Future Cities
urban networks to face climate change

Launch Conference
and
2nd Working Group Meeting

Union Portuaire Rouennaise, Rouen

19 – 20 March 2009

Report











9 mars 2009

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The Launch Conference of *Future Cities*

The organisations Rouen Seine Aménagement, the City of Rouen and the Lippeverband as Lead Partner of the INTERREG IVB-Project Future Cities - urban networks to face climate change invited to the *Future Cities* Launch Conference on Thursday 19th March 2009 in Rouen, France. 120 participants from the European partnership as well as French representatives of the local, regional and national authorities attended to the conference.

The conference was dedicated to European and national framework of climate change in urban areas as well as presenting a details of the case study in Rouen.

Key presentations were held by political stakeholders and professional experts:

Valérie Fourneyron, Mayor of Rouen

Ruut Louwers, Director of the InterregIVB-programme secretariat JTS in Lille

Johan Bogaert, representative of the Flemish government

Daniel Delalande, representative of the French national government

Prof. Jean-Luc Bertrand-Krajewski, INSA Institute Lyon

Thierry Verrier, director of Rouen Seine Aménagement and collegues presenting the pilot project Luciline in Rouen.

The morning session started with the INTERREG IVB-programme and its priorities set for adapting to climate change. What came out clearly in the discussion was the importance of communication and cooperation within the European project partnership. The further session was dedicated to the national adaptation strategies in France and Belgium.

In the afternoon the project *Future Cities - urban networks to face climate change* was presented and especially the joint working was highlighted. The following presentations gave a clear view about the special approach in the pilot project Luciline in Rouen.

Following the conference on Friday 20th March 2009 the *Future Cities*-working groups met.

Also, at the conference the project's website www.future-cities.eu was launched.

Thursday, 19th March 2009

Welcome to Rouen

Valérie Fourneyron, deputy and mayor of Rouen welcomed the conference participants to Rouen and the *Future Cities* launch conference. The conference addresses the striking problems climate change is imposing on the urban environment. The city of Rouen and its project developer Rouen Seine Aménagement have committed themselves to develop the new Luciline neighbourhood as part of the European partnership. Valérie Fourneyron presented the city of Rouen with its exceptional historic sites, and its cultural history of famous painters. The gathering of the biggest sailing boats of the world – the Armada of Rouen – attracts 10 million visitors in ten days every 5 years, and figures among the largest international events in France. Being a metropolitan area close to Paris Rouen is located on a major axe along the river Seine. The aim of sustainable development is the leading principle for the restoration of the vast port area of Rouen. While respecting the importance of the port – for the handling or cereals cargo Rouen is the biggest port in Europe - two main sectors (Flaubert on the left side, Luciline on the right side of the river) along the Seine will use recent architecture for sustainable and climate adapted development for business and residential use. As representative of the city of Rouen she stressed the point that working together with the European partners using their expertise will help to face the challenge which the consequences of climate change impose on the city of Rouen.

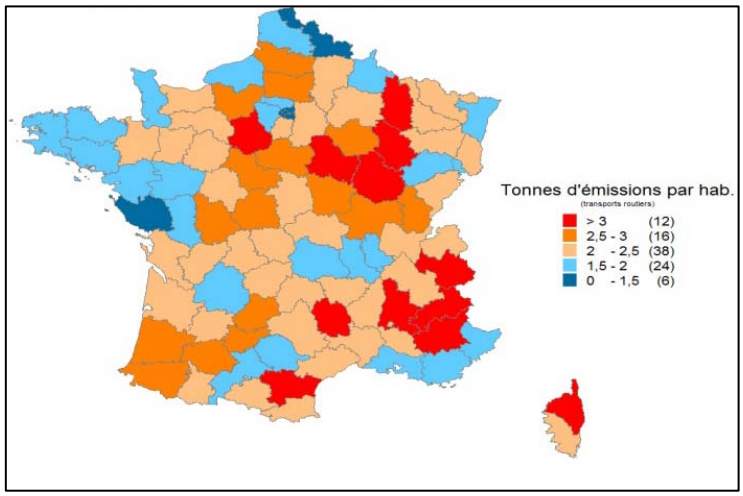
European and national approaches

The European aspects - why does the EU fund such a project as Future Cities - were introduced by ***Ruut Louwers*** from the INTERREG IV B programme Northwest-Europe. The European Commission has launched the green paper on cohesion for public consultation. From the early 1990s the importance of territorial cooperation was acknowledged, which led to the cooperation programmes (INTERREG). The programme area North West

