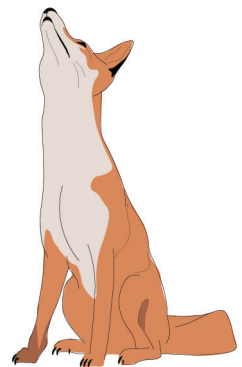




B E A S T S' C I T Y

SLOTERDIJK TRANSFORMATION TO ACHIEVE CO-LIVING WITH NATURE

Graduation project Francesco Carrasso



Prendi un angolo del tuo paese e fallo sacro.

Franco Arminio



Graduation project
Francesco Carrasso

Mentor:

Roel van Gerwen

Commission

Thijs de Zeeuw
Angelo Renna



Academie van Bouwkunst
Amsterdamse Hogeschool voor de Kunsten

Everyday practices of urban planners, landscape architects, and urban designers shape normative expectations and practical possibilities for human animal interactions. But their practices do not reflect desires to enrich or facilitate interactions between people and animals through design.

Jennifer Wolch - Zoopolis, 1998

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INTRODUCTION

“Nature, in the broadest sense, is the natural, physical, or material world or universe. Nature can refer to the phenomena of the physical world, and also to life in general. Although humans are part of nature, human activity is often understood as a separate category from other natural phenomena.”

This is how Wikipedia defines Nature. A phenomenon that doesn't include human activities.

Historically, humans have always pushed nature away. The primitive man, the first explorers, have treated nature with a distanced respect, because not being the head of the food chain meant that they had to protect themselves from its dangers and threats.

After the first settlements and the introduction of agriculture we have developed the idea of controlling nature. Understanding its dynamics and using it beneficially to improve our lives.

This attitude has lead human beings to take distance from nature to the point that in the Middle Age we had created walls to separate and protect us from both enemies and natural threats.

Such trend has influenced the idea we have of nature, considering it to be unknown and uncontrollable. At the same time, we also developed a fascination towards natural events. From the variety of species to the vastness of the sky we have elevated nature to an unthreatening heaven on

earth.

In my opinion, the disconnection from what is unpleasant and the perspective shift of what nature is, had already been a way of controlling and manipulating nature. Further down, we also developed the capability of manipulating the intrinsic functionality of nature through, for instance, irrigation systems, animal domestication and the use of nature as a decorative embellishment.

This manipulation has permitted us to embrace a part of nature in our lives because it made us feel that we could control its development in a way that was beneficial to the human species.

We are now developing nature within our cities to create spaces that can reconnect us to the entity of the earth. Looking back at what the natural world can give us as humans and how we can grow together with nature, we have learnt how to control our environment. I believe that designers of the Anthropocene era have to work with and for nature in order to reintroduce its beauty and functionality into our everyday life, looking at it as one big entity we are all living in.



San tribes cave graffiti in Norther Cape



Allegoria ed effetti del Buono e del Cattivo Governo - Ambrogio Lorenzetti

URBAN BIODIVERSITY

Growth of the urbanized areas

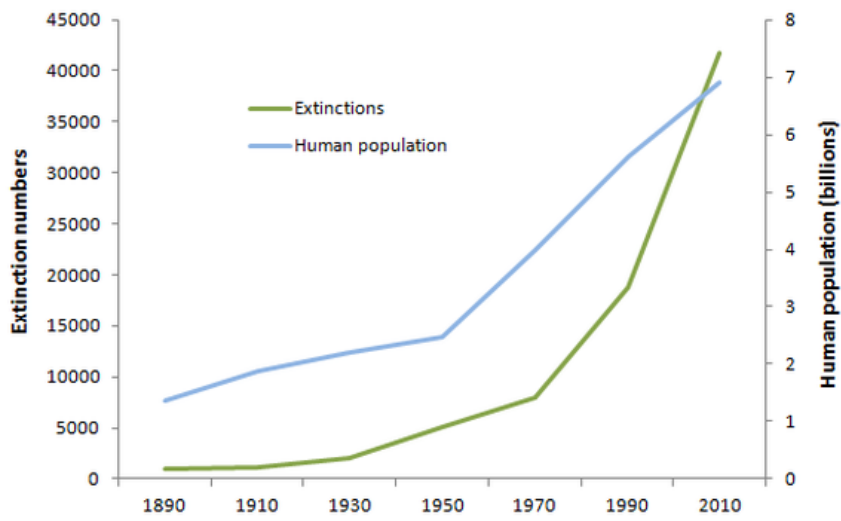
As humans, we are colonizing every single spot on earth. According to the United Nations, nowadays 55% of the human population is living in cities and by 2050 this number will rise to 68%. The migration to the cities combined with the growth of the population will lead us to either occupy more natural surface or to the densification of our cities.

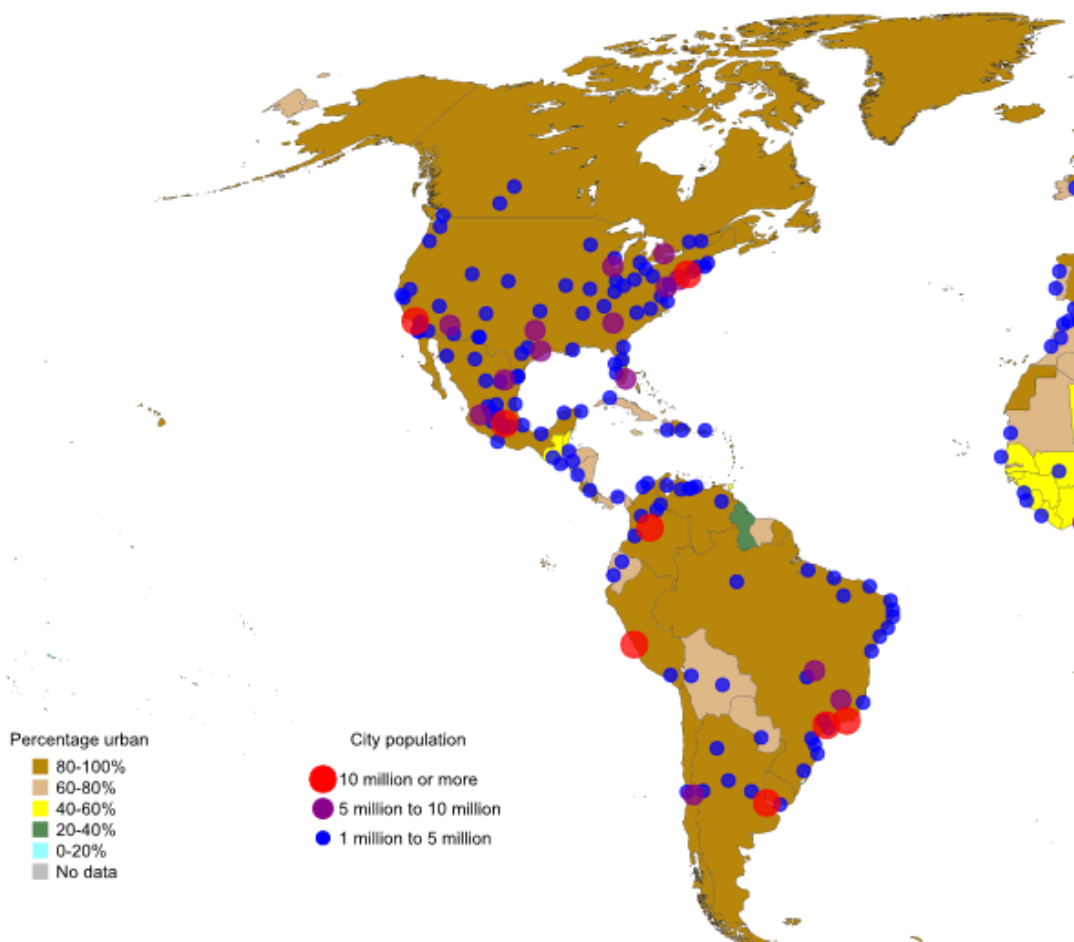
The notion that humans tend to live collectively in the so-called society, is not new. In the first half of the XVIII Century, cities started to grow exponentially thanks to the improvement of hygienic conditions, therefore leading to a decrease of the mortality rate in urban areas. Industrial revolution attracted people to the city and this was followed by an increase of the paved surfaces and the built areas. Also in

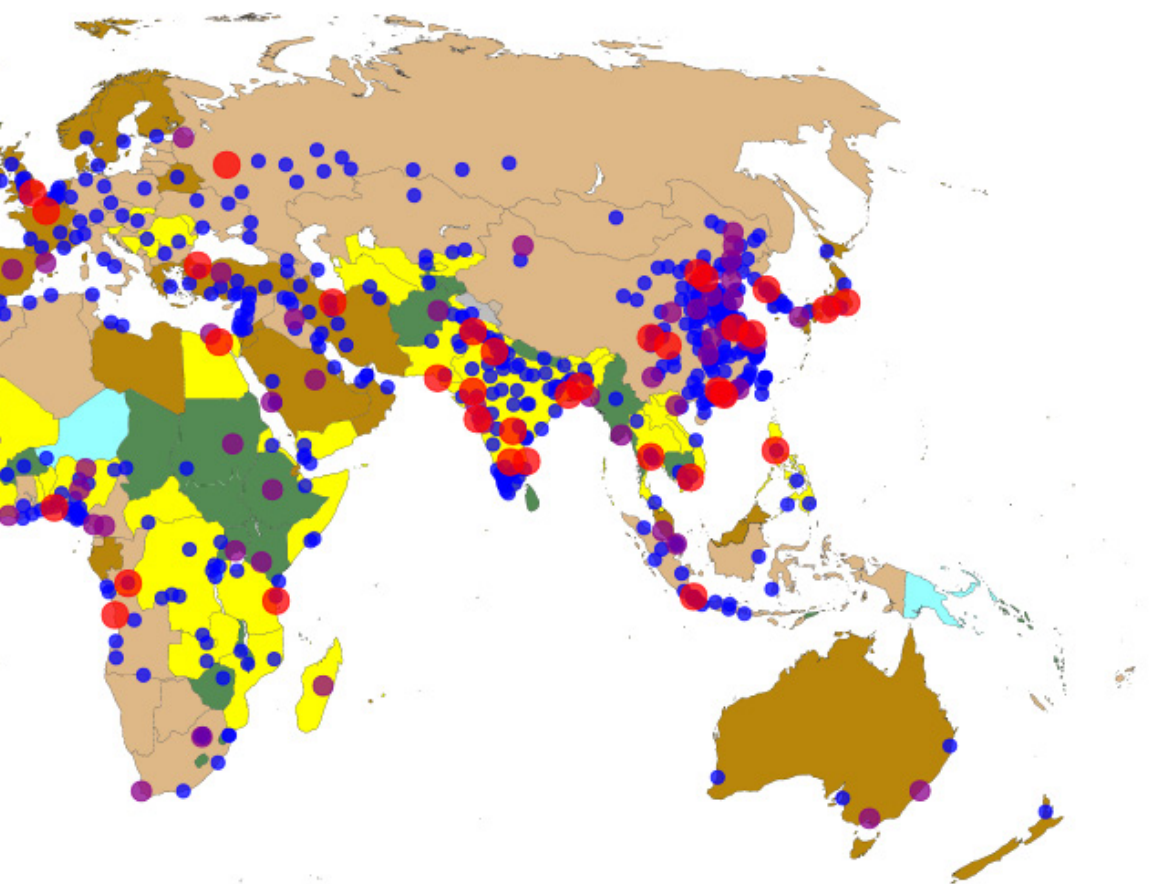
this period, we developed cities as industrial environments, making them less and less permeable to nature.

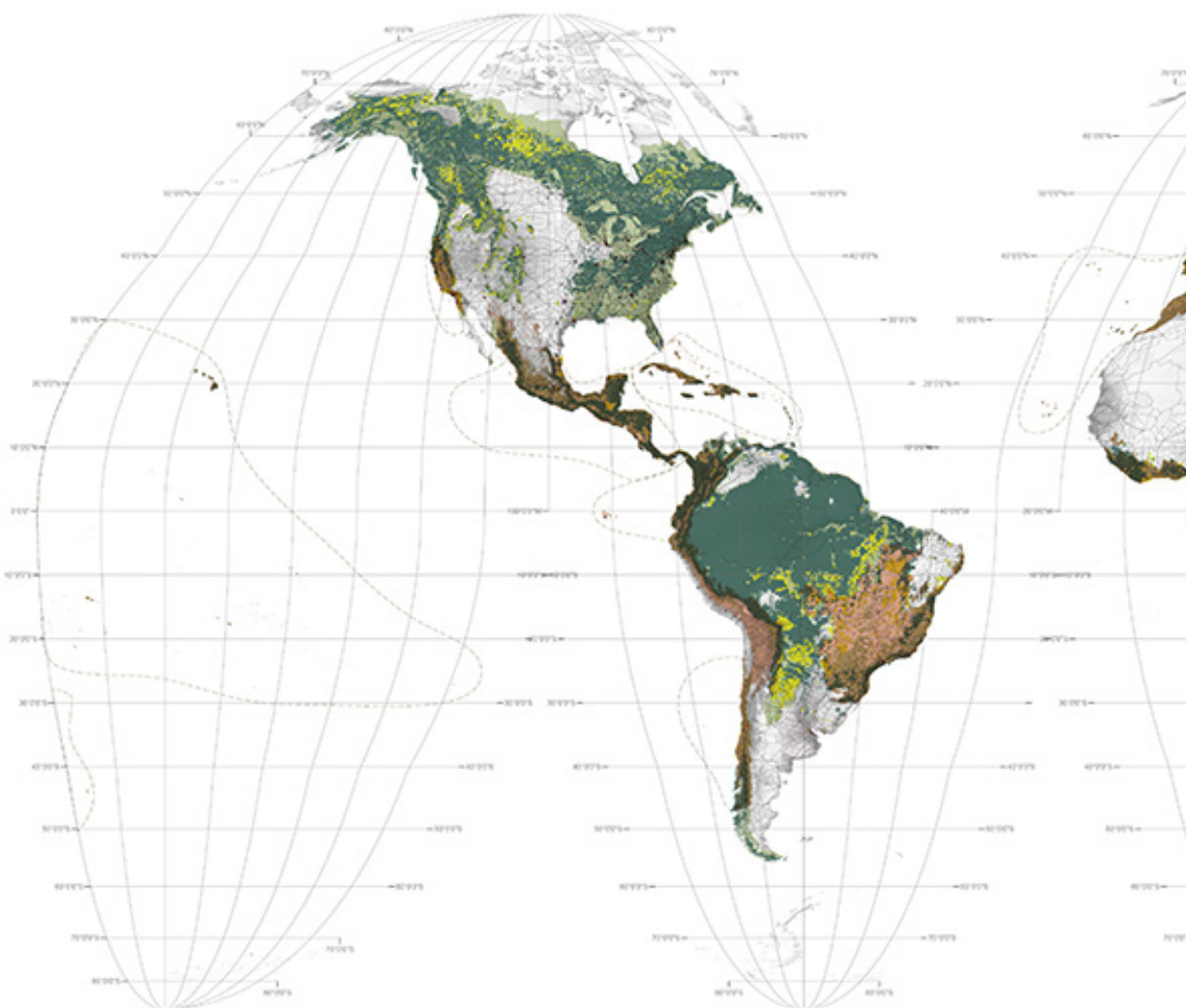
In relation to the societal structure of the time, different types of areas were built, from the working class neighbourhoods to satellite towns where the working class was accommodated. This brought to an exponential growth of the cities that has been translated to what we now call megacities. United Nations data says that in 2007 half of the world population lived in cities.

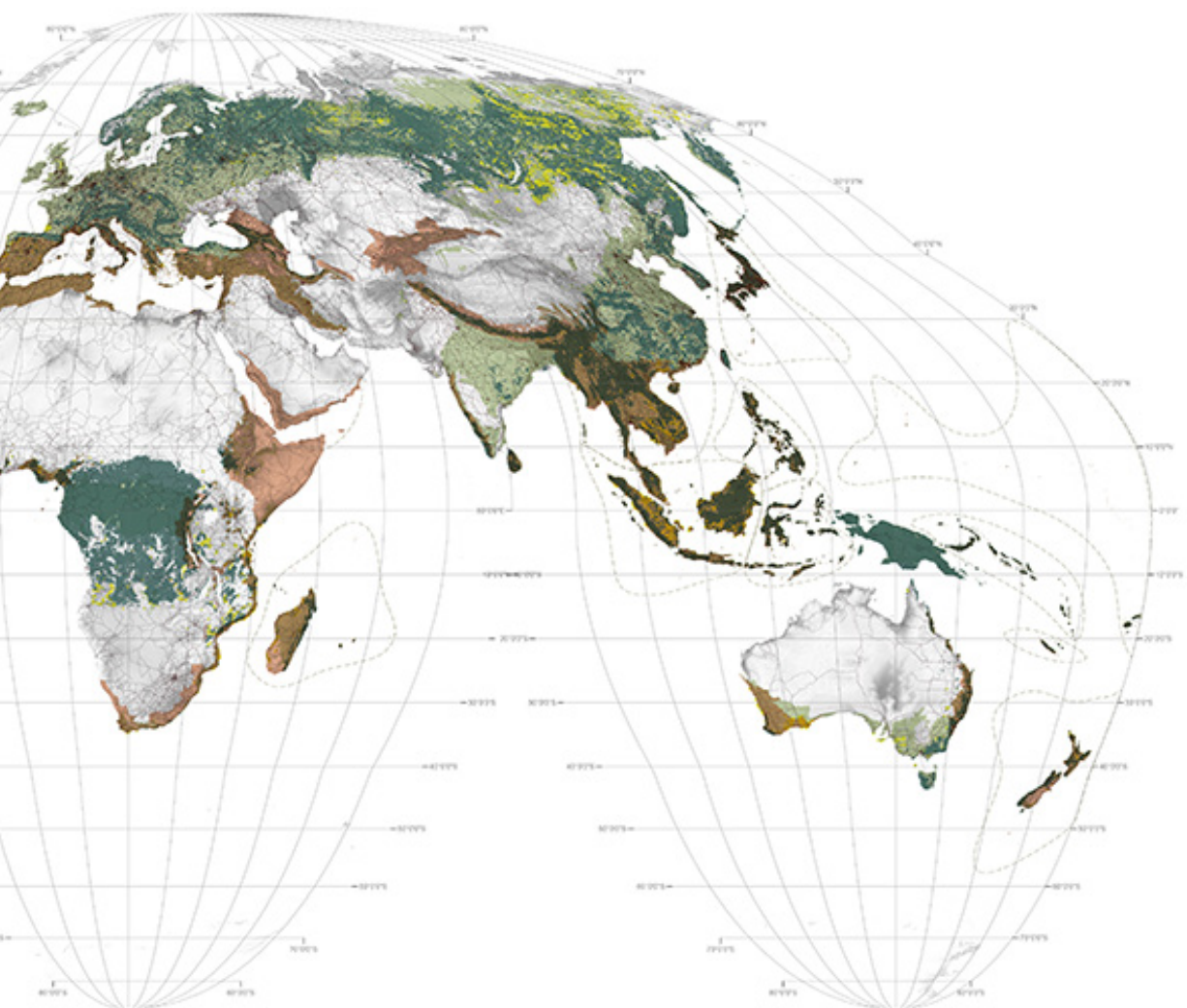
While 1950's New York was the only city with more than 10 million inhabitants, this number has grown to the point that we now have more than ten cities above this number with Tokyo at the first place with 37 million inhabitants. By 2025 world megacities will be more or less thirty. These











numbers are making clear that people have been detached from nature for what is already a long time and that this phenomenon will only grow in the future, decreasing biodiversity outside the cities.

As a consequence of urbanization, we have erased from earth a huge amount of natural habitats.

The need for housing infrastructure and for space to produce food supply are the reasons behind the destruction of hectares of original habitats causing animals and plants to adapt to new hostile spaces. Most of the time the reduction of the habitat size brings to the habitat overpopulation and therefore to disease and starvation.

Another important factor in the decrease of biodiversity is the fragmentation of the habitat, defined as unnatural detaching or separation of expansive tracts of habitats into spatially segregated fragments.

From the rise of temperature to the penetration of light in the habitats, this phenomena are decimating animal populations over a short period of time. Also, industrialization in agriculture has brought to a loss of biodiversity in the countryside. Monoculture is a technique that provides a huge amount of product in a shorter time compared to its “natural” process. As good as it sounds from the point of view of the production, this approach is destroying countrysides all over the world. Growing one specific crop means that the space around it should not be contaminated by other species, and to ensure this we have

been using pesticides to kill all other plants that could be a threat for the cultivation.

Different habitats have been erased; food supply for a lot of animals has become not sufficient to support a consistent population; natural movement in space has been prevented by the land fragmentation and other factors like light, noise and air pollution, threatening different species all over the world.

Animals migration into the cities

In his book “Darwin Comes to Town” the biologist Menno Schilthuizen describes city nature as a circumstance that had already been occurring two centuries ago. Herbert Sukopp in 1823 was already talking about city plants and exotic species as already crucial for urban biodiversity.

Further in his book, Schilthuizen mentions four aspects as the causes of what we call now urban nature. According to the biologist, human presence is crucial for the enrichment of biodiversity, which makes urban gardens so rich of exotic species from one patch to another. Thanks to the movement of people and animals, in cities we can measure high biodiversity within the same area.

First of all, there is something related to the richness of city nature at its very origins, as history teaches us, most of the first settlements were in places of rich and



Grundtræk
til en
almindelig Plantegeographie.

Red
Joakim Frederik Schouw,
Professor.

Med 4 Tavler.

Kjøbenhavn.
Paa den Gyldendalske Bogenhandlings Forlag.
Trykt i det Skriftlige Østhus.

1822.



Onopordon Acanthium - Plantae Urbanae



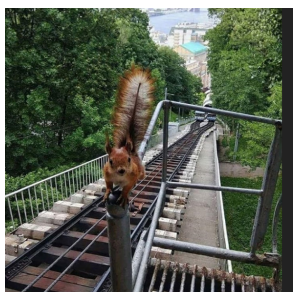
Rome



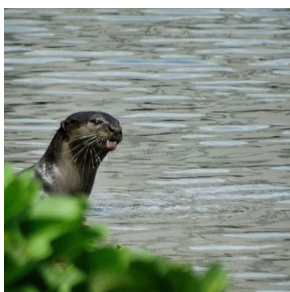
London



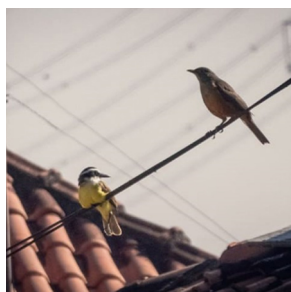
Amsterdam



Kiev



Singapore



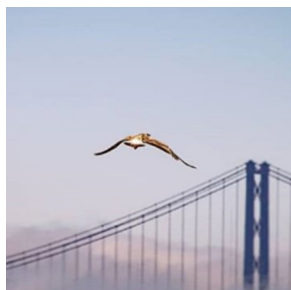
São paulo



Hong kong



Los Angeles



Lisbon



Toronto



Bristol



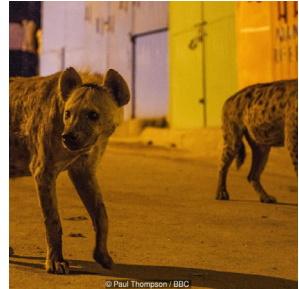
Juneau



Bilbao



New york



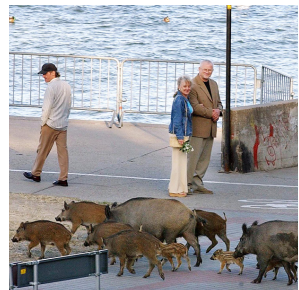
Addis Abeba



Chicago



Tobago



Warsaw

diverse habitat - the fertile soil, the high presence of food or water attracted people to those places. This means that the soil that we step onto in metropolitan areas is in fact rich. To facilitate the construction, we layered the soil to make sure that our buildings are stable, forgetting that potentially fertile substratum is right under our feet.

Secondly, another factor for urban biological richness is the loss of habitats in the immediate surroundings of the urbanized area. Over time we have minimized the biodiversity of the countryside erasing tree lines, rich edges and wild spots to make space to intensive agriculture and to new developments, leading to a consistent subtraction of habitats. It is a fact that urban wastelands have a high rate of species compared to the countryside, another reason why birds and small mammals prefer those spaces to the open countryside where the variety of plants and insects is very low.

The fourth point raised by Schilthuizen is the fact that urban areas are offering a variety of habitats that are appealing to animals. This rich scattered habitat is a perfect place, for instance, for a bird to find food and nesting space. In fact, from the point of view of a bird, these scattered habitats, free from predators and with a high variety of food, give them the perfect life balance.

As Guillaume Chapron researched at the Swedish University of Agricultural Sciences, we are invading habitats and bringing animals to the city. Cities environments

provide them food, a safe place from predators and in some cases also nesting places. Clearly, urban areas are appealing to animals and I think it is crucial that these spaces keep on being there for them and that the densification of the cities are designed with both humans and animals in mind. Since the city is the future nature we have to treat it with respect for all species.

Need to strengthen the ecological structures

Ecological corridors are becoming more and more popular in our cities, most of the time these are being constructed in a way that might help species to move from point A to B.

Different solutions for ecological gaps are applied within the boundaries of urban areas. From specific fauna passage to ramps to help animals to climb the hard banks of a river to lines of trees, these are often used solutions. We are not thinking about animal's habitats as an ensemble of flora and fauna but as a solution for specific needs.

In this way, we are not helping them to have a long stay with us in the cities but we are solving a punctual problem that will not necessarily help the bigger scale. To make sure that we co-live with nature we need to create substantial green areas, incorporate them within our houses or within the public space to give animals the same freedom that we have in our daily lives, taking into

account their natural needs.

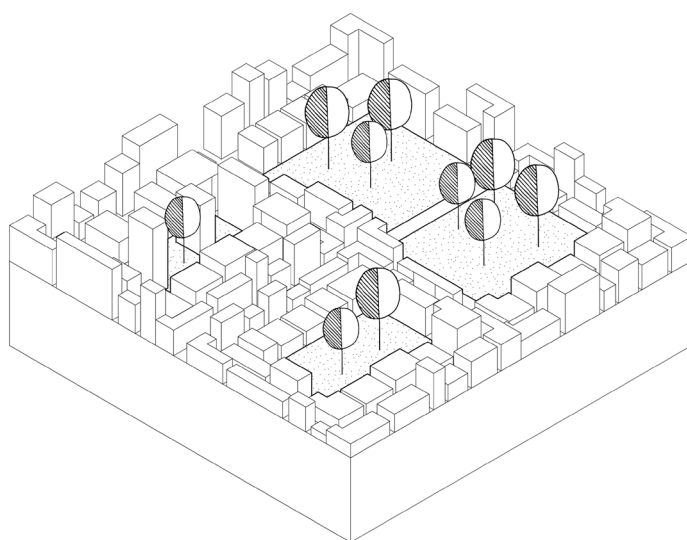
Cities development is focused on the well-being of the human species. We make easy every action that we do within urban areas, from our movement to the necessity of food, we are more and more detached from our ancient natural behavior. We evolved ourselves to have power and to be able to live in the perfect place for us. Previous generations of architects, urban planners and landscape architects were fascinated by the speed and the futuristic approach that was introduced in the first half of the last century. We set aside the importance of nature to be able to evolve ourselves and now that we have reached this level, we have to be forced to go back to nature and merge these two ways of thinking to elevate us and nature to one unique entity. Urban planners and landscape architects should have the aim to turn cities in spaces that can host both humans and wildlife.

Planning cities to host nature means that we have to think about big connections, we need to give the same weight to natural habitats as we do for transport. In my opinion, thinking about the need of a fox should be of the same importance as thinking of social public space.

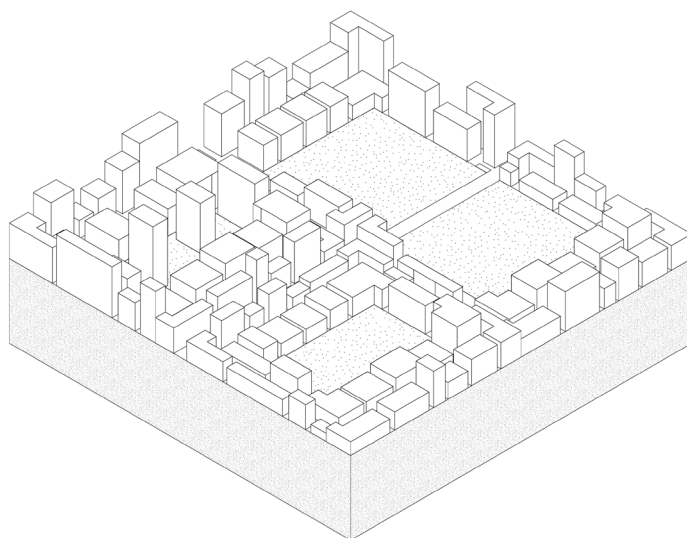
In this anthropogenic era, where we rule the development of the earth, it is our duty to think about other species, to think about biodiversity as a benefit for the natural flow of time and nature. Regenerating nature health within the cities will be a reconciliation of humans with nature. The impor-

tance of nature for our life is way more important than what we used to think. Different studies are being done in the last few years underlining how nature is helping us to be more efficient. Studies made by the University of Derby and The Wildlife Trusts are showing that there is a significant increase of people's health and happiness when there is a connection to nature or when people are conducting active nature-related behaviors such as feeding animals or planting flowers for bees. Also, children growing up with a strong connection to nature have higher self-esteem than the ones that are growing up in a concrete world. Nature is also helping people suffering from mental illness, hypertension, respiratory problems, and cardiovascular diseases.

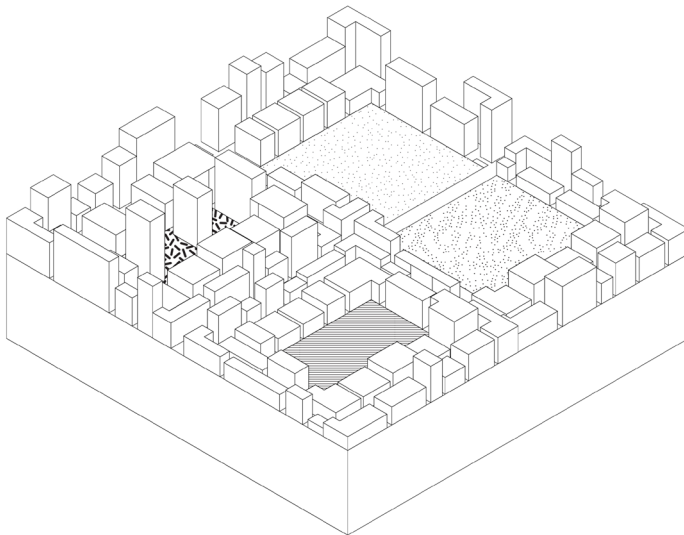
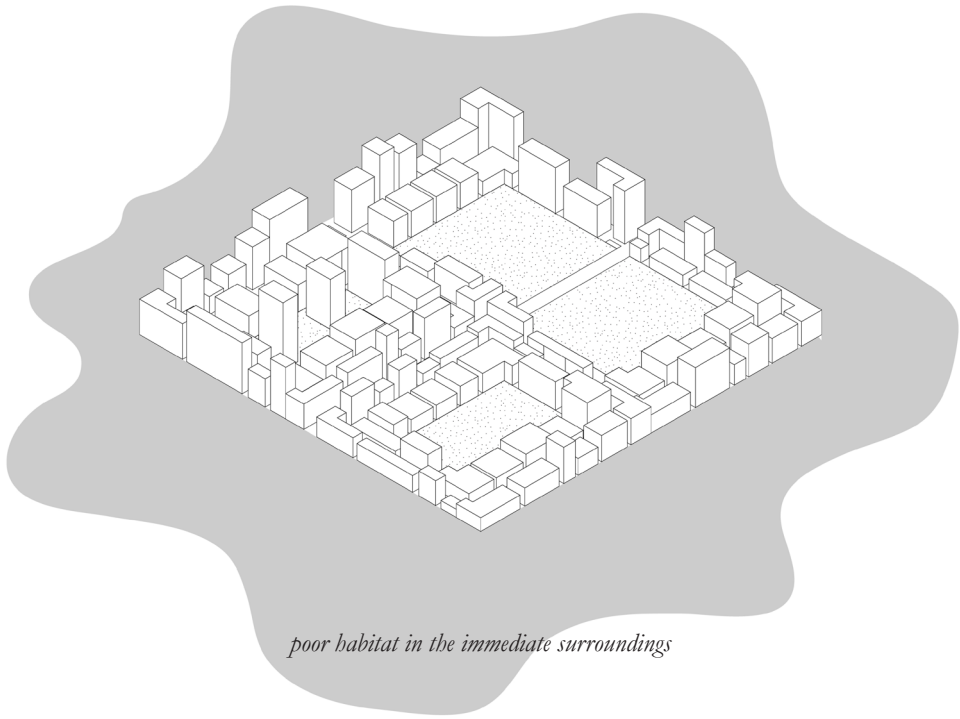
Nature is not a cure for any disease but is certainly increasing the quality of life. I do believe that being a landscape architect in this moment of time means to verbalise this need and to push it forward to make sure that future generations will inhabit a system that guarantees contact with nature on a daily basis. It is time to co-live with nature.



urban oasis



rich soil type







Taipei urban jungle, photo by Andreas Mass

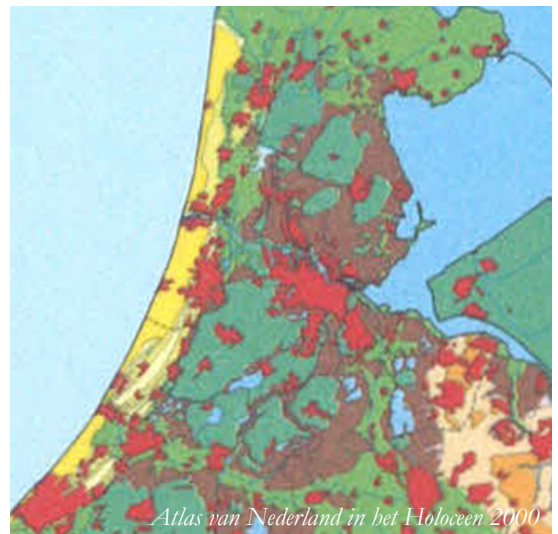
THE EVOLUTION OF THE DUTCH LANDSCAPE

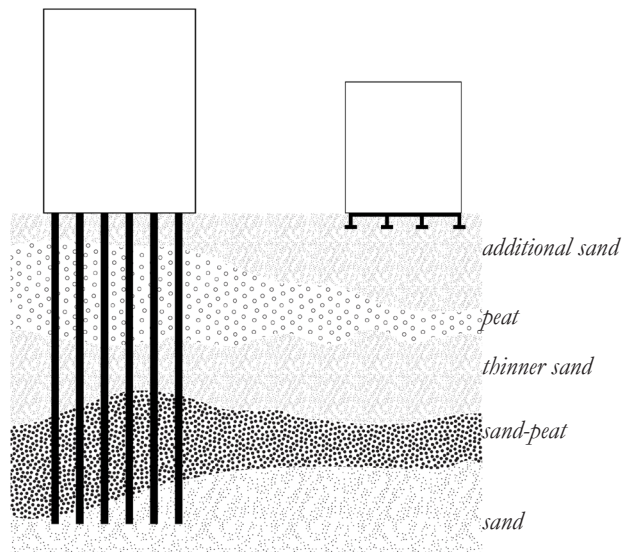
The evolution of the Dutch landscape has been very dynamic through time. Natural processes developed dunes, clay soil and peat landscapes, while human intervention created a patchwork of different soil types. In the geomorphology map of the year 2000 we see four colours instead of three, in addition to sandy peat and clay areas, red now represents cities too.

