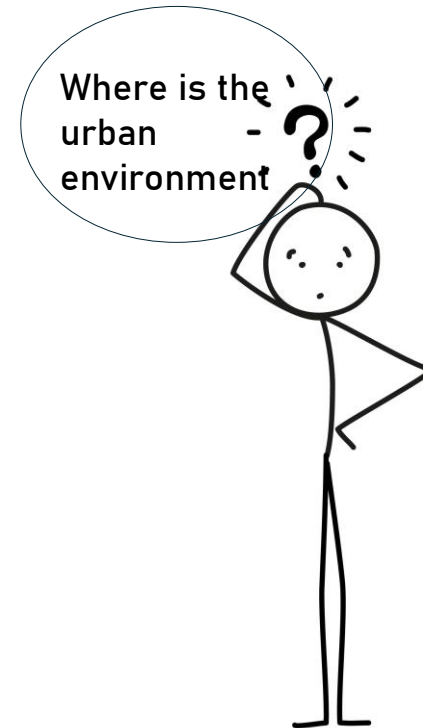
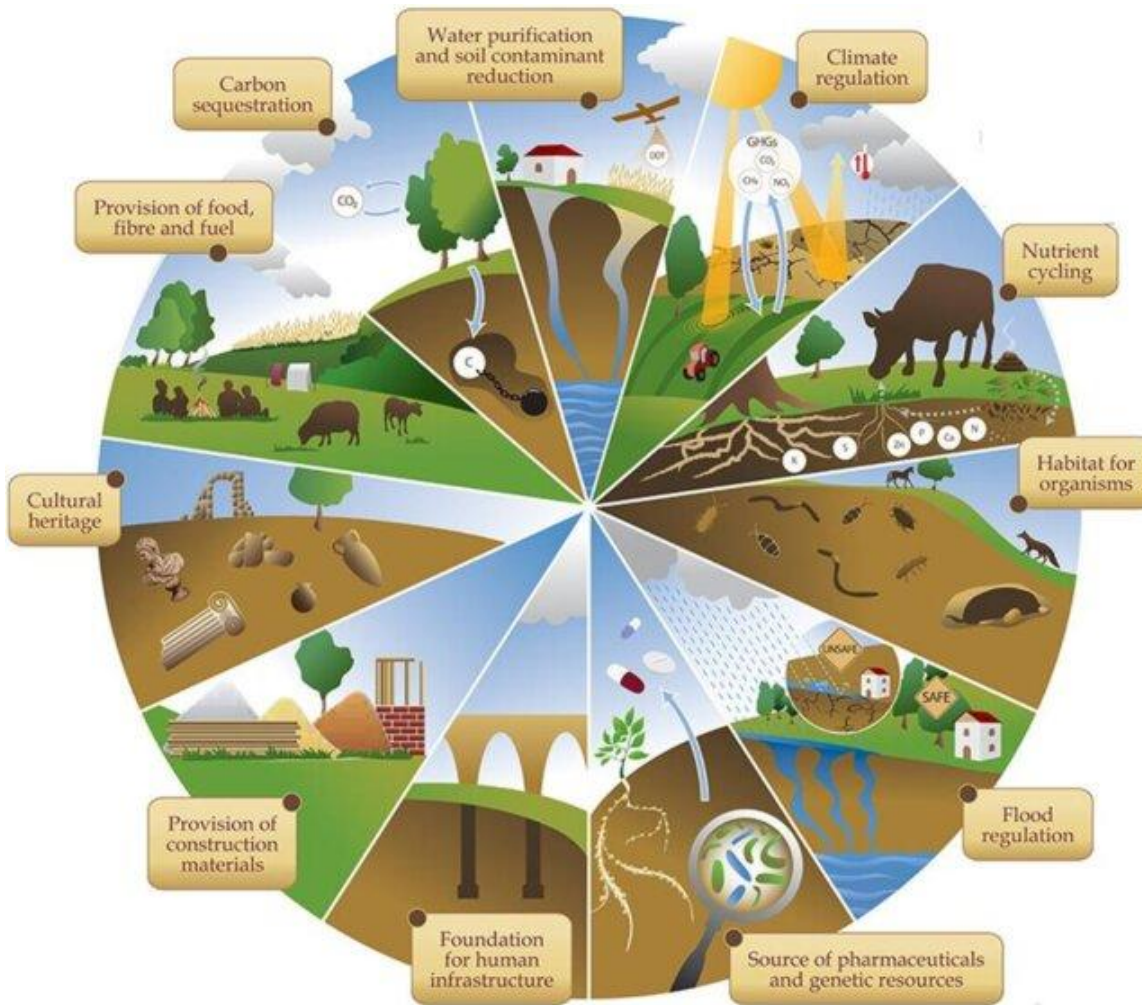


