



# Vulnerabilities and sounds Vulnerabilities vs environment

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# Winter School CRESSON

**22/01/2021 – Vulnerability & environment**

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PhD student CNRS AAU équipe CRESSON + CIFRE convention in LASA (acoustic engineering office)



## **Thesis subject**

Housing design through sonic experiments.

1.1 scale prototype experimentation of cooperative living through listening.

# Thesis – Location : Macro-lot B – ZAC Gratte-Ciel, Villeurbanne (69) near Lyon.



Vue aérienne du projet Gratte-ciel "Centre-ville"

# Thesis – Environment : Urban agriculture



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## **Vulnerability & environment**

## **Vulnerability & Environment through urban agriculture**

- How has the pandemic changed our knowledge and definition of our daily sound environment ?
  - Individual / shared
  - Times and spaces
  - Interiority/exteriority

Focus on the local perception.

## **Vulnerability & Environment, pandemic/daily sound environment.**

- How has the pandemic changed our knowledge and definition of our daily sound environment ?
  - Individual / shared
  - Times and spaces
  - Interiority/exteriority

Focus on the local perception.

- A quieter sound environment : less mechanical sounds and more interiorities

**What can we learn from these new everyday sound environments?**

**What do we want to keep for tomorrow's sounds ?**

**How do we listen to our environment and housing, and how do we use post-carbon urbanity to make a collective commitment to the environmental ambitions of a sustainable city ?**

## Vulnerability & Environment through urban agriculture

- Local priorities :
    - social interactions
    - Access to nature : can the lack of access to nature in our dense cities then be considered as a collective vulnerability ?
      - Nature in the city by the act of doing
      - Urban agriculture
        - How can it offer access to new atmospheres, to a quality of life in a reorganized city (socially, spatially, economically and from an environmental point of view) ? What impacts can urban agriculture have on the senses and our understanding of our living spaces ?
- How will spatial, temporal and sound relations be articulated between urban dwellers and potageurs ?

## **Sound recordings of urban agricultural sites**

## Corpus : Urban agriculture - Protocole

- Calibrate the sound level meter
- Check the time stamp of the recorder ZOOM
- Launch the two devices for at least 1 hour in a fixed position and start with one or more sound claps to adjust the timeline.
- Record information and appearances of sonic events :
  - Materials
  - Plant essences
  - Animal species
  - Special sonic events
- Take photos, videos and aerial view with GPS position



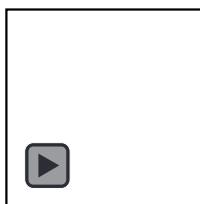
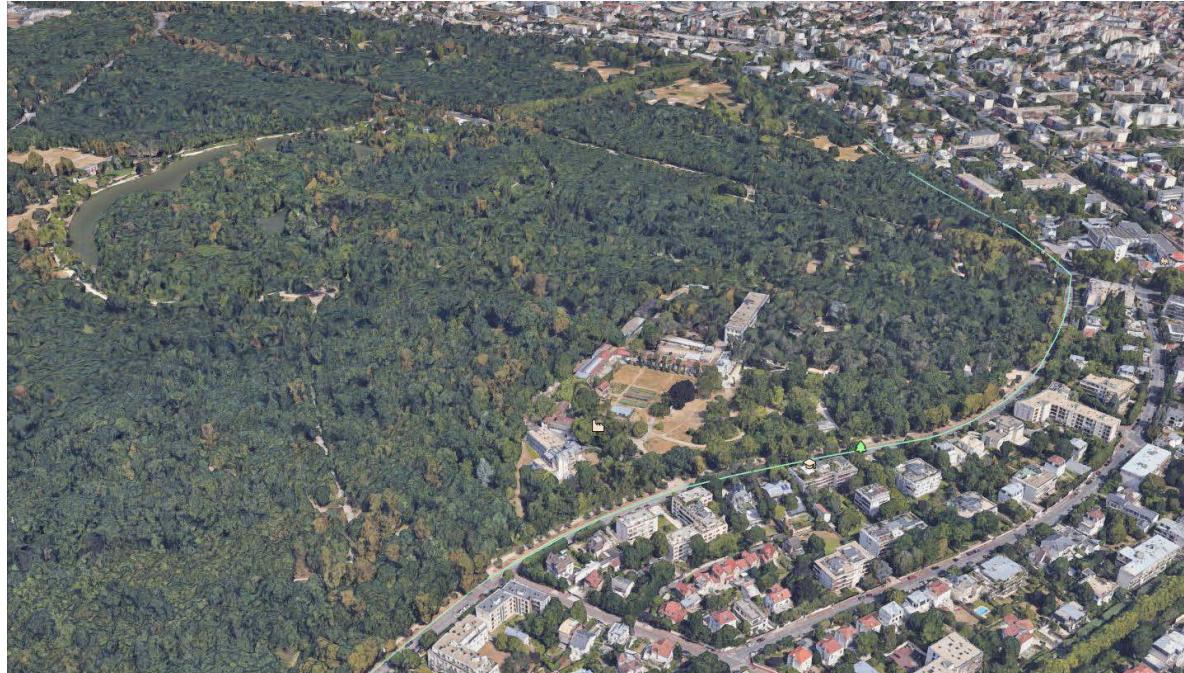
## Corpus : Urban agriculture, Opéra Bastille, Paris 12