This map made me think about the way we are looking at cities as a specific entity. The red colour also underlines the fact that in our idea the red areas are those places where nature is seen as a recreational feature. But that is not necessarily true, since different paths of biodiversity are blooming in the city-scape.

Soil types

As a consequence of the reclamation of the land and the slippage of the water from the ground, Dutch cities are mainly built on poles or on a thick layer of sand. These techniques are being developed in time to ensure that buildings and infrastructures aren't affected by the wet peat and clay landscapes. Usually these landscapes are not as stable as others soil types, as for such soil type the effect of the amount of water is important. For this reason the soil can sink or become swampy. Thanks to a complex system of pumps and the addition of a layer of sandy soil, the stability of the land is ensured.



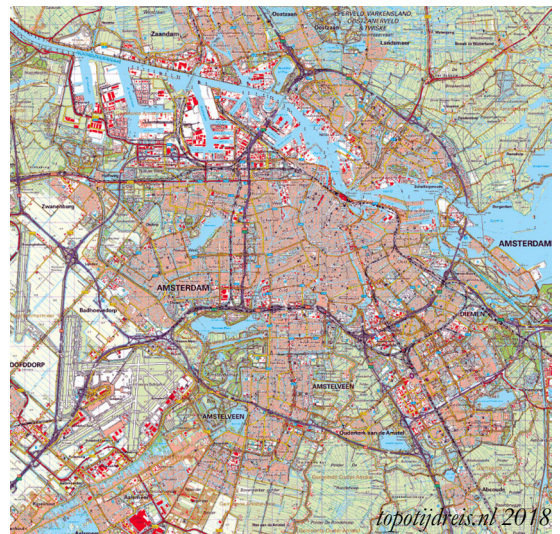
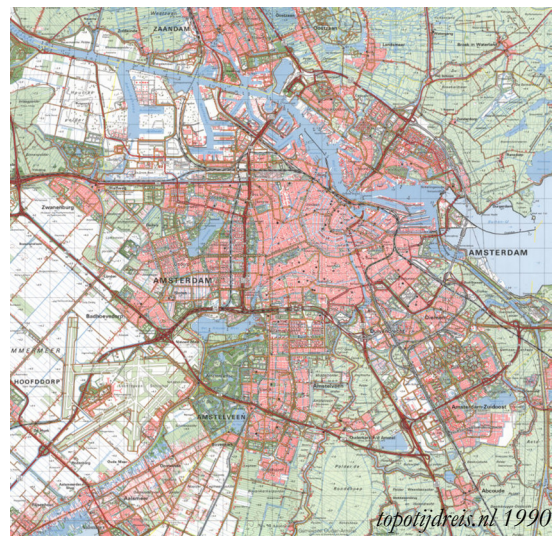
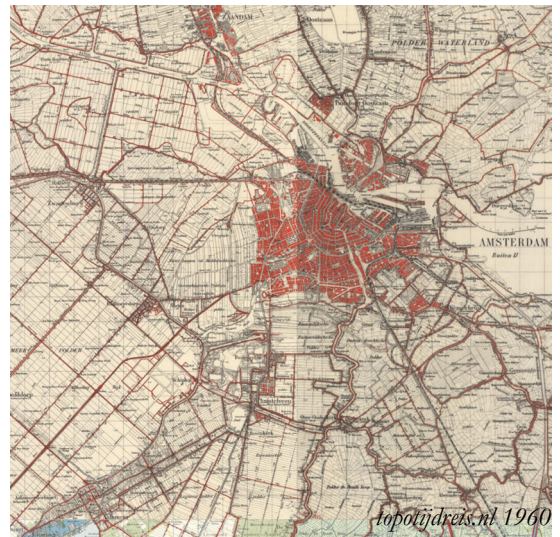


Urban vs Nature

After the '60s Netherlands went through a massive urban expansion, the developments of land defense systems and the movement of the agriculture production in other European countries made possible that the Netherlands became one of the most urbanized countries in Europe. This urbanization was needed to create enough dwellings for the increased population that the country experienced and this triggered the development of the country but also pushed nature to the margins.

After a few decades, the government and private parties came together to create a system of national parks and natural reserves where nature could grow having humans as visitors. This approach created an even more clear gap between nature and the city. Nowadays, those reservoirs are protected but are not big enough to host the amount of animals that are living in it. As a consequence, animal populations have to be controlled.

The Waterleidingduinen, for example, has a very rich population of fallow deer. They are fenced to avoid them to inhabit the area to the point that in recent years this population has grown exponentially and hunters are shooting animals to reduce their number. These kind of solutions are very drastic and I don't see this as a way to create a natural system working with and for nature. As designers, we need to create spaces that are hosting both humans and other species.



AMSTERDAM FUTURE PLANS





Impression of Amsterdam in 2040 - Gemeente Amsterdam

High density

By 2040 there will be 70.000 new homes in Amsterdam and the population will increase exponentially. To preserve the structure of the green fingers, the municipality decided to densify some areas in the cities: some will be specifically built as well as former industrial areas around the city are planned to be functional nodes.

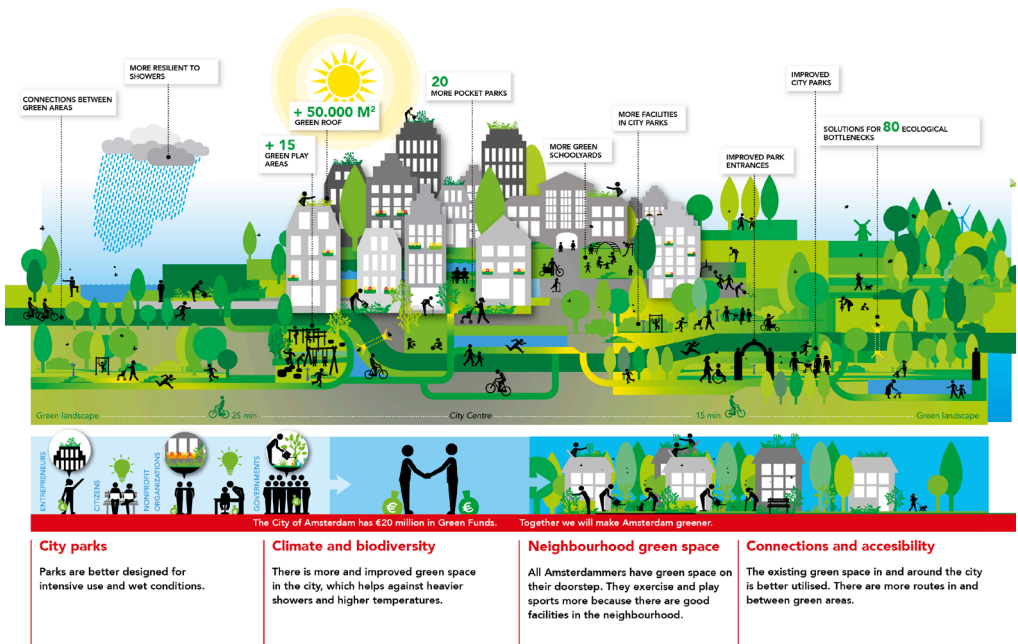
At present, a big discussion about high rise is taking place. Urban planners, policy-makers, landscape architects and architects are busy to find a suitable solution for the future. This approach will shrink the nature in the park areas or will be solved by adding vertical planting on buildings. In such a dense area, it is crucial that nature takes an important role in the making.

It is important that the future of Amsterdam is enhancing the coexistence with nature in all of its layers. I believe in a city that can be an example to other European cities, where nature and human beings are growing together in an environment that embraces them both.

Municipality approach for to reinforce the ecological structure

These points are crucial for a nature-inclusive-city and to do so there is the need of enlarging its green areas, to merge the living and the park areas to create a continuity in the ecological structure.

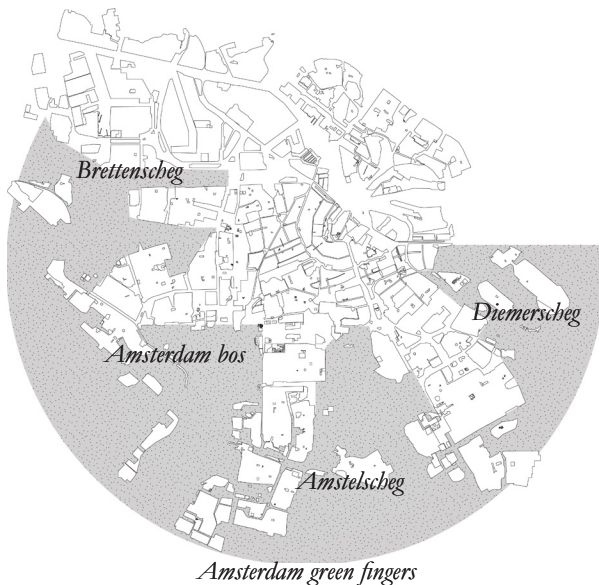
The future map of the ecological corridors that the municipality has to draw is a strategic approach in which few areas are represented as lines connecting the parks and green areas. I believe that those lines cannot just be strips of green alongside the profile of a street or simply small areas, otherwise the habitat will be segregated. Lastly, we cannot rely solely on green architecture, but we have to find more durable and economic solutions and to do so, I think we have to re-think certain areas of the city.

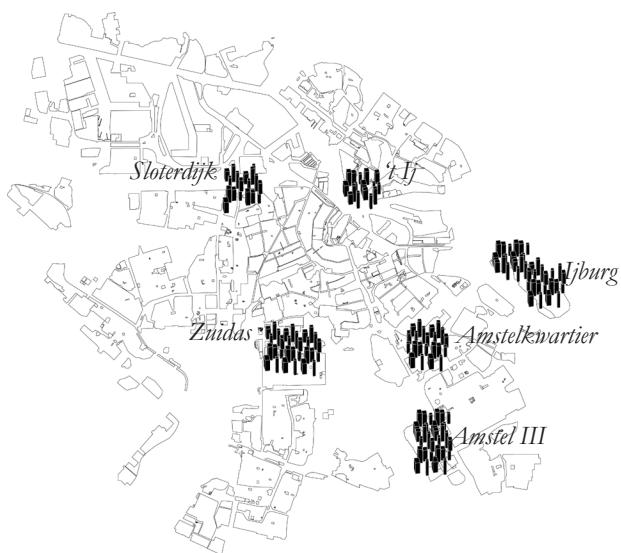


Importance of Sloterdijk Centrum

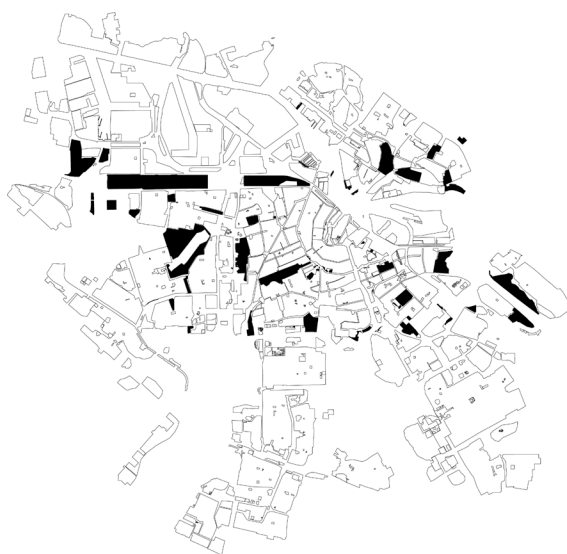
Sloterdijk centrum is a good example. In the map made by the Gementee Amsterdam this area will go through a transformation from office area to a mix-use area. To ensure this, the municipality planned a very dense ground floor and shrunk the ecological corridor on the profile of Arlandaweg, as the future of this area is crucial for the development of the west side of Amsterdam.

This area is the perfect place to prove that nature and city can co-exist. Introducing the landscape types that are peculiar to the west area of Amsterdam Metropolitan Region within Sloterdeijk Centrum will massively improve the quality of the landscape in the area while being merged with the new high density buildings. Furthermore, using the existing soil type to create specific vegetation is a way to create awareness and show to the municipality and the inhabitants of Amsterdam that nature and city can be combined to improve life quality.





Densification area in Amsterdam Vision 2040



Nature patches within the city of Amsterdam

CASE STUDY: FROM THE CITY TO THE DUNES

Journey in the nature

To create a coexistence with nature in Sloterijk Centrum we need to answer a few questions first.

How do we merge urban living with nature?

How do we, as humans, co-exist with other species in our urban environment?

How will this new urban nature look like?

In order to understand the landscape, I went on a journey from Amsterdam city centre to the dunes and I could notice that since Westerpark I was cycling in nature. From the designed nature of Westerpark, I went through the dense allotment gardens to end up in a concrete jungle at Sloterdijk. Following, I have been cycling in the Brettenzone where swampy landscape and low vegetation are combined to the wilderness.

Finally, I am welcomed into the field, both peat landscape and a more dry landscape are giving space to grazing and agricultural fields. After the agricultural land, sandy forest opened up the view to the seaside.

I was never abandoned by nature, but on my way back, when I approached Sloterdijk Centrum, I had the feeling of being at a concrete gate.

Soil samples

On this trip, I have taken eleven soil samples from Westerpark to Bloemendaal. It is clear that a few different soil types are spread over this area. Going from the sandy soil of Sloterdijk, where the city has been built on top of the peat landscape, to the more clay-sand soil of the Northern part to the sand of the dunes, again.

From my soil research, I could conclude that sand is a soil type that occurs in various places west of Amsterdam. Apart from the sand of the dune landscape there is also the sand on top of which cities are built, although this is a different type of sand. Examples like the Noorder IJplas shows that the dune landscape can also grow on this 'city sand'. This is an interesting observation, as it can mean that any area in the city that has a layer of sand underneath its paving can potentially host a dune landscape. In a scenario where one of these areas is fenced and left to natural processes, the dune landscape will emerge through the cracks of the pavement.

Also other landscape types can be recreated in urban areas, depending on the soil type and the presence of water. Even a space with very minimal porosity and big paved areas, like a public square, can be designed to host one of the ten landscape types that exist in this area of the Netherlands.



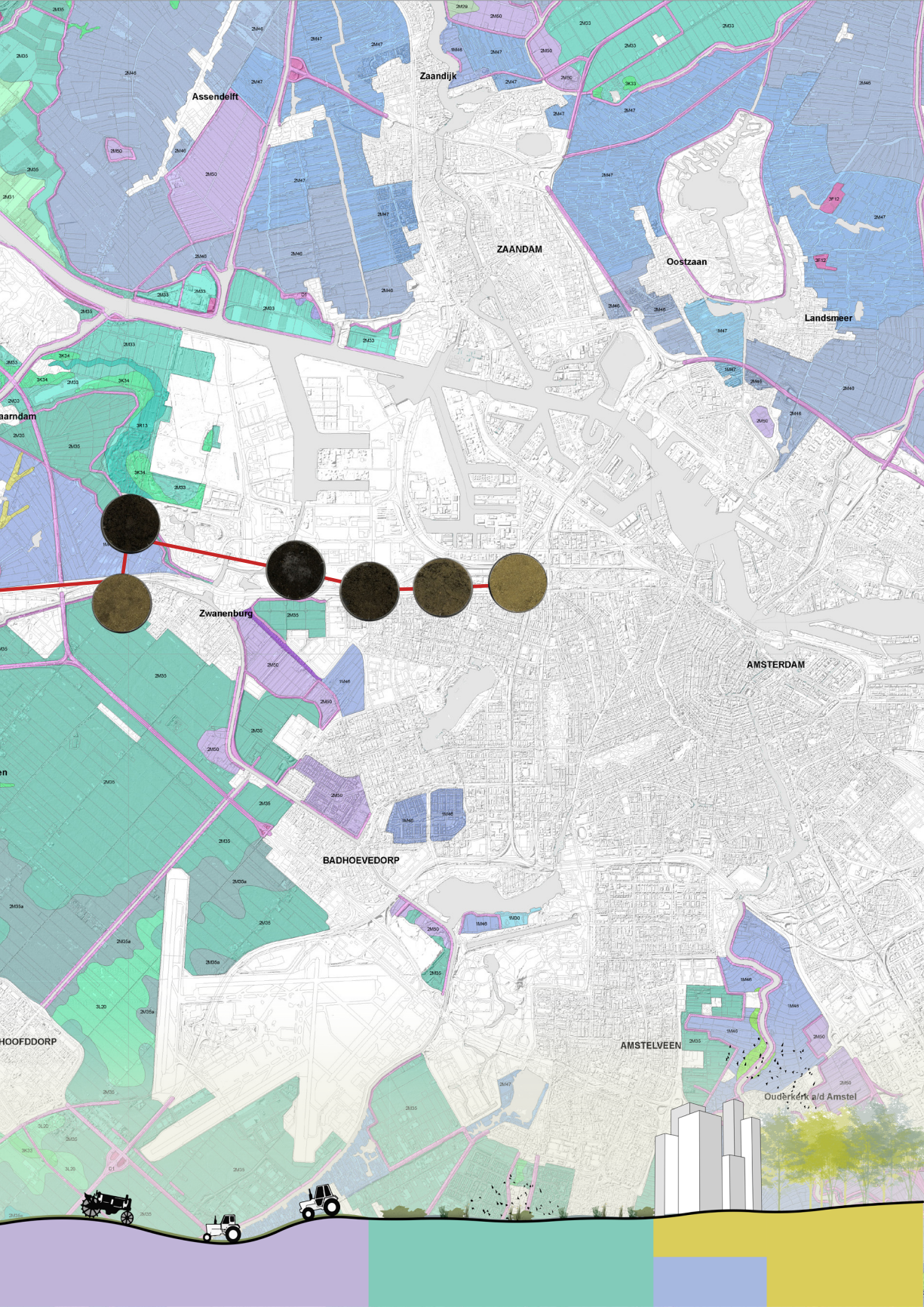
Geomorphology map

The red line represents the journey that I had from Amsterdam to the dunes, analyzing and understanding the landscape typologies and the soil type of the area. the section is showing how the soil type are layered in the vicinity of the cities.

LEGENDA

- lage kustduinen
- hoge kustduinen
- ontgonnen veenvlakte met petgaten
- veenrestvlakte
- vlakke van zee-of meerbodemaafzettingen









The sequence of landscape type

From Sloterdijk station to the open dunes of Bloemendaal I could experience the diversity in flora and fauna.

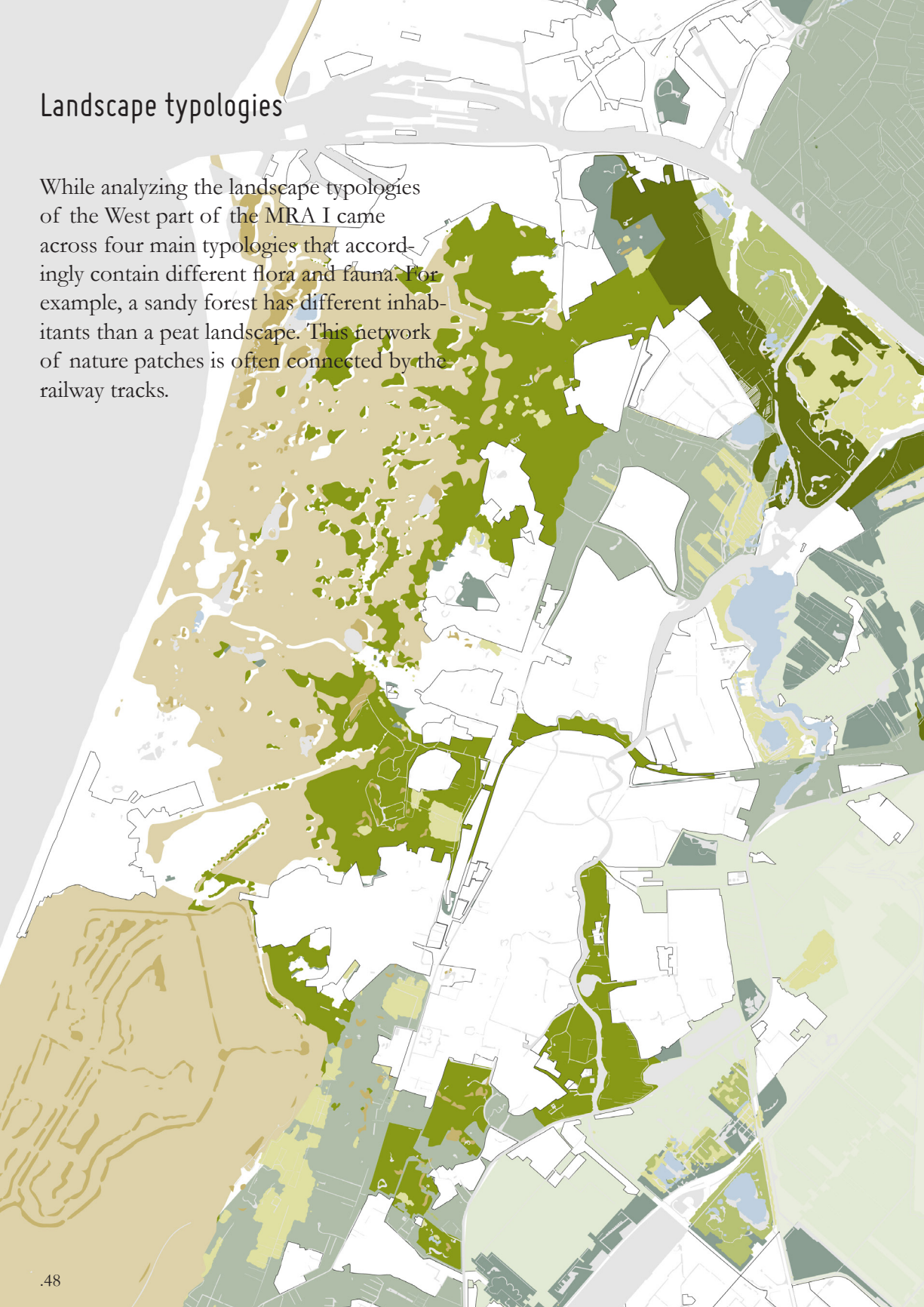
Different landscapes are helping the biodiversity to develop according to the existing soil types.





Landscape typologies

While analyzing the landscape typologies of the West part of the MRA I came across four main typologies that accordingly contain different flora and fauna. For example, a sandy forest has different inhabitants than a peat landscape. This network of nature patches is often connected by the railway tracks.





sweet lakes

wet dunes

open dunes

peat forest

production forest

sandy forest

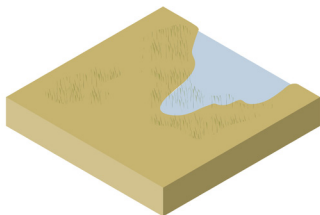
wet meadows

grazing meadows

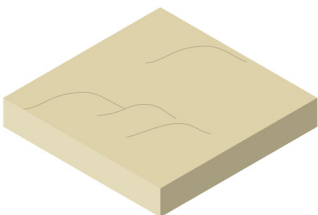
flower meadows

low ecological value

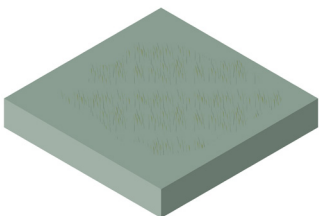
Legenda



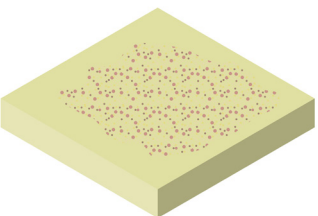
 *wet dunes*



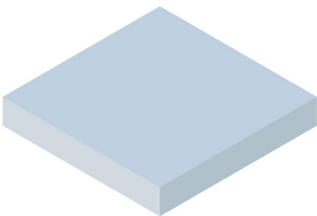
 *open dunes*



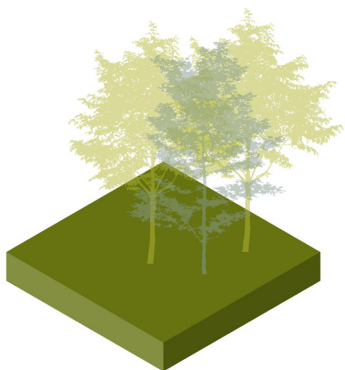
 *wet meadows*



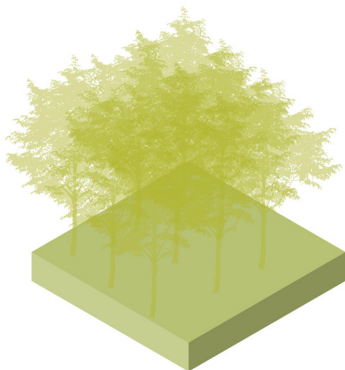
 *flower meadow*



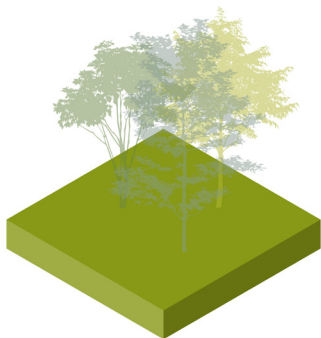
 *sweet lake*



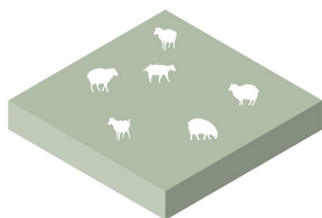
 *peat forest*



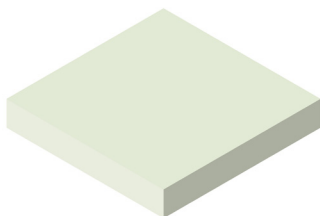
 *production forest*



 *sandy forest*



 *grazing meadows*



 *low ecological value*

Open dunes

FLORA: bitterkruidbremraap, blauwe bremraap, blauwe zeedistel, bleek schilddaad, buntgras, duinaveruit, duinlangbaardgras, duinteunisbloem, Duits viltkruid, echt bitterkruid, geelhartje, gelobde maanvaren, glad parelzaad, harlekijn, hazenpootje, herfstschroeforchis, hondskruid, hondsviooltje, kegelsilene, klavervreter, klein wintergroen, kleine ruit, kleine rupsklaver, kruisbladgentiaan, liggende asperge, nachtsilene, oorsilene, rond wintergroen, rozenkransje, ruwe klaver, scherpkruid, sierlijke vetmuur, smal fakkelfras, stijve wolfsmelk, tengere distel, torenkruid, vals muizenoor, verfbrem, vierrijige ogentroost, walstrobremraap, welriekende salomonszegel, wilde averuit, wondklaver, zandhaver, zandviooltje, zeewolfsmelk, zilverhaver, zwenkdravik.

Young dunes

FLORA: armbloemige waterbies, bitterling (zomer- en herfst-), bonte paardenstaart, brokkelig kransblad (k), draadfonteinkruid, draadgentiaan, drienvrige zegge, duizendknoopfonteinkruid, dwergbloem, dwerggras, dwergglas, fraai duizendguldenkruid, galigaan, gebogen kransblad (k), geelhartje, gevlekte orchis, groenknolorchis, grote boterbloem, grote muggenorchis, harlekijn, honingorchis, kleine knotszegge, knopbies, koprus, moerasgamander, moeraskartelblad, moeraswespenorchis, noordse rus, oeverkruid, ondergedoken moerasscherm, ongelijkbladig fonteinkruid, parnassia, rond wintergroen, ruw kransblad (k), slanke gentiaan, stekelharig kransblad (k), sterzegge, stijve moerasweegbree, teer guichelheil, teer vederkruid, veldgentiaan, verfbrem, vleeskleurige orchis, vlozegge, waterpunge, welriekende nachtorchis, wilde gagel, zilte rus, zilte waterranonkel

BUTTERFLY AND GRASSHOPPERS

Pyrgus malvae, *Oedipoda caerulescens*, *Aricia agestis*, *Argynnis niobe*, *Platycleis albopunctata*, *Argynnis aglaja*, *Hipparchia semele*, *Issoria lathonia*, *Hesperia comma*
BIRDS

Luscinia svecica, *Circus cyaneus*, *Tachybaptus ruficollis*, *Saxicola rubetra*, *Botaurus stellaris*, *Locustella naevia*, *Tringa totanus*, *Alauda arvensis*, *Anas crecca*, *Numenius arquata*.

Tadorna tadorna, *Circus cyaneus*, *Sylvia curruca*, *Somateria mollissima*, *Anthus pratensis*, *Lanius collurio*, *Linaria cannabina*, *Luscinia megarhynchos*, *Saxicola rubetra*, *Saxicola rubicola*.



Open duin - Open dunes



Vochtige duinvallei - Young dunes

Flower meadows

FLORA: aardaker, akkerdoornzaad, beemdkroon, beemdooievaarsbek, bevertjes, bochtige klaver, borstelkrans, brede ereprijs s.s., dichte bermzegge, duifkruid, geel walstro, gele morgenster, gewone vogelmelk, goudhaver, grasklokje, graslathyrus, groot streepzaad, grote bevernel, grote centaurie, grote leeuwenklauw, karwij, karwijvarkenskervel, kattendoorn, klavervreter, kleinbloemige salie, kleine ratelaar, kluwenklokje, knolboterbloem, knolsteenbreek, liggende ereprijs, moeslook, oosterse morgenster, rapunzelklokje, ruige anjer, ruige weegbree, slanke sleutelbloem, spits havikskruid, stinkende ballote, tengere distel, veldsalie, weideklokje, wilde marjolein

DRAGONFLIES

Lasiommata megera, *Carterocephalus palaemon*, *Coenonympha pamphilus*, *Aphantopus hyperantus*, *Thymelicus lineola*.

BIRDS

Motacilla flava, *Anthus pratensis*, *Limosa limosa*, *Philomachus pugnax*, *Anas strepera*, *Aythya fuligula*, *Anas clypeata*, *Tringa totanus*, *Alauda arvensis*, *Gallinago gallinago*, *Anas crecca*, *Numenius arquata*, *Anas querquedula*.

ANPHIBIANS

Natrix natrix, *Bufo calamita*, *Alytes obstetricans*, *Bombina variegata*, *Anguis fragilis*, *Emys orbicularis*, *Lacerta agilis*, *Zootoca vivipara*, *Anguis fragilis*.

Wet meadows

FLORA: aardaker, aarddistel, akkerdoornzaad, beemdkroon, beemdooievaarsbek, bevertjes, bitter barbarakruid, blauw walstro, bochtige klaver, brede ereprijs s.s., cipreswolfsmelk, dichte bermzegge, duifkruid, echte kruisdistel, geelhartje, gele morgenster, gestreepte klaver, glad parelzaad, graslathyrus, grote bevernel, grote centaurie, grote leeuwenklauw, grote pimpernel, harige ratelaar, karwijvarkenskervel, kattendoorn, klavervreter, kleinbloemige salie, kleine ratelaar, kluwenklokje, knopig doornzaad, knikkende distel, knolsteenbreek, liggende ereprijs, moeslook, oosterse morgenster, overblijvende hardbloem, paarse morgenster, rapunzelklokje, rivierduinzegge, rode bremraap, ruige anjer, ruige weegbree, spits havikskruid, tengere distel, tripmadam, veldsalie, vijfdelig kaasjeskruid, vroege zegge, weideklokje, wilde averuit, wilde marjolein, wollige distel, ijzerhard, zacht vetkruid, zandwolfsmelk, zeegroene zegge



Glanshavenbooieland- Flower meadows



Kruiden faunarijk grasland - wet meadows

Sweet lakes

FLORA: brede waterpest, doorgroeid fonteinkruid, drijvende waterweegbree, drijvend fonteinkruid, fijn hoornblad, fijne waterranonkel, gesteeld sterrenkroos, glanzig fonteinkruid, groot blaasjeskruid, groot nimfkruid, grote waterranonkel, haaks-terrenkroos, kikkerbeet, krabbenscheer, kransvederkruid, langstengelig fonteinkruid, oeverkruid, ongelijkbladig fonteinkruid, paarbladig fonteinkruid, plat fonteinkruid, puntig fonteinkruid, rond sterrenkroos, rossig fonteinkruid, spits fonteinkruid, stomp fonteinkruid, stomphoekig sterrenkroos, stijve waterranonkel, teer vederkruid, watergentiaan, waterviolier, zittende zannichellia

FISHES

Rhodeus amarus, *Migurnus fossilis*, *Cobitis taenia*, *Carassius carassius*, *Lota lota*, *Anguilla anguilla*, *Cottus perifretum*, *Gobio gobio*, *Scardinius erythrophthalmus*, *Esox lucius*, *Pungitius pungitius*, *Gasterosteus aculeatus*, *Leucaspis delineatus*, *Tinca tinca*, *Rutilus rutilus*, *Platichthys flesus*, *Abramis brama*, *Gasterosteus aculeatus*, *Alosa fallax*, *Salmo trutta*, *Cobitis taenia*, *Blicca bjoerkna*, *Gymonocephalus cernua*, *Cottus perifretum*, *Lampetra fluviatilis*, *Esox lucius*, *Sander lucioperca*, *Neogobius melanostomus*.

DRAGONFLIES

Erythromma lindenii, *Gomphus pulchellus*, *Libellula fulva*, *Leucorrhinia pectoralis*, *Aeshna viridis*, *Erythromma najas*, *Libellula quadrimaculata*, *Aeshna isocle*, *Pyrrhosoma nymphula*, *Coenagrion puella*,

Sympetrum sanguineum, *Aeshna grandis*, *Coenagrion armatum*, *Sympetrum flavolum*, *Lestes sponsa*, *Erythromma viridulum*, *Sympecma paedisca*, *Aeshna mixta*, *Cordulia aenea*, *Lestes virens*, *Coenagrion pulchellum*, *Crocothemis erythraea*.

