

Geneva and the Green spaces

Geneva and the green spaces

- District of Champel
- Geneva a green city ?
Observation of the existing
- Problematic areas
- Strategies

The green spaces in Champel neighbourhood

Champel district is a residential area characterized by its many green spaces.



Champel District

Data :

- Cad routier
- Cad hors-sol
- Cad nature
- Public green spaces (zenodo)

- Buildings
- Roads
- Public green spaces
- Vegetated roof

● Trees

Field observations

These green spaces contribute to the quality of life.
The neighborhood is very green but also very residential.

We realize that :

Most of these green spaces are not accessible or intended for people who do not live there.

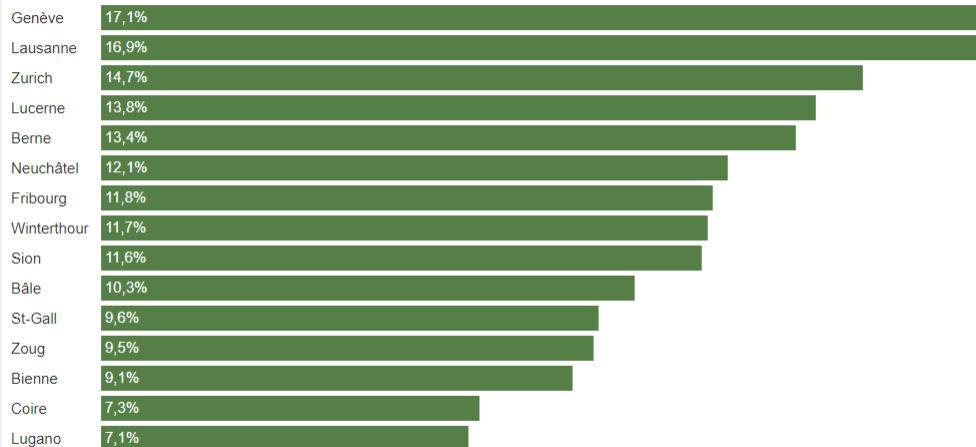


According to the city of Geneva, the municipality has 310ha of parcs and therefore 20% of the city's surface is dedicated to green spaces :

“In Geneva, there is not a neighbourhood without green spaces. There are no less than fifty of them offering calm and greenery in the middle of the city.”

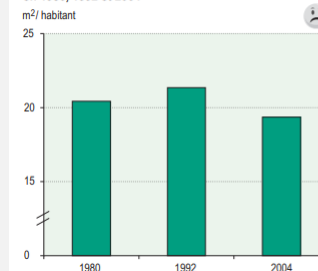
Genève est la ville suisse la plus verte

Pourcentage d'espaces verts et de loisirs par rapport à la surface bâtie totale (données de 2014)

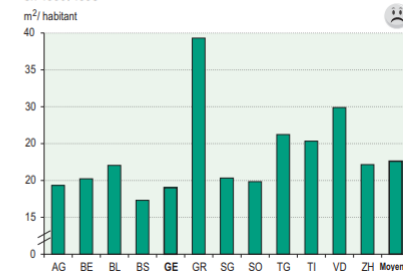


Source: [Office fédéral de la statistique](#) [Récupérez les données](#)

Surface verte et lieux de détente par habitant, à Genève, en 1980, 1992 et 2004



Surface verte et lieux de détente, par habitant et par canton, en 1990/1998



Different type of green spaces

There is a wide variety of green spaces in the city of Geneva, parks, squares, cemeteries, both large and small.

Parks: The majority of parks are former private estates that were acquired by the city or, for the most notable, bequeathed by notable families as early as the 19th century (this is still the case today with the Hentsch family's donation in 2016).

Promenades: Numerous small green spaces make it possible to avoid the main traffic routes and offer welcome rest areas.

Cemeteries: Geneva's four municipal cemeteries are both places of remembrance and a place for the public to walk. They bear witness to the city's history.

Forests: The City of Geneva owns about 70 hectares of forests located mainly in the Bois des Frères, Le Bois-de-la-Bâtie and Nant-de-Châtillon.





Bois de la Batie



Cimetière des Rois



Square du Mont Blanc



Parc La Perle du Lac

. Geneva a green city?

Observation of the existing

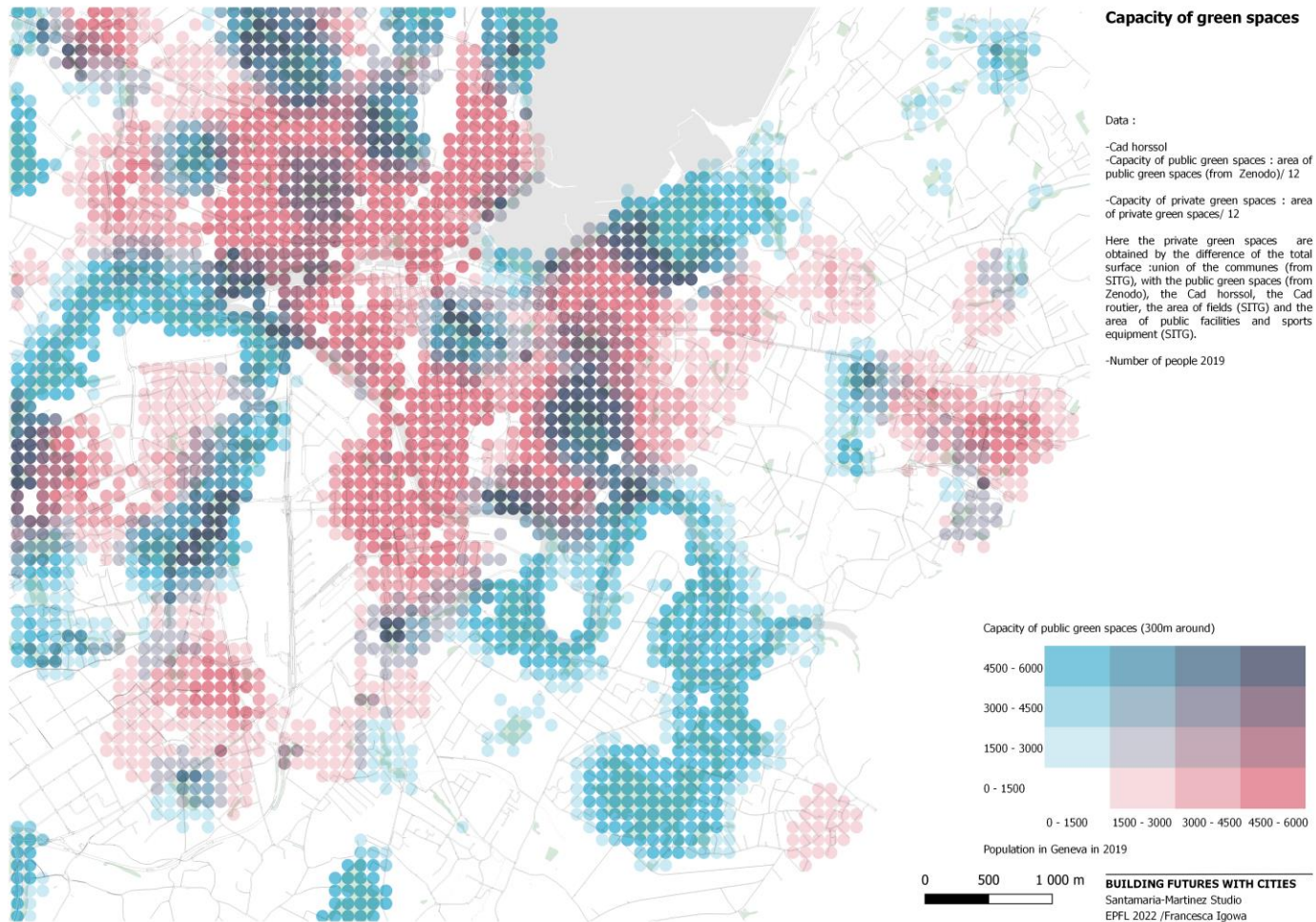
- . Is there enough green spaces for the population of Geneva ?
 - . What is the contribution of these spaces for the city?
 - .Green spaces but for who?

**. Is there enough green spaces
for the population
of Geneva ?**

Enough green spaces for everyone?