## Corpus : Urban agriculture, Swimming pool rooftop, Paris 11



## Corpus : Urban agriculture : V'île fertile, Nogent/Bois de Vincennes



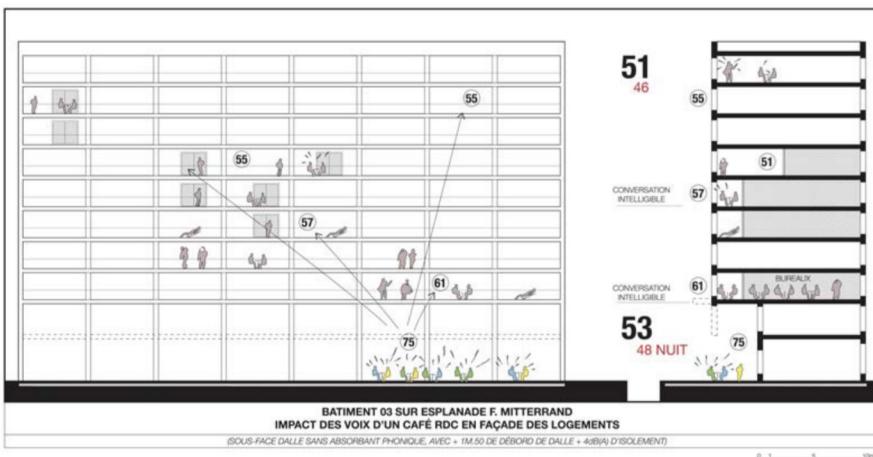
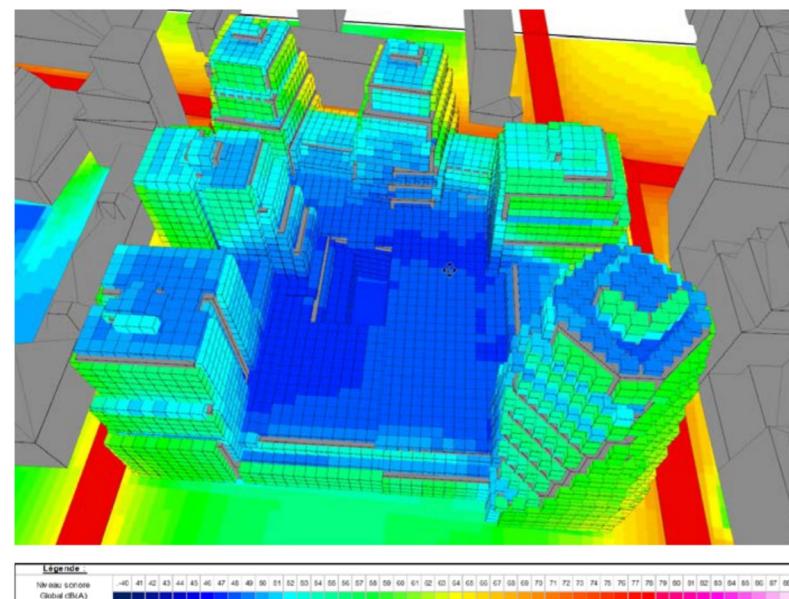
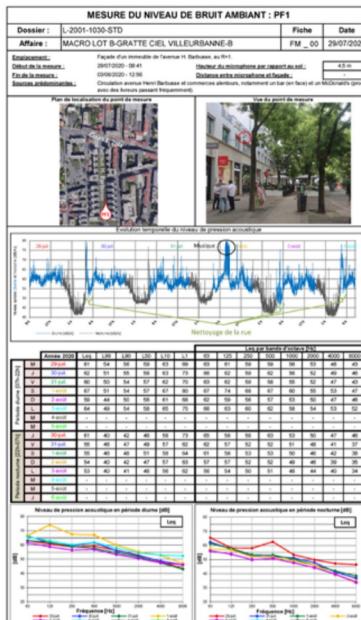
## **Questions on Vulnerability & environment**

