



BatLight District Project



Introduction

Genesis of the project: Initiative of the Municipality of Jette 2020, Sibelga invites partners



Projects:
Rouge Cloitre +
Drève St Hubert



Brainstorming

Long-term placement of batloggers:

- Never done
- Access data
- Multidisciplinary teams

- Collaboration
- impact measurement before / after
- textbook case of reference

Not identify "**amphibian**" black spots,
Attention bats.

Extension / Expected / Objective

In terms of content:

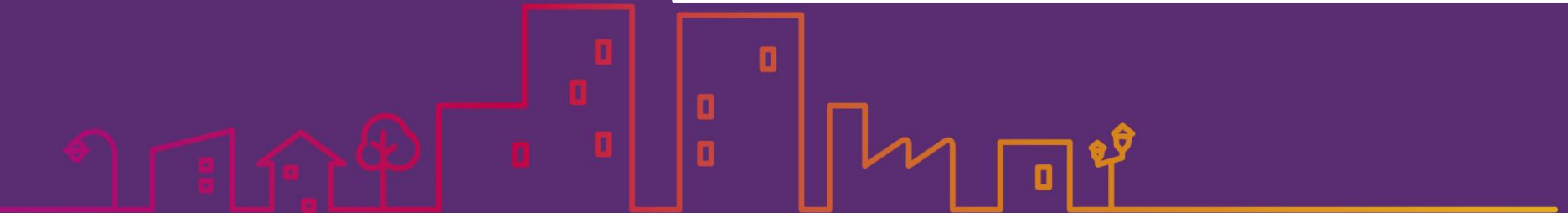
- A "test case" communication
- Input "black mesh" specifications BE
- Input "urban planning light regulations, in addition RRU

In terms of participants:

- Integration - Brussels-Mobility
- extend to private individuals (sports fields, hospital, shopkeepers)
- Lighting Designers

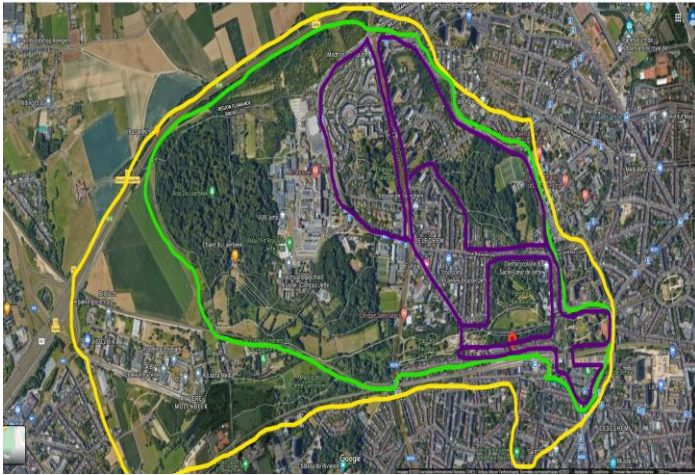
In terms of objective:

- Tests and measure impact of different types of lighting (behaviour bats)
- Testing new technologies
- Identify the most suitable solutions for biodiversity, reducing light pollution



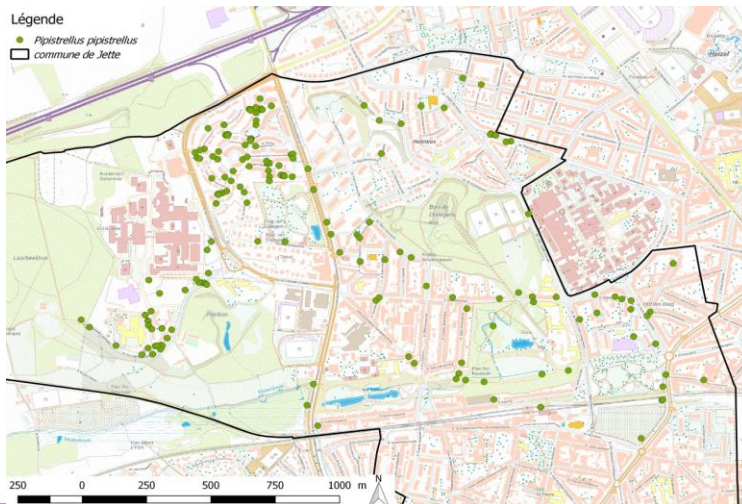
First steps:

1. Define a study scope



2. Start a bicycle transect to identify areas of preponderant bat presence

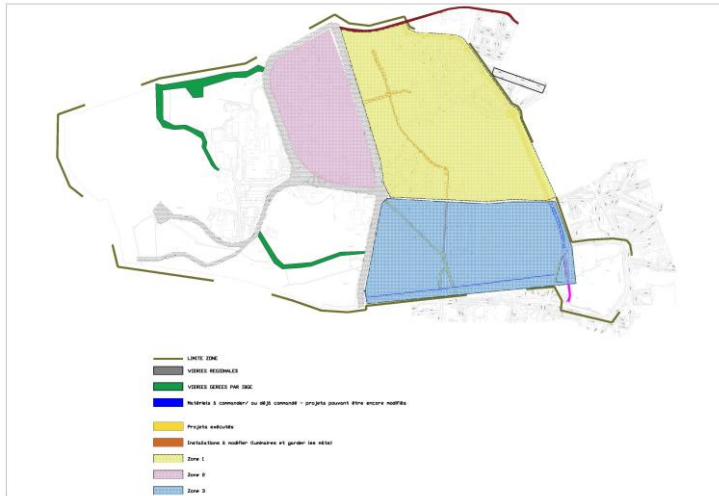
Premier Transect Natagora 04/09/2020



Listening points

- Point 1 20h40 : 2 contacts de pipistrellus pipistrellus
- Point 2 20h52 : 3 contacts de pipistrellus pipistrellus
- Point 3 21h05 : 0 contact
- Point 4 21h17 : 21 contacts de pipistrellus pipistrellus
- Point 5 21h33 : 10 contacts de pipistrellus pipistrellus
- Point 6 21h45: 4 contacts of pipistrellus pipistrellus and 1 contact of Eptesicus serotinus
- Point 7 22h00 : 30 contacts de pipistrellus pipistrellus
- Point 8 22h15 : 7 contacts de pipistrellus pipistrellus
- Point 9 22h25 : 19 contacts de pipistrellus pipistrellus

3. Analyze and Edit a map with the planned years of lighting renewal in the scope of the study



Zone 1 : Zone Nord

- Clos Jecta
- Avenue Jaak Pieter Ballings
- Rue Maurice Van Rollegem
- Rue de l'Abbaye de Dieleghem
- Rue Edouard De Grijsse
- Avenue Joseph De Heyn
- Rond-Point de la Cité-Jardin
- Avenue Jean Joseph Crocq
- Rue Eugène De Smet
- Rue Remy Soetens
- Rue Eugène Toussaint
- Rue Jean Baudouc
- Clos Joseph Otten
- Avenue Capart
- Avenue du Heymbosch
- Clos Fernand Tonnet
- Avenue Van Engeland
- Avenue de l'Arbre Ballon
- Avenue Swartenbroock
- Clos't Jaegerke
- Rue Jean Tiebackx
- Avenue Henri Liebrecht
- Rue Bonaventure
- Rue Alex Wouters
- Rue Joseph Schuermans
- Rue Guillaume Bellien
- Rue Jean Baptise Moyens

