200 Figure 12 of the buildings we have in our quarter from the series 1-464A-2. Here are some construction points in a bigger scale 1:50 to show how the elements are connected on the right side of the axonometry and two construction details for the prototype to show how the points are closed between the elements in A horizontal and in B vertical. As we can see in the details which shows the same point in A horizontal and B vertical, there is Thiokol sealant to close up the gaps with porous rubber behind. In the connecting point between the two exterior walls and the interior wall from outside to inside, there is a rubberoid layer, mineral wool bending inserts, heavy concrete, tow dipped in the cement-lime solution and a cement sand solution. The details we came out with are a result of the original details we have and the out findings from the connection points in the floor plan. Even though there are lots of recurring elements and connections, but here we can see how different it is handled within the specific points.

### **Conclusion**

In our research, we got a more profound understanding of the existing buildings in our quarter not only for the historical and technical background but also for the internal organization and the construction of a single building. Also, it gives us a basic about the micro-rayon and how to match the buildings to the serial numbers. An essential aspect of answering our research question “From which panel(s) was Cheryomushki built and which constructive, location-related modifications can we observe?” is that our series is made to be modified in regard of the climate and seismological situation of the location. We still can find many similarities to the prototype, and the modifications are locally relevant but probably not enough. Giving sure answers about this at this point is not possible but was for us worth aspiring. Even in the information and construction plans of the prototype, there are still lots of different information given which led us to make assumptions on some point of the research.

In general, we can say that even though there are some changes and adaptations in the building in the main structure, the connection to the prototype is not lost and we can relate the buildings their prototype and see lots of familiar aspects. Another point is that one can easily observe adaptations from the inhabitants which we did not focus on in that research which are caused of bad acoustic, soundproof, lousy condition, size needs, no clear organization structure in the properties and the outdoor space for example. Some of those adaptations we can see in the photos in Figure 13. These may look like a more creative and individual part but is also a fascinating phenomenon to focus. An advantage of this research is that it gives a general background of information and works as a kind of guide or manual to analyze different buildings and understand them from a small scale until the detail.

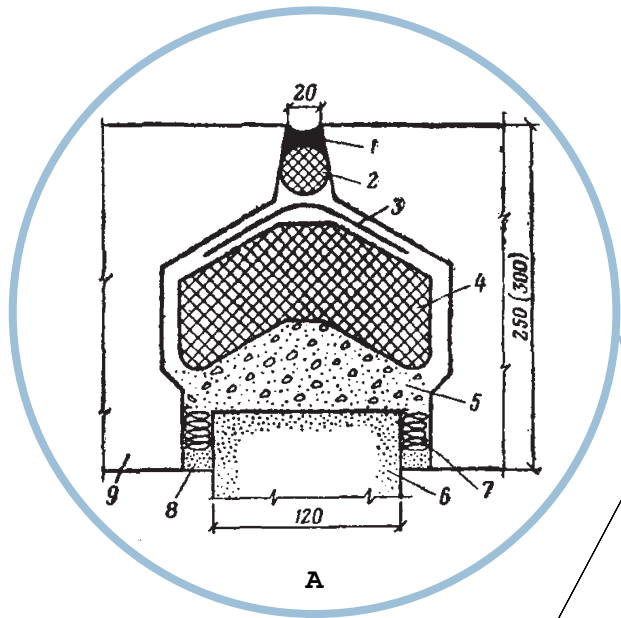
09 Basic nomenclature of articles 1958, Meuser, Philipp and Dimitrij Zadorin, 2015. Towards a Typology of Mass Housing. Berlin: DOM publishers

10 Catalogue for the 1-464A-2 buildings in Cheryomushki, own illustration

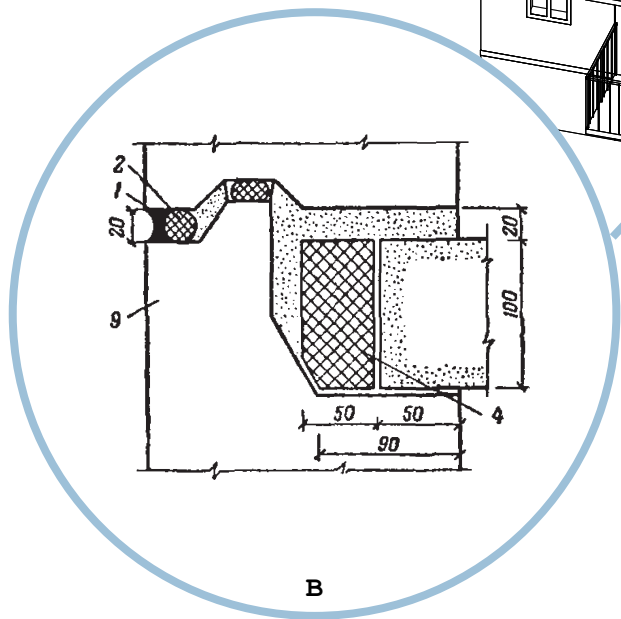
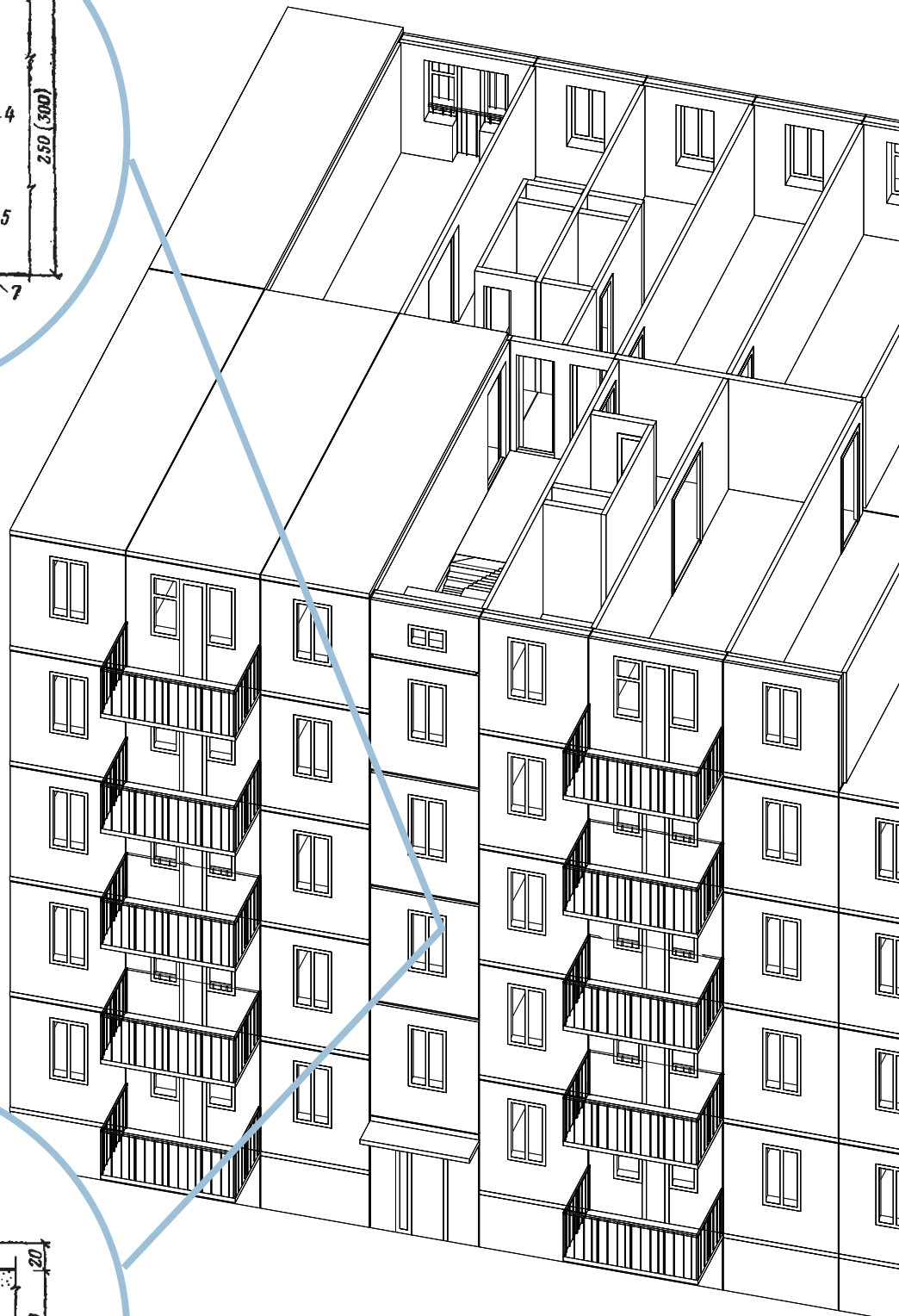
11 Structural scheme: axonometric section of a prototype of the 1-464A series, Meuser, Philipp and Dimitrij Zadorin, 2015. Towards a Typology of Mass Housing. Berlin: DOM publishers



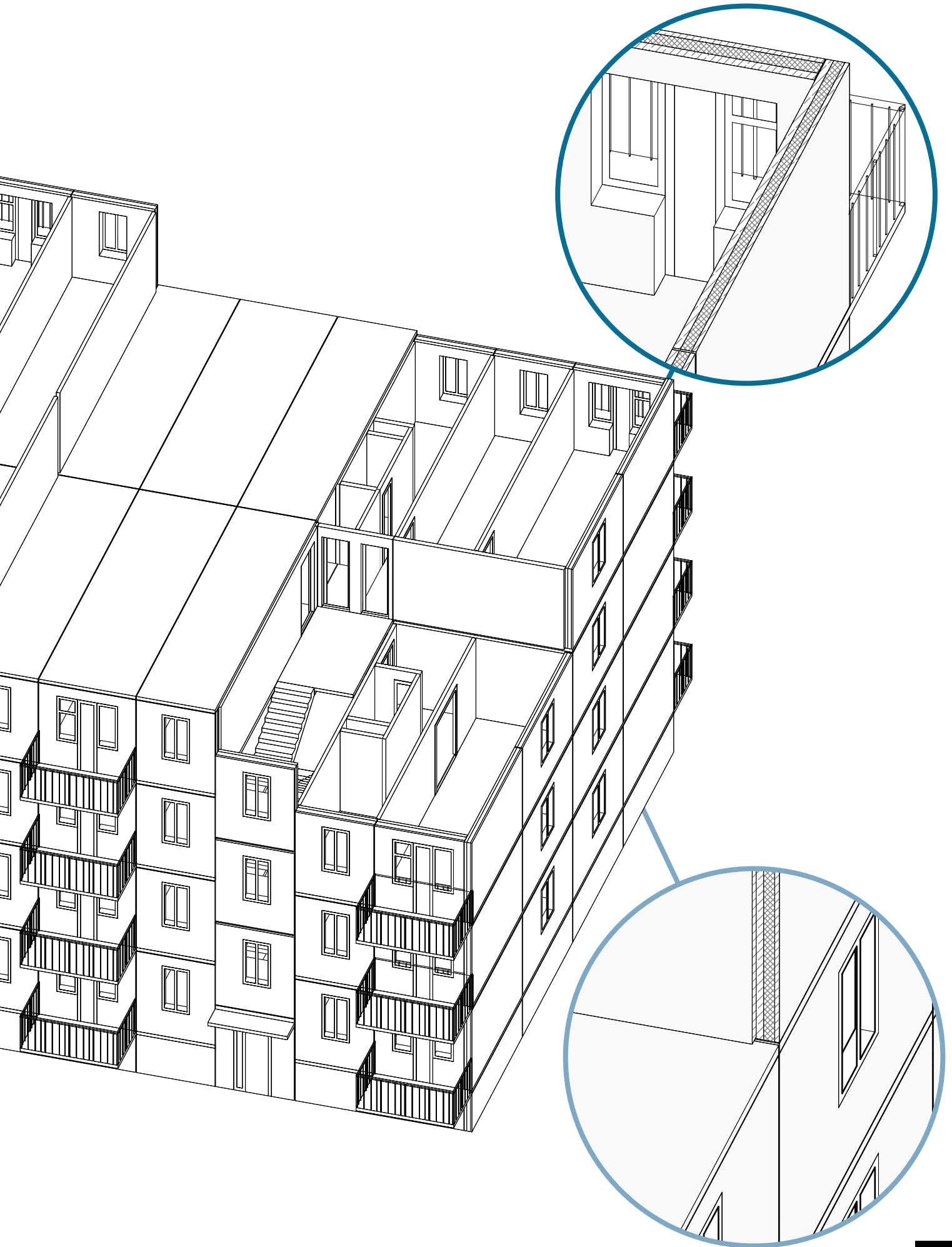




A



B





Axonometry scale 1:50 connection point of the exterior wall panels with the horizontal panels



Axonometry scale 1:50 connection point at the edge of the building



Construction detail prototype Joint gap of exterior wall panels for the serie 1-464-A  
 A - horizontal, B- vertical  
 1- thiokol sealant  
 2- porous rubber  
 3- ruberoid layer  
 4- mineral wool bending inserts  
 5- heavy concrete  
 6- internal wall panel  
 7- tow dipped in cement-lime solution  
 8- cement sand solution  
 9- exterior wall panel



13.

12 Axonometry of for the 1-464A-2 buildings in Cheryomushki scale 1:200 with zoomed in construction details scale 1:50 and construction details of the connection points between the elements, own illustration

13 Photographs of the elements in new Cheryomushki, own illustration

## List of References:

- A.u. (n.d.). External walls of panel houses, n.p.p.: Science. [online]. [Accessed 20.12.2018]. Available from: <https://cities-bлаго.ru/leksii-po-distipline-gradostroitelstvo/23-arhitekturno-konstruktivnoe-proektirovanie-zdaniy/555-naruzhnye-steny-panelnyh-zhilyh-domov.html>
- A.U., (n.d.). The thickness of the walls of the panel house. Internal and external walls, n.p.p.: postroj-sam. [online]. [Accessed 02.12.2018] Available from: <http://postroj-sam.ru/panelnye-doma/tolshchina-sten-panelnogo-doma.html>
- A.U. (2013). Panel houses with bearing walls and their designs, n.p.p.: studopedia. [online]. [Accessed 02.12.2018] Available from: [https://studopedia.ru/1\\_2192\\_panelnie-zhili-doma-s-nesushchimi-stenami-i-ih-konstruktsii.html](https://studopedia.ru/1_2192_panelnie-zhili-doma-s-nesushchimi-stenami-i-ih-konstruktsii.html)
- A.U. (2018). Cheryomushki (Odessa), n.p.p.: Wikipedia. [Accessed 20.12.2018]. Available from: [https://uk.wikipedia.org/wiki/%D0%A7%D0%B5%D1%80%D0%B5%D0%BC%D1%83%D1%88%D0%BA%D0%B8\\_\(%D0%9E%D0%B4%D0%B5%D1%81%D0%B0\)](https://uk.wikipedia.org/wiki/%D0%A7%D0%B5%D1%80%D0%B5%D0%BC%D1%83%D1%88%D0%BA%D0%B8_(%D0%9E%D0%B4%D0%B5%D1%81%D0%B0))
- A.U. (2019). Cheryomushki (Odessa region), n.p.p.: Wikipedia. [online]. Accessed 20.12.2018]. Available from: [https://forumodua.com/showthread.php?t=2891926](https://ru.wikipedia.org/wiki/%D0%A7%D0%B5%D1%80%D1%91%D0%BC%D1%83%D1%88%D0%BA%D0%B8_(%D1%80%D0%B0%D0%B9%D0%BE%D0%BD_%D0%9E%D0%B4%D0%B5%D1%81%D1%81%D1%8B)Antique, 2016. The history of mass housing late 1950s - early 1990s), Odessa: forumodua. [online]. [Accessed 02.12.2018] Available from: <a href=)
- BRZEV S. and GUAVARE-PEREZ T. (2016). Precast concrete construction. n.p.p.: Ramin Vaghei on Slideshare. [Accessed on 15.12.2018]. Available from: <https://www.slideshare.net/RaminVaghei/type-precast>
- DYCKERHOFF. (2000). Ukraine: Dyckerhoff Ukraine. [online]. [Accessed on 15.12.2018]. Available from: <http://www.dyckerhoff.com.ua/online/en/Home/Concrete/Plants/Odessa.html>
- FLÖGEL, Philipp. (2018). Learning from Chruschtschowki: Lebensqualität in seriellem Massenwohnungsbau der Sowjet Union (Masterthesis). Karlsruhe: Karlsruher Institut für Technologie
- GEIB C. and Kowalewski J. R. (n.d.). WBM Wohnungsbaugesellschaft Berlin-Mitte mbH [online]. [Accessed 15.12.2018]. Available from: <https://www.jeder-qm-du.de/>
- HANNEMANN C. (2005). Die Platte: Industrialisierter Wohnungsbau in der DDR. Berlin: Hans Schiler Berlin. [Accessed 15.12.2018]. Available from: <https://iwesoziologie.files.wordpress.com/2015/11/dieplatte72dpi.pdf>
- MEUSER P. and ZADORIN. (2015). Towards a Typology of Mass Housing. Berlin: DOM publishers
- MEUSER P. (2015). Die Ästhetik der Platte: Wohnungsbau in der Sowjetunion zwischen Stalin und Glasnost. Berlin: DOM publishers
- ministerstvo osviti i nauki ukraini harkivska nacionalna akademiya miskogo gospodarstva, 2008. Charkiw: Hnamg. [online]. [Accessed 02.12.2018]. Available from: <http://eprints.kname.edu.ua/4573/1/APXITEKTYPA-MI3YK.pdf>
- NAUCHNO-ISSLEDOVATELSKII INSTITUT. (1965). UDK524 057.4. Moskau: IZDA TELSTVO LITERATURY POSTROITELSTVA. [online]. [Accessed

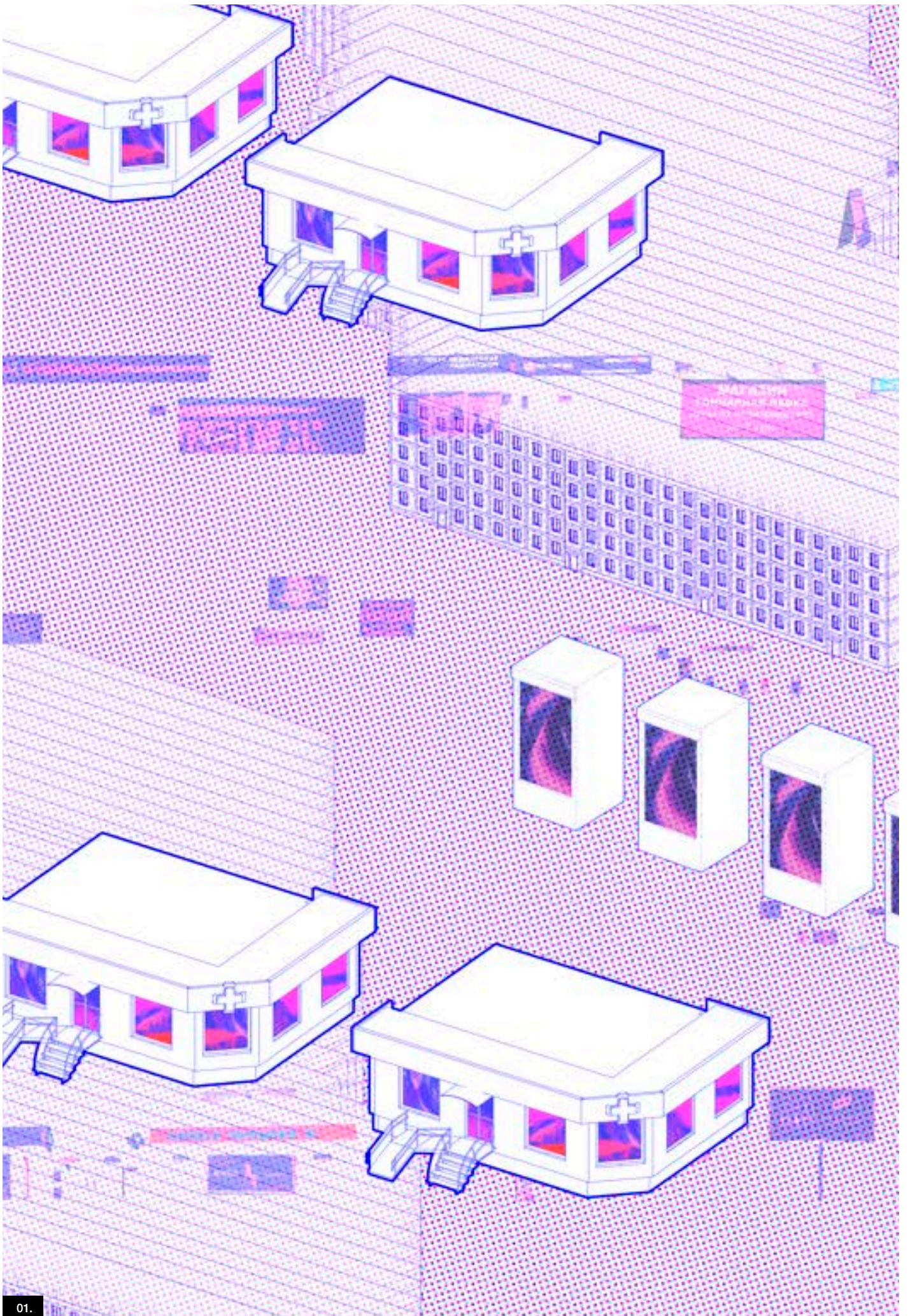
02.12.2018]. Available from: <http://www.gostrf.com/normadata/1/4293809/4293809682.pdf>

