

edilportale® TOUR 2016

Efficienza energetica e comfort abitativo
Tecnologie non invasive e sicurezza
Sostenibilità economica e ambientale

in collaborazione con



Genova, 26 maggio 2016

Ricerche per la sostenibilità in architettura

Prof. Andrea Giachetta, DSA, Università di Genova

andreagiachetta@arch.unige.it



Ecosystemics

RESEARCH GROUP

People

Research topics

Facilities

Contacts

News

www.ecosystemics.eu

ECOSYSTEMICS

Research group of the Department of Architectural Science – Polytechnic school of the University of Genoa



Design and energy retrofitting



Sustainable materials



Sustainable planning and
environment assessment



Vegetation in architecture and in
urban areas

Andrea Giachetta



Adriano Magliocco



Fausto Novi



Rossana Raiteri



Katia Perini



Chiara Piccardo



Maria Canepa



Research topics

Design and energy retrofitting

Professors and researchers member of the research group have been working on several projects regarding the integration of innovative technologies for building energy saving, production and management of local energy, monitoring of innovative solutions for building retrofitting.

Sustainable materials

The group works on research projects and carries out teaching activity and scientific dissemination related to low environmental impact materials and technology for sustainable architecture and in particular wood in the building sector.

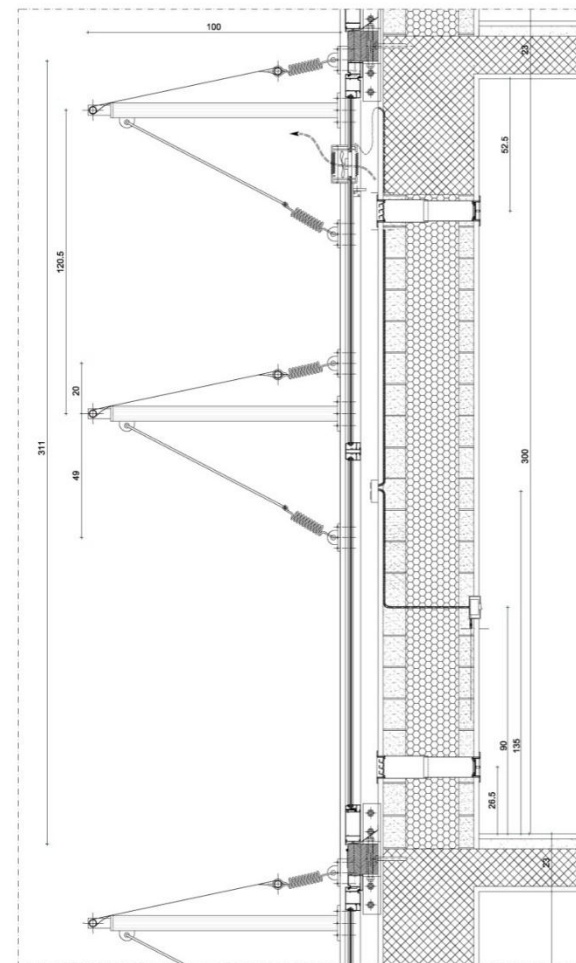
Sustainable planning and environmental assessment

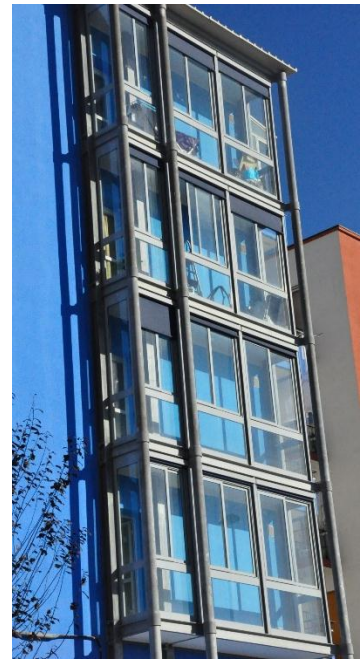
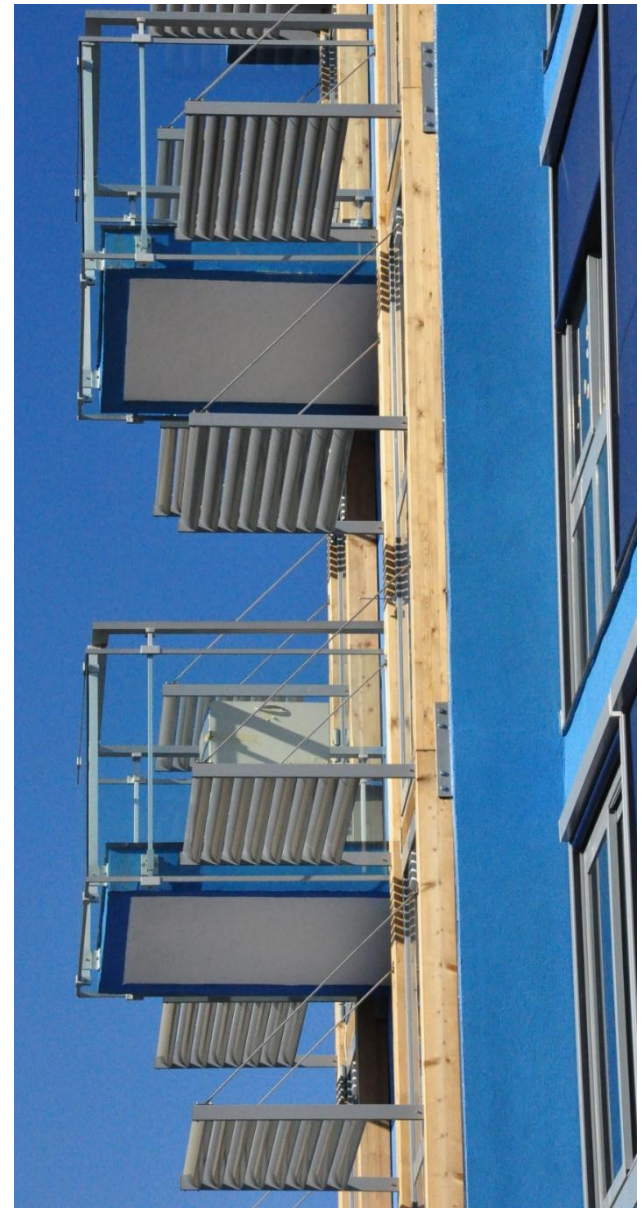
The research group carries out research, teaching and scientific dissemination activities working on the integration of innovative technologies at multiple scales as well as on environmental assessments.