Zone 2 : Zone Sud

- Chemin du Parc de la Jeunesse
- Rue Antoine Baeck
- Avenue de l'Exposition
- Rue Valère Broekaert
- Rue Decrée
- Chaussée de Dieleghem
- Rue Frédéric Mohrfeld
- Rue Fernande Volral
- Rue Dupré
- Square Jules Lorge
- Avenue du Sacré Coeur
- Avenue Secrétin

Zone 3 : Quartier Jardins de Jette

- Drève de Dueleghem
- Avenue du Bourgm. Et. Demunter
- Rue Audrey Hepburn
- Square James Dean
- Clos Laurence Olivier
- Av. Du Bourgmestre J. Neybergh
- Chemin Alfred Hitchcock
- Avenue J. Verdoodt
- Champ de Tilleul
- Rue Charlie Chaplin
- Place Jean Gabin
- Rue Marlène Dietrich
- Promenade Jacques Ledoux
- Passage Stan Laurel
- Clos Marilyn Monroe
- Clos Ingrid Bergman
- Clos Tom et Jerry
- Clos des Frères Lumière
- Passage Yves Montand
- Passage Olivier Hardy
- Place du Bourmestre J-L Thys

4. Make a renewal schedule with funding possibilities

Project portfolio 2020-2025

Roads are more than 20 years old Meet the investment criteria.

N° SAP	Commune	Rue/Avenue	Localisation	Réalisation prévue
2000161329	JET	RUE	JOSEPH LOOSSENS	en attente de la suite du réaménagement
2000161991	JET	RUE	HENRI HUYBREGHTS	2023
2000161992	JET	RUE	GASTON BIERNAUX	2023
2000162005	JET	AVENUE	ODON WARLAND	2023
2000162283	JET	AVENUE	HENRI LIEBRECHT	2023
2000160536	JET	AVENUE	LEON THEODOR	2023
2000160596	JET	AVENUE	SECRETIN	2023-2024

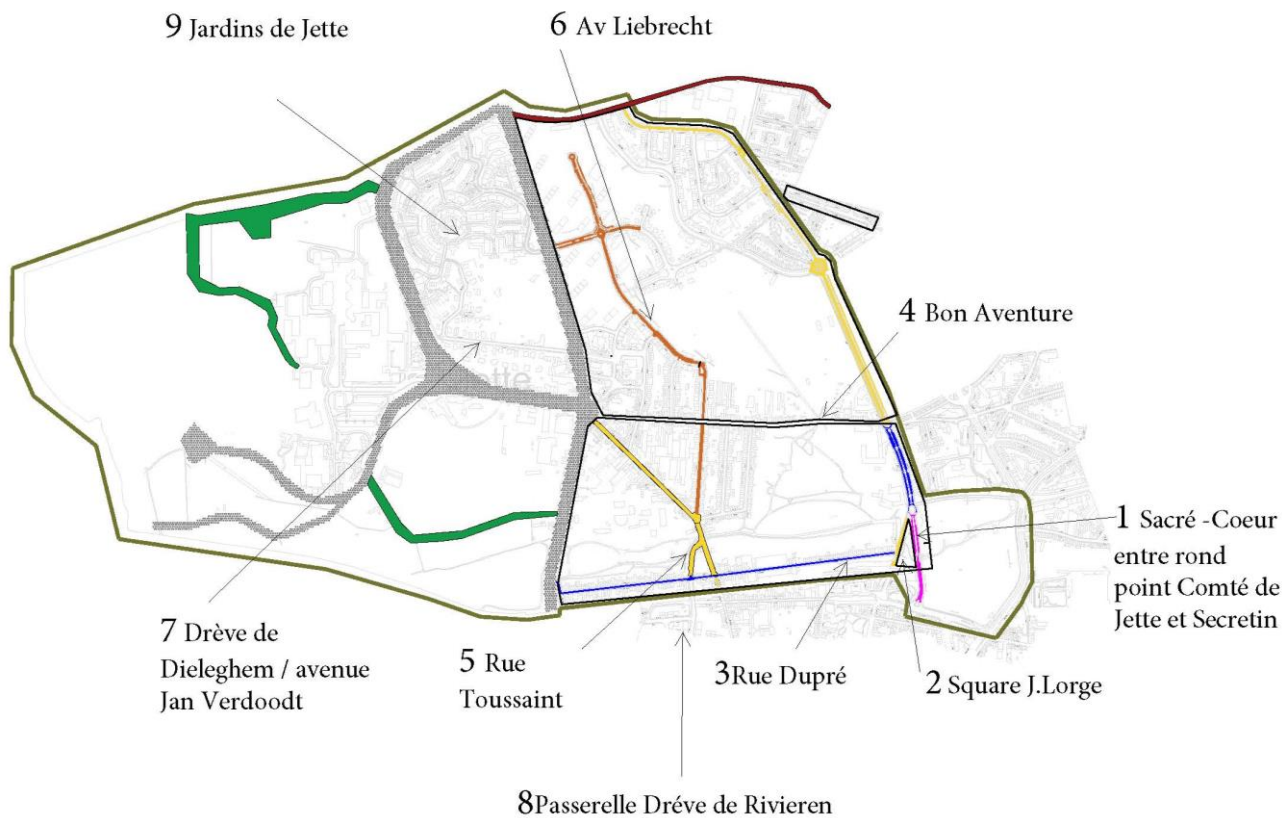


CHOICE OF TECHNOLOGIES

The regulation / choice of lighting:

- **Photometric distribution** : (more intensive, more extensive, +/- controlled, ...)
- **The spectrum of the source** : either fixed (example: warm white or "bat red") or variable (cf. Flexwhite at Schröder)
- **Intensity** : light power, variability over time - Dimming Via ISL (remotely controlled lighting)
- Solutions with **presence detectors** : (PIR Technology) or Light Bubbles
- Creation of **Dark Areas** not to be illuminated (Laerbeek Wood, Natura 2000 areas...)



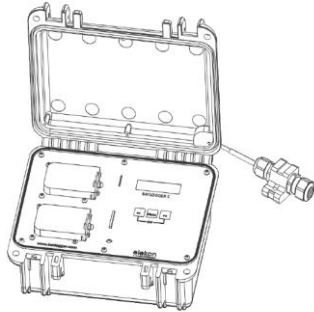


Technological choices:

- 1- Amber Light with dimming
- 2- Orange filter
- 3- Low levels (Work on photometry) and Dimming
- 4- Orange filter
- 5- Orange filter + Work on photometry
- 6- Red Light
- 7- Temperature change (2700K to 2200K) + presence detection
- 8- Work on lighting (Different temperatures and colors) + Presence detection
- 9 – Non-dimmed regime (In the future: Temperature change)



RECORDING BAT BEHAVIOUR:

