



# Smart Solutions for the Urban Metropole

## PhD summer school on Urban Metabolism and Water Management

**3-15 July 2016\* - Amsterdam - Bologna**

Turn your research into practice with our two-week PhD summer school on the circular metropole. We will support, train and coach PhD students with different scientific specialisations to transfer their research knowledge into smart sustainable solutions for the metropolises of the future. You will get experienced with multidisciplinary collaboration, creative skills, commercial thinking, and communication with different stakeholders. You will work on real life challenges of the metropolitan city's of Amsterdam (week 1) and Bologna (week 2) based on the strong involvement of both Municipalities as problem owners. The different context of two main cities in Europe gives a unique experience of how global challenges are solved and solutions are implemented locally.

*\* An E-learning module is part of the course and starts three weeks before (13 June)*



Climate-KIC is supported by the EIT, a body of the European Union

This summer school is organised in cooperation with:



# Challenges

In the summer school there will be two main challenges addressed: 'Urban Metabolism' which is addressing the circular economy of a city and 'Urban Water management', which is addressing the problems that urban areas face with water. For both challenges local cases will be presented:

## Amsterdam, Buiksloterham



Buiksloterham, a neighborhood in the north of Amsterdam, is in a unique position to serve as both a living test bed and catalyst for Amsterdam's broader transition to becoming a circular, smart, and biobased city. Buiksloterham is a comparative blank slate with many empty plots and almost no monumental buildings. This status creates space and flexibility for new developments.

The remote neighborhood shares many features with other post-industrial neighbourhoods worldwide. Though Buiksloterham is unique in Amsterdam, it also has many features that make it a good case study for the transformation of other post-industrial neighborhoods in cities around the world. It is near to, but somewhat physically and socially disconnected from, an old city center. It has scattered property ownership. Many of its plots are highly polluted, creating prohibitive cost barriers to development. These are common features of many areas that were once peripheral to city centers, but have grown closer through the process of urban expansion.

## Bologna, Zamboni District city center

Zamboni District is a quite large area in the historic centre of Bologna where a number of relevant pieces of the urban fabric are located around Zamboni street defining a dynamic place for events and everyday life rather than a 'formal neighbourhood'. It mixes resident and student communities with tourists and visitors offering an extraordinary place to experience the city. This area is characterized by the facades of the historical buildings and their typical porticoes and by a vivid cultural life.

However the place is affected by unbalanced conditions investing the environmental, social and safety issues. The ambitious challenge is to re-frame the urban metabolism to improve quality of life and create a 'Sustainable Cultural Campus' based on the circular economy principles.

Thus the case study is aimed at defining visions and ideas to portray the current and desirable future cycles for food, phosphate, waste, water, electricity and heat according to the circular metabolism theory.



# Programme

## Week 1 Amsterdam, the Netherlands

### Sunday 3 July

Arrival & Welcome drinks

### Monday 4 July

Meet & Greet

Lecture: City as a Metabolic System - Prof. Huub Rijnaarts,  
Workshop: Stakeholder Analysis Wageningen UR

### Tuesday 5 July

Visit & Tour Buiksloterham Amsterdam

Lecture: Water Management - Rob Ververs, Waternet Buiksloterham  
Workshop: Gains & Pains Stakeholders - Chris Monaghan, Metabolic, the Ceuvel

### Wednesday 6 July

Visit & Bike tour Amsterdam city centre

Lecture: Circular Neighborhood - Prof. Arjan van Timmeren, AMS Institute, Delft University of  
Workshop: Idea generation Technology

### Thursday 7 July

Groupwork & meet entrepreneurs

Lecture: Transition Management - DRIFT Rotterdam  
Workshop: Value Proposition Canvas

### Friday 8 July

Mid-term presentations stakeholders

Lecture: Problem definition - Willemijn Brouwer, creative facilitator  
Workshop: Present your problem - the Ceuvel, Buiksloterham

## Week 2 Bologna, Italy

### Monday 11 July

Visit Bologna Campus, Urban Center & Zamboni district

Lecture: Bologna Adaptation Plan - Giovanni Fini, Municipality of Bologna  
Workshop: Idea evaluation

### Tuesday 12 July

Proposals & Visioning

Lecture: Boosting regeneration processes - Prof. Giovanni Leoni, University of Bologna  
Workshop: Teamwork with stakeholders

### Wednesday 13 July

Group work & stakeholder reflection

Lecture: Design for communities - Piero Pellizzaro, Climate  
Resilience, Climalia

### Thursday 14 July

Group work & stakeholder reflection

Workshop: Communication

### Friday 15 July

Final pitches for stakeholder jury

Closing ceremony & final party



# Keynote speakers



Giovanni Fini is the Environmental Quality Project Coordinator, Environment and energy at the Urban Regeneration department of the Municipality of Bologna.

He strongly contributed in the Bologna Adaptation Plan development and took part to several research project involving the municipality to deliver energy saving measures and innovative solutions. He is also involved in Bologna Smart City project.



Giovanni Leoni is an architect and full Professor in Architecture History at the Bologna University, Department of Architecture.

He is the PhD course coordinator and member of the Urban Regeneration Workgroup. His studies and works, dealing with International Contemporary Architecture History, are widely published in Italy and abroad. He cooperates with several journals and editor as member of the scientific committee and reviewer.



Piero Pelizzaro is Resilient Specialist and co-founder of Climalia, the first Italian start-up company on Climate Services. He is also Acclimatise Associate and member of the Working Group Local Authorities for Kyoto at Kyoto Club Non Profit.