Europe which comprises 8 countries has a high potential for development but also faces threats e.g. of natural hazards. Over the period from 2007 to 2013 87 million Euro out of a total of 355 million Euro of funding will be invested in cooperation projects which take on the challenge of handling natural resources and the risk management of a densely populated area. Also, a strategic initiative on adaptation to climate change will fund exceptional scoring projects for exchange to spread their messages. The upcoming annual event of the programme in October 2009 especially will address the topic of climate change. Mr Louwers stressed the point that throughout the project implementation cooperation and communication are indispensable. This means taking decisions together as well as linking the policy level and the local level of daily life. The speaker requested Future Cities to actively communicate its contribution to territorial cohesion and he wished the partnership a successful project.

The French approach to tackling the impacts of climate change were presented ***Daniel Delalande*** from the French Environment Ministry. Following the emissions trading scheme which was adopted in December 2008 France will reduce 21 % of greenhouse gas emissions between 2005 and 2020. Beyond the trading scheme, in the sectors agriculture, transport and housing 14 % less are the aim. In 2020 renewable energy shall have a quote of 23% of energy used. In the actual situation of finance crisis less investment leads to less emissions but also less commitment to reduce greenhouse gas emissions must be stated.

Mr Delalande explained to the audience that national measures were started for the different sectors. Transportation, in 2007 responsible for over 140 million tons equivalent CO_2 shall be reduced back to the level of 1990 meaning under 120 million tons equivalent $CO_{2.}$. This shall be achieved by introducing a bonus-malus-system for cars, by measures to strengthen the railroad traffic and improving the modal split.



Concerning adaptation the handling of uncertainties is a major dilemma. The optimal strategies differ according to which prediction model is used. Flexible and robust strategies need to be developed and applied. Compared to the centres of Lille or Paris, in the region surrounding Rouen higher emission rate per capita must be stated due to a high transportation rate caused by the urban sprawl. Therefore an important aim is to balance the negative impacts of urban sprawl on the CO_2-emissions with improved energy efficient buildings.

The French Environment Round Table ("Grenelle d'environnement") concluded on actions for adapting the built environment to climate change. Here, developing "eco-quarters", fighting urban sprawl, environmental impact studies for new urban development zones, integrating transport and the use of agricultural land and natural environments, with a view to protection are foreseen together with widespread implementation of national and regional climate-energy plans by the end of 2012. The regional planning scheme shall be co-developed by the regional council and the state department including the issues of climate change and climate protection. Ending his presentation Mr Delalande stressed the importance of the local and regional level with regard to climate change because there, the consequences become evident and the local level is the level where measures actually have to be implemented.

Johan Bogaert from the Flemish government introduced the ***proposed answers to climate change consequences*** in Belgium. From his point of view the approval of the Future Cities-project must be highlighted because the topics included are very important and need to be addressed urgently.

For an overview he presented a comparison of the strategies and adaptation measures of European countries and explained the status of the Belgium planning and implementation. The Belgium adaptation network comprises the consultation between the federal and regional members, a regional adaptation steering group and a sector working group Belgium has to deal with impacts concerning river floods and sea level rise and in the eastern part also with heat waves. Accordingly, the aims of adaptation in Belgium have a clear focus on water issues in terms of quantity and quality, the coastal zone management and the landscape management. Also, studies on adaptation to climate change were conducted or are ongoing addressing water issues, but also biodiversity, spatial planning and the human health are in the focus. Mr

Bogaert explained this in more detail at the example of two city development projects: For example the sigma-plan addresses the problem of the river Schelde where sea level rise will cause a higher impact of the tide inland, e.g. in Antwerp. For compensating the future spring tide a surplus wall of over 2 meter height is needed which would cut off the city from the quai. Here, a tender for finding solutions was launched. An important basic question is the uncertainty: What will actually happen? How much will the sea level rise? Thus, concepts that go beyond traditional building concepts might have to be developed such as floating cities. Still, these might not be appropriate for 60 or more meters of sea level rise in case Antarctica melts. The question is: How will buildings still be possible and what could they look like?

In the **discussion** which was lead by the moderator Bertrand Tierce it became clear that in the Interreg-programme there exists a high competition between project applications and funding money available. Ruut Louwers advised to use the contact points, to involve them and seek their advice before submitting a project application. Also, it is important to find a thematic niche in order not to repeat work which has been already executed in former transnational projects. In the cooperation it should become clear that the knowledge from transnational projects can be used to convince the politicians that with the cooperation projects better territorial cohesion can be created. Anke Althoff from the Lead Partner of Future Cities, made clear that the two C's – Cooperation and Communication are a decisive feature of a transnational project, e.g. this conference in Rouen disseminates the ideas of what will be implemented in Rouen.