ANPHIBIANS

Trachemys scripta elegans, *Lissotriton helveticus*, *Lissotriton vulgaris*, *Lithobates catesbeianus*, *Pelobates fuscus*, *Pelophylax klepton*, *esculentus*, *Pelophylax lessonae*, *Pelophylax ridibundus*, *Rana arvalis*, *Rana temporaria*, *Salamandra salamandra*, *Gratemys pseudogeographica*



Production forest

FLORA: draadzegge, eenarig wollegras, galigaan, glanzend veenmos (m), hoogveenveenmos (m), kamvaren, kleine veenbes, koningsvaren, laurierwilg, lavendelhei, moeraslathyrus, moeraswolfsmelk, paardenhaarzegge, poelruit, rood veenmos (m), rijsbes, slank wollegras, slanke zegge, sterzegge, stijf veenmos (m), stijve zegge, violet veenmos (m), wateraardbei, waterdrieblad, waterviolier, wilde gagel, wrattig veenmos (m)

Peat forest

FLORA: draadzegge, eenarig wollegras, galigaan, glanzend veenmos (m), hoogveenveenmos (m), kamvaren, kleine veenbes, koningsvaren, laurierwilg, lavendelhei, moeraslathyrus, moeraswolfsmelk, paardenhaarzegge, poelruit, rood veenmos (m), rijsbes, slank wollegras, slanke zegge, sterzegge, stijf veenmos (m), stijve zegge, violet veenmos (m), wateraardbei, waterdrieblad, waterviolier, wilde gagel, wrattig veenmos (m)

Clay forest

FLORA: aardbeiganzerik, amandelwolfsmelk, berghertshooi, blaasvaren, bleek bosvogeltje, bleeksporig bosviooltje, bleke zegge, borstelkrans, bosbingelkruid, bosboterbloem, bosdravik, bosereprijs,

bosgeelster, boslathyrus, bosmuur, bosroos, boszegge, bottelroos, bruinrode wespenorchis, christoffelkruid, daslook, dichte bermzegge, donderkruid, donkersporig bosviooltje, eenbes, eenbloemig parelgras, fraai hertshooi, geelgroene wespenorchis, gele anemoon, gele kornoelje, gele monnikskap, gevlekt hertshooi, gewone bermzegge, groene bermzegge, grote keverorchis, gulden boterbloem, heekruid, klein heksenkruid, herfststijloos, hokjespeul, kleine kaardebol, knollathyrus, knolribzaad, kraagroos, kruidvlier, kruisbes, kruisbladwalsstro, lansvaren, lieievrouwebedstro, mannetjesorchis, muskuskruid, rood peperboompje, ruig hertshooi, ruig klokje, ruwe dravik, schedegeelster, slanke sleutelbloem, stengelloze sleutelbloem, stijve naaldvaren, stijve steenraket, tongvaren, torenkruid, tweestijlige meidoorn, viltroos, vingerzegge, vliegenorchis, vogelnestje, wegedoorn, welriekende agrimonie, wild kattenkruid, winterlinde, wit bosvogeltje, witte engbloem, witte rapunzel, zwartblauwe rapunzel

Dunes forest

FLORA: bosaardbei, bosanemoon, bottelroos, dalkruid, dennenorchis, donderkruid, dubbelloof, gebogen driehoeksvaren, glad parelzaad, grote keverorchis, hengel, klein wintergroen, laurierwilg, lelietje van dalen, ruig viooltje, ruige veldbies, stekende wolfsklauw, stengelloze sleutelbloem, stofzaad, tongvaren, valse zandzegge, voorjaarshelm-

kruid, welriekende salomonszegel, wilde hyacint

BIRDS

Luscinia svecica, *Certhia brachydactyla*, *Phoenicurus phoenicurus*, *Muscicapa striata*, *Dendrocopos major*, *Dryobates minor*, *Poecile montanus*, *Luscinia megarhynchos*, *Oriolus oriolus*. *Coccothraustes coccothraustes*, *Sitta europaea*, *Lullula arborea*, *Phylloscopus sibilatrix*, *Picus viridis*, *Dryobates minor*, *Leiopicus medius*, *Luscinia megarhynchos*, *Oriolus oriolus*, *Dryocopus martius*, *Luscinia svecica*, *Picus viridis*, *Dendrocopos major*, *Acanthis cabaret*, *Dryobates minor*, *Luscinia megarhynchos*, *Oriolus oriolus*, *Dryocopus martius*, *Coccothraustes coccothraustes*, *Sitta europaea*, *Lullula arborea*, *Phylloscopus sibilatrix*, *Emberiza citrinella*, *Picus viridis*, *Dryobates minor*, *Leiopicus medius*, *Corvus corax*, *Spinus spinus*, *Regulus ignicapilla*, *Peris apivorus*, *Oriolus oriolus*, *Dryocopus martius*.

ANPHIBIANS

Hyla arborea, *Ichthyosaura alpestris*, *Triturus carnifex*, *Triturus cristatus*, *Podarcis muralis*, *Vipera berus*, *Coronella austriaca*

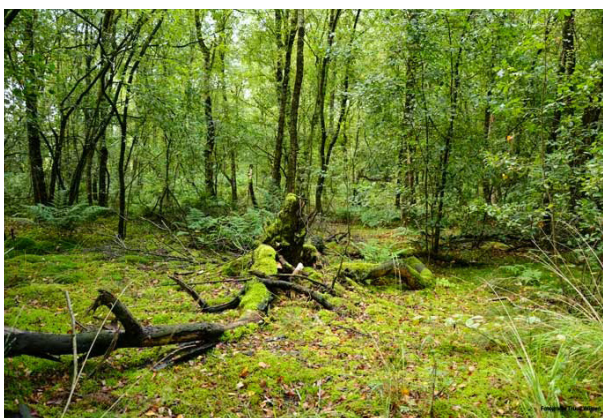
MAMMALS

Capreolus capreolus, *Dama dama*, *Martora eurasatica*, *Erinaceus europaeus*, *Talpa europea*, *Neomys fodiens*, *Crocidura russula*, *Myotis dasycneme*, *Pipistrellus pipistrellus*, *Pipistrellus nathusii*, *Eptesicus serotinus*, *Nycatalus noctula*, *Lepus europaeus*, *Oryctolagus cuniculus*, *Microtus arvalis*, *Microtus oeconomus arenicola*, *Arvicola*

terrestris, *Ondatra zibethicus*, *Ondatra zibethicus*, *Micromys minutus*, *Apodemus sylvaticus*, *Rattus norvegicus*, *Erincaceus europeus*, *Mustela naavalis*, *Mustela erminea*, *Vulpes vulpes*



Bossen met productiefunctie - Production forest



Hoog- en laagveenbos - Peat forest



Haagbeuken- en essenbos - Clay forest



Duinbos - Dune forest

Guide species

For my research, I chose eight guide species to recreate their habitat in the urban environment. These guide species require a certain landscape type that is also thought through bearing in mind it will also host all other animals that prefer that type of habitat. The guide species include reptiles, mammals, insects and amphibians to give as much consideration to all different kinds of animals.

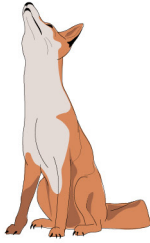
The chosen species are: *Natrix natrix*, *Bufo calamita* and *Symetrum striatus* for the swampy landscape; *Dama dama*, *Vulpes vulpes* and *Ernaceus europaeus* for the low high vegetation landscape; the *Alcedo atthis* and the *Sterna hirundo* for the sky. By analyzing their natural habitat I could understand the way they live, how they move and how they interact.



Dama dama



Natrix natrix



Vulpes vulpes



Ernaceus europaeus



Bufo calamita



Sympetrum stiratus

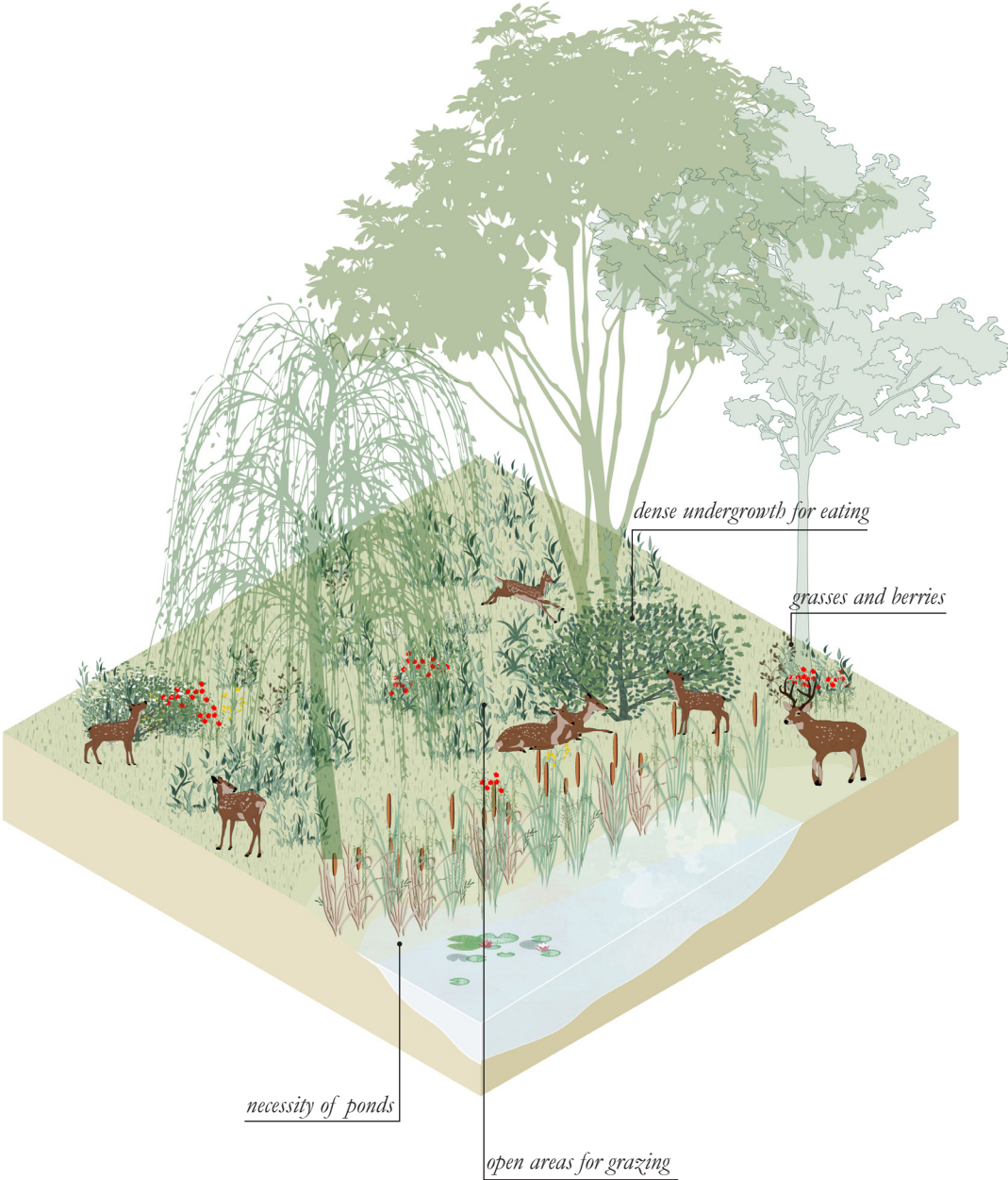


Sterna hirundo

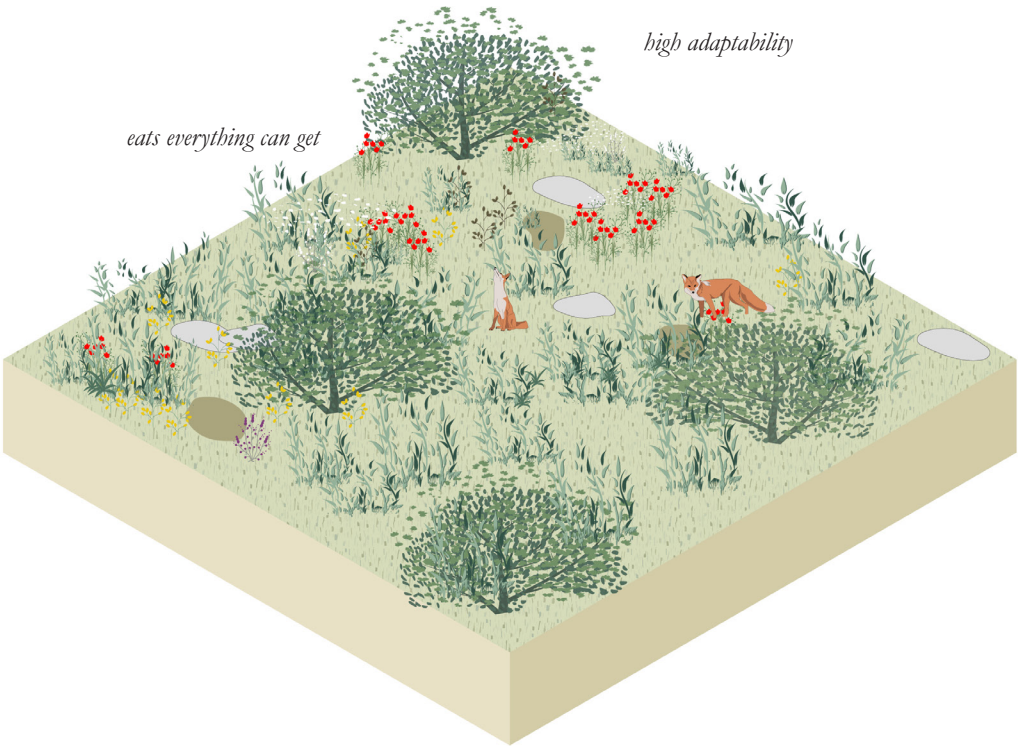


Alcedo atthis

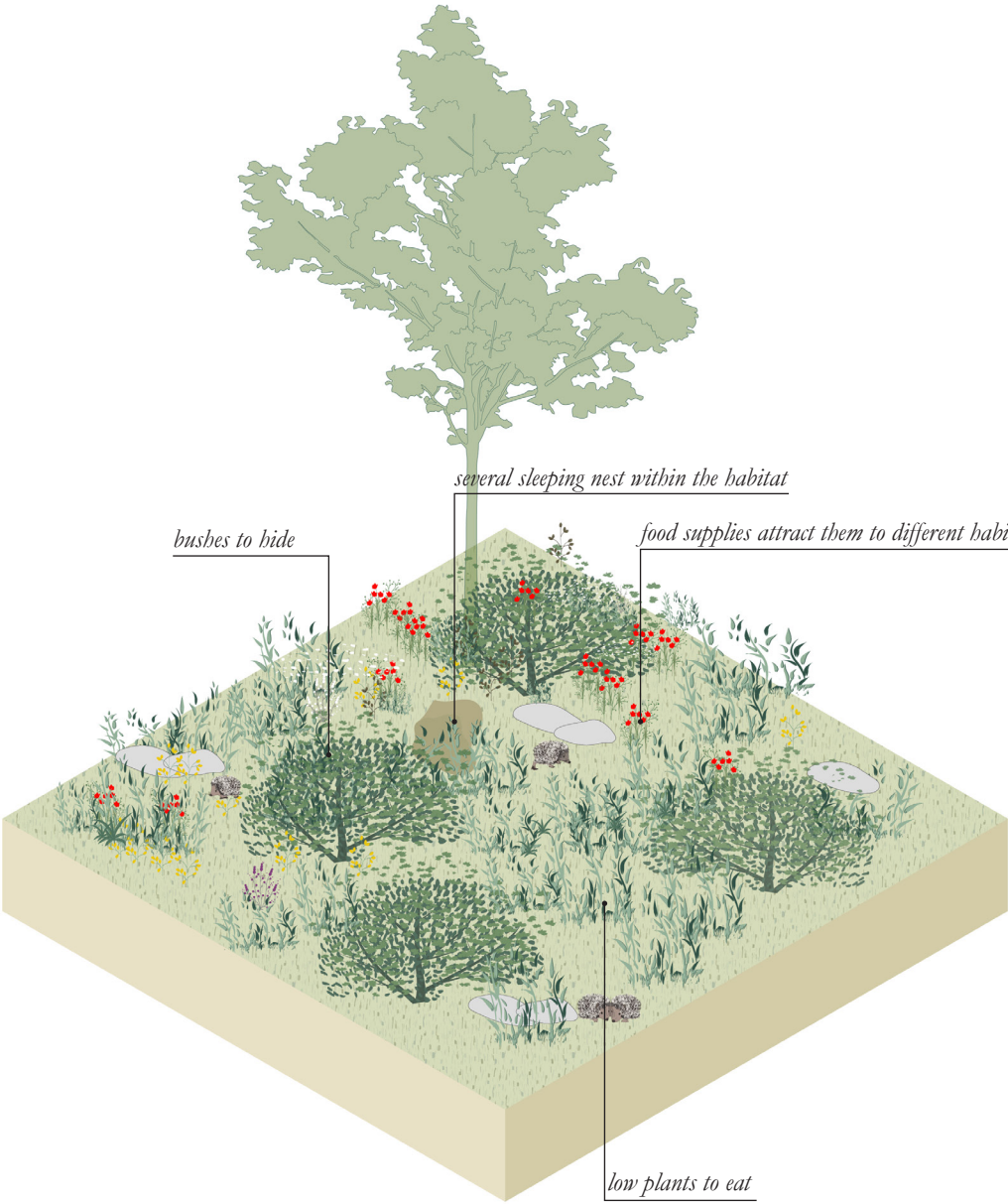
Dama dama



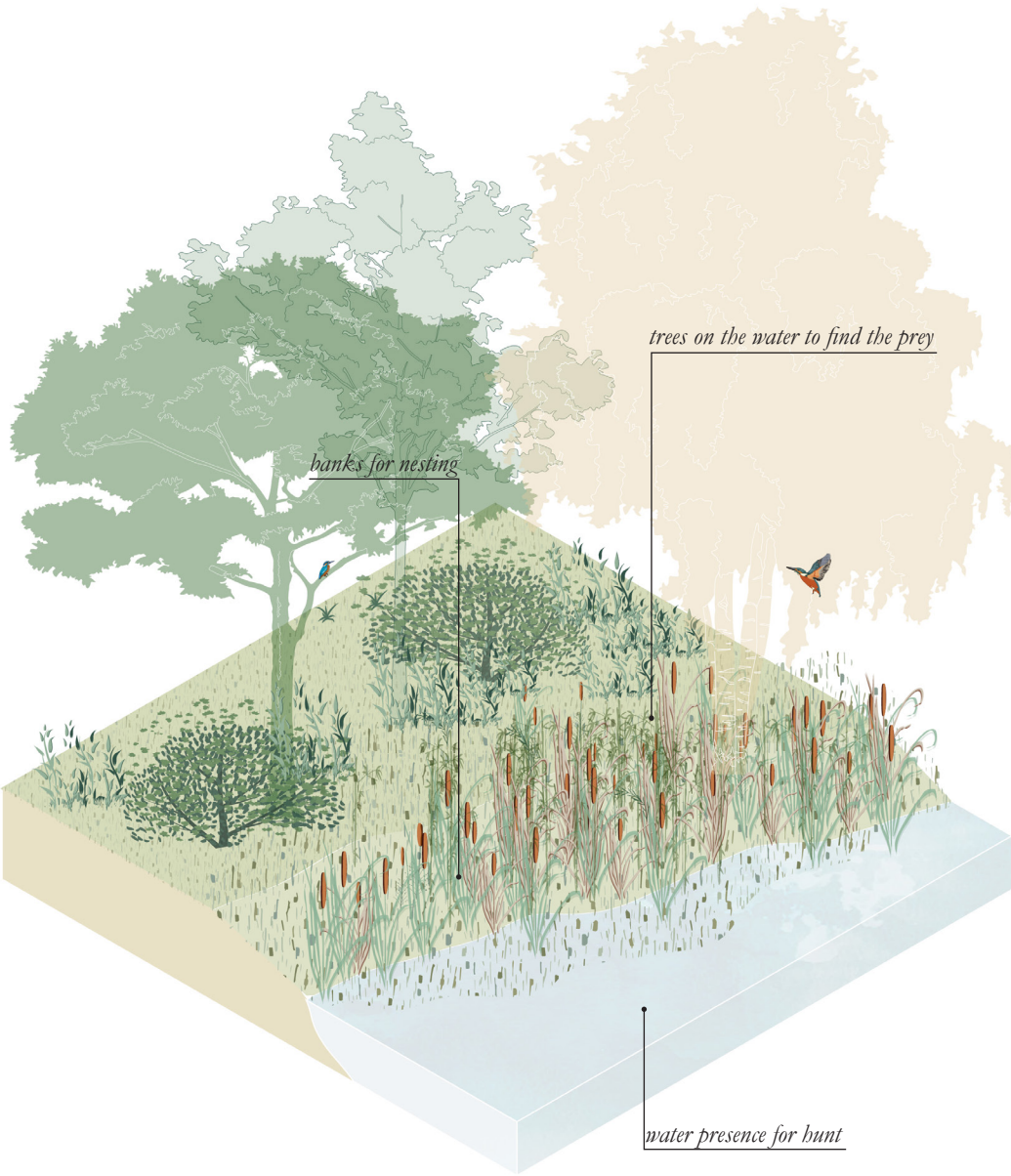
Vulpes vulpes



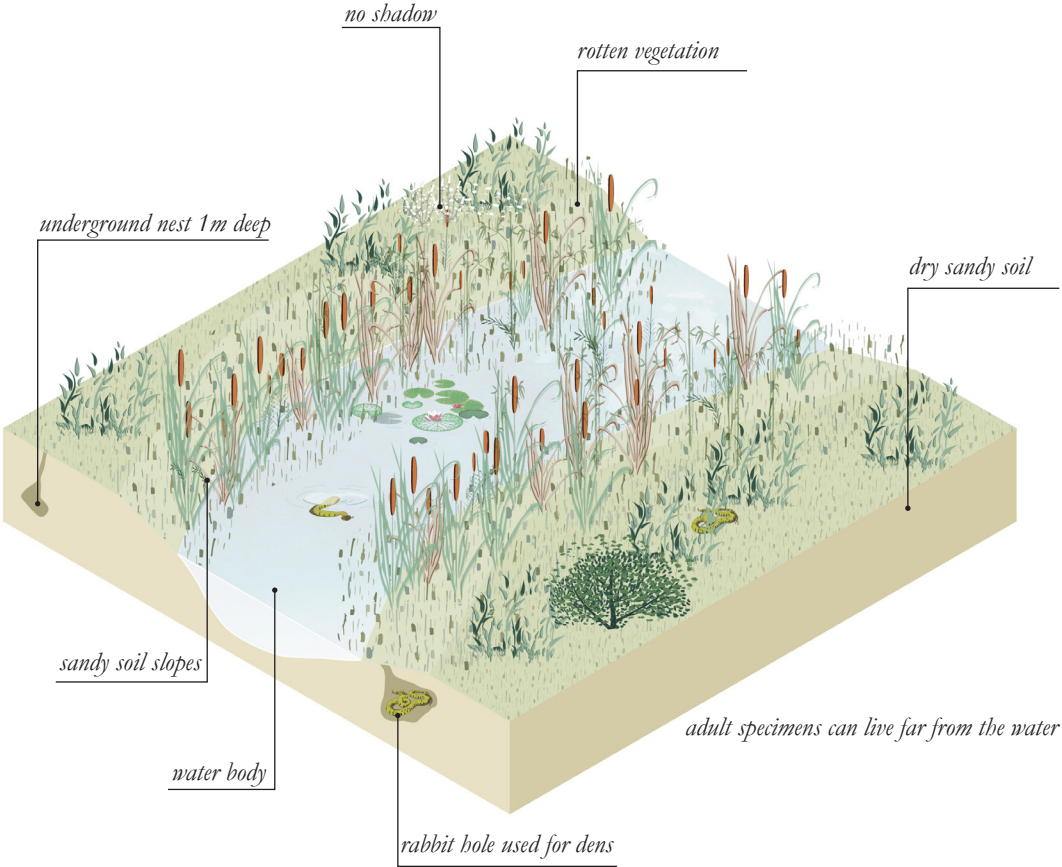
Ernaceus europeanus



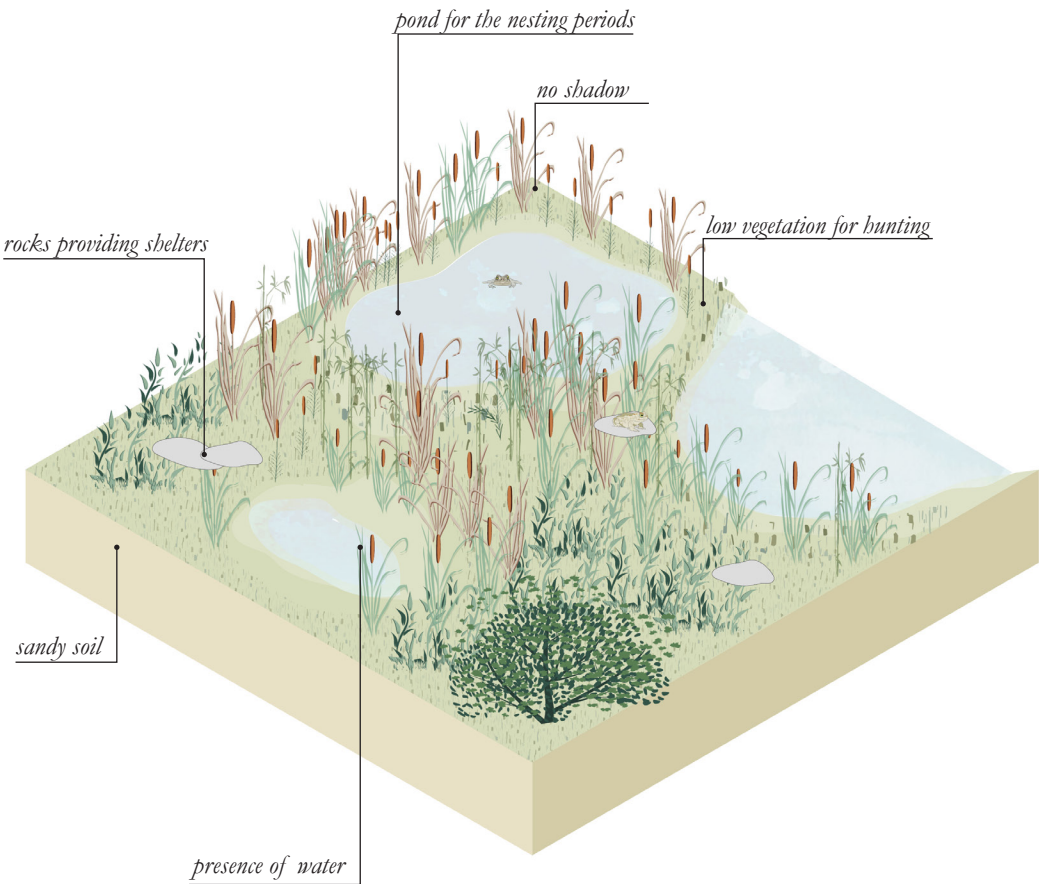
Alcedo atthis



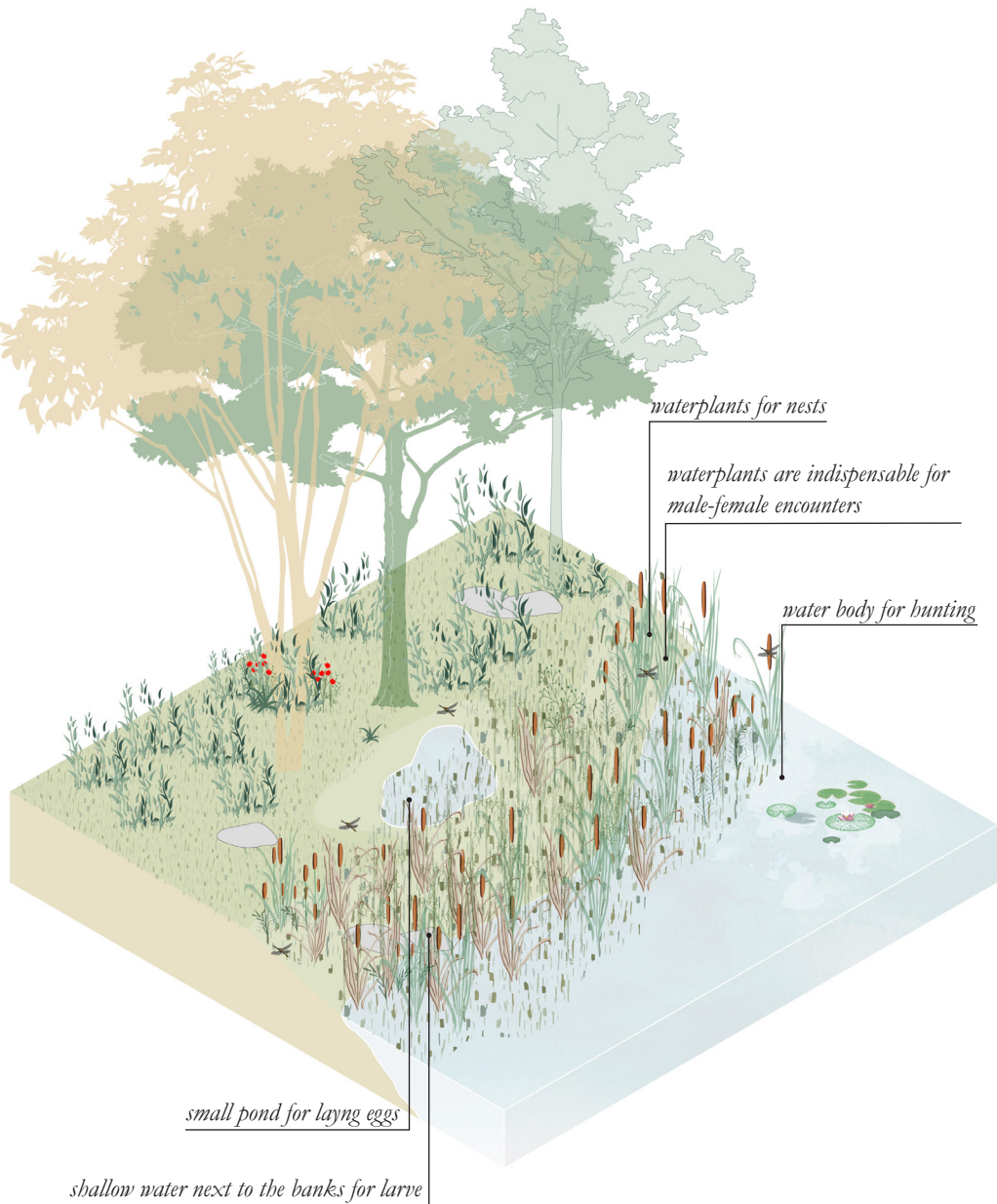
Natrix natrix



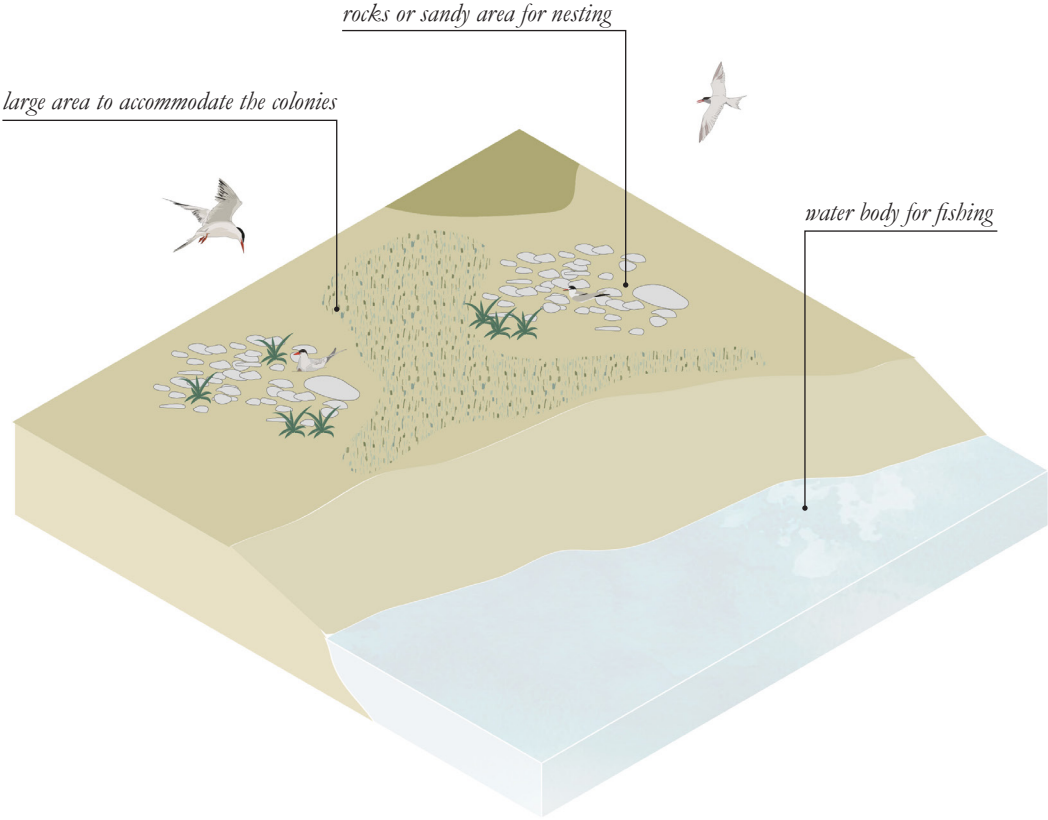
Bufo calamita



Sympetrum stiratus



Sterna hirundo



SLOTERDIJK CENTRUM

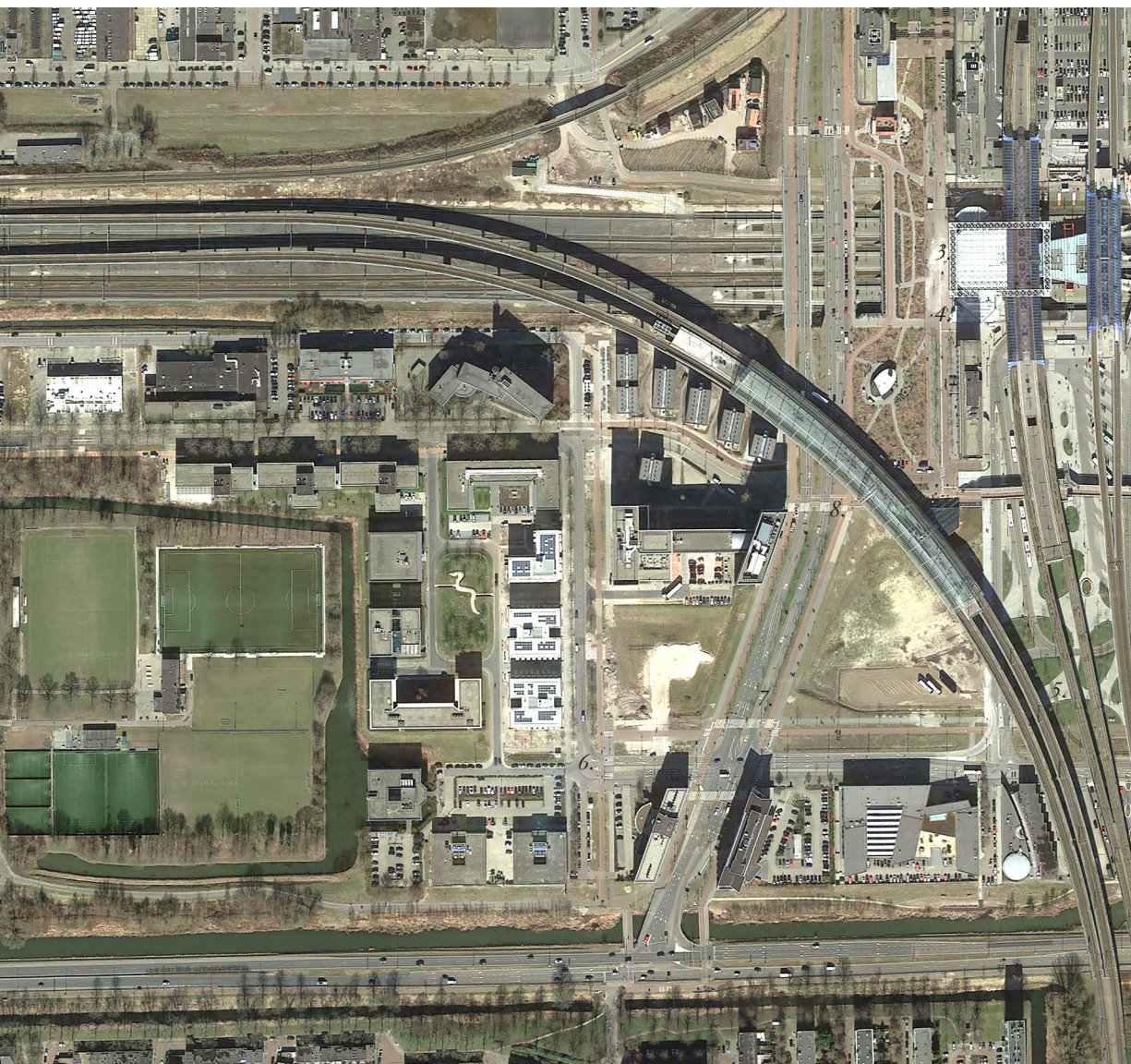
Municipality plans

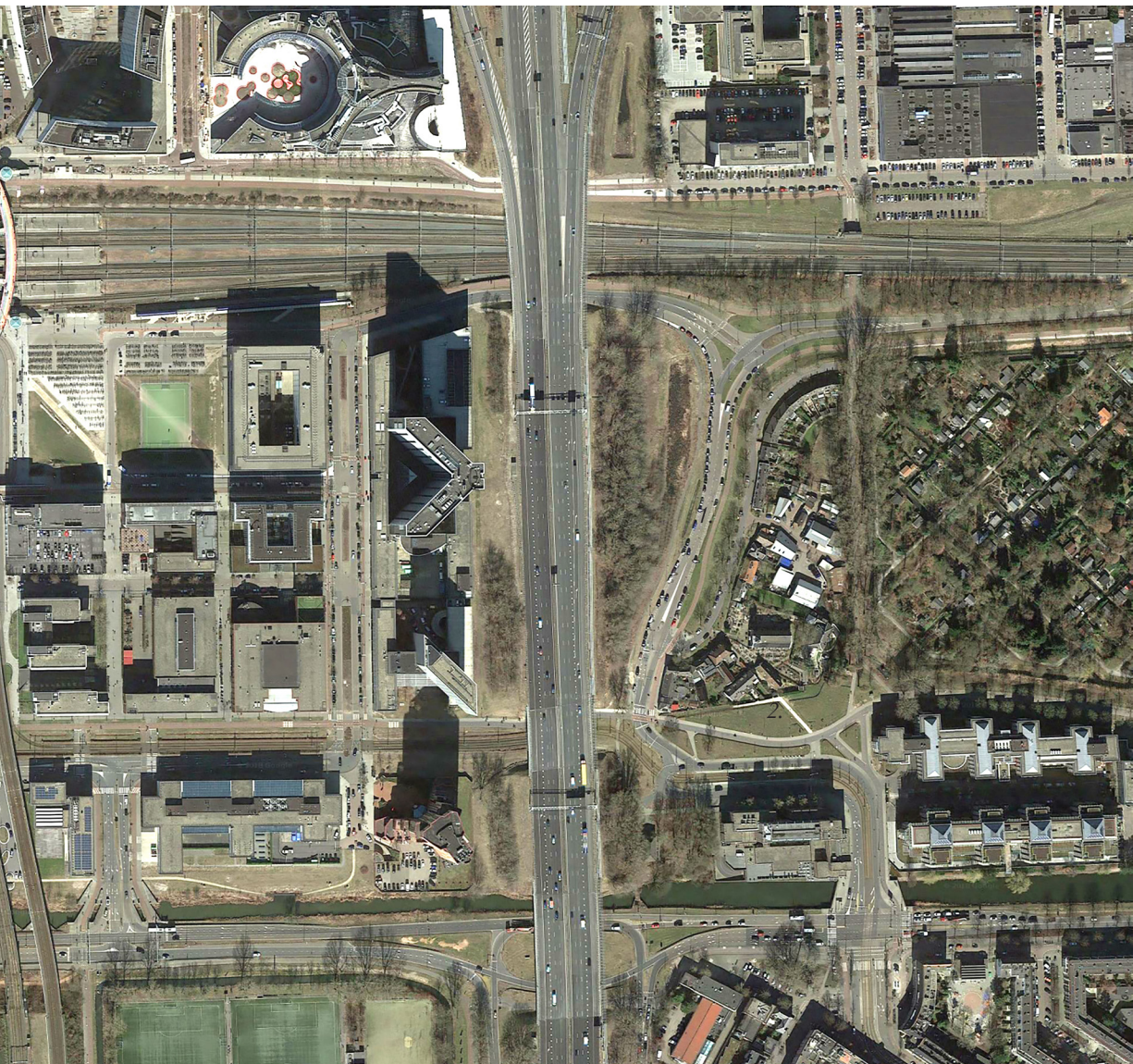
In the near future, Sloterdijk Centrum will become a mixed-use area. Going through a transformation, the area's existing buildings will change functions while new buildings will be planned. The new planning is foreseeing a very dense urban area. New buildings will rise next to the station and in empty plots. These buildings will represent one of the most active nodes of future Amsterdam.

