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# PERCEPTION OF THE (POST-)SOCIALIST MASS HOUSING IN KYIV BY THE STUDENT YOUTH

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## Abstract

This paper describes and analyses the imageability and the perceptual portraits of the (post-)socialist large-scale housing estates in Kyiv in the eyes of young people (university students). The research is based on the analysis of Lynch-type mental maps focusing on urban vernacular districts among the other their principal elements. The results show that mass housing areas still constitute an important part of the city's image. However, apparently similar neighbourhoods differ significantly in terms of their imageability and likeability depending on their location in the city and the trajectory of the post-socialist development. Consequently, individual approaches to positive image change based on the complex evaluation of development factors are needed to response the challenges faced by the different types of the (post-)socialist mass housing.

## Key words

(post-)socialist large-scale housing estates • mental maps • vernacular district • perceptual portrait • imageability • Kyiv

## Introduction

A modern city is considered not only a set of industrial facilities, engineering structures, communications and buildings, but also (and rather) as a habitat for people (Moffatt & Kohler, 2008). The development of the post-Soviet cities follows the trajectory of deindustrialisation and commercialisation on the one hand (Hirt & Stanilov, 2009; Mezentseva & Mezentsev, 2017; Dronova & Brunn, 2018; Dronova & Maruniak, 2018) and increasing of consumption, demand for comfort of living and people-centricity on the other (Prigge, 2008). This poses questions to the community, local authorities and other stakeholders regarding the maintenance, renovation, regeneration and rebranding of socialist mass housing, as well as its reintegration into the urban transport and social network (Dževrus, 2013). The problem of socialist era mass housing is partly related to their poor technical condition, safety, and low energy efficiency (Dekker & van Keppen, 2004;

Murie et al., 2005; Musterd & van Kempen, 2007; Pleshkanovska, 2021). The unattractive appearance also adds a significant negative image: "socialist spaces are 'remembered' for their distinctive 'appearances' such as, for example, the uniform residential high-rises, large collective public spaces, or monumentality in urban design" – socialist residential areas change very slowly, preserving the Soviet legacy (Golubchikov, 2016).

In this way, socialist era mass housing, once designed as comfortable place to live with open public spaces and green areas (Ušča, 2010; Buriak, 2020), today is associated with a variety of social problems and at the same time have a negative image among both local residents and those who live in other districts (Dekker & van Kempen, 2004; Herfert et al., 2013). The thesis that "image is generally more important than reality" (Benko, 2012) reflects the importance of understanding how the inhabitants imagine the city and its neighbourhoods. The negative image of a residential area may force it to the further ghettoization and decline, and vice versa, the positive image is an important ingredient of the regeneration strategy aimed at transforming a mass housing estate into a comfortable residential or, preferable, multifunctional area.

The opinion of young people regarding the transformation of the urban environment is considered to be very important (Breitbart, 1995). Young people are future stakeholders in local communities; they are bearers of culture and identity, and open up new worlds of understanding urban space (Dillabough, 2010). Both in previous eras and now, young people bring something new to cities that can enrich the community; they are important for revitalisation and economic growth of the modern cities (Santo, 2010). Researchers consider the problem of disconnection of youth from the physical surroundings of their cities due to the excessive use of digital media and social control (Gerodimos, 2018). It could lead to the worsening of the criminogenic situation, marginalisation, civic loneliness and other threatening problems of the relationship between young people and the urban landscape (Breitbart, 1995). Thus, cities should become more comfortable and attractive for young people. Achievement of this goal requires studying young people's perception of urban space as a place of their future residence, work and leisure. Its understanding contributes to the "involvement of young people in planning process to gain access to the unique insights that only young people can offer" (Santo, 2010: 53). Therefore, we consider the presented study of urban space through the eyes of young people to be relevant and important.

The paper aims to understand how young people (university students) perceive (post-) socialist large-scale housing estates of Kyiv. We tried to answer the following questions: (1) what is the place of socialist-era mass housing in the image of the city? (2) what factors determine the imageability and likeability of socialist era housing by the youth? (3) is the students' image of the (post-)socialist mass housing positive, negative, or mixed (including depending on specific neighbourhood), and what implications it may have for their further development and planning? The visual perception provides new perspectives useful in exploring new strategies for urban design and providing ways residents can envision their wellbeing in urban space (Morello & Ratti, 2009). The method of mental maps (Lynch, 1960), used in this study, allows getting a peoples' vision of the city not through verbal descriptions or quantitative indicators, but directly through visual images that respondents draw on sketch maps of the city.

## Modernist mass housing under socialism and beyond

Mass housing is considered a product of the industrial age, when the pace of housing construction significantly increased due to the influx of migrants, construction of new enterprises, as well as the rapid reconstruction of cities after World War II (van Kempen et al., 2005). Innovations in construction technology and economies of scale have allowed

building up quite large urban areas in short time, where high living comfort corresponded to the technical capabilities of the construction industry of that time (Lelévrier & Melic, 2018). The development of housing in the industrial era coincided with the formation of functionalist urbanism, which was formed as a new direction of the urban planning with the support of CIAM (International Congresses of Modern Architecture).

The concept of a functional city became dominant in urban planning after the 4th CIAM Congress. Four key functions (dwelling, work, recreation and transportation) formed a basis of urban planning (Gold, 2019). According to that approach, urban areas were divided into zones where a certain type of land use was dominated (Drėmaitė, 2017). Prominent examples are the Greater London project (Abercrombie, 1945), the Bijlmermeer in the Netherlands (Wassenberg, 2013), the city of Basilia (Monclús, 2018), the program of "big quarters" in the USA (Christensen, 1986), "the Million Homes Program" in Stockholm (Hall, 2005), etc. According to Monclús (2018), the common feature of modernist mass housing projects is their morphology: high-rise buildings in the form of a cluster of residential buildings, which corresponds to the concept of urban zoning. Wassenberg (2013) adds the size, predominance of one (housing) function and a common approach to the spatial planning to the list of the key mass housing features. Murie al. (2005) noted another important attribute: modernist mass housing areas were planned by the state or with the state support. High speed of construction was accompanied by a number of shortcomings, first of all monotonous and grey urban landscape (Murie et al., 2005). Residential areas were built on free, large plots of land (greenfields) usually located on the outskirts of cities (Yargina, 1990). Accordingly, connections with other parts of the city often were weak and such residential areas were considered of low prestige, which was especially noticeable in case of lack of transport accessibility and connectivity (Dekker & van Kempen, 2004).