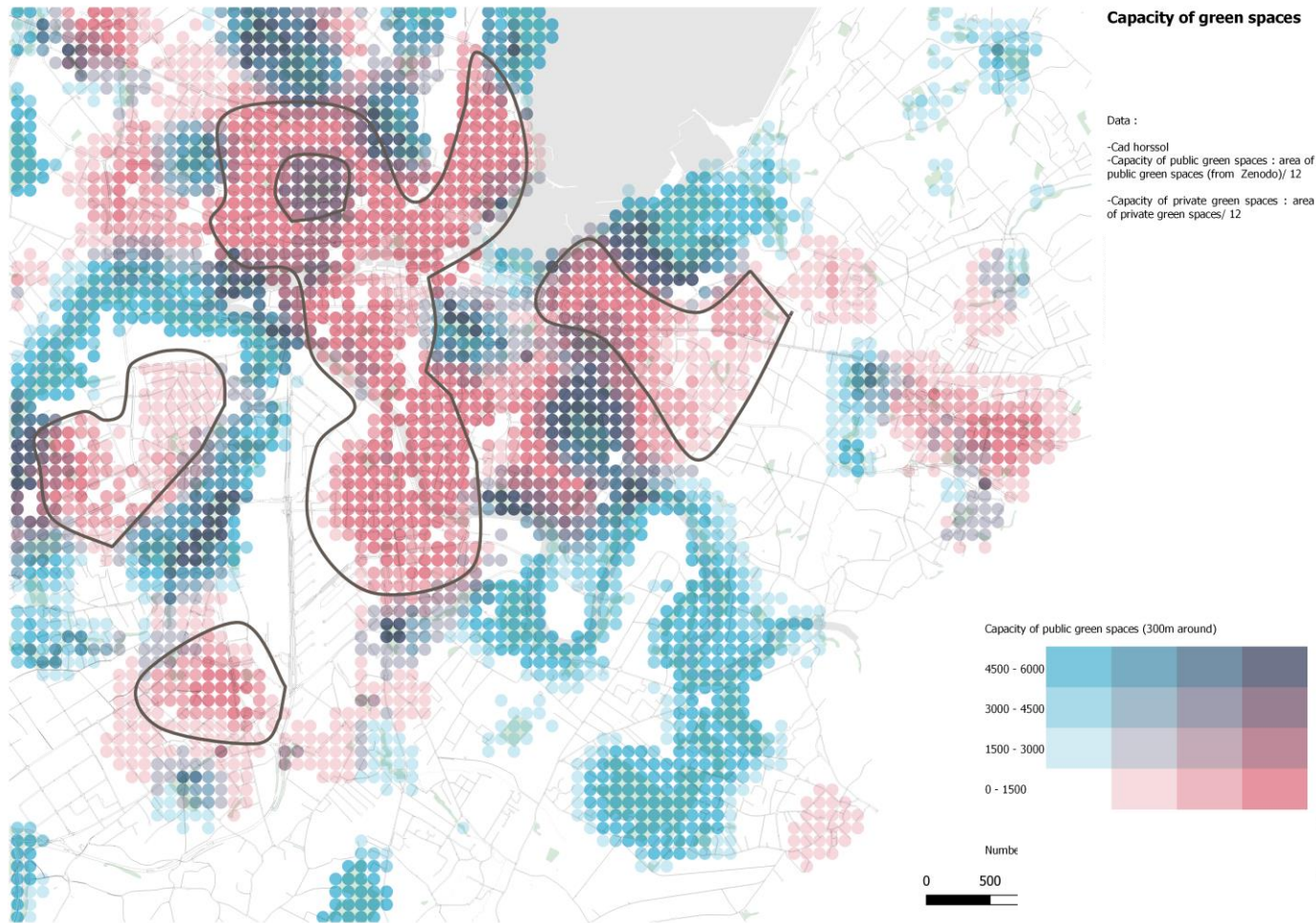
The WHO recommends a minimum of 12m² at 300 for each inhabitant in built-up areas.

Here we can see the comparison between the population and the capacity of public green spaces at 300 m of distance



Enough green spaces for everyone?

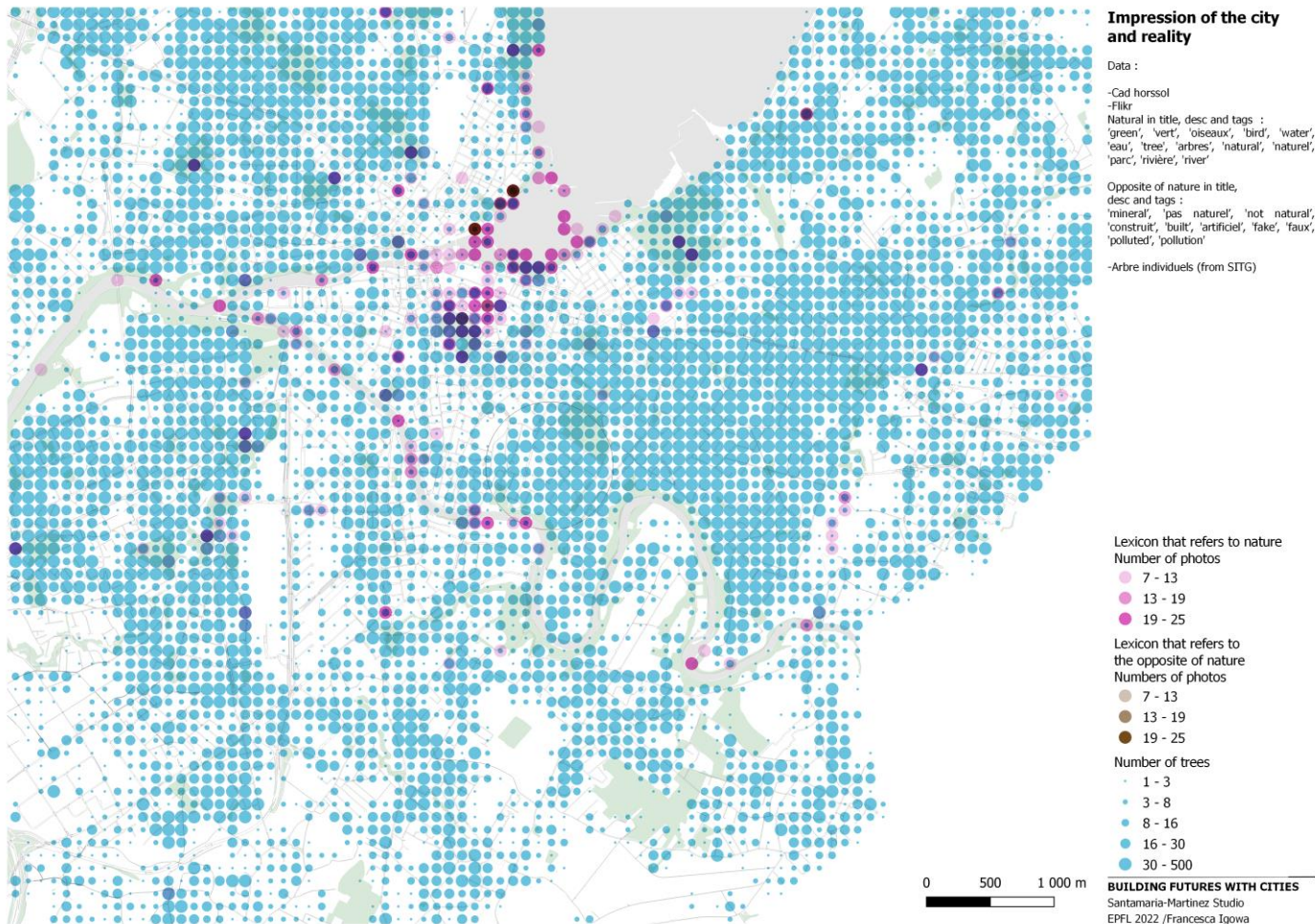
We can identify some areas with problems, where there is not enough public green spaces for everybody.



. What do these spaces provide?

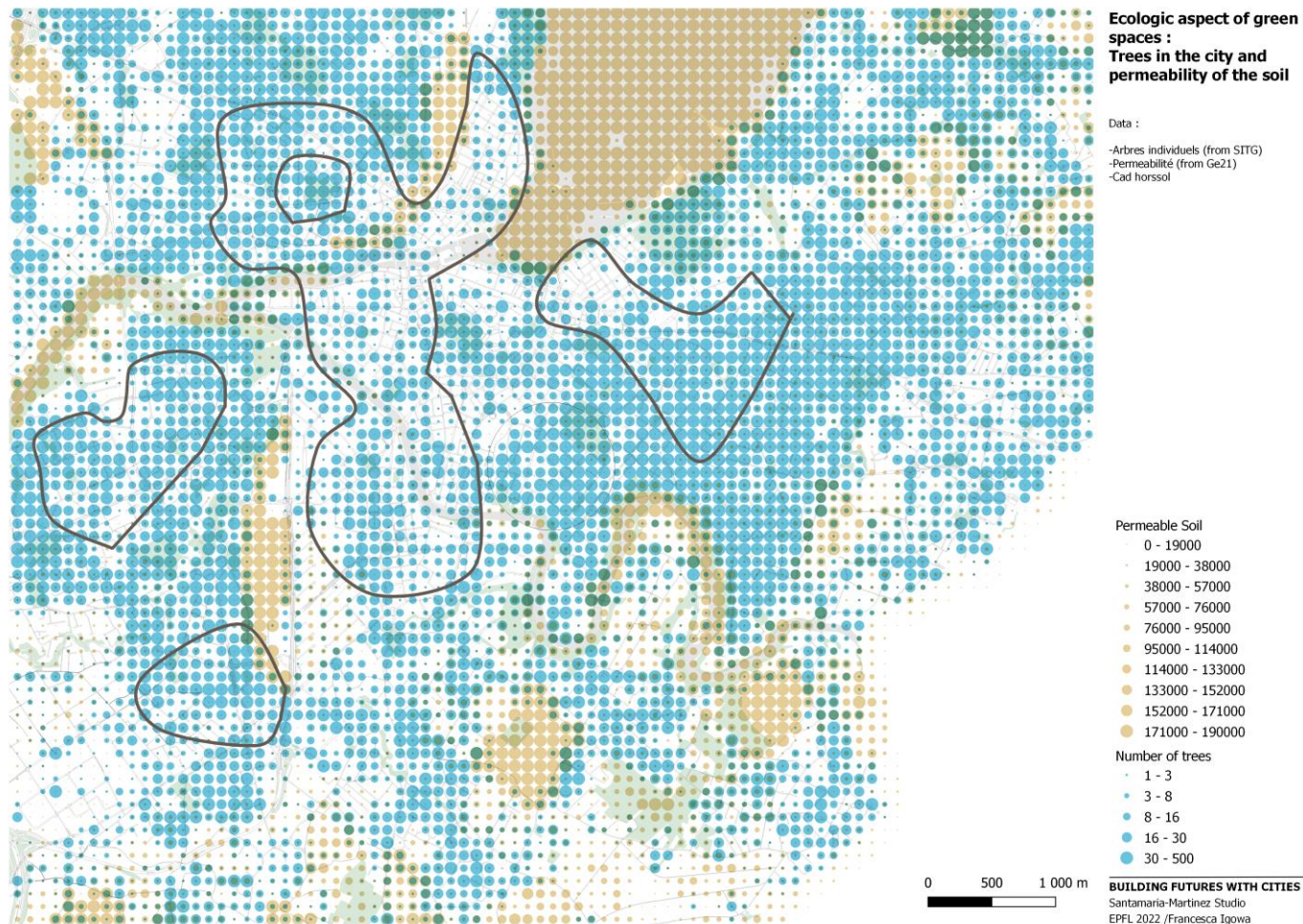
Impact on the perception in the city :

There is an impression of green in Geneva thanks to the many trees planted in the city, even in the less natural places, but we can see some areas where vegetation is less present.