SOME LAND-USE PLANNING MECHANISMS FOR SAFEGUARDING THE HEALTH OF URBAN SOILS

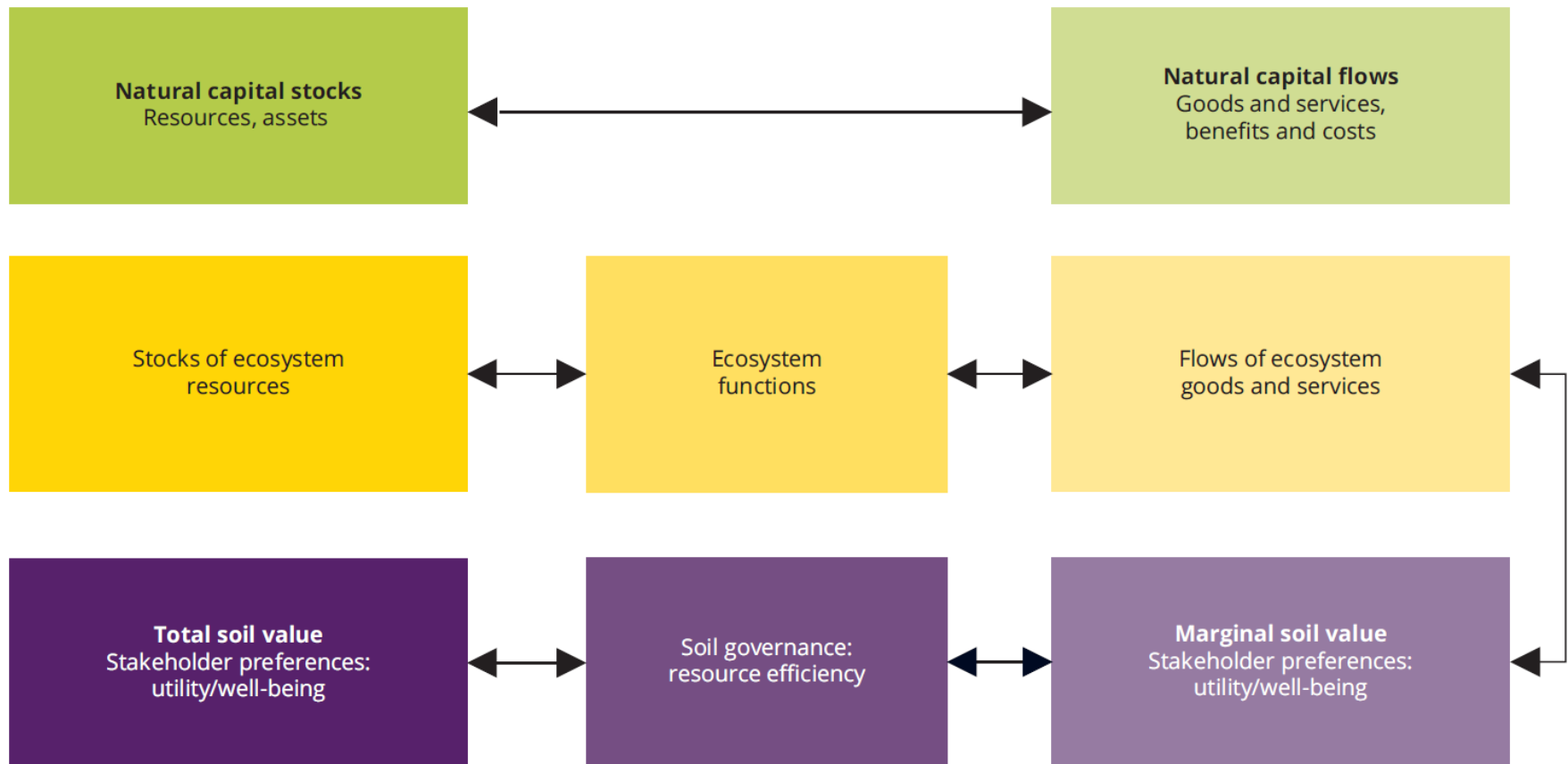
Prof. Alain Malherbe – LAB Institute – UCLouvain

