



ALEX

Urban City
Design of the Future



EMPATHY UP



Roman

Kozhevnikov

I'm experienced architect, urban planner and urban designer. I am 32 years old and I absolutely love complex, large and interdisciplinary projects



Pavel

Lukyanchuk

Civil engineer with great experience. Responsible for networks and systems

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urban context analysis

HOUSING POTENTIAL

In order to determine the possible volume of housing being built, it is necessary to find out how many residents Mackies can attract and comfortably serve. This, in turn, depends on the accessibility to objects of primary diversity (places of attraction on a city scale) and the secondary diversity that depends on it (small business).

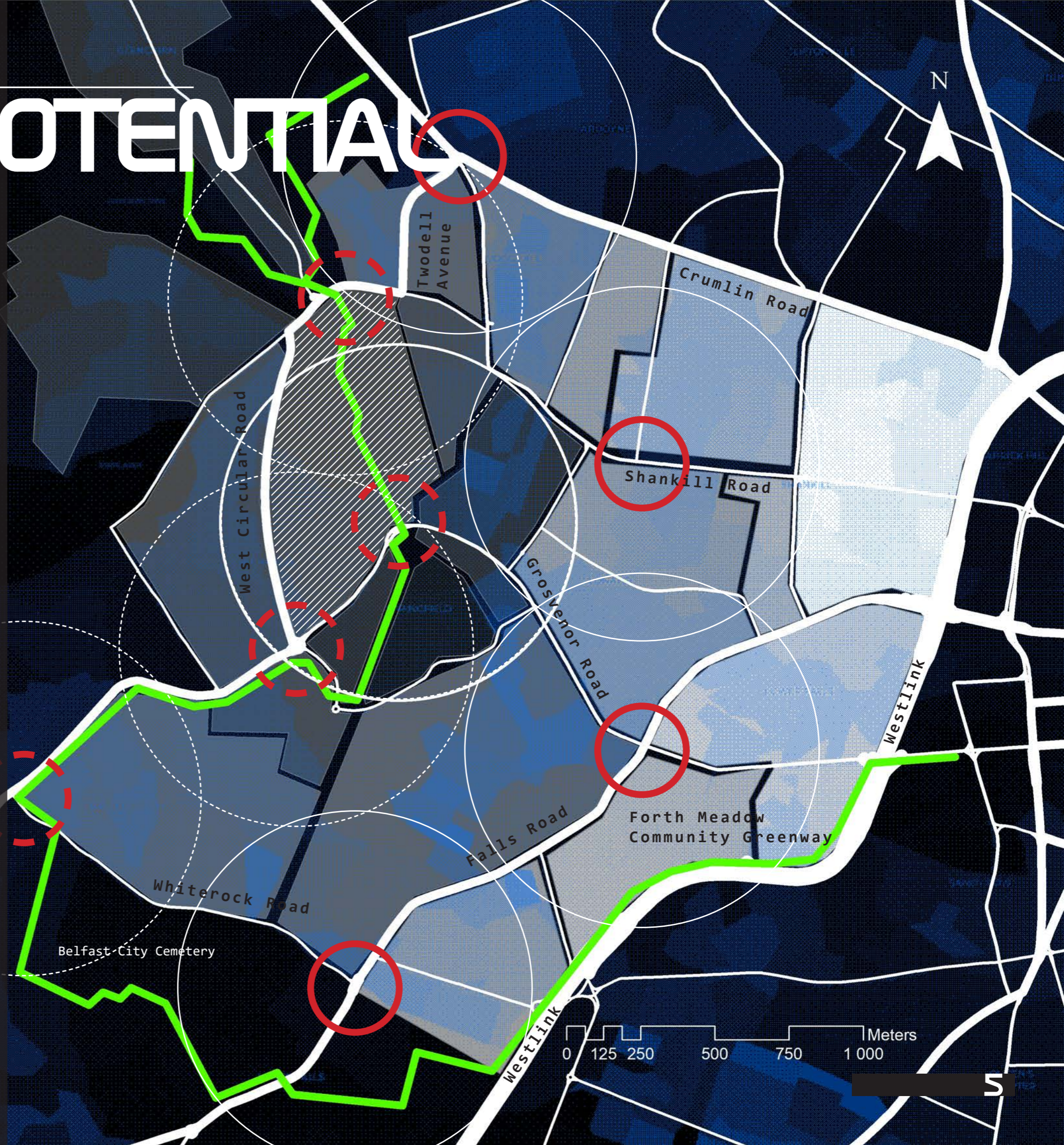
On a city scale, the design area is part of a vast planning area, bounded by Westlink from the east, by Crumlin Road from the north, from the west by the slope of Black Mountain, and from the south by the Belfast City Cemetery.

According to the result of a comparative analysis of the connectivity and the population, shown on the topogram, while moving away from the main transport links to the west, the proportion of these indicators shifts towards population surplus. In confirmation, 4 centers of urban life have been formed in the northern and eastern parts of the district meanwhile: on a segment in the middle of Shankill Road, on Crumlin Road in the area of the intersection with Twodell Avenue, and also on Falls Road at the intersections with Whiterock Road and Grosvenor Road. At the same time, in the western part of the district, which our site belongs to, the urban fabric is more monotonous and such centers haven't appeared.

However, Forth Meadow Community Greenway will soon be completed - it will connect nearby areas with other parts of the city, including the center. Most likely, as a result, in places like Mackies, local urban life centers will be formed. This will allow us to build quite a lot of housing.

In addition, Mackie's has another unique advantage that distinguishes it from the existing centers of urban life within the area, as well as from the centers of urban life that could potentially develop on the Greenway. This advantage is an industrial park, a huge place of employment which is developing in the southern part of the site. While expanding, such facilities significantly increase the demand for housing within walking distance, and the only remaining undeveloped site for this housing nearby is Makie's.

Thus, all three conditions make it possible to create a new core of the entire district with a quite high housing density.