Vegetation in architecture and in urban areas

The research, teaching and dissemination activity of the group deal also with the integration of vegetation in architecture, with green façades and roofs, and in urban environment to improve ecological and environmental conditions.

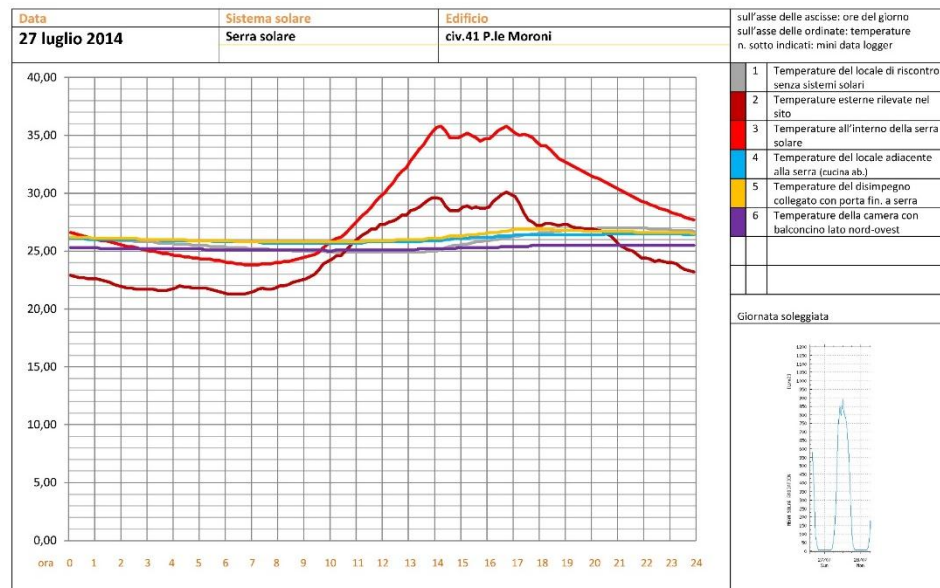
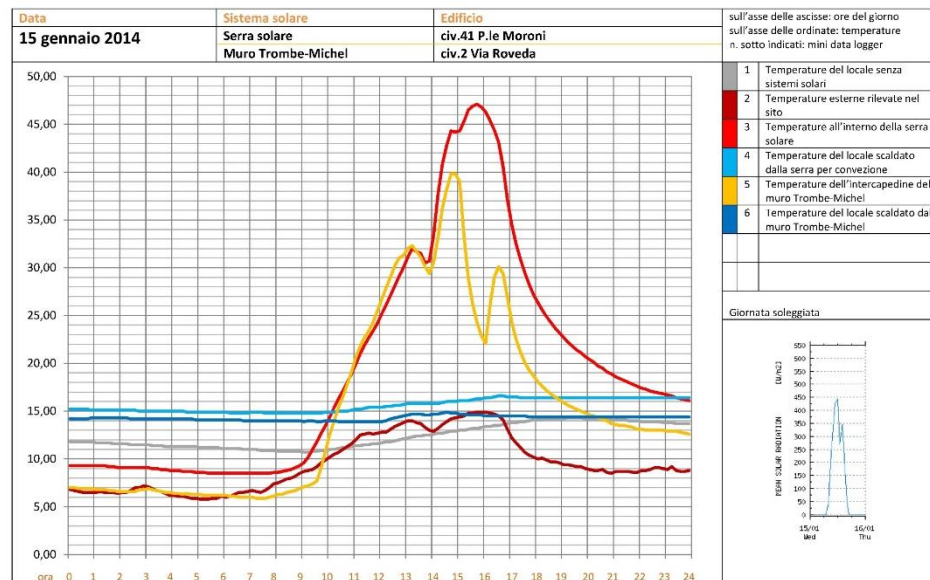
Monitoraggio di sistemi solari passivi applicati al costruito (responsabili: Giachetta, Piccardo per ARTE Savona)