Soil health Webinar – 24th January 2025

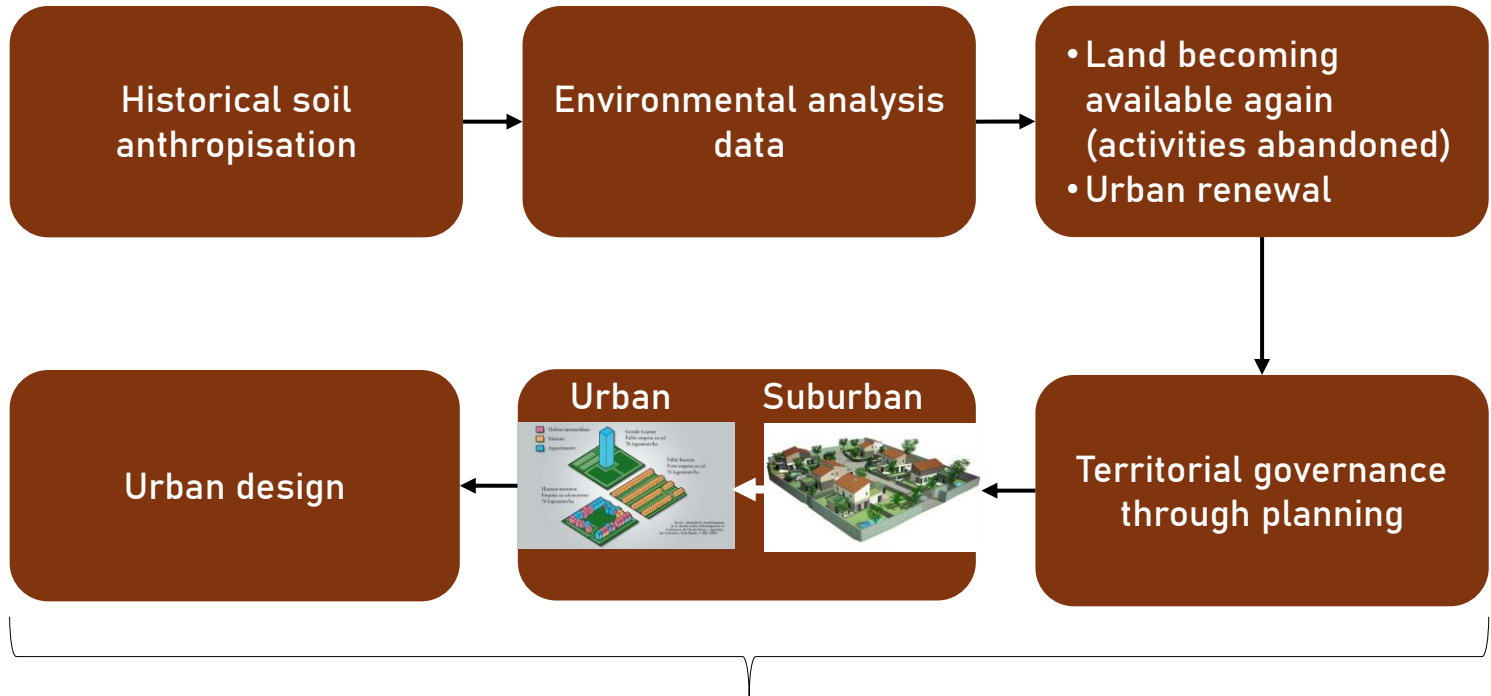


Schematic diagram of soil functions (FAO 2016)

Ecosystem services of urban soils, a resource to be preserved and regenerated



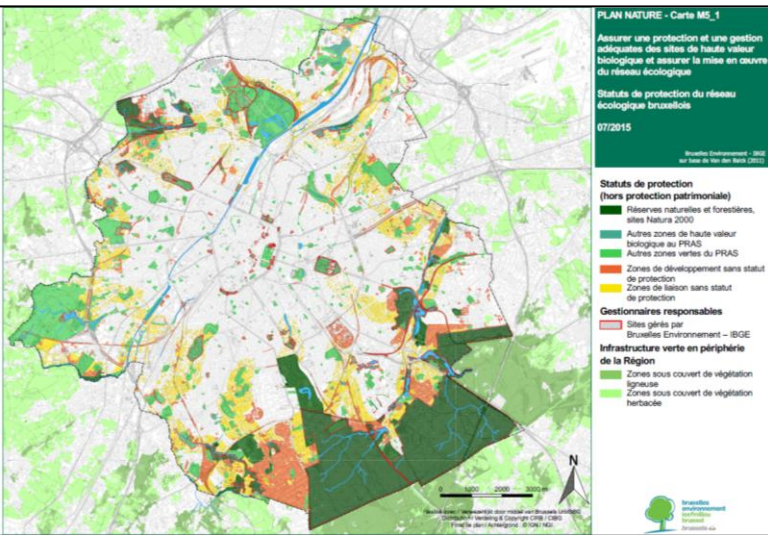
Natural capital and ecosystems: a framework for soil valuation and governance (EEA, 2016)