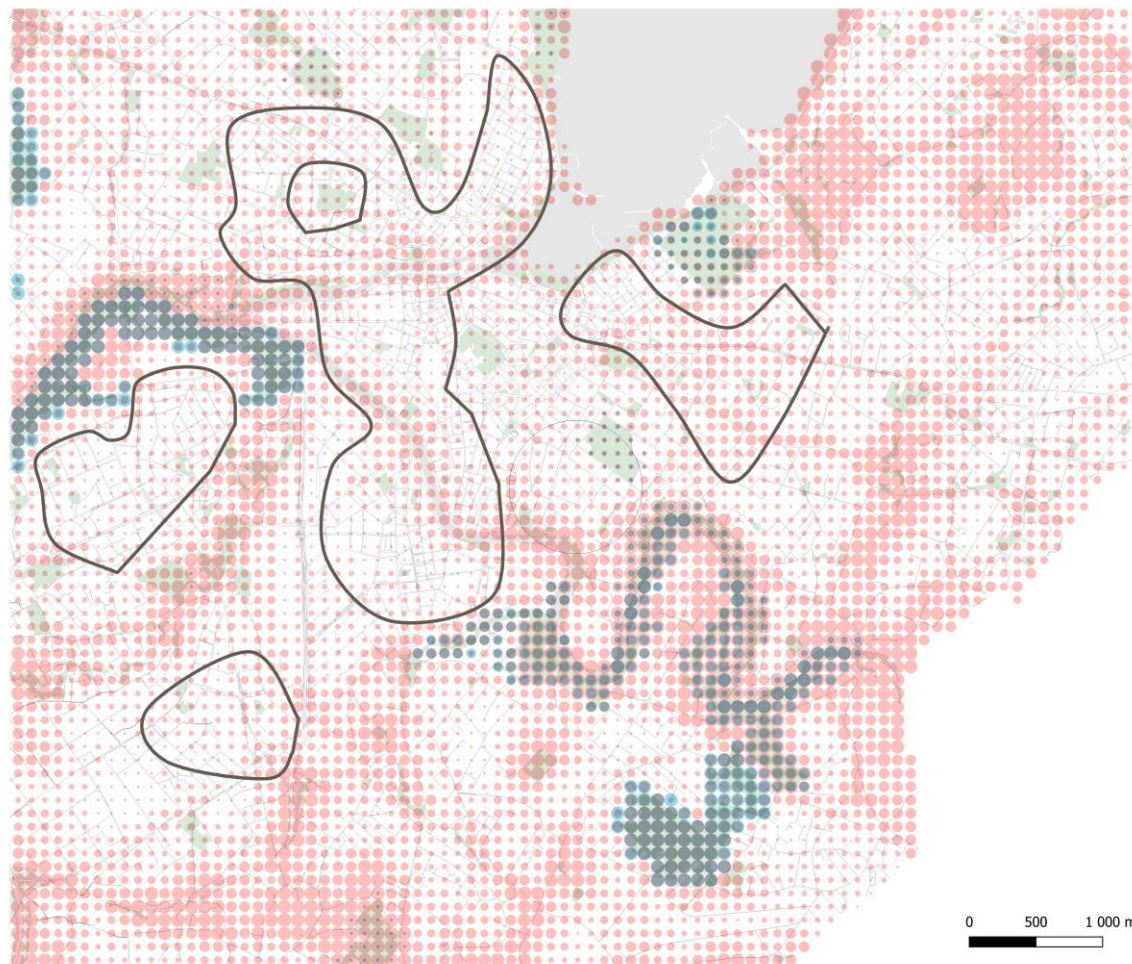
Green spaces and their benefits

We can see a correlation between the permeability of the soil and the localization of the big green spaces.



Green spaces and their benefits

The green spaces aload a better diversity of the plants and so a better biodiversity.



Ecologic aspect of green spaces :
Floristic wealth, naturality of the soil and public green spaces

Data :

- Floristic wealth (from Ge21)
- Naturality (from Ge21)
- Public green spaces (from Zenodo)
- Cad horssol

Number of plant species

- 10 - 58
- 58 - 107
- 107 - 155
- 155 - 203
- 203 - 252
- 252 - 300

Naturality of the soil

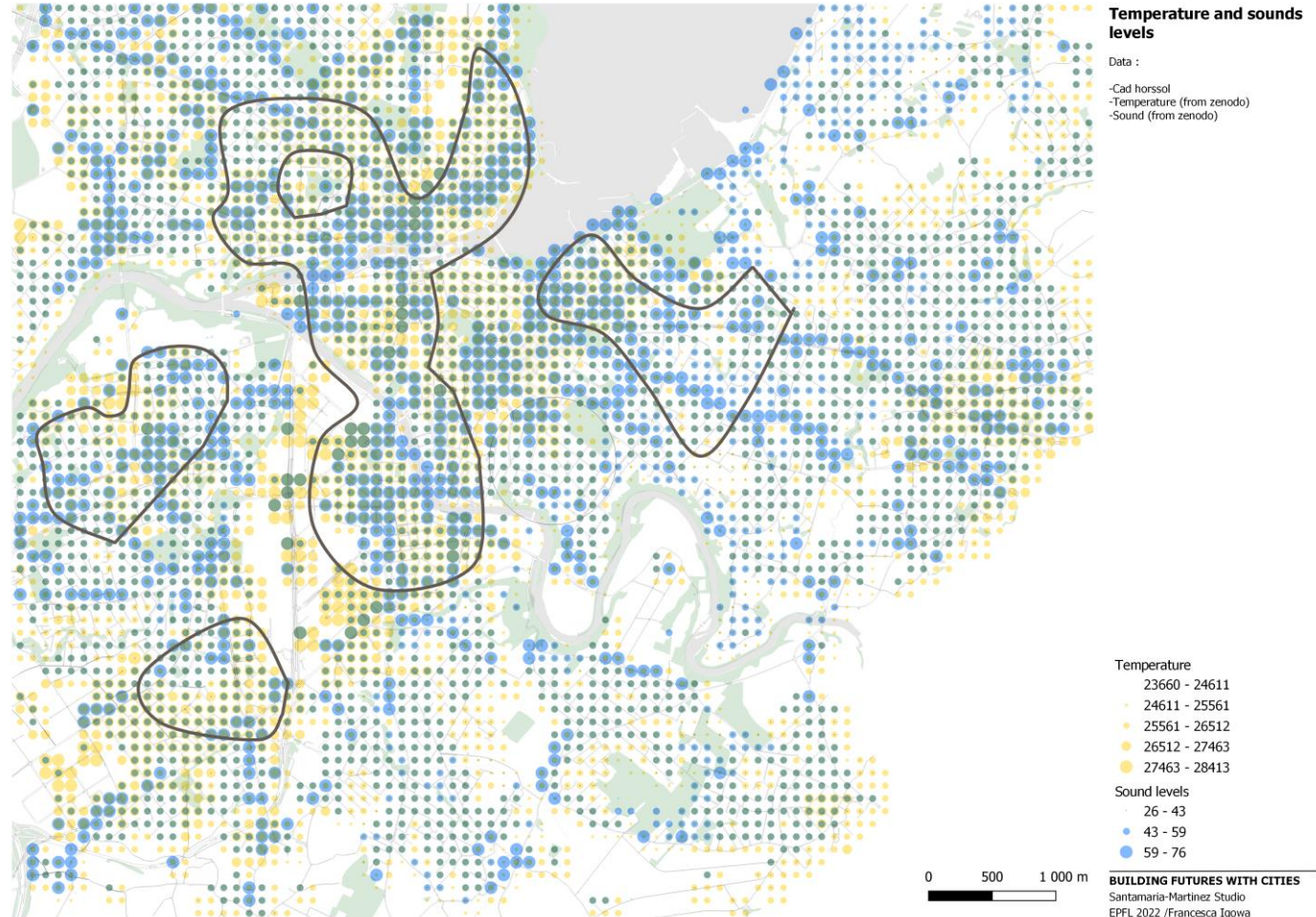
- Green spaces
- 70 - 80056
- 80056 - 160042
- 160042 - 240028
- 240028 - 320014
- 320014 - 400000



Green spaces and their benefits

In the different zone that we identified we can see that the heat island are more present and the sound level is higher.

Actually the presence of trees and vegetation, can be useful to reduce the temperature in the city and can be use as a barrier for the sound's pollution