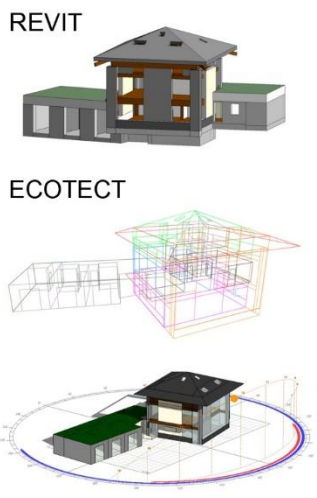
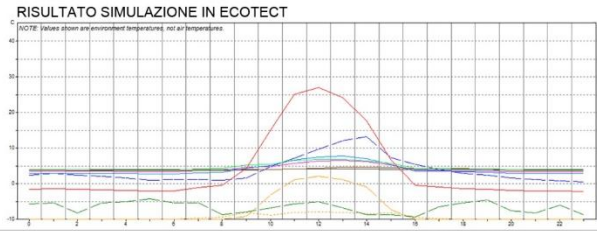
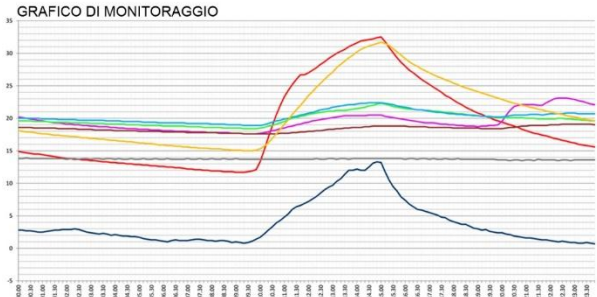
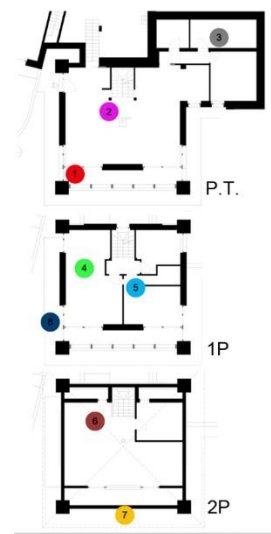






Elaborazioni termografiche: arch. Laura Bronzin





Progettista: Arch. Eddy Cretaz

Tesisti: PALADINO Nicoletta, TRUFFELLI Chiara, VENTURINO Gio Batta

Un contatto con i ricercatori dell'IUT dell'Università francese

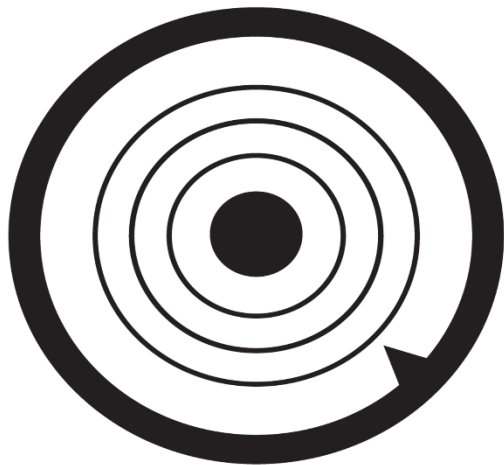


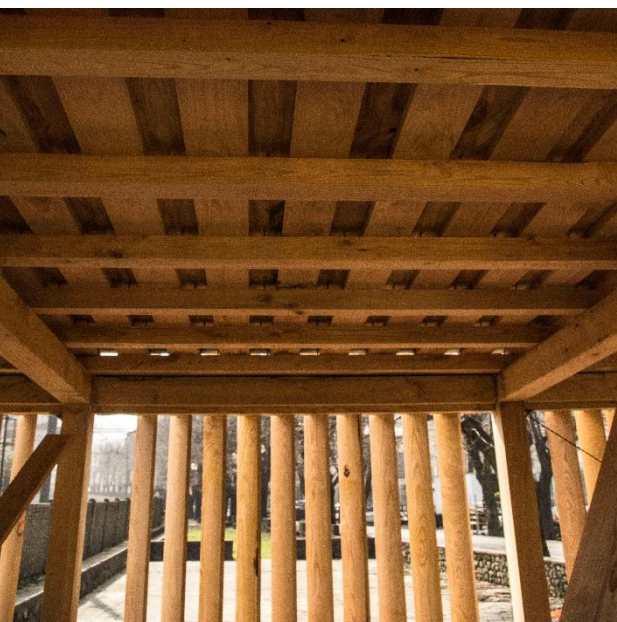
La filiera del legno in architettura: corso Tecnologo del legno (responsabili: Magliocco, Piccardo con Ciofs Liguria, Dott. Paolo Derchi e altri)