Daniel Delalande added that especially in France the system of funding territorial cohesion is implemented e.g. in the "contrat de plan" contracts between the national and the regional level determining and funding the infrastructure development. However, at the moment there exists a difference between the EU and French funding aims: France wishes more support for energy efficient buildings.

The presentation of the two different governmental approaches highlighted the different impacts on regions and the differences in vulnerability. For Mr Bogaert local initiatives are very important because there are different problems which need to be tackled by adequate solutions. All speakers stressed the importance of communicating possible solutions to show the local level, which is decisive for implementation, what could be done. Mr Delalande added that the only answer to the high level of uncertainties are no-regret strategies looking at the local and regional risks and adapting buildings and planned developments. Decision-makers must be supported in the task of assessing the risk.

Adaptation to climate change by the building and water sector

The sustainability strategy in views of climate change was presented by ***Olivier Gaudron*** from the French national research coordination for urban development, construction and architecture. The urban development construction and architecture plan or PUCA from its French initials (Plan Urbanisme Construction Architecture) was created in 1998 by the French Ministry of public works in order to advance knowledge of territories and cities and to shed light on public action. Mr Gaudron explained that a long term strategy on all levels – the national, regional and local level is von high importance. The experimental programme of PUCA aims at enhancing the environmental quality and energy efficiency of building constructions. Integrated approaches are important which include all issues of architecture and social aspects. The PUCA represents the national ministerial level. The architects are requested to fill in their role within the relationship with the local communities in solving the problems on the local basis within the framework set by the national level.

Examples of the programme “sustainable city” in a part of Rouen were demonstrated by the architect ***Cécile Fort***. On the left side of the river Seine an urban development with 100 accommodations was developed. When the development was installed in 2001, building energy efficiently was not as high on the agenda as nowadays. Nevertheless, in the quarter many aims of sustainable development were implemented, e.g. the heating consumption was reduced by good insulation and appropriate building orientation. However, by designing compact buildings for low energy consumption less daylight is the consequence a problem which was solved by an innovative skylight system.

Jean-Luc Bertrand-Krajewski presented the evolution of strategies and available techniques for ***sustainable management of urban stormwater*** responding to the question what strategies are there available for the restoration of the Luciline area. The urban stormwater management has evolved from an urban nuisance to water as a valuable resource as well as looking at it only in terms of hydrology and hydraulics but rather taking a multi-purpose approach. Multifunctional systems consider hydraulic control, quality treatment, water as a natural resource and water as a means for urban climate control as well as possible other function or use. A great variety of techniques is available for singular and multi-purpose tasks. Mr Bertrand-Krajewski stressed the point that long term maintenance should be considered with the integrated approaches. Here, systems that use the city’s surface areas are easier to maintain than underground systems. An important question is how to transfer the existing systems into the new multifunctional ones. In new developments this is possible but solutions in existing urban areas are more difficult. Also, flexible systems are needed for changing framework conditions in existing areas, e.g. decreasing population.

In the **discussion** Pascal Victor from the architect's organisation "maison l'architecture" explained that projects like the one presented are the starting point for larger scale environmentally friendly neighbourhoods. The architect's organisation contributes to the dissemination of the guidelines of the environmental round table by the training of architects and stakeholders. Working together with different disciplines and stakeholders for added value becomes more and more important compared to the former attitude of architects tending to have the overruling view what buildings should look like. He added that European programmes are helpful for exchange on sustainable buildings and gathering information for making effective progress.

Although progress has been made in recent years, in France there is a need for more interdisciplinary and regional interactions e.g. working together up- and downstream as Mr Bertrand-Krajewski explained. Also, monitoring of the effects more broadly is needed for improved actions. Best practice in Europe for collecting rainwater can be learned from Germany and the UK as well as outside of Europe from Australia. Altogether the speakers expressed the progress made in the different fields of action and highlighted the necessity of working together and networking to achieve implementation on local level. Anke Althoff remarked, that as the Interreg IIIB-project "Urban Water" has shown the international exchange of know how can lead to actual transfer of instruments or improved procedures from one country to another. The transfer of know how made it possible that a Dutch planning instrument was transferred in an adapted way to Scotland. Insofar the European Interreg funding allows for trying out new ideas. Often the new developments by architects or new techniques available are not new for scientists but the implementation on the local level has not been executed yet.