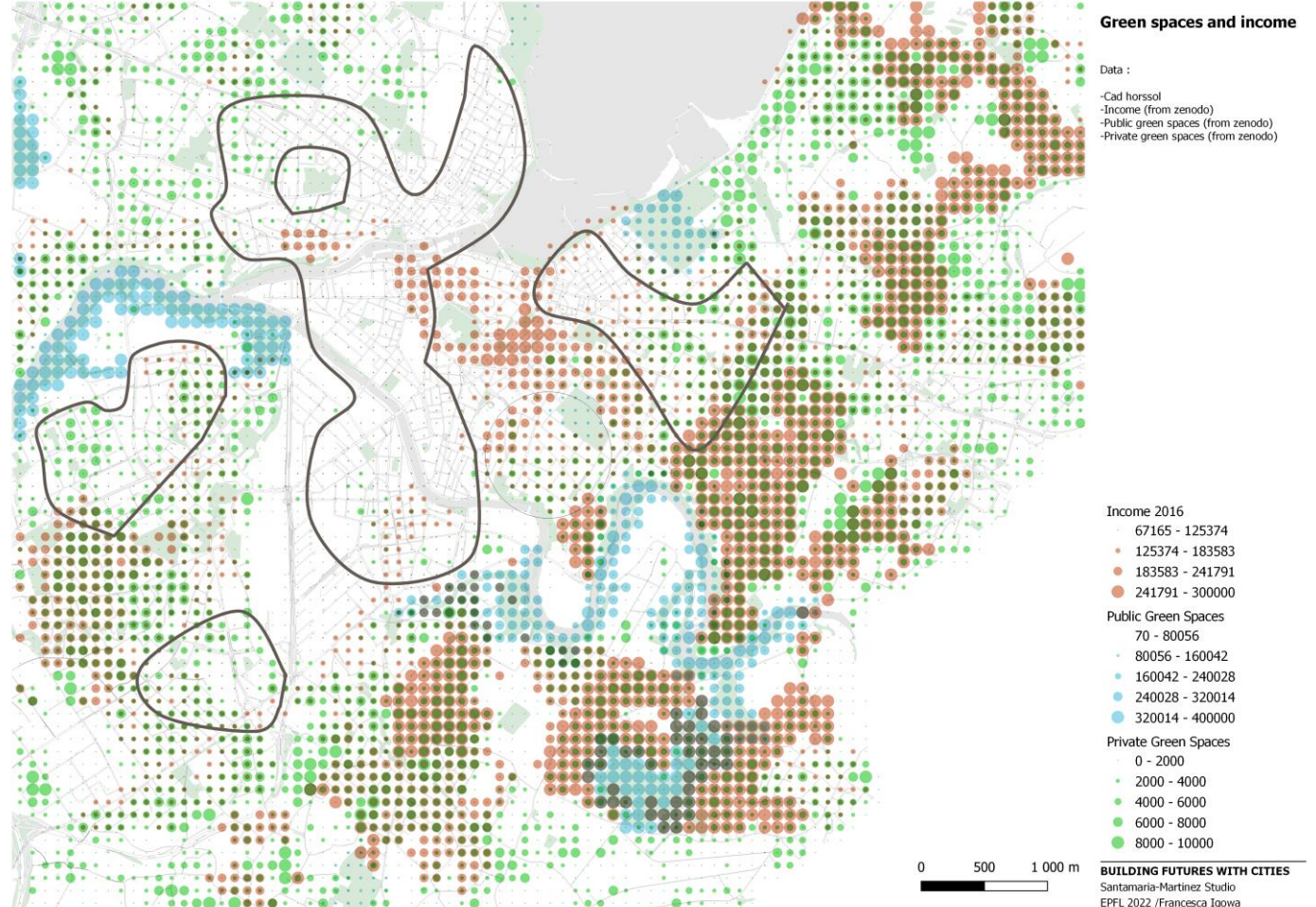


**.Green spaces
but
for who?**

Green spaces but for who?

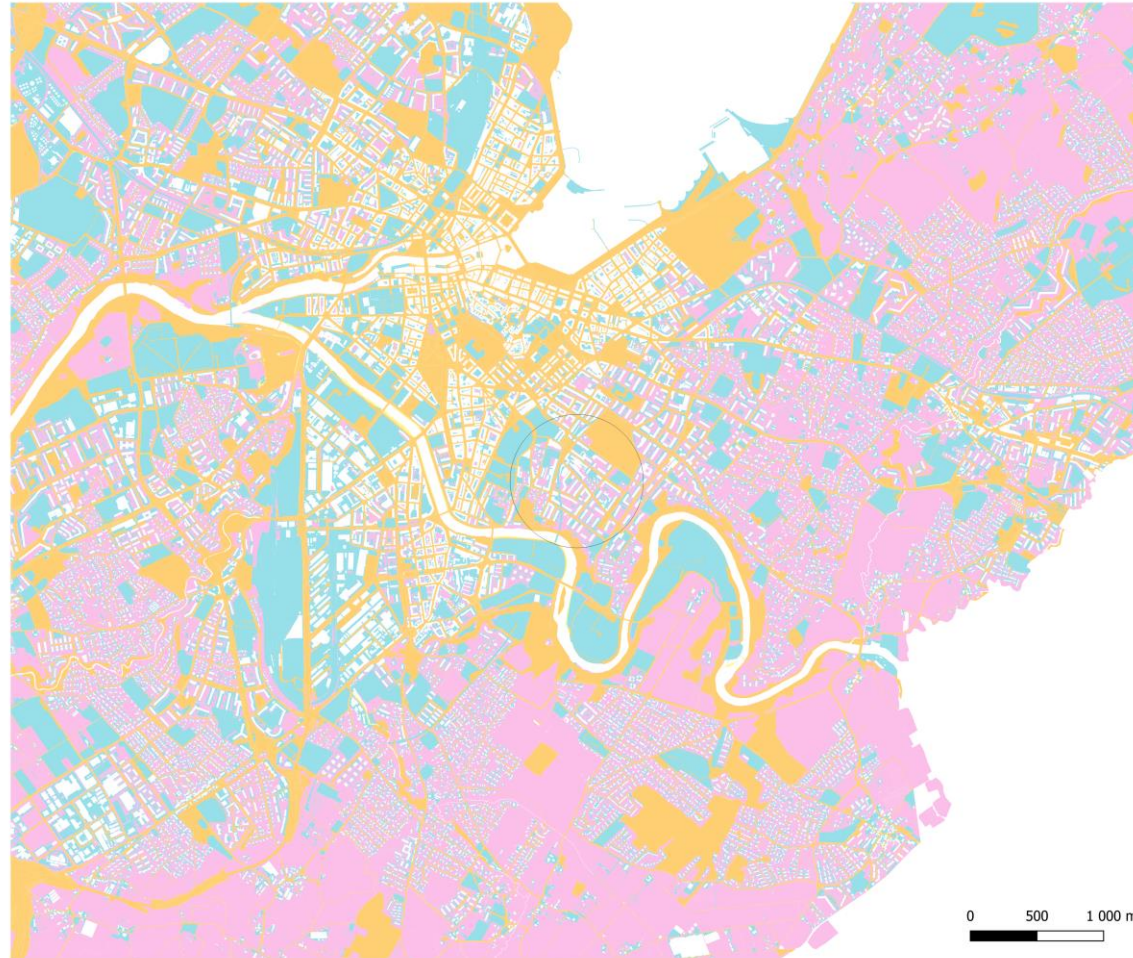
Green spaces are unevenly distributed, we have seen above that public green spaces are already in insufficient quantity, moreover if we look at private green spaces, we clearly see that they are superimposed with the highest incomes.

So the higher the income the more accessible is the green.



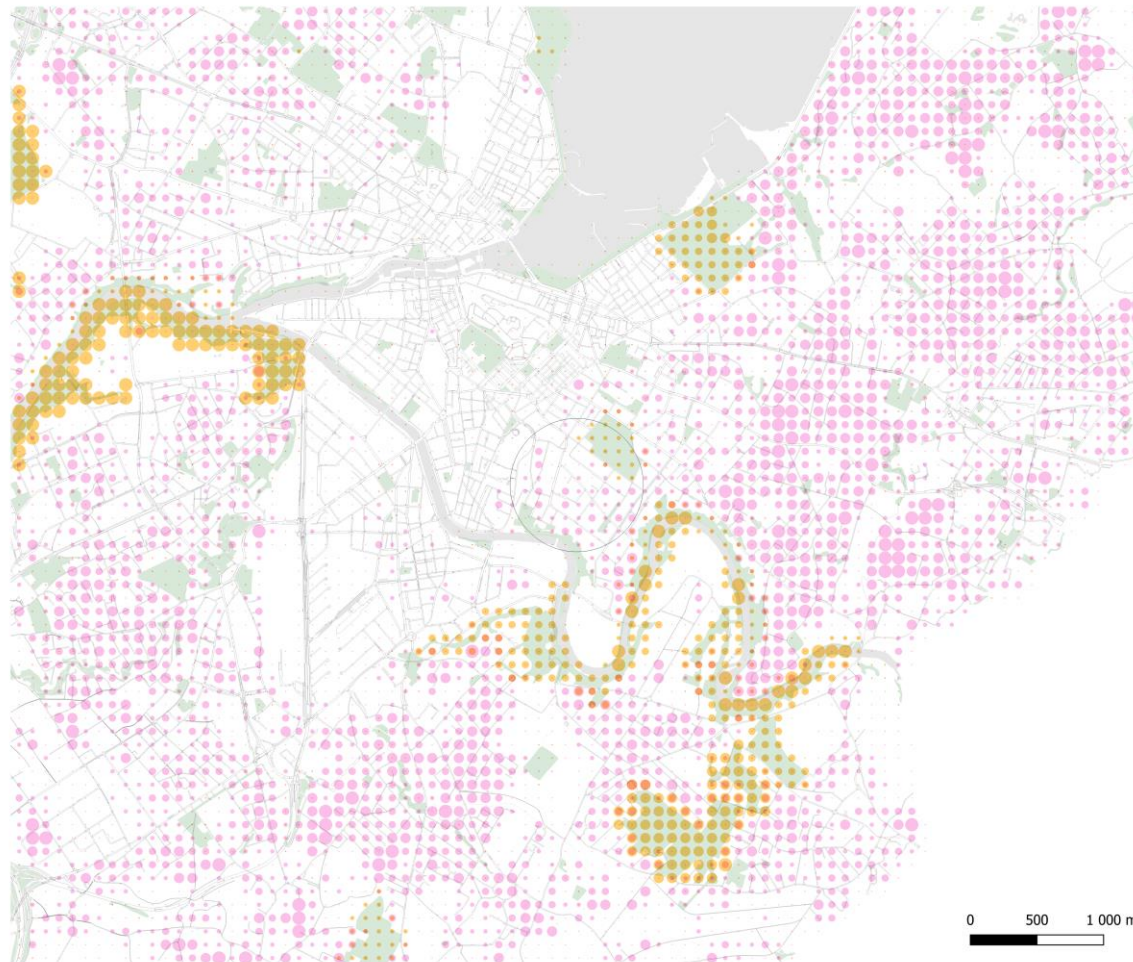
Green spaces but for who ?

We can see that most of the green spaces are private gardens in the less built-up areas: that is to say, around individual houses (villas...)



Green spaces but for who ?