Localisation and design of urban projects to preserve/regenerate the health of urban soils

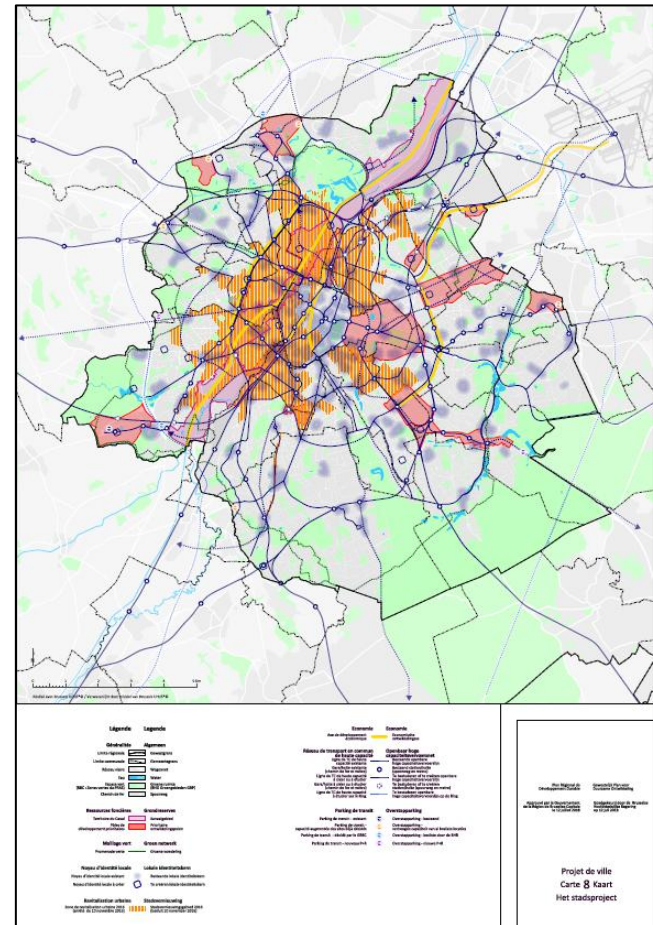
Thierry Wesel – Des
boyaux sous le bitume
(2024)

TWO SECTORS OF SOIL HEALTH GOVERNANCE



Environment

Land Use Planning and Urban Design



OVERVIEW OF THE DATA AVAILABLE TO CHARACTERISE URBAN SOILS

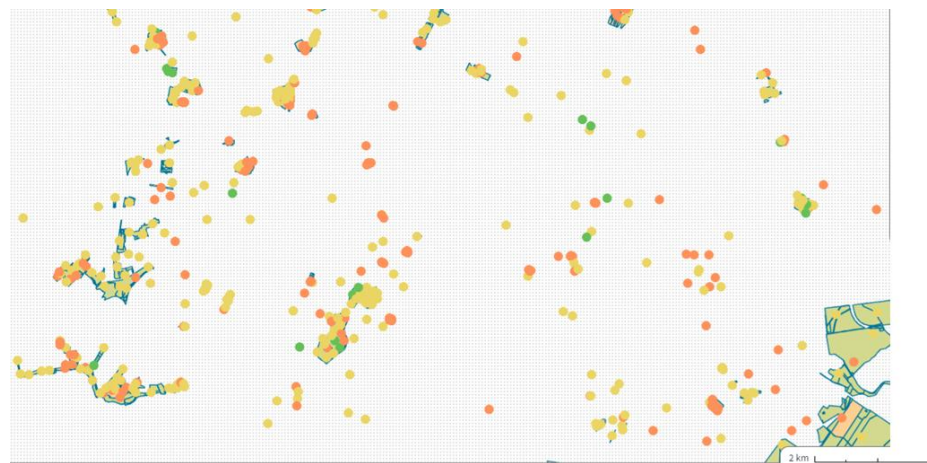
Wallonia – Namur city centre



Soil typology
Map of the main types of soil (WalOnMap)

OVERVIEW OF THE DATA AVAILABLE TO CHARACTERISE URBAN SOILS

Brussels Capital Region – center of the Region



Légende

Indice qualité du sol (point)

