The Green Office Model in Italy: Terracini in Transizione and UniTo Green Office

Enabling student-driven change towards sustainability through the Green Office model

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ISCN Conference, Siena

14th of June 2016

Terracini in Transizione

Università di Torino

energia

cibo

rifiuti

mobilità

acquisti ecologici

UniToGO

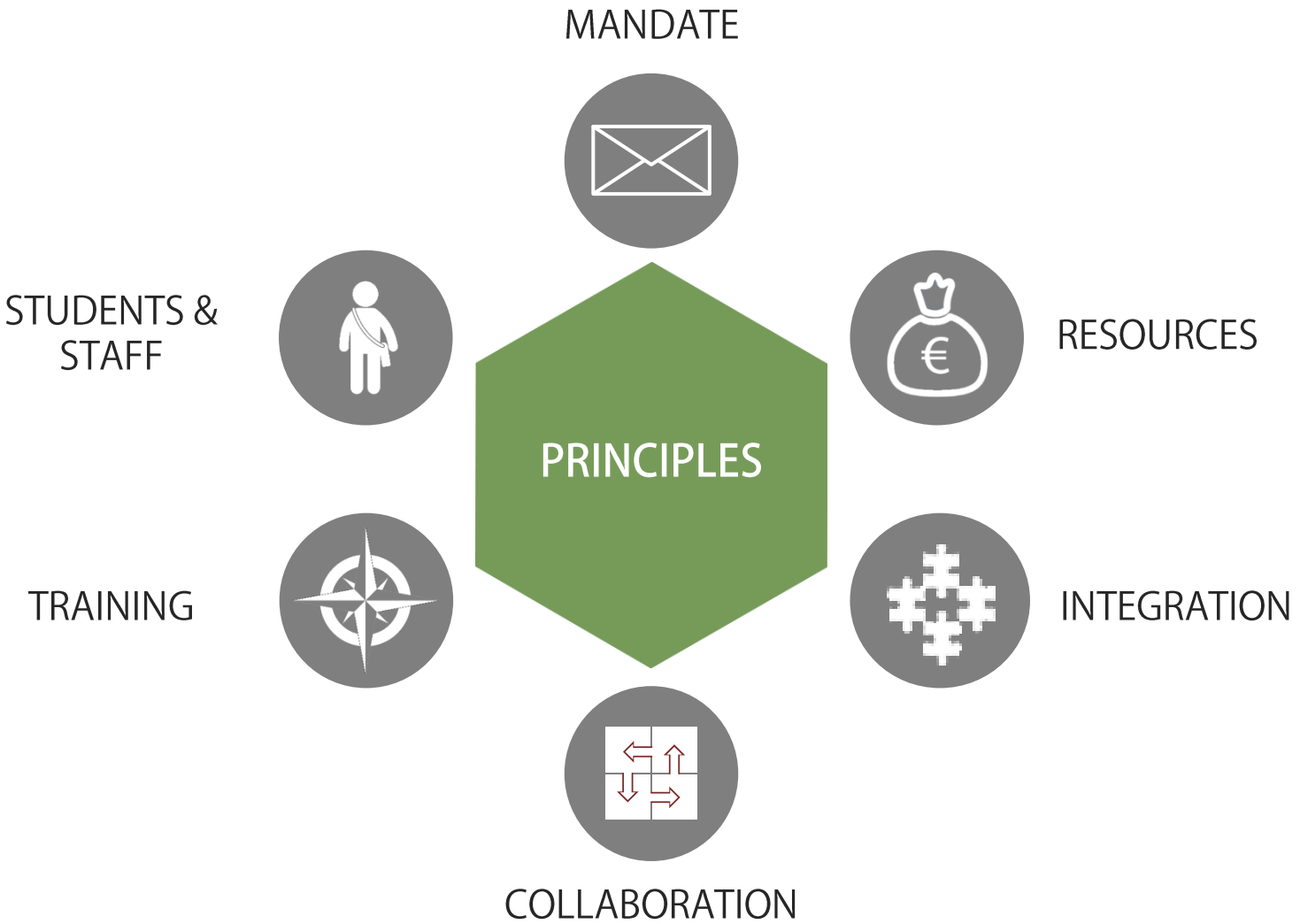
GREEN OFFICE FOR SUSTAINABILITY

rootAbility

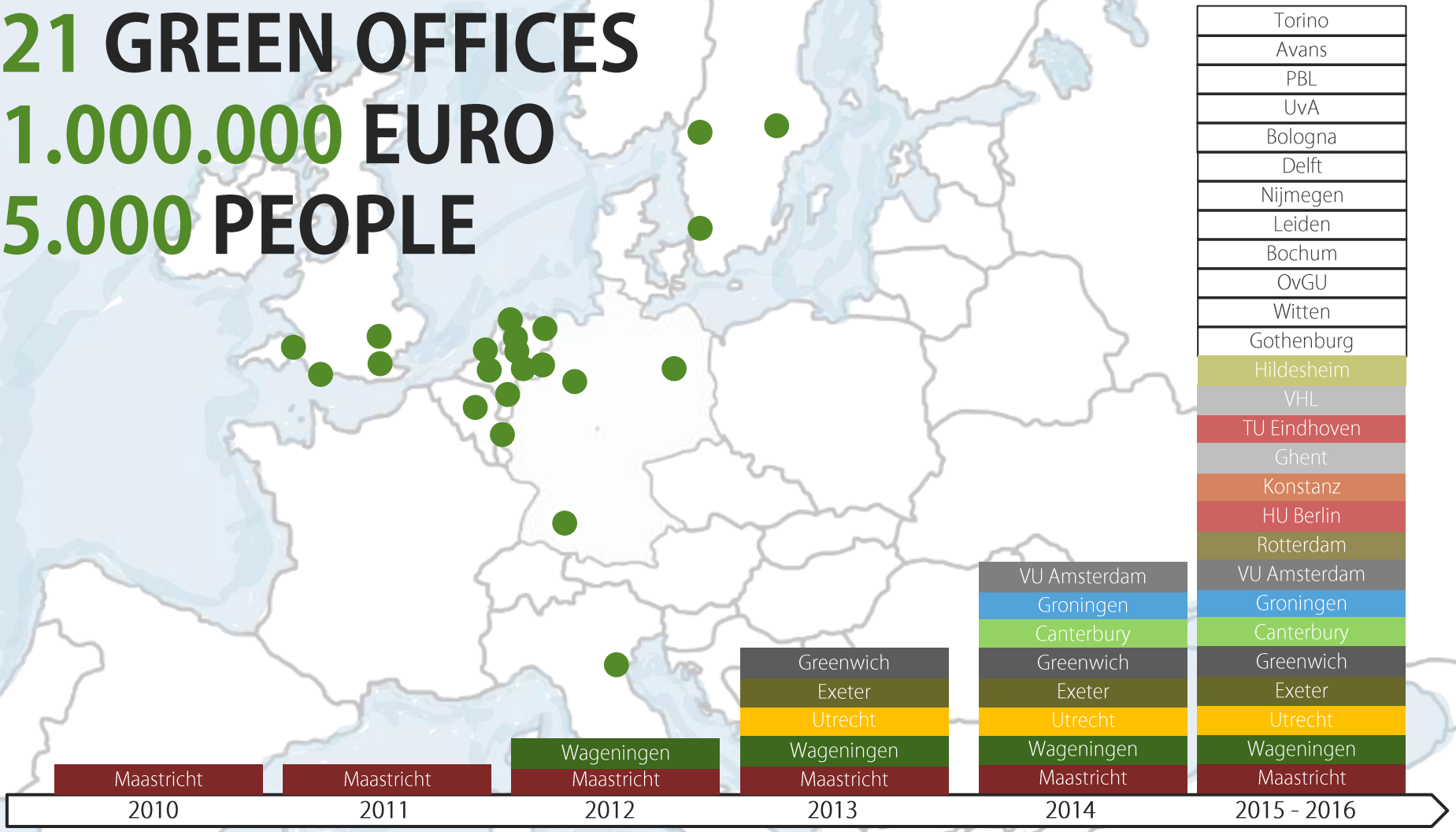
www.rootAbility.com


Sustainability committee
Environmental coordinator
Sustainability academics
EFFECTIVE
GECCO
M(O)RGEN
oikos
BOOKS 4 LIFE
enactus
MANDRIL