The Future Cities-project

Aims and strategy of the Future Cities-project were presented by ***Anke Althoff***, the project manager of *Future Cities* for the Lead Partner Lippeverband. The project's aim is to make city regions in Northwest Europe fit to cope with climate change impacts. The focus lies on proactive transformation of urban structures. Until the end of 2012 eight project partners from Belgium, France, Germany, the Netherlands and the UK work together to develop and implement effective means for adapting the urban environment. 11 million euros will be spent whereof 5.5 million euros will be funded by the European Regional Development Fund. Key components of the urban environment – water systems, green structures and energy saving - will be addressed, combining the key components for more economic efficiency. Existing city networks broadly focus on mitigation meaning greenhouse gas reduction. Laying the focus on adaptation is not thoroughly in the focus yet although it is a very urgent topic to be tackled. Actions are carried out to develop an assessment check for climate proof cities and action plans for transformation. Combined measures will be implemented in all participating countries and the long term impact will be fostered by targeted awareness raising activities. The joint working of the project partners will allow for comprehensive encouragement of best practice solutions for problems which need to be tackled soon. The transnational assessment check to assess the climate proofness of urban structures and planned measures shall allow for improved acting in an anticipatory manner. No regret measures will be implemented in the light of uncertainties of the climate change impacts. On the website of Future Cities the project is presented in more detail and all project accomplishments will be can be found there. Being one pilot project the Luciline area will be presented in detail by representatives from Rouen and Rouen seine Aménagement.

The Luciline-project in Rouen

Yvon Robert, former mayor of Rouen and elected representative for town planning, reflected the steps of the development of the Luciline-project area. For more than 20 years he has been involved in the planning of Luciline. He started the first ideas when it became clear that the area was declining and was not enough developed to be able to change without major measures. The goal of the project was to develop both sides of the river which is a difficult condition. Access to the area and public transport were in the focus of the first ideas. This lead to the “TEOR”, the bus system that connects east and west Rouen. This created also an important axis along Luciline. Improvement of access was also the reason to realise the new bridge which now is an attractive symbol.

In the planning phases it became obvious that, to raise attractiveness, the area not only needed good access but also needed to refer to different framework conditions. Housing and economic uses are the main focus of land use in the area. But to gain sustainability other aspects were added in the further planning process. Close cooperation with the port authority is a key element since the port is closely linked with the development.

Mr Robert reflected that 20 years ago, when his greatest problem was to connect the area with the rest of Rouen by public transport it was not predictable that now the project is part of an EU-project-network. But this cooperation brings many attractive elements into the area. And cities live from the links between heritage and modern structures. That is why Future Cities will create an added value for Luciline.

Thierry Verrier, the general director of the city's project development organisation Rouen Seine Aménagement, explained that part of the development strategy was the creation of visible elements and the a development that limits the risk for the public site. Cooperation with real estate companies ensured that public budgets are not at risk. Another dogma was the involvement of many different expert in an early stage, like city planners, infrastructure planners, energy experts, financial experts etc.

Christian Devillers, civil engineer working on the ***urban development planning for Luciline*** explained the plans for the 100 ha area in detail. The area close to the city center (30 min walk) is well integrated. The whole area is used but not too densely so that re-use is possible. This "2nd phase of city planning" that focuses on re-using certain areas creates great chances for the cities.

Important aspects for the conception is the urban and green framework, the morphology and the view-axis from the existing housing areas up on the hills north of the area. The goal is to mix the structures and styles and uses to create multifunctional structures. 40 % will be reserved for social housing.

Water plays also a role in the development: the Luciline River was covered under ground years ago and shall be made visible again along the street axis. It will be connected with the Seine via a sewer.

Also, in other aspects the realisation will go beyond the original plans and expectations: more water, sustainable technologies and e.g. a modern car park system that requires only 0.8 parking lots per dwelling to limit the cars in the area and to force public transport, instead of 1.5 recently. Similar the businesses will be treated. The project completion is projected in 15 years.

Overall Christian Devillers called the project Luciline an "example for a new approach in city planning": sustainable and social with social housing etc. Also there is a close relationship to economy to create new jobs in the area and to ensure existing jobs. Energy saving is one of the next goals.

Lily Taloni, engineer, presented the ***energy concept for Luciline***. First, the conditions were checked: geology survey, climatic criteria assessment which showed only few wind and much sun, wood supply evaluation. Based on that, options for the energy concept were developed and compared: individual heat pump solutions, gas heating for single buildings, central geothermal solutions for an ensemble of buildings or for the total planning area, wood heating system.