●
●

TECNOLOGO DEL LEGGNO

Progetto B.E.S.T. Bosco, Energia e Sviluppo per il Territorio | Piani di Sviluppo Settoriale (PSS) | Programma Operativo Ob. "Competitività regionale e occupazione" | Fondo Sociale Europeo - Regione Liguria 2007-2013



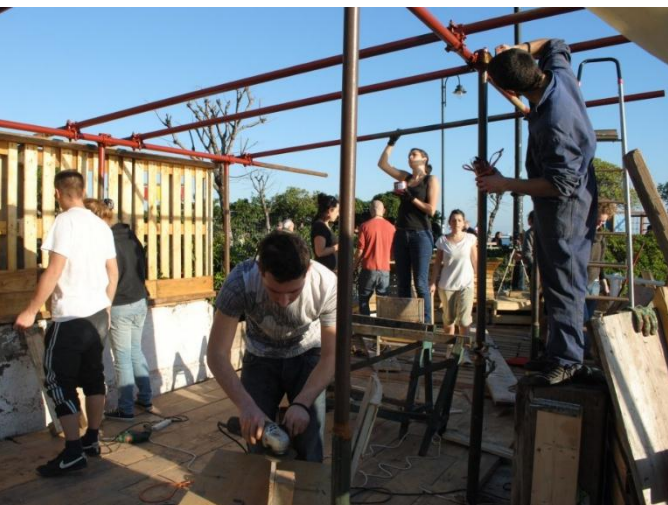


Un contatto con le associazioni interpro e l'università francesi



Il laboratorio didattico RICICLAB

(responsabili: Raiteri, Novi, Giachetta con il Municipio 7 Ponente e altri)









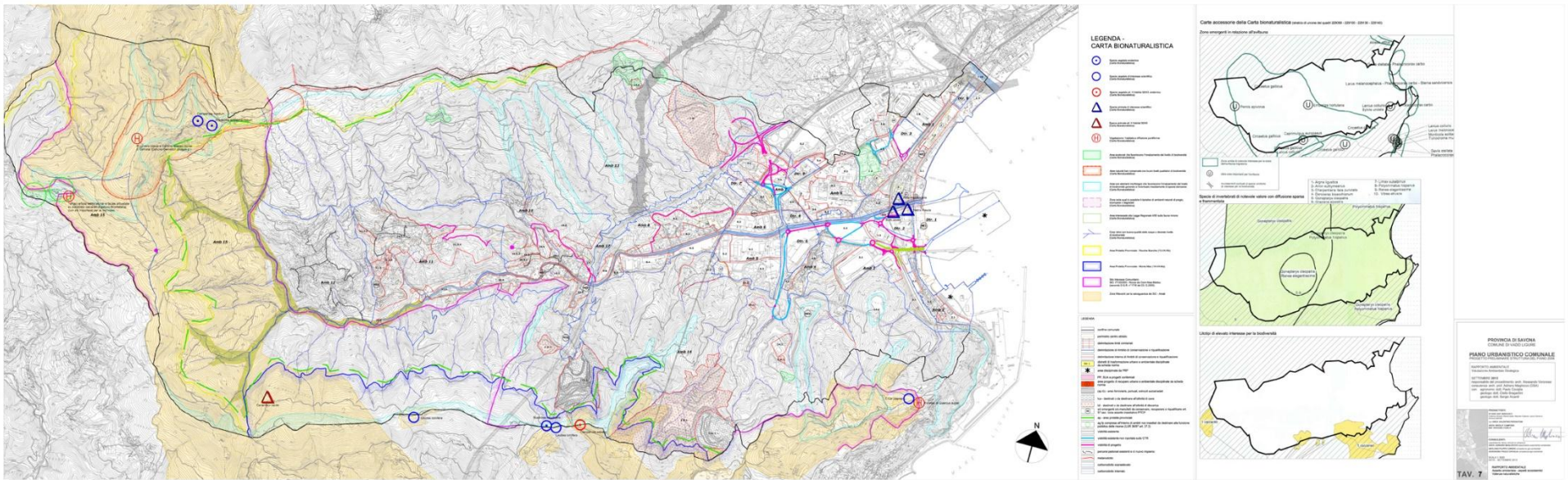
Allestimento mostra per Ateneo – Festival della Scienza «1512-2012 Cinquecento anni di insegnamento medico a Genova» (responsabile: Novi, con Cassinelli, Perini, Piccardo, Oddino, Robbiano Antropologi: Guerci, Consigliere, Micucci)