On the both sides of the Iron Curtain, mass housing served as an important political tool: while in the socialist block it promised to "build communism faster", in the West it was meant to build a "welfare state" (Drėmaitė, 2017). However, the idea was especially developed in the former USSR and the socialist camp. While in the West there were always numerous alternatives to mass multi-unit apartment building, usually employed for social housing projects, in the Soviet Union such structures became the predominant model of residential housing (Benkő, 2012; Drėmaitė, 2017). Gigantomania and centralisation in urban planning fitted well with the mass housing approach and even were used as an instrument of Soviet propaganda (Belli, 2020). A large number of residential areas of this type were built in Poland, the Czech Republic, Slovakia and other countries of the socialist camp, as well as in the most cities of the Soviet Union (Belogolovsky & Novikov, 2010). Plans for the development of modernist residential areas provided a number of typical solutions for the urban space organisation. Basic social infrastructure like kindergartens, elementary schools, culture / community centres, shops and services were located in the immediate vicinity of residential buildings, forming the basic planning units – so called micro-districts, or *mikrorayons* (Hees, 2018). A tiered ("stepped") system of public service of the population was introduced within the micro-districts (Buriak, 2020). Open planning and sufficient green areas were to provide comfort for the locals (Ušča, 2010). On the other hand, the rapid pace of construction and the desire to reduce its cost led to the construction of extremely large mono-functional areas. For example, in Saltivka district, which was the largest housing estate in the former USSR, over 400,000 inhabitants were planned to live (Buriak, 2020); in Balta Alba district, Bucharest – 300,000 (Marin & Chelcea, 2018). Large-scale mass housing is a characteristic feature of Moscow, where the first and canonical *khruschevki* housing estate Novyje Cheremushki was built in 1955-1958, and later almost all peripheral

areas of the city were built up with cheap panel houses (Gunko et al., 2018).

Interest in the study of large housing estates increased in the 1990s and early 2000s due to the process of socio-spatial polarisation and urban segregation. In the countries of North, West and Southern Europe there were a general decline of these areas, the deterioration of the crime situation and their gradual transformation into ghettos (Kempen, 2009). This was the reason for a detailed study of their current state, as well as determining the directions of recovery. In order to cope with the challenges, the European Commission implemented the RESTATE project (Restructuring Large-scale Housing Estates in European Cities), which aimed to identify the problems of mass housing estates on the example of the ten European cities, including post-socialist (Dekker & van Kempen, 2004). The areas of mass housing in the Western Europe contrast sharply with other residential and central areas due to higher unemployment, influx of ethnic minorities, poor technical condition of the buildings, lack of good shopping facilities, safety problems, etc. (Bolt, 2018). In the CEE post-socialist countries, the better quality of greenery and the design of new residential areas in the inner-city neighbourhoods and the refurbishment of the old city make large housing estates less attractive and decrease the satisfaction of their residents (Herfert et al., 2013).

Although mass housing areas in post-Soviet cities have common features with the Western European ones (Borén & Gentile, 2007), they are characterised by a relatively better socio-economic situation (Gnatiuk & Kryvets, 2018; Mezentsev & Stebletska, 2017). Among the main reasons are significantly less migration of ethnic minorities and low level of segregation (Musterd & van Kempen, 2007). Most districts are inhabited by both low-income and middle-income residents, and estates are still able to attract well-educated families and young childless couples (Kährik & Tammaru, 2010). The latest modernist projects demonstrate the predominance of positive feedback from locals on the comfort of living due to convenient city planning and a large number of green areas (Brunn et al., 2020). At the same time, the specific problem of Soviet mass housing is extremely poor technical conditions, especially in *khruschevki* (Pleshkanovska & Biriuk, 2021). Thus, areas of mass construction remain an obstacle to city modernisation and sustainable urban development. They are no longer as comfortable as initially planned in the Soviet construction plans, have problems with development of infrastructure, green areas and transport accessibility.

## Mass housing in Kyiv: brief overview and typology of neighbourhoods

Mass housing construction in Kyiv started in 1956 and covered extensive areas on both the right and left banks of the Dnieper during the subsequent four decades (Fig. 1). However, new type of housing was built not only compactly within specially designed residential areas, but also placed between the historical buildings in the central areas of the city, in particular on the site of the buildings destroyed during the World War II. The flow of time was characterised by an increase in the average number of floors (5 in 1960s, 9 in 1970-1980s, 16 in 1990s), a change in the type of buildings (from serial panel *khruschevki* in 1950-1960s through serial panel *brezhnevki* in 1970-1980s to individual projects in 1990s), and a change in approaches to territory planning (a shift from regular perimeter planning to more wide use of free planning elements with a clear grouping of residential buildings and social infrastructure into microdistricts) (Stebletska, 2014; Mezentsev & Stebletska, 2017; Pleshkanovska & Biriuk, 2021).

Taking into account various criteria, including period of construction, typical series of houses, the average number of floors, and features of the internal planning structure, all the variety of mass housing in Kyiv may be divided into the four types, where the last fourth type is not a classic mass housing but shares some common features with it (Fig. 1):