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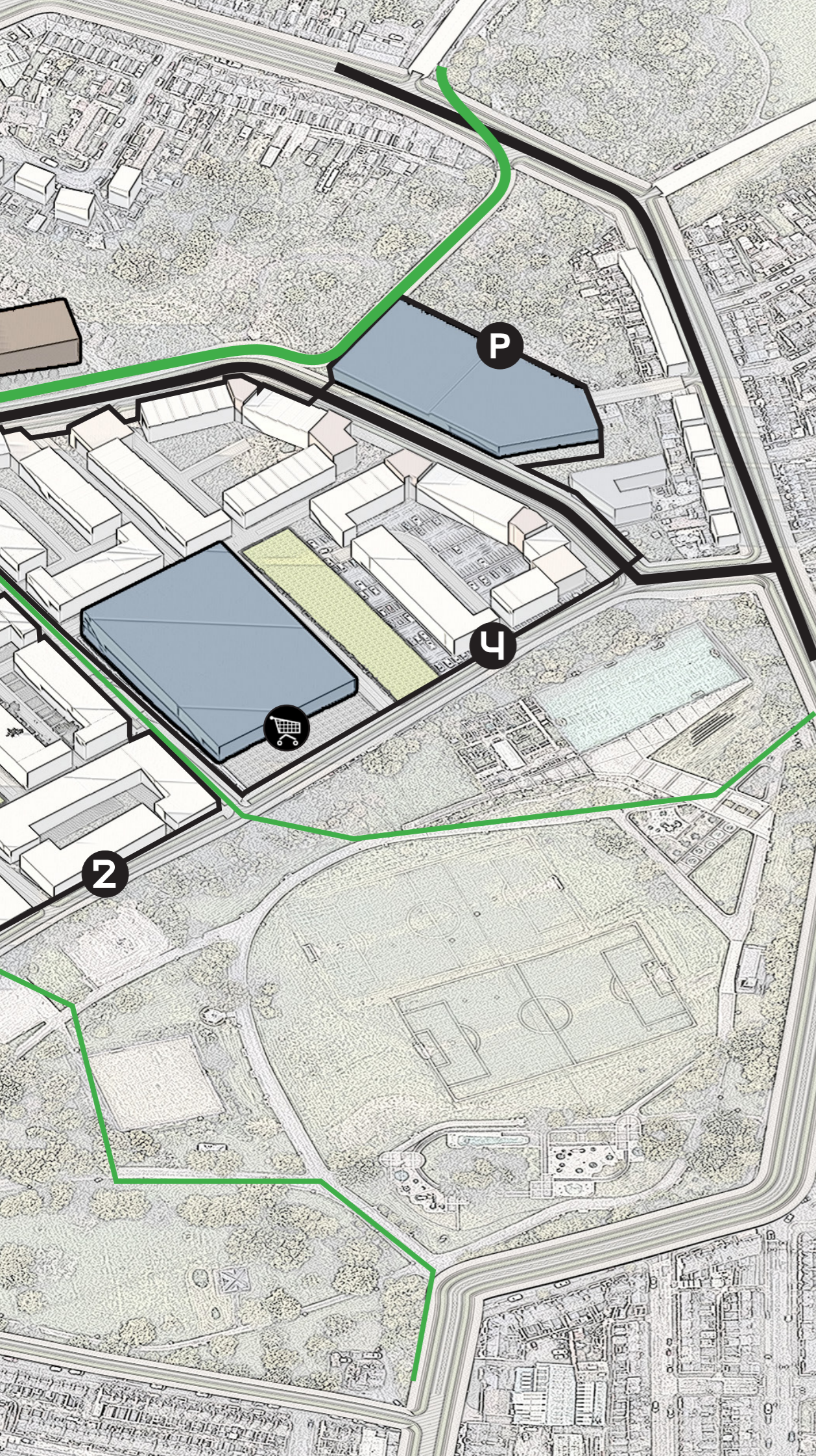
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SUSTAINABLE & ACTIVE TRAVEL



The planned Greenway should be traced on the eastern side of the Forth Meadow. Placing it in the center of a neighborhood rather than on the outskirts will help to create more pedestrian traffic and will increase site security with cross-surveillance. This will help to make Greenway the community and commercial link of the neighborhood, while also leaving enough space on the west side to create full-size housing blocks.



One of the foundations of creating a healthy and sustainable mobility is lowering the dependence of the population on the transport by creating a mixed pedestrian environment. So, to generate additional diversity, the existing roadway is proposed to be narrowed but elongated to create link between the Springfield Road and Twoddell Avenue.



Between the new street and the Greenway, will be created a public space for all residents of the nearby neighborhoods. Here local food production, team sports playgrounds and wind turbines should take place.



A pond will be created along the flow of the Fourth Meadow. An overflow device will be installed in the south, a ravine will be used as a lake bed, the walls of the ravine will be terraced and used for permaculture growing.



On the axis of the site the main square will take place, surrounded with school, community center and medical center.



FBP facilities and other enterprises should be distributed along the main street as part of a multifunctional development, along with educational, medical and religious institutions. The development will be arranged into superblocks - groups of blocks, with pedestrian streets between them. Inside each of the superblocks, a public space with children's and sports grounds will be created.



The block on the south side of the microdistrict (on the part A of the land owned by the Department for Communities) should be built first. This part will be special: with a relatively small size, it should be comfortable not only for residents, but also for visitors from other areas, which will serve as a catalyst for further action. The access road will be shifted slightly to the east, and a mixed-use block will be erected on the resulting site. The two-row building front will help to create an «intermediate» pedestrian street between the intimate (internal) and public (external) spaces of the quarter, which will be comfortable for the guests of the quarter.



After that, the main bulk of the housing on the eastern part of the site will be built (East end of land owned by the Department for Communities and all land of the Forthriver Business Park). Construction should advance from the new street to the east, gradually reducing housing density as development moves away from the main transit axis.