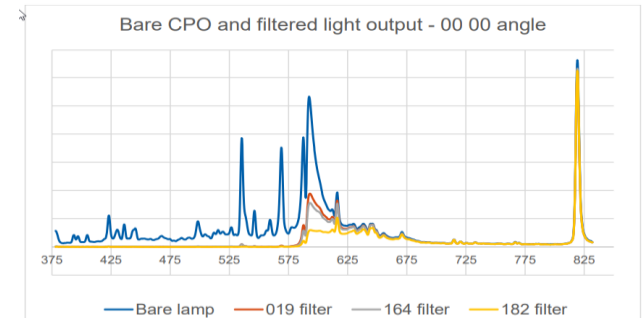


FILTER SELECTION AND PLACEMENT

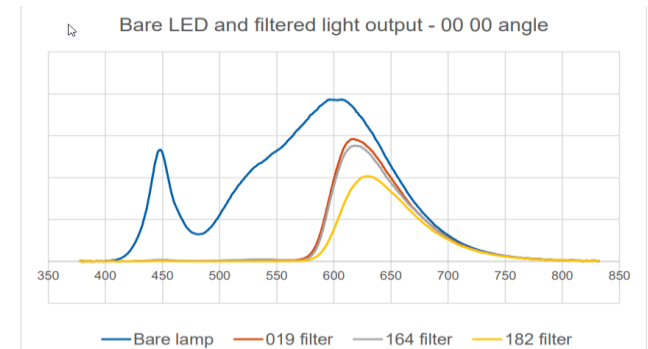
Order Gelatins (Color Filters):
 (2X Code 182+2 X Code 164+1 X Code 019)



Photographie du luminaire LED avec filtre 019



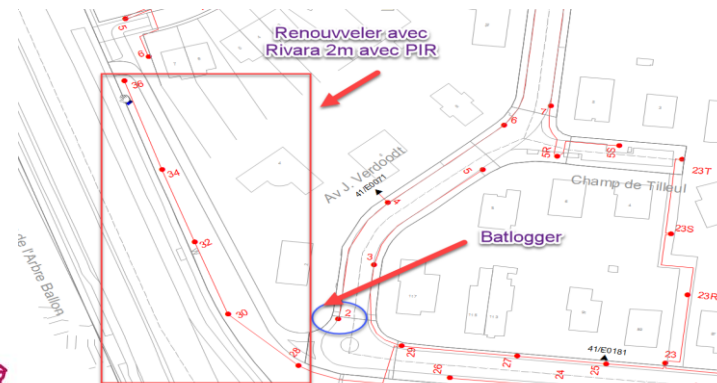
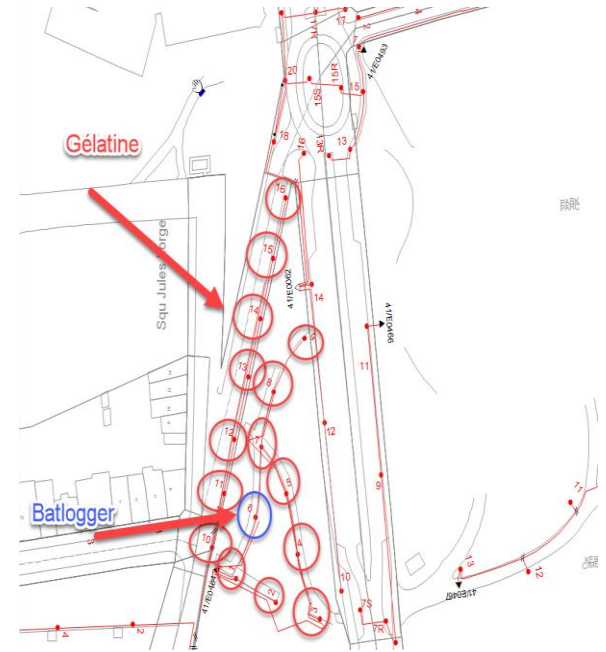
Photographie du luminaire traditionnel avec filtre 019



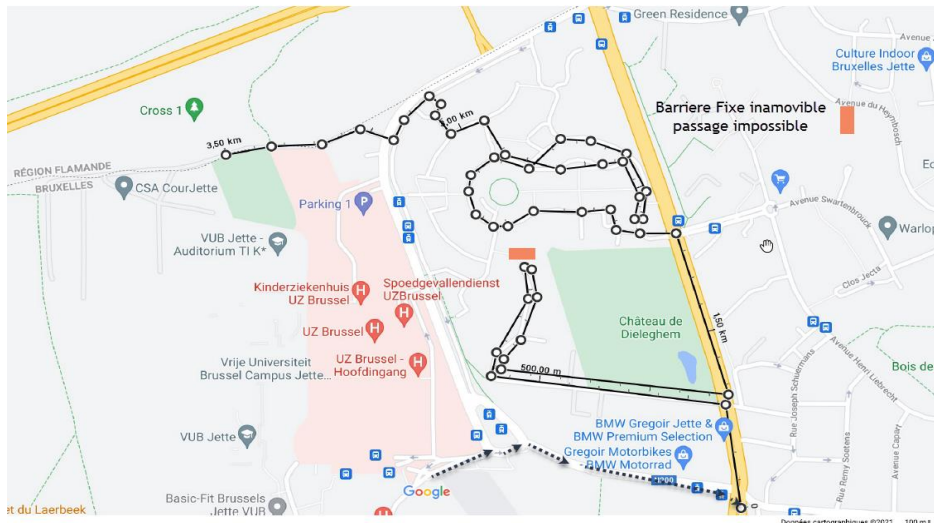
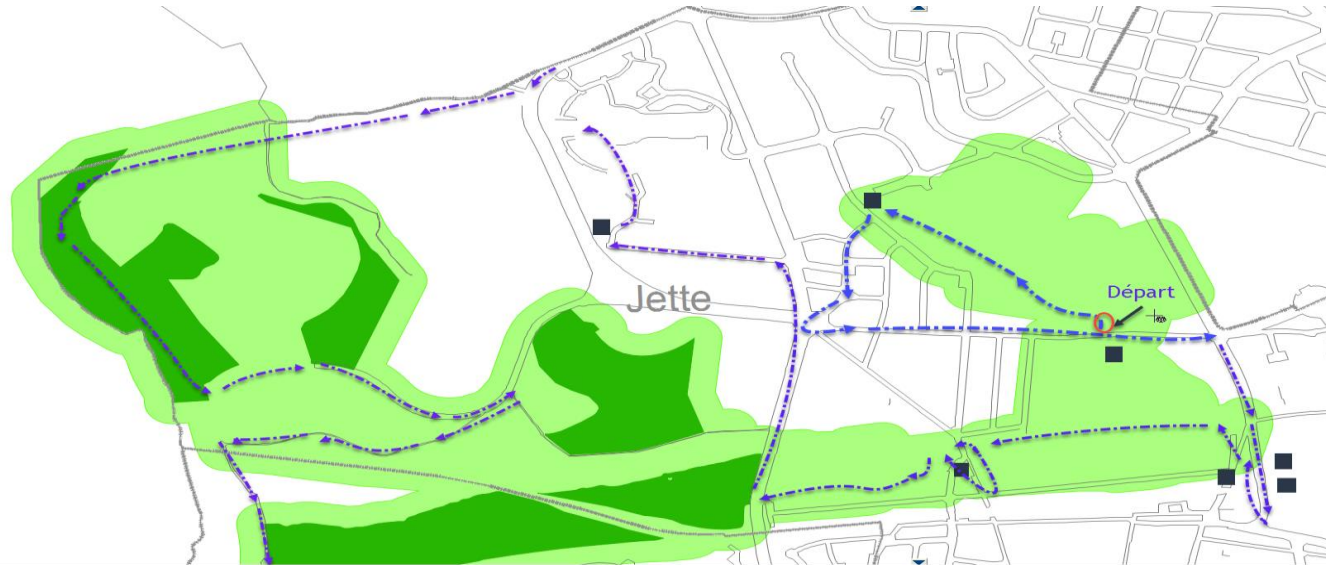
LOCATION OF THE BATLOGGER AND SURVEY OF THE ROUTE:



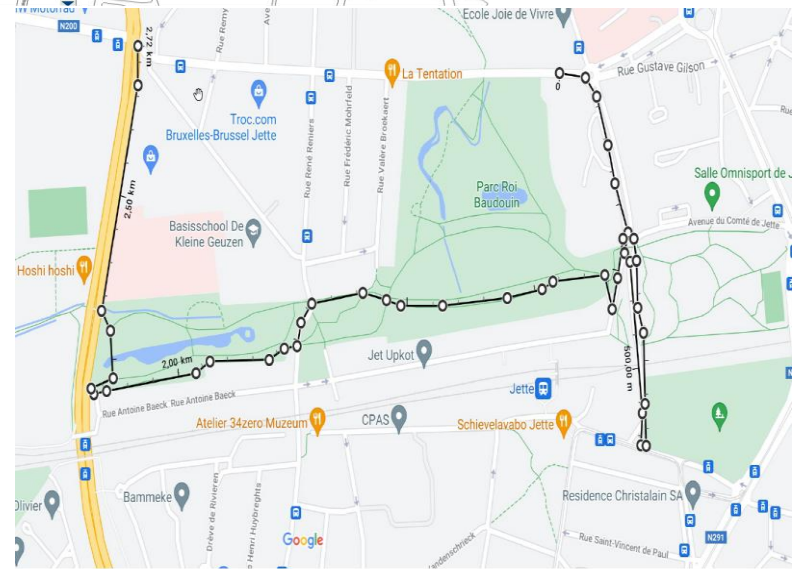
*Square Lorge
Sacré cœur
Toussaint
Liebrecht
Bon Aventure
Verdoodt*



MEASUREMENT CIRCUIT WITH LABORELEC VEHICLE



Mesurer une distance
Distance totale : 3,50 km (2,17 mi)



Mesurer une distance
Distance totale : 2,72 km (1,69 mi)

Measurement Companion with Dynamic Lighting Assessment (#DYLA)

Bat migration from Sep/Oct to March
Resumption of measures in May/June

Measurement Campaigns:2021

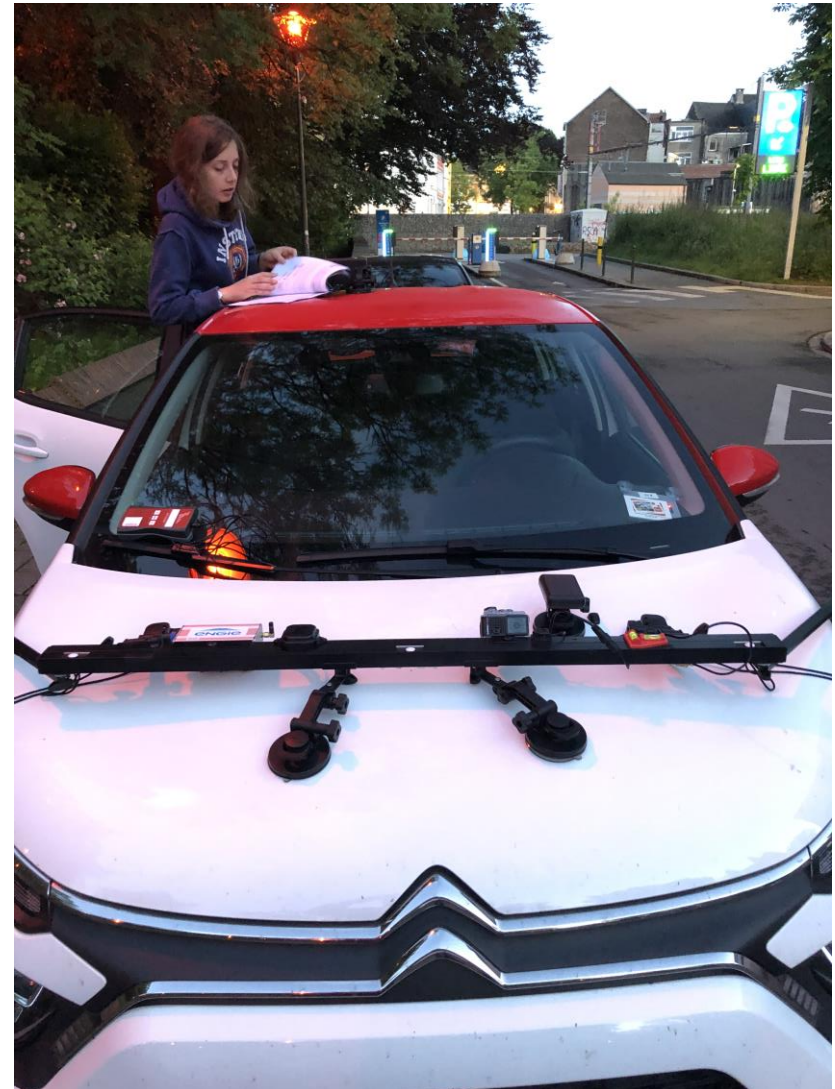
- 1 Dynamic measurement on 10/6/21 at 19:30
- 2 Dynamic measurement on 12/08/21 at 22:30
- 3 Dynamic measurement on 27/09/21 at 21:30