RÜTHERS M. (2017). Chruschtschowki - die Geburt der „Platte“. Hamburg: dekoder GmbH. [online].[Accessed 15.12.2018]. Available from: <https://www.dekoder.org/de/gnose/chruschtschowki-plattenbau-osterman-chruschtschow>

TSNIEP. (1968). Standard project Series 1-464A, Ukraine: TsNIEP housing. [Accessed 02.12.2018]. Available from: <http://files.stroyinf.ru/Data2/1/4293778/4293778383.pdf> or <https://files.stroyinf.ru/Index2/1/4293778/4293778383.htm>

#### List of Figures:

- 01 A concrete panel façade in Cheryomushki, own photograph
- 02 Modifications and influences on the series I-464 in Odessa, own illustration Elements used: Map of Ukraine, <https://www.wetterkontor.de/de/klima/klimaland.asp?land=UA>, [Accessed 15.12.2018] Meuser, Philipp, 2015. Die Ästhetik der Platte: Wohnungsbau in der Sowjetunion zwischen Stalin und Glasnost. Berlin: DOM publishers Prefabricated housing development
- 03 since 1945 in Odessa, own illustration
- 04 Specific panel serie and its generation of single buildings in the research microrayon, own illustration
- 05 Production process of prefabricated concrete panels, own illustration
- 06 Elements used: a.u., n.d. Zusammensetzung von Beton. Berlin: BauNetz Media GmbH. [Accessed 15.12.2018]. Available from: <https://www.baunetzwissen.de/beton/fachwissen/herstellung/zusammensetzung-von-beton-150914>
- 07 Barberowski, Jörg, 2015. Verwüstetes Land: Die Sowjetunion nach Holocaust und Krieg, Bonn: bpb: Bundeszentrale für politische Bildung. [Accessed 15.12.2018]. Available from: <http://www.bpb.de/geschichte/zeitgeschichte/deutschlandarchiv/207010/verwuestetes-land-die-sowjetunion-nach-holocaust-und-krieg>
- 08 Cheryomushki Odessa scale 1:500, own illustration
- 09 General floor plan for the 1-464A-2 buildingsin Cheryomushki scale 1:150, own illustration
- 10 Basic nomenclature of articles 1958, Meuser, Philipp and Dimitrij Zadorin, 2015. Towards a Typology of Mass Housing. Berlin: DOM publishers
- 11 Catalogue for the 1-464A-2 buildings in Cheryomushki, own illustration
- 12 Structural scheme: axonometric section of a prototype of the 1-464A series, Meuser, Philipp and Dimitrij Zadorin, 2015. Towards a Typology f Mass Housing. Berlin: DOM publishers Axonometry of for the 1-464A-2 buildings in Cheryomushki scale 1:200 with zoomed in construction details scale 1:50 and construction details of the connection points between the elements, own illustration
- 13 Photographs of the elements in newCheryomushki, own illustration





# Cheryomushki – A Settlement of Socialist Housing under Market Economic Conditions

How is the post-socialist settlement around Henerala Petrova Street changing under market economic conditions? This chapter is focussing on one of the radical changes microrayon areas are facing after the shift from a system that relied on centralised planning to an economic system where distribution is mainly guided by supply and demand (Tsenkova p.26 l.05).

These areas like Cheryomushki are originally not designed to provide a large range of different products for different needs but rather a clearly defined range of goods everybody needed in their daily life (Tsenkova p. 26, l. 03 / p. 27, l.09).

After the end of the soviet union the emerging demand for more products in these areas was mainly provided by small businesses that added their shops to the existing structure (TSENKOVA p. 65, l. 16). This leads to the question of how these added businesses are placed and how they shape their environment. This topic is explored by analysing the shop structure, their advertising, access points of customers, privatisations of ground and the impact on the surrounding of these shops. Henerala Petrova Street is a busy street in Cheryomushki that shows a high amount of added shops as well as vendors and is close to the Cheryomushki market. Therefore it is exemplary for our analysis.

## About the Structure of the Socialist City

To grasp what the shift from the socialist city to a market oriented city means for street life in Odessa, it is helpful to look at the previous conditions under which people in Cheryomushki lived.

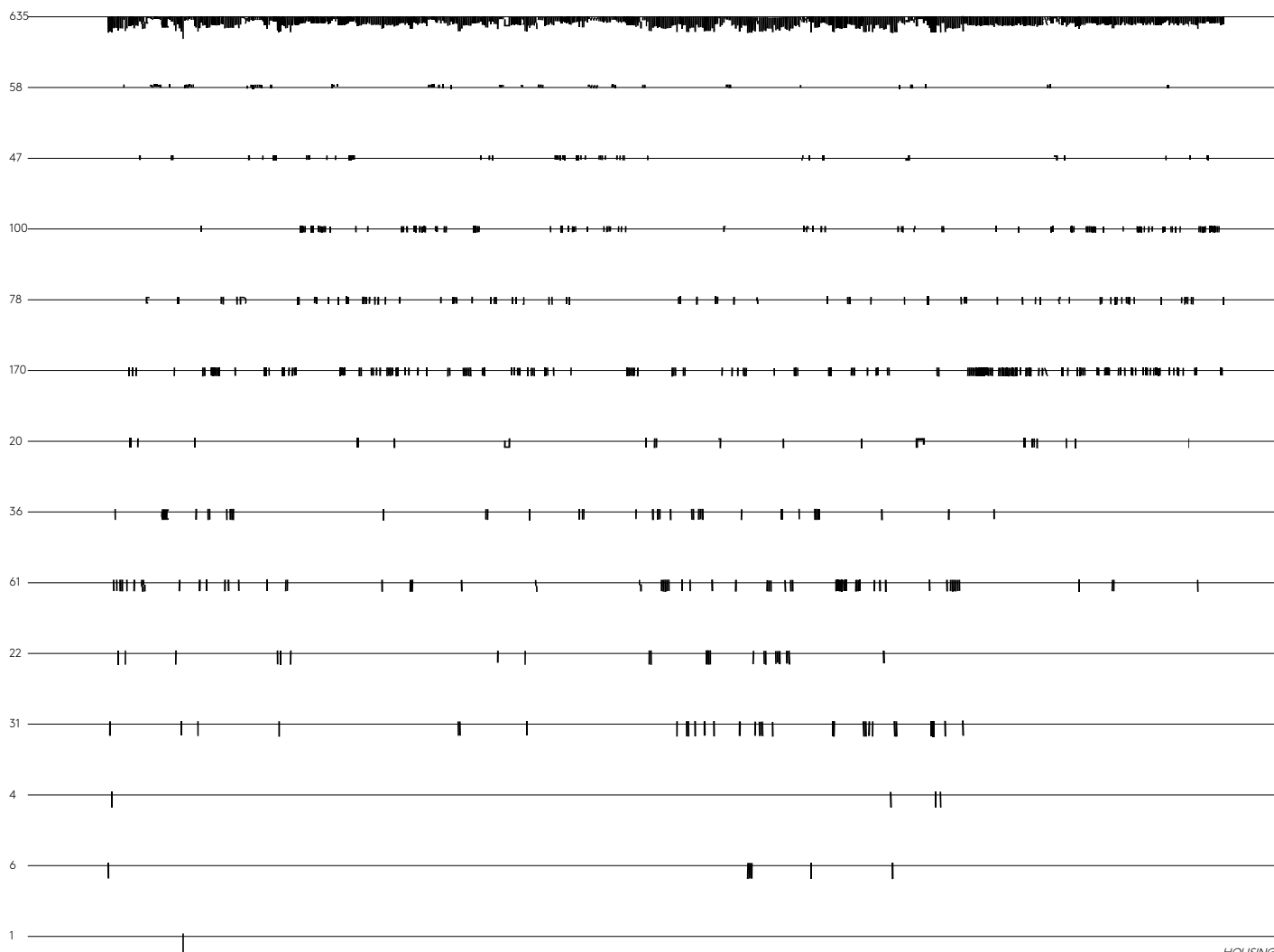
As an answer to the vast housing crisis in soviet cities during the 1950s former first secretary of the Communist Party Chruschtschow proposed the planning of large housing districts, the microrayons. They were mainly supposed to accommodate a large amount of people and provide most of their daily needs as was ensured to the citizens by the soviet union. The state was obligated to provide housing, alimentation, work and entertainment. Social disparities in the cities should be solved by the idea of giving equal citizens equal living situations, a doctor should have the same living environment as a blue-collar worker. Since everybody was supposed to sign up for social housing programs, prefabrication offered a way to cut costs to a minimum. Mass housing therefore provided little diversity in building and flat layouts. A few standardised housing types were

repeatedly built and normally had from 5 to 10 storeys, the most common type built in Cheryomushki offered 40 flats with two or three rooms. This rigid system of repetition is shown on map 2. By arranging all buildings in Cheryomushki in a row the few differences in between of them get even clearer. Each row below the first one show one standardised length of building, which indicates not only how few types were built but also show that the similar housing types are often arranged close to each other. The three most numerous building types added together make up over half of the 635 buildings and there are only 13 different lengths in total. The lower part of the map transfers this questions to different facility types in Cheryomushki but has similar results. Out of 49 school buildings 37 show one of the three most typical building layouts.

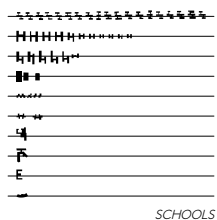
Seriality and systematization were central aspects of how the socialist city was designed to be a rational counterpoint to previous city development. Meanwhile old medieval town centres appear naturally grown, socialist city planners tried to include the most important parameters necessary for city life and construct a reproduceable system that should cover daily life for citizens in a comfortable way.

One of these parameters was for example that within the microrayon, peoples daily needs should be provided within 500 m of walking distance from their homes. This includes kindergardens, schools, alimentation, work and medical care. Therefore micro-districts should not be sleeping cities but areas where children could walk from home to kindergarden without crossing a street meanwhile their parents work in the factory close to the same microrayon. Map 3 and 4 compare this planning theory to the built reality. Each circle shows the distance of 500 meters around a facility. Map 3 represent all the facilities provided in each quarter whereas map 4 provides an insight on the distribution of the facilities on district scale. They show for example how varying the distribution of hospitals in the area is and how concentrated the industry in the centre and south east of the district is. There is also a high disparity in between of north and south concerning supermarkets. The network of primary and secondary schools as well as police stations is denser in the centre of Cheryomushki than most of the parts on the edge of the area.

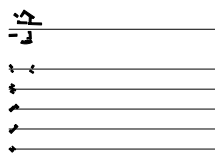
Meanwhile the planning was well intentioned, none of the quarters in Cheryomushki provide all of the requirements of daily life within 500 meters of distance. After the end of the soviet union during the 1990s the change of economic system in the Ukraine also meant major changes for the Cheryomushki city structure. The area seemed already unfit to provide for the needs of its inhabitants during the soviet period let alone emerging demand for more varied supply. This demand was mainly met by new businesses and shops around the streets of Cheryomushki reshaping their impression completely.



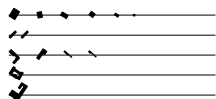
HOUSING



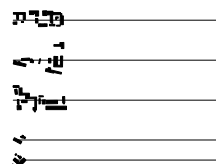
SCHOOLS



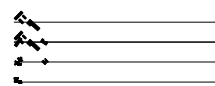
HOSPITALS



SUPERMARKETS

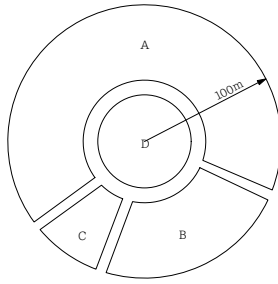


FACTORIES

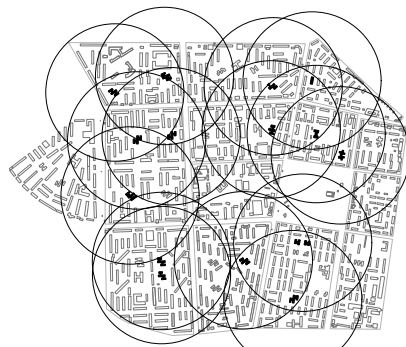
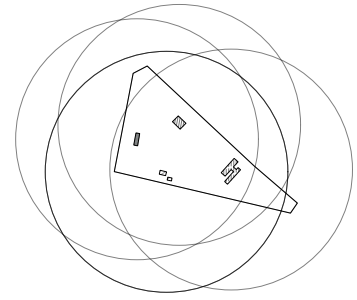


ADMINISTRATION

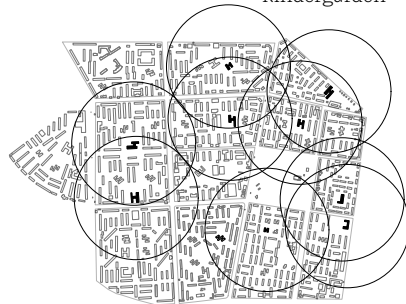
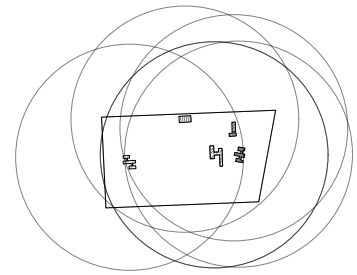
LEVEL OF PUBLIC SERVICE	URBAN PLANNING UNIT	FREQUENCY OF NEED AND RADIUS PEDESTRIAN ACCESSIBILITY
1	Housing group and microdistrict level	<b>everyday need</b> Accessibility radius: 100 - 500 m
2	City district level	<b>period need</b> Accessibility radius: 1000 - 1500 m
3	City level	<b>episodical need</b> No standard radius for accessibility



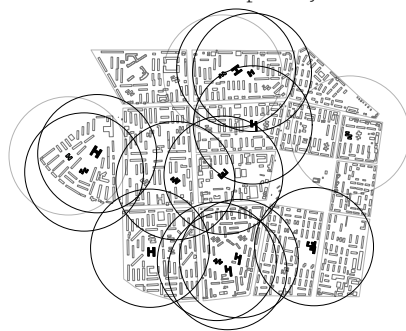
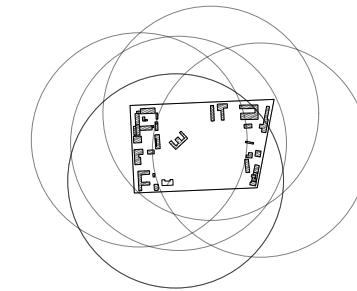
- A HOUSING
- B NURSERY KINDERGARDEN
- C ELDERLY CENTER
- D CANTEEN AND OTHER SERVICE



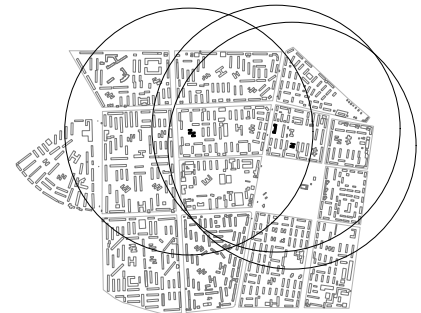
kindergarden



primary school



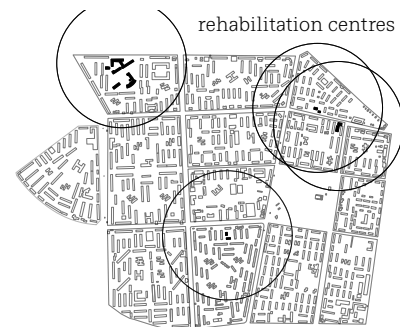
secondary school



rehabilitation centres



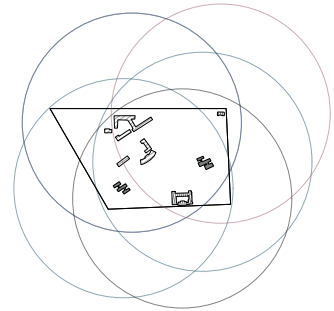
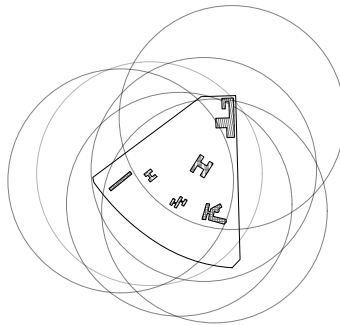
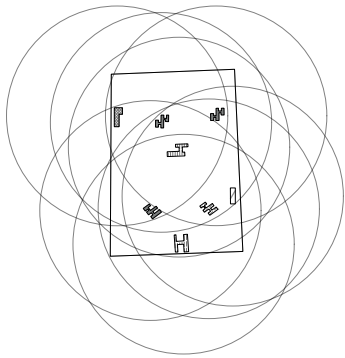
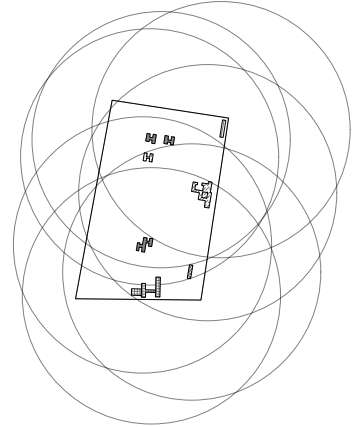
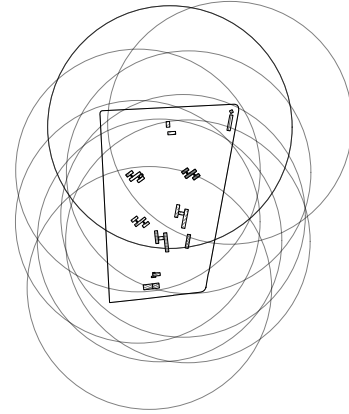
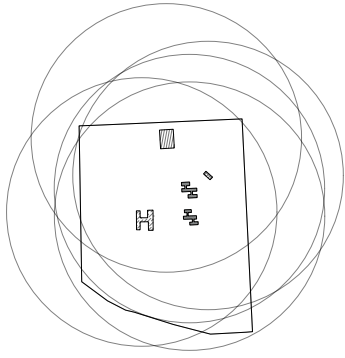
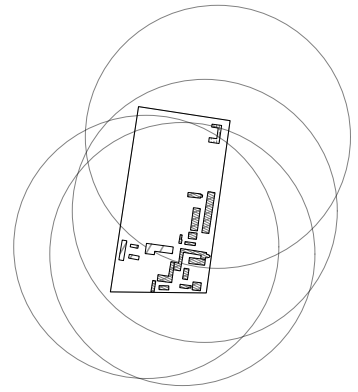
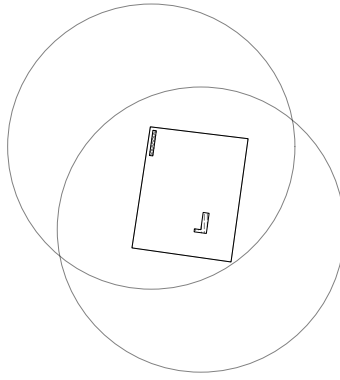
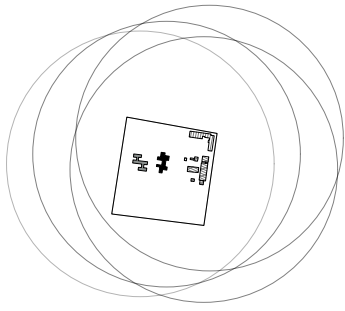
universities



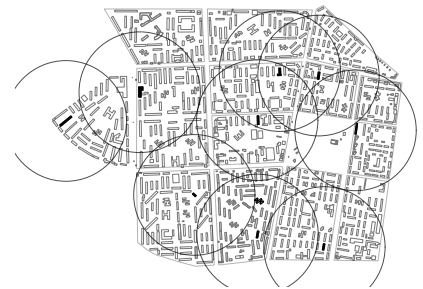
hospitals

03 radial distances 1, own graphic

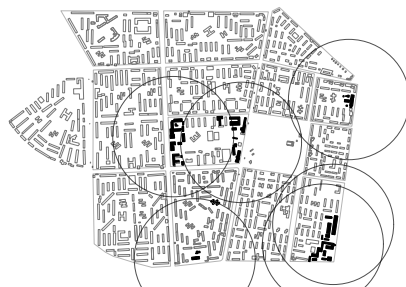
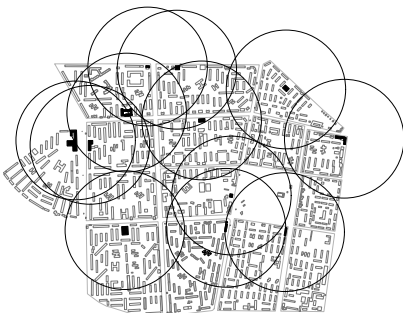
04 radial distances 2, own graphic



03.