GREEN OFFICE


MANDATE
STUDENTS & STAFF
RESOURCES
PRINCIPLES
TRAINING
INTEGRATION
COLLABORATION

21 GREEN OFFICES
1.000.000 EURO
5.000 PEOPLE



UNESCO World Conference on Education for Sustainable Development
Stakeholder Meeting
UNESCO ESD YOUTH CONFERENCE
7 November 2014 • Okayama, Japan

Deutschlandfunk

nus Students' Green Fund

UNESCO-Japan Prize on Education for Sustainable Development

deVerdieping Trouw

ISCN International Sustainable Campus Network

Berliner Morgenpost

oikos

SUSTAINABUL SUSTAINABUL







tricht University Green

Terracini in Transizione

- Creating a multifunctional and transdisciplinary team
- Problems identification
- Sharing *vision and approach*

Vision: campus as «living-lab» of sustainability

Building <u>real</u> connections among Academia, Students and Staff

- Mapping initiatives and stakeholders
- Bottom-up and Top-down approaches
- Setting the Transition Arena

UNIVERSITY OF TURIN AT A GLANCE

With laissez-faire and price atomic
Ecology's Uneconomic
But with another kind of logic
Economy's Unecologic

Kenneth E. Boulding

An Overview

Building Stock And Users	• Over one hundred buildings (514387 m^2) • Over 66.000 Students • Over 3500 Academic, administrative staffs
Annual Energy Consumption	• Over 23.48 GWh / 7.000.000€ (Electric) • Over 2082 TOE / 2.000.000 € (Gas)

GREENUNITO AND UNITOGO

www.green.unito.it

GreenUnito

GreenUnito is an Online Hub to lead the transition to a Sustainable Smart Green University.

GreenUnito is a web platform which collects and amplifies every project on sustainability.

GreenUnito is an OpenDatabase for thesis&paper, reports, datasets and bestpractices