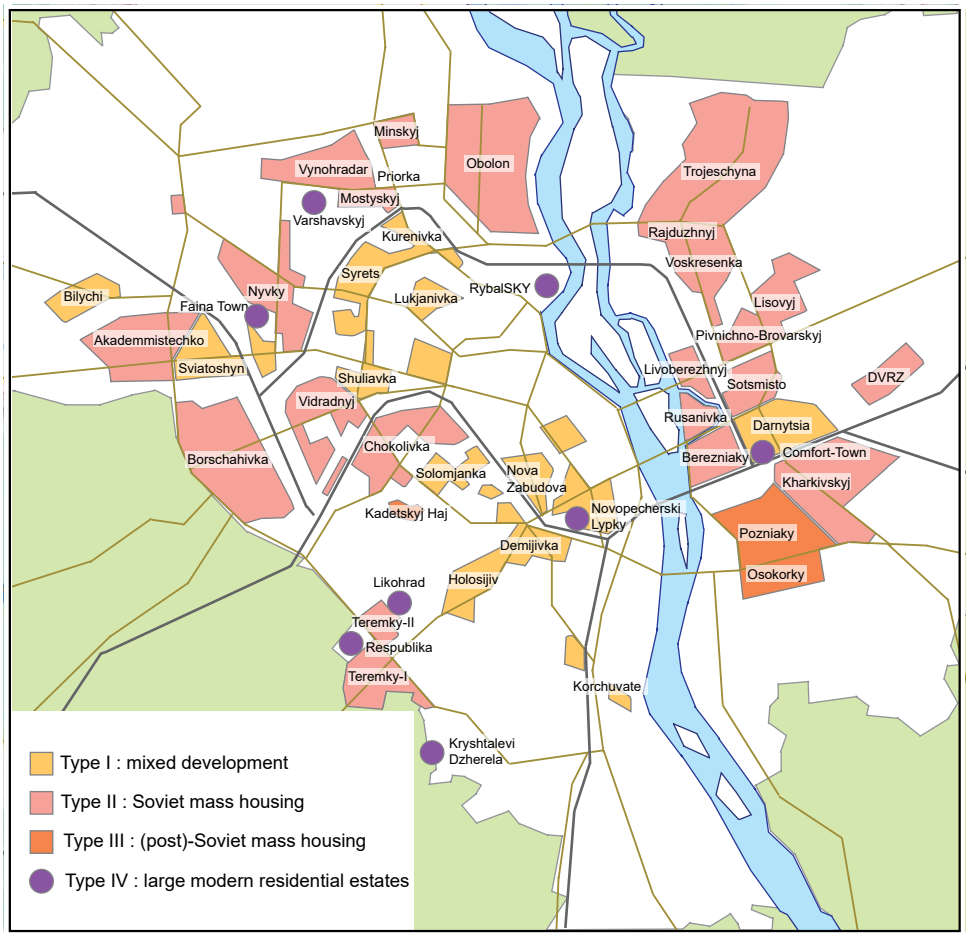



**Figure 1.** Mass housing areas in Kyiv

Type 1: Soviet-era housing estates, built mostly in 1950-1960s and representing an attempt to fit mass residential development into the already established street network. The resulting residential areas possess some distinctive features: the outer boundary of the residential area is not clearly expressed; micro-districts are of small sizes, classical micro-districts often do not exist as such; functional zoning is unclear (residential buildings are interspersed with industrial and warehouse facilities, as well as social and communal infrastructure); in the post-socialist period, commercialisation and new-build gentrification resulted in the construction of new housing within vacant lots and industrial-warehouse zones, contributing to the further diversification in terms of functions and morphology.

Type 2: Classic Soviet-era mass housing estates built from the very beginning on previously undeveloped sites (greenfields) at the urban periphery or on the site of a previously demolished low-rise development) in accordance with a comprehensive development project. This group is the most numerous one due to the advantages of construction: on the edges of the built-up urban area, there was a plenty of immediately available space, as well as established networks of services in the adjacent areas (French, 1995). Such residential estates have their own specific features: clearly delineated outer boundary of the

residential area (exception: the boundary with another mass housing estate goes across the street); large classic micro-districts; specific geometry of planning with regard to the street network or the placement of houses within the neighbourhood; clear functional zoning (residential buildings are separated from industrial and warehouse zones; clearly separated social infrastructure cells within micro-districts). Consequently, there were limited opportunities for additional construction within the integrally formed micro-districts in the post-socialist period – it was possible only at the plots adjacent to the residential estate (the sprawl of the residential estate) or at the expense of the open public spaces (squares, squares, embankments, etc.) outside the micro-districts. Within this type of mass housing estates, two subtypes can be further distinguished. Subtype 2.1 represents residential estates of earlier construction time (1950-1960) with fewer floors (mostly up to 5) and smaller micro-districts. Residential estates of the subtype 2.2 were constructed later (1970-1980) with more storeys (mostly 5-10) and with larger micro-districts.

Type 3: Housing estates started to be built-up under socialism (at the end of the 1980s) and continued after the collapse of the socialist system (1990-2010). Similar to the Type 2, such housing estates were built on free, undeveloped areas and initially were characterised by the large size of micro-districts and clear functional zoning. At the same time, the specific features of this type of mass housing are: a higher average number of floors (9-16-25); a greater variety of residential construction (due to the coexistence of mass Soviet series houses with limited series and even individual projects of the post-socialism); a higher density of construction (which is explained by the transformation of the urban land for a valuable commodity and the efforts of developers to maximise profits both via the densification of regular construction and in-fills (so called "dot construction") within open spaces, including squares and wide courtyards. Also, these residential estates lack their own industrial zones, since the initial period of the post-socialist transition was marked by the collapse and decline of the industry. Thus, Type 3 housing estates, while preserving the general urban planning philosophy of the socialist period, acquired a neoliberal touch as a result of actual implementation in the conditions of transition to a free market and neoliberal economy.

Type 4 residential estates do not directly fall under the criteria of mass housing projects but share with them some characteristics as the large size and integral approach to planning. These are post-Soviet developments (mainly of the 2010s), the design and construction of which took place at the expense of private investors and entirely during the post-socialist period. In fact, these are about large modern residential complexes with a developed internal street network consisting of separate blocks. In contrast to the previous classic types of mass housing, the buildings are typically clustered not into micro-districts but in smaller quarters delineated by the streets along the perimeter and with an internal backyard. The height can be different – from 3-5 to 16-25 floors; the construction density is high. As a rule, these are gated communities (in the contrast to the classic mass housing areas), although there are some exceptions. From the very beginning, they have active ground floors (settled by different services), but experience a luck of affordable social sphere (kindergartens, elementary schools, hospitals, etc). For instance, the complicated and ambiguous relationship effects of the residents of the Soviet mass housing (Sotsmisto, Type 2) and the newly-built residential estate (Comfort Town, Type 4) are described in Mezentsev et al. (2019), while the neoliberal challenges and answers to them in the residential estate Liko-Grad (Type 4) are outlined by Dronova, Klyui, & Khomenko (2021). On the one hand, such residential estates they may be considered as a Ukrainian national embodiment of post-socialist mass housing, on the other – they are interesting for comparison with the classic (post-)socialist mass housing in terms of imageability and perceptual characteristics.

## Methodological approach

The research is based on the analysis of Lynch-type mental maps (Lynch, 1960) drawn by the 2-3 year bachelor geography students in 2018-2021. Each student was asked "to make a sketch map of Kyiv from his/her perspective marking the most prominent and important places, including streets, squares, neighbourhoods, buildings, public places and other landmarks, etc." without receiving additional suggestions from the researchers. Also, the students basically were not familiar with a Lynch's mental mapping method at the moment of creating their sketches. This is important because the research is very susceptible to the occurrence of the so-called "interviewer effect", which may influence the resulting sketch substantially (Nawrocki, 2017). A total of 78 maps were selected for further processing; the remaining 12 sketches were considered to be unsuitable for analysis (e.g. depicting the contours of the city only). The respondents had approximately one hour to perform a task. Among the students, whose sketches were selected for the research, 47 (60.2%) came from different Ukrainian regions and lived mostly in campus dormitory, while the rest 31 (39.8%) were native Kyivans.