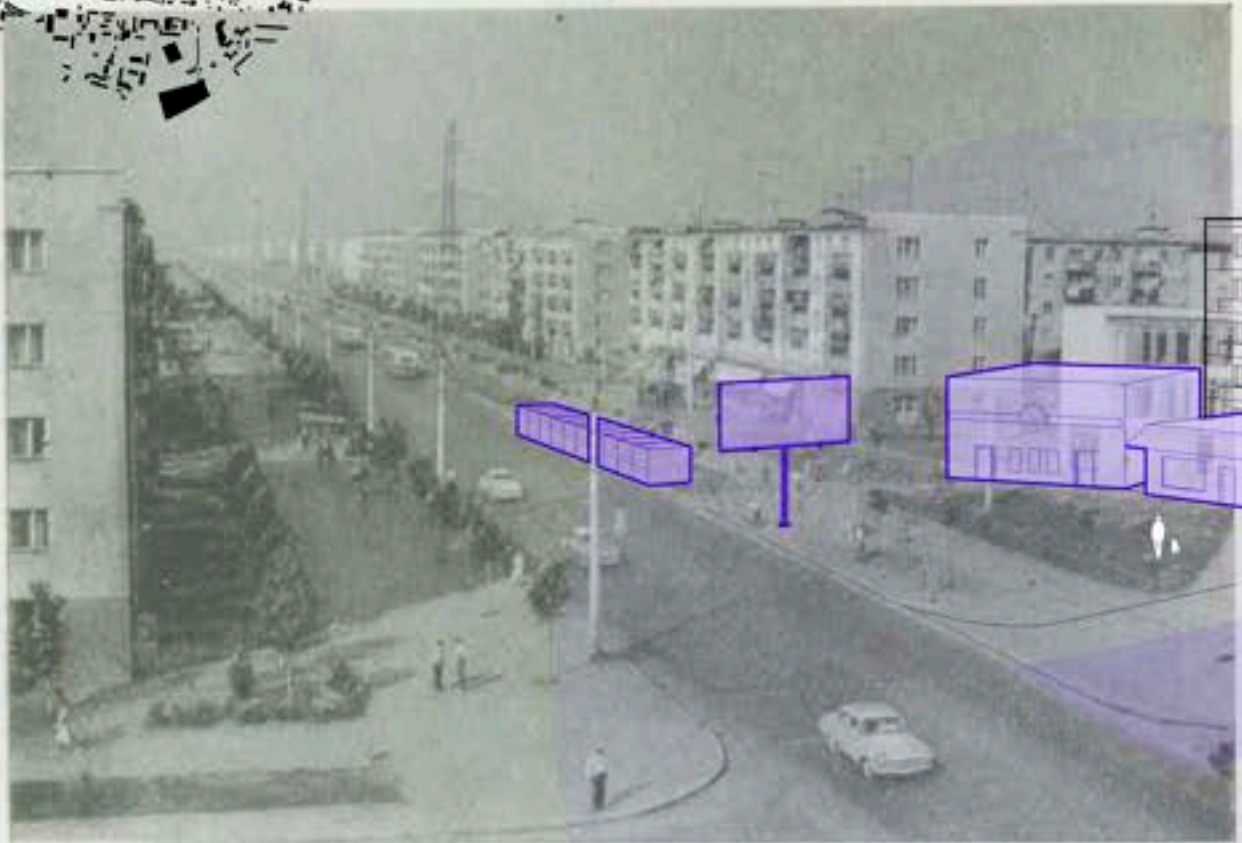


police stations



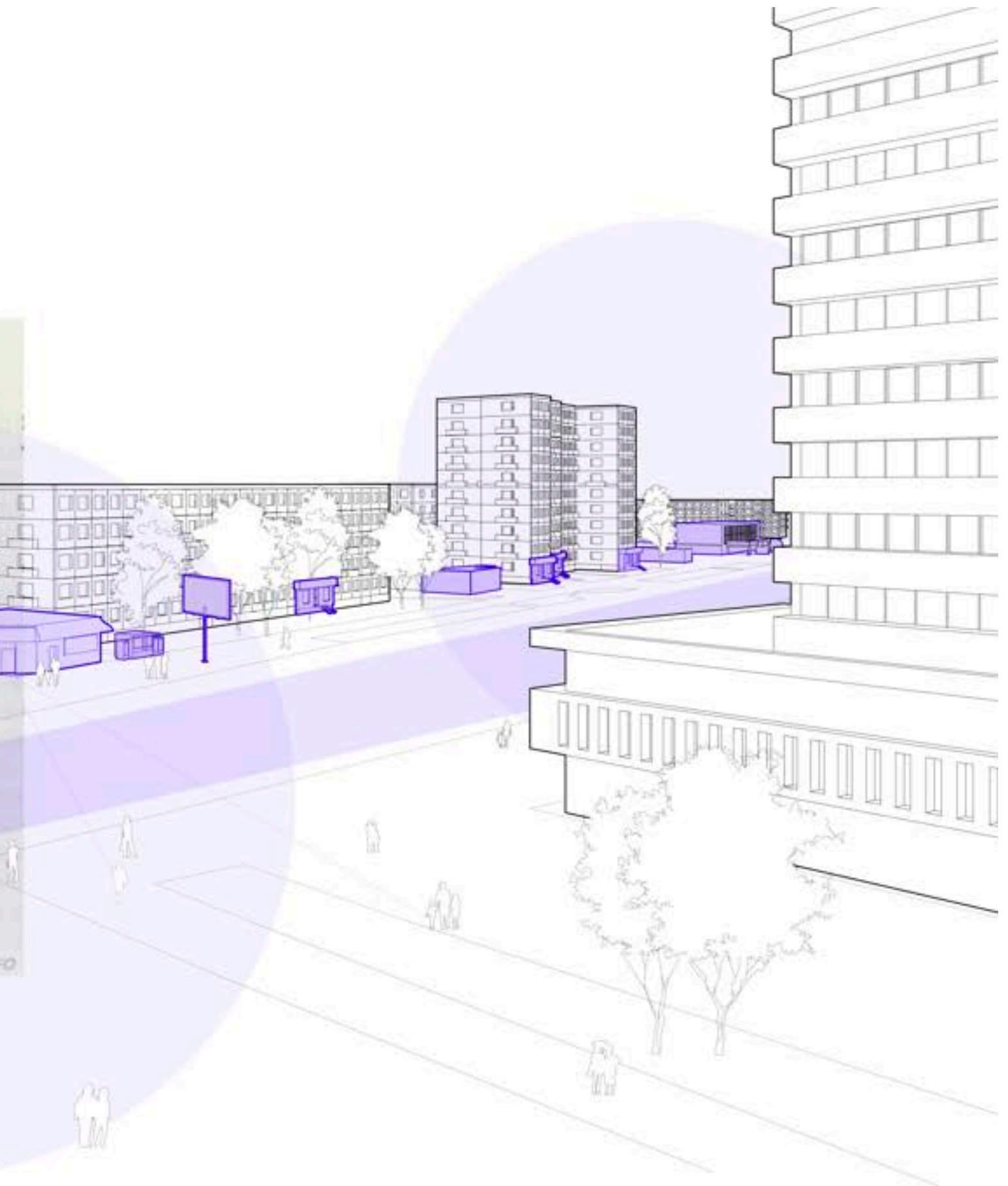
city management

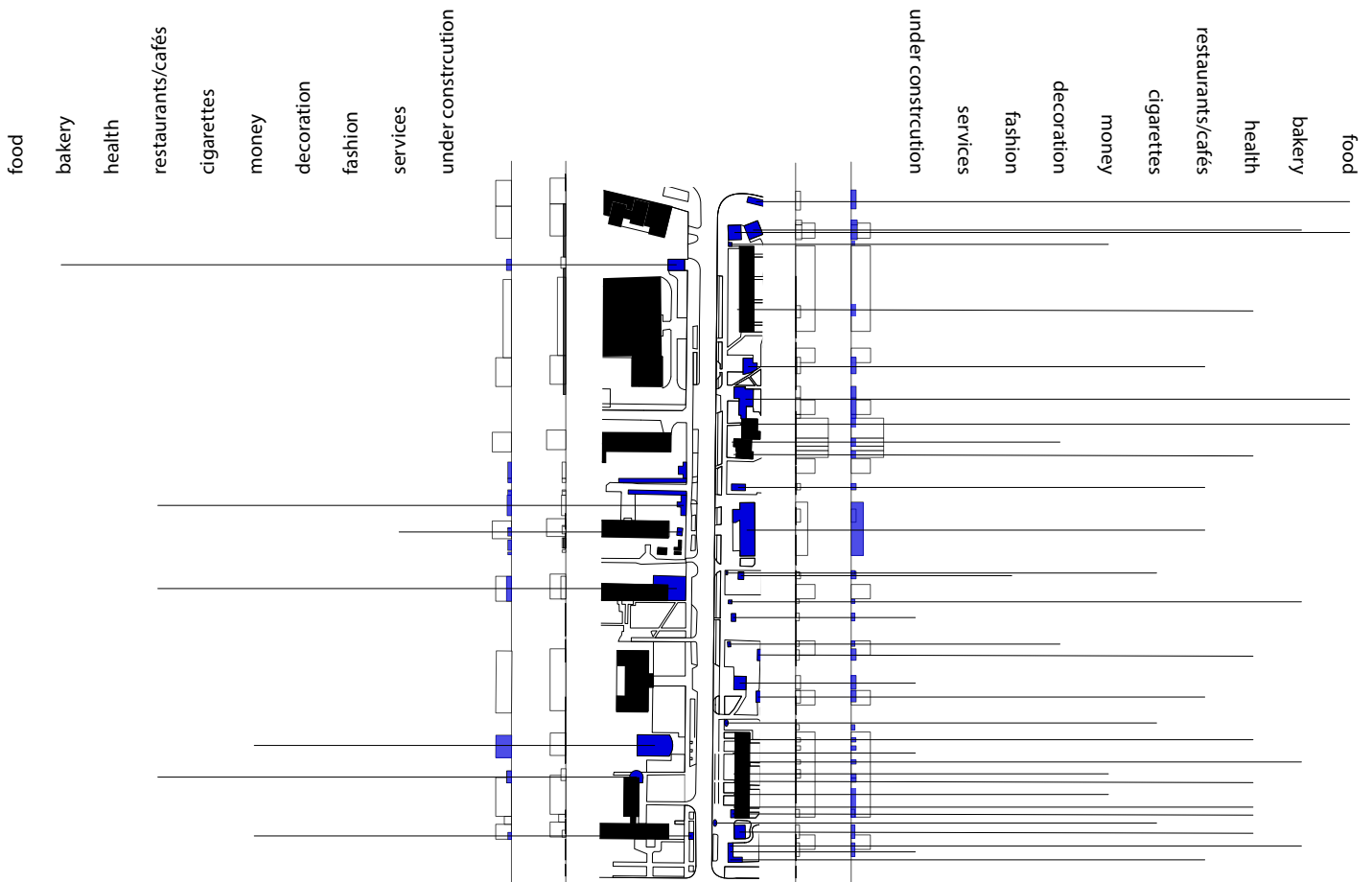
04.



Новий житловий масив. Вулиця космонавтів. Одеса. 1967 р.

*DoessnStory.lvs*





06.

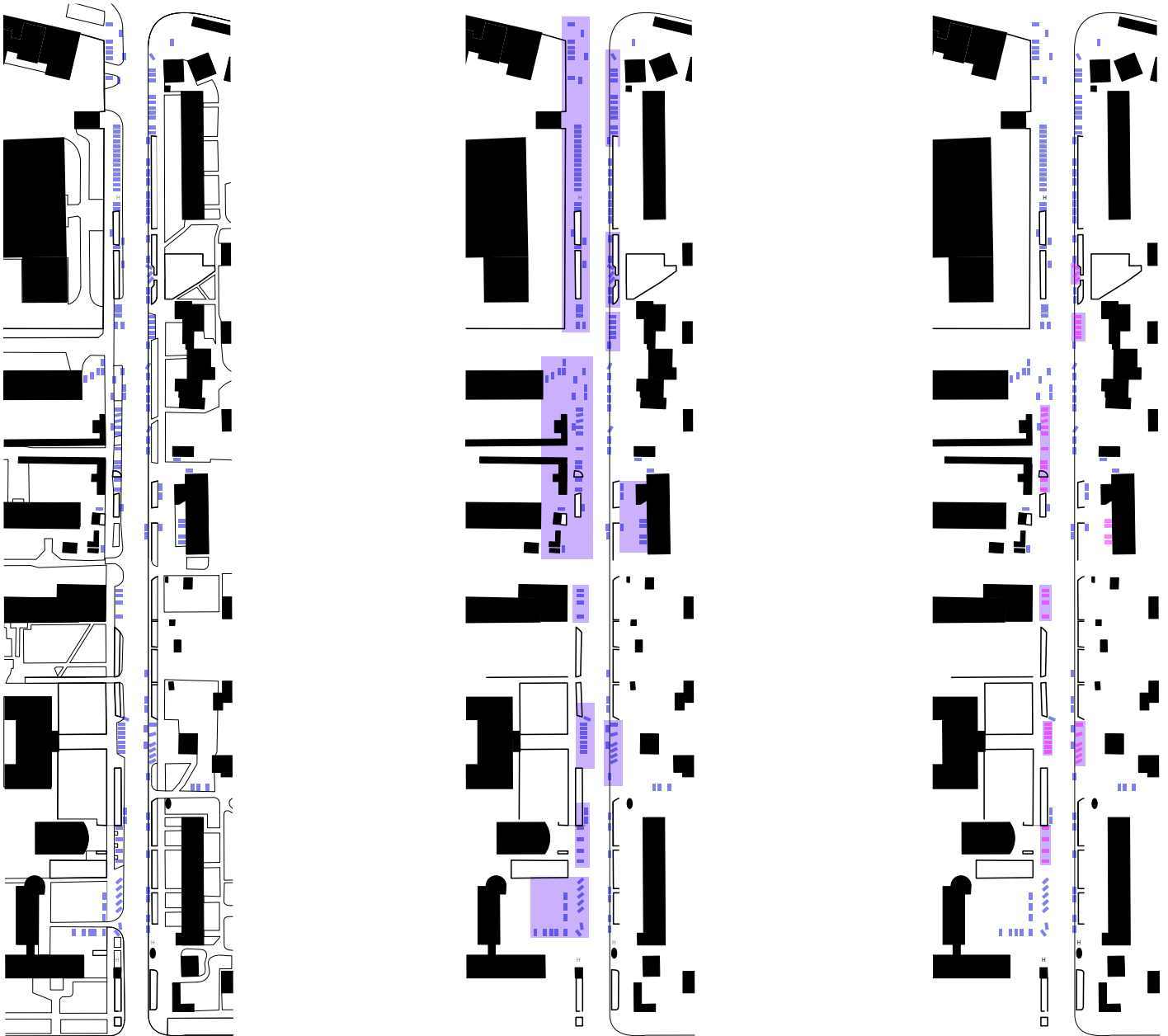
## Shop Structure

The probably most shaping aspect of economic changes in the city structure are the added shop structures. To understand better how the added shop layout changed its environment we take a look at the position of these shops. Heneral Petrova Street in the middle of Cheryomushki is exemplaric in this scenario. The street is characterised by a high amount of shops, especially on the south side of the street they occur frequently. The reason for this could be that the shop owners settled their shops vis-a-vis to some hotspots like the city council administration of Odessa or the entrance to Cheryomushki market, located on the northern side to catch the pedestrians eye. The added shops typologies reflect the variety of different supplies. The high amount of shops related to health like pharmacies or medical practices are located around the south western corner of Heneral Petrova street, giving potential clients different choises between shops. There are less stores concerned with food supply, maybe due to the proximity of the Cheryomushki market.



06 radial distances 1, own graphic





07.

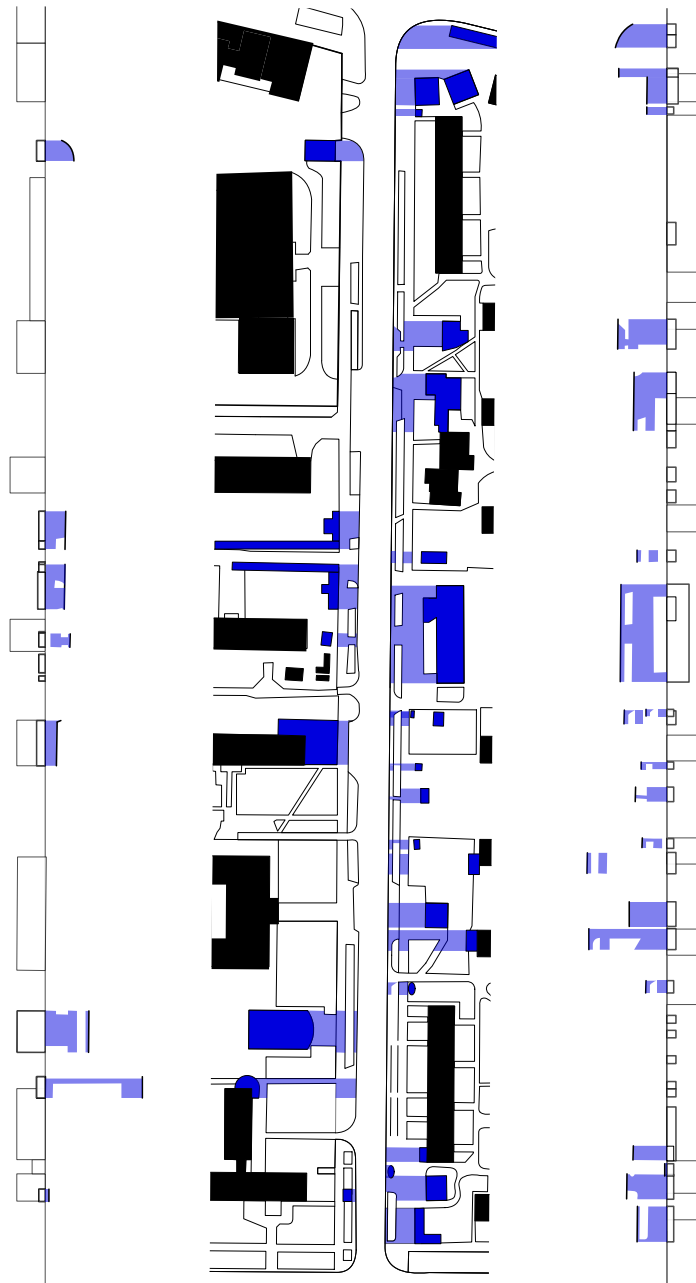
### How do Customers Access these Shops?

Beside walking from a place nearby and arriving at the bus stop at Henerala Petrova Street, cars are the main mode of transport used to get to the street. Yet the parking situation in Cheryomushki is partially problematic since there are very little designated parking spots. Planners did not seem to expect a that high amount of cars standing in the area, which now causes chaotic parking in many of the green public spaces in Cheryomushki. This can also be seen in Henerala Petrova Street.

There is an obvious corelation between parking cars and shops or institutions on the sides of the street, so they probably increase the tense parking situation. A lot of parking occurs in front of the access point of the Cheryomushki market as well as the administrative complex on the west side of the street. On the other hand most designated parking is installed in front of the shop fronts and the entrance to the market, so these compensate for part of the problem by a changed street layout.