Consulenza per la VAS di Piani Urbanistici (responsabili: Magliocco con Piccardo, Canepa per Comuni/Provincia SV)



SPECIE ED ALTRI ELEMENTI RILEVANTI

- Corsi d'acqua importanti per la biodiversità
- ▨ Aree ecotonali
- ▨ Diffusione Sparsa di Flora
- ▨ Diffusione Sparsa di Invertebrati
- ▨ Livello di Conoscenza Faunistica - areale
- ▨ Livello di Conoscenza Floristica - areale
- ▨ Morfologia importante per la biodiversità
- ▨ Zone di ripristino ambientale
- Siti puntuali di presenza delle specie



La facciata Verde della sede INPS di Genova Sestri **(responsabili: Magliocco, Perini con Poliflor, RSE-GSE, TU Delft e altri)**





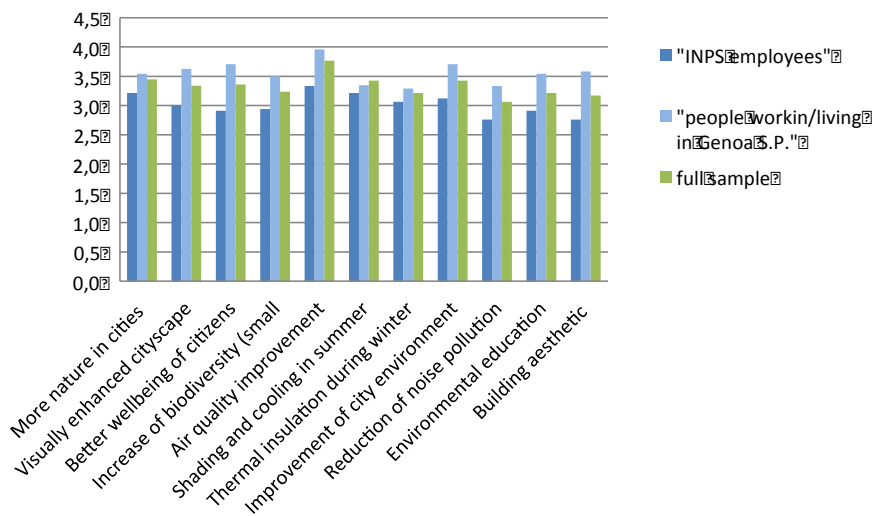


Phase 1: quantitative analysis 3 months before the installation of the INPS green facade