At the first stage of the research, we estimated the imageability of the mass housing estates in Kyiv on the background of the other urban vernacular districts, employing the approach outlined in Kononenko and Gnatiuk (2022). We focused on identification of the districts being one among five key elements of the mental map, originally defined by Lynch (1960). According to his definition, districts are large city areas which observer can mentally go inside of and that differ from the surrounding area in terms of texture, building type, urban functions, activity, inhabitants, degree of maintenance, topography, etc. Thus, we identified urban vernacular districts on the mental maps based on the three criteria: (1) the name of a district is signed on the map, (2) the limits of a district is drawn on the map, (3) an urban area with specific texture, for example – type of buildings, functions, landscape elements, etc. A specific district can be defined by all three criteria, a pair of criteria, or one of them. In case when the name of the district is not signed, but there is a border and/or specific texture drawn, we tried to establish, as far as possible, exactly which district is depicted referencing the context of the mental map and the maps of Kyiv's districts, housing estates, and historical areas. In this way, calculating a number / proportion of the mental maps containing a specific vernacular district, it is possible to compare the identified vernacular district in terms of their imageability using a particular criterion (name, border, or texture) or their sum. The integral imageability index ($I$) for a certain vernacular district was calculated as follows:

$$I = \frac{(N + B + T)}{(3 \cdot M)}$$

where:

$N$ – is a number of mental maps where the name of the district is signed;

$B$ – is a number of mental maps where the border of the district is drawn;

$T$ – is a number of mental maps where the texture of the district is drawn,

$M$ – is a total number of analysed mental maps.

At the second stage of the research, we investigated the images, or perceptual portraits, or, to certain extent, identities of the identified vernacular districts. Lynch (1960) and Nasar (1998) use the word image, rather than identity, as image is a public opinion, an idea in the mind about what it is like; however, the term identity expresses qualities that differentiate something from another" (Benkő, 2012). To do it, we systematised concrete landmarks (e.g. specific buildings, constructions, natural objects, etc.) and other mental associations (e.g. pictograms indicating the land use – housing, industry, etc.) graphically depicted on the mental maps and related to a certain vernacular district. In particular, associations based on the landmarks were classified into the following semantic

categories: I. Facilities/areas with specific function: (1) trade; (2) entertainment and leisure; (3) HoReCa; (4) housing; (5) industry; (6) education and science; (7) historical places, monuments; (8) transport; (9) administration; (10) sport; II. Multifunctional urban areas: (1) streets and squares; (2) green spaces; (3) waterfronts. The structure of perceptual associations for each vernacular district was weighted by a number of mentions of each association (each single recording of an association on a mental map was considered as a mention).

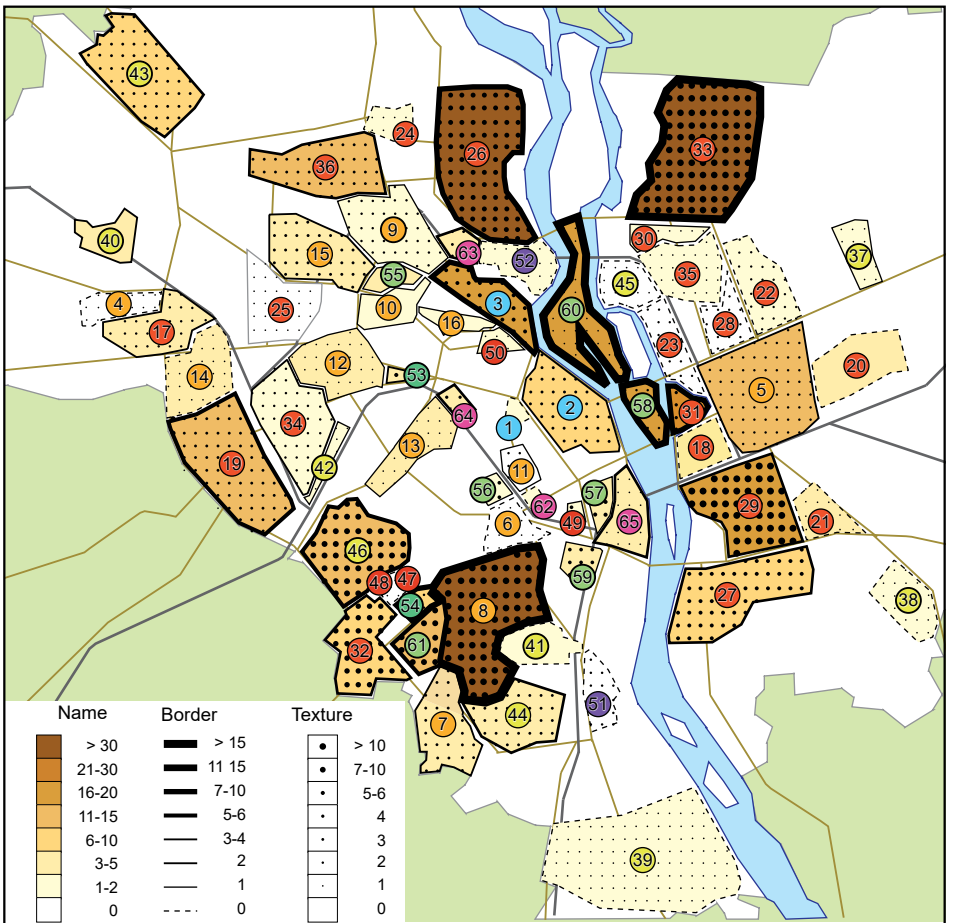
At the third stage of the research, beyond the concrete landmarks, we searched for the various graphical symbols and textual labels indicating the attitudes of the authors of the mental maps to the specific vernacular districts, expressed in terms of topophilia, topophobia, neutrality, or ignorance, and signalizing on the district's likeability, stereotypization, and/or stigmatisation (Dolata & Kotus, 2006; Benkő, 2012).

The main limitation of the research is that the revealed images of the vernacular districts (including mass housing areas) belong to a specific group of urban residents, namely – the students of a specific faculty. First, in their everyday activity students are substantially confined to their faculty area, therefore their knowledge about the respective part of the city is predictably better. Nevertheless, this circumstance apparently had no crucial influence on the findings, as we tried not to make far-reaching conclusions based on the perception of the around-the-faculty area. Second, as young people, students have a specific range of activities and demands to the urban space, as well as specific criteria of its attractiveness. Nearly a half of them are newcomers from the other regions who live in a university campus and thus may have only superficial images of the other parts of the city, including shape them based on the popular stereotypes rather than personal experience. The results would be different if analyse the mental maps of average Kyivans (taking a representative sample of all age groups) or the residents of a specific part of the city, including mass housing areas. Moreover, starting their own family, young people are likely to re-evaluate their priorities paying less attention to, for example, education institutions and leisure, and focusing more on basic social infrastructure, including kindergartens, schools, hospitals and outpatient departments, easy access to basic public utilities, and the presence of green yard spaces between houses (cf. Dekker & van Kempen, 2004; Musterd & van Kempen, 2007; Mezentsev & Stebletska, 2017). Nevertheless, most of these young people are the future city residents that are going to make a choice where to live and buy/rent an apartment. In view of that, their perceptions are important for understanding the problematic aspects of the city development and planning, including those related to maintenance and regeneration of mass housing areas.