- parking cars in Google StreetView (Nov. 2011)
- parking groups
- parking legal
- H** bus stops

07 radial distances 1, own graphic



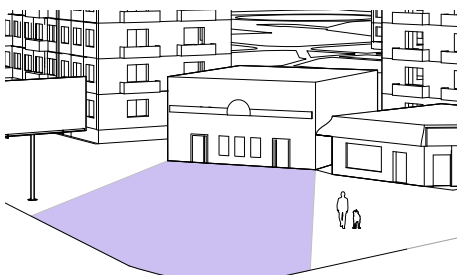
08.

### In what Relation to the Street are the Shops positioned?

Looking at the original plans, there is not much useable suitable for new buildings. Where were these new buildings added?

Shops profit of their proximity to the busy street life and therefore were often built along main access points to the quarters but seldomly arranged directly along the street. They were rather built in second row into or in between of existing housing. The mostly one storey buildings are usually built in already paved areas instead of the green spaces in between.

There also is a difference of the arrangement of shops to the north and to the south of the Heneral Petrova street. In comparison, the shops to the north seem to be placed less chaotically and rather in a row next to the sidewalk meanwhile the distance to the sidewalk varies strongly to the south of the street.



■ firm base from shop to Heneral Petrova Str.

08 shops, their depth and height, own graphic



09.

### What New Spatial Situations Result out of the Positioning of the Shops?

The map above focuses on the relation of free space and the connections in between of shops. It visualizes the little relation shops on the northern side of the street have to shops on the southern side. Shops rarely face shops on the other side of the street. The spaces behind those shops are mostly underused and could potentially be reused as parking areas or better designed green spaces. The large fenced area on the north east side of the street blocks out a big part of the street access to the quarter, therefore the northern side of the street seems more enclosed in comparison to the many small openings on the southern side.

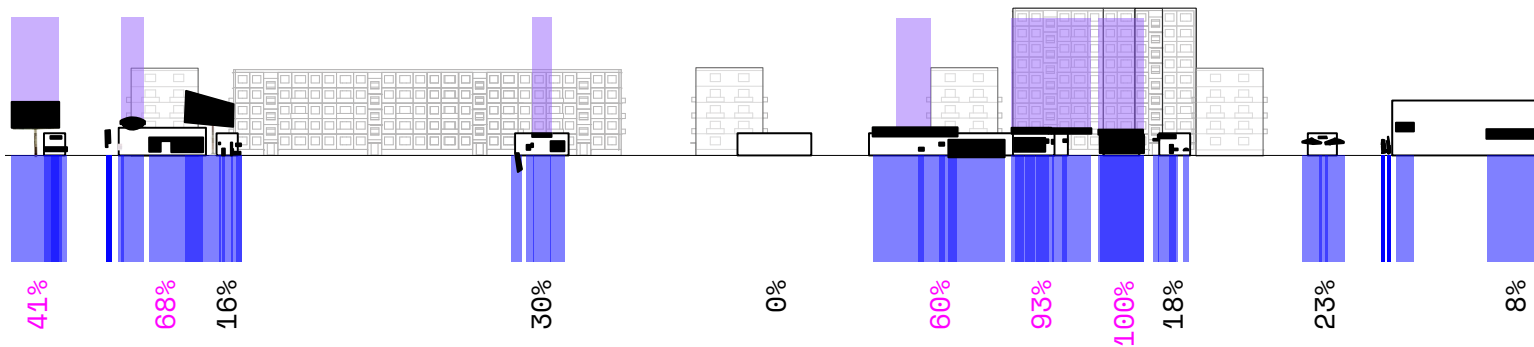
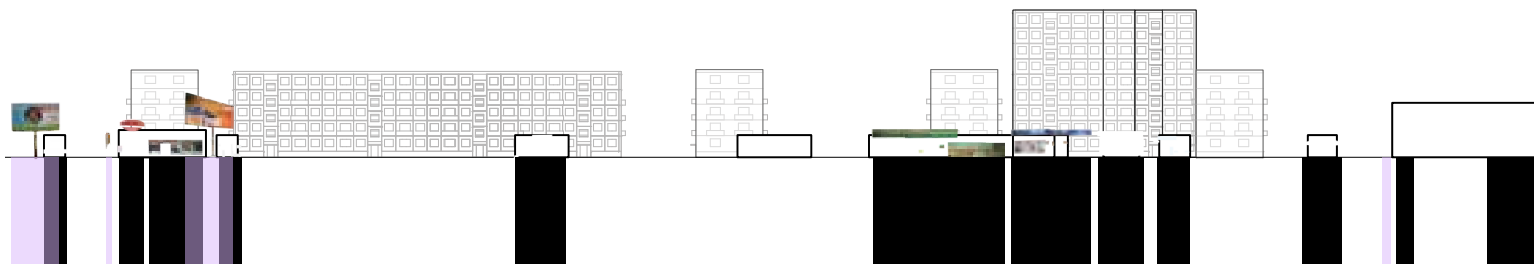
In conclusion there is a high commercial density but the street is too broad and too busy to really connect both sides with each other.

- relations in between of added shops
- space facing Henerala Petrova Str.
- shops direct connection to Henerala Petrova Str.

09 shops and their new created space, own graphic,



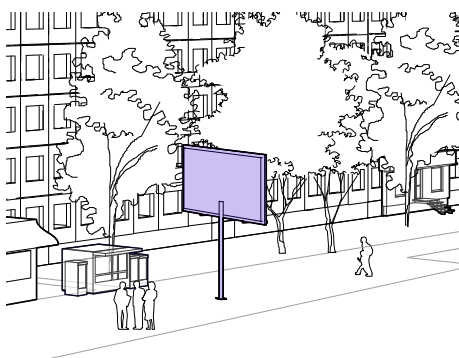




### How do the Shop advertise their Products?

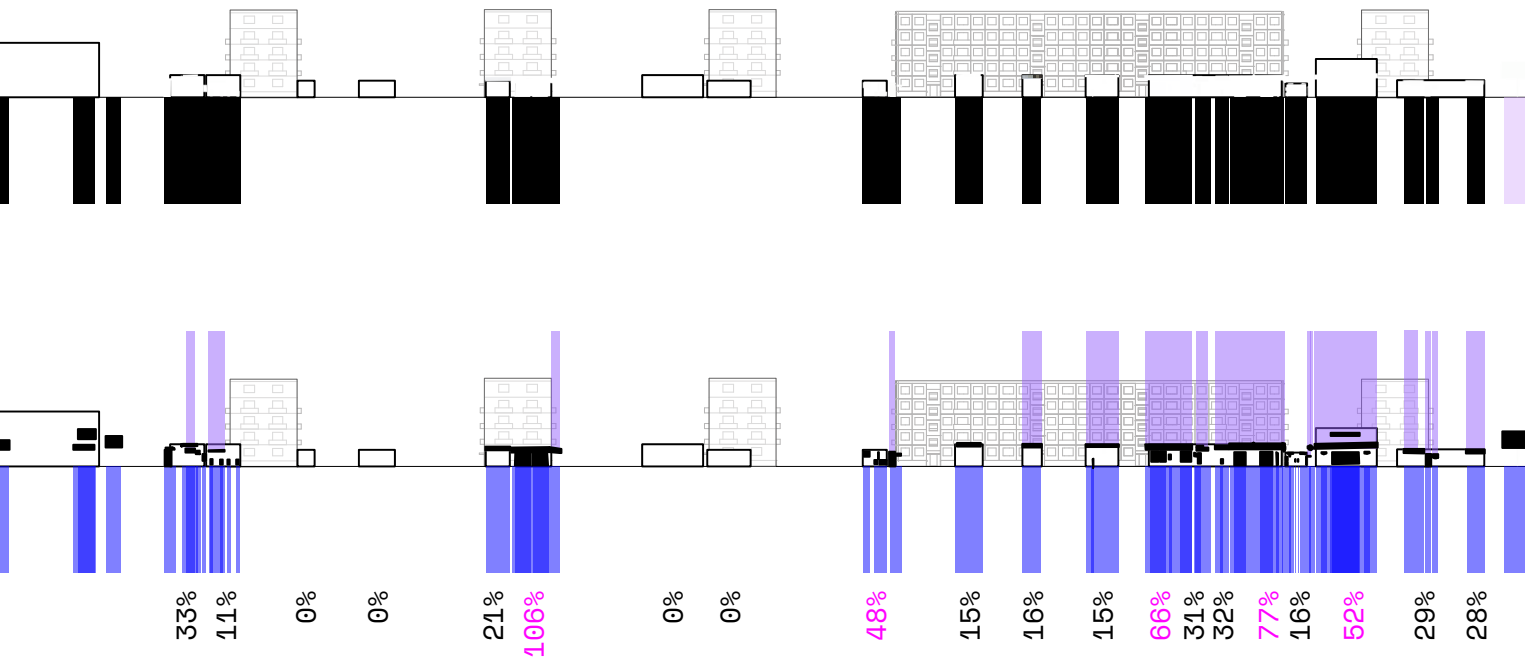
Since the high commercial density means a lot of competition for the shops, they tend to advertise their products loudly to get the attention of potential clients. A lot of shops use posters covering the whole shop facade to be visible from the street, other shops use luminous signs to stand out in the dark or use signs standing on the sidewalk to catch the eye of pedestrians not looking at the facades of the buildings.

The denser the shop structure in an area is, the more advertising occurs, as visible on the map above. Most advertising promotes shops or products sold nearby, only billboards close to the crossroads promote other products. Shops that use a lot of posters to advertise their products often also use luminous signs. This way the area ends up littered with dense information often overlaying each other. About half of the first floor area of the street is plastered with posters which also characterises the new street scapes of Chereomushki and especially the access points of the quarters.



#### advertising

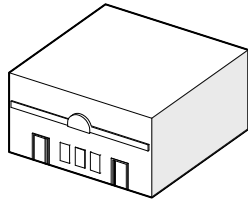
- advertising shop nearby
- not advertising shop nearby
- luminous advertising
- advertising overlay on facade



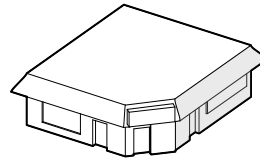
11.

10 billboards and posters, own graphic

11 advertising, own graphic

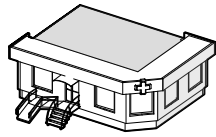


permantent shops

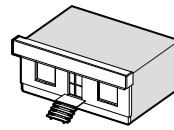


semi-permanent shops

free standing shops

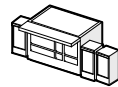


annex to existing building



completely built into existing housing units

housing expansion

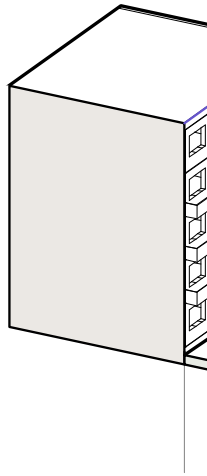


kiosk



stall

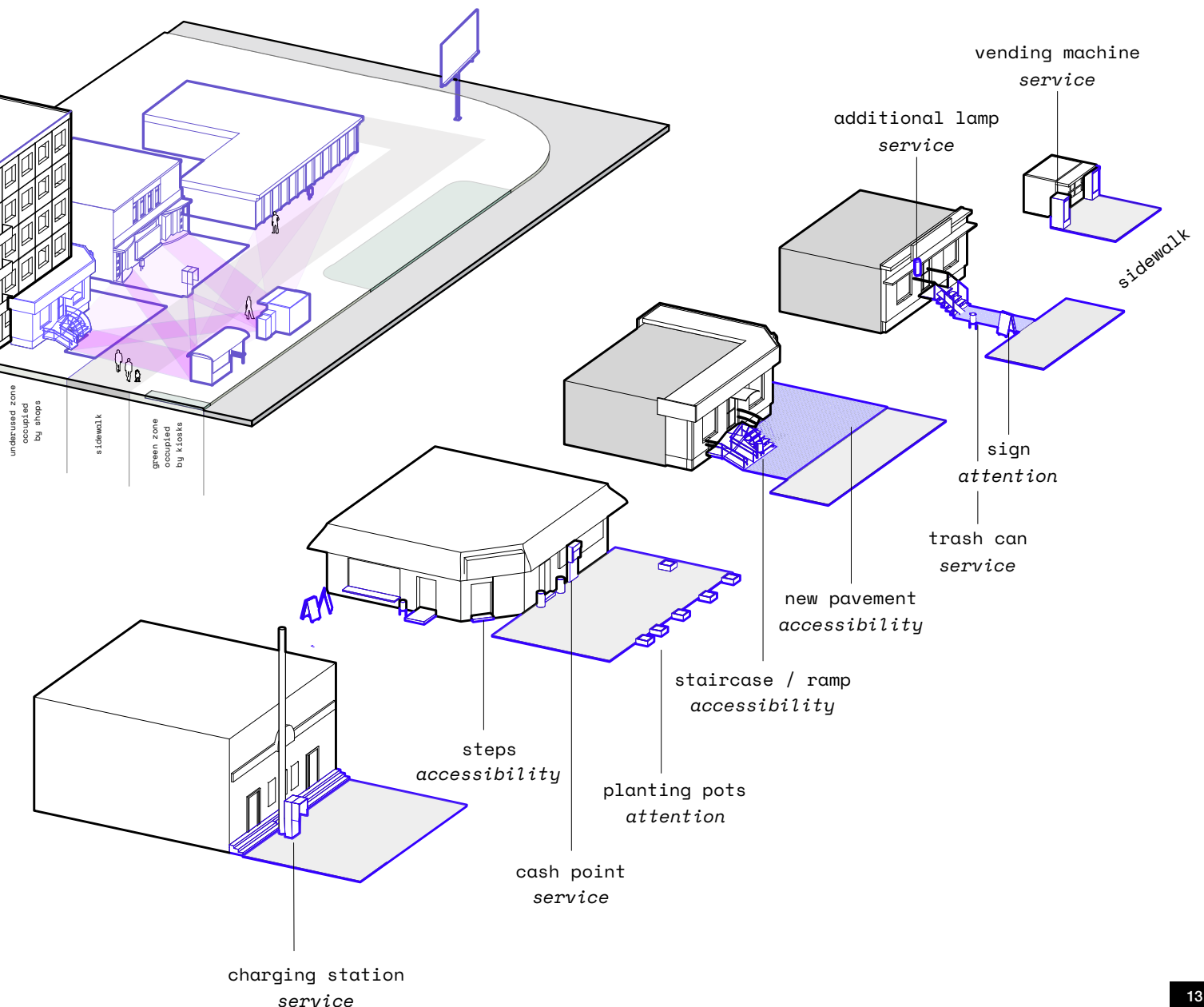
informal



### What Types of Shops are Typical for Heneral Petrova Street and how do they Impact their Environment?

The main types of free standing shops are permanent shops which are built out of concrete and have a base and semi permanent shops that could eventually be dismantled and erected somewhere else. These types are often occuring on the corners of crossroads as well as the entrance of small streets. Many of the first floor flats on the side of the street ewre transformed and sometimes extended to accomodate shops as well. These usually occur on the long sides or corners of the prefab housing units. Kiosk and small stalls are built close to the streets and easily removable. These shop typologies often have a high impact on their direct surroundings. Shop owners use the underused areas in between the housing units and the sidewalks to make their shop more welcoming, provide stairs and ramps, add new pavement to make the shops easier accessible, advertise their products and provide services like cash points for their customers. In many cases the entrances are blocked by trees and staircases have to be built





around them. If the shops are nearby each other, they often shape new meeting spots that maybe try to slow down potential customers passing by as seen in the second example above, where flowering pots are arranged in a way that people can't pass through that fast.

### Conclusion

Alltogether, even if the strict structure of Cheryomushki seemed unfit to house a large amount of commercial uses, shop owners found a way to meet the demands of the inhabitants through mostly informal shops. These shop sturctures reshape the sidewalks and green space, compete on the attention of the consumers but are not able to connect the wide street to one coherent walking space. They are partially unstructured and improvised but still able to form new meeting points reactivate underused zones in between of housing, the sidewalks and the street.

### impact of shops on surrounding

- Shops
- Sidewalks
- Adaptions on surrounding

List of References:

- ARCH+. (2011). Planung und Realität - Strategien im Umgang mit den Großsiedlungen
- BEHANCE. (2014) [accessed on 14.02.2019] <https://www.behance.net/gallery/15767771/Socialist-Housing-Slovakia>,
- FRENCH R. A. (1979). The Socialist City: Spatial Structure and Urban Policy
- HILPERT T. (1978). Die funktionelle Stadt: Le Corbusiers Stadtvision - Bedingungen, Motive, Hintergründe
- ISOCARP. (n.d.). [accessed 15.12.2018] [http://www.isocarp.net/Data/case\\_studies/1244.pdf](http://www.isocarp.net/Data/case_studies/1244.pdf),
- LE CORBUSIER. (1945). Grundfragen des Städtebaus
- MARTINY A. (1989). Bauen und Wohnen in der Sowjetunion nach dem Zweiten Weltkrieg: Bauarbeiterschaft, Architektur u. Wohnverhältnisse im sozialen Wandel
- MEUSER P. / TADORIN D. (2015). Towards a Typology of Soviet Mass Housing - Prefabrication in the USSR
- PETSCH J. (1975). Architektur und Städtebau im 20. Jahrhundert - Wohnungsbau. Sozialistischer Städtebau
- URBANISZIKA. (2006) [accessed 15.12.2018] [http://www.urbanisztika.bme.hu/segedlet/angol/panelstudy\\_cst.pdf](http://www.urbanisztika.bme.hu/segedlet/angol/panelstudy_cst.pdf)

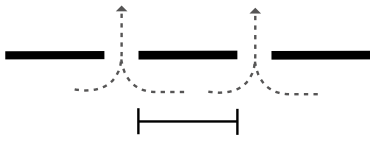
List of Figures:

- 01 the city of markets, own graphic, 2018
- 02 distance on a line, own graphic, 2018
- 03 radial distances 1, own graphic, 2018
- 04 radial distances 2, own graphic, 2018
- 05 changed Heneralá Petrova Street, own graphic, 2018
- 06 types of supply, own graphic, 2018
- 07 parking situations, own graphic, 2018
- 08 shops, their depth and height, own graphic, 2018
- 09 shops and their new created space, own graphic, 2018
- 10 billboards and posters, own graphic, 2018
- 11 advertising, own graphic, 2018
- 12 shapes of shops, own graphic, 2018
- 13 surrounding of shops, own graphic, 2018

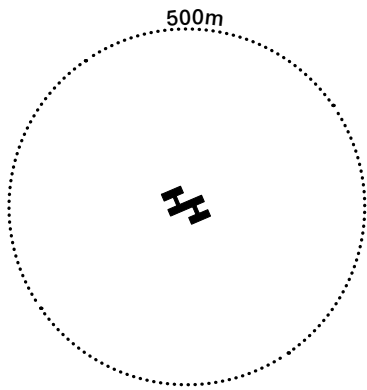


## Socialist City planning rules

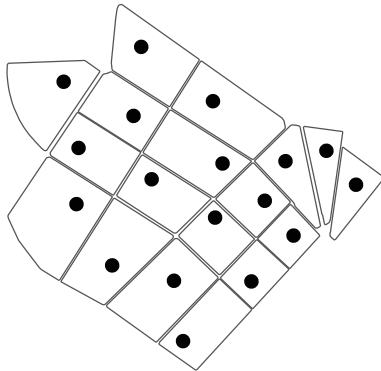
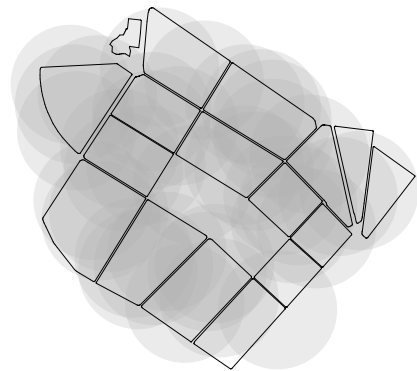
## Appearance in Cheryomushki