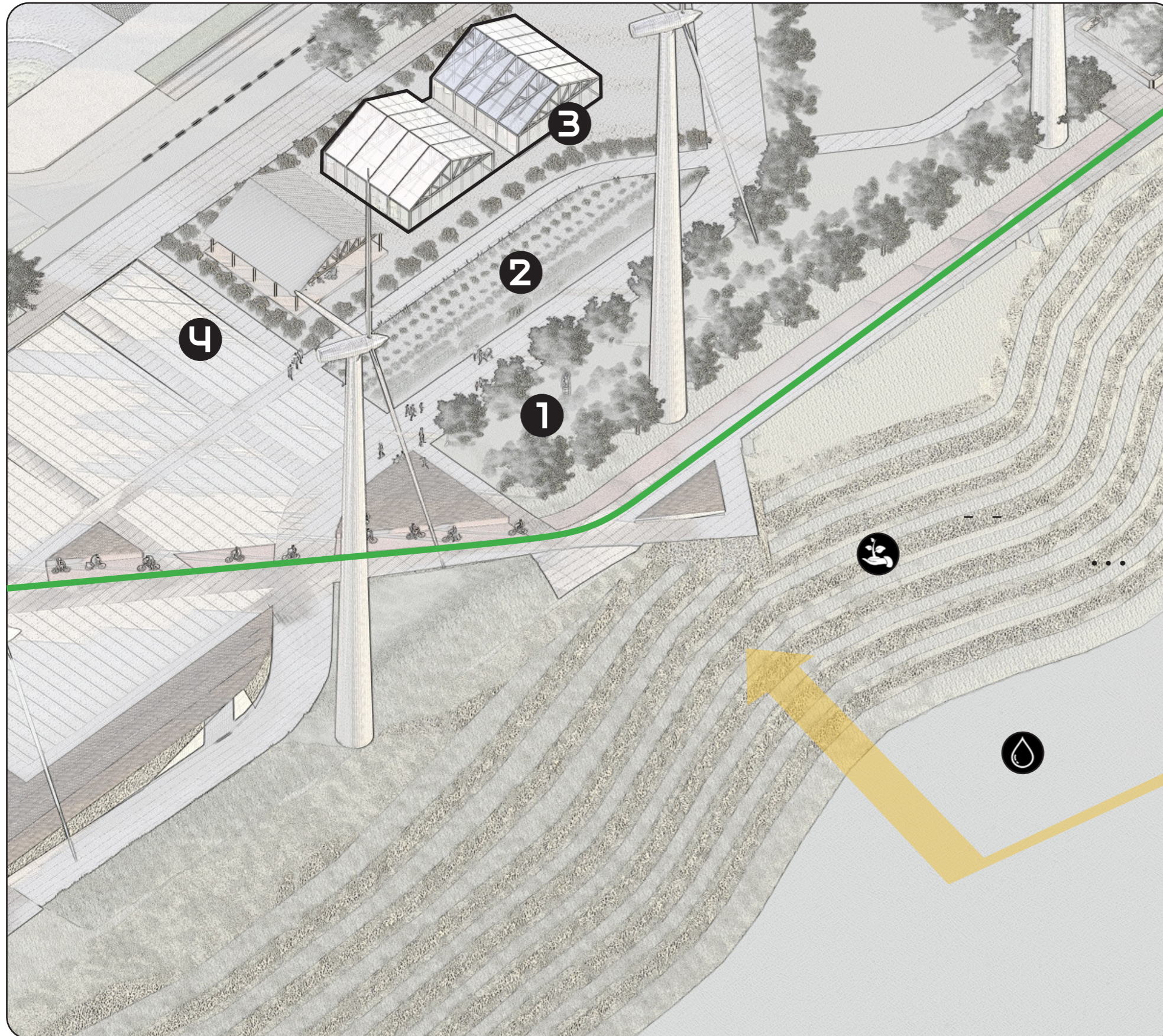
Following this, to complete the continuous building line, another superblock will be built near the Tesco Superstore. Parking spaces for supermarket will be provided through the construction of a multi-level parking lot, a public space and a mixed-use block will be built in front of the supermarket facade. Thus, a human scale entrance to the neighborhood from Twoddell Avenue will be organized.



The areas to the west of the ravine and in body of existing building will be build up last. Due to the low pedestrian accessibility of these areas, healthy living in them to a large extent depends on the success of the previous stages. It is proposed to build light bridges for pedestrians over the Ravine.



A healthy place to live PERMACULTURE



The slopes of the ravine will be terraced and planted with mixed crops. Slopes will be made using the technology of steep raised beds according to the Sepp Holzer method. This solution is increasing agricultural surface area, using slopes of the ravine as a natural protection from the wind and receives more solar radiation per unit area. At the same time, mixed plantings reduce the need for fertilizers. Boulders will be placed on the terraces as heat accumulators.



This lake will be used for breeding fish and crayfish. Together with aquatic plants growing in the shallow upper part of the pond, they will be part of the nitrogen cycle, which will make the water naturally clear, as it happens in nature.

The lake will collect and store rainwater for irrigation, as well as excess flood water. The lake will act as a lens of water - the light will be reflected from the surface of the water and increase the amount of solar radiation reaching the plants on the slopes. Water birds from the lake will rid the shoots of pests.



Between the lane and the Greenway, there will be an edible park (1), community gardens (2) and greenhouses (3). Fruit trees and berries will be grown on the territory of the park, a menagerie, apiaries, a local food market (4) and a training center will be located.