## Results and discussion

### Imageability and placelessness

From the students' point of view, taken together, mass housing estates of Kyiv have a sufficiently high level of imageability compared to the other types of vernacular districts. First, most of the actually existing mass housing areas were reflected in one or another form (label, border, or texture) on the mental maps. Among the 65 identified vernacular districts, 33 (50.8%) belongs to the mass housing areas, in particular: Type 1 – 13 (20.0%), Type 2 – 18 (27.7%), Type 3 – 2 (3.1%), Type 4 – 4 (6.2%) (Fig. 2). Second, the average imageability of mass housing areas, especially classic modernist residential estates of (post-) Soviet construction period (Types 2 and 3), is relatively high compared to the other types of vernacular districts, including historical areas, areas of detached housing, green spaces, university campuses, and transport nodes. In particular, for the students, mass housing estates of Trojeschyna, Obolon (Type 2), and Holosijiv (Type 1) are the most recognizable vernacular districts of Kyiv, surpassing, among else, the central historical areas with mixed-use development (Figs. 2, 3).




**Name:** number of mental maps with a district name signed on the map

**Border:** number of mental maps with a district border drawn on the map

**Texture:** number of mental maps with specific texture indicated on the map (type of buildings, functions, landscape elements, etc.)

Central historic areas (mixed use)

1 – Besarabka
2 – Pechersk
3 – Podil

Mixed development

4 – Bilychi
5 – Darnytsia
6 – Demijivka
7 – Feofanija
8 – Holosijiv
9 – Kurenivka
10 – Lukjanivka
11 – Nova Zabudova
12 – Shuliavka
13 – Solomjanka
14 – Sviatoshyn
15 – Syrets
16 – Tatarka

Modernist mass housing

17 – Akademmistechko
18 – Berezniaky
19 – Borschahivka
20 – DVRZ
21 – Kharkivskyj
22 – Lisovyj
23 – Livoberezhnyj
24 – Minskyi
25 – Nyvky
26 – Obolon
27 – Osokorky
28 – Pivnichno-Brovarskyj
29 – Pozniaky
30 – Rajduzhnyi
31 – Rusanivka
32 – Teremky
33 – Trojeschyna
34 – Vidradnyi
35 – Voskresenka
36 – Vynohradar

Detached housing

37 – Bortnychi
38 – Bykivnia
39 – Koncha-Zaspa
40 – Kotsiubynske
41 – Mysholovka
42 – Novokaravajevi Dachi
43 – Puscha-Vodytsia
44 – Pyrohiv
45 – Voskresenski Sady
46 – Zhuliany

Modern residential estates

47 – Likohrad
48 – Nova Anhlija
49 – Novopecherski Lypky
50 – Vozdvyzhenka

Industrial areas

51 – Korchuvate
52 – Rybalskyi Ostriv

University campuses

53 – KPI
54 – Studmistechko

Open green spaces

55 – Babyn Jar
56 – Bajkove Kladovysche
57 – Botsad
58 – Hidropark
59 – Lysa Hora
60 – Trukhaniv Ostriv
61 – VDNH

Transport nodes

62 – Lybidska
63 – Pochajna
64 – Vokzal
65 – Vydubychi

**Figure 2.** Vernacular district of Kyiv – imageability

Nevertheless, mass housing estates of Kyiv substantially vary in terms of imageability: their intra-group variability is higher than the variability of the average imageability for different types of urban vernacular districts. The list of the most recognizable neighbourhoods ($I > 0.05$) includes predominantly classic modernist mass housing belonging to Types 2 and 3 (Trojeschyna, Borschahivka, Pozniaky, Obolon, Rusanivka, Vynohradar, Teremky, Osokorky), as well as two Type 1 neighbourhoods (Holosijiv, which is extremely recognizable but as a neighbourhood with a plenty of green spaces rather than concentration of housing, and Darnytsia, perceived as a multifunctional neighbourhood rather than a simply residential area). Higher imageability is usual for mass housing estates that are (1) architecturally homogeneous, i.e. residential building belong to a limited number of series, (2) prominent in terms of spatial planning, in particular, have specific geometry of the street network or the placement of buildings (e.g., the street network in Obolon or the placement of buildings in Teremky both arranged in the form of regular hexagons), (3) clearly separated from the other residential areas by natural or artificial barriers (rivers, railways, etc.) or areas with a different function (e.g. green spaces or industrial zones).

At the same time, many mass housing estates are almost invisible on the students' mental maps – this refers to Livoberezhnyj Masyv, Pivnichno-Brovarskyj Masyv, Lisovyj Masyv, Chokolivka, Kharkivskyj Masyv, Nyvky, etc. (Fig. 2). Most of maps show these estates as empty spaces, otherwise such mass housing areas are often do identified as residential development (via drawing residential buildings), but merge into solid spots without clear identification of exact boundaries and names (Fig. 4). Such kind of placelessness (for the recent understandings of the concepts see Freestone & Liu, 2016), additionally enhanced with comments like *"something unclear"*, question marks, or depicting monotonous residential landscape (cf. Murie