Active plinths and housing blocks will activate the area for humans. Most of the space is designed for people and the only vegetation planned will be added to the existing Orlyplein and designed to take place on the facades of the buildings or on the courtyards of the new blocks.

This approach is minimizing the space for nature. I think that in such an important area for the continuity of ecological corridors, the ground floor represents a crucial area for nature development. I believe that the future function of this area can be integrated with a high-density natural area. With this project, I want to prove that it is possible to create space for nature in a high-density area of a city like Amsterdam. From my point of view, co-living with nature is key to improving the livability of our city and a way to create awareness on the importance and the benefit of wildlife.









1. Oud-sloterdijk 1953.



2. Sloterdijk in 1972, *Amsterdam city archives*.







5. Bus entrance to the bus stop







Introduce natural landscape in the city

Recreate natural landscape s in the city will bring humans to live nature in everyday life. Reuse the soil to create landscapes that are belonging to an area is a way to merge the cityscape with the landscape and create a new entity in the city that will function as an exchange between humans and nature.



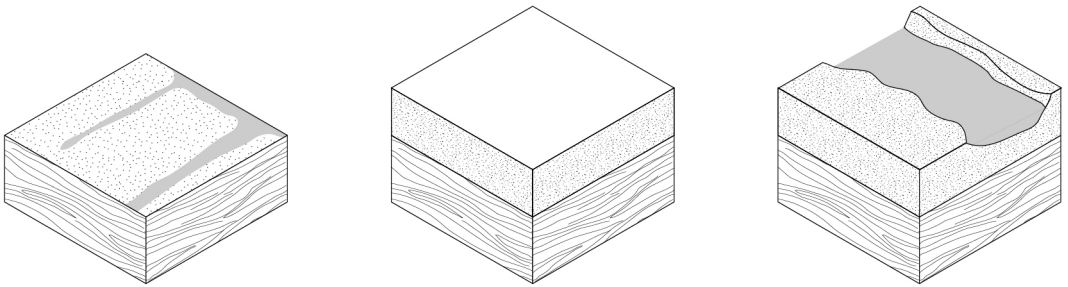


CO-LIVING

Use of the existing soil type

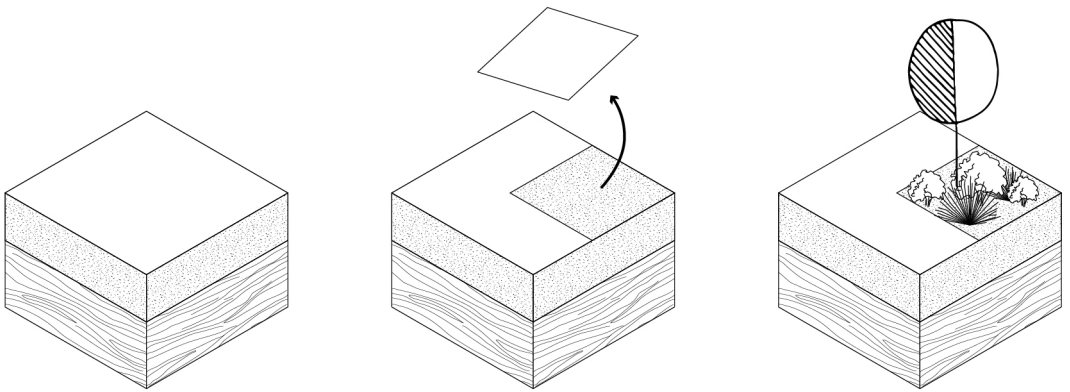
During my analysis, I understood that I could potentially reproduce the dune landscape on the layer of sand that this area is built on. On the other hand, Sloterdijk Centrum has different heights and therefore different soil types.

Orlyplain and all the area around it, from the end of the Brettenzone to the old Sloterdijk town, are based on sand. On the other hand, the southern part, where the N200 starts, is touched by water and a more swampy area can be created along this line to improve the quality of the waterland landscape. Orlyplain itself can become a more urban area welcoming commuters into an urban wilderness.



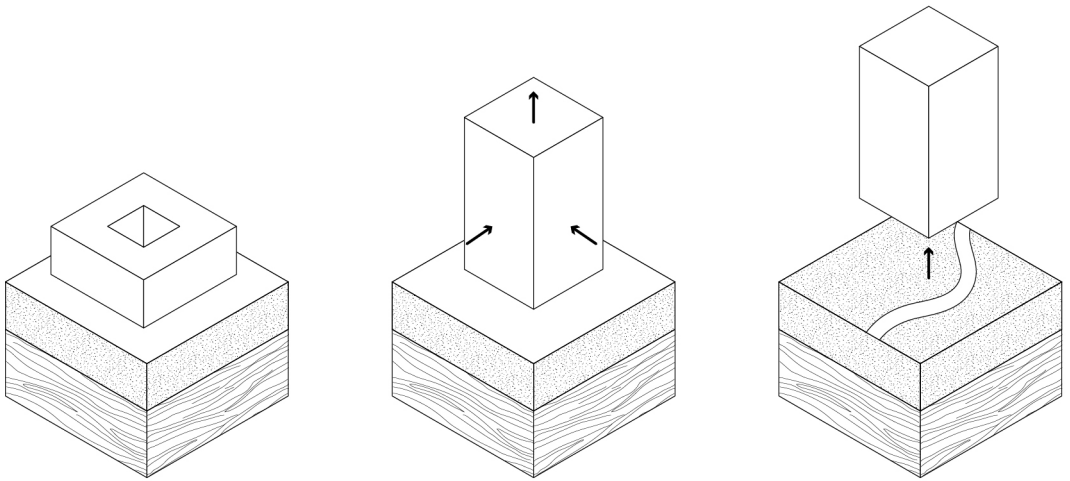
Minimize paved areas

To ensure the natural development of those landscape types I think that minimizing the paving is crucial. This will help plants to grow more rapidly. This strategy, combined with the maintenance of the planting, will ensure an alive natural landscape, linked to the soil type and to the presence of water. This idea will also make sure that different animals can find enough space to breed, nest and hunt their food.



Enlarge space for nature on the ground floor

To make more space on the ground floor, I have decided to put the main car traffic below ground. I have also decided to have towers in the area instead of big housing blocks that are taking over space without cutting square metres from the program of the municipality. This will help ensuring the movement of all the species and to create a connection between nature and humans, as it will give substantial space to trees and vegetation. To make this possible, I decided to elevate the towers from the ground floor of 25m on the south side. Doing so, will enlarge the natural connection and will create specific space for encounters below the towers. Also some of the buildings will be elevated of 1m from the ground floor and this will create a space that is not accessible by humans but that is perfect for different

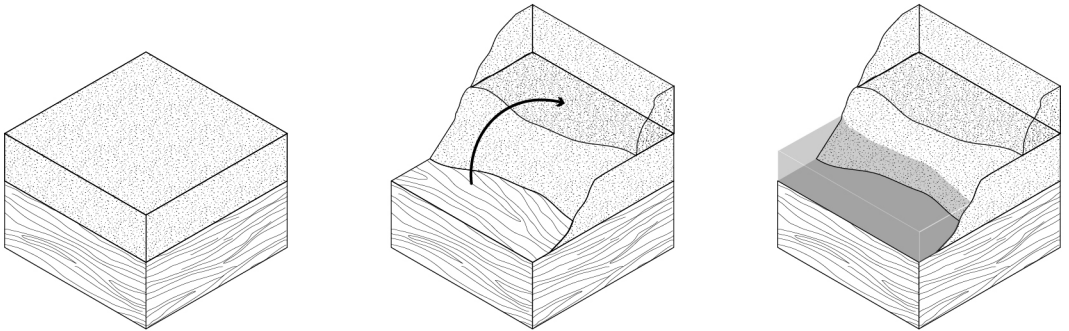


Reuse of sand in the area

To create diversity in the landscape, I will make sure that more water will be created in the area.

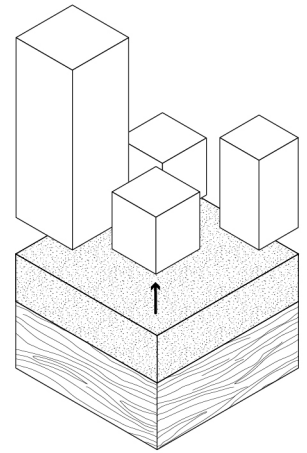
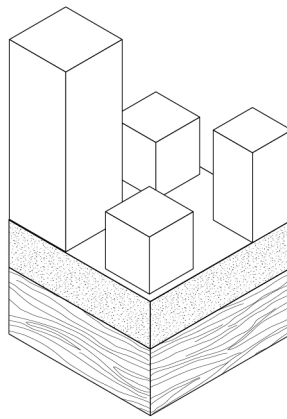
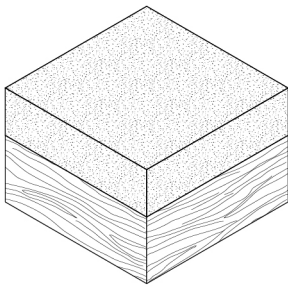
To do so, I will reuse the sand that is now on top of the peat layer to create land.

Now in the area of Sloterdijk, peat is 5 to 10 metres deep. Excavating to get to this soil type will make sure that the diversity of the landscape will emerge and therefore creating an increase of biodiversity and different habitats.



Nature and city, how to merge two different entities

My intervention will consist of the design of different landscape typologies that could fulfill the specific needs of each chosen species. Next to that I will create a high density mixed-use area that will be perfectly merged within this natural landscape. This way of designing is giving me the opportunity to prove the fact that we can live with nature share specific spots with it. The public space design, in fact, is made in a way that every spot where people can come together is also a spot where, we, as humans can meet the other species.. This new way of living will open up many possibilities for the future and will create awareness about sharing the public areas with animals while also ensuring their private habitat. Every species will have a space for themselves in the same way humans go back to



ENCOUNTERS





The Dream - Henri Rousseau

Relationship between guide species and humans

To make sure that all the chosen guide species would benefit from the area, I created a space that mirrors the environment they are familiar with. I considered that each species needs a place to nest, breed and find food supply. In addition to this, I made sure that it would overlap with human space, when possible, in order to guarantee for interaction between species. This approach is giving me the opportunity to ensure a co-existence. I created remote places for both humans and animals to enjoy their habitat as well as a place where the co-living would be enhanced. This will help make sure acceptance from both sides is met and that different spaces can be shared.

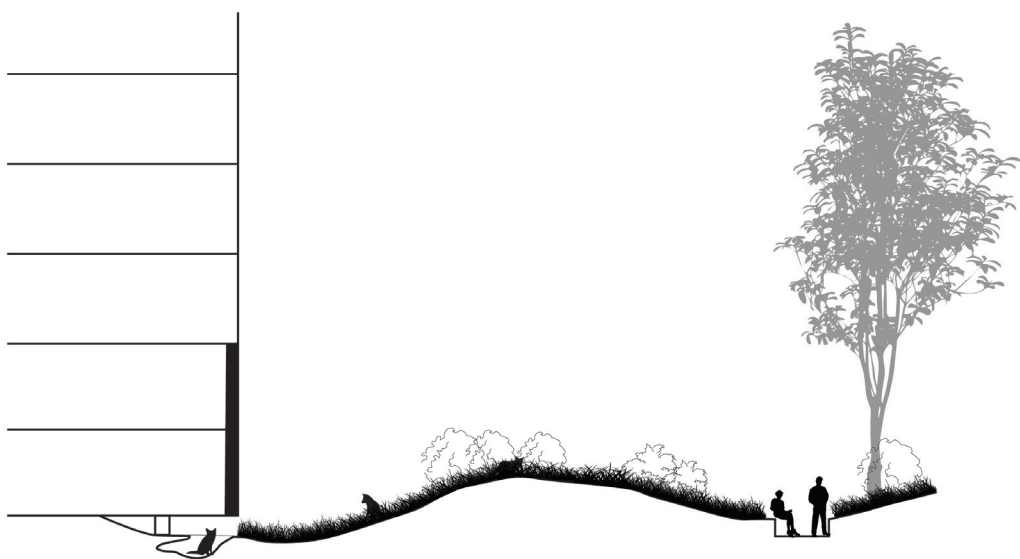
To guide me in this process, I followed a set of principles that will help me define the space as well as making sure that both humans and animals can approach it.



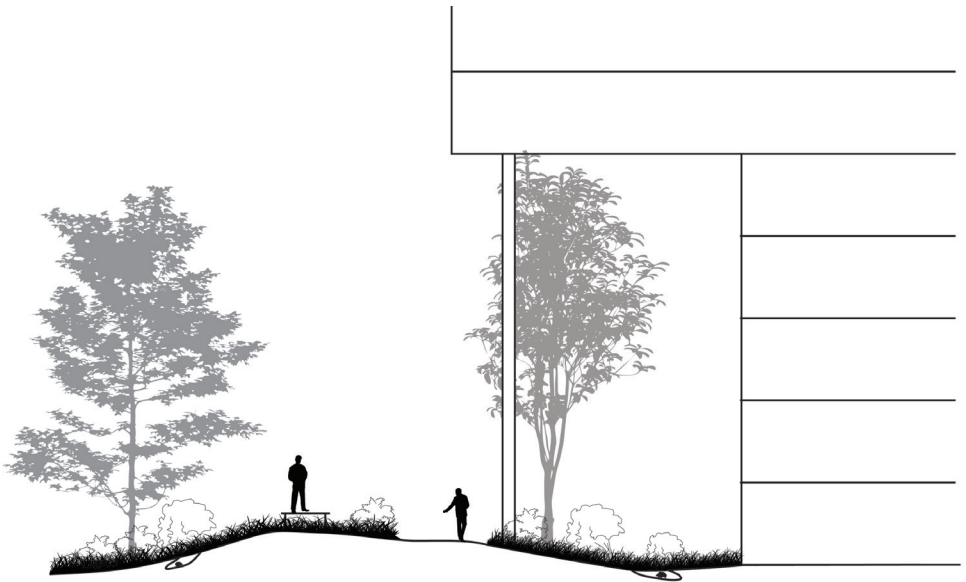
photo by Gejo Klos



Dama dama is a very social animal, they are open to sharing space and food with humans. It is important to make sure that there is a space for both species to come together, that is both designed for humans as a public space and friendly for the fallow deer to walk and rest.



Vulpes vulpes will be attracted to the space below the buildings with an elevation of 1m. This space will also welcome many dens of small mammals, with whom foxes will be more than happy to share space as they can provide them with source of nutrition. A screen placed on the buildings' first floors will add a small hill area that will separate the private life of the foxes from the pathway via a difference in heights.



Ernaceus Europeanus is a garden lover. Designing garden-like spaces under the cantilevers will give them space to move and to have dens and food resources. Furthermore, elevating the paths onto the gardens will ensure continuity in the habitat.



Alcedo Atthis is a bird that likes privacy when it comes to family business. This bird is not a crowd lover and for their nests they prefer remote places unreachable to humans. Their nest is dug in a wall along the water so that they can have easy access to it. Humans are still welcome on the kingfisher islands but via the north side, so that humans are prevented from reaching the nest by a boat or by swimming.



Natrix natrix is a snake that lives in the swampy areas so to create the perfect space for them it is indispensable to ensure a consistent amount of reeds and swamps.

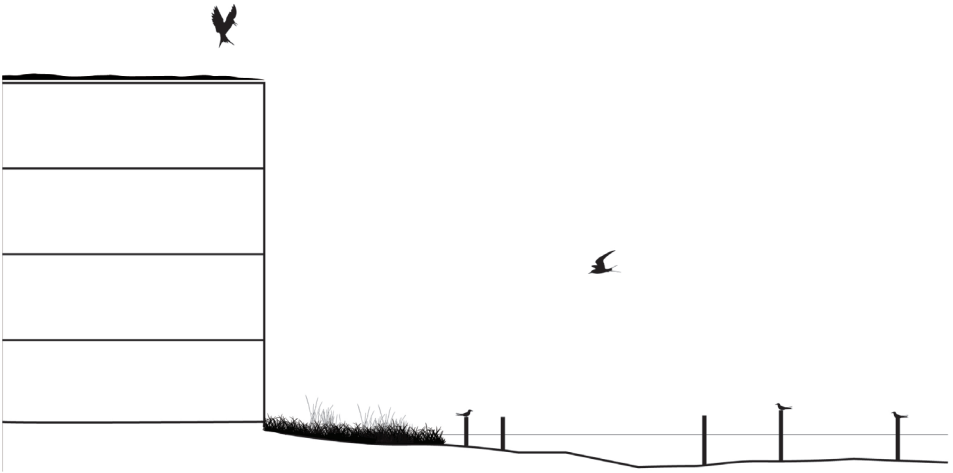
Elevating the path on both land and water will help create a visual connection. Moreover, recreational water will make sure that humans will be able to share space with the snakes.



Bufo calamita is sharing the space with the grass snake; they like to use 5 to 10 cm swamps to copulate and rock to hide. Around the dedicated ponds there will be elevated rock benches to give resting opportunity to the human while enjoying the view of the toad's spectacular life.



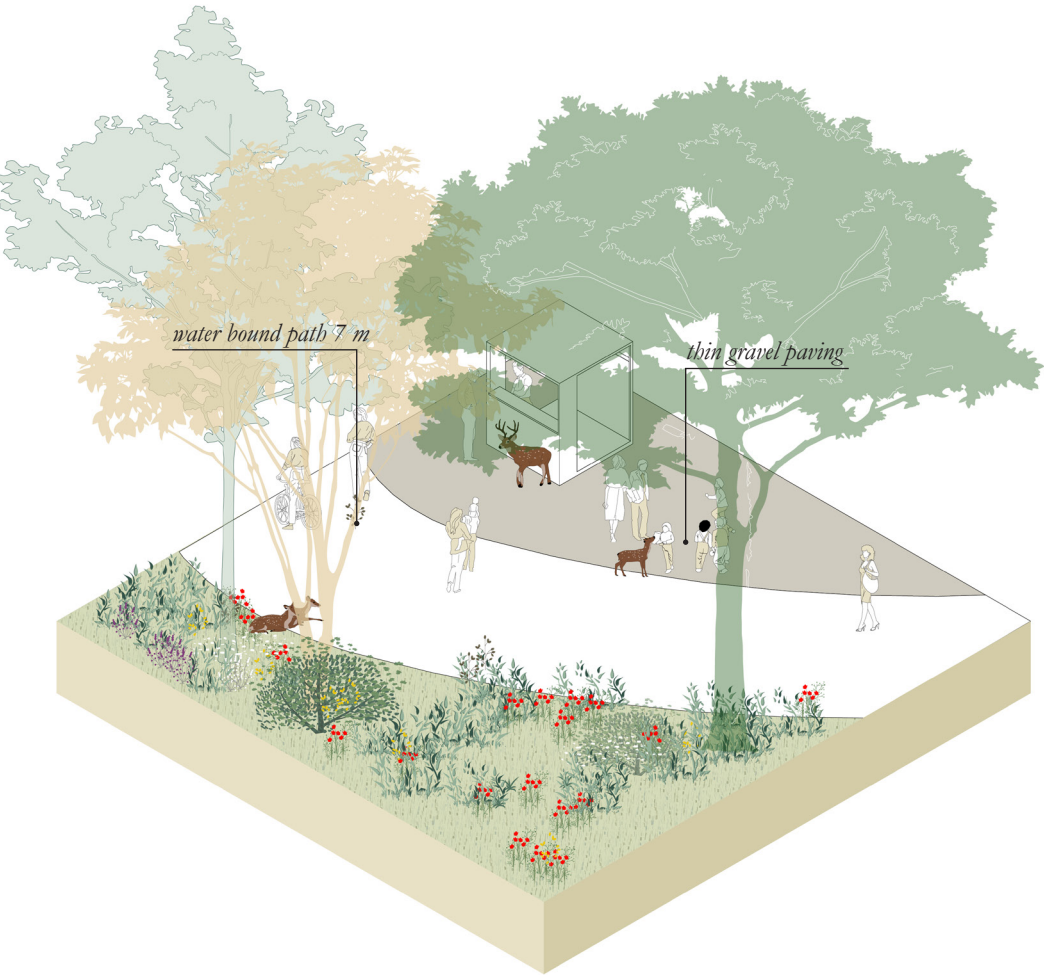
Sympetrum stiratus is an insect that likes to fly above wet plants, therefore dedicated ponds with water plants will be created in combination with wooden sticks to rest. Around these ponds, people will have recreational space since the dragonfly is not put off by the human presence.



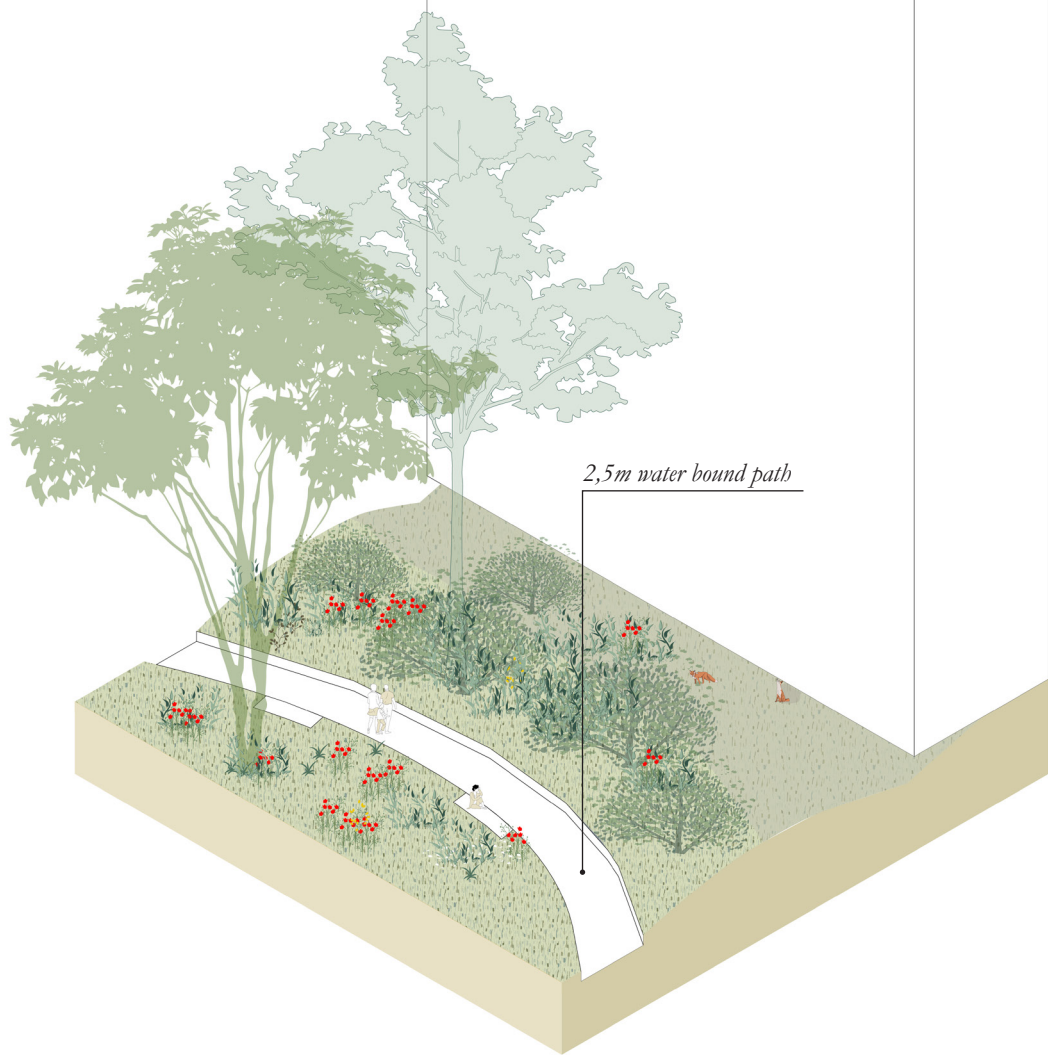
Sterna hirundo is a coastal bird that prefers the city to nest as they are attracted by pebble stones roofs. It is important to create space for them to fish and to rest in proximity of where they nest.

The buildings along the water will have pebble stones and poles to rest will be installed on the water close to those buildings.