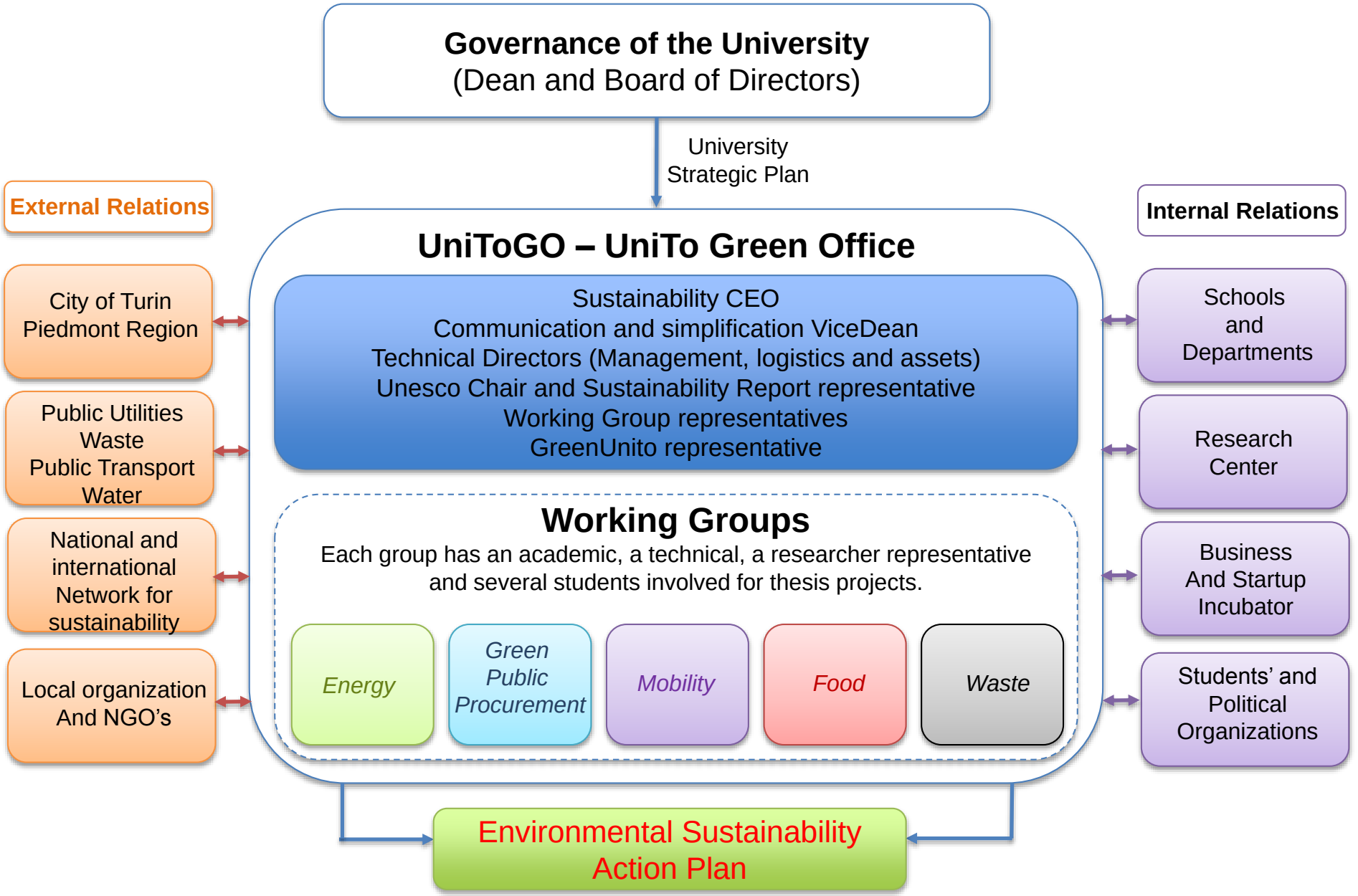
UniToGO: UniTo Green Office

UniToGO is an interdisciplinary network composed by Professors, Researcher, administrative staff and students for sustainability.

UniToGo will coordinate and promote every activities and initiatives about sustainability.

UniToGO is the main promotor of the "Environmental Sustainability Action Plan"