Accessibility



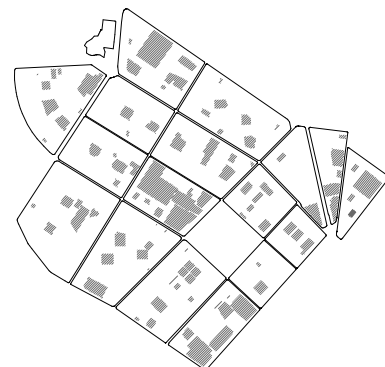
Educational reachability



Decentralization



Community Space



# Cheryomushki, a District based on Socialist City Planning Strategies

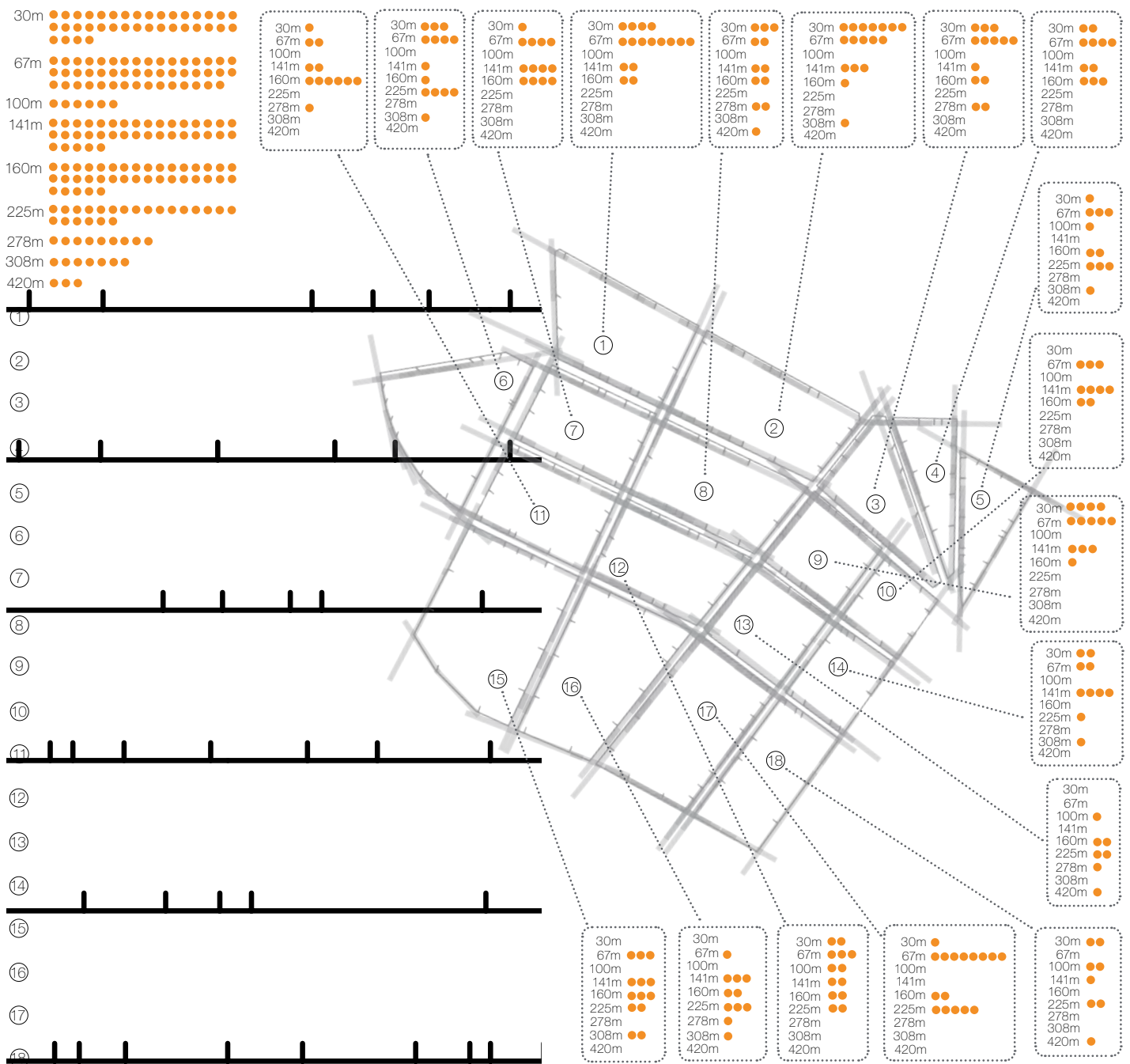
When dealing with an existing district in city planning, the background research concerning the ideals and goals of the original planning is a major aspect. The district of Cheryomushki in Odessa is obviously a top down planning situation, strongly influenced by the architectural believes of modern times as well as the Soviet city planning (cf. Klett, 2012). This chapter aims for discovering the basic rules of socialist planning and analyzing them in the context of Cheryomushki.

A literature research revealed planning restrictions and requirements a city planner had to deal with in the 1950s in socialist cities. For further investigation four topics were chosen. The first and second topic concern exact measurement limitations, namely the distance between two entries into a microrayon being smaller than 300 m and the reachability of educational institutions within 500 m. The third aspect comes with the socialist ideal of equality among the inhabitants and therefore a general idea of decentralization of everyday needs. As a fourth aspect the former Soviet believe of shared ground leads to the aspect of ownership and restrictions in after Soviet times. For all topics the basic question is if one can find them in Cheryomushki and how they come into appearance. To investigate the issues on different scales the district and a microrayon are considered.

## Socialist City Planning

In the history of the Soviet Union as a socialist republic under the power of Stalin, city planning focused on representative buildings, while people lived in community housings, having little private room and sharing bathrooms and kitchens (cf. Dekoder, 2017). The beginning of the era of Khrushchev was marked with a promise of a private flat for everybody and a turn towards the ideals of modern city planning. Among the trend towards urbanization a major demand of new flats arose and was tried to be solved in housing districts like Cheryomushki in Odessa. Ideals of modern believes like the division of housing and working or floating room became part of the new rational city planning structure (cf. Goldzamt, 1974, p. 154). Other than in western European district planning the believe in a social community and equality played a major role and established socialist city planning. It led to the formation of Microrayons meant to become the center of community life as they group several housing buildings surrounding a communal green center with schools and kindergartens.

01 Illustration of socialist city planning rules, Hägle u. Flicker, 2018



02.

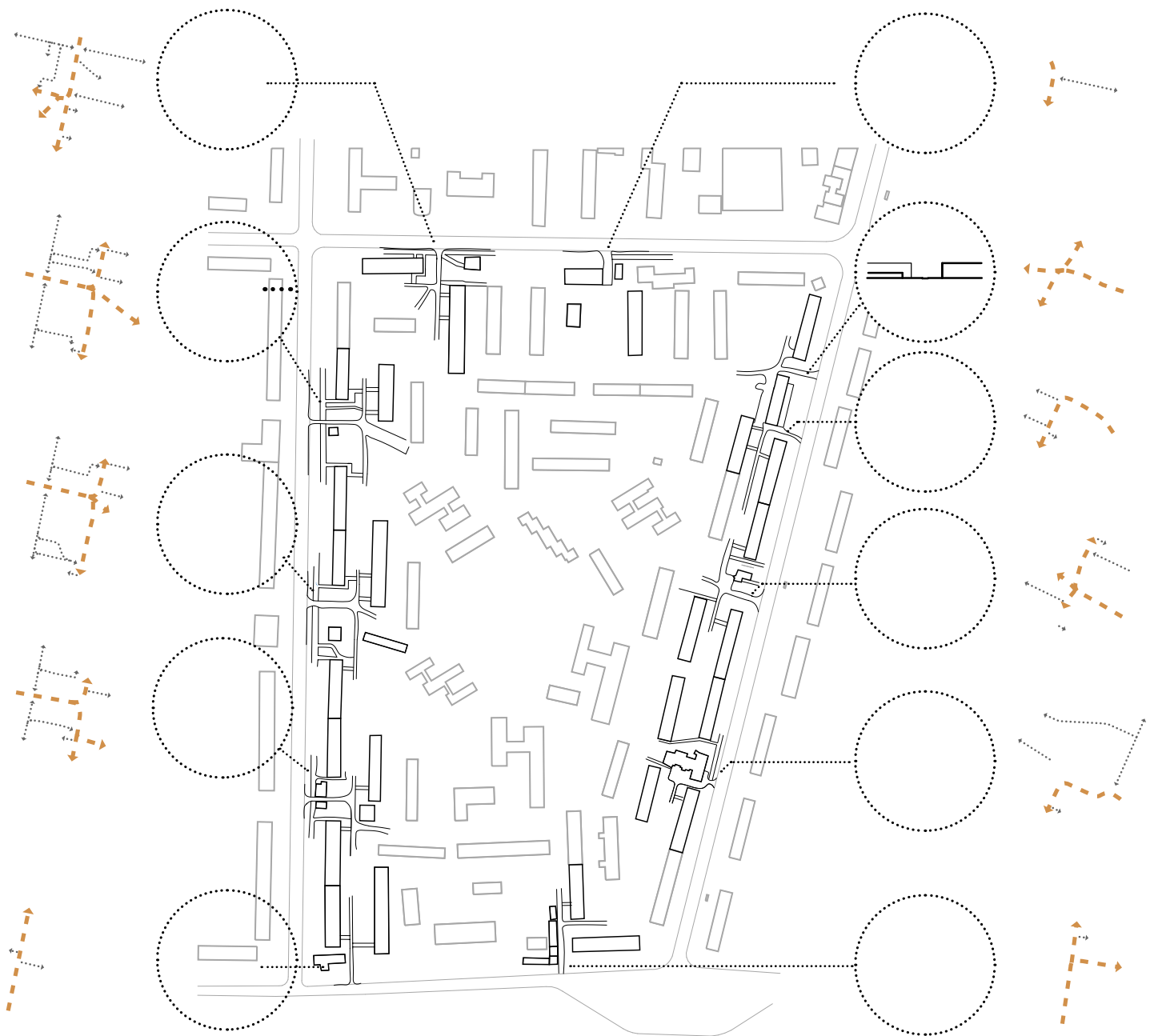
### Microrayon Accessibility

Looking at the first Socialist City planning rule concerning the accessibility of each microrayon, entrances to the microrayons should have a distance to each other that have a maximum length of 300m to ensure short ways to the public transportation system (cf. Comin, 2018). An overlapping of a 300 m distance (02) all over Cheryomuski shows a high density of entrances which comes from short distances between the entries. To see the density of entrances for each microrayon the outlines of the microrayons have been unrolled which indicates the relation between the length of the microrayon outline and the density of its entrances. At first sight it seems like no system of distances lies behind. But with a deeper glance nine different typologies of length can be identified. The map (02) shows the amount and the places of appearance of each typology all over Cheryomushki. The amount of entrances split into the certain typology distances shows a higher amount of short distances like 30m or 67m and also a high amount of 141 m and 160 m distances appearing all over Cheryomushki. Just a small amount of

### Cheryomushki, Microrayon accessibility

- entrances
- frequency of entrances typologies

02 Cheryomushki accessibility, Hägle u. Flicker, 2018



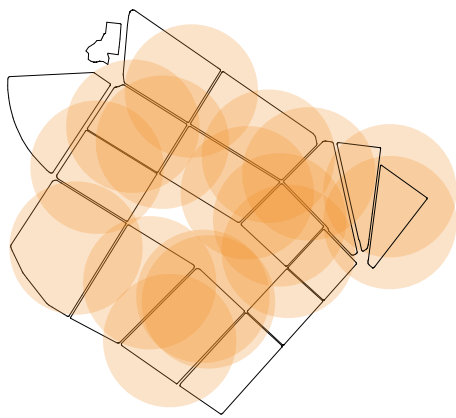
03.

entrances is further away from each other than 278 m and only ten entrance distances can be excluded from the rule because they exceed the maximum length of 300 m. Regarding the entrances on the scale of the microrayon the map (03) points out the typology of each entrance in different manners. The size and proportion of the entrance space is analyzed by several elevations. The rate of built-up spaces in between the entrance spaces can also be identified in these elevations. It shows a division of the microrayon in eastern and western parts. Therefore, the eastern entrance space is quite smaller than the western entrances and the percentage of built-up spaces is higher in the eastern parts. Beneath the elevations, the streets and pathways leading to the inner parts of the microrayon are showing a distribution between the eastern and the western part of the microrayon. While the street system is nearly the same, the system of the pedestrian pathways is more complex in the western part, what indicates a changing usage of the entrances, meaning a higher density of pedestrians in the western entrances.

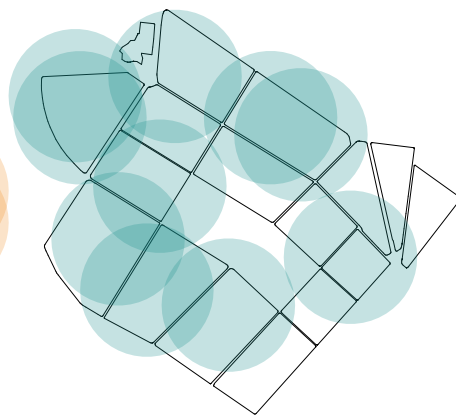
### Microrayon Accessibility

- car and pedestrian streets
- pedestrians pathways

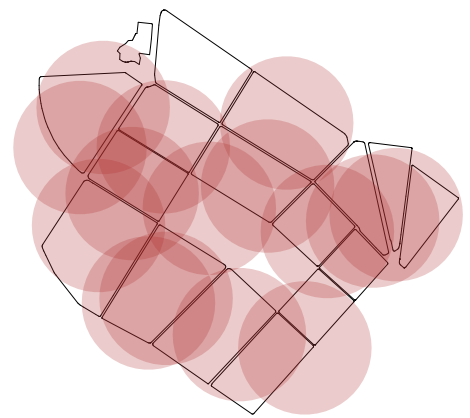
03 Mikrorayon accessibility, Hägle u. Flicker, 2018



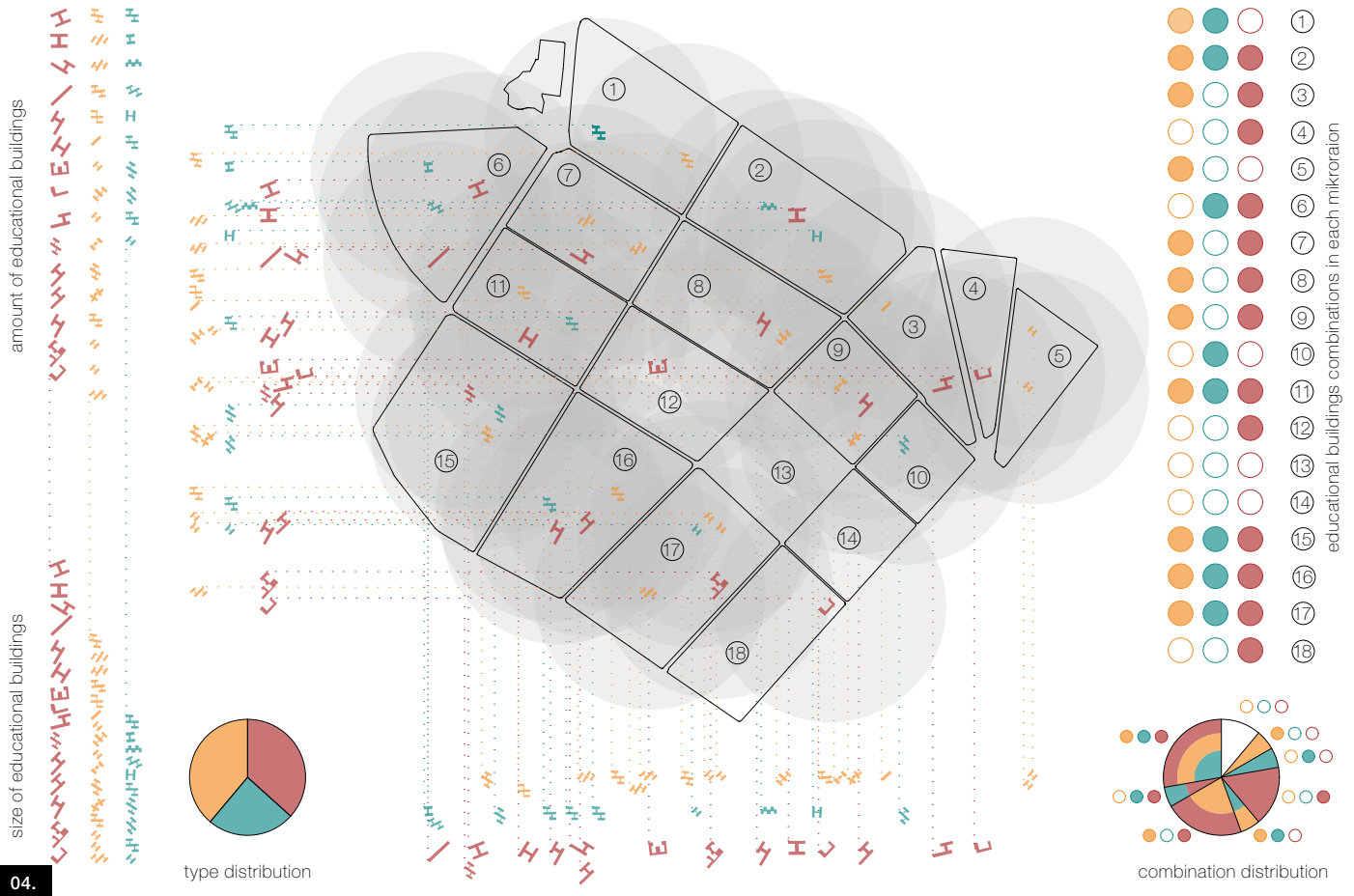
kindergarten/ preschool distribution



primary school distribution



secondary school distribution



04.

### Educational Reachability

One basic believe of the socialist city planning describes the reachability of every day needs within 500 meters. As one main social aspect of a society is the education of the youngest members, the socialist city planning aimed for an evenly distributed system of schools throughout the district. In the above maps the distance is under investigation for the instances of school buildings. Basically, they can be divided in three types: kindergarten, primary school and secondary school.

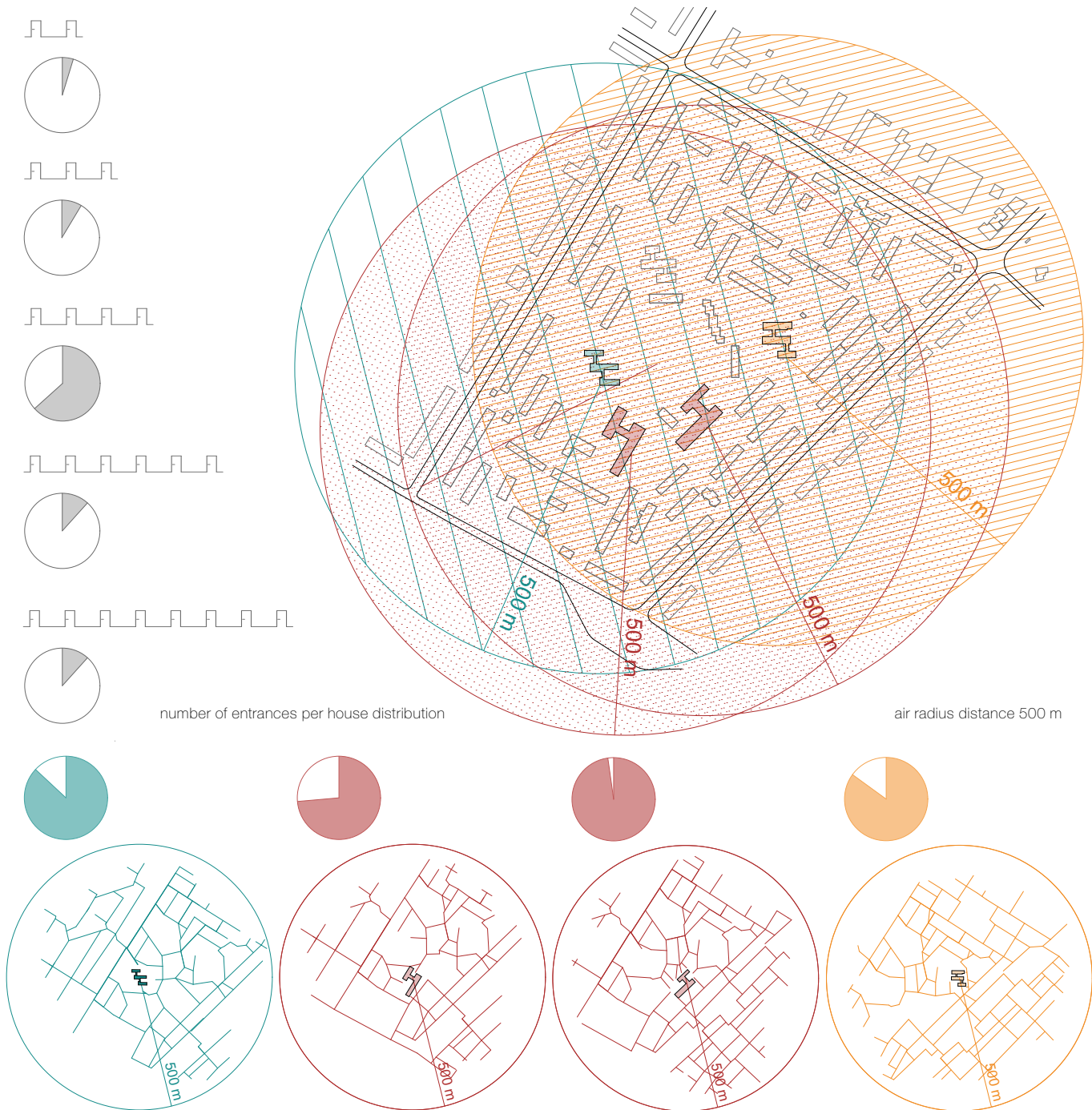
The highest density of an institution type is seen for kindergartens, whereas the buildings for secondary schools are the largest in size. The number of primary schools is rather small and only in eight out of 18 microrayons a building of this type is located, whereas in five out of 18 microrayons each school type is represented. In the top part of map 04. heat maps illustrate the distribution and coverage of xthe different school types. Especially the primary school coverage shows some uncovered areas. To get a closer look at the reachability the microrayon 16 is further mapped in a smaller

### Cheryomushki Educational reachability

- kindergarten/ preschool
- primary school
- secondary school

04 Cheryomushki educational reachability, Hägle u. Flicker, 2018





05.

scale. It contains one kindergarten, one primary school and two secondary schools and therefore all institution types are represented here. Again, the distance of 500 m seems to cover most of the Mikrorayon area as shown in the upright part of map 05. To see how well the residential buildings of this Mikrorayon are supported by its own educational structures the walking distance of 500 m from each school building is displayed in the lower part of map 05. and compared with the number of residential buildings entrances that are covered within that reach. This shows that the walking distance covers less than the 500 m air radius suggested but differs mainly by the location within the Mikrorayon. Especially in the northern part the system seems to be supported by the surrounding Mikrorayons or just extend the 500 m.