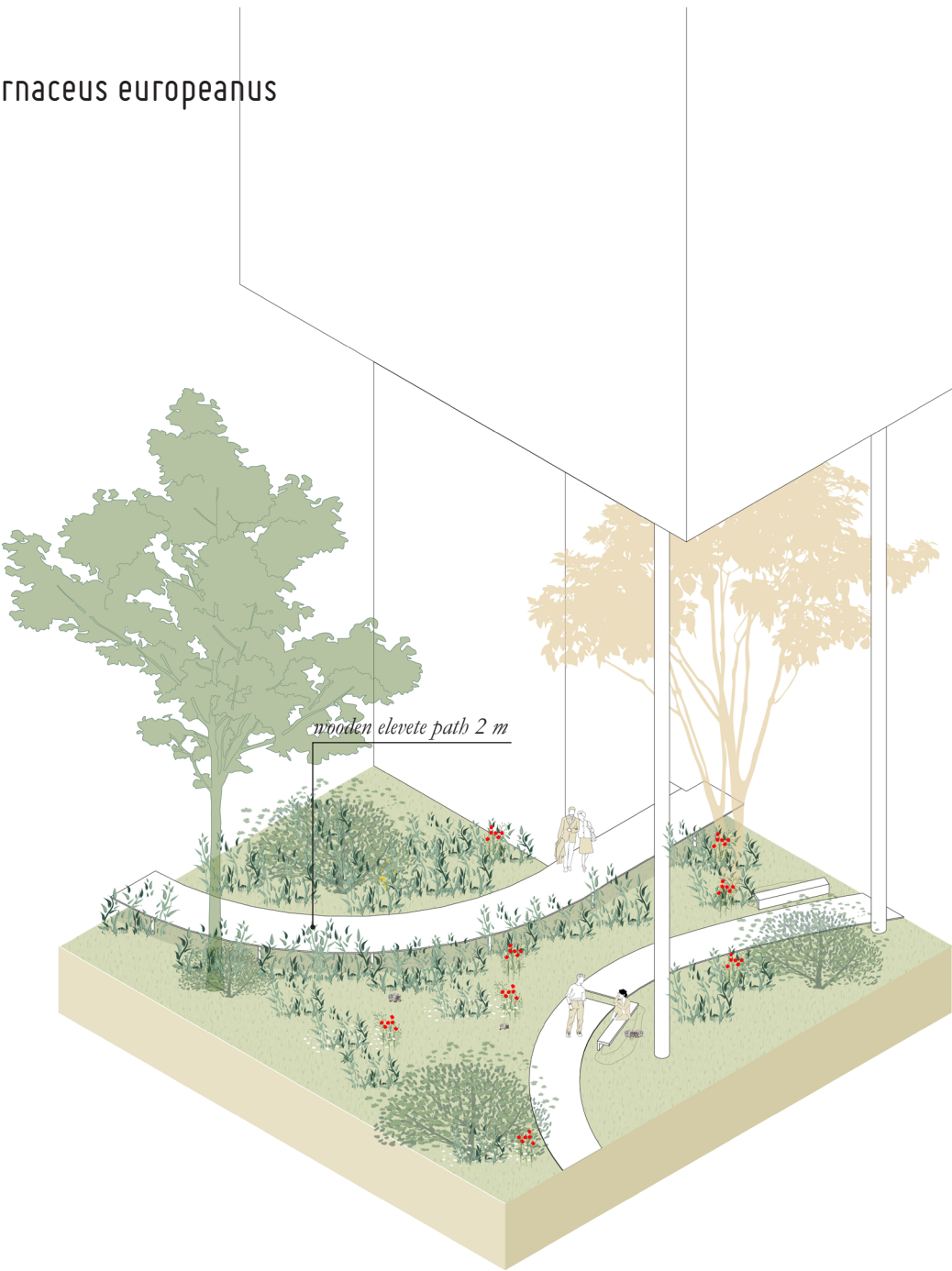
Dama dama



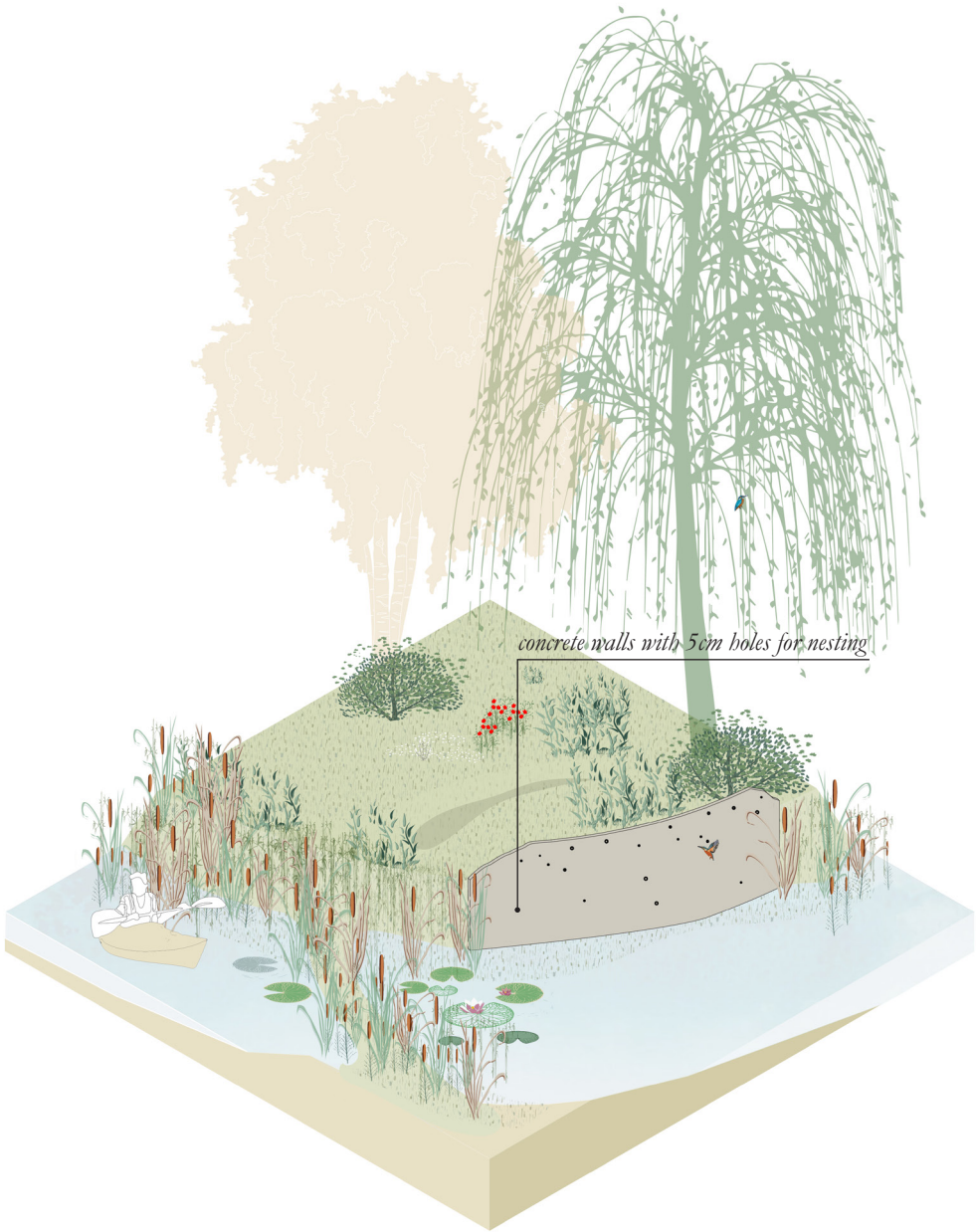
Vulpes vulpes



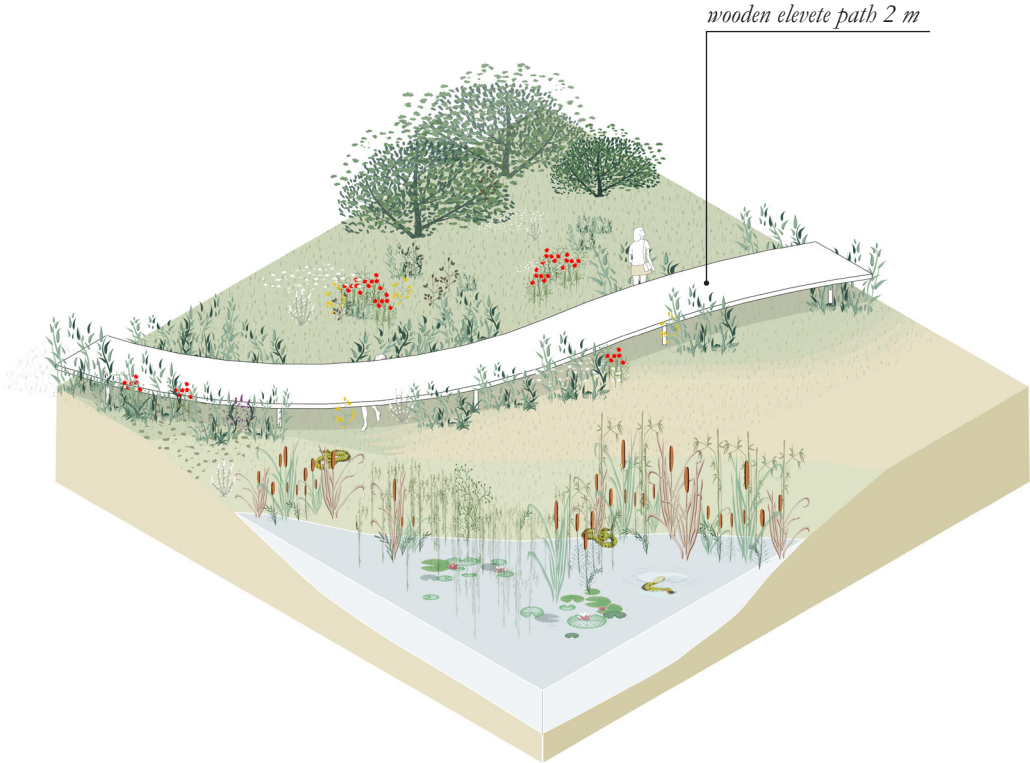
Ernaceus europeanus



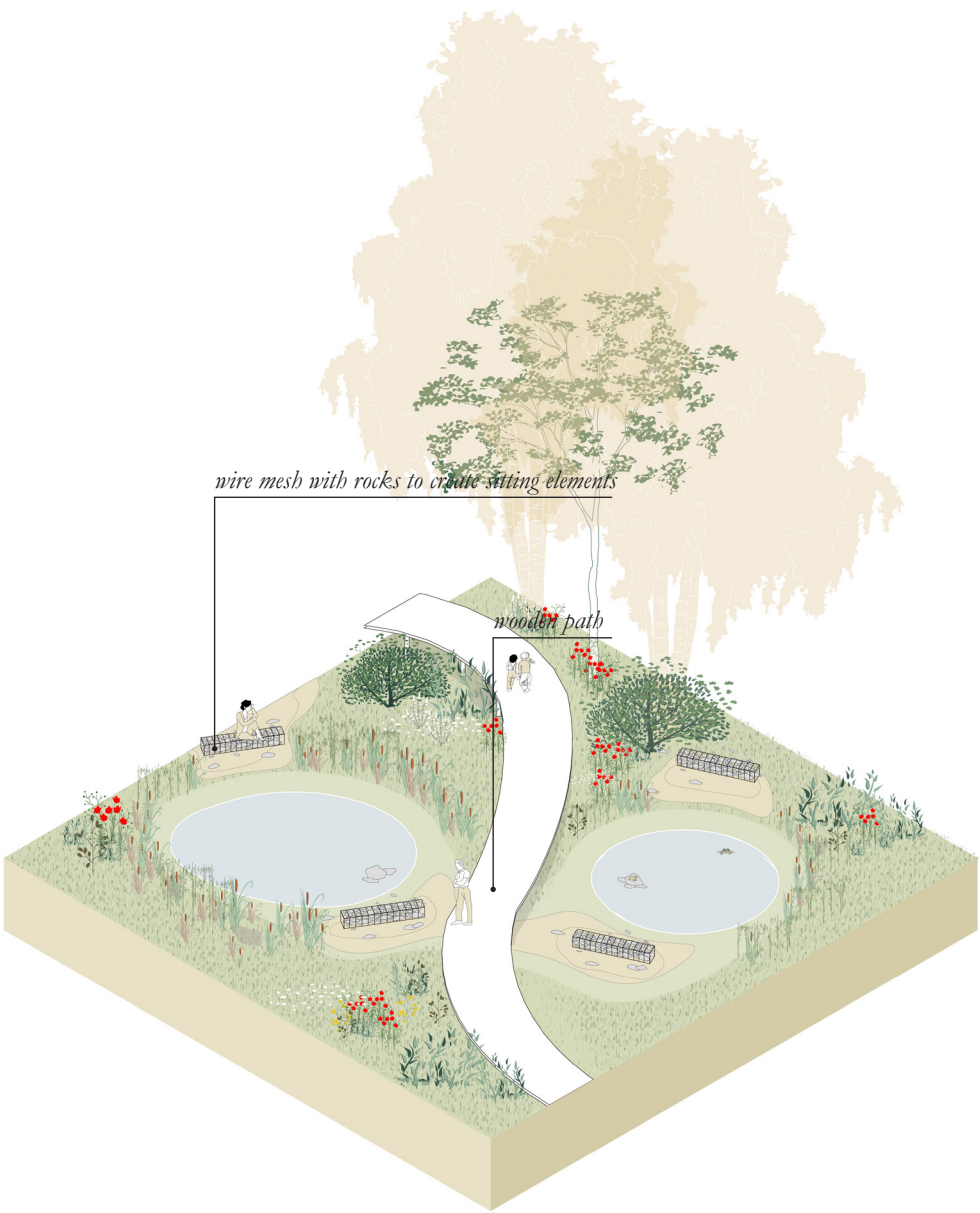
Alcedo atthis



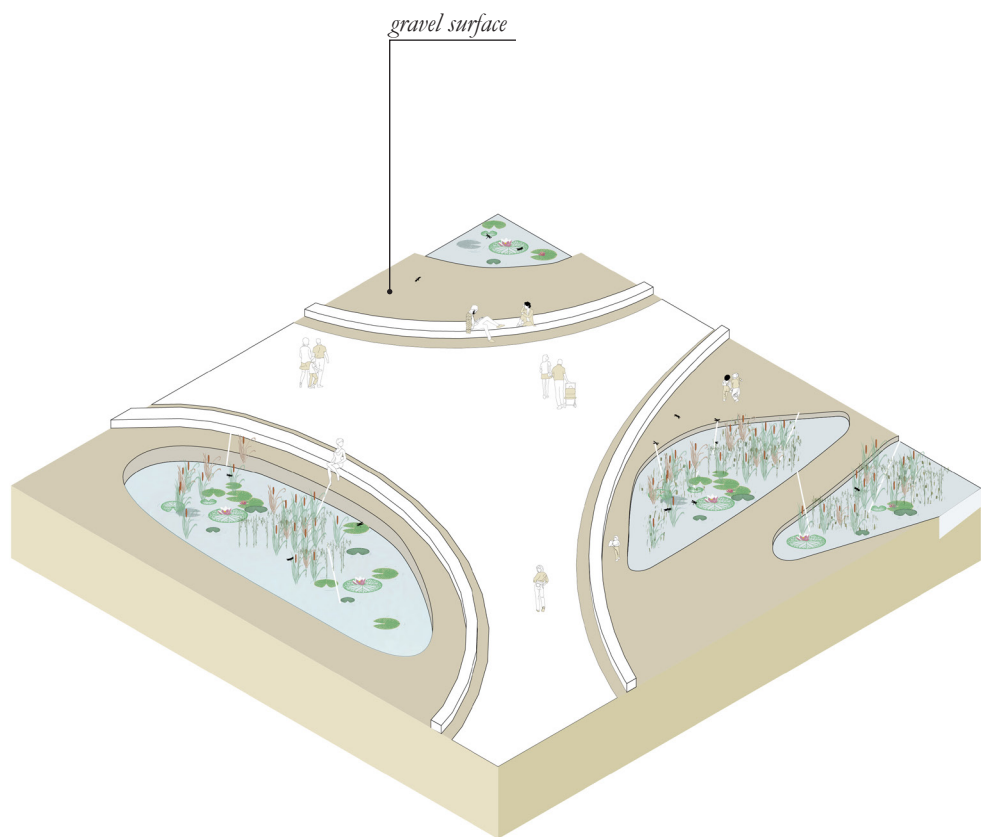
Natrix natrix



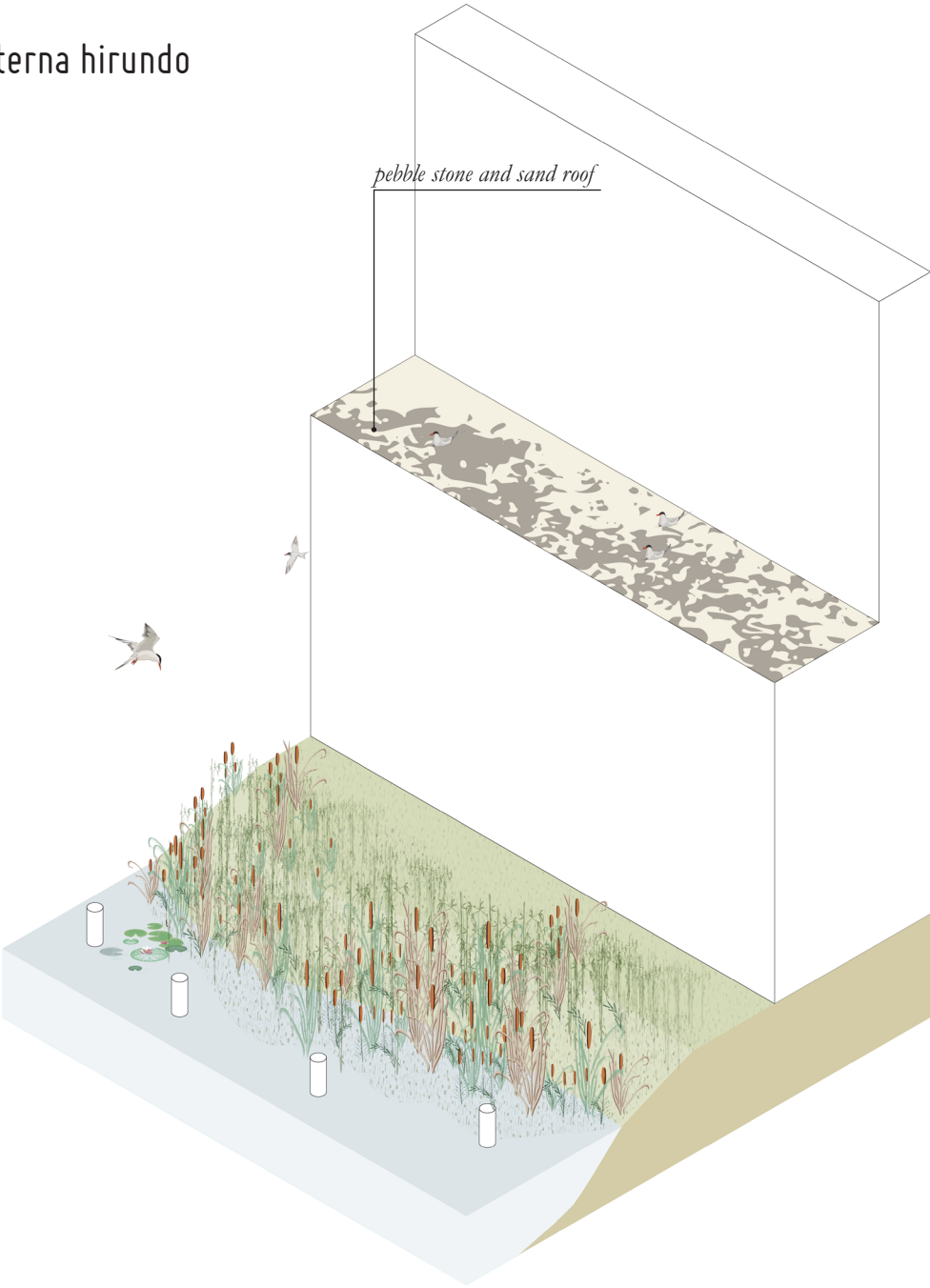
Bufo calamita



Sympetrum stiratus

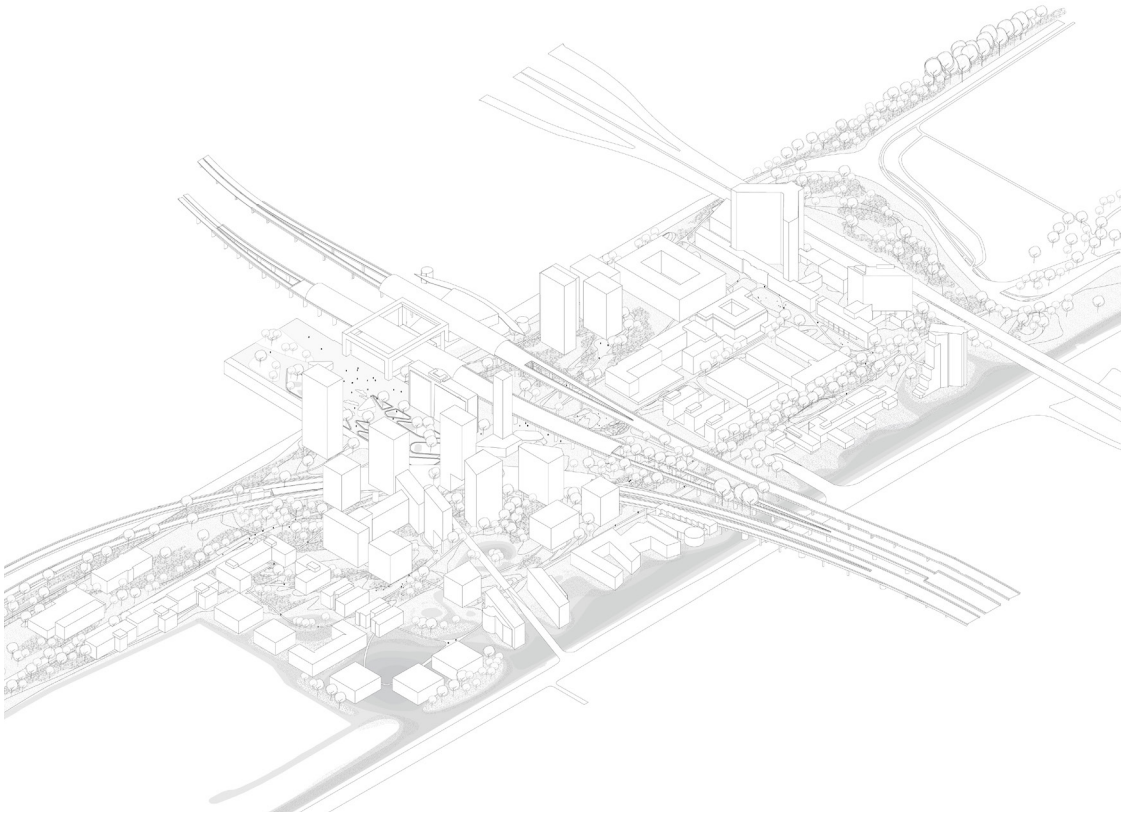


Sterna hirundo

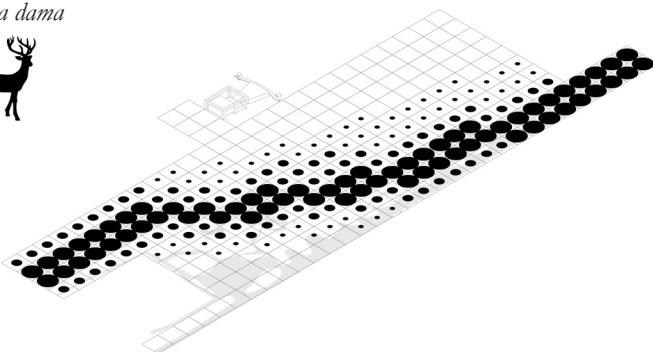


MOUVEMENT OF THE SPECIES IN SLOTERDIJK CENTRUM

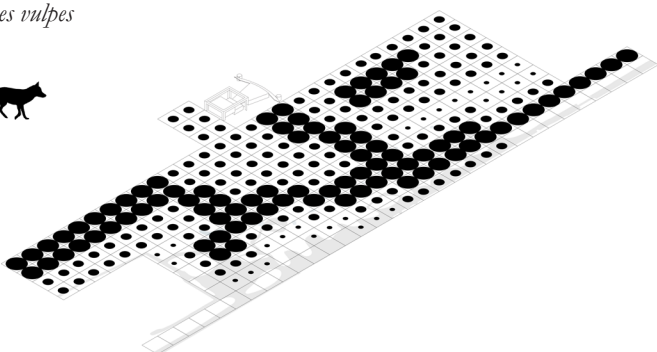
To shape the landscape in the area, I have studied the attitude of each species to recreate the movements they will be doing in Sloterdijk Centrum. For each species, I am recreating a routing that ensures that the habitat they live in is guiding them to explore the area while remaining connected to the bigger scale. From the continuous tree lines that will follow the walk of the fallow deer to the specific ponds created for natterjack toad to the hiding spots for foxes, the area will become a place where each habitat is developed to create resilience and adaptability.



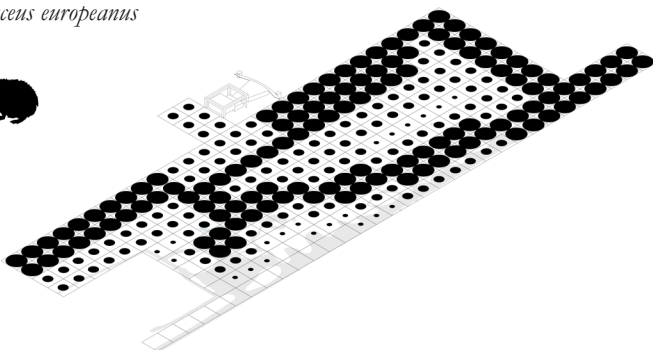
Dama dama



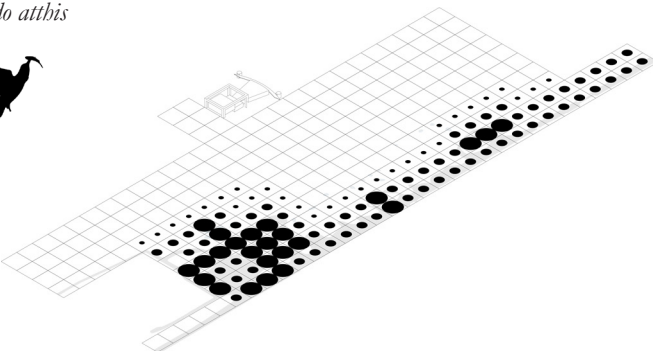
Vulpes vulpes



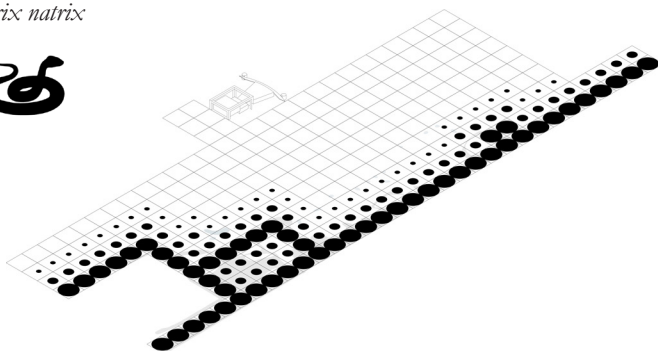
Ernaceus europaeus



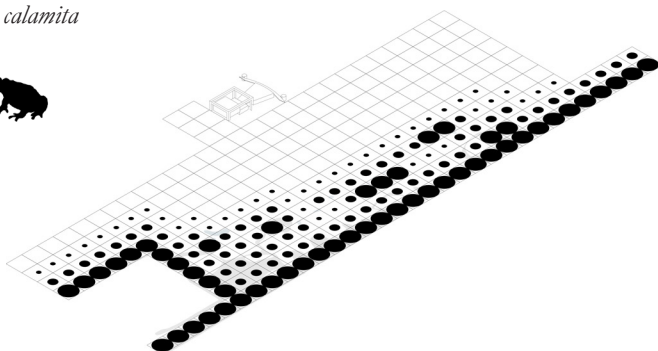
Alcedo atthis



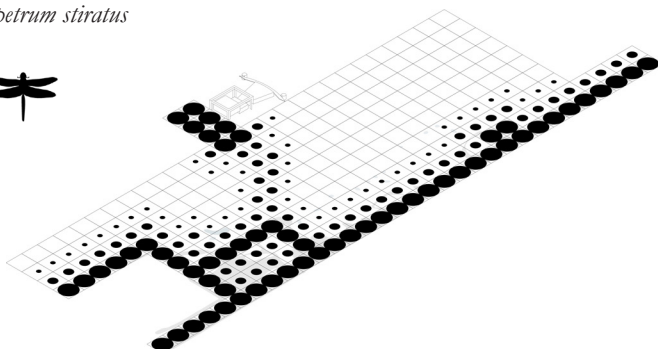
Natrix natrix



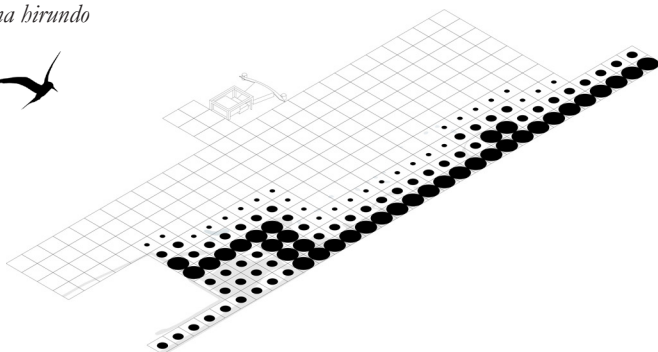
Bufo calamita



Sympetrum stiratus



Sterna birundo



DESIGN LAYERS

Landscape

Soil type

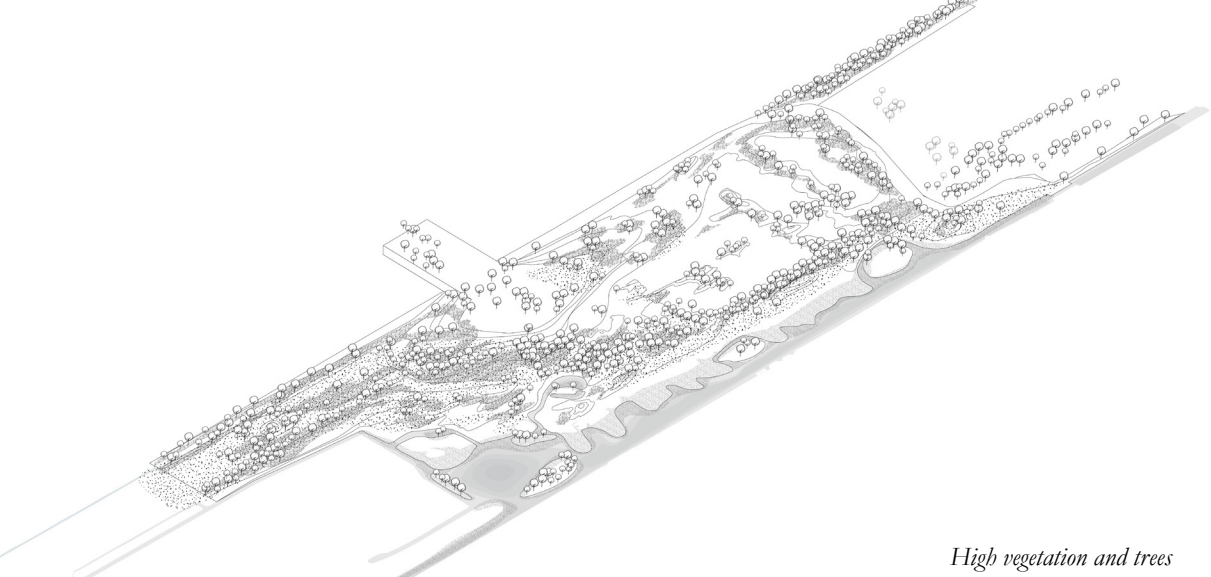
To define the landscape in the new Sloterdijk Centrum I took into account the soil type and the routing of the animals. To be able to enhance the nature I decided to minimize the paving and to give space to dune landscape where the sand was used as a base for the building construction. On the south part, along the waterway, I made space for water. Enlarging the waterline helped to bring in the plot a swampy landscape, more related to the peat. By doing this, a gradient from water to swamp to dunes is created to ensure that all species have a perfect habitat to live together with humans in an urban environment.

Orlyplein is the ultimate habitat for dragonflies. A public space on a hard surface becomes a natural square where a series of ponds gives space to water plants and where consistent planters make sure that trees are growing on the square. This space will welcome train travelers and will create a buffer from a more hardscape to a soft landscape embraced by nature.

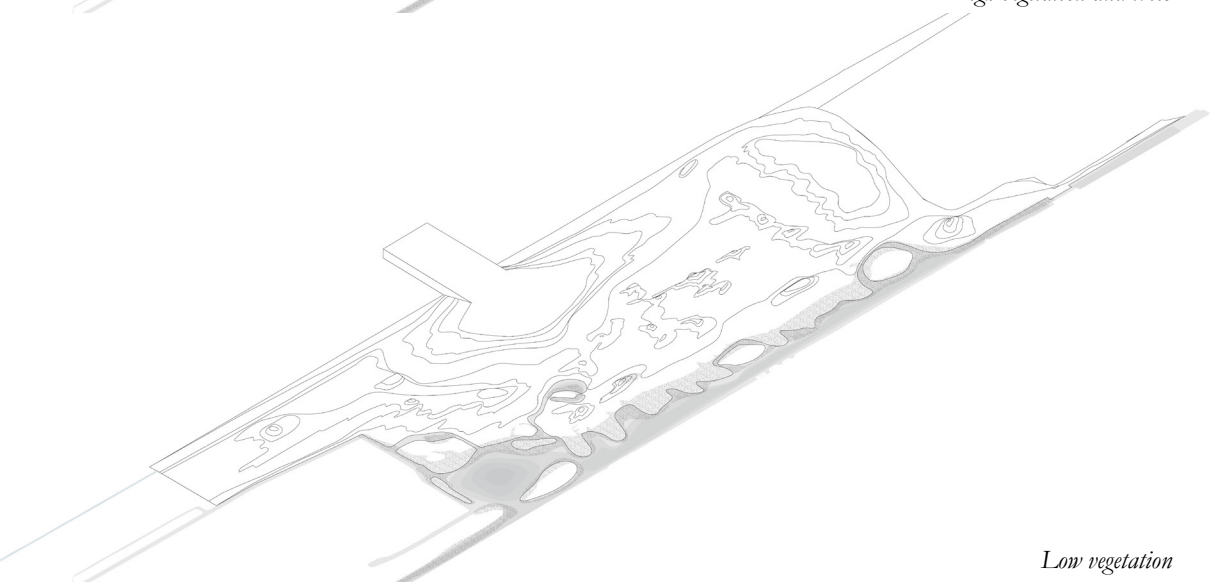
Types of vegetation

On top of this layer, nature will take its course.

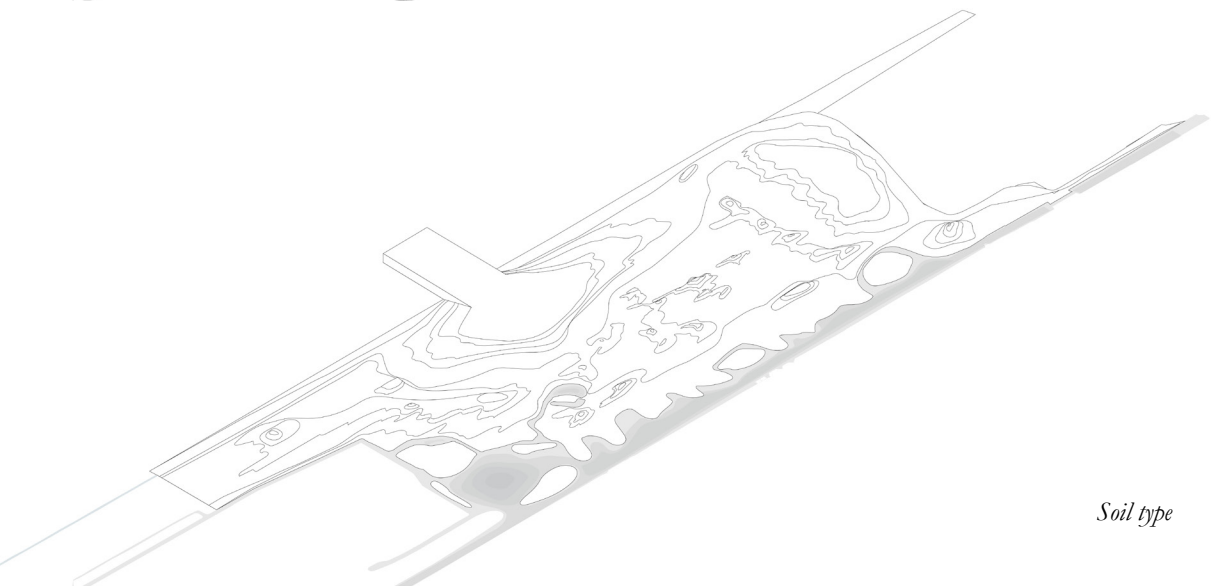
The water line will slowly fade in the swampy area which will be populated by wet plants belonging to the outside city landscape. Reed will welcome grass habitats; snakes and toads will give food to dragonflies. The inner land will have a low vegetation that will cover the dune and on top of it high bushes will be planted to ensure the perfect habitat for foxes and hedgehogs; a consistent line of trees will follow the northwest, southeast line to give space to the fallow deer habitat; these layers will help the kingfisher and the terns to find shelter and food.



High vegetation and trees



Low vegetation



Soil type





Study model - dunes

Infrastructure

Cars

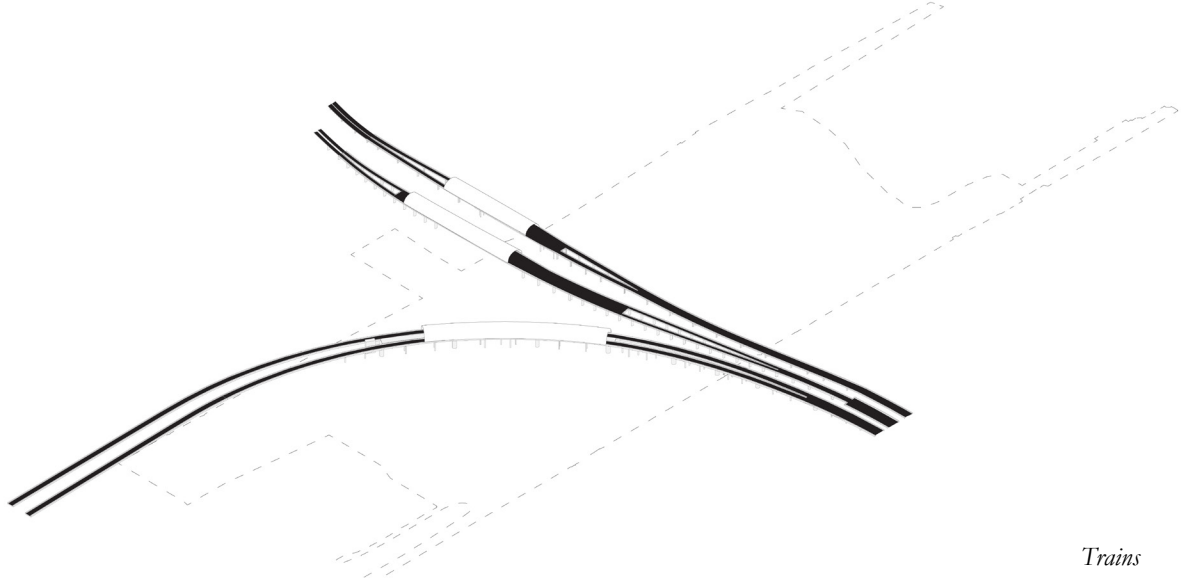
To be able to create a consistent ground floor for nature, I have decided to bring the car traffic to a lower level. All the cars will access the area via ramps that will go under the ground and are connected with bus stations and the parking lots. From here, people will be guided to their homes or to the station square via escalators or elevators. Also from the bus station, a visual connection will be guaranteed via openings in the ceiling.

Slow traffic

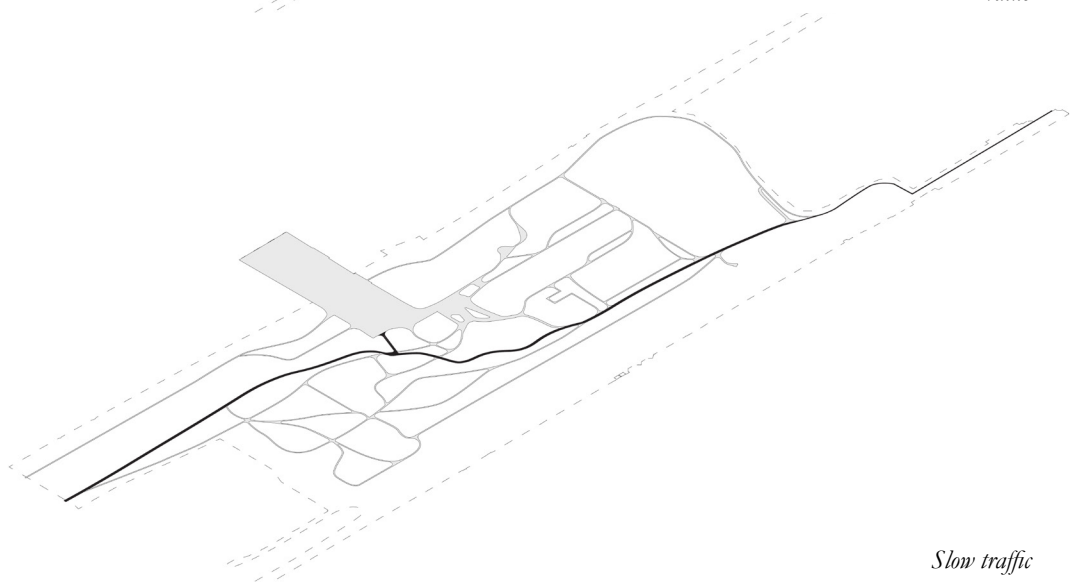
The pedestrian connections are going from Orlyplein (main node of the area and one of the main nodes of Amsterdam) to the rest of the plot via a pattern of paths with a width of 2.5 metres. Here, bikes and pedestrians are welcomed on a network of routings within nature. Main axes following the line of the trees consist of a path 5m wide. Shared spaces between pedestrians, bikes and service cars are guaranteed.