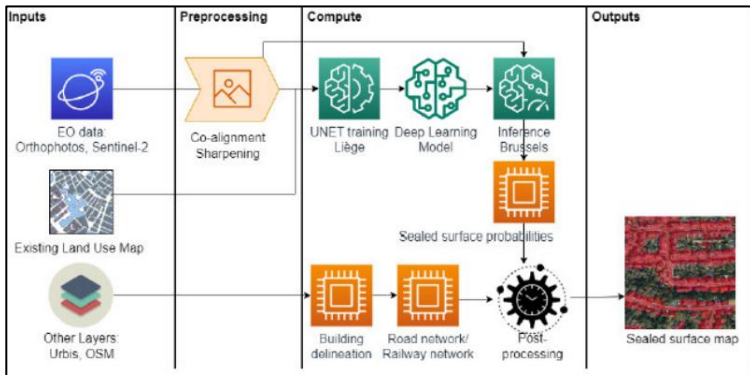
- 75 ≤ Indice ≤ 100
- 50 ≤ Indice ≤ 74
- Indice < 50

Soil quality

Soil quality index map (environment.brussels)

THE INDICATORS

Sealing rate



WEO, 2023 – source environment.brussels

Open ground coefficient

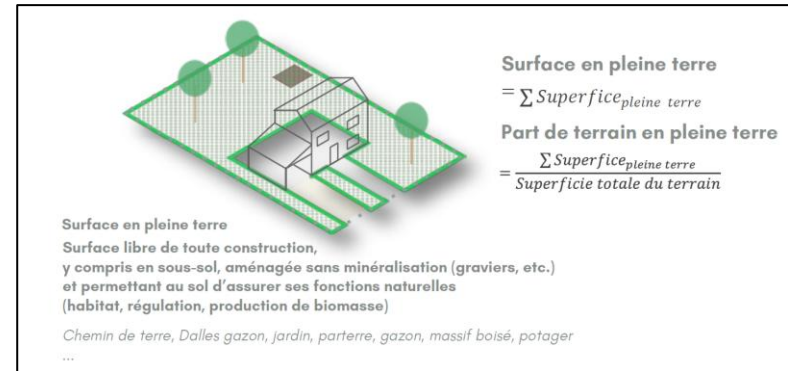


Schéma du Développement Territorial wallon - 2024

Urban soil functions: water filtration, flooding and biodiversity

Biotope Coefficient per Surface Area (CBS+)

CBS+ environment.brussels

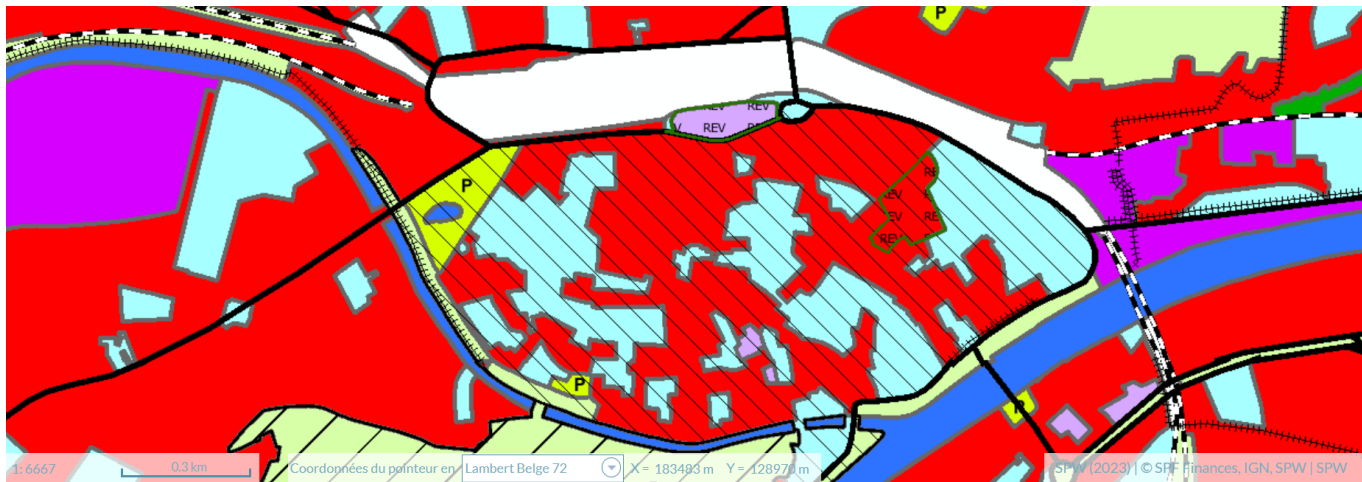
Soil Quality Index

Score IQSB	Classe de qualité des sols	Description
>=75	A	Sols de bonne à très bonne qualité sans limitation d'usage
>=50 et <75	B	Sols de moyenne à bonne qualité avec peu de limitation d'usage
<50	C1	Sols de qualité moyenne mais à haute valeur ajoutée
	C2	Sols de faible qualité et dégradé nécessitant un traitement mais qui n'est pas réalisable actuellement
	D	Sols de faible qualité et dégradés nécessitant un traitement