The decision was taken together with different stakeholders, but the city was decisive. The first two possibilities were cancelled since they were not effective enough. The best solution seems to be the central geothermal system as most adaptable solution, since wood hating systems create emission in the area. Good practise examples from other cases were evaluated. However, one experience is already the importance of early integration of energy supply aspects in the early planning phases for such a development project.

Jean-Yves Ausser and Sophie Boulin, engineers in the company ANTEA, explained the ***solutions for geothermal energy***. Experience from 30 years of research on geothermal solutions is available today. But for practical solutions it is crucial to reduce the energy consumption for a whole area, to find individual constructions for all houses and to combine regenerative energy sources. For Luciline different drillings were made to evaluate the potential. This is not completed yet. The potential depends on the underground, the groundwater table and temperature and other conditions. Three options are possible for Luciline that can be characterised by the temperature they work with (high, medium and low temperatures). At present the survey of the potential for Luciline shows good results and the team expects possibilities for geothermal solutions.

Thomas Buhler is working on applications for ***heat exchangers in sewer pipes***. He demonstrated examples and experience from different other locations. For Luciline this technique is not being actually planned yet. He stressed the point that reliable monitoring of the use of geothermal potential and of heat in sewer systems is needed. A long as it works on the “first-come-first-serves” approach, investments could be lost if the potential is insufficient due to “overloading” the natural supply.

He recommended adjusting the concepts for energy, supplying infrastructure etc. in early planning phases with the urban planners. Changes in the urban planning can cause difficult changes in the technical planning efforts and cause costs.

Régis Berlier explained the planned ***water management for the Luciline area***. The Luciline river is fed by 3 springs but is nowadays totally channeled while crossing the area. It is planned to restore the surface flow which will have an educational impact and at the same time solve the existing sewer problem. Monitoring the effects is an important part of the project. Here, flora and fauna upstream and downstream will be included for monitoring the quality of rainwater run off and the Luciline stream water.

Wrap-up

Thierry Verrier thanked the Interreg partners that with the help of the partnership the Luciline project will be implemented in an improved way being part of a transnational project. An important part will be the communication e.g. with the inhabitants. Here, the working group on communication will help moving forward on crucial themes. He thanked Charlotte Masset for bringing Rouen Seine Aménagement into the European partnership. At the moment the project Luciline is in its first steps and will be developed together during the partnership based on the expertise of all partners. All this will have to be done with optimal use of public money or by saving public money in the actual circumstances of finance crisis.

Lundi 23 mars 2009 N°133

La CHRONIQUE de NORMANDIE

« Récits des hauts faits, projets, humeurs et ambitions des responsables de la région »

Et pendant ce temps là...

Pièce maîtresse du grand projet urbain "Seine-Ouest", la construction du futur quartier "Luciline", à Rouen, 10 ha de bureaux et de logements pour accueillir 1 500 habitants et 2 500 emplois entre le Mont-Riboudet et la Seine, commencera en 2011. D'un montant évalué à 500 M€, l'opération se déploiera sur une dizaine d'années. La maîtrise d'ouvrage est assurée par Rouen Seine Aménagement ; la maîtrise d'oeuvre urbaine est pilotée par l'architecte Christian Devillers.

Valérie Fourneyron veut faire de Luciline un projet environnemental exemplaire dans trois directions :

- L'efficacité énergétique avec la valorisation du potentiel géothermique du site.
- La gestion douce des eaux pluviales urbaines.
- l'utilisation des modes doux pour les déplacements.

Les études sont en cours. Elles bénéficient du financement du programme européen Interreg IVB - Future Cities qui vise à partager les connaissances et les innovations entre plusieurs villes européennes.

List of participants – Launch Conference

Name	Organisation
Moulay-Ahmed ABDELGHANI IDRISSI	UNIVERSITÉ DE ROUEN
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Albon BOURCHER	Université du Havre
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Emmanuelle BREARD	Mairie de Rouen
Thomas BUHLER	PLANAIR
Cédric CAILLER	CERQUAL
Laurence CALTOT	Mairie de Rouen
Jérôme CHAIB	AREHN
André-Jacques CHATILLON	Mairie de Rouen
Sylvie CHAUVET	ATTICA
Bruno CHRISTIN	Quille
Frédéric CIEUX	LOGISEINE
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Brayima DAKYO	Université du Havre
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Bert MEŸER	Van Hall Larenstein
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