Measurement Campaigns:2022

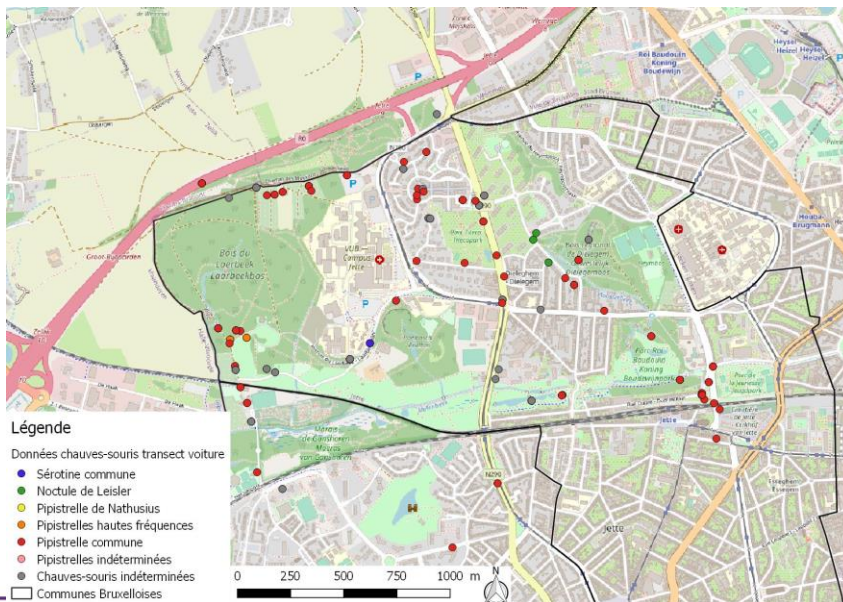
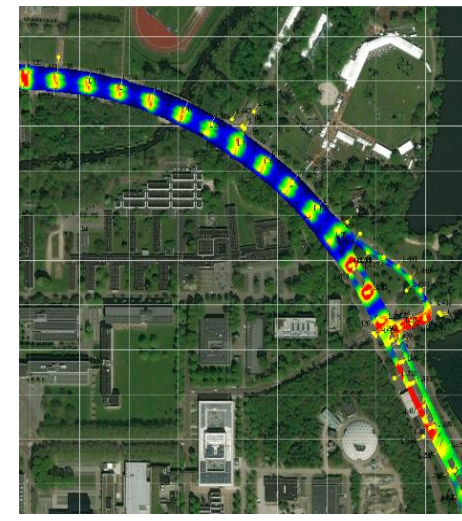
- 1 Dynamic measurement on 07/6/22 at 19:30
- 2 Dynamic measurements on 25/08/22 at 22:30
- 3 Dynamic measurements on 05/10/22 at 21:30

Measurement Campaigns:2023

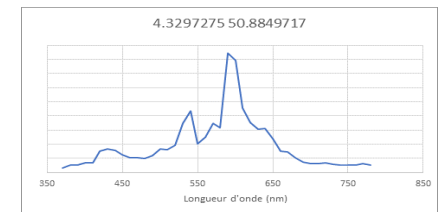
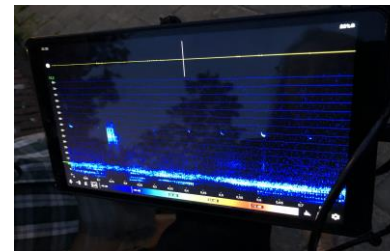
- 1 Dynamic measurement on 12/6/23 at 19:30
- 2 Dynamic measurement on 09/08/23 at 22:30
- 3 Dynamic measurement on 05/10/23 at 21:30



Measurements with special vehicle for illumination mapping in 3D modeling (add batlogger in vehicle) spectral analysis of devices



Example of spectral data related to GPS coordinates :



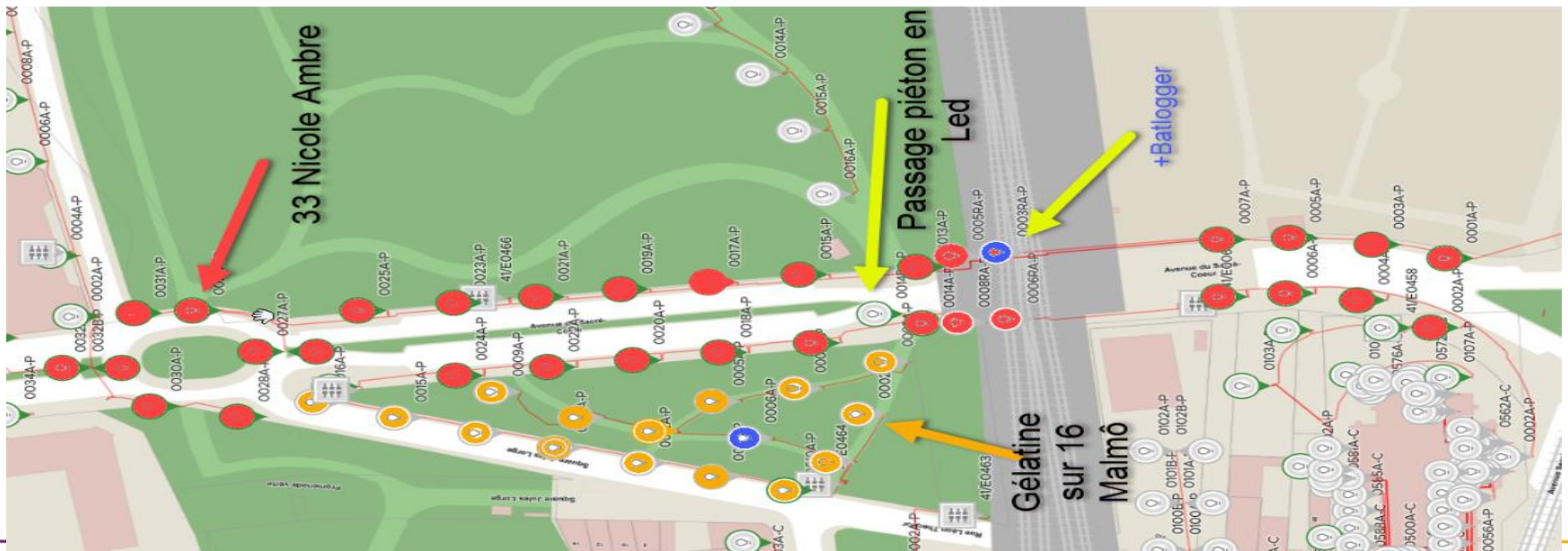
Sibelga works 2021:

1. Dupré / 2. Baeck / 3. Dieleghem (Pose)

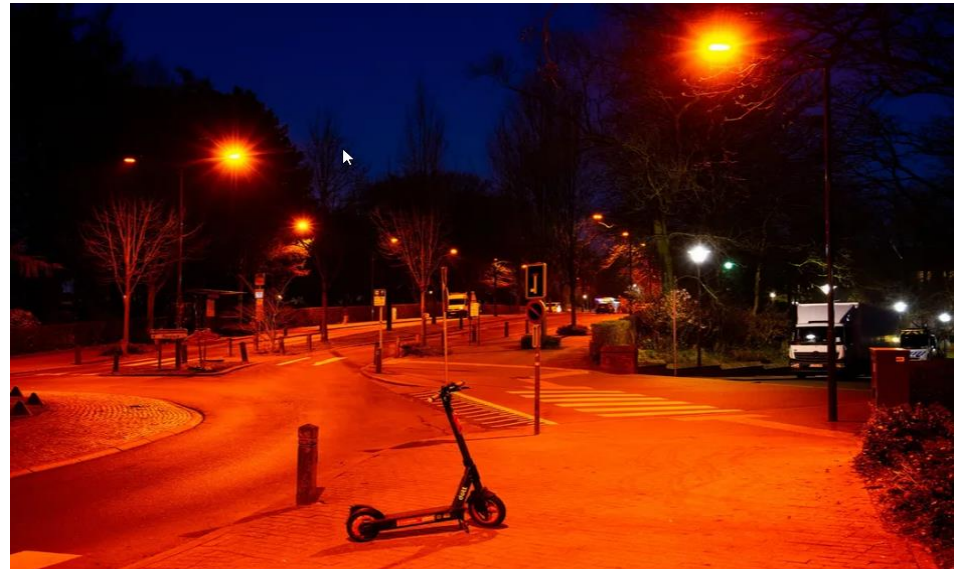


Sibelga projects completed 2021-2022

1. Sacré Cœur (Nicole Batlamp Ambre) 2021 / 2. Travaux Pont Sacré – Cœur 2022



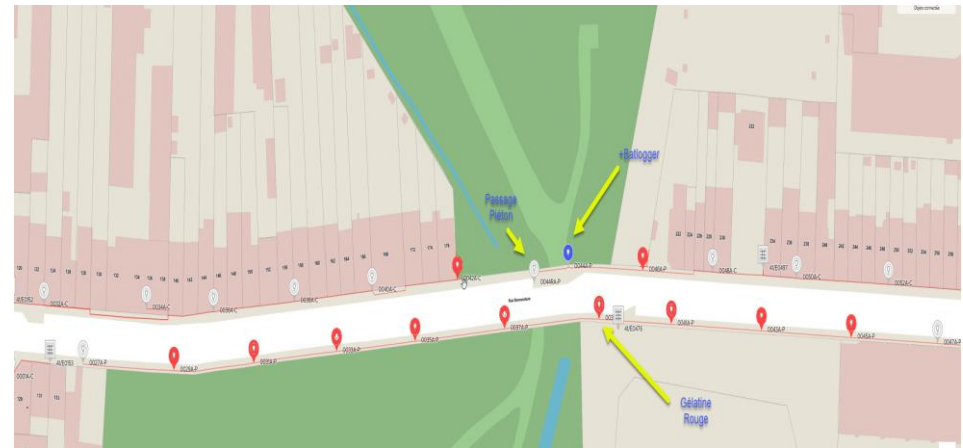
Work on the avenue and the Sacré-Coeur Bridge



3. Orange filter on Malmô Square Lorge



4. Orange filter on Tempore Bon Aventure Street

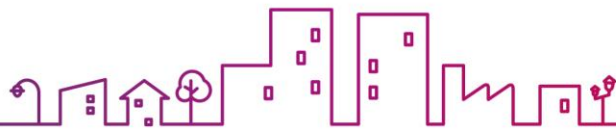


Projects completed in 2022

5. Intervention on Avenue H.Liebrecht: Celso Red Replacement of 7 luminaries - Jan 22

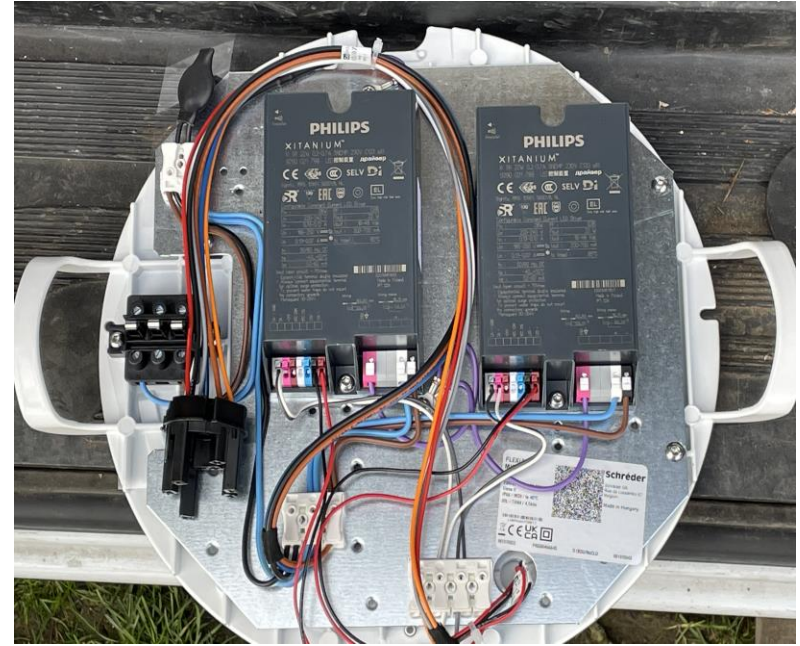


M3	C3	M3	C3	M3
Celso 3000K	Red 4020lm	Red 4020lm	Red 6000lm	Red 6000lm
	14,76		22,03	
	0,51		0,51	
1,24		1,02		1,53
0,55		0,37		0,37
0,6		0,38		0,38
9		6		7
0,41		0,24		0,24



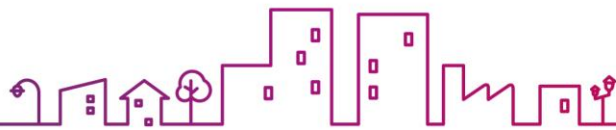
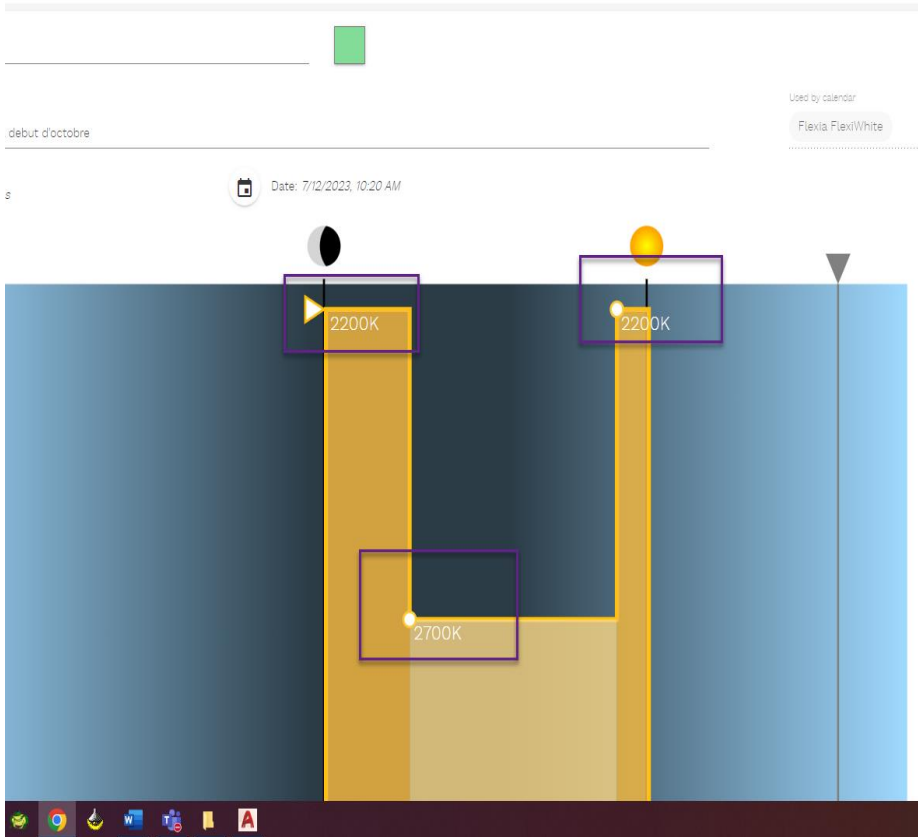
6. Rue Verdoodt + Drève de Dieleghem (Flexia luminaire)