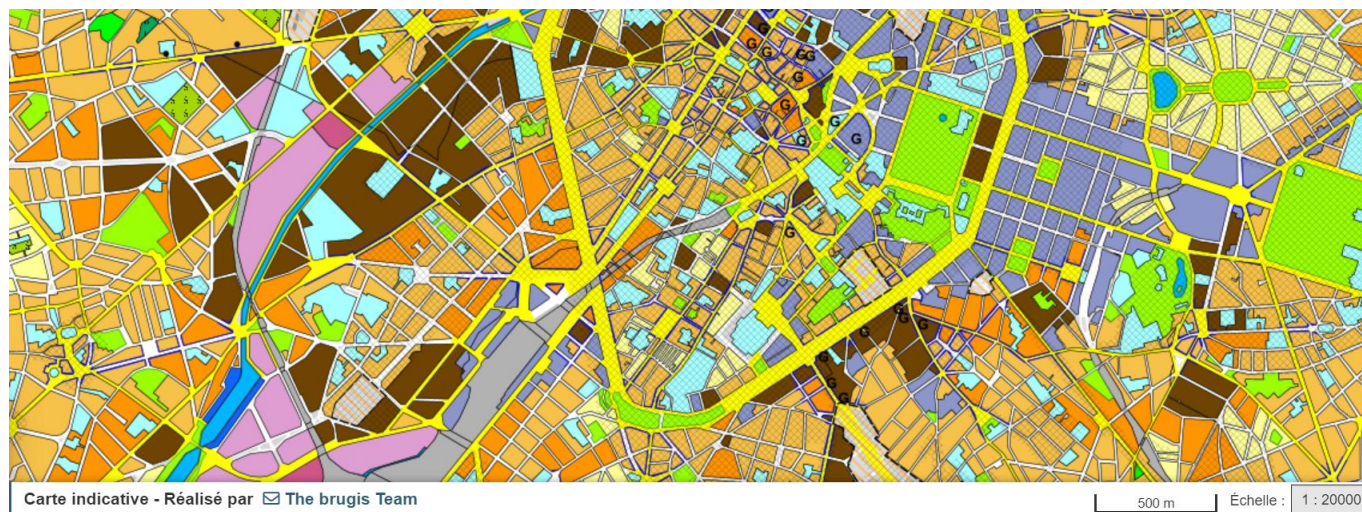
Indice de Qualité des Sols Bruxelles (IQSB) environment.brussels

- Knowledge of urban soils is still incomplete and fragmentary and needs to be consolidated.
- Knowledge of soil health is relevant at parcel scale.