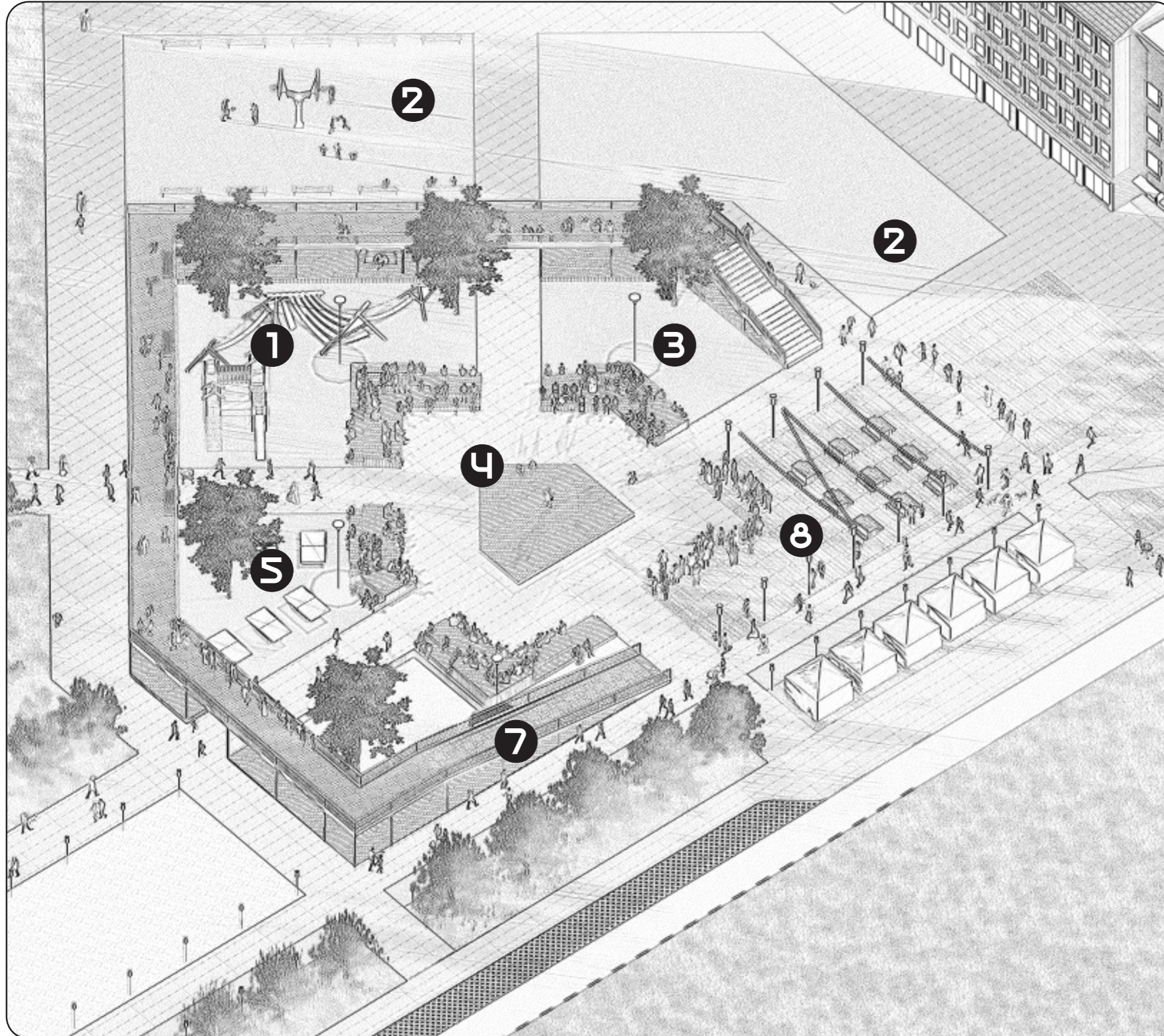
In front of each house a small plot of land with option to farming will be reserved. The total area of land available for agriculture within the neighbourhood will be over 6 hectares.



A healthy place to live

COMMUNAL SPACES

ENCOURAGE SOCIAL INTERACTION AND COMBAT SOCIAL ISOLATION



In front of the school, in the compositional center of the entire neighbourhood, street space suddenly opens up to a vast square, bounded around by a public buildings facades, a cliff, a park and a roadway. Square organized in the form of an amphitheater, opening to an esplanade on the visual axis intersection.

The functional zoning of the area is a tight proximity of leisure activities for a wide range of people: a children playground, a ball games playgrounds, workout area, a stage with wooden stands for street performances and lectures, a playground with ping-pong and board games tables, a playground for dogs. This is done so that completely different people come together to fight social isolation.

The perimeter of the square will be surrounded by raised pedestrian terrace. A shelter from the rain and a swings will take place under the terrace. This construction will visually limit the square, provide an additional view from above, and will complicate the space, making it more interesting and capacious.

In the northern part of the square, the space will be left unspecialized. With the help of temporary landscaping elements, it can be used for any task, such as setting up tables and tents and arranging a national cuisine festival.

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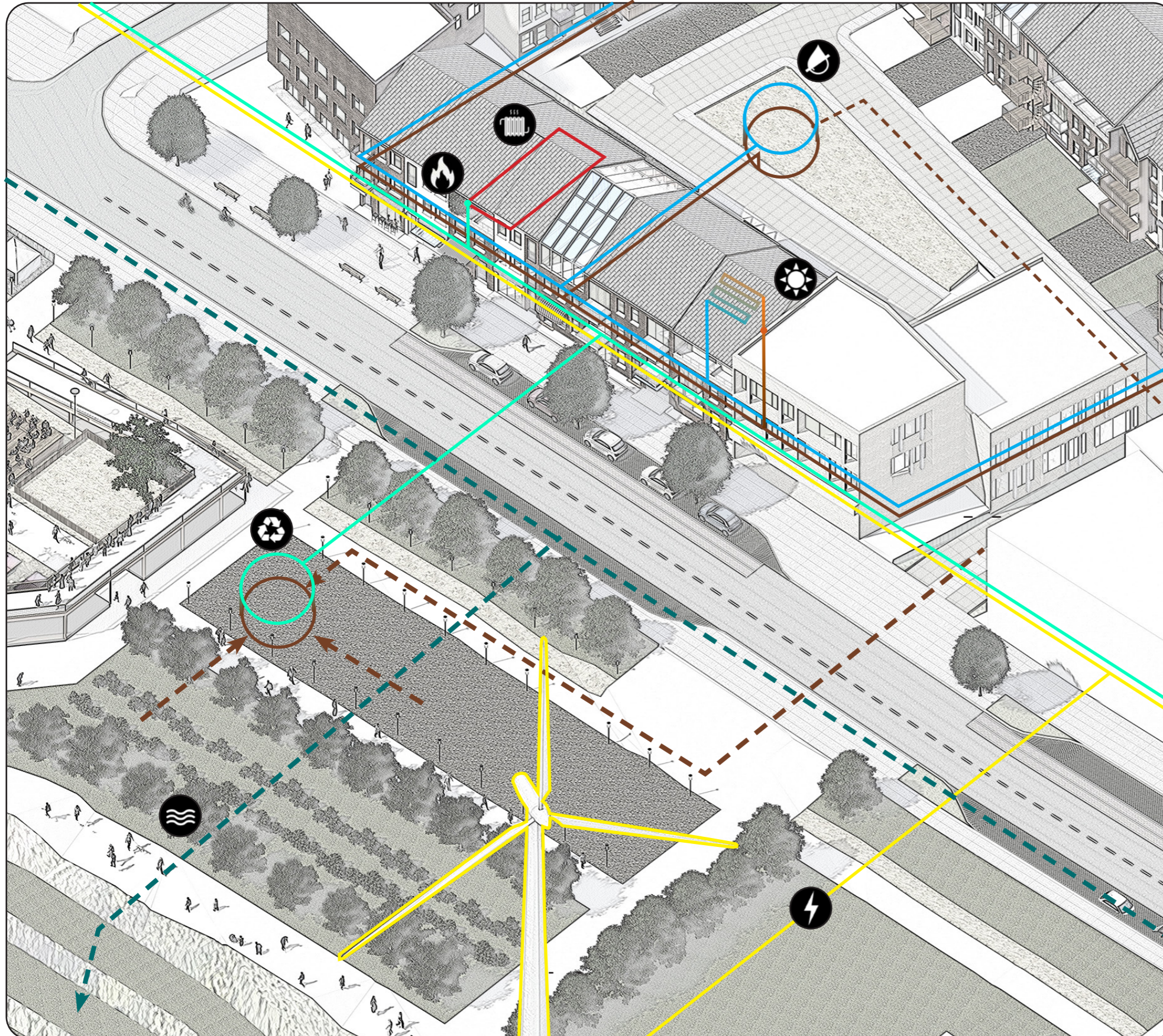
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Adapting to the challenges of a CHANGING CLIMATE