Currently he is an external consultant for The Ministry of the Environment and Protection of Land and Sea of Italy for training activities on Urban Adaptation Policy to Climate Change.



Huub Rijnaarts is professor in Environment and Water Technology at the sub-department of Environmental Technology of Wageningen UR, director of the Wageningen institute for Environmental and Climate research (WIMEK), member of the board of Deltares and member of the board of the Amsterdam Institute for Advanced Metropolitan Solutions (AMS). Huub Rijnaarts heads multiple research projects focusing on water technology, resource recovery and creating resilient cities.



Professor Arjan van Timmeren is scientific director of the Amsterdam Institute for Advanced Metropolitan Solutions (AMS). He has played a significant role in integrating technologybased metropolitan solutions for sustainable cities, both in practice and in academia. Through his position and his research group at TU Delft, he is involved in many projects within the Netherlands and abroad, ranging from individual buildings to large 'climate neutral' city districts and infrastructure.

# Learning Goals

The learning objectives will be realized by a 'learning by doing' approach. Students will get experienced with multidisciplinary collaboration, creative skills, commercial thinking, and communication with different stakeholders during their work on real life challenges of the metropolitan city's of Amsterdam and Bologna. We will use a broad variety of speakers and trainers to ensure the system approach is applied in the fullest. Theoretical frameworks will always be presented in the context of a practical case. To make the course more effective, an e-learning module that introduces the different cases to the students will be completed 1 month before the life course starts.

The first week will concentrate on the showcasing of challenges and cases: site visits to areas in the local city that show what problems municipalities are facing and which stakeholders are involved by potential solutions. Creative workshops will support the students to implement the theoretical frameworks on systems thinking, innovation and business development onto the cases that have been presented. Your own research and skills will be matched with a potential market to come up with a value proposition for a specific customer group.

In the second week the students will complete the site visits in Bologna and will work on a minimal viable product to evaluate their proposition with a real customer: the municipalities of Amsterdam and Bologna and the corresponding stakeholders. Coaches and stakeholders will support the students to ensure the personal abilities and knowledge of the students are fully explored and developed and applied to the solution they offer to the client.

## Registration & Costs

The PhD Summer School is an integral part of Climate-KIC's PhD programme, which means that fees are fully covered for Climate-KIC labelled students. For all other participant the following fees apply:

- €250 for PhDs from partners SENSE and AMS
- €500 for PhDs from Climate-KIC partner universities and EU citizens
- €2000 for non-EU passport holders

The fee of the programme includes:

- Accommodation (in double rooms)
- Breakfast and lunch, approximately five dinners per week
- Local transportation & transfer from Amsterdam to Bologna

Participants need to cover the travel costs to and from the destination themselves. After the confirmation of acceptance, you will receive an invoice. Course fees need to be paid three weeks before the start of the programme.

Please registrate for this summer school through our Climate-KIC.org website. **Deadline 30 May.**  
<http://www.climate-kic.org/programmes/phd-summer-schools/application-form/>

For more information. Please visit our website at  
<http://www.climate-kic.org/programmes/phd-summer-schools>

Or send an email to [martine.vanveelen@climate-kic.org](mailto:martine.vanveelen@climate-kic.org)

# Partners

## Amsterdam Institute for Advanced Metropolitan Solutions (AMS)



AMS aims to become an internationally leading institute where talent is educated and engineers, designers, digital engineers and natural/social scientist jointly develop and valorise interdisciplinary metropolitan solutions. AMS is centered on applied technology in urban themes such as water, energy, waste, food, data and mobility, and the integration of these themes. Amsterdam is its home base and test bed. More information: <http://www.ams-institute.org/home/>

## Urban Center Bologna



Urban Center Bologna is a multifunctional center born to boost the transformation of Bologna in a more livable, sustainable and resilient city. UCB is committed in promoting and protecting Bologna's environment, its economic vitality, its cultural vibrancy, and above all its environmental sustainability and social diversity. At UCB, citizens can learn about the local policy initiatives and the projects implemented in the city. More information: <http://www.urbancenterbologna>

## SENSE Research School for Socio-Economic and Natural Sciences of the Environment



The SENSE Research School for Socio-Economic and Natural Sciences of the Environment is a joint venture of the environmental research institutes of more than ten Dutch universities and research organisations. The SENSE provides a disciplinary and multidisciplinary research programme aimed at advanced understanding of environmental problems and advanced training of PhD candidates in this field. More information: <http://www.sense.nl>

## University of Bologna



The University of Bologna has ancient origins, and is considered to be the oldest university in the Western world. The Department of Architecture is involved in several research programs with relation to sustainable design, urban regeneration, building retrofitting and renovation, and climate responsive strategies. More information: <http://www.da.unibo.it/it/internazionalizzazione/the-department-of-architecture-2013-university-of-bologna>

## Municipality of Amsterdam



Amsterdam is the largest city of the Netherlands and functions as the nominal capital of the country. As one of the well-planned cities of Europe, Amsterdam is well known for a blend of traditional and modern architecture. With more than 100 kilometres of canals constructed during the Dutch golden age, the city offers a picturesque landscape. No wonder it is also called "Venice of the North". For more information: <http://www.iamsterdam.com>

## Municipality of Bologna



Comune di Bologna

Bologna, with about 380,000 inhabitants, is the capital of Emilia-Romagna, a region in Northern Italy. Very important for the city life are the University and the fair of Bologna which has gained an international prestige related to the competitiveness of its events. The development of small and medium industry force to talk about an "Emilian model" of development able to create one of the richest area in the country. More info [www.comune.bologna.it](http://www.comune.bologna.it)