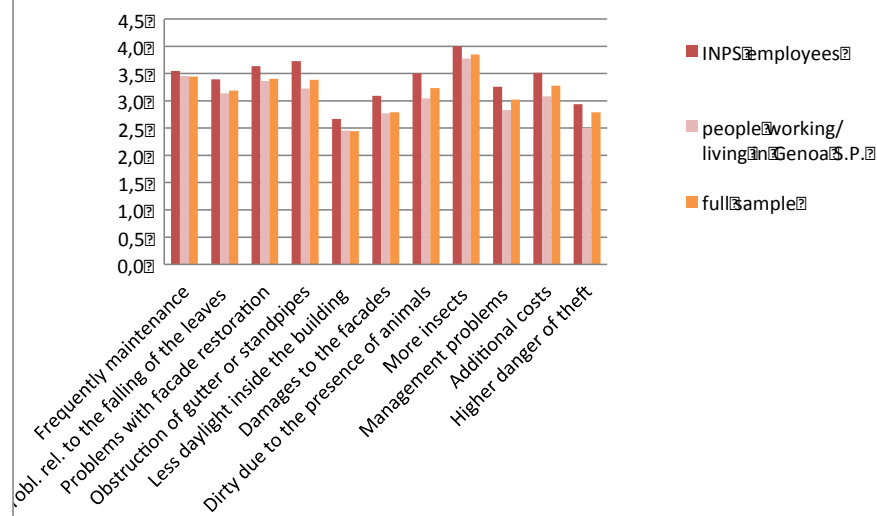
July 2014

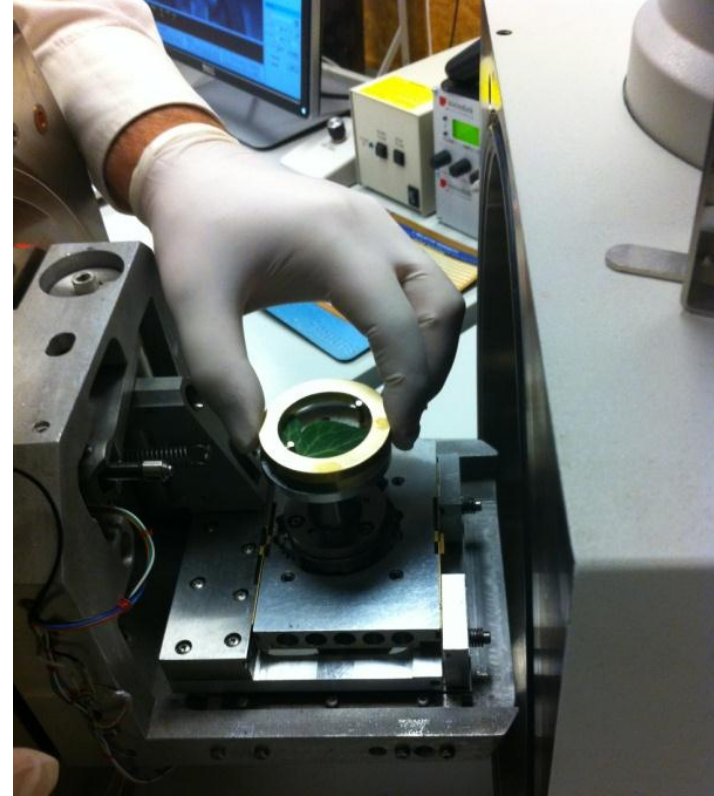
59 people interviewed

POSITIVE EFFECTS

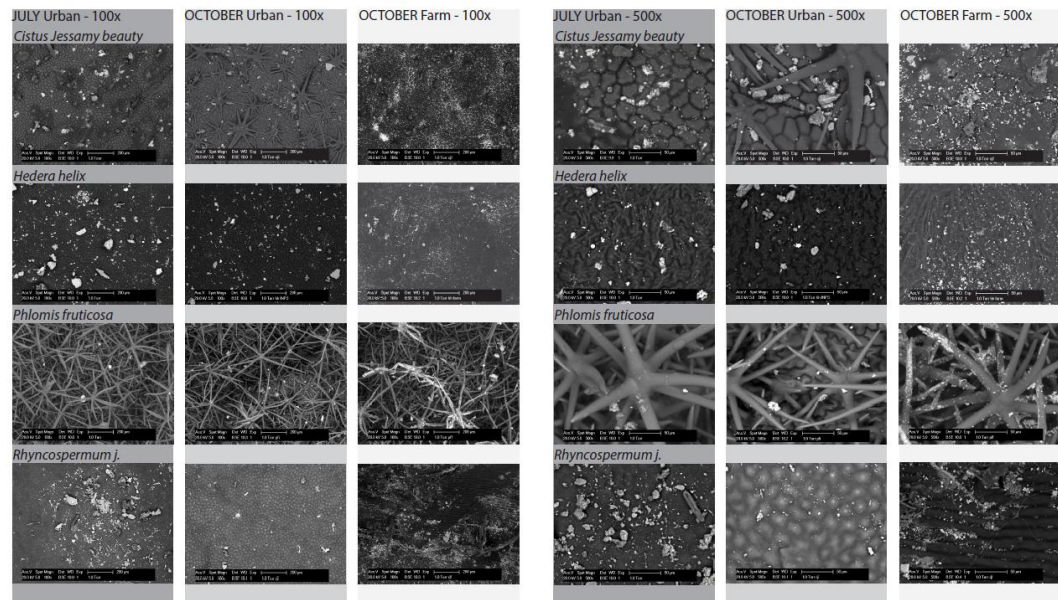
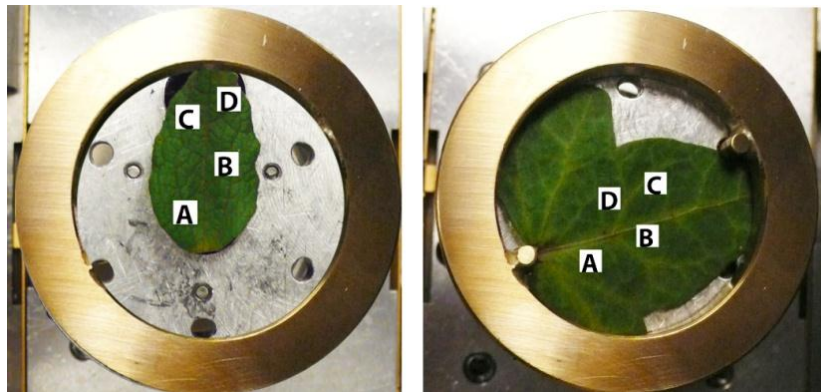