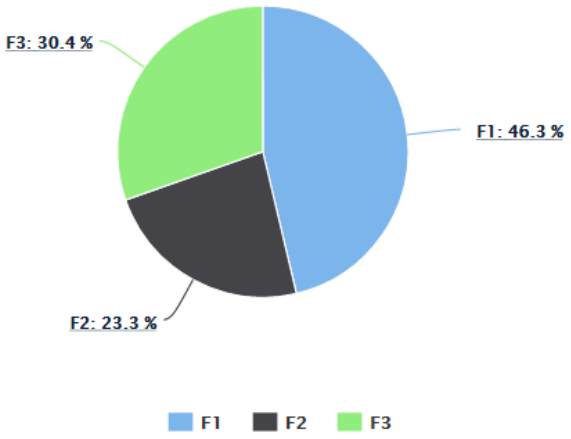
THE STRUCTURE OF THE UNITO GREEN OFFICE



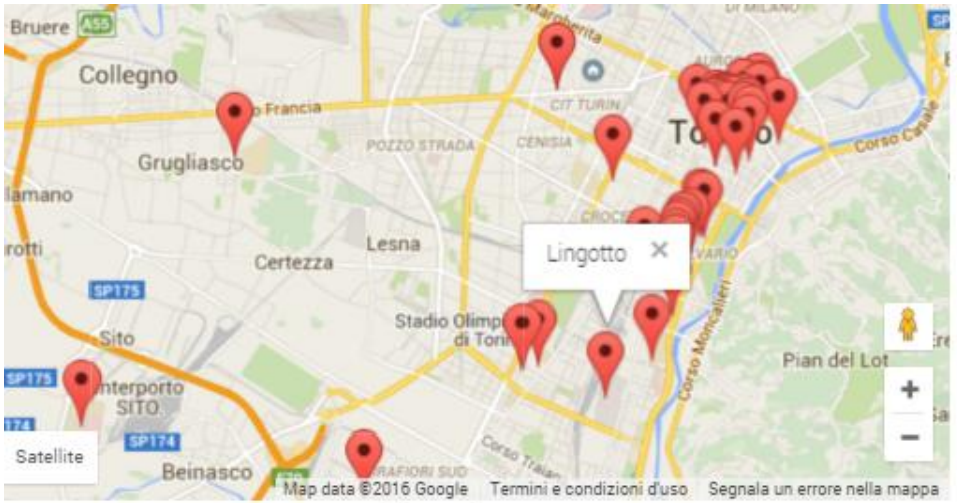
GREENUNITO: ENERGY OPENDATA

OpenData:
A common good to improve transparency and sustainability

Easy access to Geolocalized Data for each Building and Department

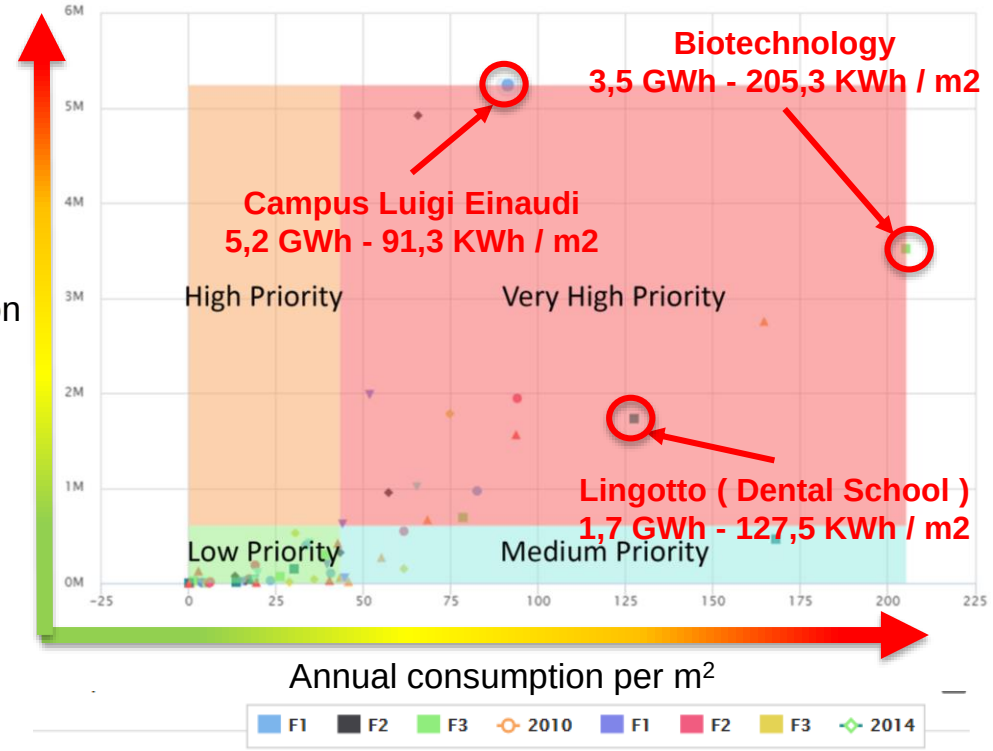


- Facilitate and speed up research project with outright dataset
- Help decision-making process for high complexity management problems
- Facilitate open roundtable organization among public and private
- Boost end-user engagment and improve their awareness

