European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

WGs and MC Meeting at ISTANBUL, 3-5 December 2014

Action Start date: 01/07/2012 - Action End date: 30/06/2016

Year 3: 1 July 2014 - 30 June 2015 (*Ongoing Action*)

EuNetAir at COST Strategic Event Cities of Tomorrow - The Challenges for Horizon 2020

Torino, Italy, 17 - 19th of September 2014

Anita Lloyd Spetz

Deputy Chair

Linköping University, Sweden and University of Oulu, Finland

COST is supported by the EU Framework Programme

ESF provides the COST Office through a European Commission contract

Outline

- Cities of Tomorrow:
- In architecture
- Transportation
- Safe cities
- Gardening and agriculture
- Clean air and water

TORINO STRATEGICA

Visons for Torino

Vision

Our vision is of a Torino where anyone can realise their personal dreams and achieve their professional goals.

By 2025 Torino must become the City of Opportunity: a city that's efficient for business and attractive for people.

Two key strategies for realising the vision: developing the capacity for **metropolitan governance** and cultivating the conditions that **drive economic growth**.

The Future of Lisboa

Bairro da Boavista Housing Project

Toward the Full electric Urban Mobility

The urban mobility

Passenger commuting

Co-modality based on integration among cars, rail, bus local transport, no-motorized mobility

Marco Aimo Boot
Iveco PD&E – Innovation - Alternative Traction & Electrification Manager

Urban mobility

The urban mobility

Models and Technologies

Enhanced technologies

And the evolution is constantly increasing

Urban mobility

The urban mobility

And we are working on it

Multi-role vehicles for smart logistics

Urban mobility

The urban mobility

The passengers transport

People mobility will also shape the smart cities of the future

Urban mobility

Urban Mobility Plan Vienna 2025

Car and bike sharing

Andreas Trisko,
Vienna Government

Walking and sitting

Vienna! ahead
Urban Development

City of Vienna

The Polis network in COST

POLIS EUROPEAN CITIES AND REGIONS NETWORKING FOR INNOVATIVE TRANSPORT SOLUTIONS

www.polisnetwork.eu

Designing safe cities of tomorrow

Can Planning and Design Contribute to Safer Cities? Prof. Clara Cardia

Designing safe cities of tomorrow

To be a potential of pleasure and wellbeing for the neighbourhood the parks have to be really used, otherwise they will be only refuge for all types of illegal activities and incivilities.

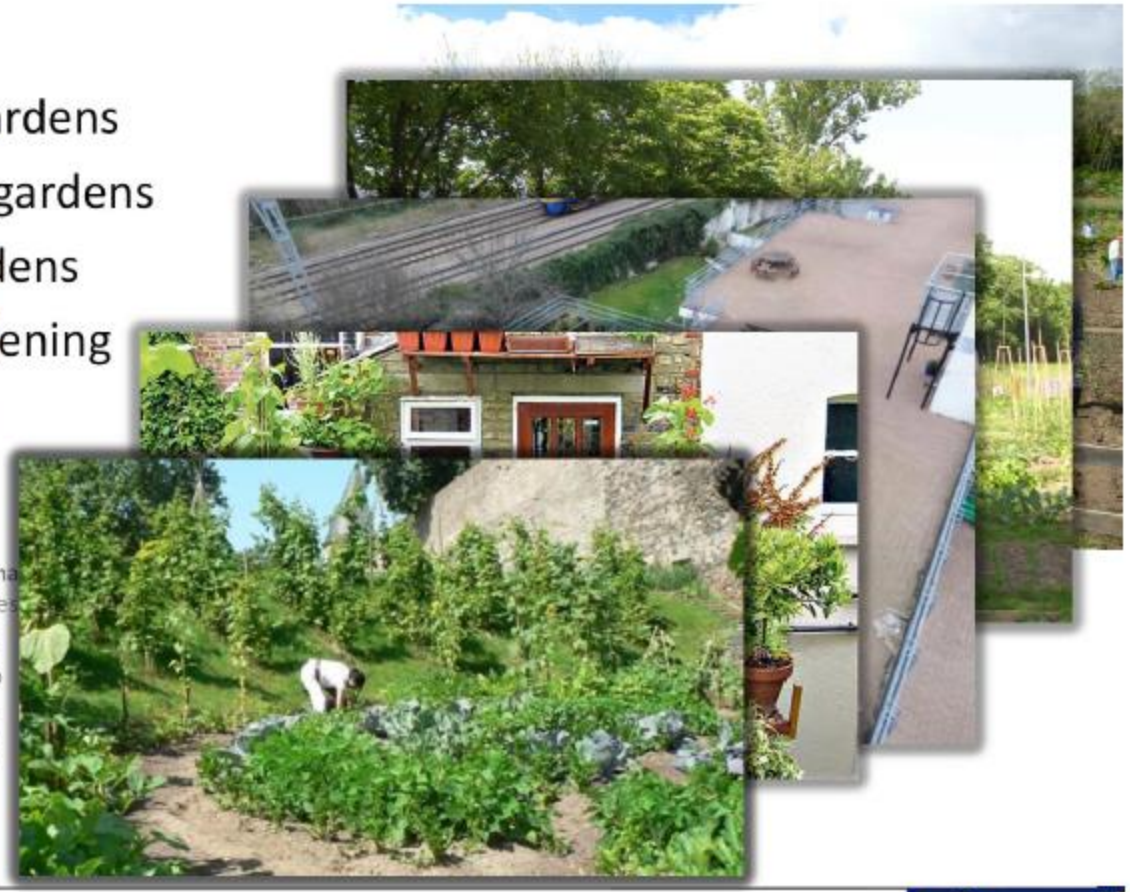
To be successful park :