NEGATIVE EFFECTS





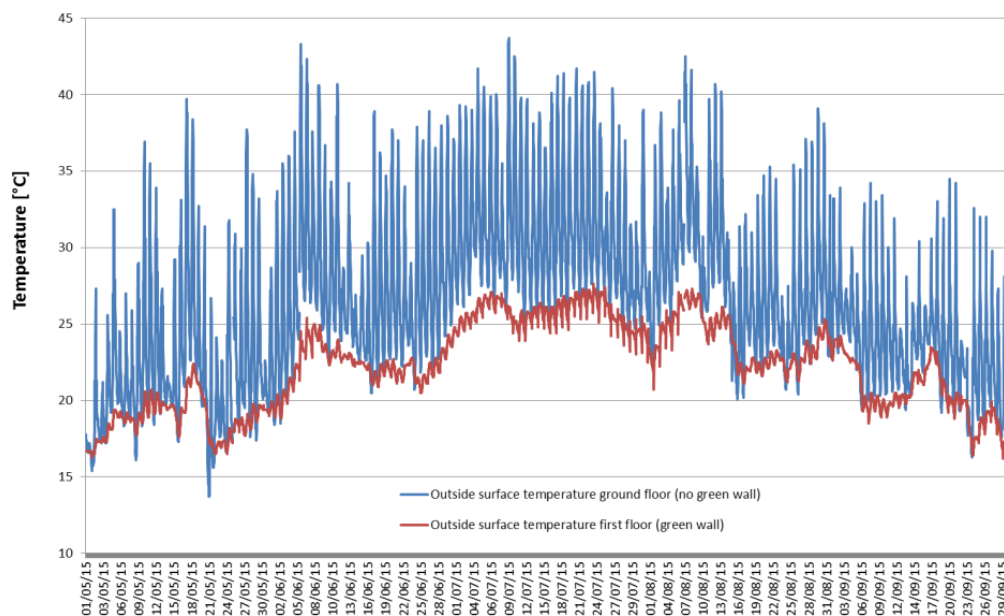
Quantification of air quality improvement
PM collecting capacities – UNIGE-DSA with TUDelft



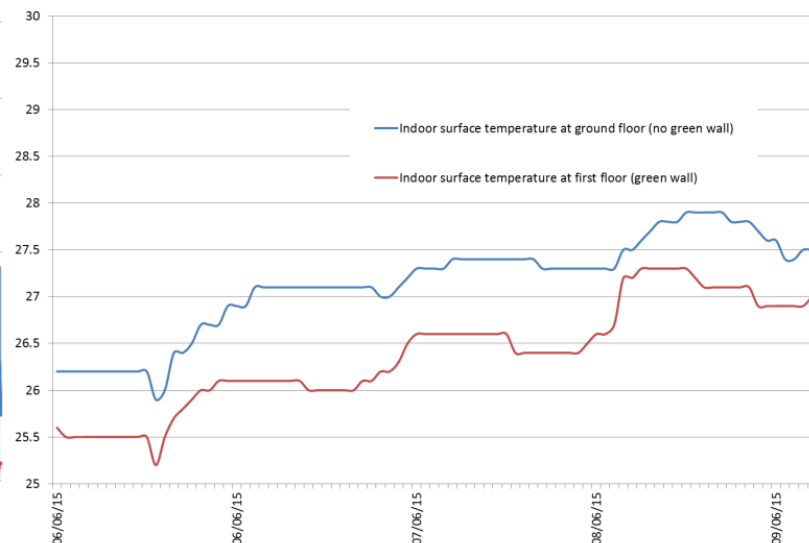


Energy performances improvement of the building envelope_ In collaboration with Ricerca sul Sistema Energetico (RSE) S.p.A. (Research on energy system)

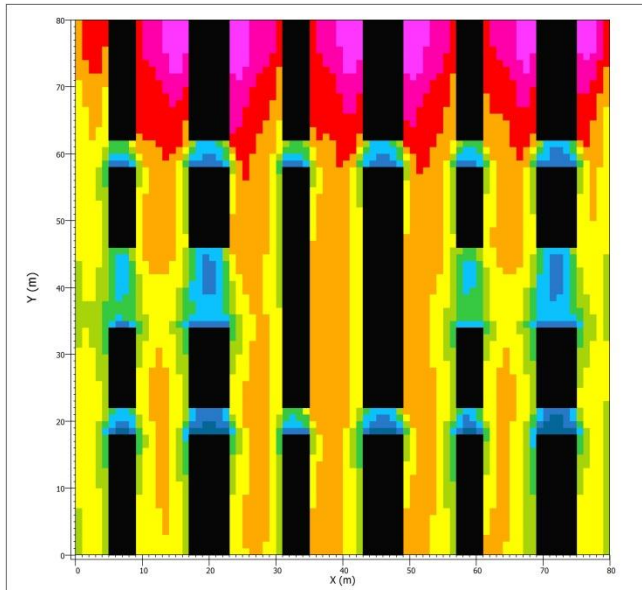
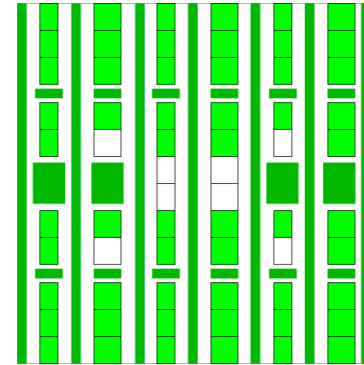
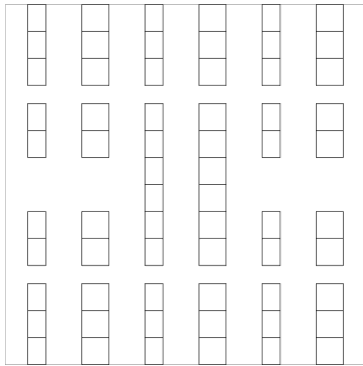
Monitoring the cooling potential of green facades