## Questions

- How is urban agriculture going to develop as a tool to overcome a sense of environmental vulnerability in dense cities ?
- Can biodiversity be heard within urban agriculture? Can birds find a place and how ?
- How can sound interactions between urban agriculture and housing be established ? Legal regulations, specifications, planning of uses ?
- What new places of exchange and what social practices does urban agriculture bring to the scale of a building ? How will the sound ambiances be composed?
- How can future inhabitants be made to listen to their sound environment of which urban agriculture will be a component ?

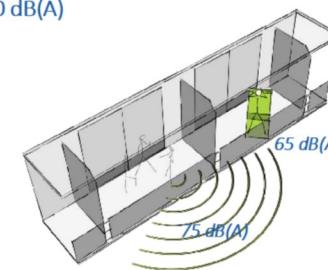
## **Paths of use of the recordings in the thesis**

## Interpret and listen sound events

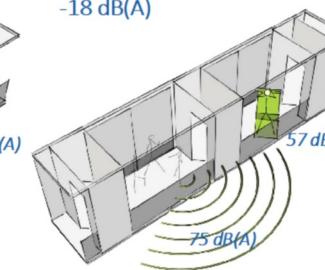


Cas courant avec pare vue standard  
Atténuation entre loggias :  
- 10 dB(A)

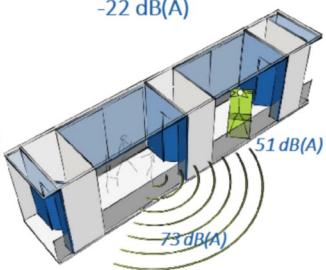
- 10 dB(A)