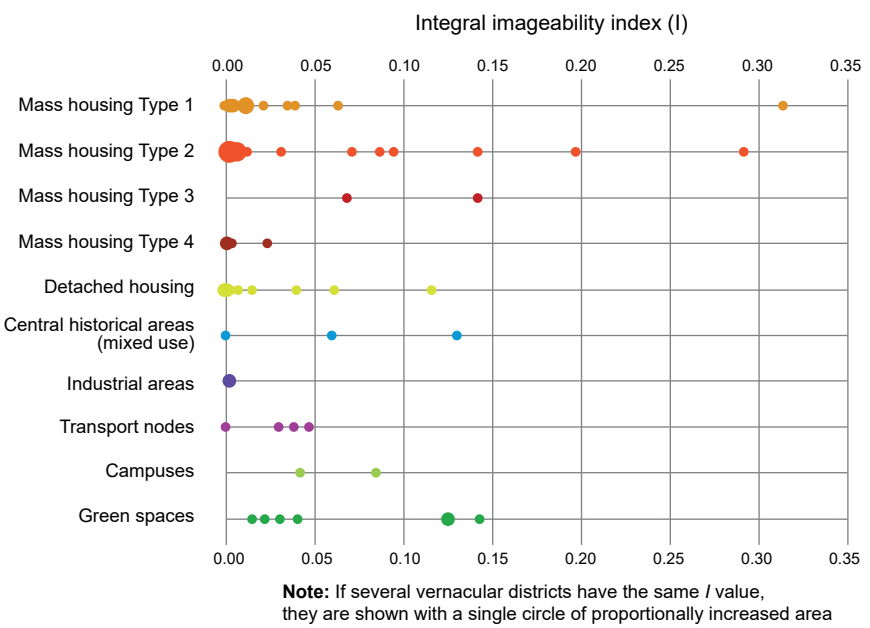



**Figure 3.** Integral imageability index for vernacular districts of Kyiv


**Figure 4.** Placelessness and "umbrella" districts. A – a group of mass housing neighbourhoods (Pivnichno-Brovarskyj Masyv, Lisovyj Masyv, Voskresenka) marked as a single residential area without specific borders and names; the inscriptions say *"residential area"* and *"something unclear here"*; B – a group of mass housing neighbourhoods (Osokorky, Pozniaky, Kharkivskyj Masyv) marked as a single residential area without specific borders and names; C – empty space in the place of mass housing estates in the north-east part of the city; D – left bank Kyiv marked as residential area but without specific names and borders; E – the left bank (the north is down) is represented as a continuous residential area with monotonous landscape; the names of the neighbourhoods (*"Trojeschyna"*, *"Rusanivka"*, *"Pozniaky"*) do not correspond to their real location; F – the map shows a name (Borschahivka) of a mass housing estate [in the left-centre], but the corresponding area is almost empty contrary to the surrounding areas

et al., 2005), is conditioned by the spatial proximity of different small residential estates without a clearly defined physical barrier between them. Some vernacular districts with high imageability serve as an "umbrella" for other, less recognizable, mass housing areas (Fig. 4). This corresponds to the Lynch's observation that some vernacular districts may be connected to each other or be arranged into semi-hierarchical structures (Lynch, 1960).

## Perceptual associations: scope and structure

Mass housing areas cannot compete with the historical neighbourhoods, such as Podil and Pechersk, in terms of the number and frequency of perceptual associations drawn or textually labelled by the students (Fig. 5). The only exception is Holosijiv, which, as already mentioned above, is associated primarily with forests and parks. However, mass housing areas stand out favourably compared to areas of detached housing and industrial zones. The same as for imageability, there is a significant differentiation between individual neighbourhoods. In particular, Holosijiv, Darnytsia (Type 1), Obolon, Teremky, Trojeschyna, Rusanivka (Type 2), Poznyaki, Osokorky (Type 3) are neighbourhoods with rich perceptual portraits, while Bilychi (Type 1), DVRZ, Minskyj Masyv, Rajduzhnyj Masyv, Berezniaky, Nyvky (Type 2), as well as all modern large residential estates (Type 4) rarely evoke perceptual associations. A lion's share of this differentiation may be explained by the neighbourhood location in relation to the metro lines and stations since most of the landmarks depicted on the mental maps gravitate to the latter (Gnatiuk, Kononenko, & Mezentsev, 2022). However, the location a neighbourhood with relation to green spaces, waterfronts, and big shopping malls is also important. Also, since more than a half of students lived in the university campus, their mental maps show some bias towards the better knowledge of the landmarks in the corresponding (south-western) sector of the city.

The structure of perceptual associations is even more informative than just their number or frequency. Here, differences between the types of mass housing estates are visible. Most of Type 1 neighbourhoods are perceived by the students as mixed use areas. Typically there is a balance between different perceived functions, and the residential function often plays far from the main role, leaving space for entertainment and leisure (Shuliavka), transport (Darnytsia), and multifunctional areas like open green spaces (Syrets), etc. Moreover, the residential function completely drops from the list of associations for some Type 1 areas – Bilychi (perceived as an area of green spaces and waterfronts) and Kurenivka (perceived as a mixed use area of industry, trade, and parks).

Mass housing areas of Types 2 and 3 vary substantially in the diversity and structure of perceptual associations. Some neighbourhoods are perceived as multifunctional areas with relatively balanced functions, and the residential function often hides in the shade of the others. The brightest example is Obolon, where residential function takes only fourth position being outpaced by waterfronts, trade, entertainment, and leisure. Similar situation is observed for Teremky, where residential function is outstripped by the trade, entertainment and leisure, Rusanivka, which is known primarily due to its numerous waterfronts, and Vidradnyj, perceived mostly as a location of several universities. The next group of neighbourhoods (Trojeschyna, Borschahivka, Kharkivskyj Masyv, Pozniaky, Osokorky), despite a diverse set of perceptual associations, are perceived mostly as residential function. A lot of neighbourhoods are perceived almost exclusively as residential areas (e.g. Akademmistechko, Voskresenka, Vynohradar, Minskyj Masyv). Finally, DVRZ neighbourhood evoke associations with industry only, and is not perceived by the students as a residential area at all.