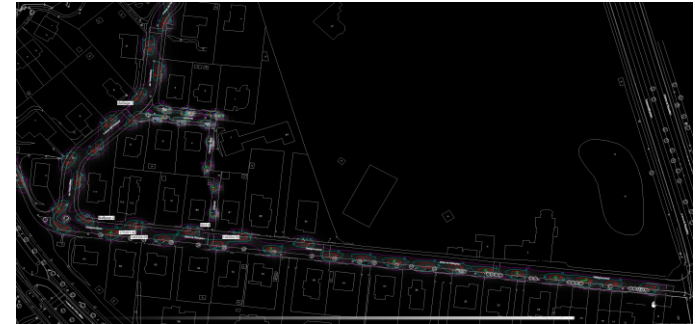


6. Rue Verdoodt + Drève de Dieleghem

T° Change Solution
2200K-2700K
+ Dimming Scénari

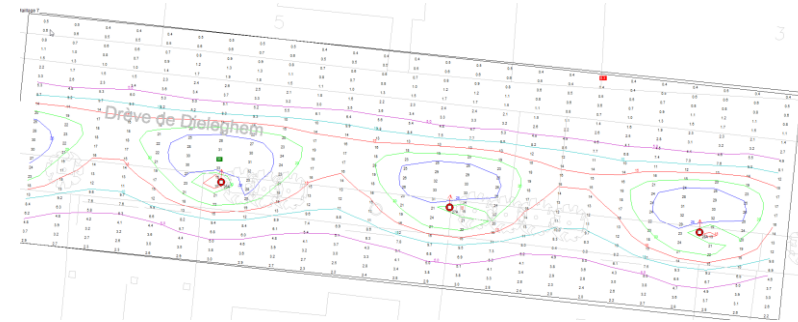


Comparison Photometric studies Change of road class



2700 k

Emoy	= 9.76
Emin	= 0.34
E _{max}	= 34.55
Emin/E _{max}	= 0.01
Emin/Emoy	= 0.03



2200 k

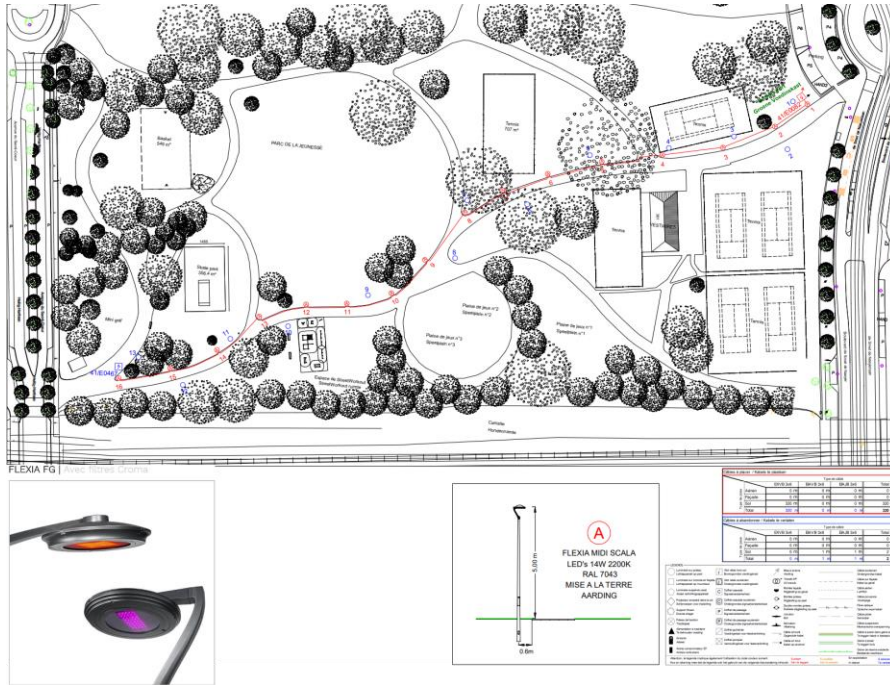
Emoy	= 5.64
Emin	= 0.20
E _{max}	= 21.60
Emin/E _{max}	= 0.01
Emin/Emoy	= 0.03