Repartition of the private and public green



Green spaces in the city

Data :

- Cad horssoil
- Capacity of public green spaces : area of public green spaces (from Zenodo)/ 12
- Capacity of private green spaces : area of private green spaces/ 12

Here the private green spaces are obtained by the difference of the total surface union of the communes (from SITG), with the public green spaces (from SITG), the Cad horssoil, the Cad routier, the area of fields (SITG) and the area of public facilities and sports equipment (SITG).

Surface of private green spaces

- 0 - 2000
- 2000 - 4000
- 4000 - 6000
- 6000 - 8000
- 8000 - 10000

Surface of public green spaces

- 70 - 100056
- 100056 - 200042
- 200042 - 300028
- 300028 - 400014
- 400014 - 500000



Impact of the green in the city

-Ecosystemic services

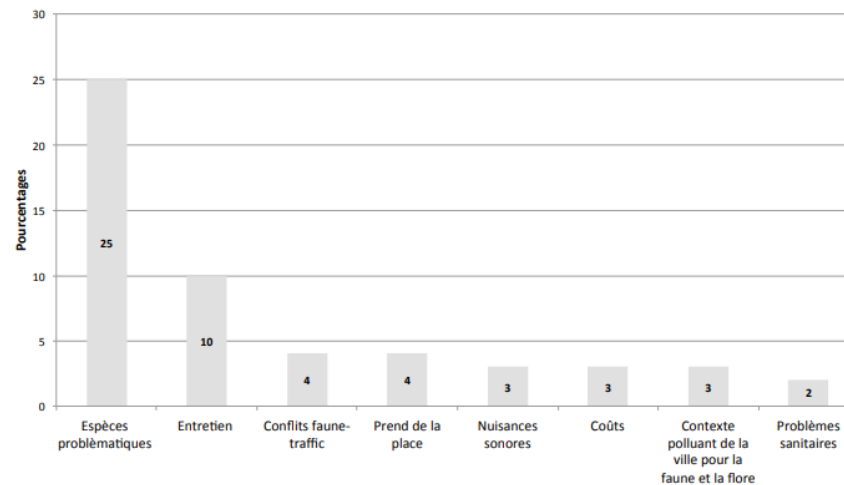
-Well-being of the population

-But we have to be aware of the inconvenients

Tableau 8 : Services écosystémiques générés par la végétation urbaine

	Street tree	Lawns/parks	Urban forest	Cultivated land
Air filtering	X	X	X	X
Micro climate regulation	X	X	X	X
Noise reduction	X	X	X	X
Rainwater drainage		X	X	X
Sewage treatment				
Recreation/cultural values	X	X	X	X

(Bolund et Hunhammar, 1999)



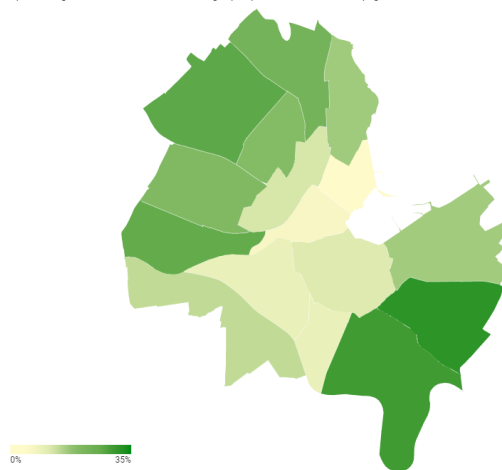
Green spaces but for who?

-More present for the high economic classes

-In the city, it related to the individual housing and the possibility to have a private garden

Le taux de couverture de canopée à Genève

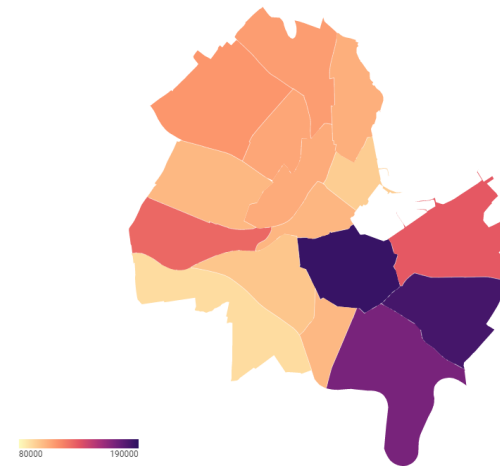
Le pourcentage du territoire recouvert de feuillages par quartier au sens du découpage de l'office fédéral de la statistique.



Carte: RTSinfo - Source: Conservatoire et jardins botaniques, Ville de Genève - [Récupérer les données](#) - Créé avec Datawrapper

Le pouvoir économique des quartiers genevois

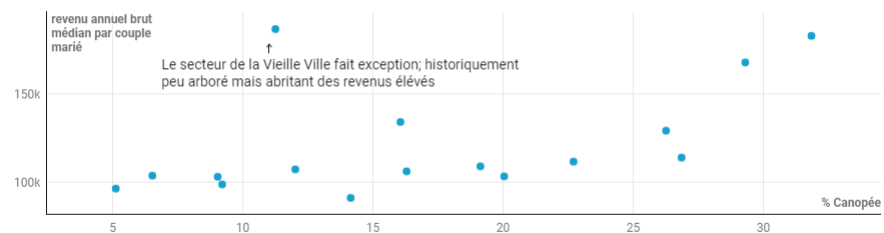
Le pouvoir économique des quartiers en fonction du revenu annuel médian brut par couple marié.



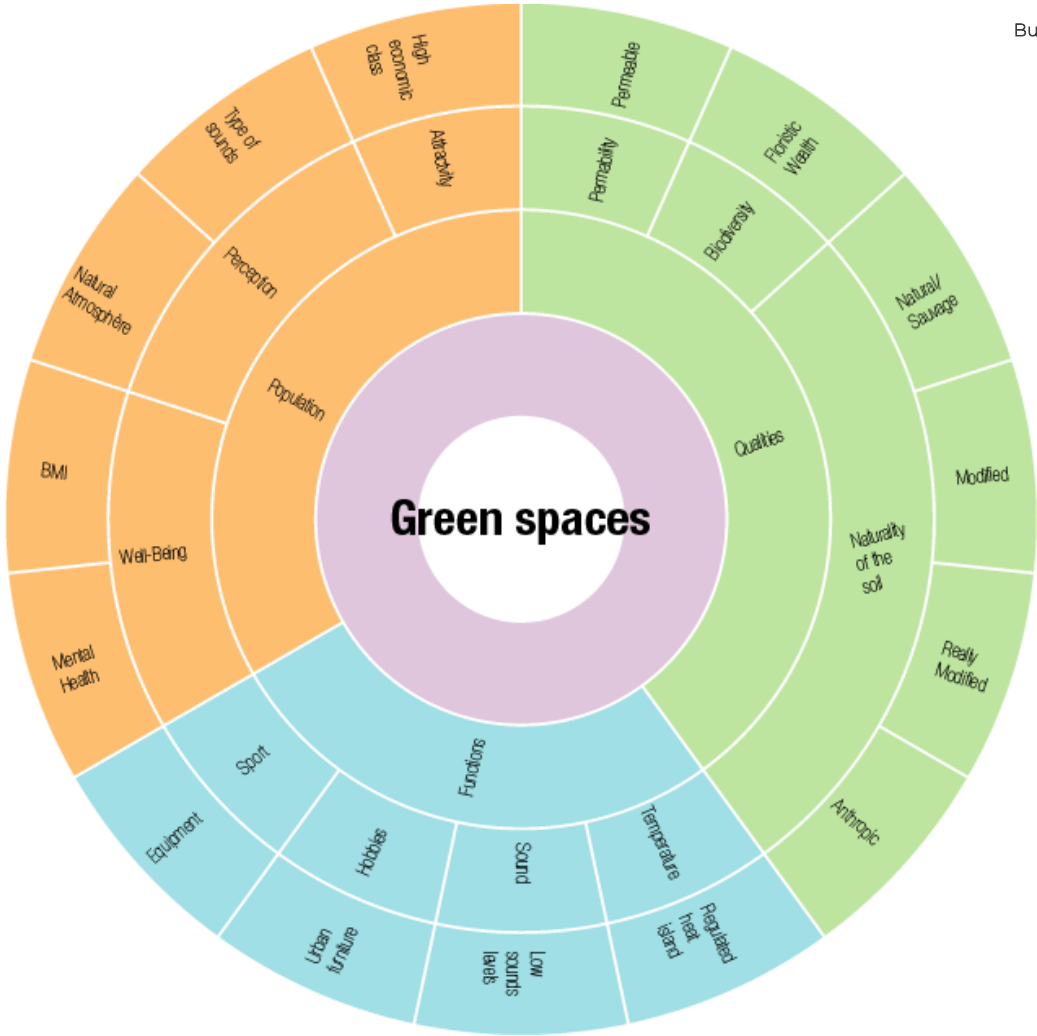
Carte: RTSinfo - Source: OCSTAT - [Récupérer les données](#) - Créé avec Datawrapper

A Genève, les quartiers aisés sont davantage à l'ombre des arbres

Le taux de couverture de canopée par le revenu annuel médian des couples mariés selon les quartiers tels que découpar par l'OFS.

