

feelcity : Clever data acquisition for liveable cities



Prof. Reto Camponovo

head of the laboratory for energy environment and architecture

University of Applied Sciences and Arts Western Switzerland

Observation

Trend : ...*Everything has to be «Smart», the same goes for Cities*

Our proposed analysis

- Cities can not be smart because they have no brains
- Cities are the mirror of the intelligence of their urban planners and the authorities
- Urban planners need better city climate knowledge to build livable and sustainable cities
- IT technologies are a tools that can contribute to improve this knowledge but alone they are not enough

Two different way

1) Most trendy (**quantitative approach**)

Quick analysis of instant collected data to find a better individual compromise (eg. itinerary adaptation to prevent polluted streets, traffic obstruction, displacement optimization, ...)

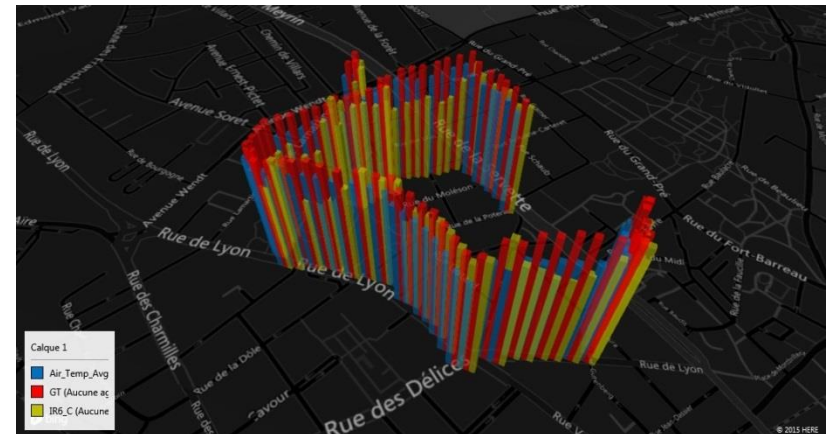
➔ Improves daily but does not build sustainable cities



2) Most sustainable **(quantitative & qualitative approach)**

True analysis of collected data coupled with real-time images to establish physical phenomena correlations with the immediate environment of a pedestrian. This enables authorities and urban planners to develop reliable planning projects to improve the quality of the city in a sustainable approach.

➔ transforms the city sustainably for the benefit of all inhabitants



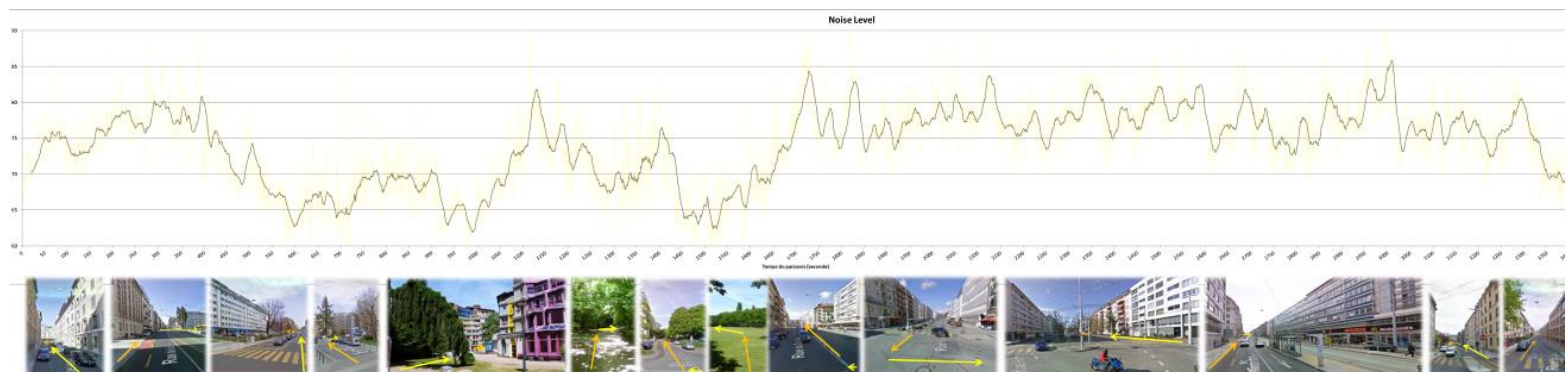
feelcity project follows the 2nd way

The aim of the project is to act sustainably on mitigation of climate change in the city by increasing the knowledge for urban planning.



dessin : Jana Milošovičová, 2010.