Water system will be totally looped.

Organic waste and crop production are sent to a biogas plant. The product of such an installation is combustible gas, which will be used in dwellings for cooking and heating. System, working only on human waste, will cover full need in gas. (8700 m² from needed 8 060 m²)

Solar systems installed on the roof will be used as a heating element in the hot water supply system. Unlike photovoltaic panels, such systems directly use infrared radiation from the sun to heat water, which makes it possible to avoid inevitable losses during the conversion of heat-electricity-heat. Needed 1400 kWh of energy will be covered using only 17% of the roofs area.

The site will be powered by seven wind turbines generating totally 21,000 kWh in a day (15,728 kWh is full demand)

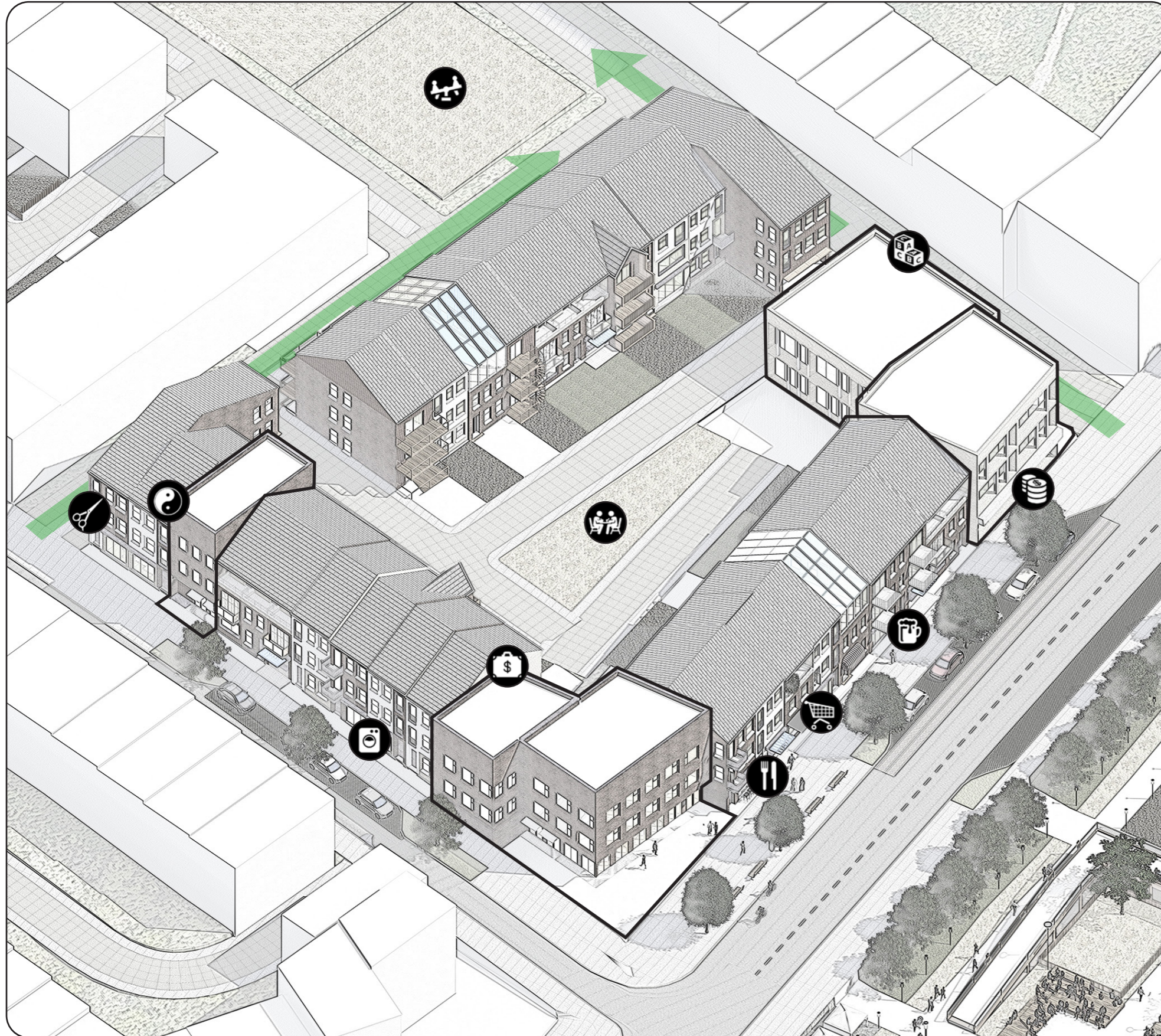
As a protection against flood waters, the lake will be used as an overflow reservoir. Normally, rainwater will arrive through a filter unit.

Thus, by generating an excess amount of green energy, future neighborhood will have a negative level of emission.





An inclusive community **BLOCK & SUPERBLOCK**



A tight community that promotes respect and does not tolerate discrimination is reaching by putting the village size community on the dramatically smaller but comfortable piece of land. To achieve this, we will learn from the Montreal «Plexes». These triplexes are stacked on top of each other and side by side at the same time, allowing us to create 1920 dwellings on the site. At the same time such a solution will make a housing more affordable through more efficient use of land and smaller apartments than in private houses.