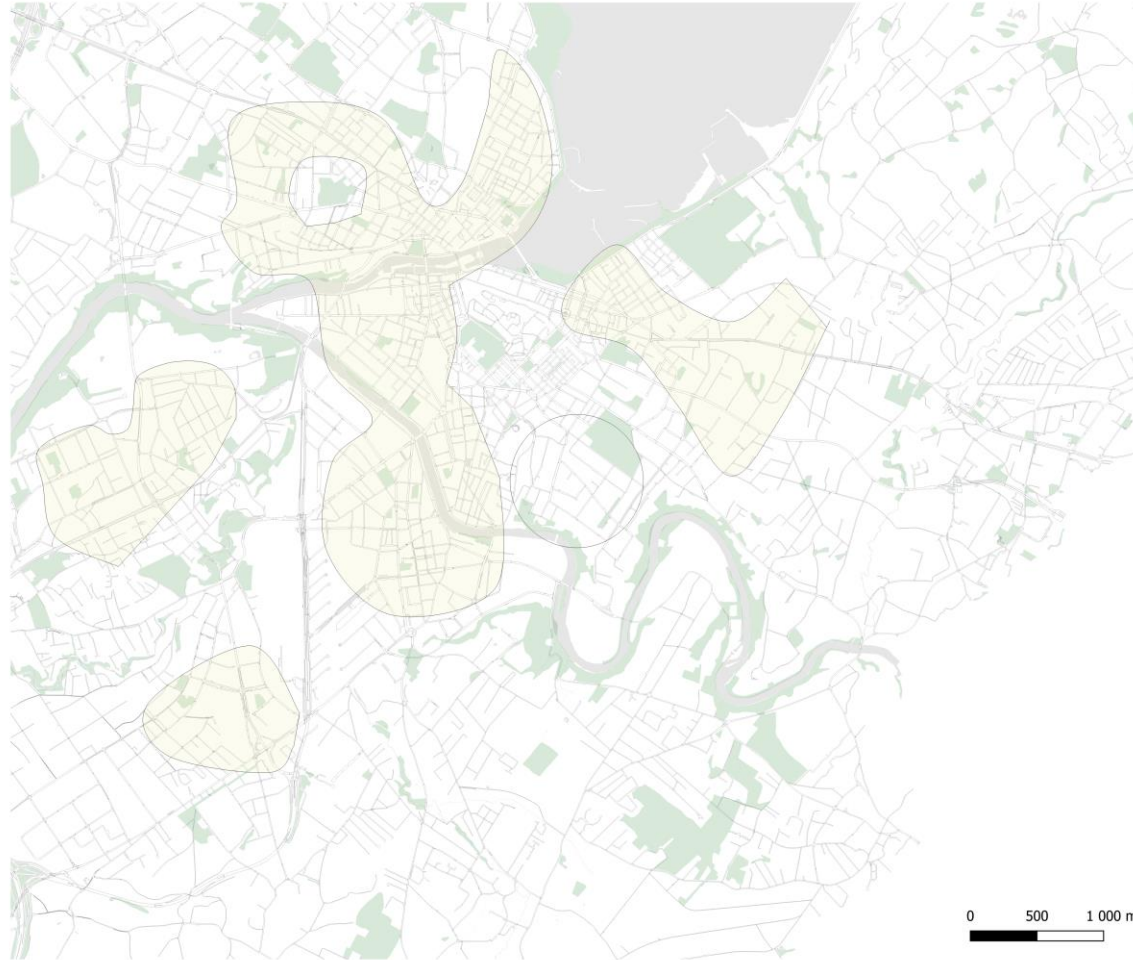


Graphique: RTSinfo - Source: Conservatoire et jardins botaniques de la Ville de Genève, OCSTAT - [Récupérer les données](#) - Créé avec Datawrapper



. Example of Problematic Areas

Area with problems



Data :

- Cad routier
- Public green spaces (from Zenodo)
- Cad nature

0 500 1 000 m

Lancy

The commune lies to the south of Geneva.

According to the Federal Statistical Office, Lancy measures 4.77 km². 88.0% of this area is residential or infrastructure land, 5.2% is agricultural land, 6.4% is wooded land and 0.4% is unproductive land.



Lancy

_green atmosphere and environment

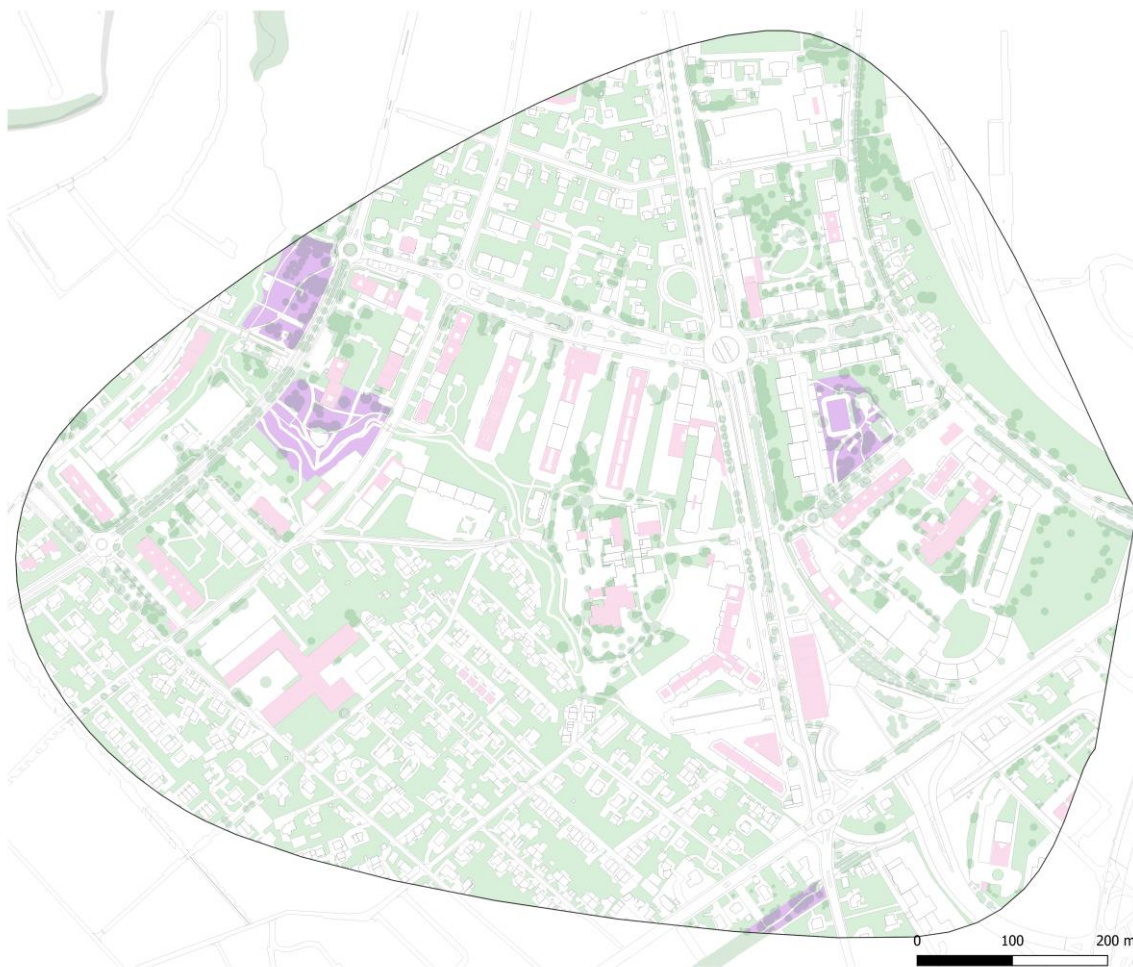
_individual housing

_collective housing

_not enough public green spaces

_built area not really dense

The green is present but not distributed and accessible to everyone



1_ Lancy district

Data :

- Cad routier
- Cad horrsol
- Cad nature
- Public green spaces (zenodo)

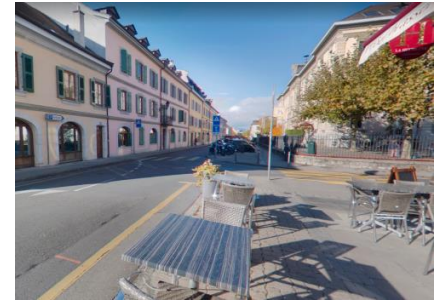
- Buildings
- Roads
- Public green spaces
- Vegetated roof

● Trees

Carouge

Carouge borders the city of Geneva, from which it is separated by the river Arve.

According to the Federal Statistical Office, Carouge measures 2.7 km². 84.9% of this area is residential or infrastructure land, 4.9% is agricultural land, 8.7% is woodland and 1.5% is unproductive land.



Carouge

- _green present in little pieces
- _collective housing
- _high density of population
- _not enough public green spaces
- _built area really dense

The green is less present, there is trees but many mineral surfaces. Most of the green aspect are found in the courtyards of buildings that are accessible for the inhabitants.



2_Carouge

Data :

- Cad routier
- Cad horsol
- Cad nature
- Public green spaces (zenodo)

- Buildings
- Roads
- Public green spaces
- Vegetated roof
- Trees

Les Paquis

Les Pâquis is a district of Geneva (Switzerland) located on the right bank of Lake Geneva, built from 1855.