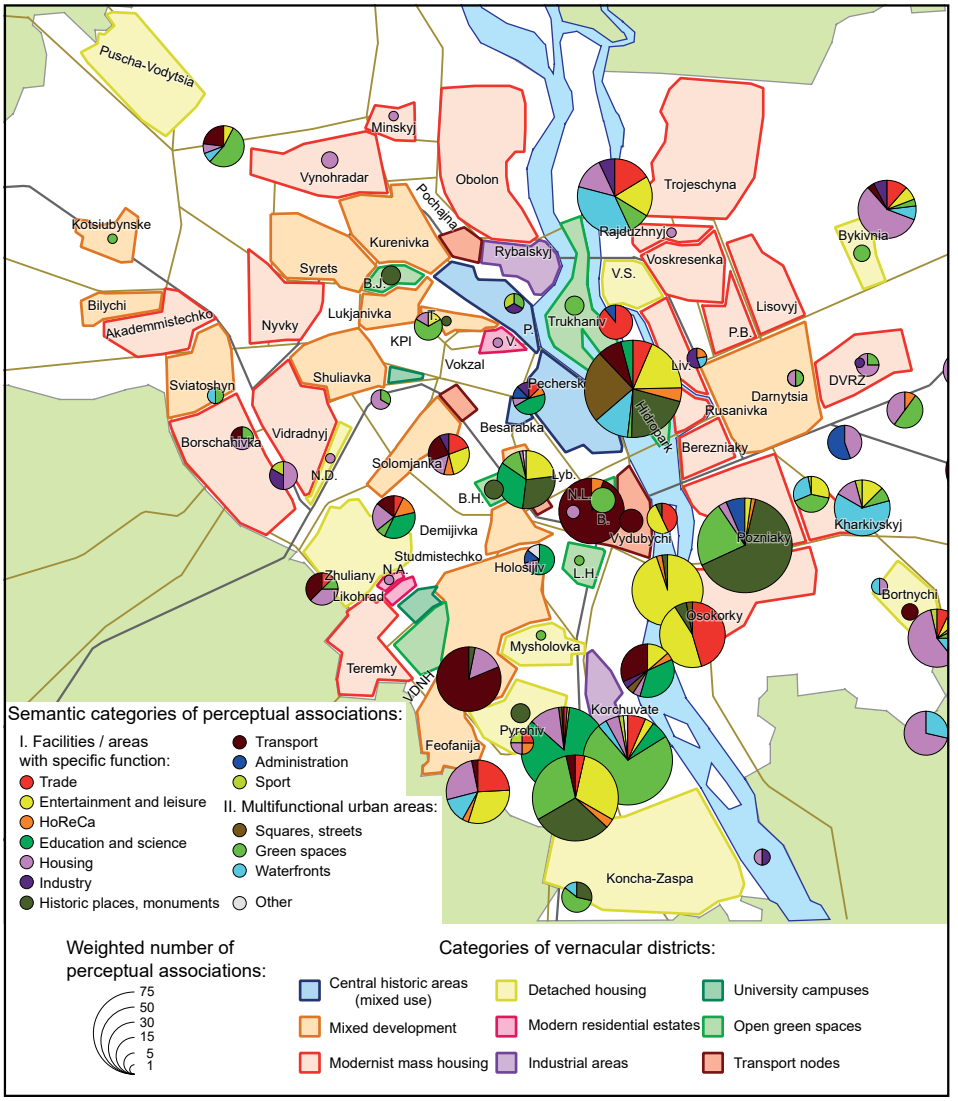



**Figure 5.** Vernacular district of Kyiv – perceptual associations

## Problematic neighbourhoods: stereotypization

Most of mass housing areas are not considered clearly problematic by the students. However, some of them, including the most recognizable ones, evoke in them quite frequent and strong negative associations. In particular, Soviet-era residential areas of Trojeschyna and Borschahivka are often perceived by the students as dangerous criminal neighbourhoods with a delinquent subculture (so called "gopniks"), hooliganism, and social illnesses (alcoholism, drug addiction) – mental maps contain numerous images of guns and stereotypical human figures representing drunkards and squatting gopniks with bottle in hand. Textual labels like

*"Mordor"*, *"criminal"*, *"ghetto"*, *"wonderland"* [ironically], *"better not to go in at night"* are another common type of markers reflecting negative image of these mass housing estates in the opinion of the student youth. Two of the mental maps contain a popular Russian-language expression "zhizn' dala treshchinu – pereekhal na Troieshchinu" (life fell apart – moved to Trojeschyna), defining in this way Trojeschyna as a neighbourhood for losers. Also, Trojeschyna, Borschahivka, and Obolon, all being classic socialist housing estates in terms of planning approach, are perceived as *"Soviet neighbourhoods"*, which is evidenced by drawn Soviet state symbols – a five-pointed star, or a hammer and a sickle. Such perception makes repercussion with Czepczyński's (2008) assertion that socialist cities were socialist mainly because of the ideological contexts attached to almost every planning approach. Perceptual ghettoization by the students of Trojeschyna and Borschahivka is additionally manifested, first, via frequent drawing the border of the residential estate, and second, via putting the labels like *"not quite a city"* or *"Trojeschyna is a separate country"*. Perception of some mass housing areas as "ghettos" is associated with their peripheral location within the city and poor transport accessibility (Dekker & van Kempen, 2004). Especially sensitive factor is a lack of a metro, reflected in labels like *"someday there will be a metro"* for Trojeschyna (the project of the metro line to Trojeschyna was elaborated in the late 1980s but has not been implemented yet) or *"a ghetto without a metro"* for Vynohradar. In the absence of a metro, students often drew the principal lines of the ground high-speed transport, such as tram lines and city train in Borschahivka and Trojeschyna (see Fig. 6 for some examples). On the other hand, Pozniaky, a mass housing estate finished to build-up during the post-socialism, has good transport accessibility and connectivity, including via the metro, but is perceived as a *"stone jungle"* or *"furious neighbourhood"* due to its high-rise and dense development.

The positive emotional attitudes are more difficult to identify on the mental maps. Nevertheless, some students marked their favourite urban areas with symbols of hearts or similar. According to this marker, mass housing estates like Rusanivka and Obolon (both Type 2) evoke positive emotions in students because of a lot of greenery, panoramic waterfronts, riverbed fountains, and abundant possibilities for leisure and entertainment. In terms of high students' topophilia, they are almost equal to the central historical areas of the city. Also, one of the modern residential complexes, Novopecherski Lypky (Type 4), appears accompanied with the dollar symbols ($) and a writing *"everyone who is cool – everyone is here"* – in this case the positive attitude is stipulated by the high social status of the local residents.

What lessons should be learned from these findings? In our case, negative associations came from the students, most of whom have rarely or never visited the respective urban areas. In private conversations with the investigators after the drawing their mental maps, most students confessed that they built a negative idea of a certain neighbourhood based not on direct personal experience, but on information from acquaintances, media, and social networks. Similarly, Kovács and Herfert (2012) argue that negative attitudes to the socialist-era mass housing prevails in those who live outside of those areas. This means that observed negative perceptions of several (post-)socialist residential neighbourhoods should be considered as stereotypization (the assignment of meanings under the influence of simplifications and erroneous and/or superficial social beliefs) rather than direct social stigmatisation (resulting from a knowledge of places plus groups ascribed to them and constituting a confirmation of the existing state of affairs) (see Dolata & Kotus, 2006). Such stereotypization of neighbourhoods by the students may negatively influence social capital in the city and exacerbate existing socio-spatial polarisation between various urban areas. In particular, origin from a positively or negatively stereotyped


**Figure 6.** Problematic issues of mass housing in Kyiv reflected on the mental maps – an example of Trojeschyna neighbourhood. A – a pistol denoting bad criminal situation; B – a bombshell, a gang of gopniks, and an inscription *"criminal"*; C – Soviet symbols, a bottle denoting drunkards, and a city train ("міська електричка") as a crucial mean of transport to get to the city centre; D – an inscription *"a separate country"*; E – an inscription *"Mordor"* and a direction arrow pointing at the neighbourhood somewhere beyond the margin of the map; F – inscriptions *"someday there will be a metro"* and *"Chernobyl ghetto"*; G – the neighbourhood is drawn as something outside the city with a figure of gopnik with a bottle in hand; H – an inscription *"Trojeschyna is a wonderland"*

neighbourhood may become more important criteria for trust to a person than his/her personal characteristics (Gorbunova et al., 2015). Thus, young people may build their network of acquaintances avoiding the people from "bad" neighbourhoods. Also, they may avoid purchasing housing in such neighbourhoods or consider them only as a temporary living place as a part of transitory residential strategy – as a short-time station during the life cycle – which may result in further decline of socialist-era neighbourhoods due to the lack of inflow of young residents with higher incomes and social status (Mezentsev & Stebletska 2017).