Trains

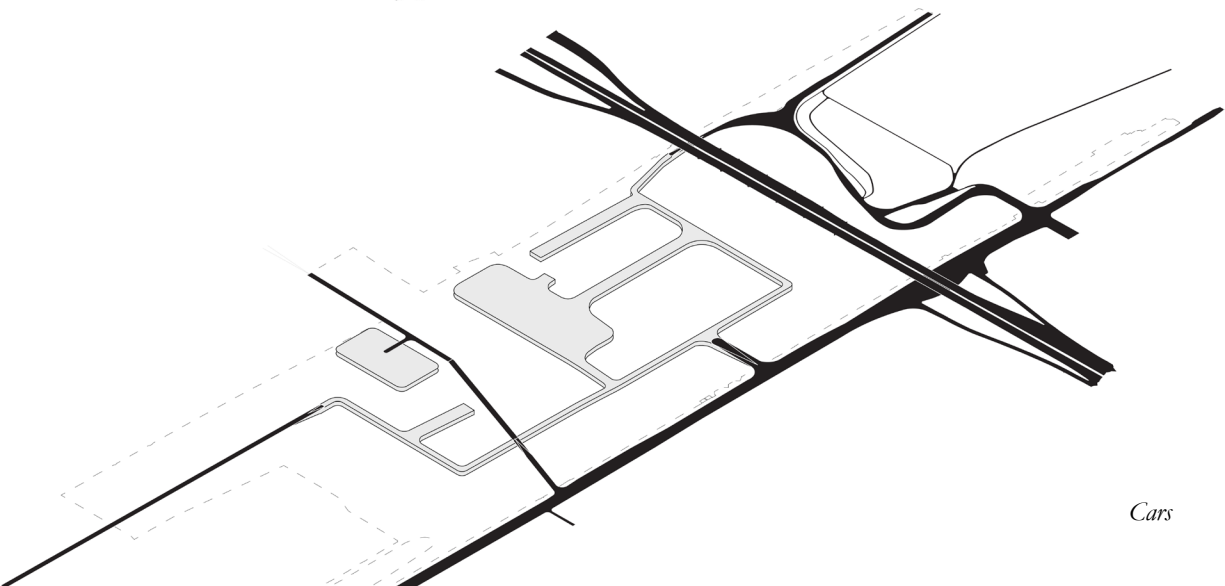
The train connection will not change in the future plans.



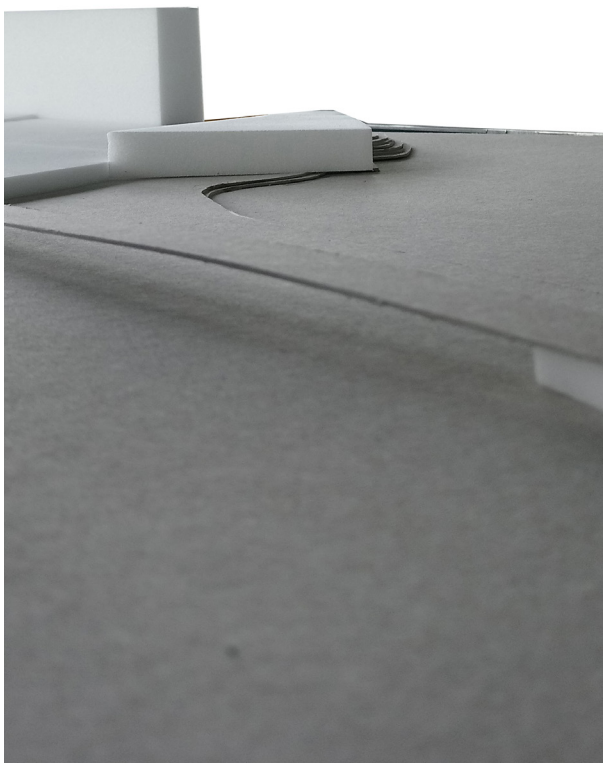
Trains



Slow traffic



Cars





Program

Space for animals

The open landscape and the dedicated areas for the species will increase exponentially the possibilities for animals to use the area. From sandy soil to swampy area, this space will provide them with food, nest and habitat.

Space for people

People will be using the area in a new way. Orlyplein is one of the main public spaces, with a square hosting a playground in the centre and then splitting in two sides in a more natural public space where people can meet animals. Also along the main axes, there will be resting areas where different kinds of kiosks will create meeting points for people that live there and professionals. More hidden in the blocks, the paths will connect different pocket squares, spaces where families can meet or where residents can hang out.

Space for animals and people

Different moments along the path system will enhance the co-existence.

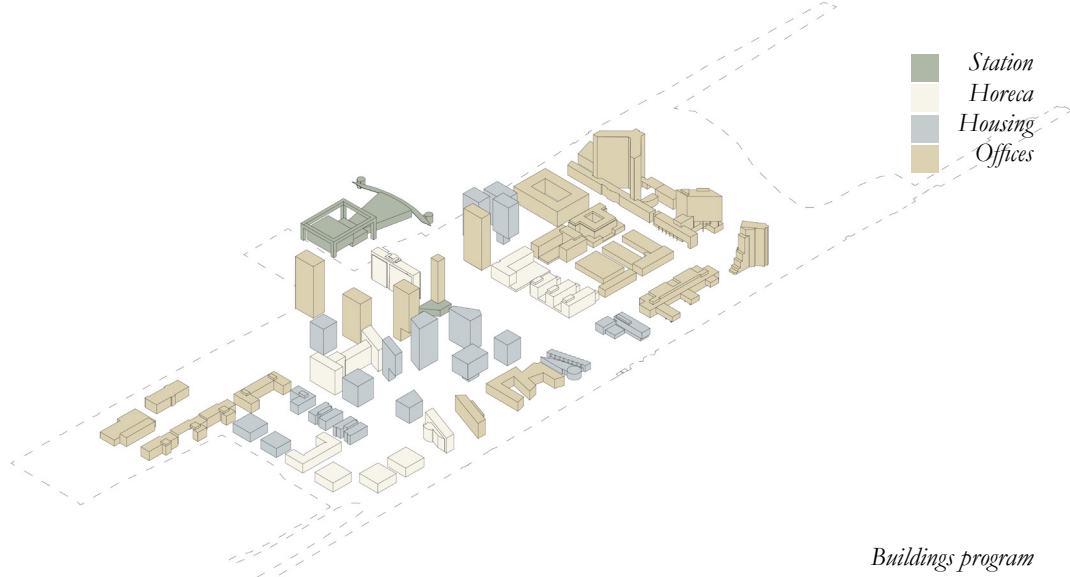
In relation to the specific habitat of a species, I have designed spaces where to improve the interaction. Along the water, a pathway will give an overview of the grass snake habitat but will also connect visually the terns to the people walking on the path. Next to the natterjack toad ponds, benches will give space for people to enjoy the natural landscape and to see those little animals living their lives. Along the main axes, the kiosks will attract the fallow deers during the day and foxes at night. Foxes will also be given

some paths in the northeast side of the plot, taking them to a more specific habitat in a remote space where they will be more than welcome if in search of food.

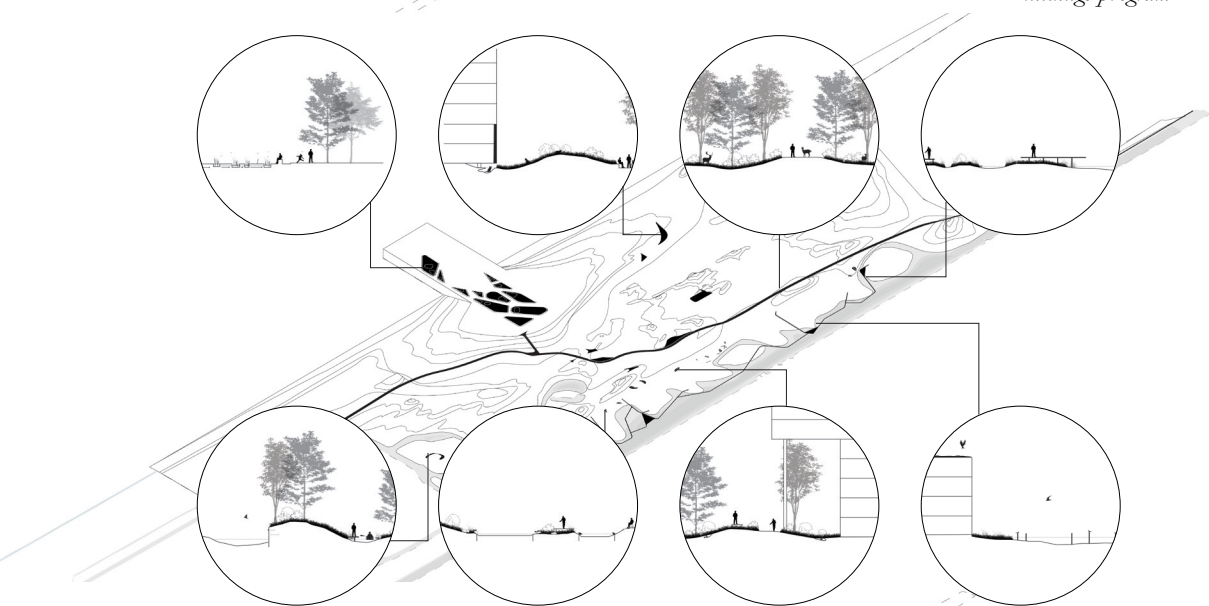
Under the cantilevers of the elevated buildings, gardens will enhance the habitat of hedgehogs and help them move around. Here some of the meeting spots will share space with them.

The recreational water lines will bring people close enough to kingfisher nests while the connection will be interrupted so the bird can still have privacy.

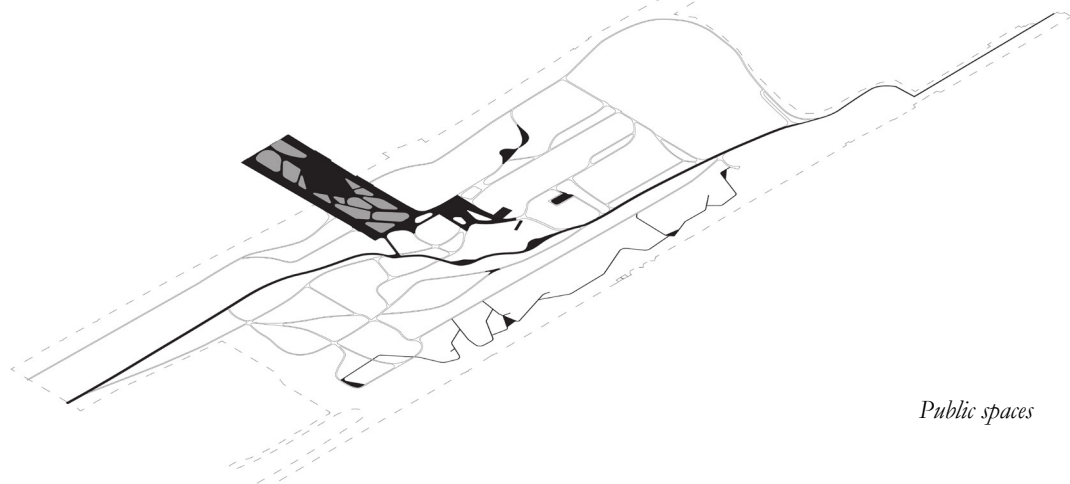
On Orlyplein the dragonfly will have their perfect spot: a series of ponds in the square will host water plants and decorate the main public space in Sloterdijk centrum.



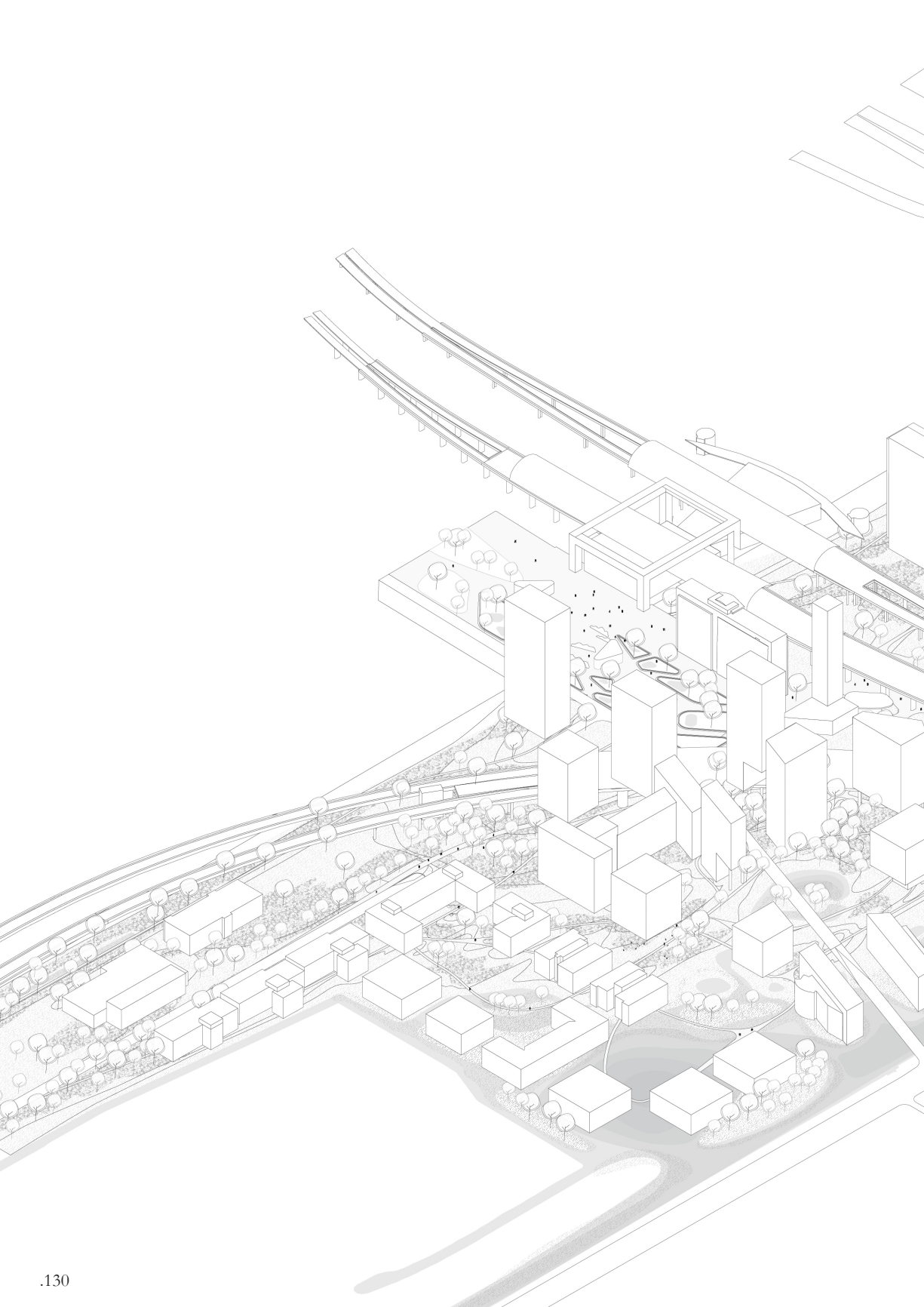
Buildings program

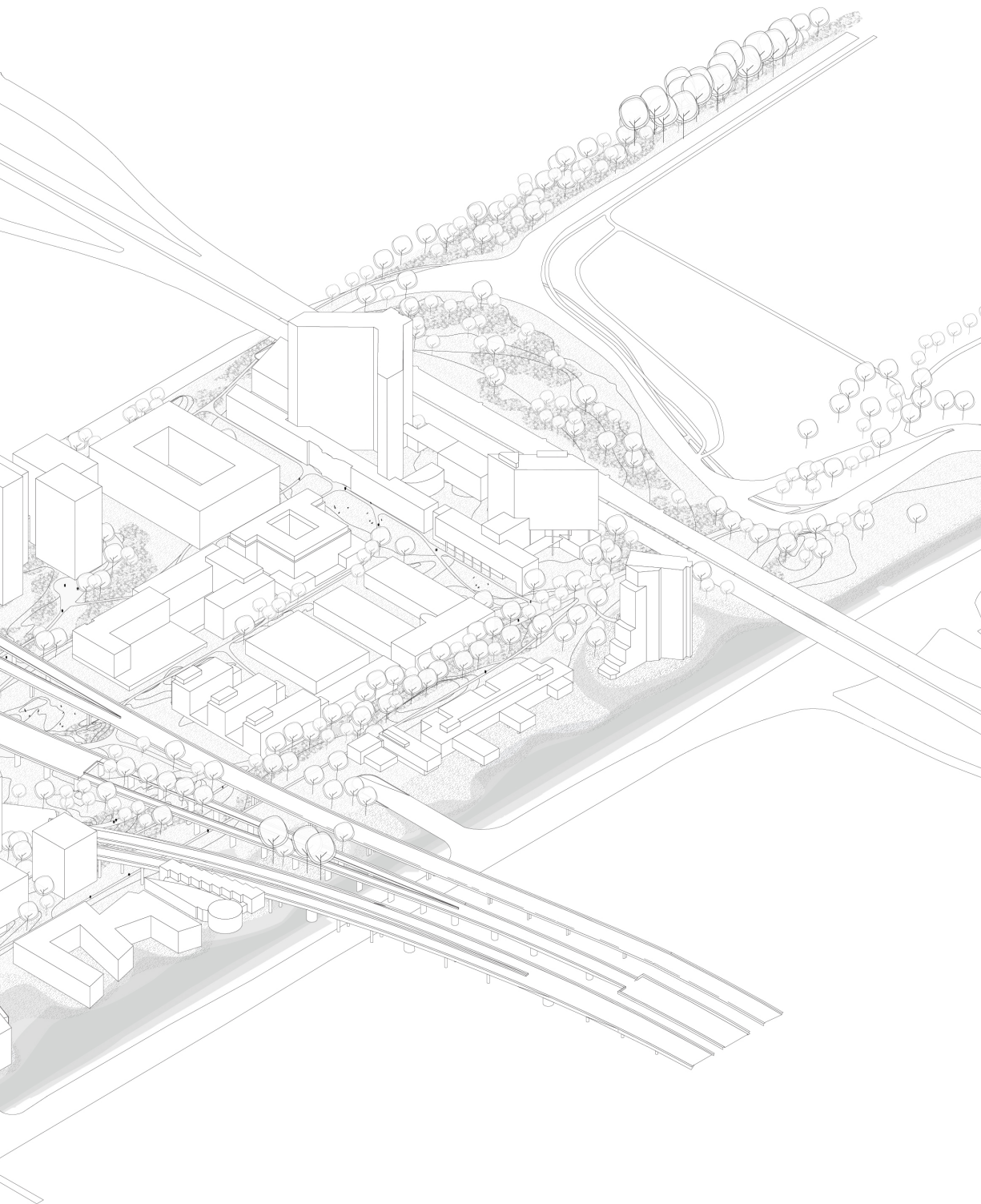


Encounters humans - animals



Public spaces





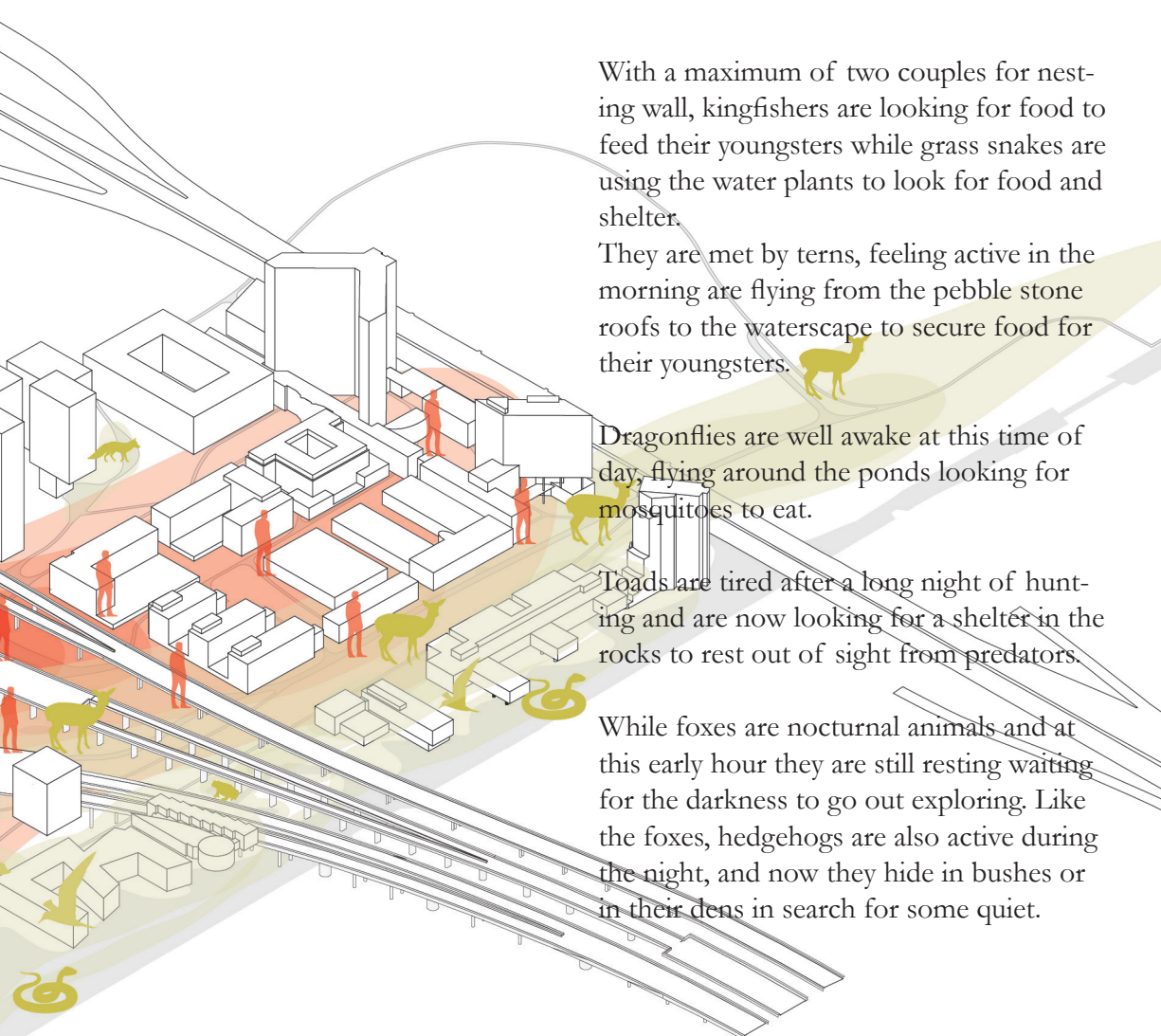
Use of the space @ 8.30

About 25.000 people are using Sloterdijk station every day.

When the stream of daily commuters reaches the station, they scatter around on their way to the buildings and public spaces. Along their route, they will be met by animals co-living the same environment.

Fallow deers, aware of the human presence and more comfortable with it, know this is the time to approach humans for food or cuddles. Around the kiosks, they are looking for nuts.





With a maximum of two couples for nesting wall, kingfishers are looking for food to feed their youngsters while grass snakes are using the water plants to look for food and shelter.

They are met by terns, feeling active in the morning are flying from the pebble stone roofs to the waterscape to secure food for their youngsters.

Dragonflies are well awake at this time of day, flying around the ponds looking for mosquitoes to eat.

Toads are tired after a long night of hunting and are now looking for a shelter in the rocks to rest out of sight from predators.

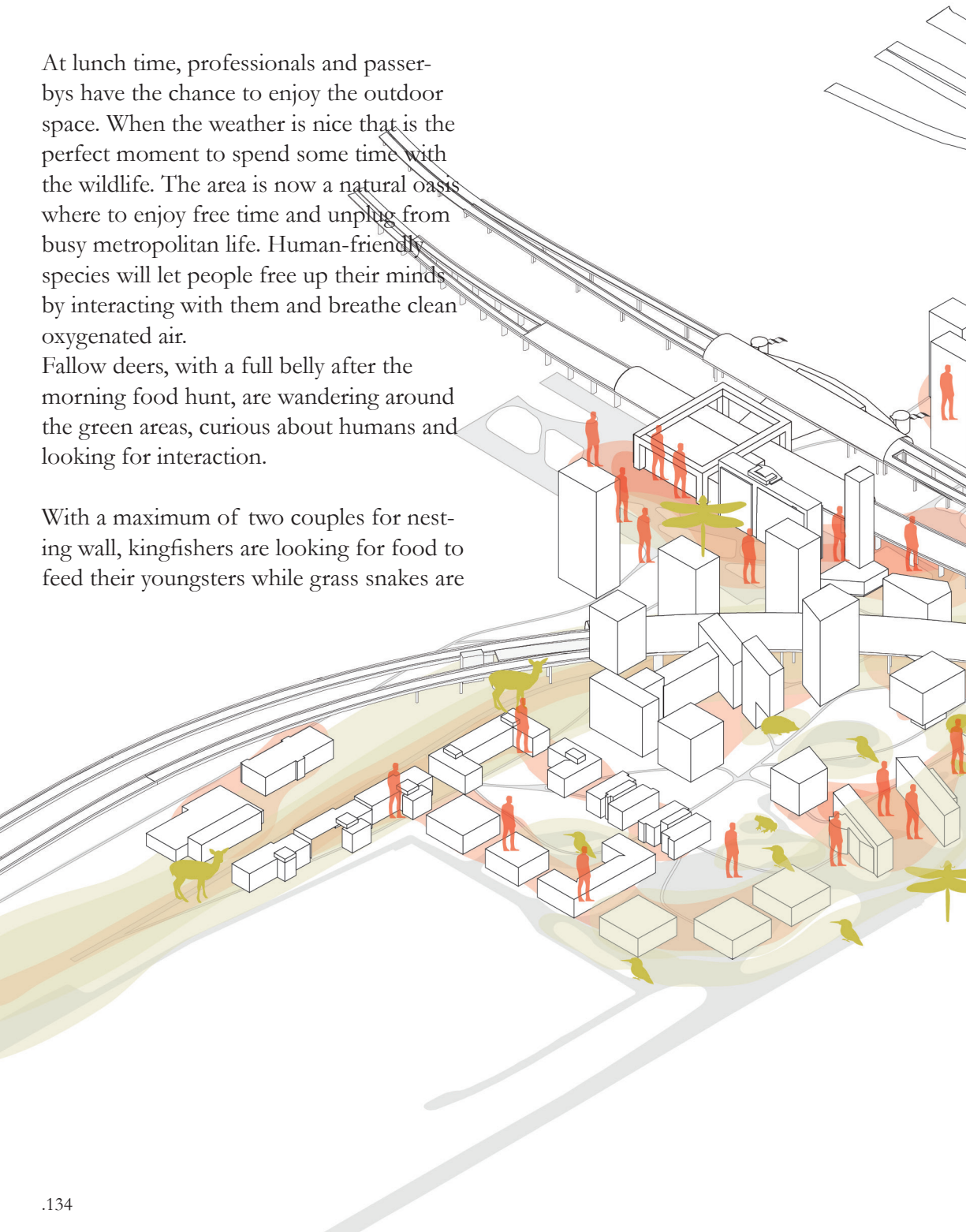
While foxes are nocturnal animals and at this early hour they are still resting waiting for the darkness to go out exploring. Like the foxes, hedgehogs are also active during the night, and now they hide in bushes or in their dens in search for some quiet.

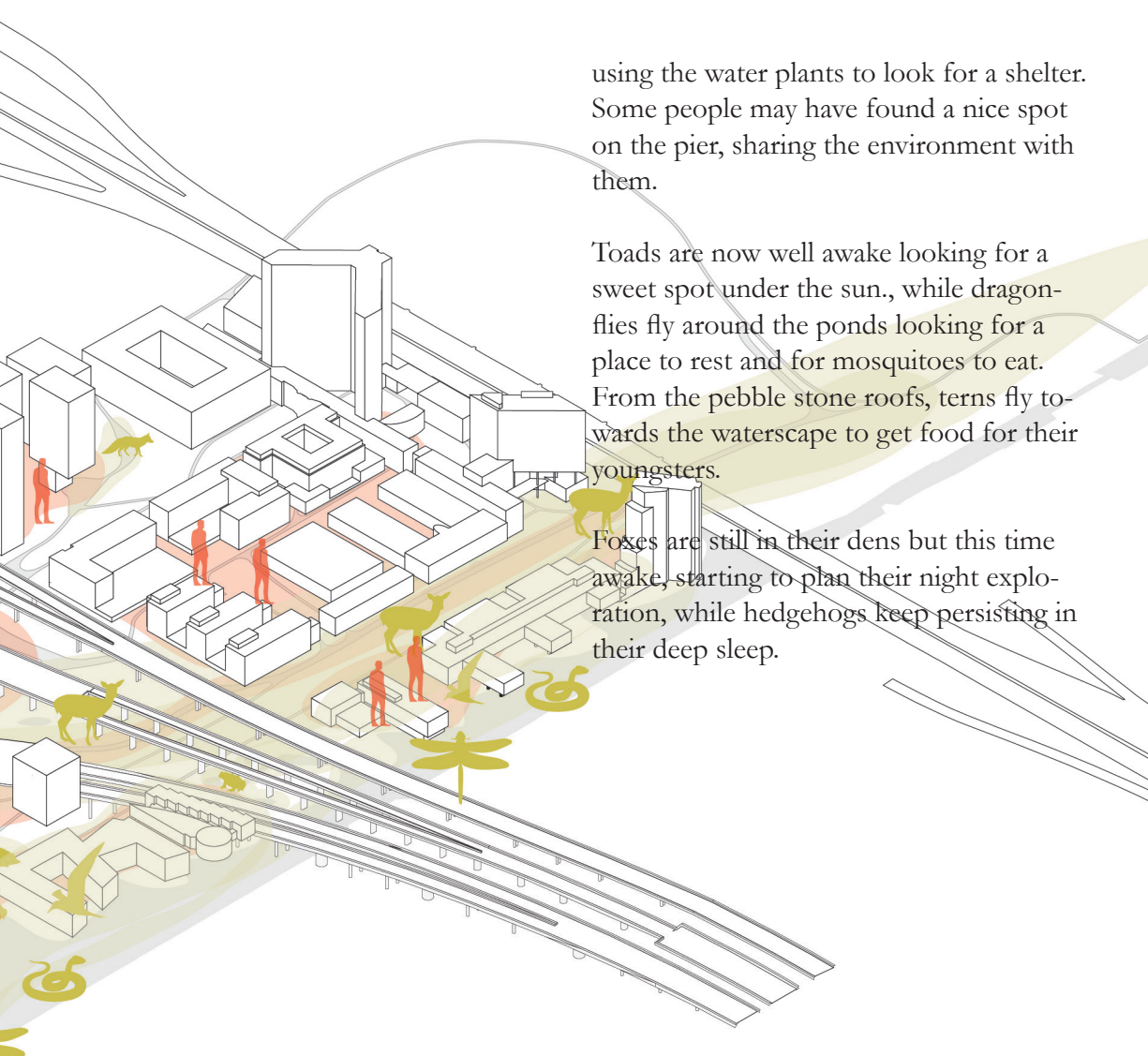
Use of the space @ 12.30

At lunch time, professionals and passerbys have the chance to enjoy the outdoor space. When the weather is nice that is the perfect moment to spend some time with the wildlife. The area is now a natural oasis where to enjoy free time and unplug from busy metropolitan life. Human-friendly species will let people free up their minds by interacting with them and breathe clean oxygenated air.

Fallow deers, with a full belly after the morning food hunt, are wandering around the green areas, curious about humans and looking for interaction.

With a maximum of two couples for nesting wall, kingfishers are looking for food to feed their youngsters while grass snakes are





using the water plants to look for a shelter. Some people may have found a nice spot on the pier, sharing the environment with them.

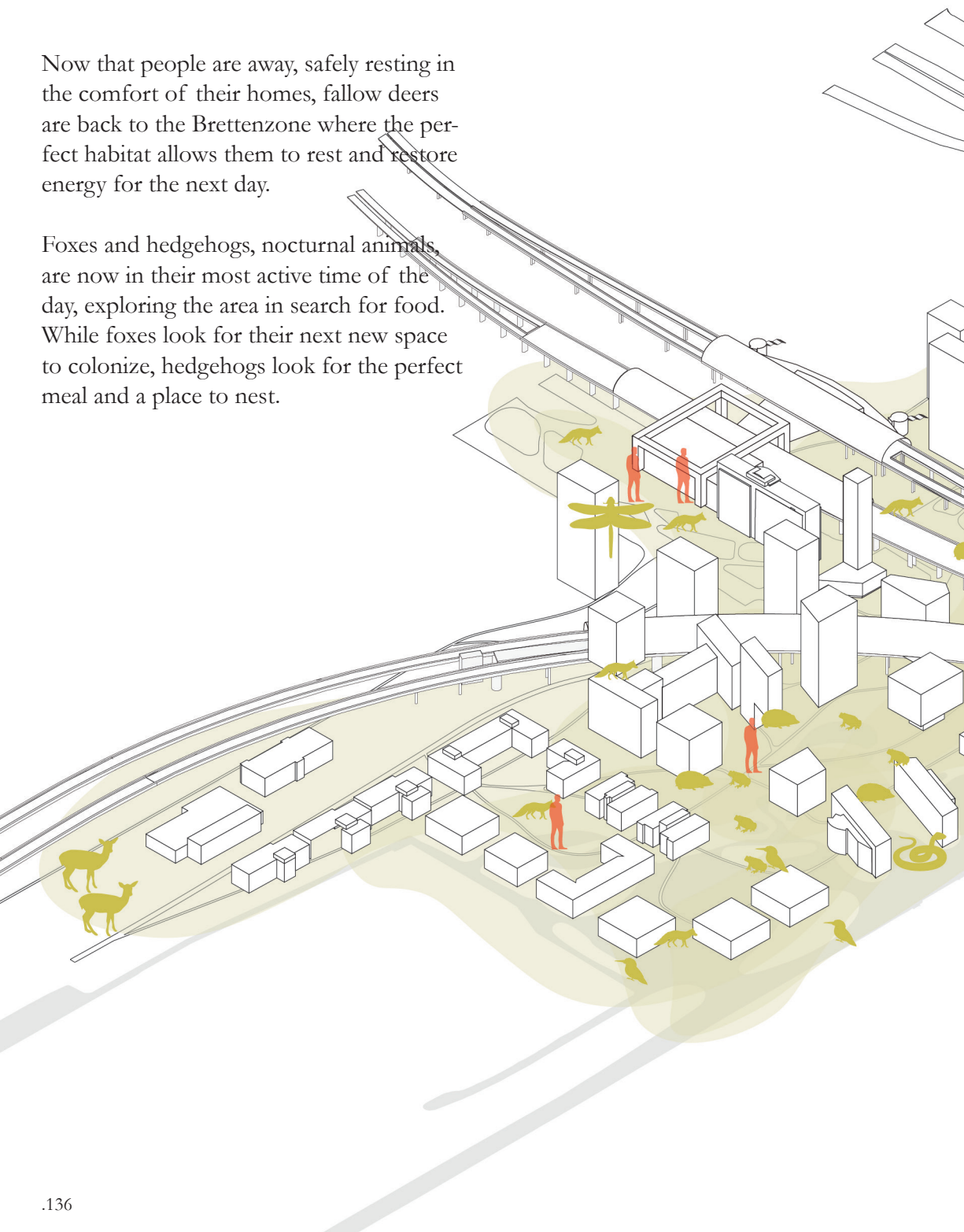
Toads are now well awake looking for a sweet spot under the sun., while dragonflies fly around the ponds looking for a place to rest and for mosquitoes to eat. From the pebble stone roofs, terns fly towards the waterscape to get food for their youngsters.