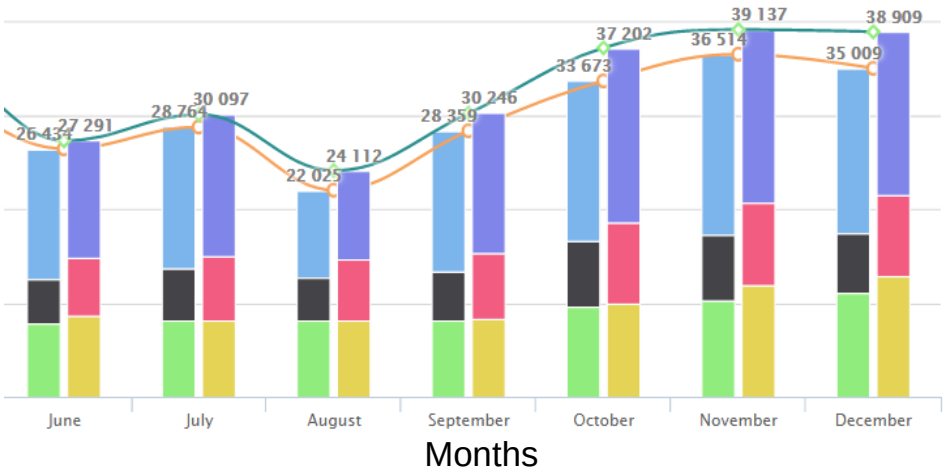


GREENUNITO, OPENDATA AND INTERACTIVE GRAPHS

Building Annual Consumption



Building Monthly Consumption



Management Support Tools

- Historical Consumption and Trend Monitoring
- Day/Night consumption analysis
- Straightforward anomalies identification

Competition among different departments

- Comparison among different years and buildings
- Possibility to directly download data and graphs
- Involment of Departments' staff in sustainable management

Users' Engagement

- Improvement of users' (students, researcher and staff) awareness about sustainability
- Easy understanding of impacts of wrong everyday habitudes.
- Easy access data for students' thesis

COMFORTSENSE RESEARCH PROJECT
USERS' ENGAGEMENT

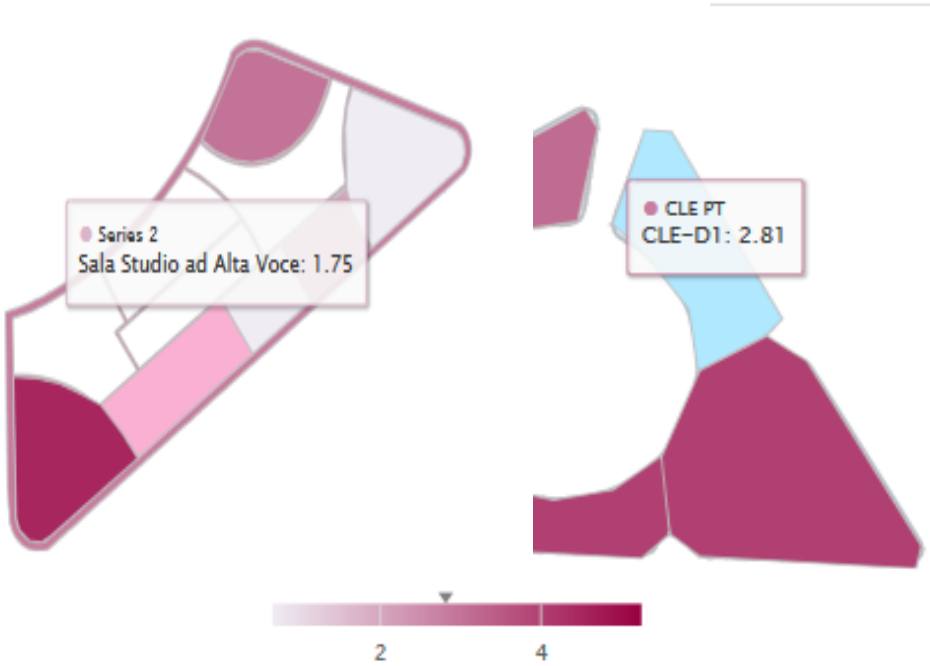
www.craftinglab.it/comfortsense

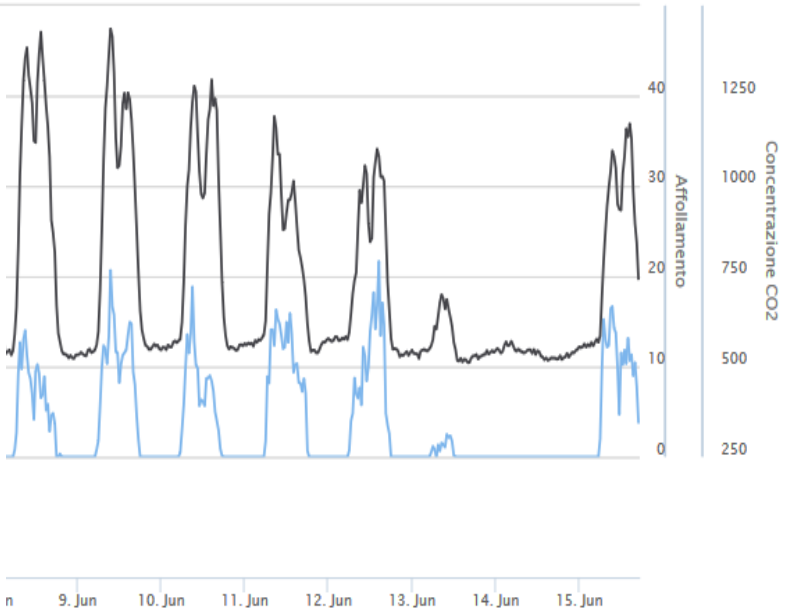
Mobile App
Allow users to send Comfort Feedback & to Visualize historical data