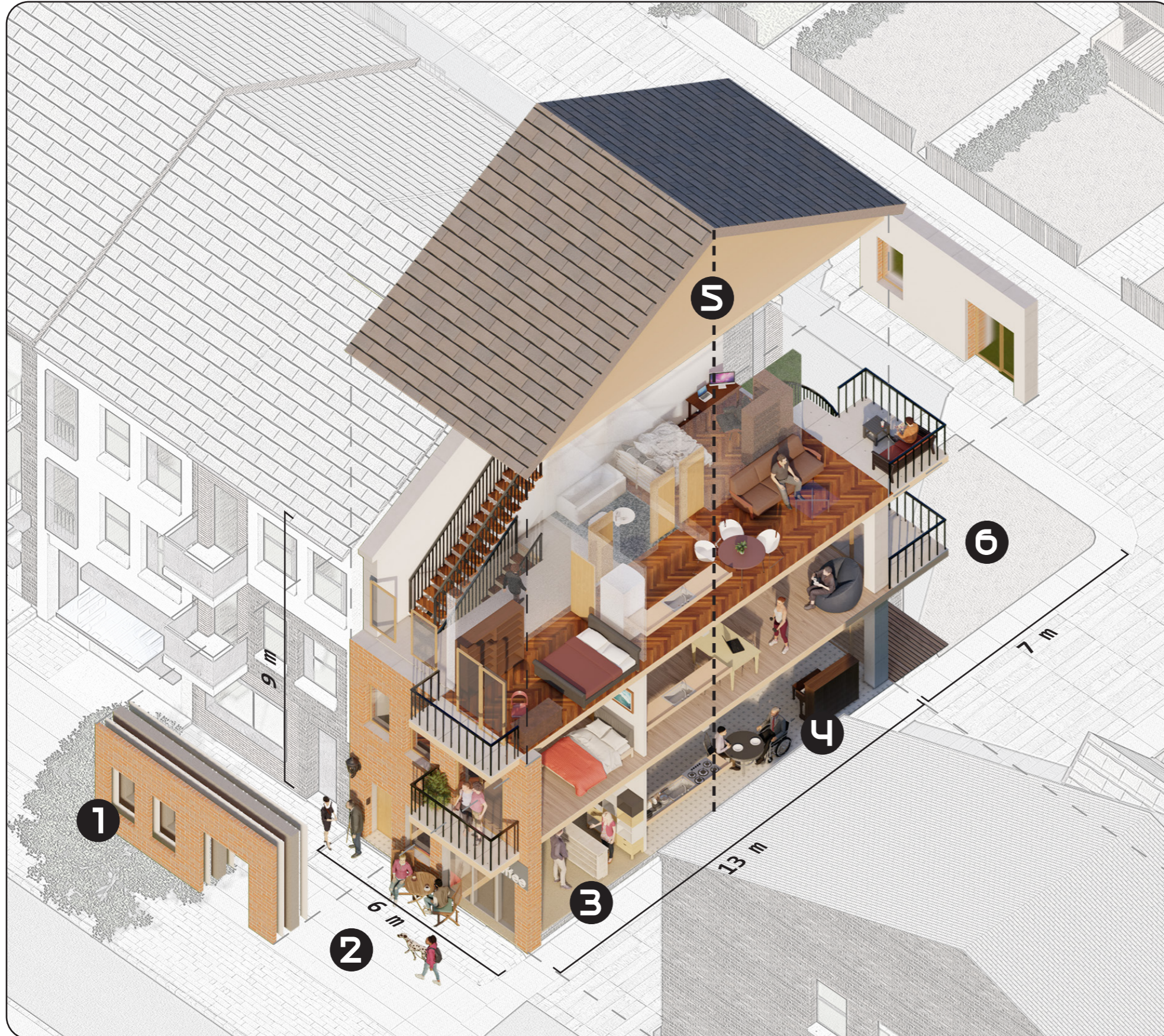
Whole development is just a large number of small independent buildings. This will help to create of a community of mixed tenure. Tenure blindness is achieved by building residential buildings with a different number of dwellings, indistinguishable from the outside.

Thanks to the mixed functionality, everyone will find a place to work (including small factories in the structure of the district or a store on the ground floor of the house), pray or find like-minded people otherwise, the school should also be mixed.



An inclusive community

HUMAN SCALE



Examples of houses are designed with energy efficiency in mind through the use of modern building envelopes of environmentally friendly equipment.

1

Buildings are going to be welcoming. The development is designed on a human scale - this contributes to the integration of the external and internal spaces of the dwellings, which in turn contributes to maintaining security and building a closer community.

2

Buildings are going to be accessible. Ground floor will be almost at the ground level, which is convenient for people with low mobility and engaging public realm development.

3

4

Buildings are adaptable to everyone. Due to mixed zoning, apartments can be turned into a street commercial, hostel. This can be done because of the very free layout of the house: there is only one transverse wall.

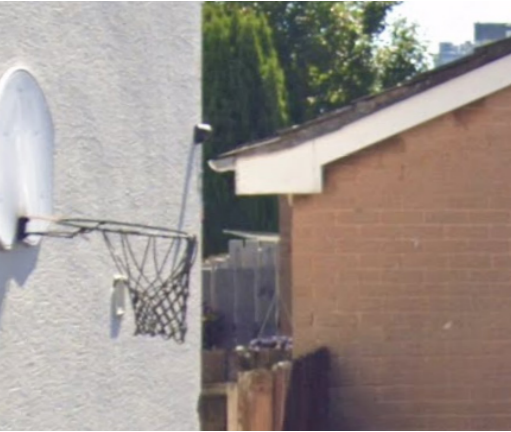
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In all houses there is a possibility of a through passage inside the block.

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urban context analysis

BELFAST TEXTURES



urban context analysis

MULTISENSORY DESIGN



On the sidewalks, the building boundary is made on a human scale:

- Building entrance at street level
- Street profile organized in a comfortable scale.



The exits from the courtyard are visually framed by elongated sections of residential buildings or hidden behind a corner. The inner space of the blocks is intimate, the yard is protected from wind and external sounds.