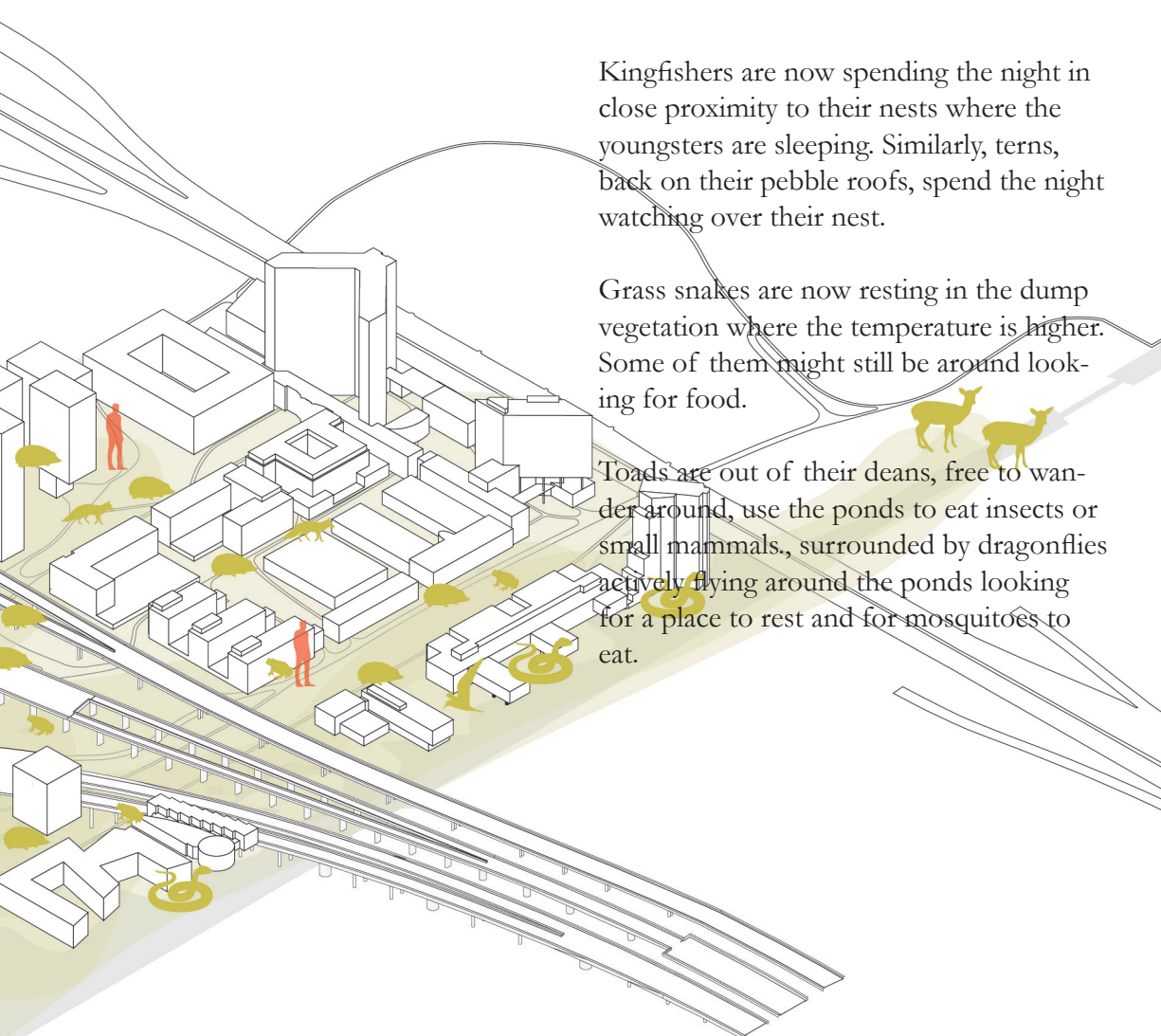
Foxes are still in their dens but this time awake, starting to plan their night exploration, while hedgehogs keep persisting in their deep sleep.

Use of the space @ 0.00

Now that people are away, safely resting in the comfort of their homes, fallow deer are back to the Brettenzone where the perfect habitat allows them to rest and restore energy for the next day.

Foxes and hedgehogs, nocturnal animals, are now in their most active time of the day, exploring the area in search for food. While foxes look for their next new space to colonize, hedgehogs look for the perfect meal and a place to nest.



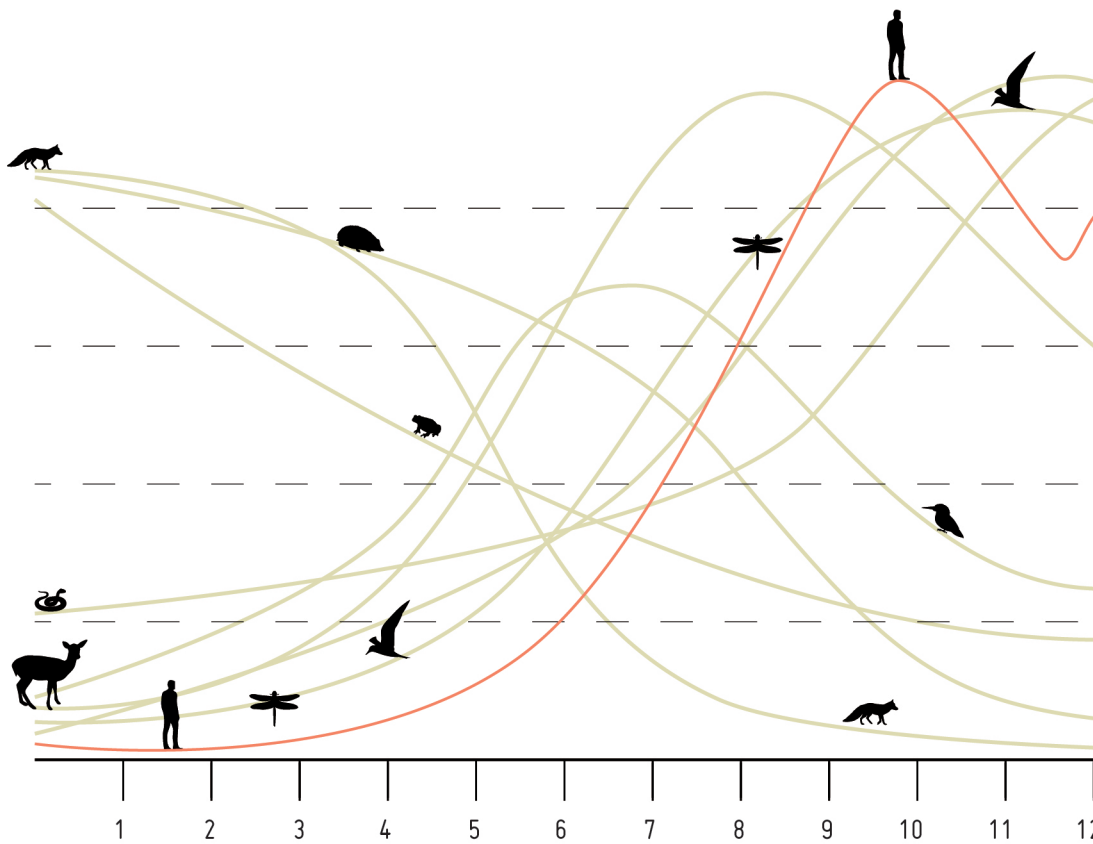


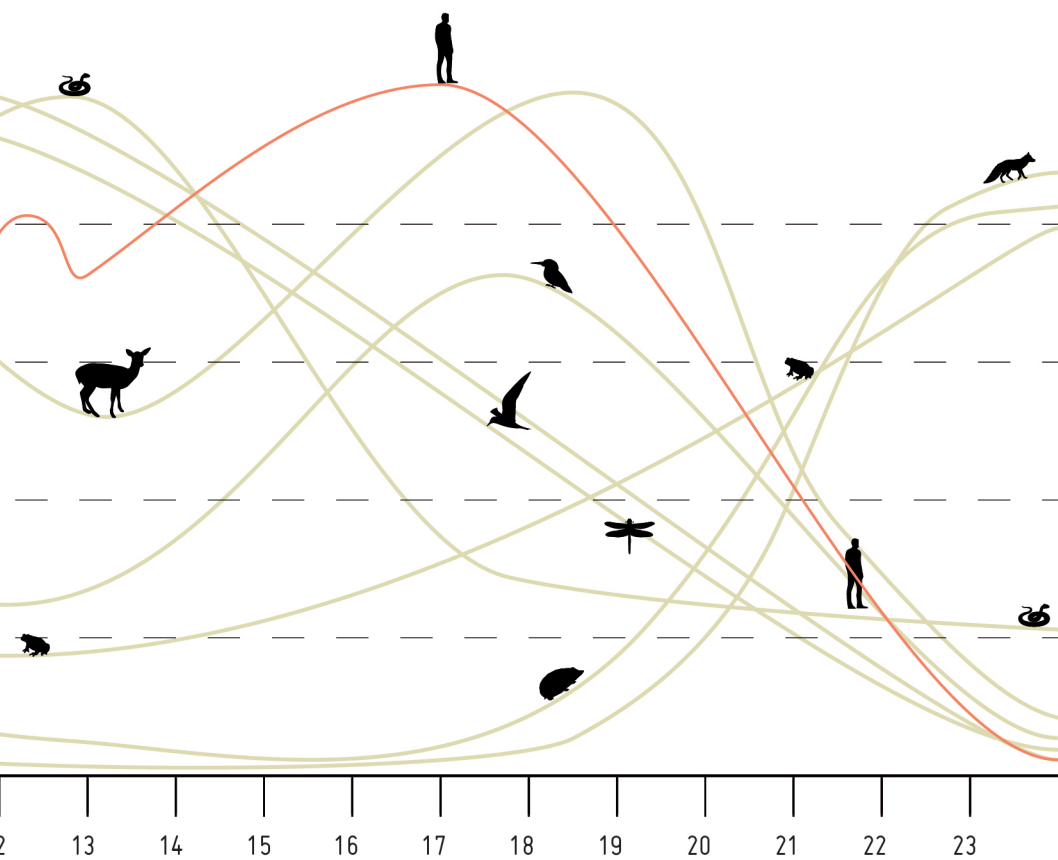
Kingfishers are now spending the night in close proximity to their nests where the youngsters are sleeping. Similarly, terns, back on their pebble roofs, spend the night watching over their nest.

Grass snakes are now resting in the dump vegetation where the temperature is higher. Some of them might still be around looking for food.

Toads are out of their dens, free to wander around, use the ponds to eat insects or small mammals., surrounded by dragonflies actively flying around the ponds looking for a place to rest and for mosquitoes to eat.

Use of the space in relation to time

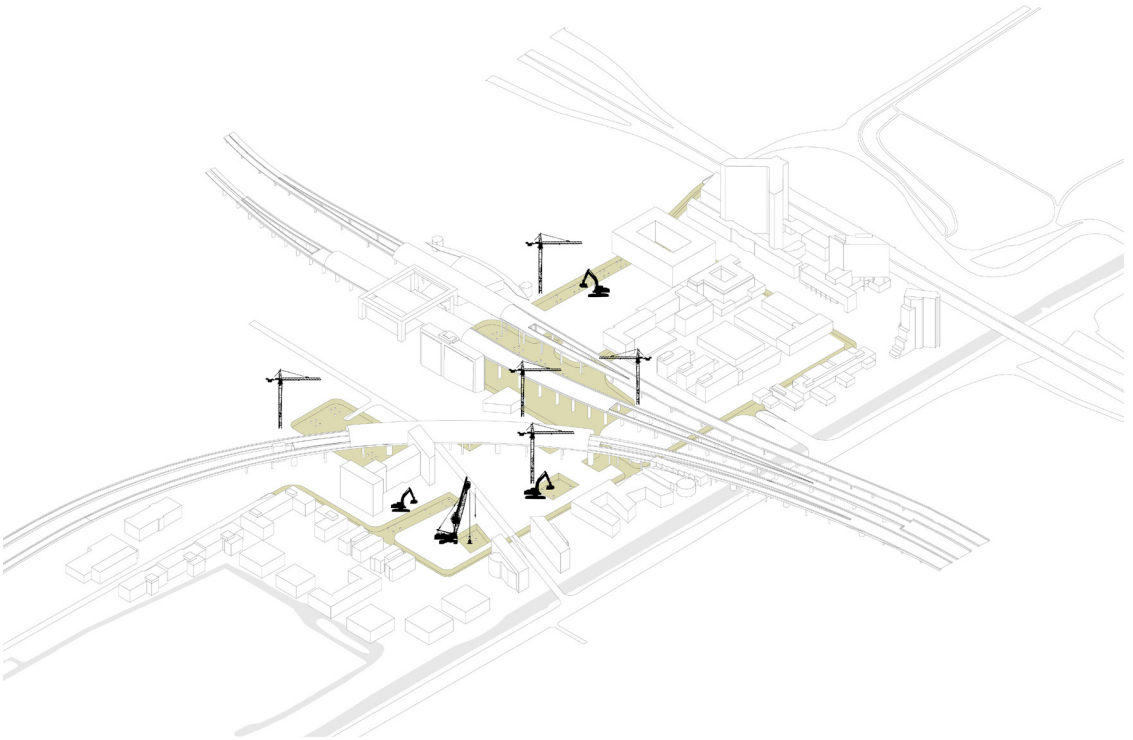




PHASING

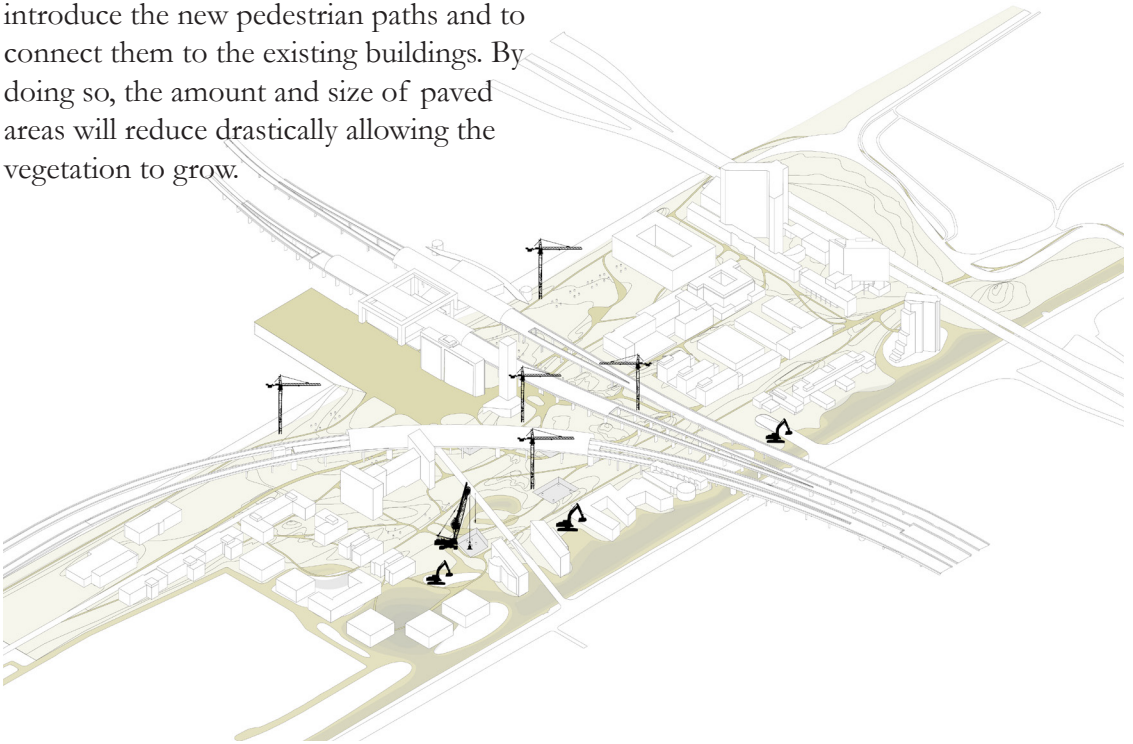
1st PHASE

In order to achieve the project goals, the first phase to be implemented requires moving the whole road infrastructure below ground. Such work will reduce the road traffic in the area while giving space to the forthcoming nature.



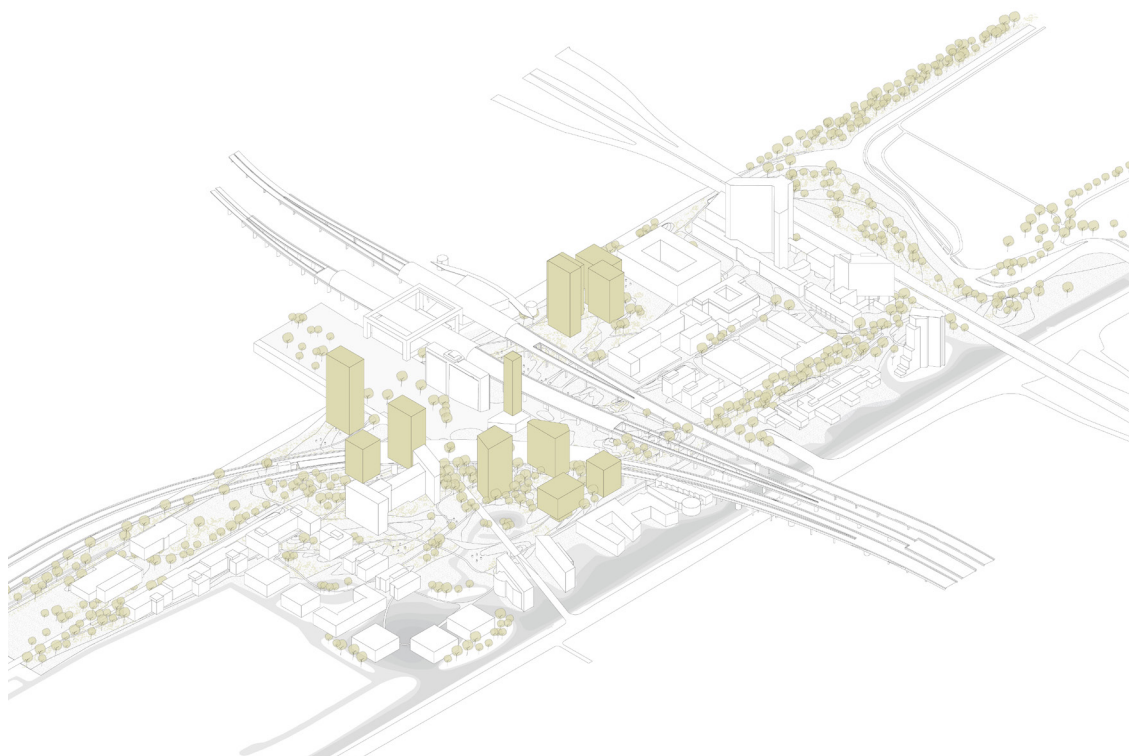
2nd PHASE

It is now time to introduce the peat landscape and to do so it is crucial to dig and enlarge the waterline. This intervention will also help create new dunes and giving a whole new atmosphere to the area. Moreover, the peat landscape will allow opportunities for the development of different types of landscape while new species will be introduced depending on the area type. This will also be the phase to create and introduce the new pedestrian paths and to connect them to the existing buildings. By doing so, the amount and size of paved areas will reduce drastically allowing the vegetation to grow.



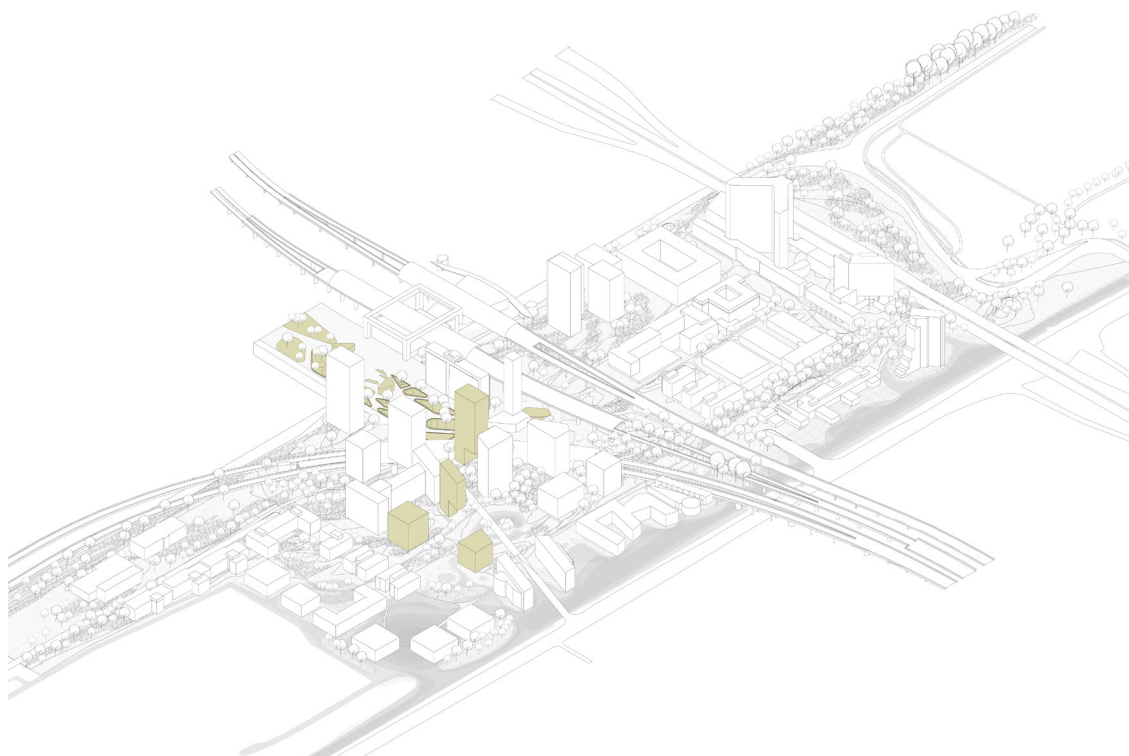
3rd PHASE

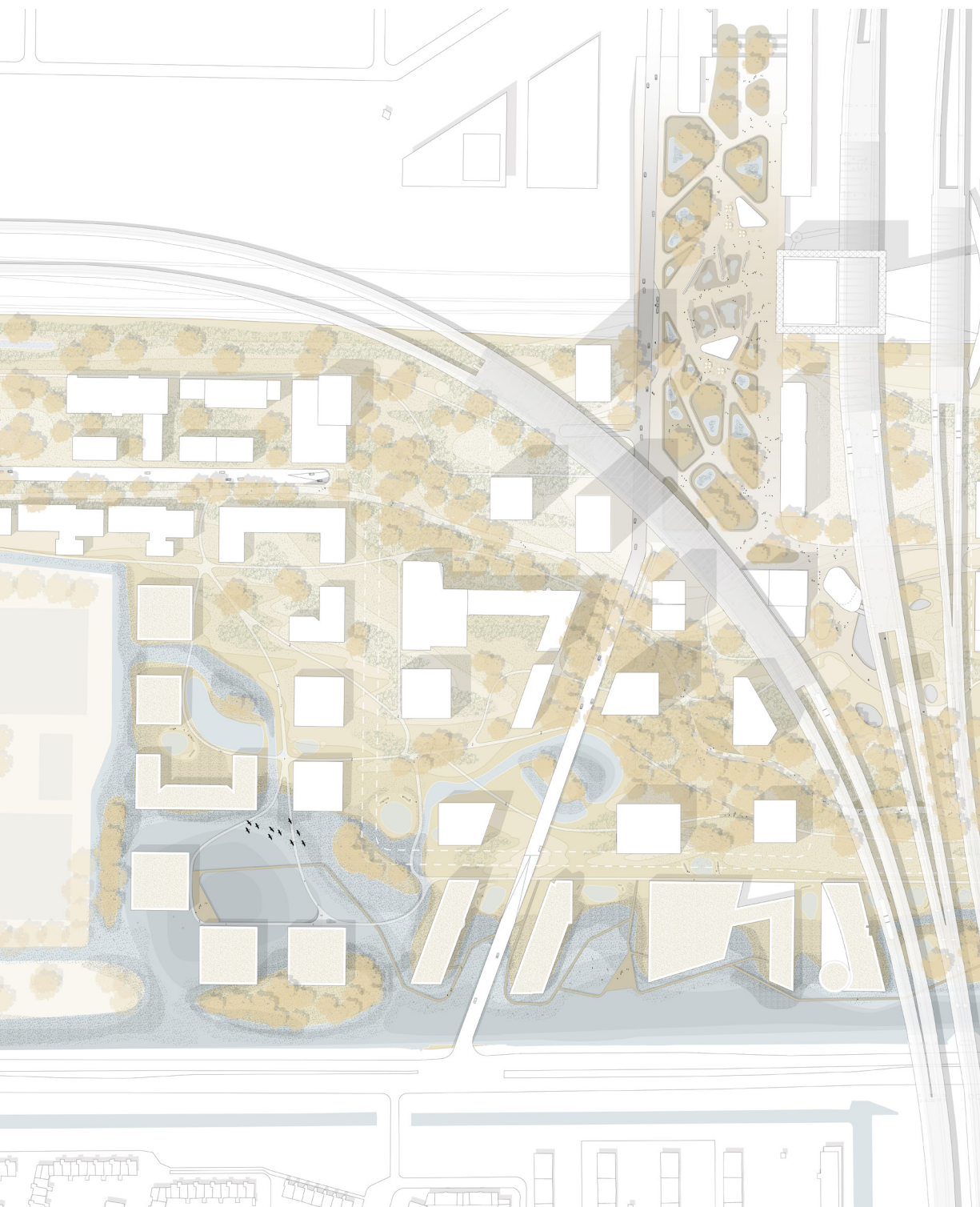
New planting species will be introduced in the area to create the landscape typologies that will welcome the new habitat.

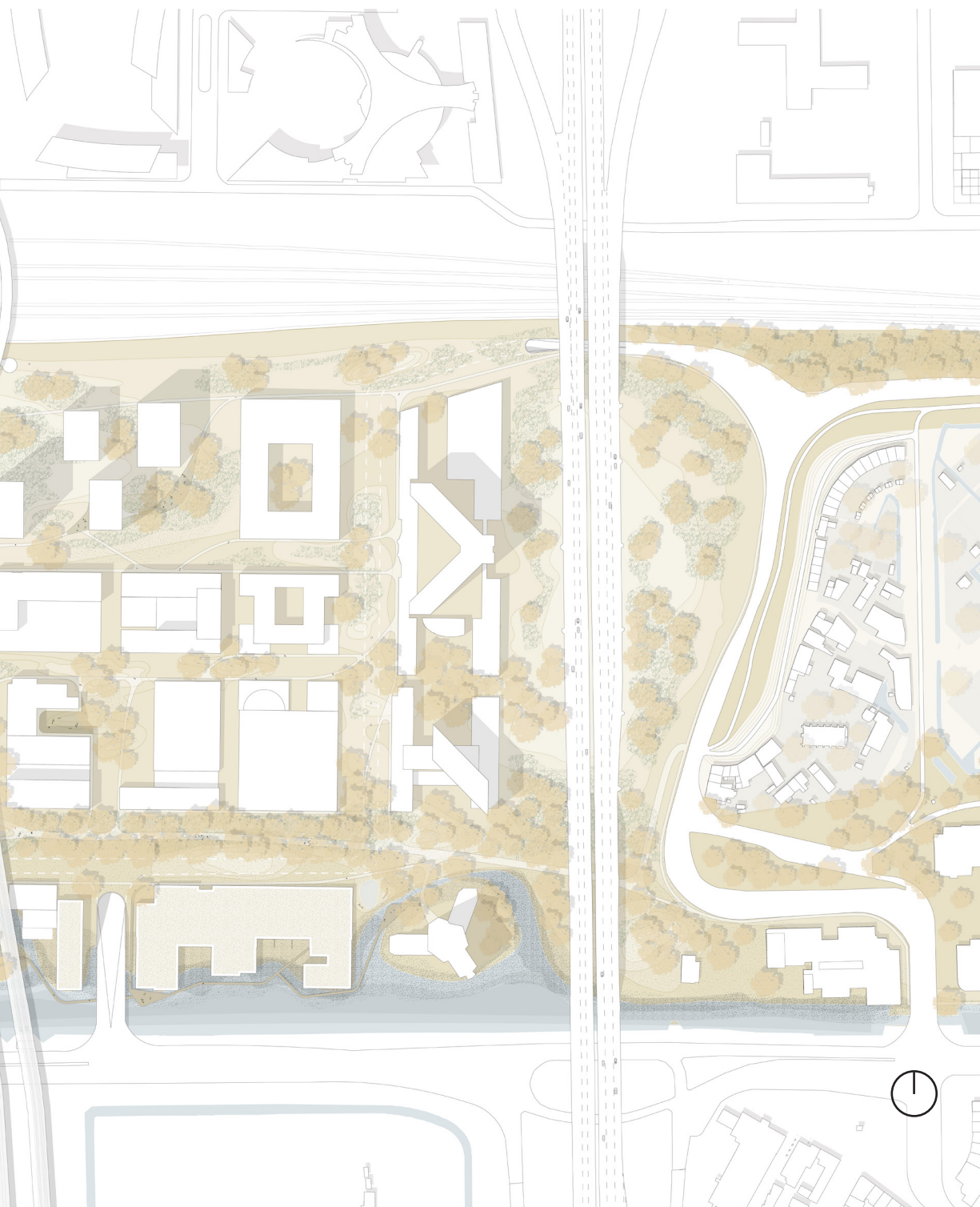


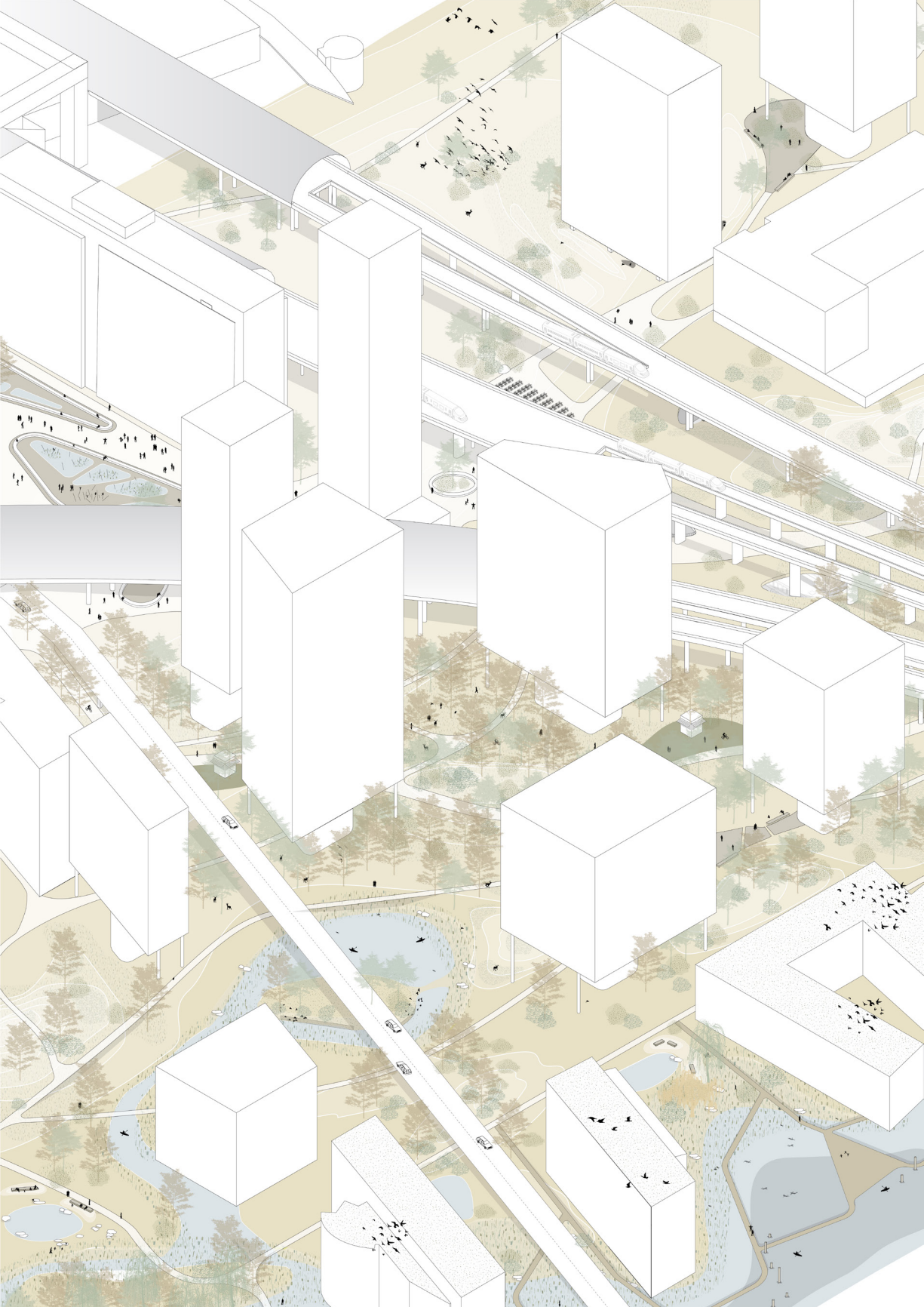
4th PHASE

The last phase will consist in the construction of new buildings, including the residential towers for the future residents. In parallel, Orlyplein's new configuration will be implemented giving the square its new layout that will welcome and introduce new residents and daily visitors to the new way of living the area.