Residential buildings can in general be divided into 5 different types by the amount of entrances. Most buildings are four entrance houses as the basic type of prefabricated Khrushchovka (cf. Dekoder, 2017).

### Mikrorayon Educational Reachability

- kindergarten/ preschool
- primary school
- secondary school

05 Mikrorayon educational reachability, Hägle u. Flicker, 2018



06.

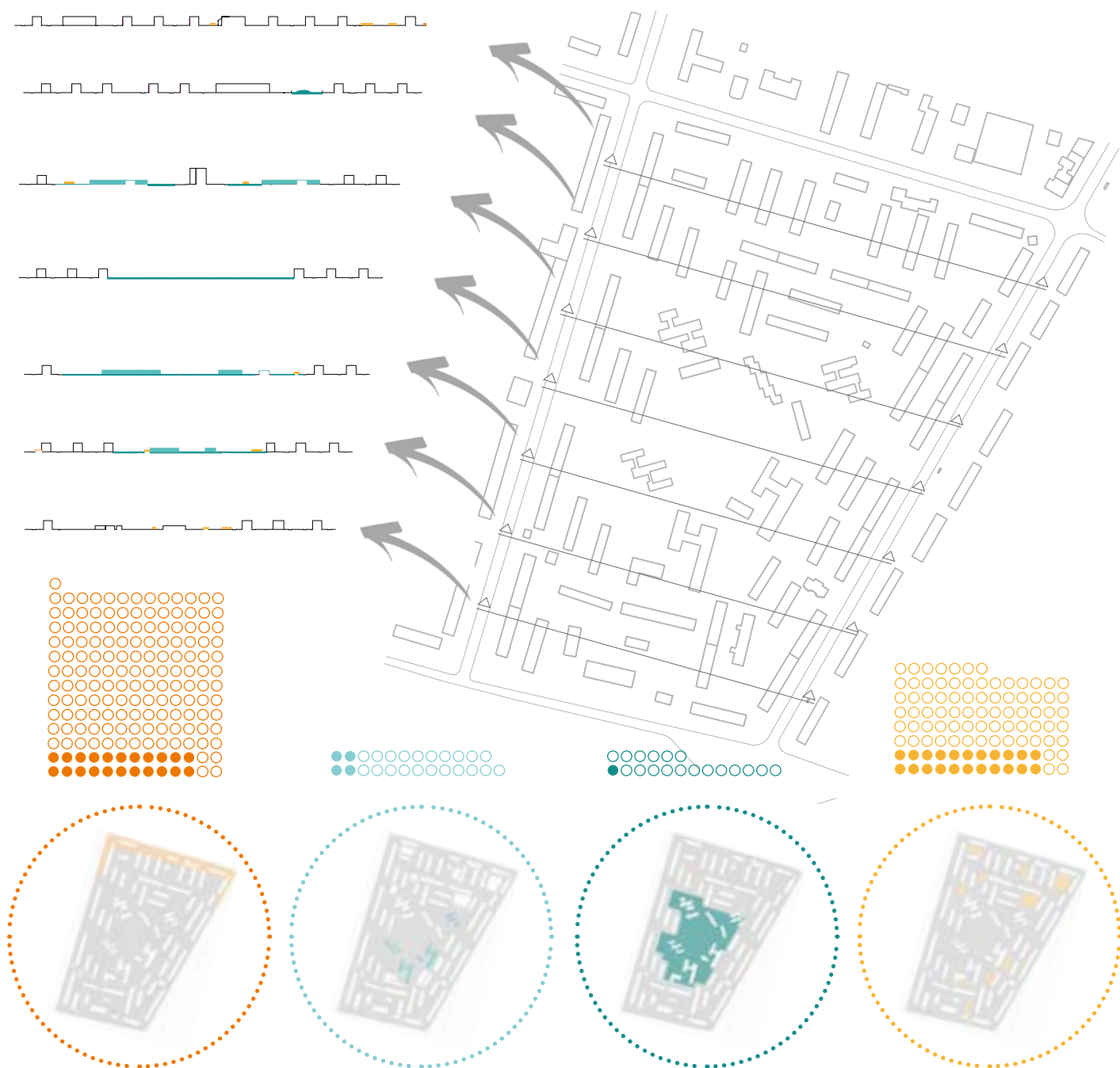
## Decentralization

Since the decentralization of functions is a big topic in the socialist city in terms of supply the third socialist city planning rule treats the topic of decentralization within Cheryomushki (cf. French & Hamilton, p. 60). The map (06) is divided into four subtopics green spaces, educational buildings, small shops and garage hotspots. As a part of the original planning, the green spaces and the educational buildings can be defined as functions coming from the socialist heritage, while small shops and garage hotspots arose as supplements to fulfill the needs in Cheryomushki. The decentralization of the second category shows an accumulation of functions which indicates places where these daily functions are needed. Considering each of the subcategories, they all show a high distribution with certain densities or gaps. Except for one microrayon each microrayon has at least one bigger green space. In contrast, the educational buildings show a higher density in the southwestern part of Cheryomushki and they show a gap in the central part, concerning the Gorki Park. The subcategories covering the additions

### Cheryomushki, Decentralization

- Small Shops
- Garage Hotspots
- Green Spaces
- Educational Buildings
- Lack of Needs
- Socialist Heritage

06 Cheryomushki decentralization, Hägle u. Flicker, 2018



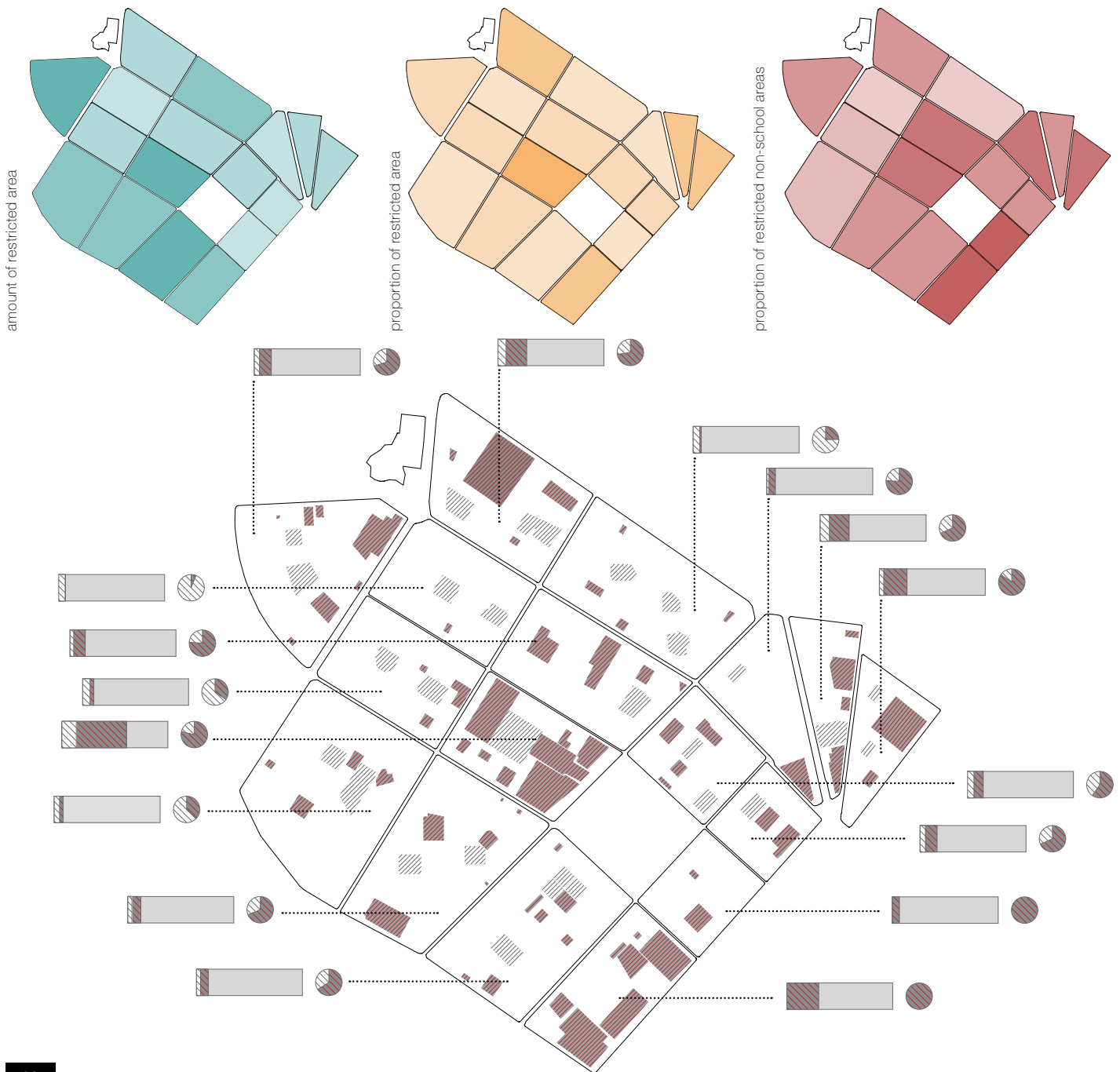
07.

seem to be spread all over Cheryomushki. By analyzing the location of the small shops, there is a high density towards the districts center. This accumulation of shops indicates that several functions work better when centralized. The small shops also tend to appear next to street crossings and corners of the Microrayons. By checking the locations of the garage hotspots, it becomes apparent that there is a density in the south and in the northeast. Beneath the location of the decentralized functions the map (07) shows the amount of appearances of each subcategory in the whole district and a rate of this amount appearing in the Microrayon and where they are mainly located within the Microrayon. By section the Microrayon every 100m the map (07) points out the proportions of the functions within the Microrayon. Comparing the sections with the amount, functions appearing in small amounts have a stronger appearance within the Microrayon because of their proportions. the amount, functions appearing in small amounts have a stronger appearance within the Microrayon because of their proportions.

**Microrayon**

- Small Shops
- Garage Hotspots
- Green Spaces
- Educational Buildings
- Existing amount in the district
- Existing amount in the Mikrorayon

07 Mikrorayon decentralization, Hägle u. Flicker, 2018



08.

### (Non-) Community Space

The last investigated soviet planning ideal is the governmental ground ownership (cf. Klett, 2012). For the reason of securing the children in the play area of kindergartens and primary schools the surrounding ground was fenced and therefore right in the beginning separated from the general community space. After the end of the regime, private and public appropriation took place and certainly further areas got disconnected by fences or walls from the general open space (cf. Goldzamt, 1974, p. 276). All of these borders interrupt the modern ideal of a floating space. In map 08. the fenced areas are shown, divided in original separations for educational safety reasons and later added borders. The restricted areas differ in size and amount throughout the different mikroraion. The heat maps in the upper part of map 08. display this distribution for the separate aspects. In general, one can see that the “center” mikroraion is highly covered with a big number of restricted areas that are mainly non-educational purposes. For the aspect of the amount of different fenced buildings a tendency towards a crowded

#### Cheryomushki (Non-) community space

- amount of restricted areas
- proportion of restricted area
- proportion of restricted non-school areas
- restricted school areas
- restricted non-school areas
- non-restricted mikroraion area

08 Cheryomushki (Non-) community space, Hägle u. Flicker, 2018



ground occupancy

bordertypes around the fenced areas

biggest borders found on site

09.

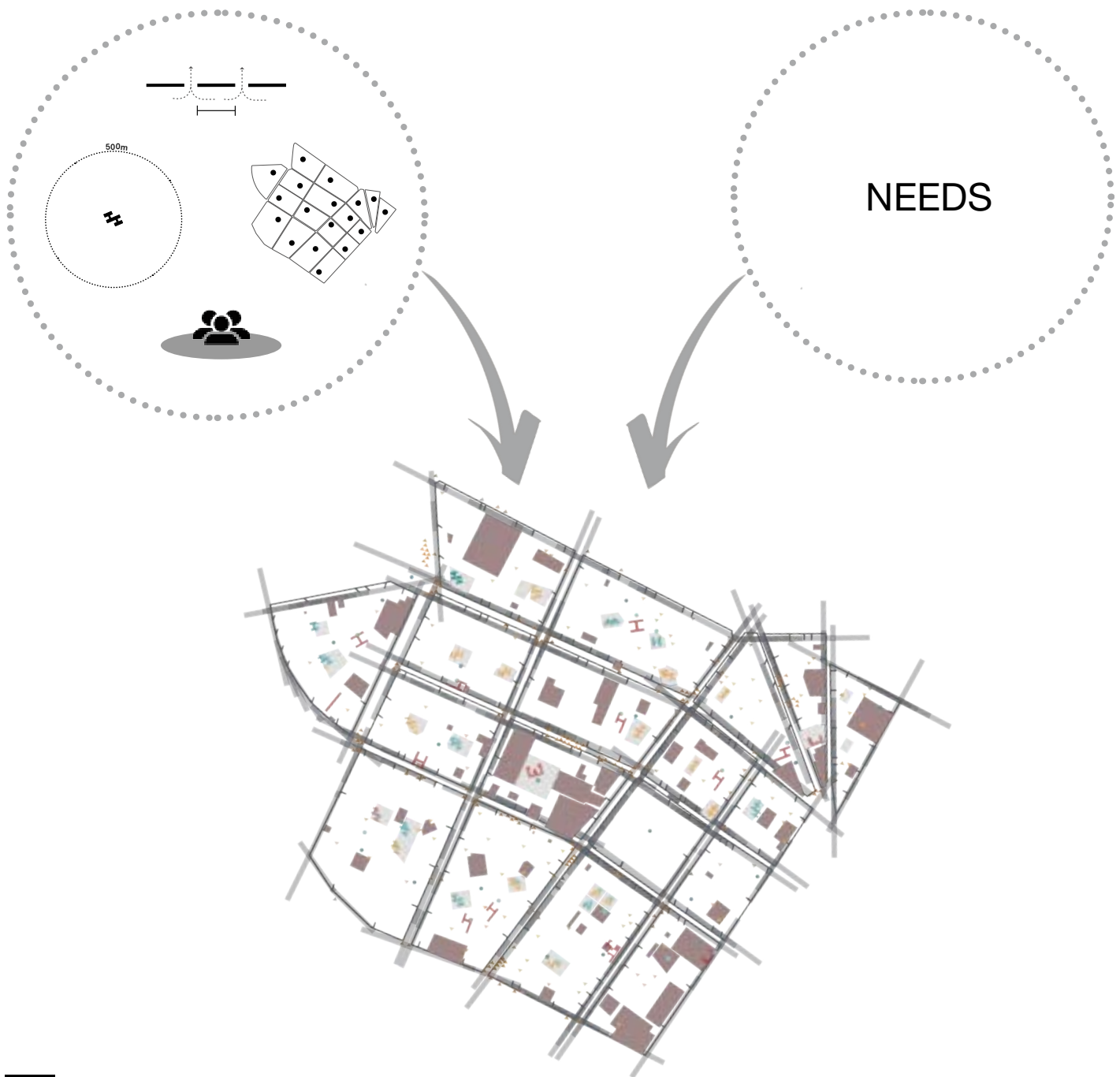
southwest can be spotted in the left heatmap. The middle one shows in contrast a rather evenly distributed proportion of the covered ground compared to the general ground of the single microrayon. The distribution of the proportion of non-educational fenced buildings show a tendency towards higher appropriation towards the south-east.

In the zoomed in microrayon in map 09 seven areas are restricted today, where five are bigger ones and two smaller ones. Two of the bigger restricted areas are for educational purpose, one is for industry and one for official use. The two smaller ones come with restaurants. The restrictions come with different types of borders, as there are fences, walls or even buildings included. Despitew all these restrictions the size of the free area after subtracting the street space, building area and the restricted area is still making up more than 65% of the microrayon area. This fact is rather surprising, as the impression of the open space on site was rather fragmented. This leads to the assumption that further borders and interruptions might be found in the microrayon.

### Microrayon (Non-) community space

- traffic ways
- open ground
- built on ground
- restricted areas

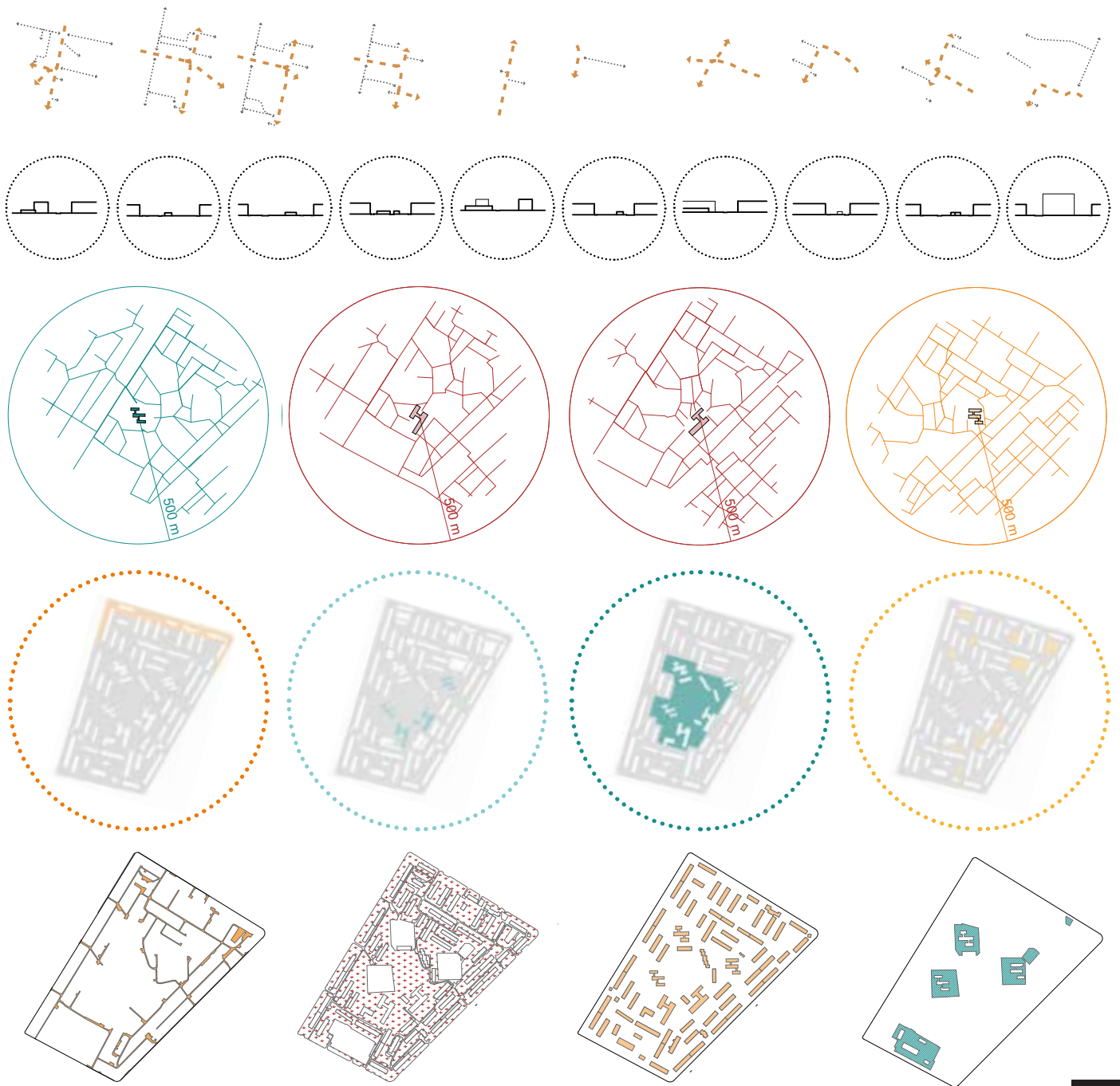
09 Microrayon (Non-) community space, Hågle u. Flicker, 2018



10.