- it has to be well located, in proximity of vital areas and natural flows
- it has to have good climatic conditions
- it has to be designed with clear views and transparencies
- it has to have activities
- it needs to be well maintained and patrolled

Safe city

Urban gardening - what are we talking about?

- Allotment gardens
- Community gardens
- Rooftop gardens
- Vertical gardening
- Edible cities



Allotment Park in Lisbon;
photo: Runrid Fox

Neighbourhoodgarden in Vienna
photo: nachbarschaftsgarten.files

Rooftop Gardening in Camden
photo provided by Silvio Caputo

Vertical vegetation in London;
photo by www.telegraph.co.uk

Urban Gardening in a public park in Andernach, Germany;
photo: Runrid Fox

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Urban Agriculture Europe

- **„Urban agriculture is not to be**
- **addressed as a rural leftover but as**
- **the result of interacting of agriculture**
- **with the urban society, the urban**
- **markets, the urban space and the**
- **urban metabolism.**

Prof Lionella Scazzosi, vice chair

Flyer produced

Structure

Work in COST action UAE is based on 5 working groups (WGs). While WG 1 is working on a general approach, definitions and typologies the other WGs concentrate on the interaction of Urban Agriculture with the urban society (2), markets (3), space (4) and metabolism (5).
WGs meet twice a year at the COST UAE meetings or conferences to discuss their research methods and to bring together the results of national and individual work on the WGS subject.

Working Group 1
UA definitions and European Policies
Definition, types of UA, dictionary of UA, policy recommendations

Working Group 2
UA and governance
Analyse of existing public policies on UA, community activities, education, food policy

Working Group 3
Entrepreneurial models of UA
Specialisation to urban needs, sale to local markets, economic diversification

Working Group 4
Spatial visions of UA
Open space access, public infrastructure, cultural heritage

Working Group 5
UA metabolism
Waste recycling, CO2 sequestration, soil and climate

Contacts

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Administrative Officer	Ms. Carmencita Malimban carmencita.malimban@cost.eu

COST Members during study tour in Warsaw Metropolitan Area, April 2014

COST Action TD1106

URBAN AGRICULTURE EUROPE (UAE)

www.urban-agriculture-europe.org

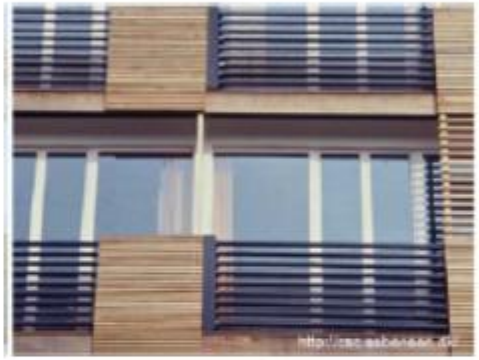
Layout: Katarzyna Bruszewska

Prof. Lionella Scazzosi, Politecnico di Milano, vice chair COST Action Urban Agriculture Europe