Les Paquis

_green present in little pieces

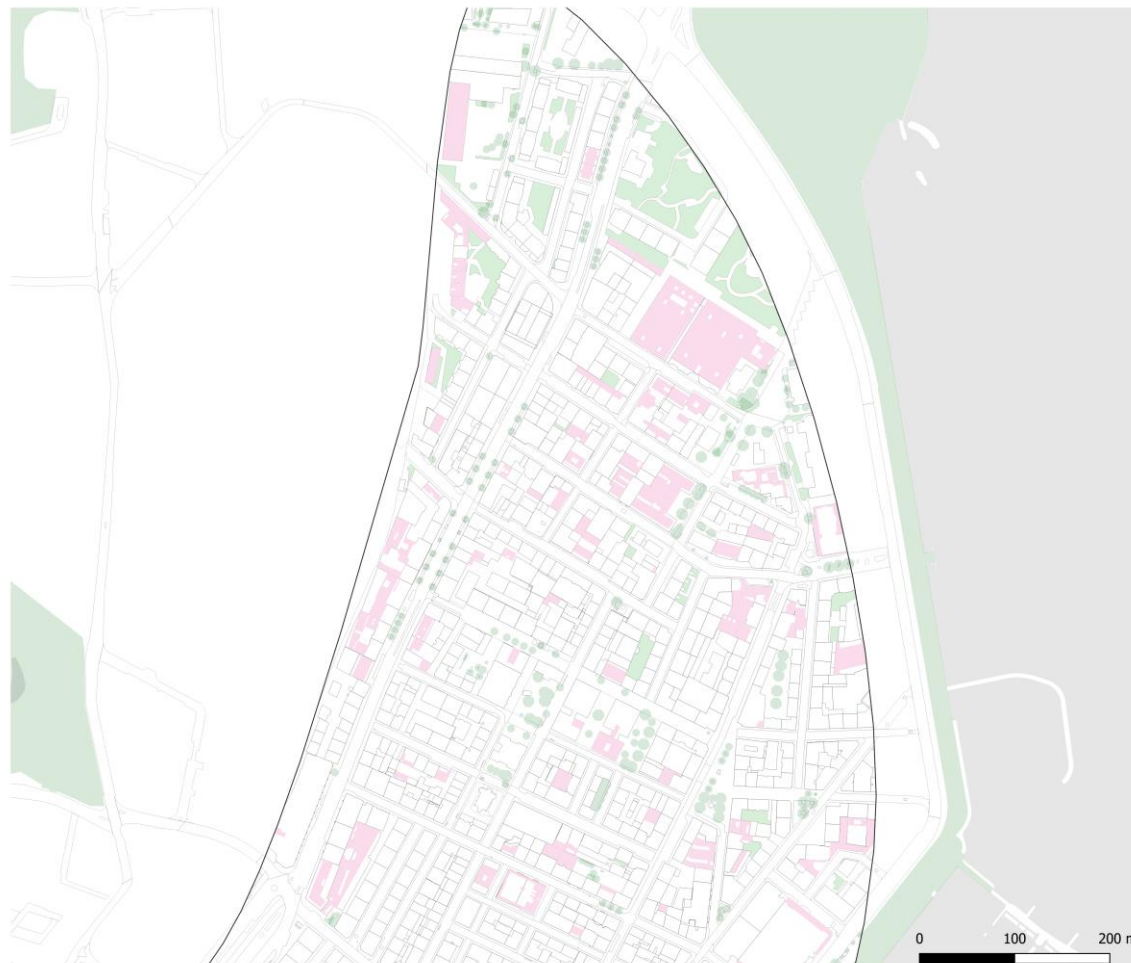
_collective housing

_high density of population

_not enough public green spaces

_built area really dense

The green not present, everything is really mineral. The only public green spaces is the parc along the lake. But inside of the neighborhood there is just some trees and not enough green.



3_Les paquis

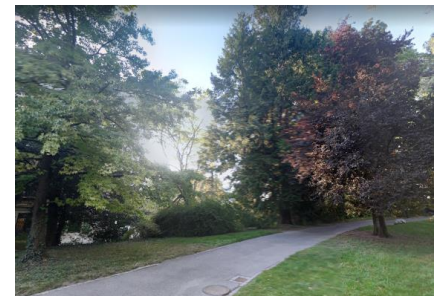
Data :

- Cad routier
- Cad horsol
- Cad nature
- Public green spaces (zenodo)

- Buildings
- Roads
- Public green spaces
- Vegetated roof
- Trees

Les Eaux-Vives

Les Eaux-Vives is a popular district of Geneva, Switzerland and a former commune of the canton of Geneva. The district is located on the left bank of Lake Geneva.



4_ Les Eaux-Vives

_green atmosphere and environment

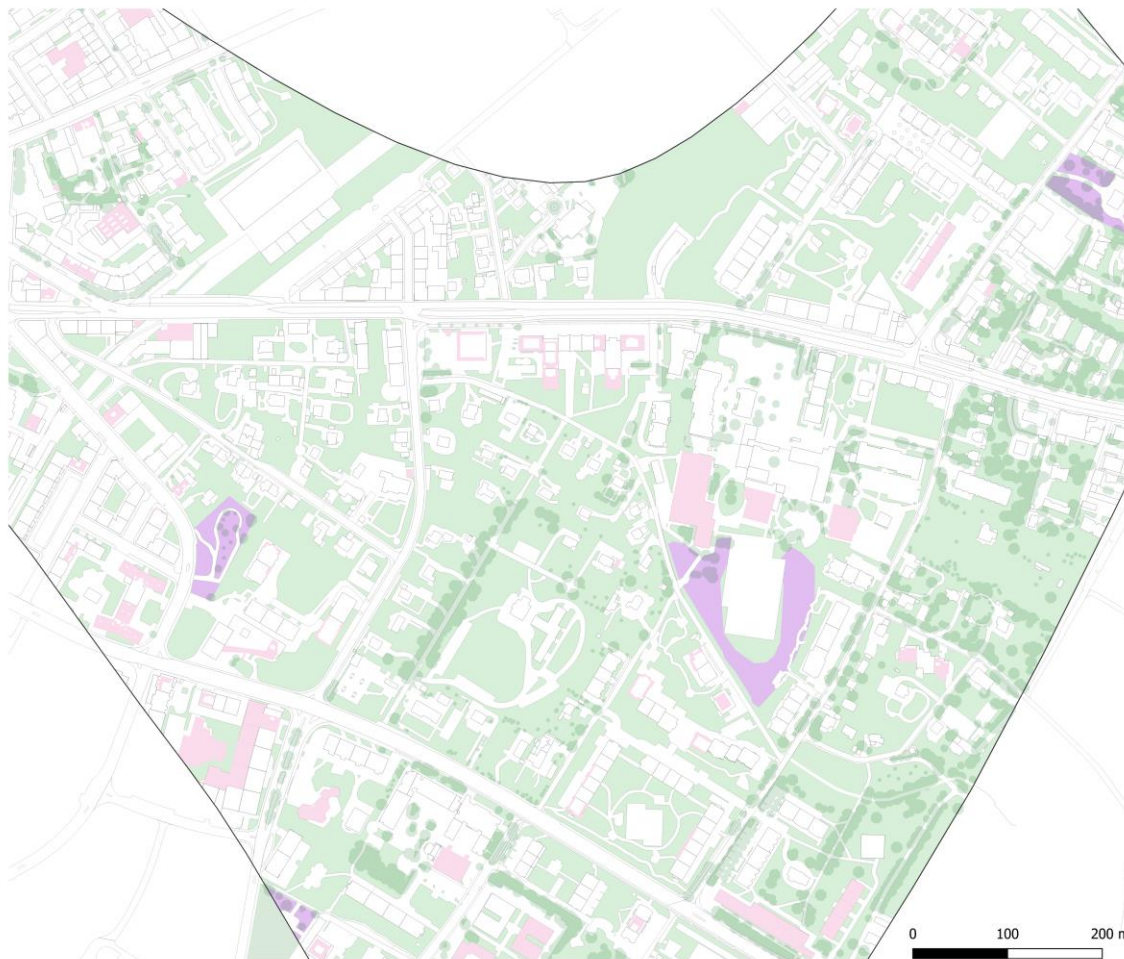
_individual housing

_collective housing

_not enough public green spaces

_built area not really dense

The green is present but not distributed and accessible to everyone.



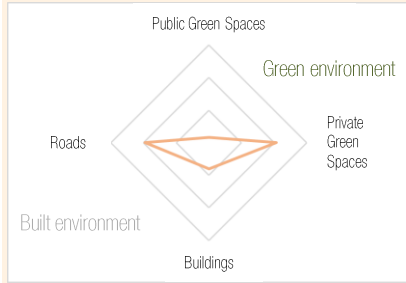
4_ Eaux Vives

Data :

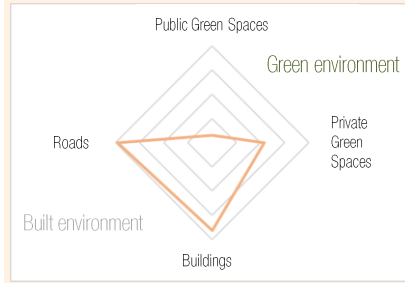
- Cad routier
- Cad horsol
- Cad nature
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- Buildings
- Roads
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Lancy



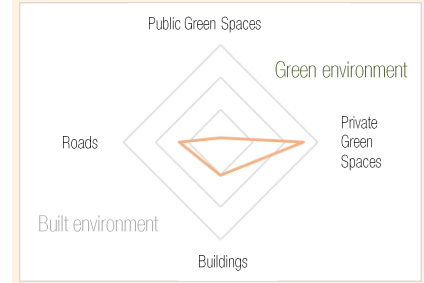
Carouge



Les Paquis



Les Eaux-Vives



There is two different case :

The green is present, and the quantity is enough but not distributed and not accessible to everyone.

There is not enough green, and the environment is densely built.