## Conclusion

The investigation of the four chosen rules for socialist city planning in this chapter has pointed out the formal application of the rules in a top down planning. In general, the given rules have been applied all over Cheryomushki and therefore form a solid soviet planning frame, which is still visible today. As districts usually change over time with new inhabitants or as in the case of Cheryomushki even a change in the political system their appearance today differs from the originally planned layout. These supplements are caused by the unfulfilled and changing needs of inhabitants. By looking at these additions to the system an important fact is how they have been developed in the district. By analyzing and comparing the supplements with the basic rules that were chosen in the beginning, it first seems like they have their own systematic or even none. But when looking at it more closely it shows a high rate of correspondence to the systematic of the basic rule. Besides the usage of the socialist city planning rules and where their limitations are, the chapter also dealt with the question how the analyzed rules



appear in the microrayon in Cheryomushki. Comparing the appearance of the four topics that are displayed in the maps, they seem not to have any similarity in their tasks, especially because they cover two different sorts of rules – the measurable rules and the abstract rules, but in the end, the mapping highlights one common aspect – there is an underlying system in every appearance of the rules and their descendants. The rules once had been set up to form a city which followed a specific political system, but when changing the system, the rules need to be adapted as well. Furthermore, one limitation of the rules is caused by the changes of the society after the end of the socialist regime. When the society changes the strictness of the rules is not only providing a clear system for the urban planning, but it is also too rigid when it comes to the specific needs of the inhabitants. Nowadays, the socialist city planning rules can be seen as a toolbox for urban planning which needs to be used carefully and has to be complemented with the specific needs of the inhabitants.

11 Microrayon conclusion, Hägle u. Flicker, 2018

#### List of References:

- Barth, H., Butter, A. (Hg. 1998): Projekt Sozialistische Stadt: Beiträge zur Bau- und Planungsgeschichte der DDR. Reimer, Berlin.
- Bolz, L. (Hg. 1951): Von Deutschem Bauen : Reden und Aufsätze. Verlag der Nationen, Berlin.
- French, R. A., Hamilton, F. E. I. (Hg. 1979): The Socialist City - Spatial Structure and Urban Policy. John Wiley & Sons, Chichester.
- Goldzamt, E. (Hg. 1974): Städtebau sozialistischer Länder: soziale Probleme. Verlag für Bauwesen, VEB, Berlin.
- Gray, G. H. (Hg. 1946): Housing and Citizenship: A study of low-cost housing. Reinhold Publishing Corporation, New York.

#### Sources

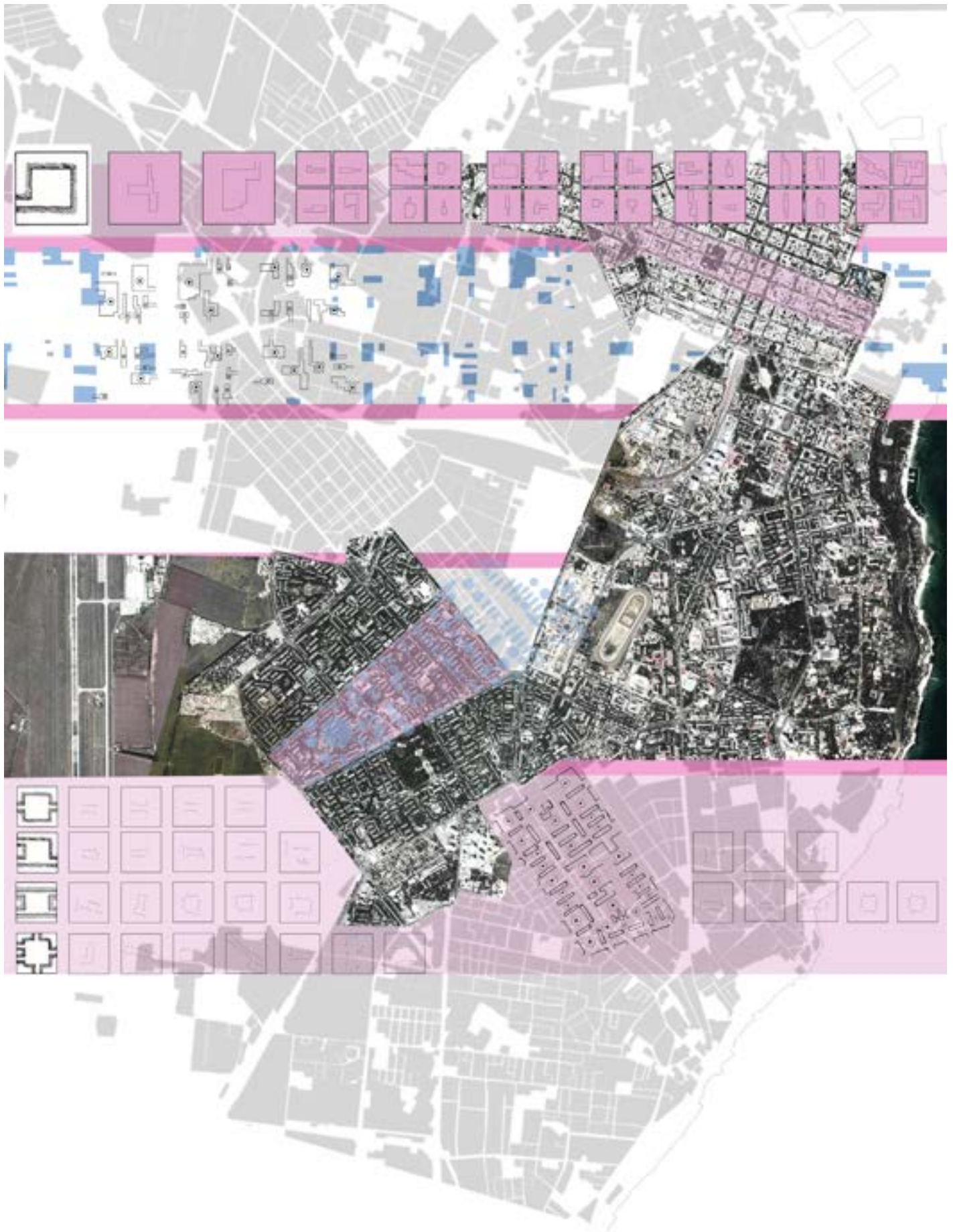
- <https://www.dekoder.org/de/gnose/chruschtschowki-plattenbau-oster-man-chruschtschow>. Abgerufen am 20.12.2018.
- <http://commin.org/en/bsr-glossaries/national-glossaries/belarus/mikrorayon--microdistrict.html>. Abgerufen am 20.12.2018.
- <https://www.klett.de/alias/1004536> Abgerufen am 20.12.2018.
- <https://service.ombk.odessa.ua/portal/apps/webappviewer/index.html?id=b31cc5f267c740aca33f5893c3dc9c45>. Abgerufen am 20.12.2018.
- <https://www.youtube.com/watch?v=yKQHaY84pd0>. Abgerufen am 20.12.2018.

#### List of Figures:

- 01 Illustration of socialist city planning rules, Hägle und Flicker, 2018.
- 02 Cheryomushki accessibility, Hägle u. Flicker, 2018.
- 03 Mikrorayon accessibility, Hägle u. Flicker, 2018.
- 04 Cheryomushki educational reachability, Hägle u. Flicker, 2018.
- 05 Mikrorayon educational reachability, Hägle u. Flicker, 2018.
- 06 Cheryomushki decentralization, Hägle u. Flicker, 2018.
- 07 Mikrorayon decentralization, Hägle u. Flicker, 2018.
- 08 Cheryomushki (Non-) community space, Hägle u. Flicker, 2018.
- 09 Mikrorayon (Non-) community space, Hägle u. Flicker, 2018.
- 10 Cheryomushki conclusion, Hägle u. Flicker, 2018.
- 11 Mikrorayon conclusion, Hägle u. Flicker, 2018.
- 12 Chruschtschowki - birth of prefabricated masshousing, Hägle u. Flicker, 2018.







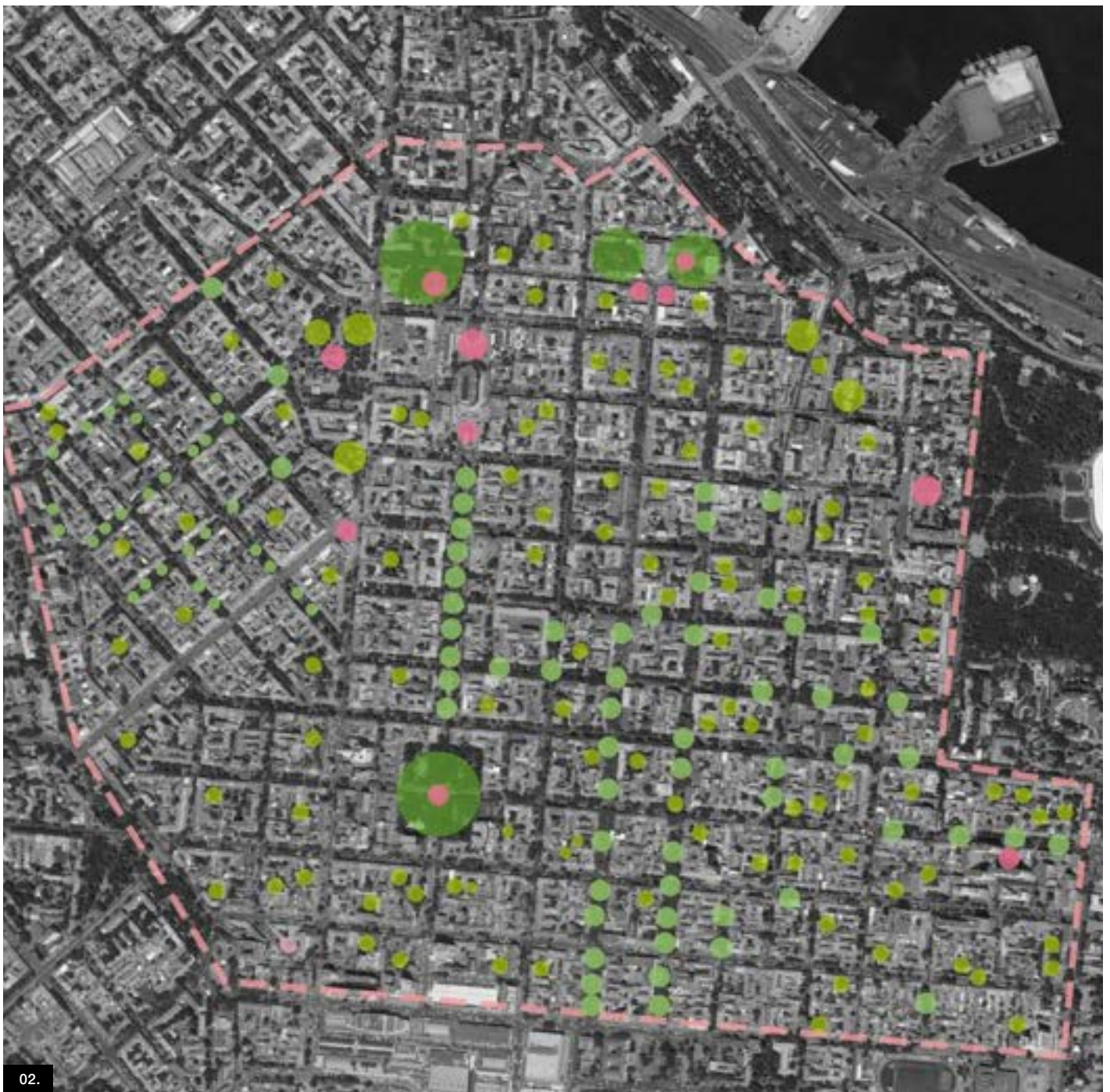
Odessa is an ancient city founded in 1794. It became a modern port city in the nineteenth and twentieth centuries. Due to its long history and modernization process, odessa has both the spatial structure of ancient cities and modern cities.

In this context, we can discover significant differences between public spaces in ancient cities and modern cities. So this question has aroused our interest, how urban modernization affects open space. We think that the spaceform the type of space and the scale of space are essential element of space. We separately studied the functions and forms of public spaces in ancient cities and modern cities. Then compare the analysis results. We hope to study the impact of urban modernization on public space by comparing the shape of public spaces in urban centers (ancient cities) and Cheryomushki (modern cities). Through this comparison, this mapping intends to reveal, how are various types of public spaces distributed in modern cities and ancient cities? How does urban modernization affect the spaceforms? Based on the conclusion of those issues, we also hope to explore the trend of public space development.

## Urban Open Space Evolution

Urban modernization refers to the balanced and coordinated operation of the city's multi-functional subsystems in a modern way, so that the overall development and competitiveness of the city can reach the advanced level of the era. It is a complex historical development process and is phased. In this process, public space has also been greatly changed.

From ancient times to industrial times, the architectural space was changed from closed to open, from rigid to free. The function inside the building is not as single as it was in ancient times, but it becomes difficult to define. At the same time, the boundaries between space and space in the building are less obvious. Urban modernization has largely changed the interior of the building. We can't help but wonder if urban space has also been greatly affected. Is the trend of the interior space of the building equally applicable to urban space?



The structure of the city center is similar to that of the traditional European city block. The open space of the city center is mainly composed of inner courtyards, urban parks and urban green belts in the building blocks. It can be seen from the figure that the functional classification of these open spaces is very clear. Because the size of the block is relatively small and dense, and the streets are also vertically staggered, the traffic system in the city center is more efficient, and the main parking space is distributed on both sides of the street.

### Types of Open Space

- Gardens and Parks
- Natural and seminatural Space
- Green corridor
- Square
- Playground



03.

Compared to the city center of Odessa, the public space scale of cheryomuski is too large. The boundaries between various public spaces are less obvious, and the functions also show a mixed state. In addition to the central green space, each community also has small central green spaces, but the green spaces are mixed with other public space types such as playgrounds. Square market and the commemorative space are mainly distributed throughout the center of the area, while the playground is distributed in the center of the block, while there are many undefined spaces inside the block. It can be found that in modern cities in Cheryomushki, the funtions are more mixed and complecated. Complexity of functions and the trend of mixing seems to be not only suitable for architectural spaces, but also in urban public spaces.

### Types of Open Space

- Gardens and Parks
- Natural and seminatural Space
- Green corridor
- Square
- Playground

03 Types of open space in Cheryomushki ,own graphic,2018



### Photos of Open Spaces in City Center

The above picture shows the different types of public spaces in the city center. It can be seen that the parking is mainly concentrated on both sides of the road (04 and 05). Sports equipment is also rare in urban centers (05). It is mainly located in parks and central green spaces. However, there are many scattered semi-green spaces in the city center, and there are also concentrated distribution of public facilities such as benches (06). The courtyard between the buildings are relatively narrow (07). The parks in the city centre are small and scattered. The green belts in the city center are also distributed in strips on both sides of the road (08 and 09).

04 Photos of open spaces in Cheryomushki, google maps, 2018

05 Photos of open spaces in Cheryomusiki, google maps, 2018

06 Photos of open spaces in Cheryomushki, google maps, 2018

07 Photos of open spaces in Cheryomushki, google maps, 2018

08 Photos of open spaces in Cheryomushki, google maps, 2018

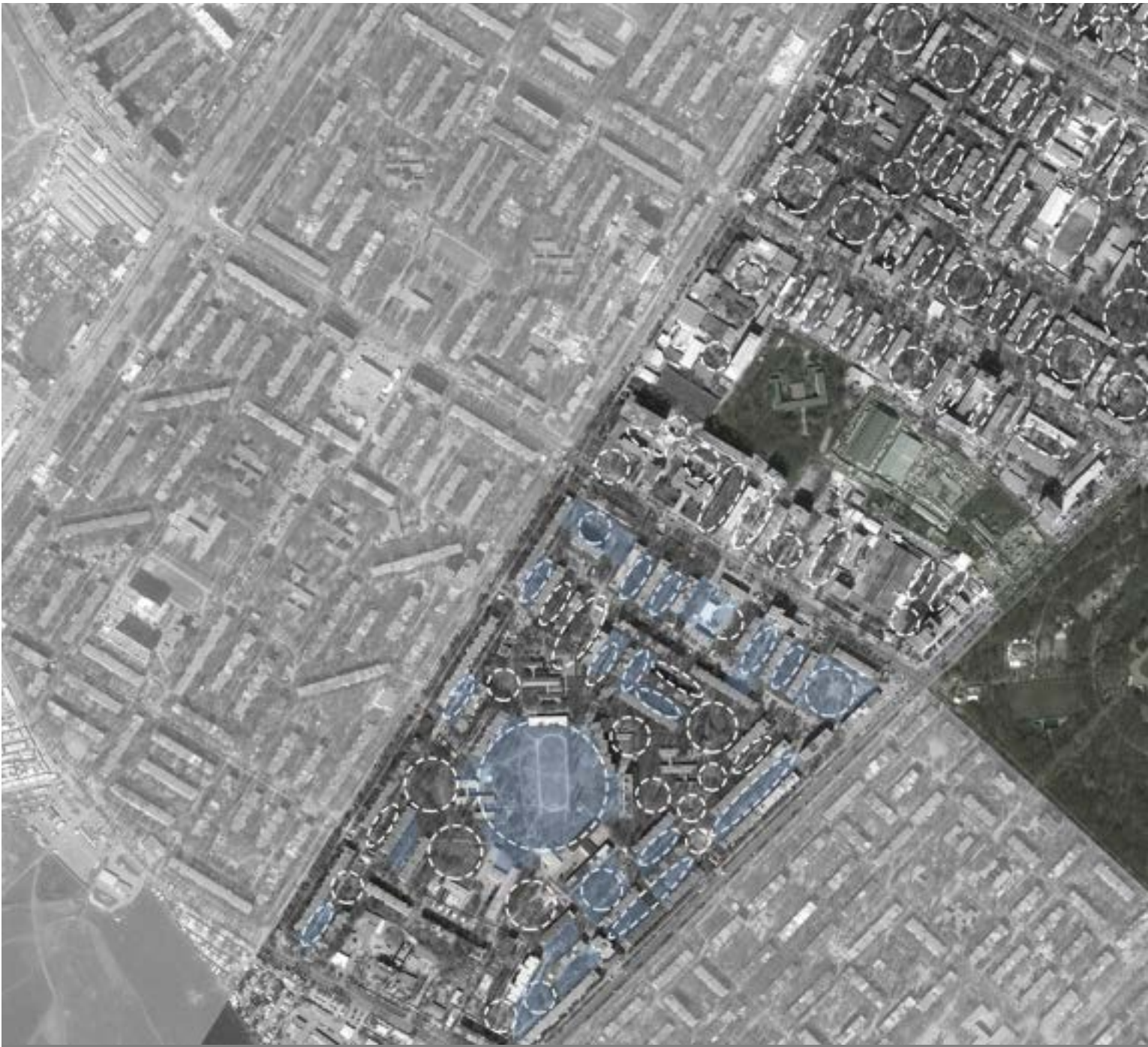
09 Photos of open spaces in Cheryomushki, google maps, 2018



### Photos of Open Spaces in Cheryomushki

The above picture shows the different types of public spaces in cheryomushiki. It can be seen that parking in this area is mainly distributed around the houses and there is a relatively small parking lot( 10). Each community has its own sports space, and the open space is more spacious and highly mobile (11). There are scattered semi-natural spaces between the houses, small areas of greenery or private gardens (12). There is no more intimate inner courtyard, and there is a long strip of courtyard space between the buildings (12 and 13). The parks of cheryomushiki are relatively large and concentrated.