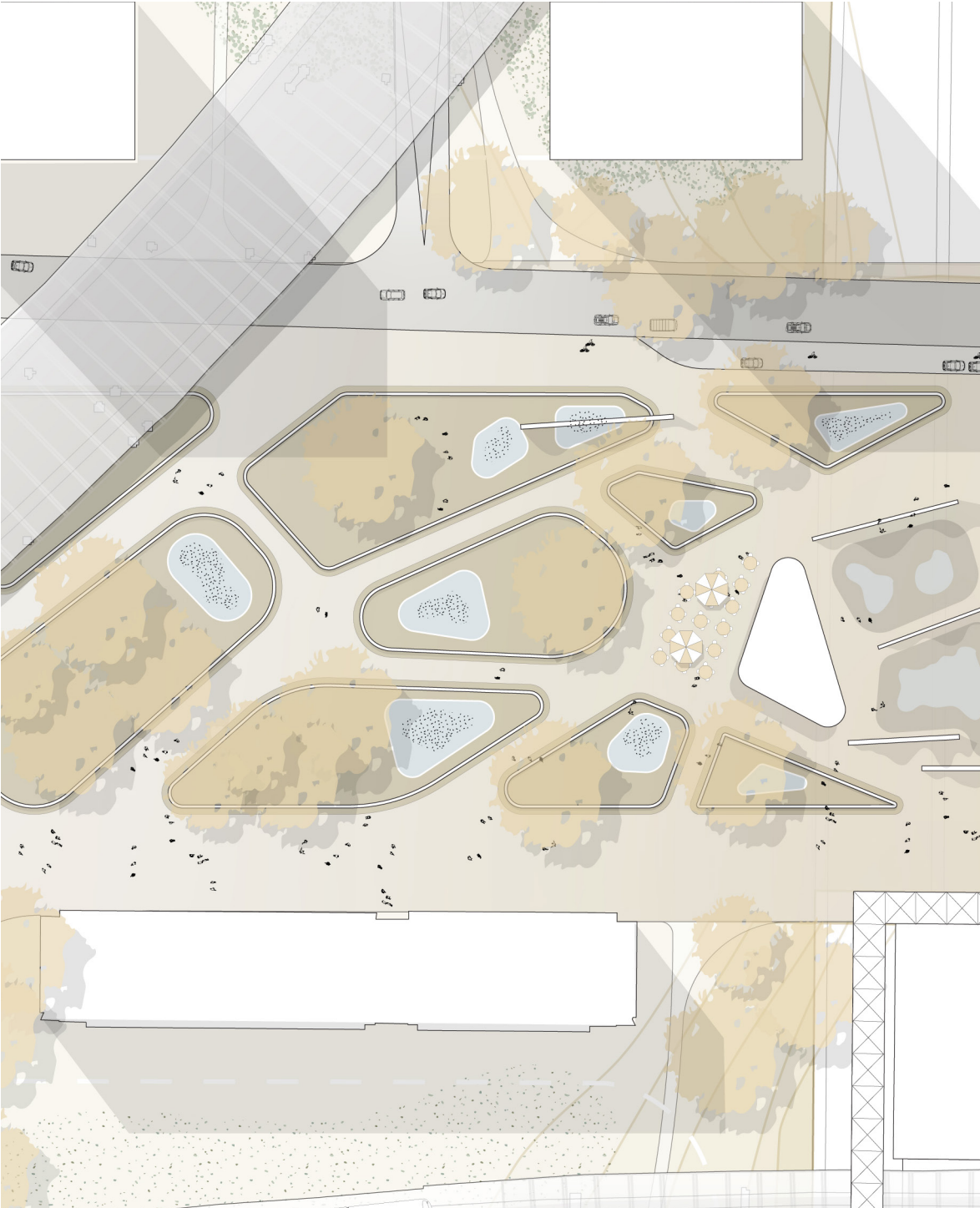


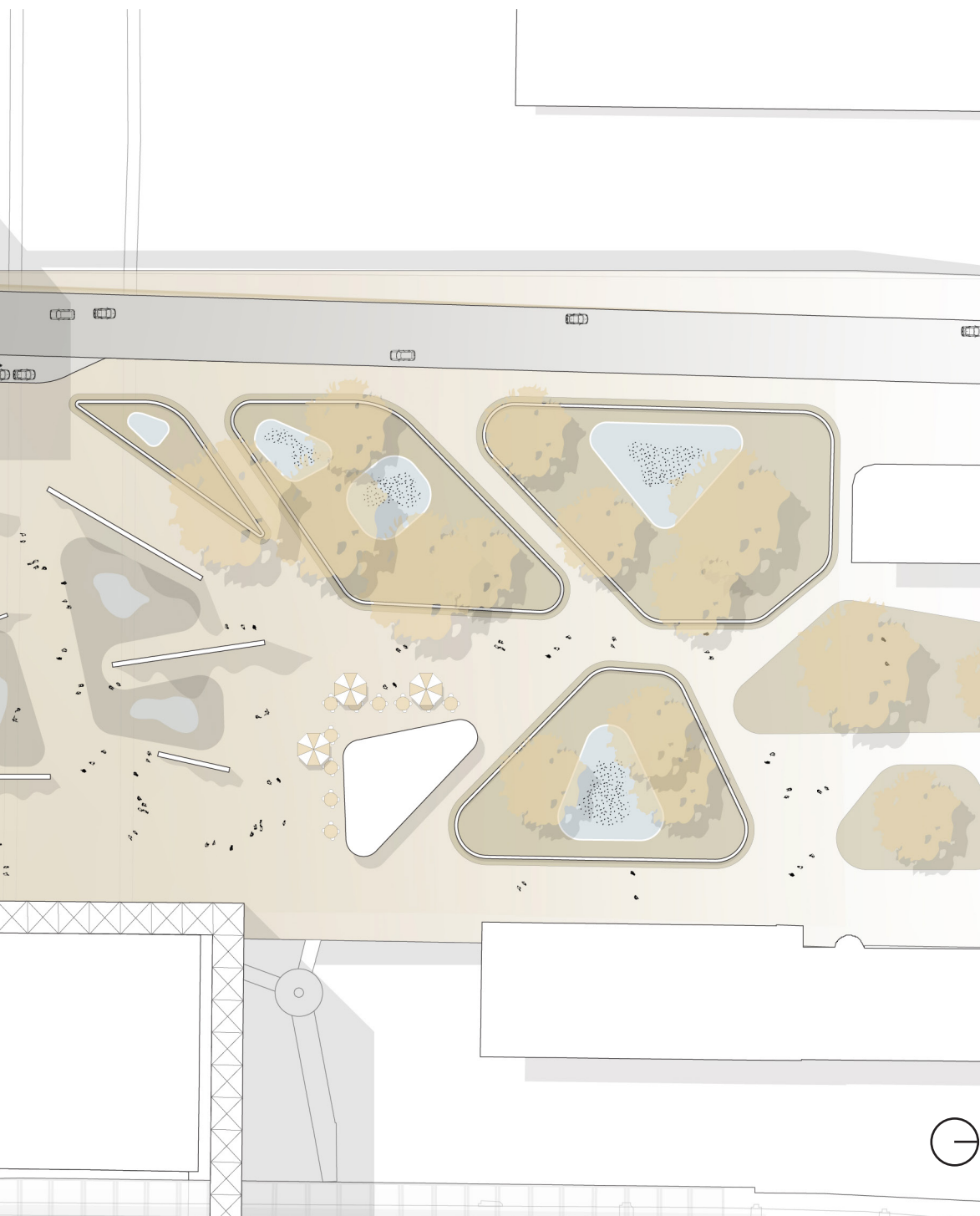




ENCOUNTERS IN THE PUBLIC SPACE

Orlyplein

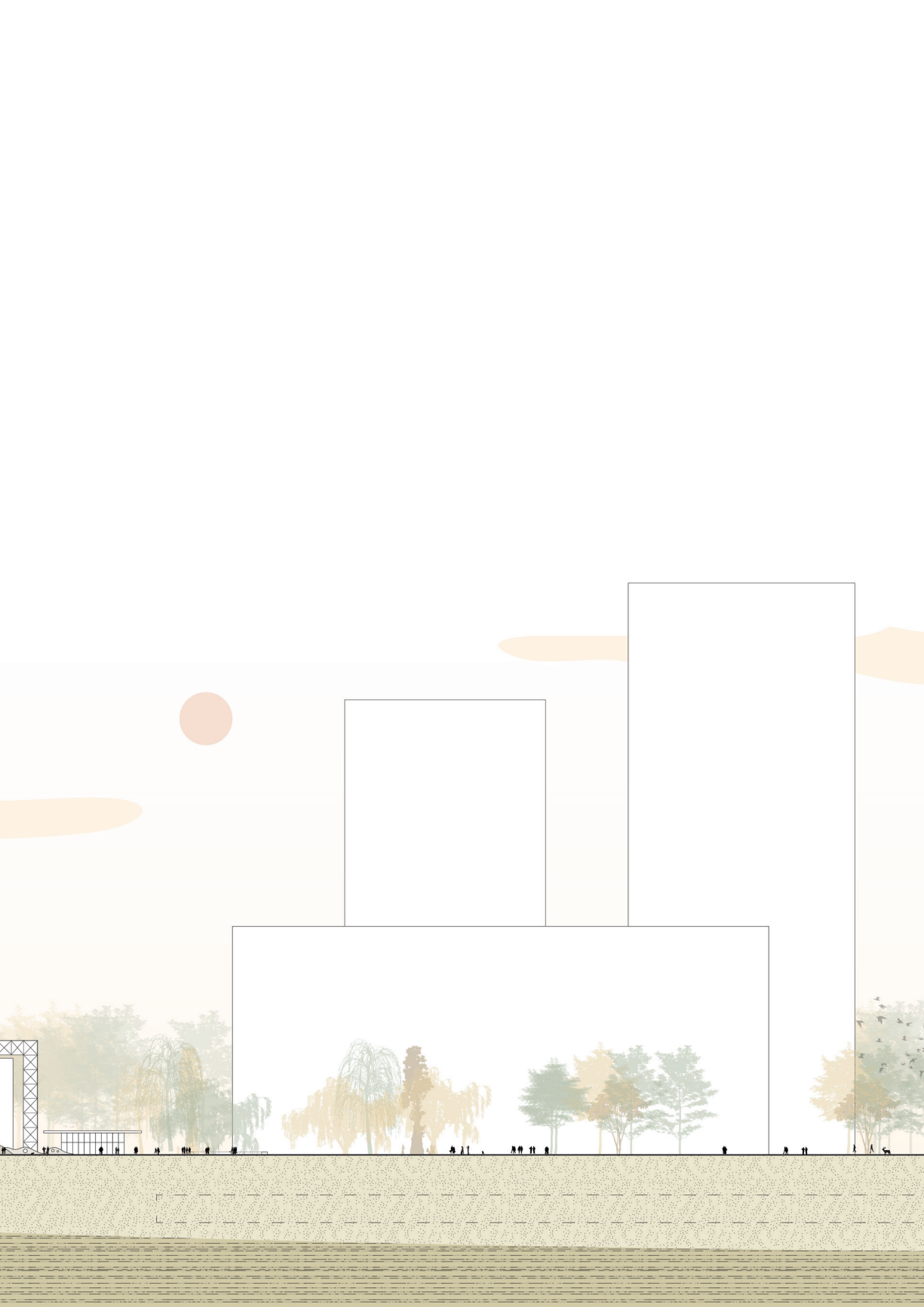




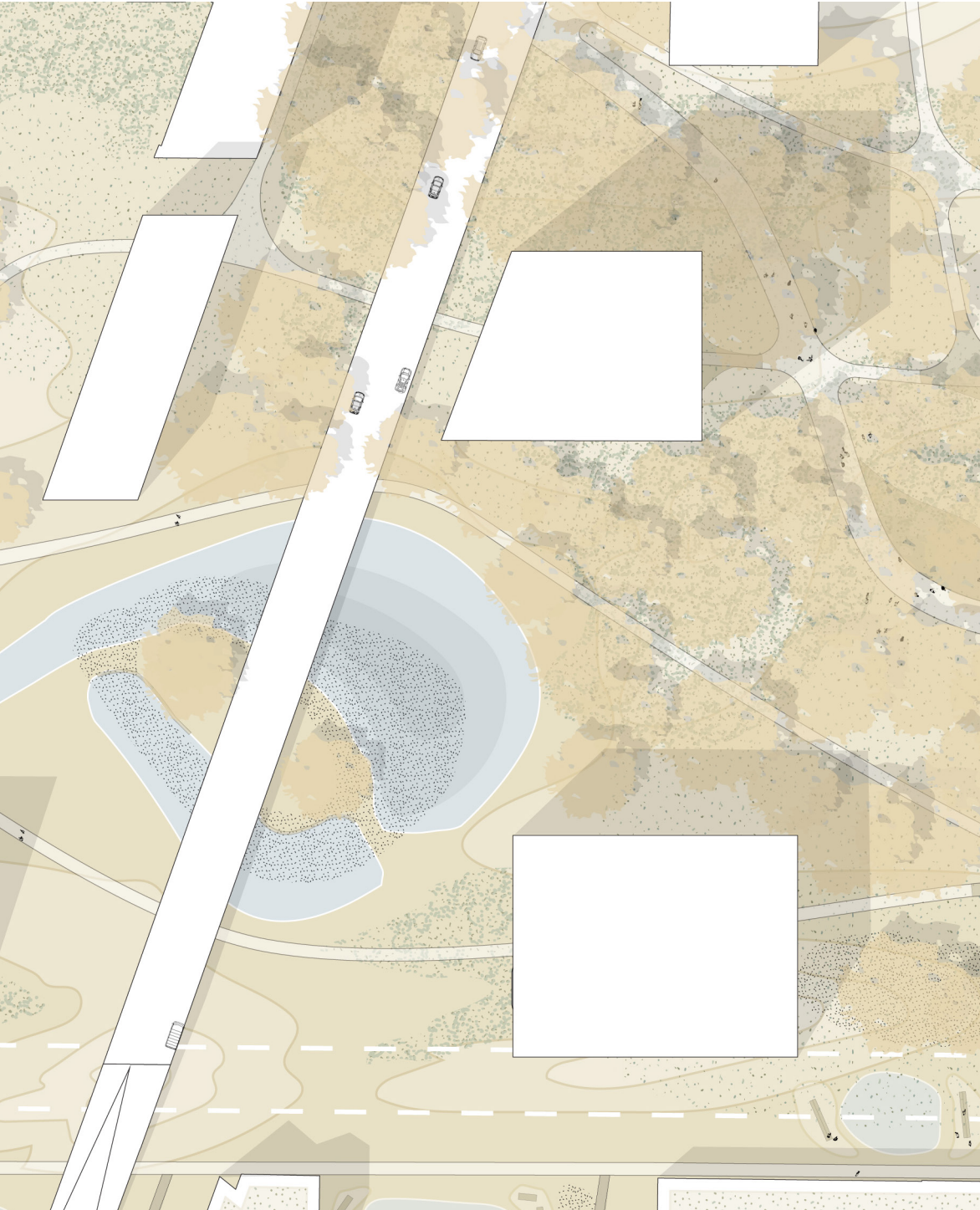


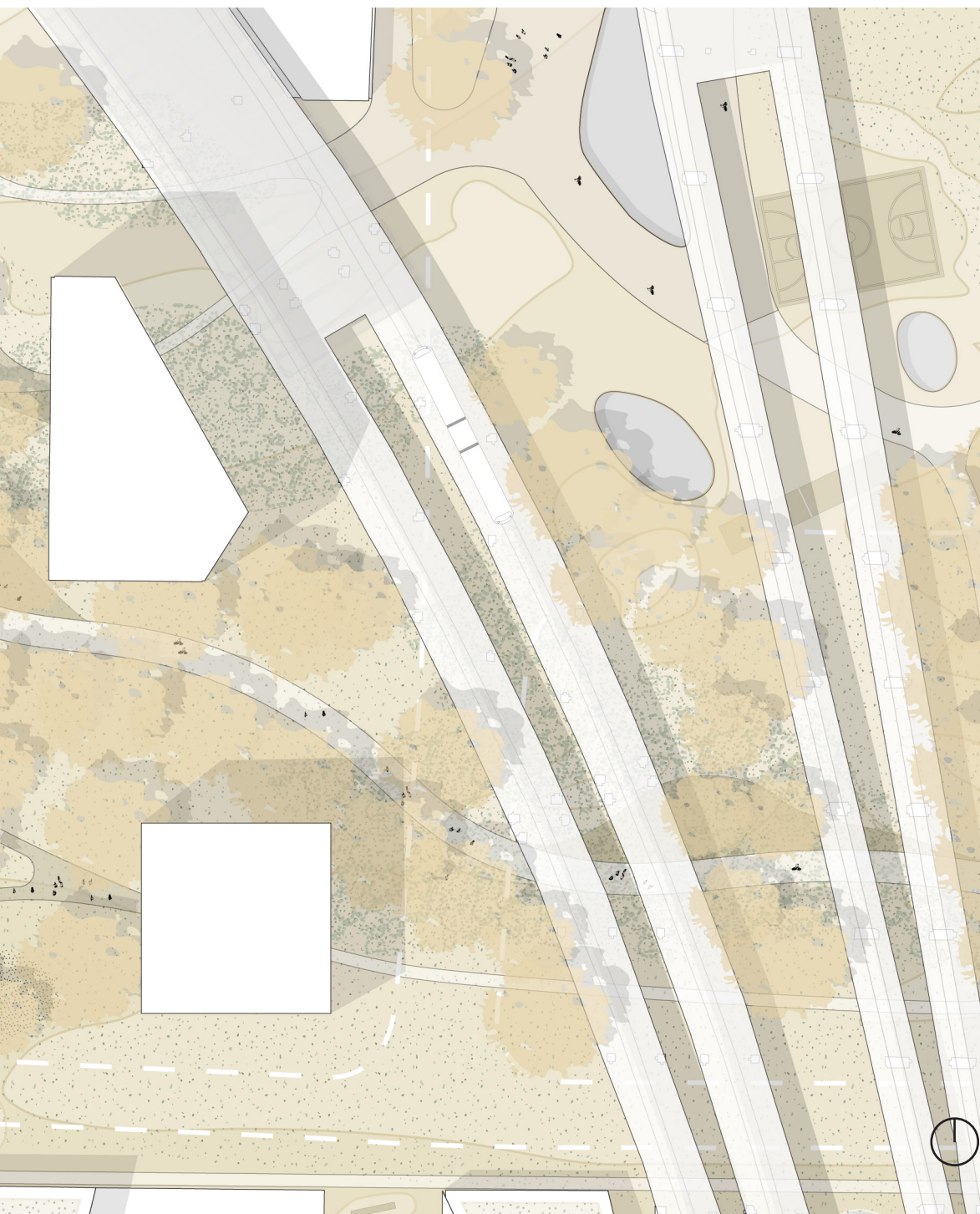






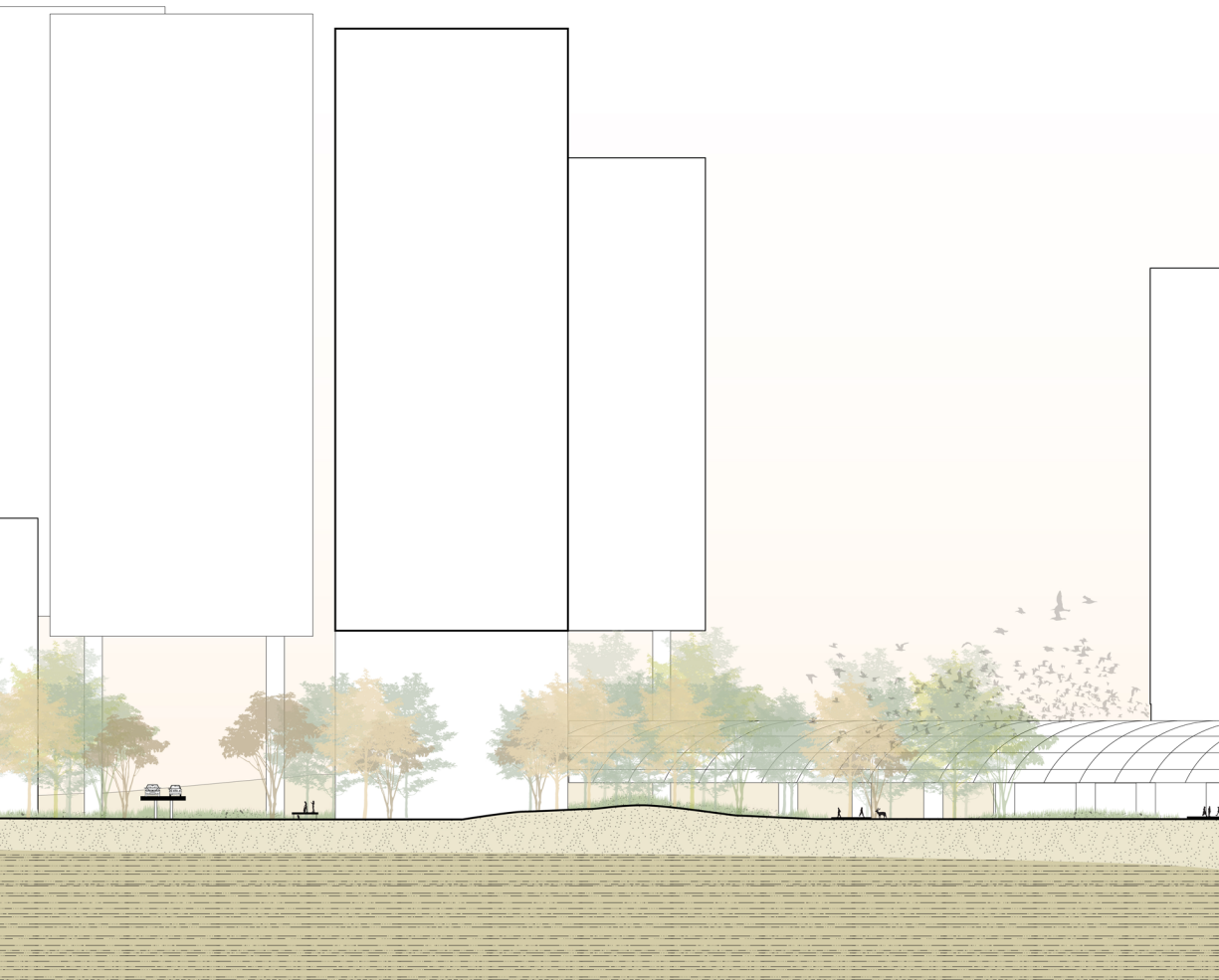
Main axe

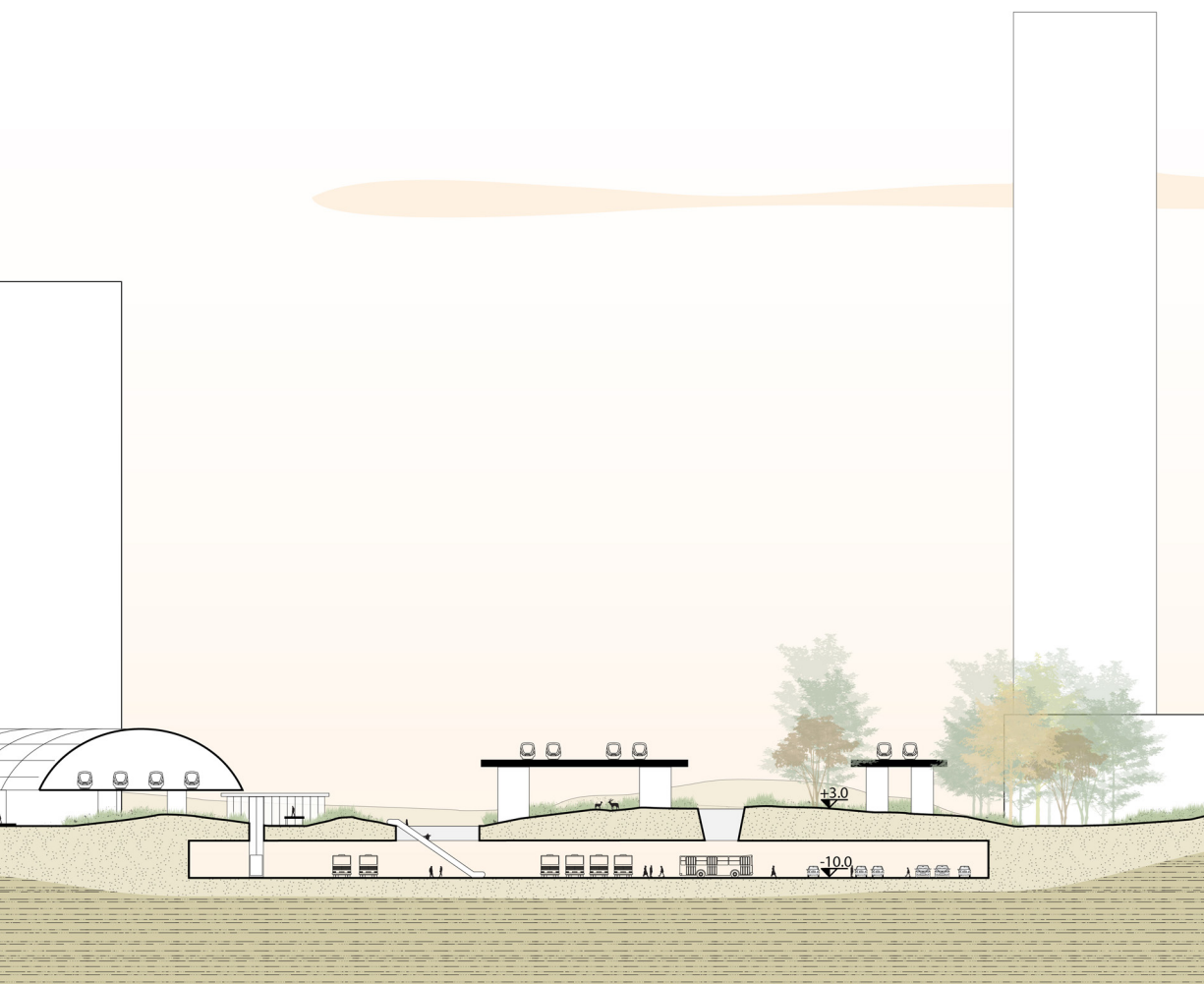




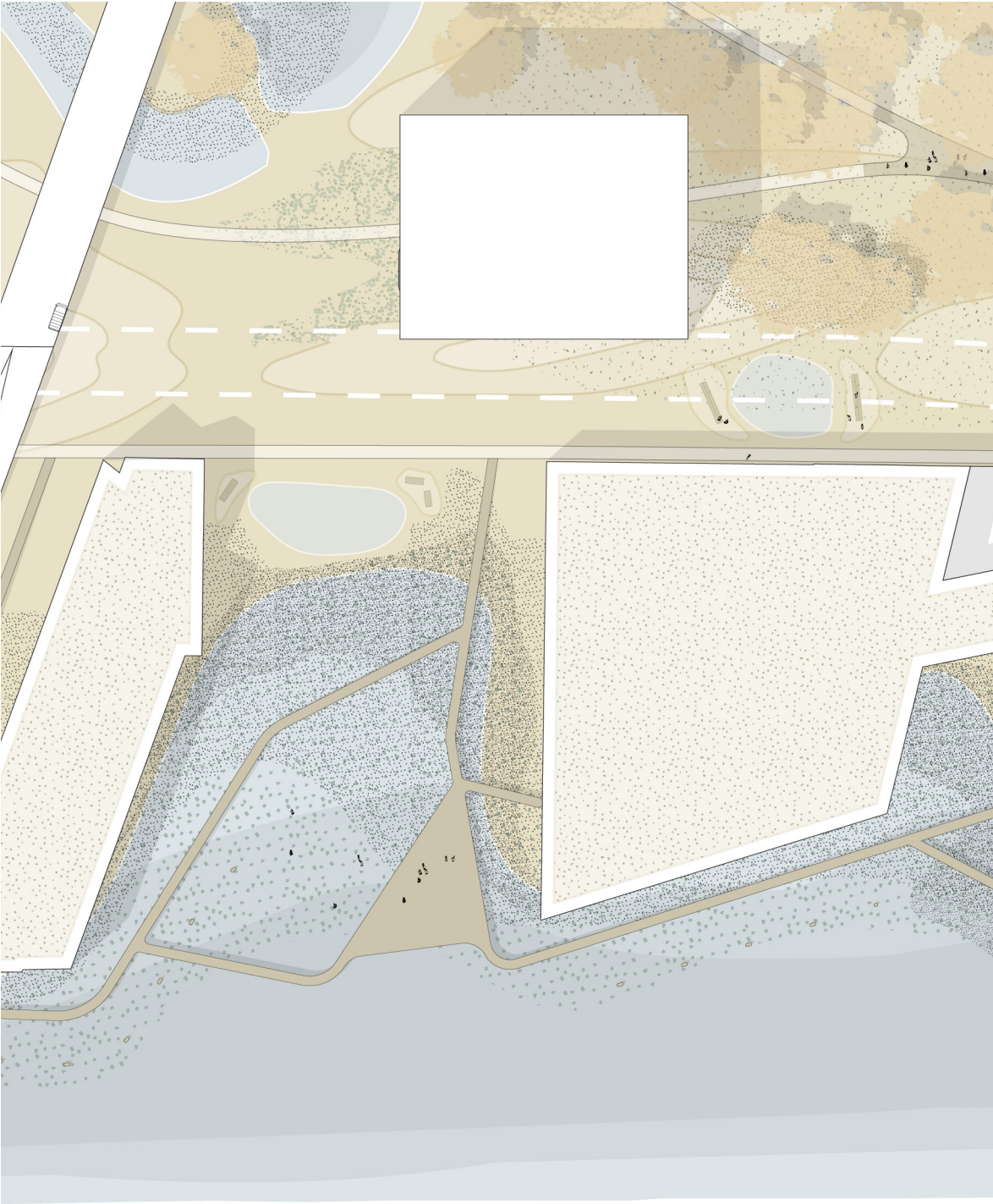


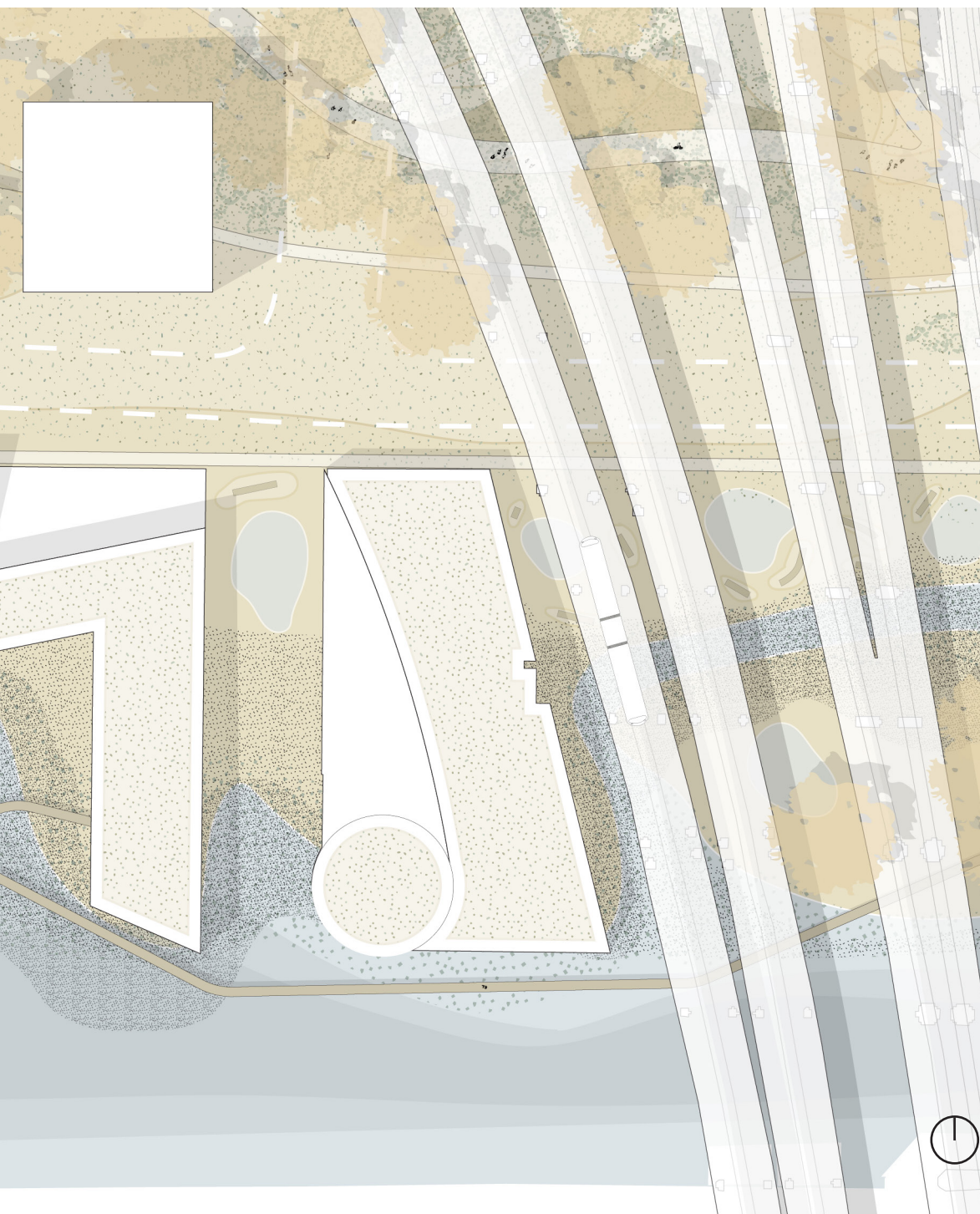






Neighborhood squares





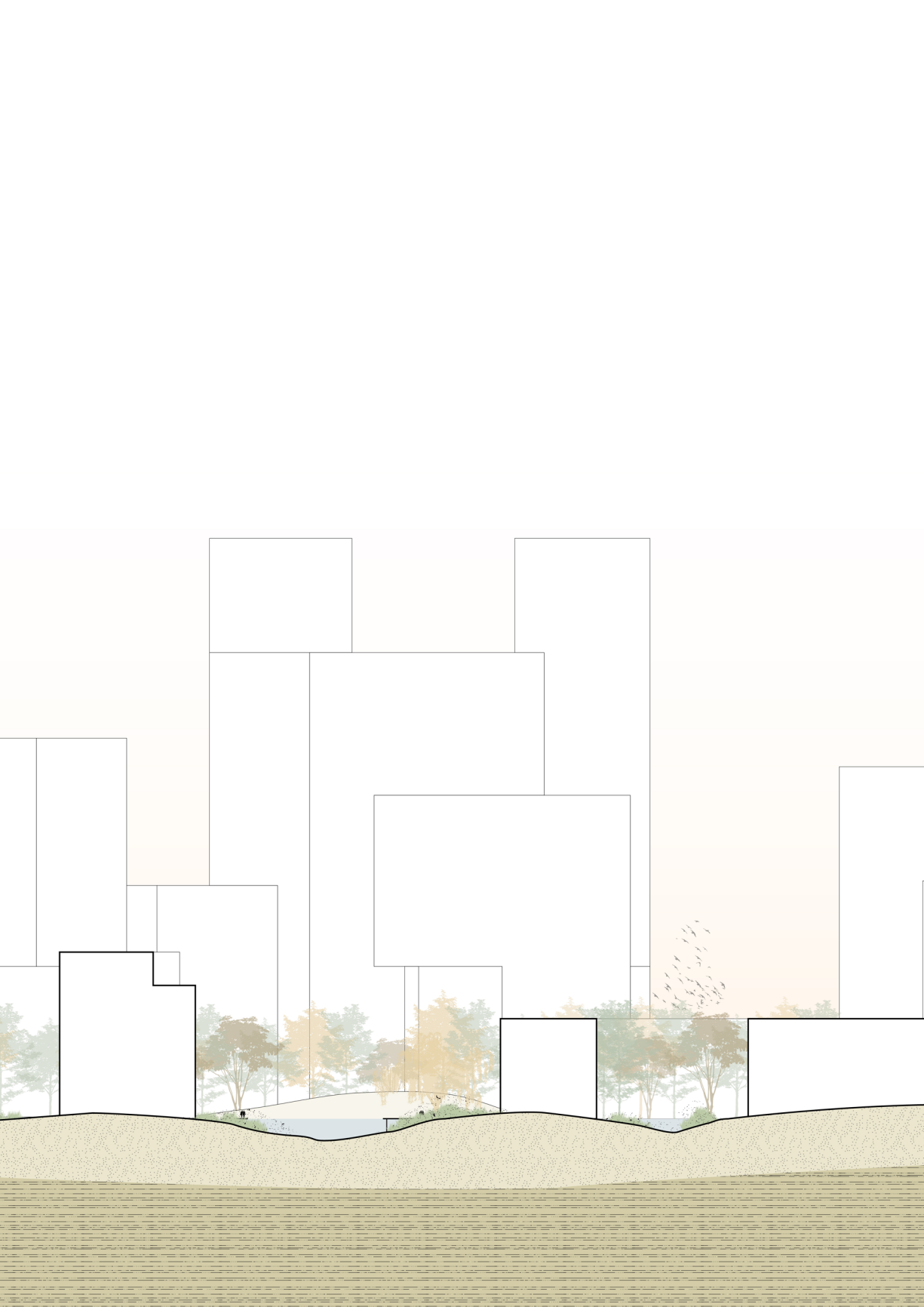
















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