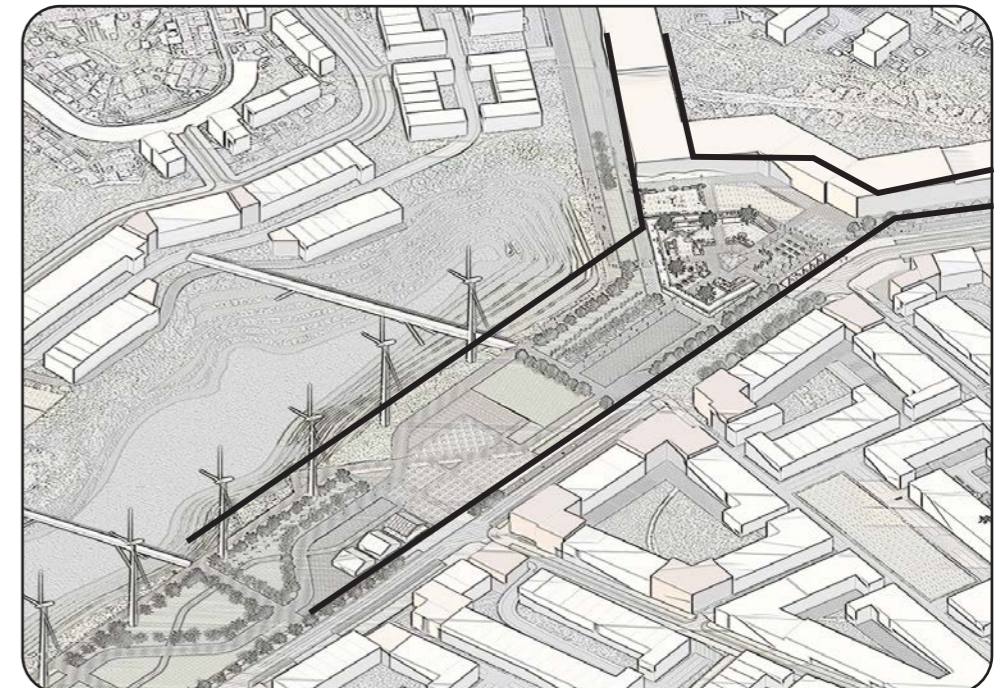
On the scale of the block, the space is contrasting and dynamic. This effect is achieved by alternating horizontal and vertical elements.



The exits of pedestrian streets to the boundaries of the superblock are visually highlighted by contrasting empty side facades of residential buildings. This solution simplifies visual navigation and adds variety to the environment.



Street space is organized for a linear-nodal scenario of perception. At the intersections of the main street with local driveways, the corners of the blocks are decorated with dominant public buildings. These buildings recede back from the boundaries of the street and form small node.

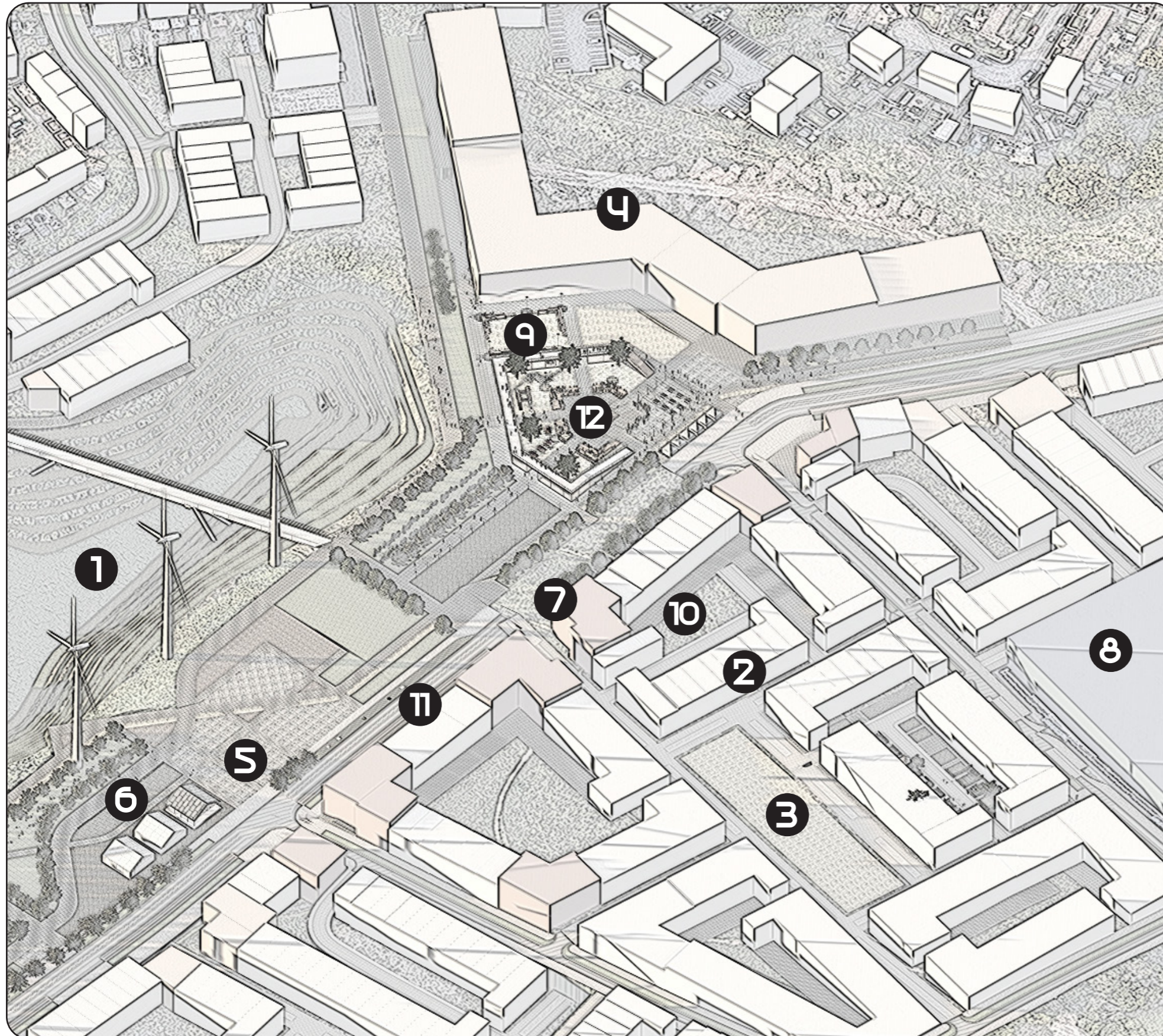


On the maximum scale, the main visual axis has a meridional direction, and is defined by a ravine, a chain of wind turbines, a building boundary and a roadway. Squares near the school and on the corners are main nodes on the axis.