Solar cells in Beijing

BISTS balustrade/railing feature

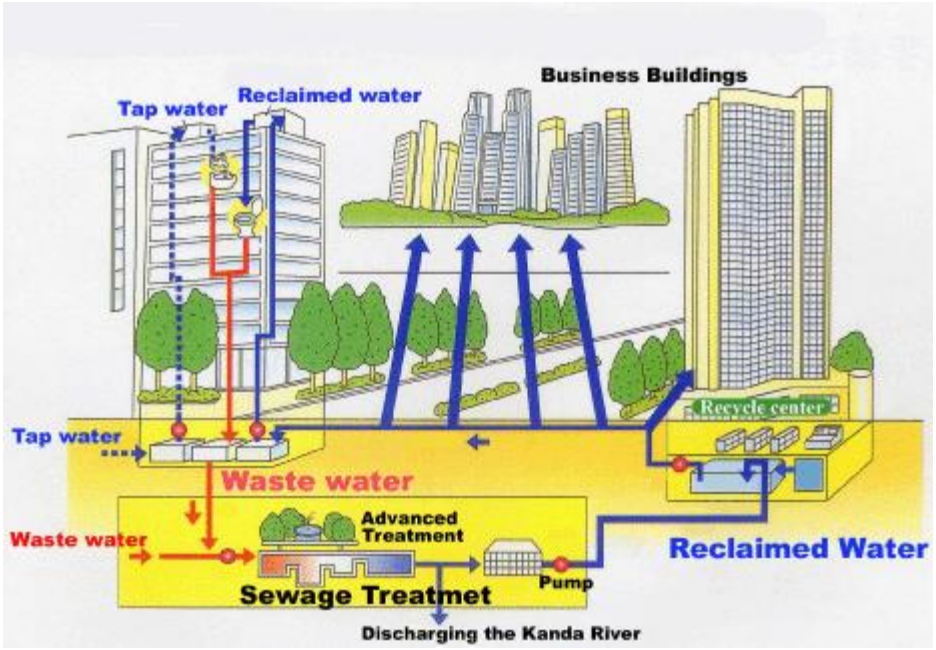


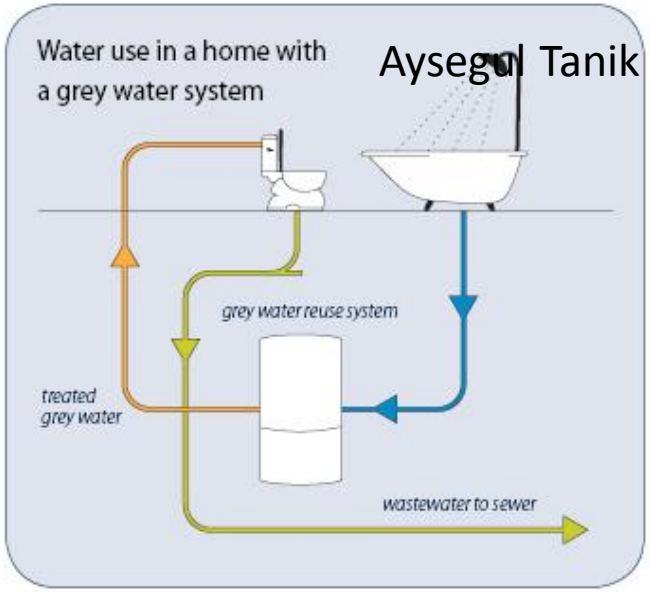



Solar collectors act as balcony railings of the building, Beijing, China

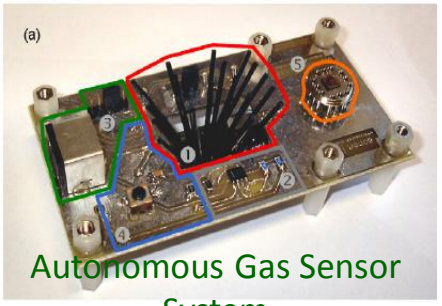
Soteris A. Kalogirou

Sustainable water use





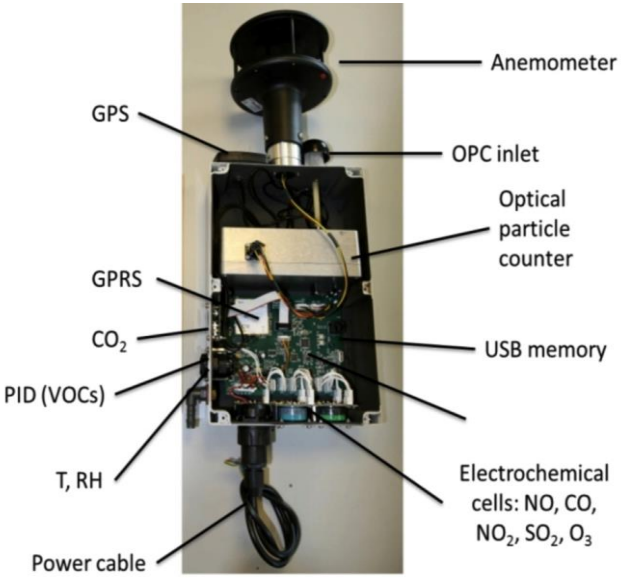
EuNetAir INNOVATION on AIR QUALITY MONITORING