Meshlium and Ibeacon
Occupancy sensors and Indoor Geolocalization

Fixed Sensors & Wearable
Temperature, Humidity and Co2 Concentration

COMFORTSENSE RESEARCH PROJECT: USERS' ENGAGEMENT & MANAGEMENT SUPPORT TOOLS





INTERACTIVE MAPS
Indoor Geolocalized Data visualization
Quick identification of anomalies
Example: Feedback on Comfort (1-5)
Average users' rate = 1.75 (discomfort)

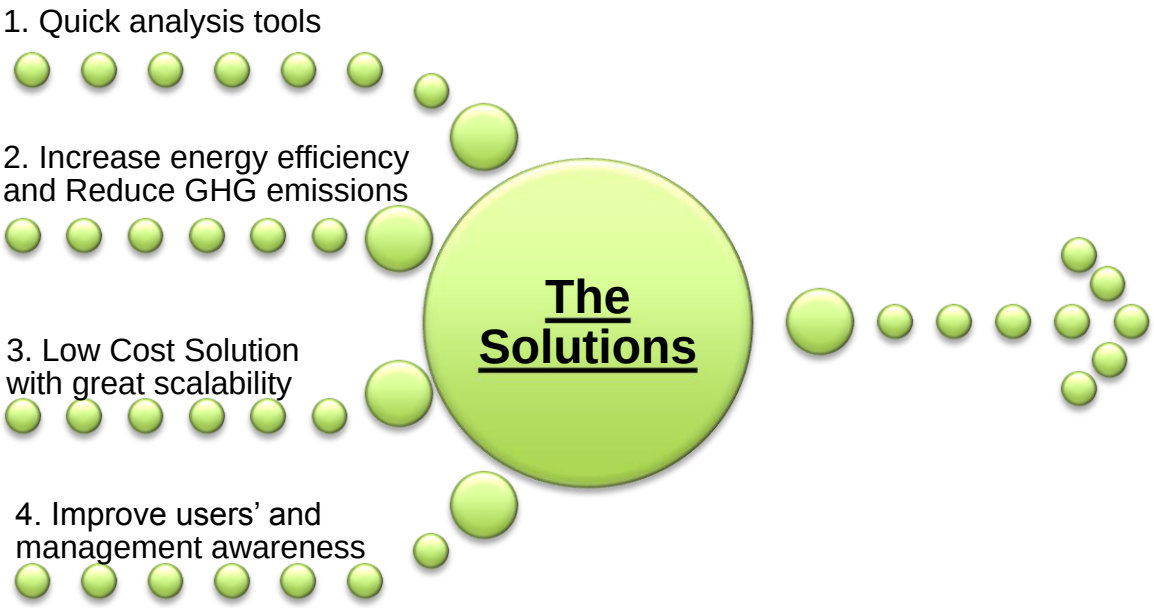
STOCKCHARTS
Multiple Data Comparisons
Quick identification of correlations and trends
Example: Occupancy VS Co2 Concentration
Co2 sensors able to predict room Occupancy

CONCLUSION

General Problems

1. Inhomogeneity of datasets
2. Absence of monitoring equipment in historical buildings
3. Lack of tools for data visualization & analysis
4. Inadequate awareness for sustainability

Some of these problems we found are typical of a large Public Organization, where attention to the responsible use of energy has been low.
The approach and the tools we have presented may contribute to reverse this.



1. Online tools & Energy Audit
2. IOT solutions for energy efficiency
3. OpenSource web applications
4. OpenData & best practices