Authorities and urban planners need new planning tools for the transition towards sustainable and liveable cities, and to target public investments.



graphiques : leea // hepia, 2015

feelcity in short

Fisheye 360° camcorder mounted on 2 axis stabilisator



5 directional IR-sensor (front, rear, left, right, top)

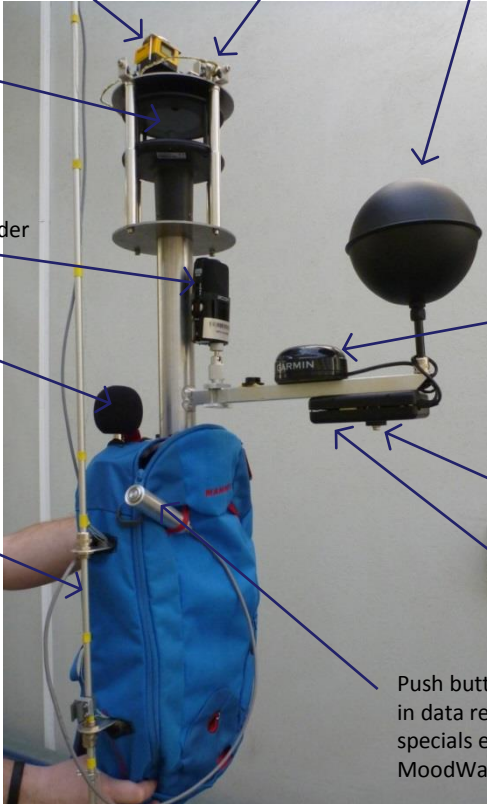
Globe temperature (mean radiant temp.)

Wind speed and direction (sonic anemometer)

Four direction sound recorder (front/rear, left/right)

sound level recorder

Vertical stem equipped with 6 thermocouples



GPS

1 directional (bottom) IR-sensor

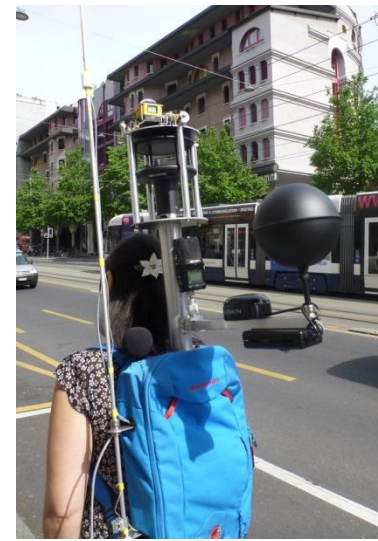
1 Raspi camera (bottom)

Push button to set a flags in data recording to mark specials events during MoodWalk

In the backpack :

- Campbell CR-6 logger
- Arduino
- Li-Ion battery

- inertial platform (gyro)
- ventilated air temp. and humidity
- O₃, NO_x and PM10 sensors (connected to external air duct)



The equipment is easily deployed on streets, squares and other public places at a pedestrian level during a « climatic urban walk » that can be reproduced at different times of the day or seasons so to yield a dynamic view of the climatic quality of a portion of the city.



Creating a «feelcity» network of cities

The measurement equipment is available to public and academic partners who are interested in contributing and sharing case studies through monitored situations related to urban climatic design of public spaces and new projects..

We want to create a network of cities to share and improve the knowledge

Join the project, contact

reto.camponovo@hesge.ch





Thanks for your attention ...

Oslo (N), 21/08/2014
59°54'54.15"N 10°44'03.44"

Picture : Reto Camponovo