## Similar appearances, different trajectories, individual responses

The direct comparison of the findings with the proliferating literature on neighbourhood satisfaction is hardly possible given the differences in both methodology and the research subject: external perceptual image of the neighbourhood by the specific social stratum (students) is not exactly the same as neighbourhood satisfaction by the local residents. However, our results, pointing out high imageability and predominantly neutral or positive image of (post-)socialist residential estates in Kyiv in the opinion of the students, resonate with conclusions that large socialist era housing estates in CEE, as well as in Ukraine, have a high level of satisfaction among their residents (Bernt, 2007; Herfert et al., 2013; Havryliuk, 2022), often much higher compared to the central areas of the city (Kovacs & Douglas, 2004) – contrary to Szelényi's (1996) and Musterd and Van Kempen's (2007) pessimistic assertions. Thus, we argue that at least some (post-)socialist residential estates remain attractive not only for their local inhabitants, but for the young people from the outside, constituting their potential dwellers in the future, as well. Simultaneously, several mass housing estates have strong negative stereotypic image, while the others are almost unrecognizable among the young people.

Substantial differentiation of mass housing estates in Kyiv in terms of their imageability and likeability in the eyes of the student youth resonates with the assertion that large housing estates appear to be merely identical from the very beginning, but their personal stories are very different (Temelová at al., 2011; Benkő, 2012; Gnatiuk & Kryvets, 2018). Besides the differences of the impoverishment level and the share of economically active population (Węcławowicz, 1998; Ruoppila & Kährik, 2003), there are other significant factors influencing the image of a neighbourhood. Some of them are strongly related to the build environment and urban fabric – their aesthetics and suitability to today's needs (Benkő, 2012). As we can see from our analysis, the main reasons for high likeability of a neighbourhood among the students are good transport accessibility, attractively arranged public spaces, presence of open green spaces and waterfronts with corresponding leisure activities and panoramic views (Dekker & van Kempen, 2005; Musterd & van Kempen, 2007), and developed spheres of retail and entertainment, which are typically materialised with a construction of a large shopping mall. The original architectural and planning decisions may also contribute to the imageability and attractiveness of the (post-) socialist mass housing for the young people, for instance, location on the artificial island surrounded by the channel (Rusanivka), weird spatial pattern of buildings (Teremky), unusual hexagonal street network (Obolon).

The findings show that different types of mass housing estates followed different trajectories during their post-socialist development, which is reflected in the students' perception. Type 1 neighbourhoods, where a diversity of urban morphology and functions was observed from the beginning, as well as some Type 2 neighbourhoods with tangible opportunities in the form of open green spaces, waterfronts, and newly emerged facilities of trade, leisure, and entertainment (especially shopping malls), are perceived by the student youth as multifunctional urban areas rather than urban bedroom communities.

At the same time, other Type 2 and 3 neighbourhoods with peripheral location on the urban fringe and bad transport accessibility often fall under negative stereotypes, both true and erroneous, circulating in the urban community, and thus often are perceived as something like a ghetto by the young people.

Consequently, different types of (post-) socialist mass housing estates need individual approaches to positive image change based on the complex evaluation of development factors and challenges (Dol et al. 2007; Benkő, 2012). In most general terms, what is needed is to modify the homogeneous urban fabric of mass housing estates in terms of both functions and morphology, to improve their rapid transit accessibility (Gnatiuk et al., 2022) to give them new atmosphere, to preserve their environmental safety, to make them magnets for businesses and consumers, to improve the crime situation, and to overcome negative popular stereotypes associated with the neighbourhood (Balducci et al., 2007; Benkő, 2012). However, strengths and weaknesses, treats and opportunities should be analysed for each mass housing estate separately. For instance, for some of them, the image may be improved via beautification of the existing local green areas and waterfronts, while for the others construction of a shopping mall as a local public space may be the only possible and the best solution. In this respect, neoliberal urban development, often criticised for its negative impacts on the post-socialist city in general (e.g. Sýkora & Bouzarovski, 2012; Golubchikov, Badyina, & Makhrova, 2014) and Kyiv in particular (Mezentseva & Mezentsev, 2017; Dronova & Brunn, 2018), including for aggressive and uncontrolled commercialisation, plays rather positive role for some mass housing estates since results in tangible differentiation of their functions and morphology, inducing in this way the inflow of young people into the neighbourhood (Kährik & Tammaru (2010) on the role of new housing construction in population structure shift, Gnatiuk and Kryvets (2018) on the role of commercialisation in modernisation).

## Conclusion

At the beginning of the fourth decade of the post-socialist transition, mass housing estates of the post-socialist city constitute a tangible part of its collective image, being well reflected in the perception of the younger generation. However, apparently similar individual mass housing estates differ significantly in terms of their imageability and likeability. While several mass housing estates top the list of the most recognizable urban vernacular districts, some others are practically unrecognizable for the young people, being at risk to gradually disappear from the cognitive map of the city with a change of generations.

While the low imageability neighbourhoods suffer from growing placelessness and loss of local identity, the most recognizable neighbourhoods may have strong good image or, on the contrary, have the image of a "bad" neighbourhood. Neighbourhoods with good image, despite their typical appearance (monotonous urban landscape, grey panel residential blocks, etc.), attract young people with their green areas, waterfronts, modern entertainment, cafes and restaurants, places with beautiful scenery, and especially – a good transport accessibility, notably a proximity to metro stations (cf. Gnatiuk, Kononenko, & Mezentsev, 2022). "Bad" neighbourhoods are subjects of negative stereotypes circulating among the urban community, including the students. Although these stereotypes are fitting the reality only partially, they do reflect some really existing problems: social illnesses, poor transport accessibility, luck of such attractors for young people as shopping malls, green areas, waterfronts, and other places for shopping, leisure, and entertainment. Such different perceptions may influence the choice of living place by the young people and further exacerbate the existing social differences between the individual mass housing areas.

The examples of mass housing estates with a good image suggest possible responses and "recipes" to overcome the negative images of the "bad" neighbourhoods in order

to make them attractive for the younger generations. Anyway, these responses, aimed at re-integration of (post-)socialist large-scale housing neighbourhoods into the urban space and their re-branding, should be individual and based on the complex evaluation of development factors for specific mass housing estate. The specific strategies for re-branding the post-(socialist) mass housing under various types of political and legal regimes and for different socio-economic types of cities and neighbourhoods may be the subject of further research.

Editors' note:
Unless otherwise stated, the sources of tables and figures are the authors', on the basis of their own research.

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