Comparison between external surface temperatures in presence and in absence of the vertical greening system



Comparison between indoor surface temperatures in presence and in absence of the vertical greening system



Simulation 1 13:00:00
21.06.2012
x/y cut at z = 4

Pot. Temperature

- below 304.67 K
- 304.67 to 305.05 K
- 305.05 to 305.42 K
- 305.42 to 305.80 K
- 305.80 to 306.17 K
- 306.17 to 306.54 K
- 306.54 to 306.92 K
- 306.92 to 307.29 K
- 307.29 to 307.66 K
- above 307.66 K

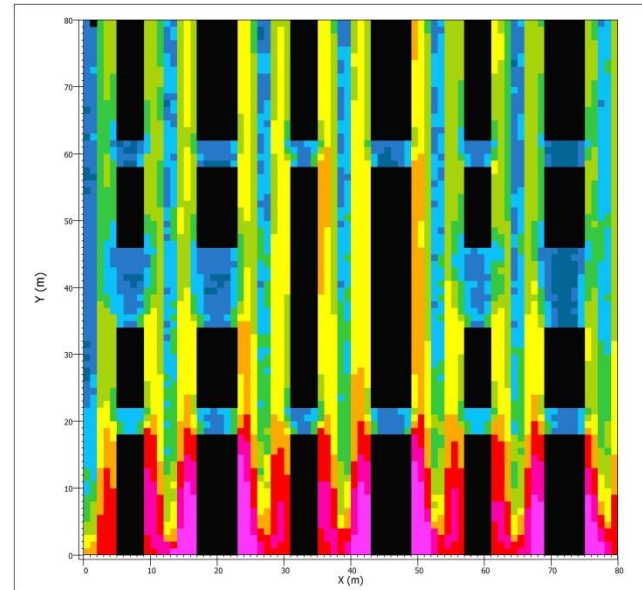
Classed LAD and Shelters

- Buildings



<Left foot>

<Right foot>



Simulation 13 13:00:00
21.06.2012
x/y cut at z = 4

Pot. Temperature

- below 302.98 K
- 302.98 to 303.41 K
- 303.41 to 303.85 K
- 303.85 to 304.29 K
- 304.29 to 304.72 K
- 304.72 to 305.16 K
- 305.16 to 305.60 K
- 305.60 to 306.03 K
- 306.03 to 306.47 K
- above 306.47 K

Classed LAD and Shelters

- Buildings



<Left foot>

<Right foot>

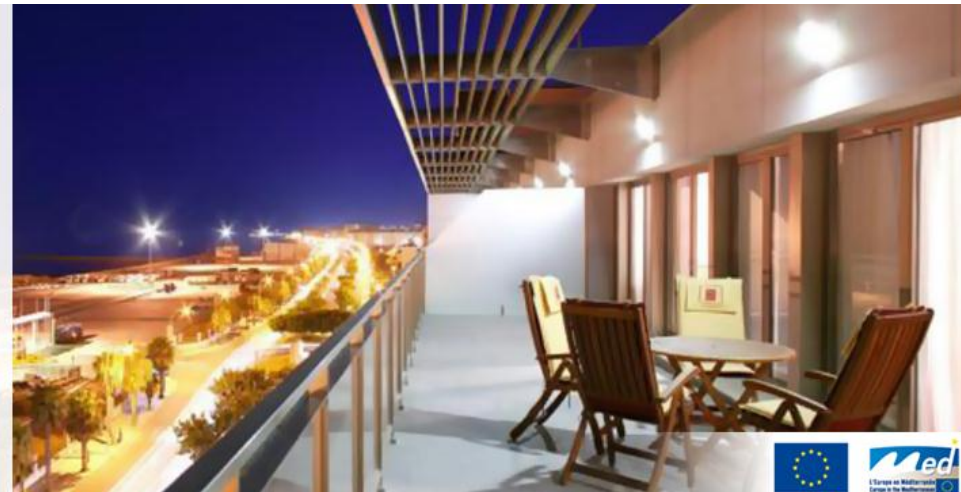
VEGETATION ON THE GROUND: ENVI-MET SIMULATIONS

I progetti di ricerca europei e transfrontalieri



SCORE Sustainable
Construction
in Rural and Fragile Areas
for Energy efficiency

- Home
- What is SCORE?
- Case Studies
- Matrix
- Events
- Regulations
- Newsletter & Report
- Press
- Research Results



Il progetto Me.R – Mediterraneo in Rete, Marittimo It-Fr (responsabili: Giachetta con Piccardo, con CMA Corse du Sud, Associazione Industriali Nord Sardegna, Lucense, Team)



Ecosystemics

RESEARCH GROUP

www.ecosystemics.eu

andreagiachetta@arch.unige.it