➔ In the both situation there is a lack of public green spaces

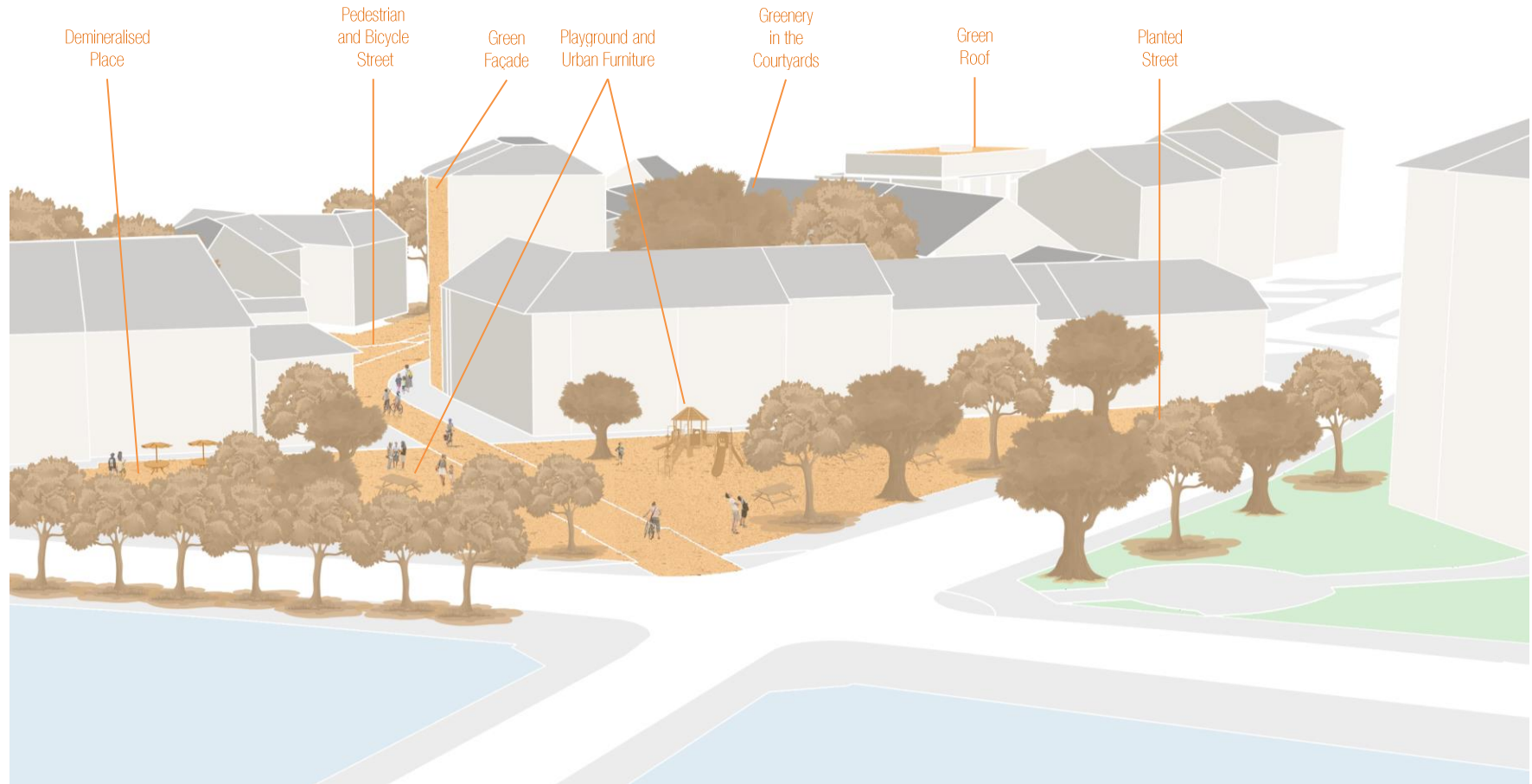
Strategies

- Find opportunities to insert green spaces in densely built-up areas, free up space if necessary.
- Reinforce the green aspect of the city and the biodiversity/ecosystemic services by different means:
 - vegetal fences
 - vegetal roofs and façades
 - floor covering (more natural or at least more permeable)
 - stop the cutting of certain trees (for the shade and temperature)
- Make existing green spaces accessible to all and more welcoming by :
 - changing some land from "accessible" to public or private to "public" (totally or partially)
 - installing sports equipment
 - installing urban furniture
- Encouraging pedestrian mobility and creating a network of local green spaces

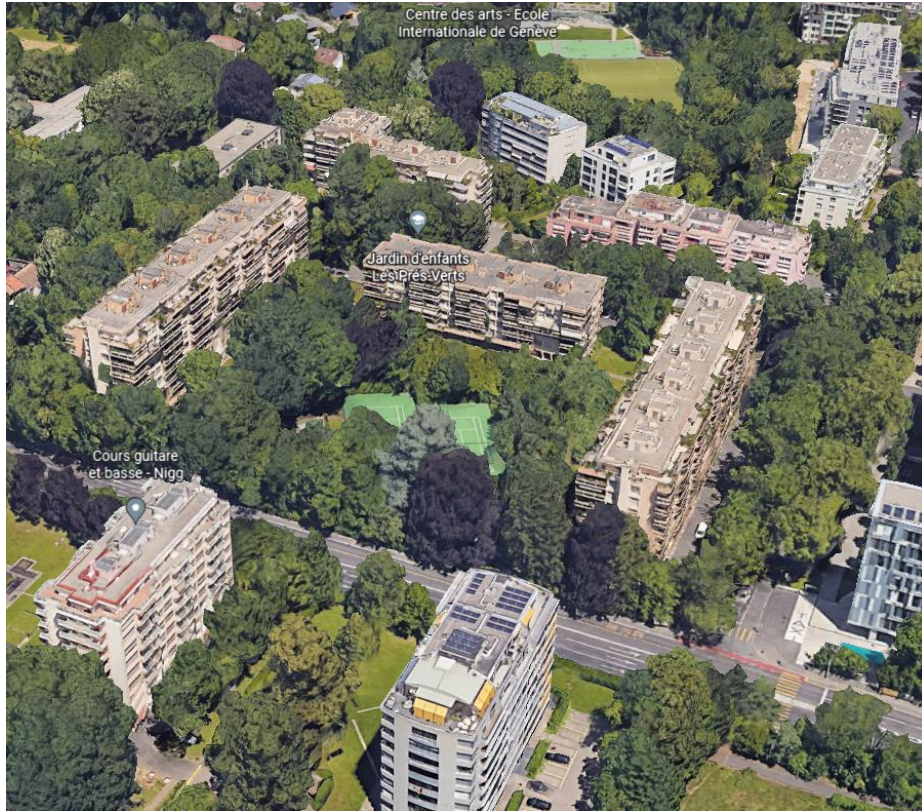
➔ The goal is to create accessible places of contact between people for their well-being (leisure and sport), to improve the quality of life, to encourage pedestrian mobility, to be able to have green spaces for all and in sufficient quantity.

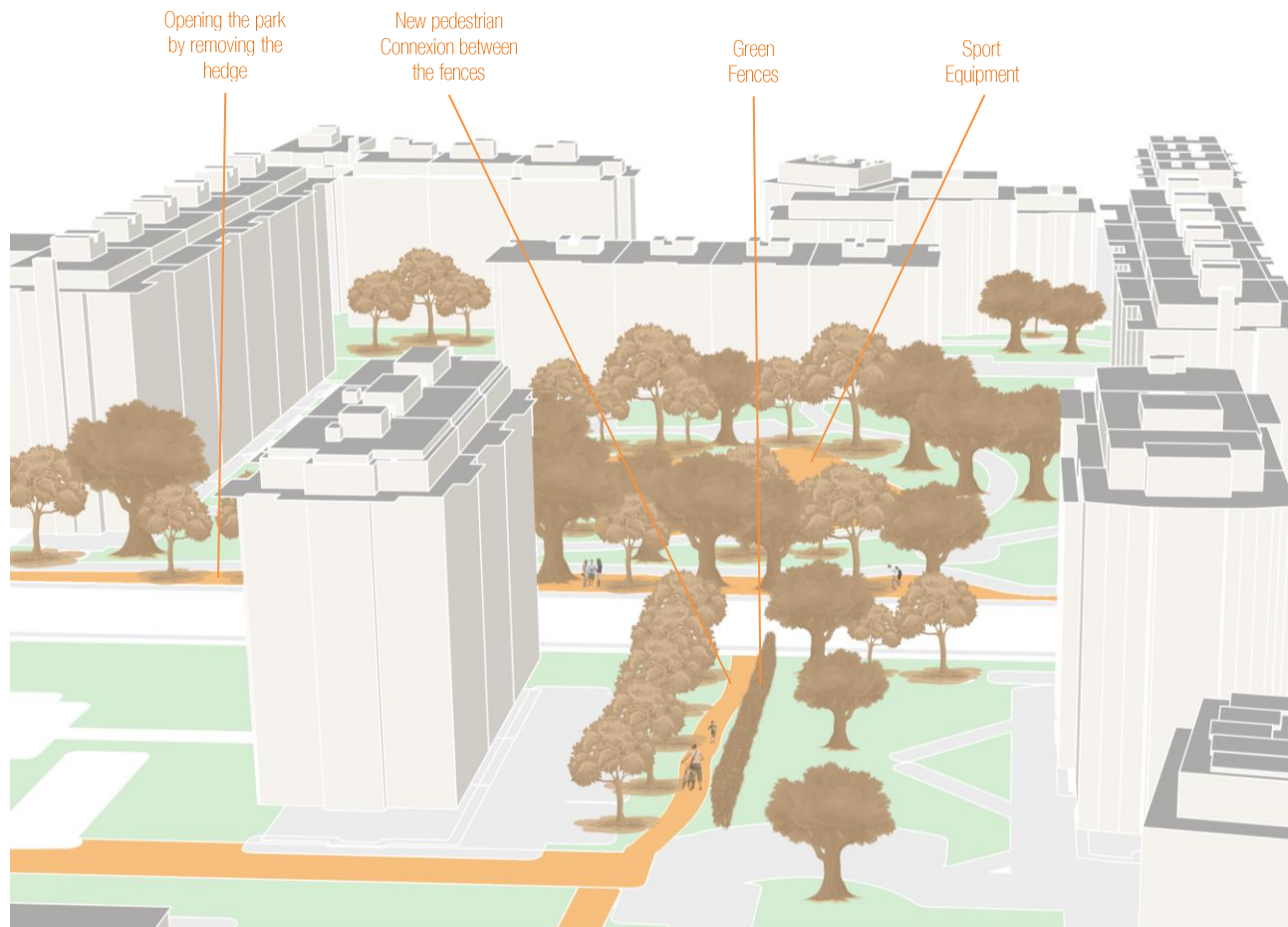
Exemple : Transformation of a place in Carouge





Exemple : Accessibility of a green area in Les Eaux-Vives





Conclusions

The different strategies propose to first use the nature already present in the city but also to try to densify it.

For Carouge, by using the already green blocks as accessible and amenable green spaces for all, and by transform some streets, we can gain 8-10% of green space (in terms of surface and without counting trees and vertical vegetation).

For Les Eaux-Vives where the greens are already presents, their accessibility will depends on the possibility to make public some private space and the possibility of developing these spaces for the public.

But those solution are not possible for certain areas that are already very densely built up, such as the Paquis district, where we should de-densify to create new green spaces.