## Optimisation 1: Séparatifs complets avec rangements -18 dB(A)

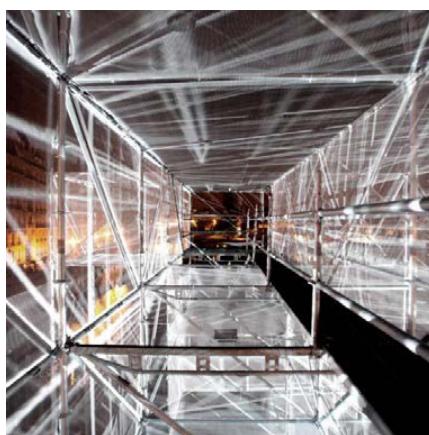
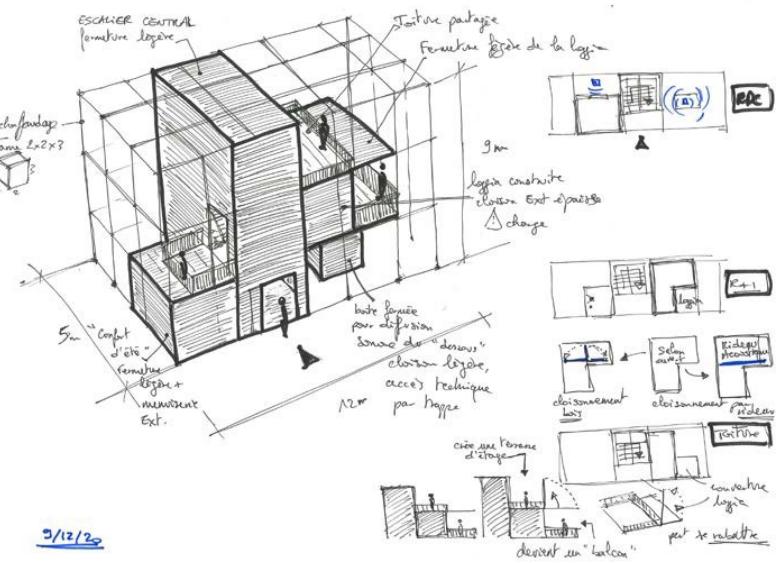
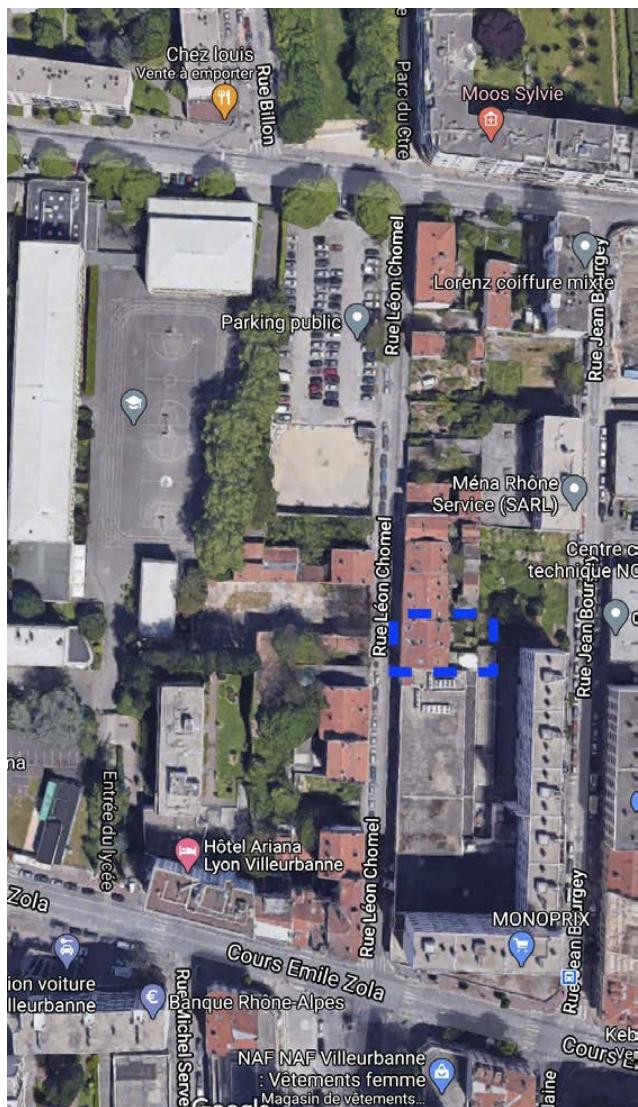


Optimisation 2:  
Séparatifs complet avec absorbant  
-22 dB(A)



Revêtement absorbant

# Experiment



## Corpus : Urban agriculture – Ilot le Belvédère, Paris 19