A day in the life

of typical resident living on the new Mackies neighbourhood



Early in the morning my brother and I went to the lake to fish. I like to watch the bobber flutter while taking a bite, however fish I don't like. In the dawn silence, only a quiet splash of water is heard, only occasionally broken by the scream of birds living in the reeds nearby.

1

When we returned to the warmth of the house, lights were on in the kitchen, and mom was already setting the table. The aroma of freshly brewed coffee wafted everywhere. Mom made scrambled eggs and tomatoes for breakfast. She says that this dish is called shukshuka, and that a neighbor gave her the recipe. Dad reads the news.

2

Yesterday we played pirates on the playground (3), but now the older guys are in school (4), so today there is not much going on here. Mom allows me to go to the playground by myself, because there are a lot of familiar adults on it.

3

4

We played a bit of locks, and later my mother came out and I went shopping with her. Not far from the house, near the park there is a market. It's September now and the whole market is just littered with apples. How do they smell! Fallen leaves crunch underfoot.

5

After buying groceries and walking around the park (6) for a bit, we go home. There are a lot of tasty things in the shop windows on the main street, the inviting smell of pizzeria can be heard from around the corner (7). But mom likes to cook herself, and dad comes home for lunch - he works in a shop (8).

6

8

After lunch, on my his way to basketball, brother takes me to the community center for my drawing lessons.

9

After classes, I hurry home: on Fridays we have a barbecue in the courtyard!

10

After dinner, my mom goes to meet up with friends, and my dad and I go to watch some street musician perform in the square.

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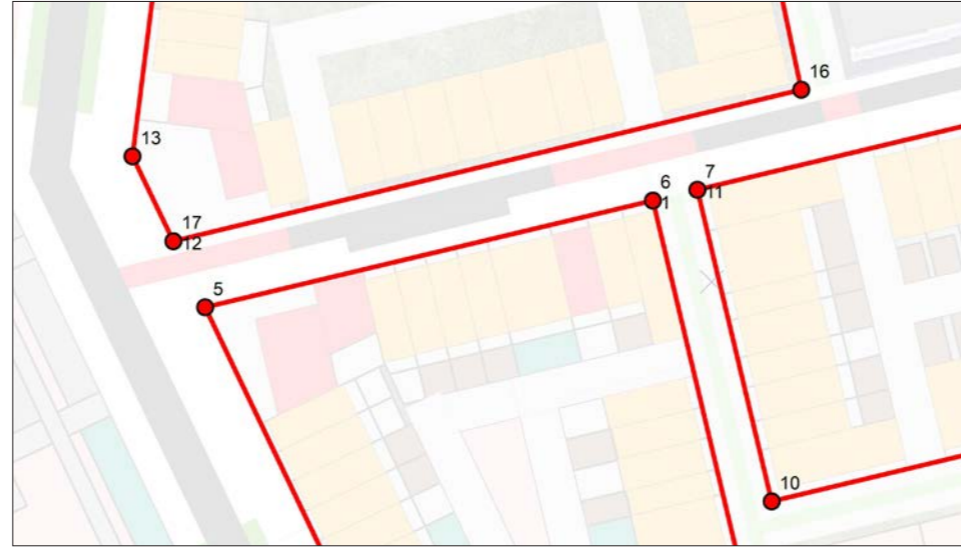


Participatory planning

Several workshops will be held at the beginning of the design process. At these events, the materials of the concept will be presented in high detail, statistics will be collected to study the areas of employment and commuting, and to determine public opinion. Workshops will include brainstorming, situation modeling, gamification and debate techniques.

If there will be a public request, the design solutions of the concept could be clarified, supplemented and changed, controversial issues will be resolved by a general vote.

Thus, the «Co-creation in design» requirement will be performed at the «Design» stage.



Flexibility

We believe that we are not always right, and the last judge for a scientist is an experiment. Therefore, we designed the microdistrict to be flexible so that design solutions can be changed at any of the subsequent stages of implementation and use.

The initial survey of the territory will consist only in the allocation of the boundaries of the quarters, and the division into separate sections will occur during the construction process with the participation of the public. This will help determine the size of future houses and the presence of public and commercial facilities in the quarter based on the wishes of a particular investor and with corrections of errors.

Pedestrian streets inside the superblock will be built without permanent barriers. This will allow residents to influence the environment during their stay: flower tubs, tables, benches, mobile fences.

Thus, the requirement of co-creation in design will be fulfilled during the design, assembly and operation phases.



Separate developers

Due to the fact that the future development essentially consists of many small independent developments, there will be no need to attract one large contractor.

A large developer lobbies its own interests, which can lead to an inappropriate increase in building density with a decrease in the quality of the urban environment, the use of low-quality structures, mechanisms and materials.

Thus, the very fact of the absence of a large developer in the process limits possible corruption, lobbying the interests of the developer and ensures Self-management and autonomy at the design and construction stages.

Different stages of development Design, Build and Live



Separate projects

Without a single contractor in design and construction, local architects, artists, cultural figures, craftsmen and dissenters will be able to build their own unique home their way.

We do not strive for uniformity, diversity is our advantage! Imagine whatever you want, design however you want, build with whoever you want, even with your own hands, or set up a tent and like JD. So at the Design and Build stages, the Co-creation in design and Local employment and skills requirements will be fulfilled.



Strong community

Tight bound within the quarter will create a sense of community, not neighborhood. Shared public spaces within the superbloc will create a sense of neighborhood rather than a sense of isolation. Community center, mixed school and public spaces welcoming outsiders will promote a sense of cooperation rather than xenophobia. These properties of the future mixed development area will help to create a strong community, capable of self-initiative, self-communication, self-government and self-advocacy at all levels.

As a result, the requirement of Self-management and autonomy at the stage of residence will be fulfilled.



Local employment

Within walking distance, the required number of work places for all segments of the population will be created. So at the live stage, the requirement of Local employment and skills will be met.



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where is safer?