7. Solution with PIR "presence detection" With Rivara



Projects Sibelga 2023

8- Parc de la Jeunesse Flexia Midi 2200k



FLEXIA | Midi | Console Sofa

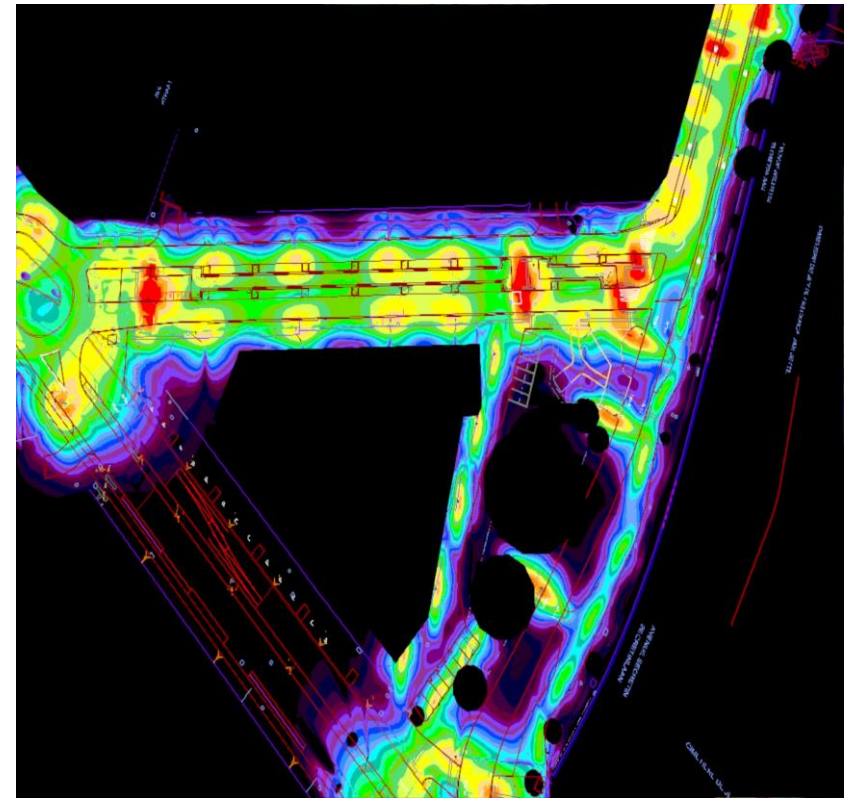


FLEXIA | Midi | Console Evens



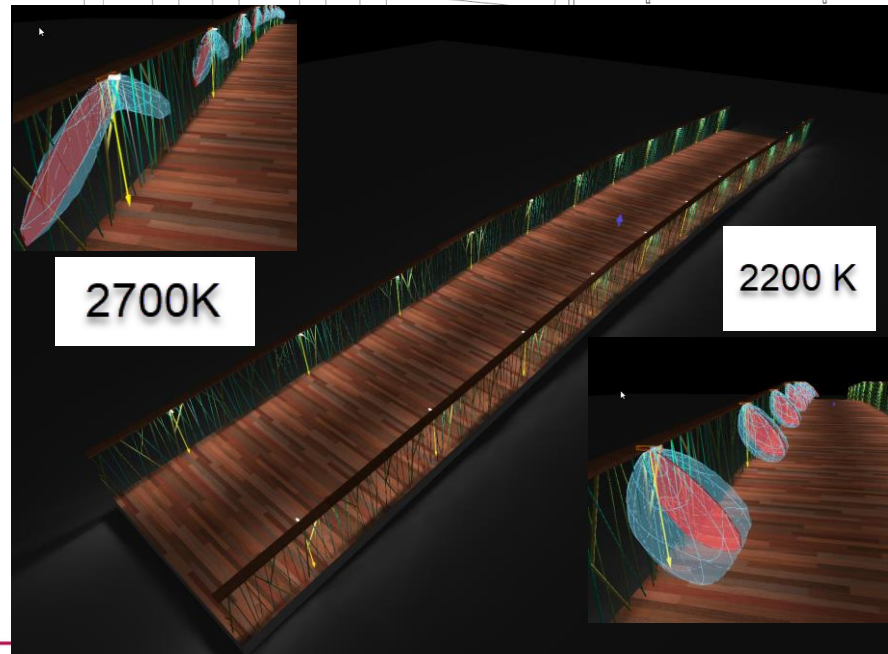
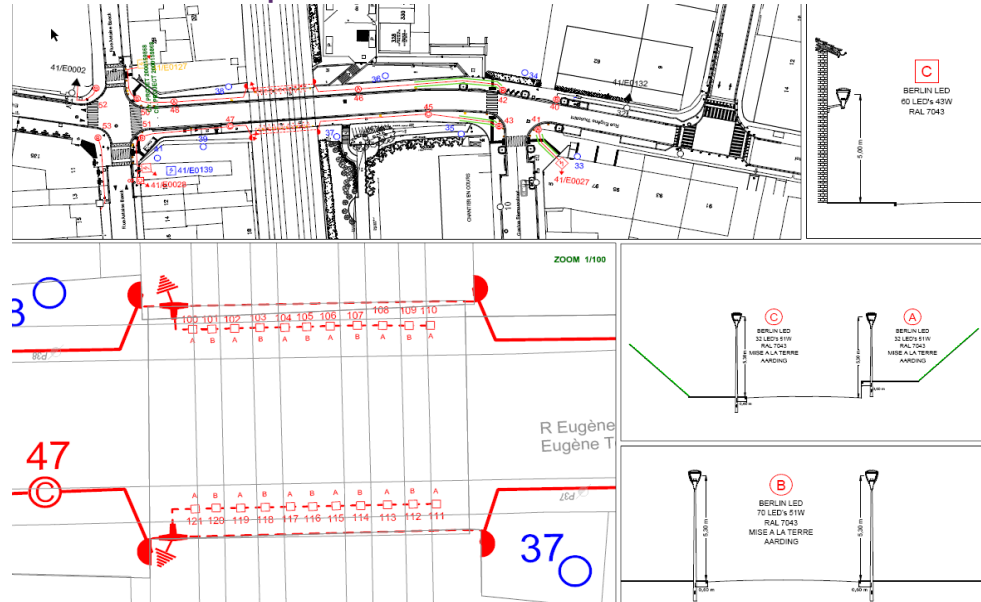
9. Project Secretin Démineur 2022-2023-2024

Mixte Flexia FG Midi (2200k+2700k)
+Hestia 3000k



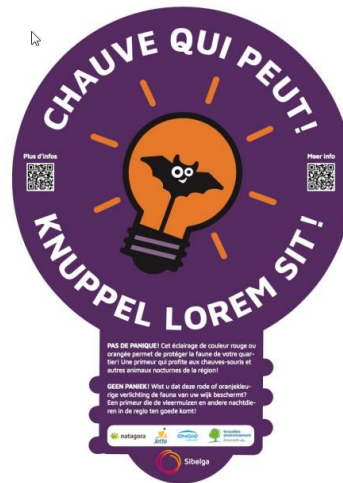
10. Taking into account the installations around the perimeter (Bridge + Toussaint Footbridge) 2023

Modification of the Toussaint Project (continued redevelopment)



Communication

Stickers on poles + QR code



Participatory support of the Star Mesh experience by Radiance 35

Participatory and pedagogical processes

Data analysis process

Test « grandeur nature » in situ



Marche Plan Lumière de Saint-Gilles, R35, février, 2021



Atelier Optimalux, Plan ombre et Lumière, Carouge, R35, novembre 2022

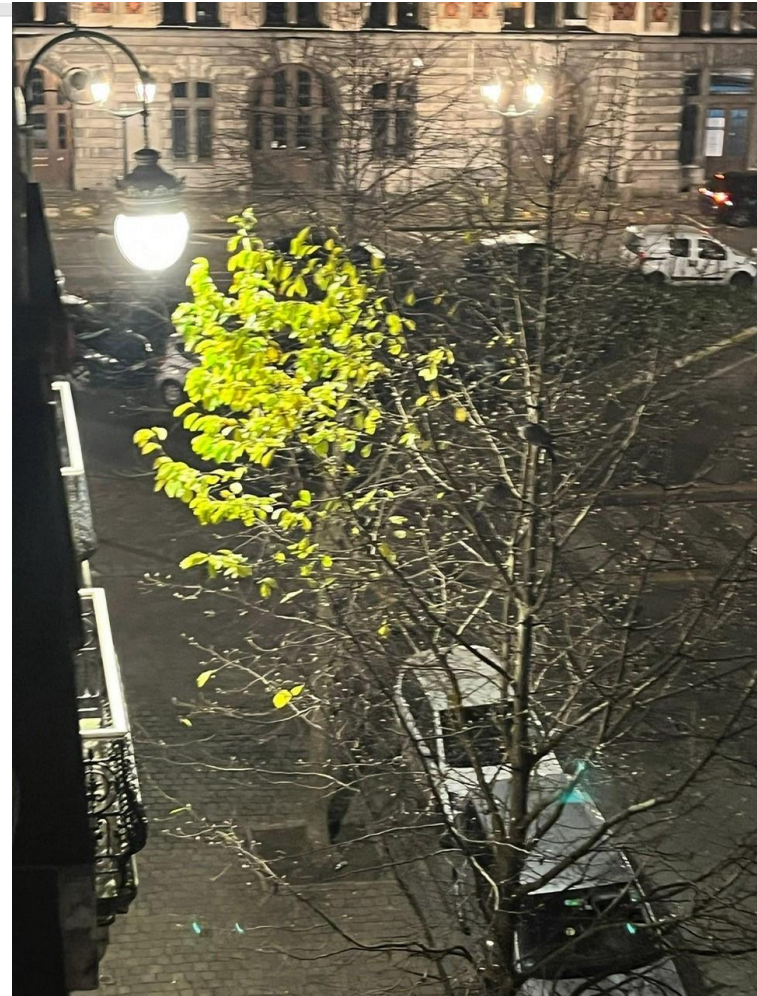
<https://www.bruzz.be/milieu/bat-light-district-jette->

<https://www.laminutesauvage.be/>

Perspectives.....

Belgium for
Biodiversity (B4B)
project

LIFE SNAP grant
application





Sibelga

**Merci pour
votre attention**

**Thank You for
Your Intention**

**Bedankt voor
uw aandacht**