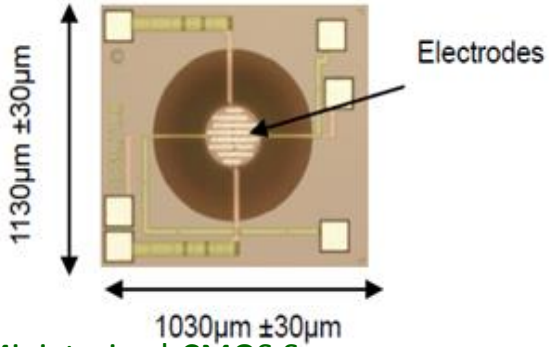


Autonomous Gas Sensor System
by IREC and Univ. of Barcelona

Autonomous EC Gas AQ Sensor System
by ENEA, Italy

Wireless sensor network for air-quality monitoring around Heathrow airport
by University of Cambridge and Alphasense Ltd, UK



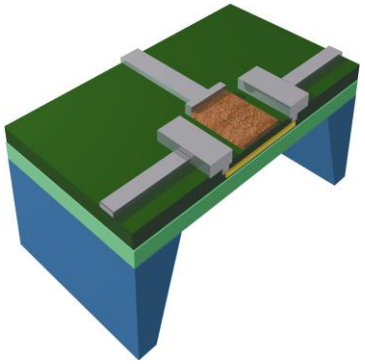


Miniaturized CMOS Sensor
by CCMOS Sensors Ltd and Warwick University

Air Quality Bike (Aeroflex) for Mobile AQ Measurements
by VITO, Belgium

A low-cost modular sensor platform combining IR spectrometry and MOX gas sensors for IAQ monitoring (CO_2, VOC) and medical applications
by 3S GmbH and Saarland University, Germany

Non-Dispersive Infra Red (NDIR) Gas Sensors (CO2) by SenseAir, Sweden



SGX-Sensortech MOX Gas Sensors for Automotive AQ Measurements
by SGX-Sensortech, Switzerland

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EXAMPLES OF SENSOR DEMONSTRATION IN EU CITIES

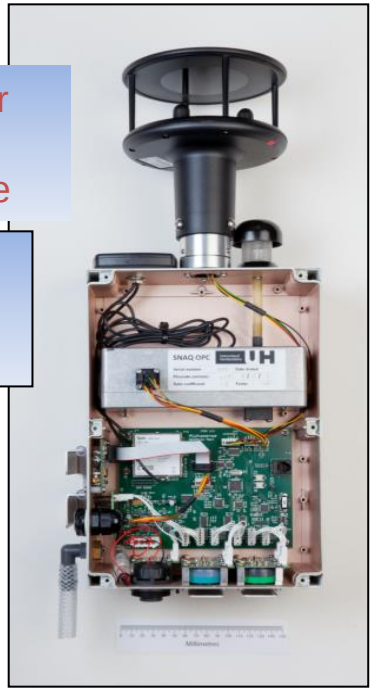
London: Heathrow Airport
SNAQ-Heathrow project: Wireless Sensors Network

Courtesy by Rod Jones and Alphasense Ltd

- ~ 36 sensor nodes located in and around the airport
- Web: http://www.snaq.org/

SNAQ sensor node by Cambridge

~49 x 22 x 16 cm
~2.8 kg



UNIVERSITY OF CAMBRIDGE

University of Hertfordshire

alphasense THE SENSOR TECHNOLOGY COMPANY

MANCHESTER 1824

Heathrow

BRITISH AIRWAYS

NPL National Physical Laboratory

Imperial College London

Cambridge Environmental Research Consultants
Environmental Software and Services

CONCLUSIONS

The COST Action TD1105 *EuNetAir* is proposed to solve problems in the area of:

- Air Quality Control
- Environmental Sustainability
- Indoor/Outdoor Energy Efficiency
- Climate Change Monitoring
- Health Effects of Air-Pollution

This will have an impact on Cities of Tomorrow and lead to:

- Healthier indoor and outdoor environment
- Reduced energy consumption
- Less negative climate influence
- Interesting job opportunities and new spin off companies

All talks: http://www.cost.eu/events/cities-of-tomorrow
Video presentation: www.eunetair.it