- 10 Photos of open spaces in Cheryomushki, google maps, 2018
- 11 Photos of open spaces in Cheryomushki, google maps, 2018
- 12 Photos of open spaces in Cheryomushki, google maps, 2018
- 13 Photos of open spaces in Cheryomushki, google maps, 2018
- 14 Photos of open spaces in Cheryomushki, google maps, 2018
- 15 Photos of open spaces in Cheryomushki, google maps, 2018



### **The Shape of Open Space in Cheryomushki**

There are two center greens in Cheryomushki. But the central green space does not form a distinct axis to form control over the entire area. Inside the block, the distribution of public space is somewhat confusing, and we can't clearly define the boundaries of space. You can only roughly determine the center and direction of the space. The entire block is full of narrow spaces and semi-open spaces.





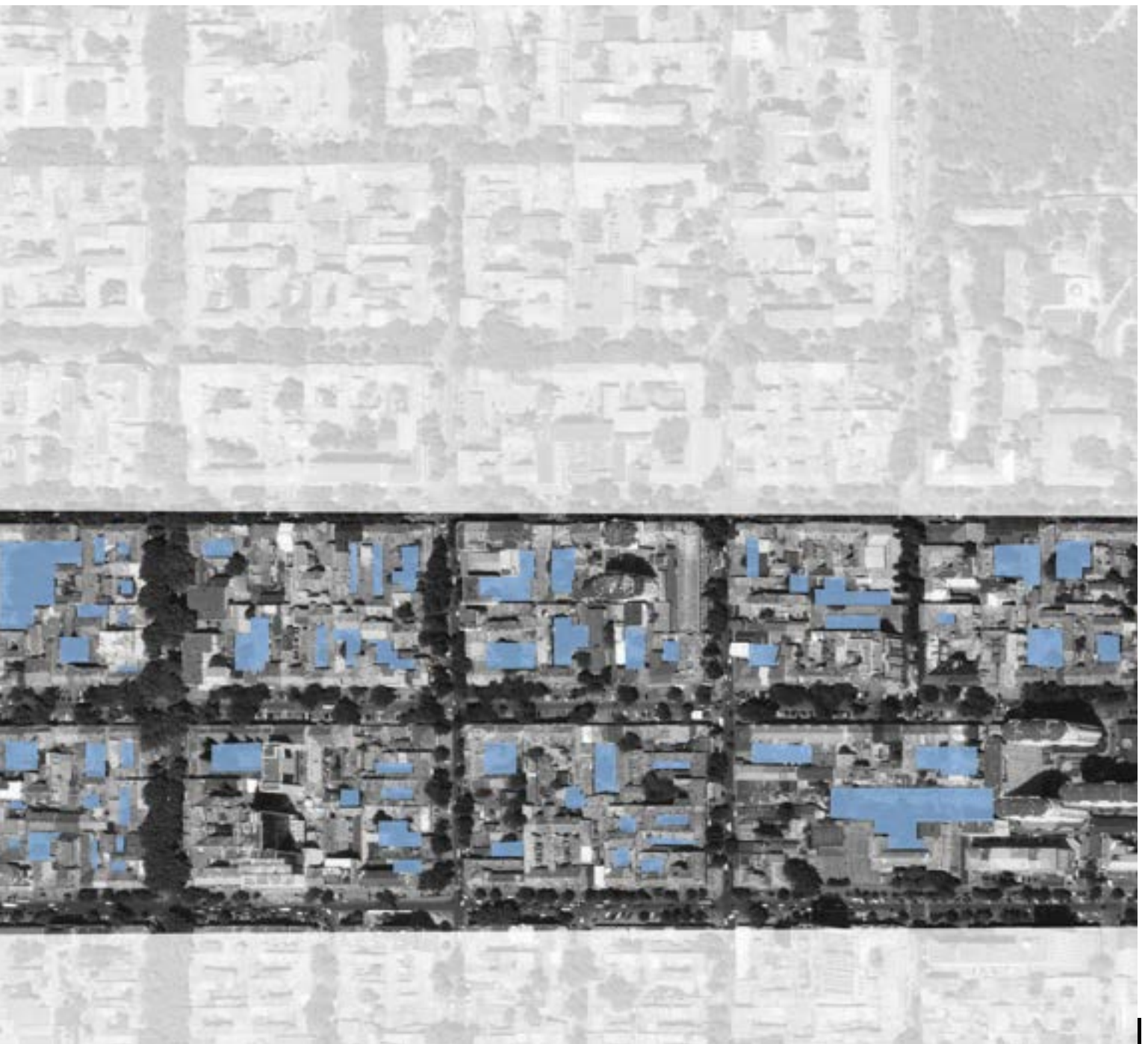
16.

16 the distribution and shapes of open space in Cheryomushki, own graphic, 2018



### **The Shape of Open Space in City Center**

The center of Odessa was built in 1794. The structure of the ancient city remains until now. So we regard the city center as a representative of ancient cities. We can see that there is also a central park in the city center, and the central park extends northward, forming a boulevard, such a public space system constitutes an axis of the city center. At the same time, public spaces have obvious boundaries in city center. Perhaps we can say that in ancient cities, the public space structure is clearer. And on the other hand, the courtyards belong to the neighborhood. So we think that, the courtyard are also a kind of public space or semi-public space. And it lacks the connection between the courtyard each other. So we can also say, public space and public space in ancient city are relatively isolated.



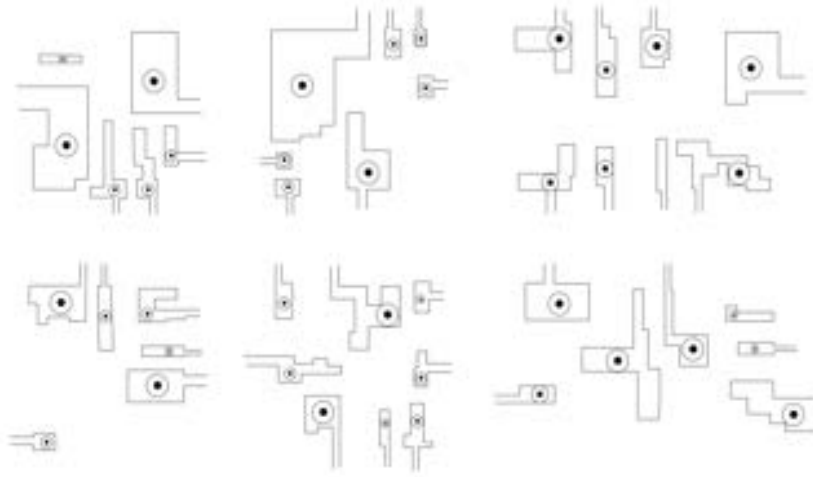
17 the distribution and shapes of open space in city center, own graphic,2018



18.

### The Boundaries and Connection of Open Space in Modern City

We focus on a block in Cheryomushki, which we see as a representative of modern city blocks. We look deeply into each of the public spaces in the neighborhood to study its boundaries and shapes. We will find that we can only determine the visual boundaries of space based on the outline of the building as the boundary of the public space. At the same time, each public space has multiple entrances and exits. The number of exits and entrances determines the flexibility of space and the close connection between space and space.

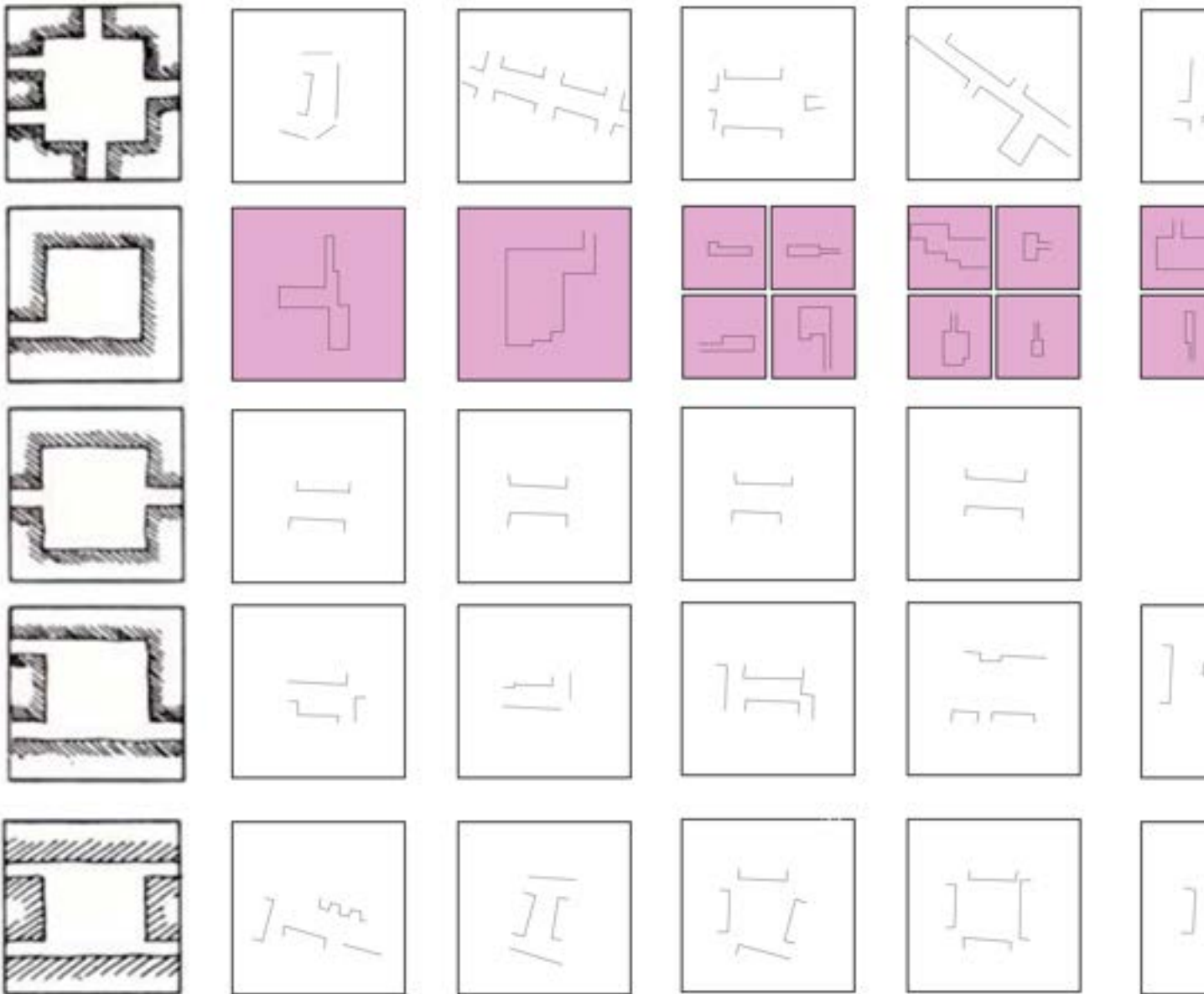


19.

### The Boundaries and Connections of Open Spaces in Ancient City

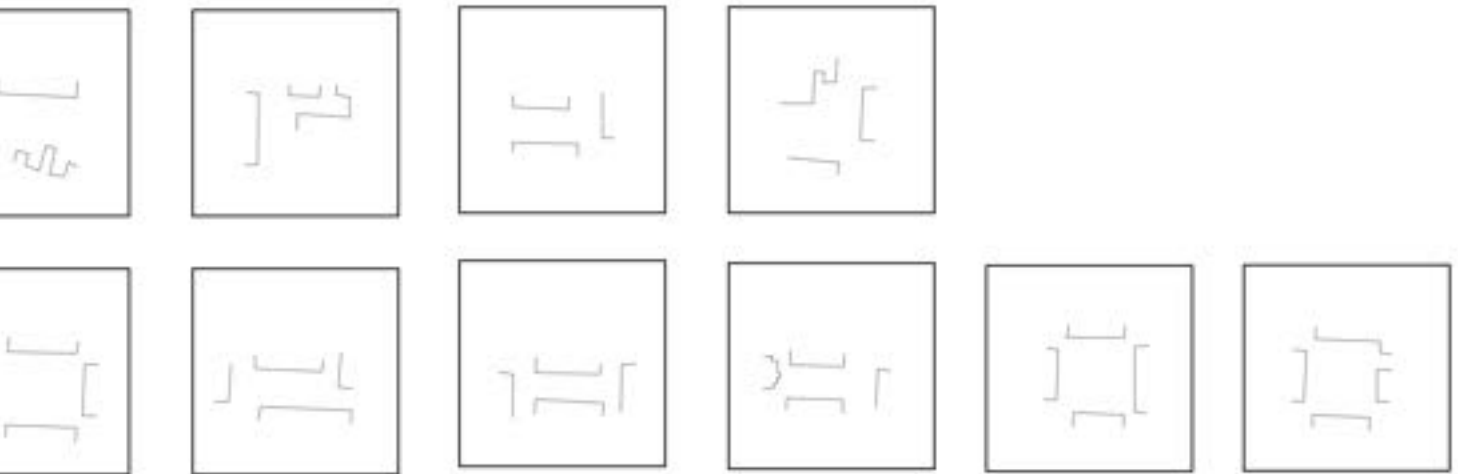
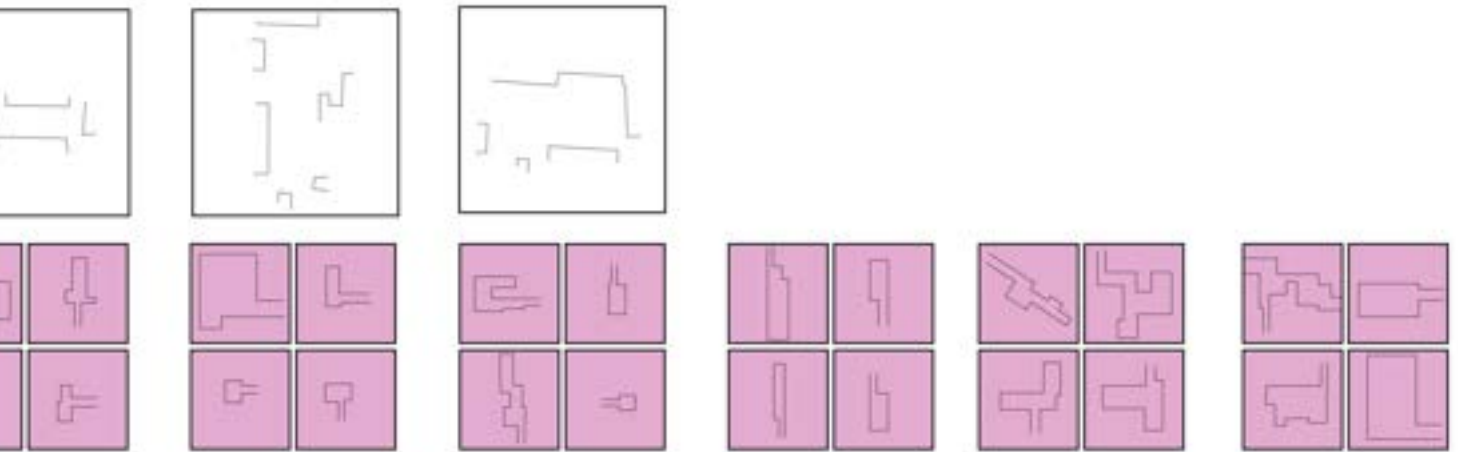
We also delved into several blocks in the center of Odessa. We use satellite maps to determine the boundaries and entrances of public spaces. In the process, we can reconfirm that most public spaces have obvious boundaries and obvious exits. Compared to modern cities, public spaces in the city center have smaller scales. There is also little connection between public spaces.

19 the boundies and connection of open space in city center. Junbo and Yuxing, own graphic, 2018



### Category of Open Space

The entrance change the direction and the shape of public space. So Public space entrance is an important factor affecting the boundaries and accessibility of public spaces. The accessibility of public space determines the connection between public spaces, determines the flexibility of public space, and to some extent affects the function of public space. Therefore, we hope to classify the public space according to the number of entrances and exits to study the impact of urban modernization on the entrance of public space. From the perspective of classification, we can clearly see that most of the public spaces in the old town have only one entrance, while in the public space of Cheryomushki there are more than two entrances. The modernization of cities also has a significant impact on the number of public space entrances.



List of References:

- socialist city prozess in China [online] [http://www.cas.cn/zt/jzt/ltzt/wgxqxdhyjxlc/xdhlyj/200308/t20030819\\_2670723.shtml](http://www.cas.cn/zt/jzt/ltzt/wgxqxdhyjxlc/xdhlyj/200308/t20030819_2670723.shtml)
- Open Space Technology: A User's Guide: Harrison Owen
- People Places: Design Guidelines for Ur  
[http://www.cas.cn/zt/jzt/ltzt/wgxqxdhyjxlc/xdhlyj/200308/t20030819\\_2670723.html](http://www.cas.cn/zt/jzt/ltzt/wgxqxdhyjxlc/xdhlyj/200308/t20030819_2670723.html), Abgerufen am 14.05.2014.
- <http://lib.utexas.edu/maps/lebanon.html?src=mappery>. Historische Karten, Abgerufen am 07.05.2014.
- [https://en.wikipedia.org/wiki/The\\_Metropolis\\_and\\_Mental\\_Life](https://en.wikipedia.org/wiki/The_Metropolis_and_Mental_Life)
- <https://books.google.de/books?id=eXk8CwAAQBAJ&pg=PA26&lpg=PA26&dq=openspace+lectures&source=bl&ots=4ESbKAvaaI&sig=HsJTZlTQc6VY4igm1ZKqFenY5XY&hl=de&sa=X&ved=2ahUKEwit2NH2p7HfAhUFU1AKHUFOD3EQ6AEwBnoECAMQAQ#v=onepage&q=openspace%20lectures&f=false>
- <https://de.slideshare.net/ntcities/open-space-typology-definitions>
- <https://www.homesandproperty.co.uk/area-guides/merton-borough/morden/living-in-morden-area-guide-to-homes-schools-and-transport-links-all12526.html>
- <https://journals.sagepub.com/doi/10.1191/030913298672729084>
- [https://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Stadtplanung-und-Bauordnung/Stadtentwicklung/stadt-bau-plan/city-building-plan/cbp\\_phase\\_2.html](https://www.muenchen.de/rathaus/Stadtverwaltung/Referat-fuer-Stadtplanung-und-Bauordnung/Stadtentwicklung/stadt-bau-plan/city-building-plan/cbp_phase_2.html)

List of Figures:

- 01 Urban open space evolution Yuxing Yang/Junbo Xu 2018
- 02 tyoes of city center, Junbo Xu/ Yuxing Yang 2018
- 03 Types of open space in Cheryomushki, Junbo Xu/ Yuxing Yang, 2018
- 04-15 compaeison of propotion, Junbo Xu/Yuxing Yang, 2018
- 16 the distribution and shapes of open space in Cheryomushki, Junbo/Yuxing 2018
- 17 the distribution and shapes of open space in city centeri, Junbo/Yuxing 2018
- 18 the boundies and connection of open space in cheryomushki, Junbo/Yuxing
- 19 the boundies and connection of open space in city center, Junbo/Yuxing
- 20 category of open space, Junbo/Yuxing 2018
- 21 City regenetation,Yuxing Yang/Junbo xu 2018





# Imprint

Published by:

Karlsruhe Institute of Technology (KIT)  
Institute for Urban and Landscape Design (IESL)  
Chair of International Planning and Urban Design (ISTB)  
Prof. Dr. Barbara Engel, Head of Chair  
Englerstraße 11, 76131 Karlsruhe  
Phone: +49 (0)721 - 608 42171  
[www.istb.iesl.kit.edu](http://www.istb.iesl.kit.edu)

5.2 Metropol.X\_Odessa  
Hidden Qualities of Cheryomushki  
MA Seminar  
WS 2018/19

Editing and Layout:  
Prof. Barbara Engel  
Nikolas Rogge  
Merit de Buhr

The responsibility for the contents of the  
contributions is with the respective authors.

© 2020 Institute for Urban and Landscape Design  
Chair of International Planning and Urban Design, KIT