CONSIDERATION OF URBAN SOIL IN LAND-USE PLANNING



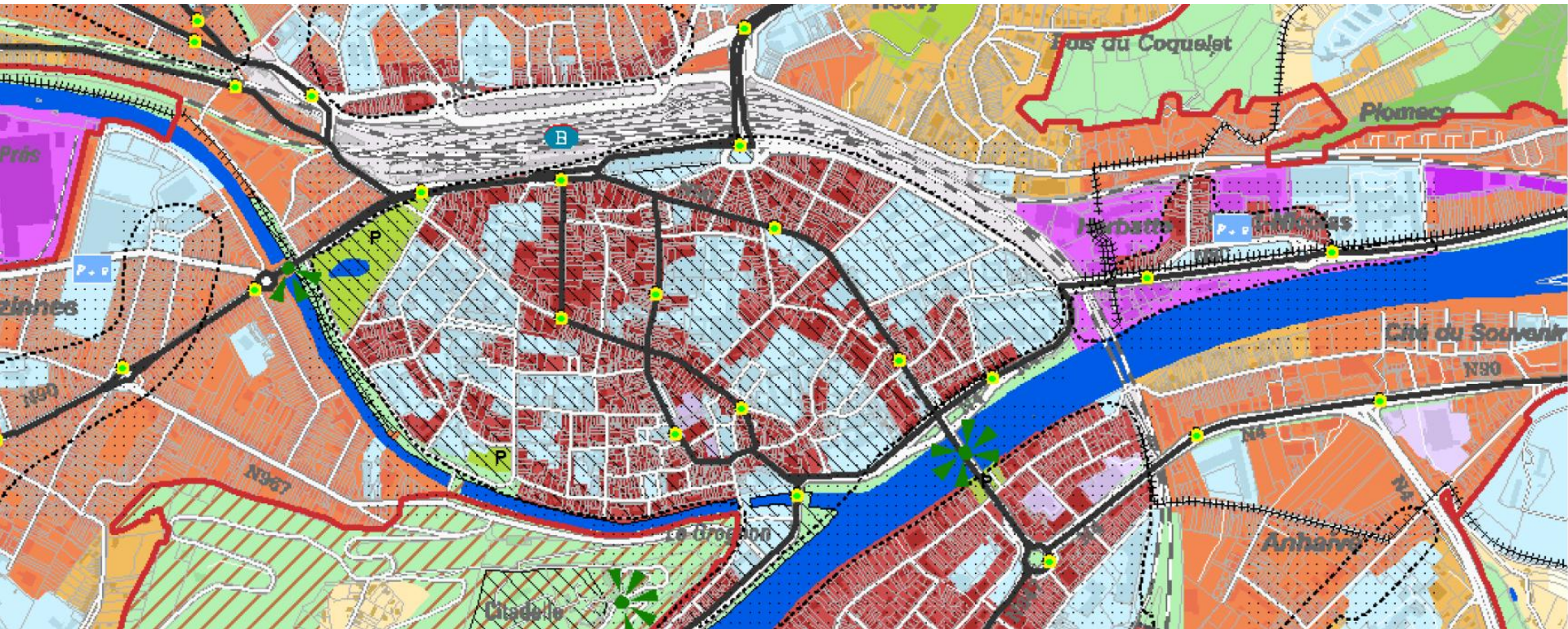
Wallonia – Namur city centre, Plan de secteur (WalOnMap)



Plan Régional d'Affectation des Sols (Brugis)

CONSIDERATION OF URBAN SOIL IN LAND-USE PLANNING

Wallonia – Namur city centre



Local territorial development strategy





















Schéma de développement communal 2012 (Ville de Namur)

CONSIDERATION OF URBAN SOIL IN LAND-USE PLANNING

Zones d'affectation

-  Habitat
-  Services publics et équipements communautaires
-  Centre d'enfouissement technique
-  Centre d'enfouissement technique désaffecté
-  Loisirs
-  Servitude particulière
-  Espaces verts
-  Naturelle
-  Parc
-  Eau
-  Non affectée ("zone blanche")

Extract from the Walloon sector plan legend

- Espaces structurants
-  Espaces structurants
- Affectations
-  Eau
-  zones d habitation a predominance residentielle
-  Zones d habitation
-  Zones mixtes
-  Zones de forte mixite
-  Zones d industries urbaines
-  Zones d activites portuaires et de transports
-  zones administratives
-  Zones d equipement d interet collectif ou de service public
-  Zones d entreprises en milieu urbain
-  Zones de chemin de fer
-  Zones vertes
-  Zones vertes de haute valeur biologique
-  Zones de parcs
-  Domaine royal
-  Zones de sports ou de loisirs de plein air
-  Zones de cimetieres
-  Zones forestieres
-  Zones agricoles
-  Zones d interet regional
-  Zones de reserves foncieres

Extract from the PRAS legend

- Land-use planning governance tools need input from the environmental sector before environmental impact studies are carried out. In-depth knowledge of soil ecosystem services should contribute to project design and be better integrated into impact studies.
- The allocation of functions by zone (housing, economic, green space, etc.) in the land allocation maps of the 1970-1980 period was based in particular on the typology of soils, which did not take into account soils that had already been artificialised.

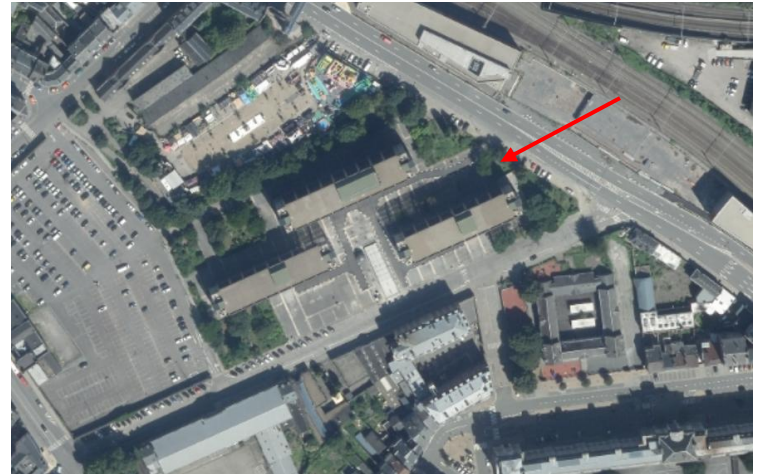


URBAN DESIGN AS A SYNTHESIS BETWEEN THE ENVIRONMENT AND THE LAND USE STRATEGY

Wallonia – Namur city centre



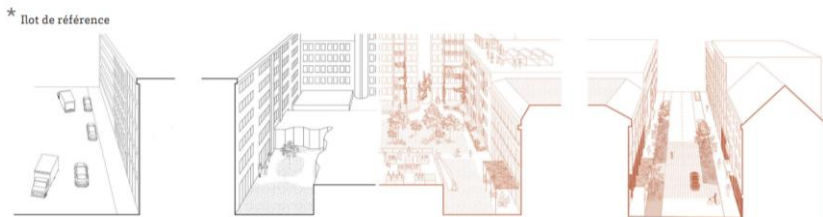
Sketch of the pedestrianisation of the street du fer (credit: AGORA)



THEMIS Project (credit: AG)

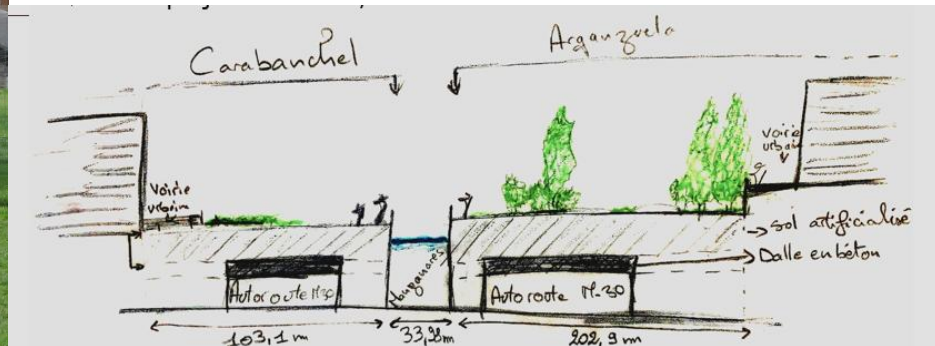
URBAN DESIGN AS A SYNTHESIS BETWEEN THE ENVIRONMENT AND THE LAND USE STRATEGY

Brussels Capital Region – center of the Region



Master Development Plan (PAD) – North Territory

Le PAD Maximilien-Vergote (BUUR – perspective.brussels)

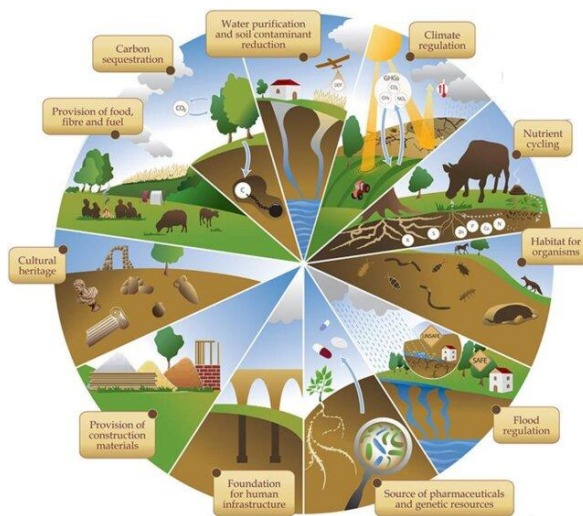


Assia ABERBOUR, Soumaila AREMOU, Rocco FERRETTI; Yahia Amir MERNIZ, Ma Gloire MUANDA, Auriane ROSSIER

Park Madrid Rio (Madrid)



Parc de la Plaine du Loup (Lausanne) © Photo: Ville de Lausanne

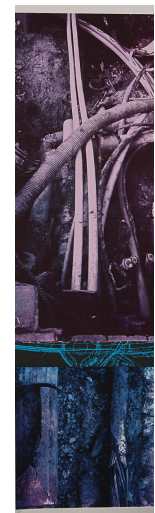


Urban Soils

Soil function are different from rural areas



Different constraints than in rural areas



Urban Design

social, community, economic, environmental, heritage... like function of soils

The knowledge obtained from experiments carried out during the design and implementation of urban projects will contribute to the adaptation of existing governance tools and the development of new methods for preserving and rehabilitating the ecosystem services produced by urban soils in a holistic and focused approach.

Thank you for your attention