



# 3<sup>rd</sup> Working Group Meeting

Hastings,  
One Priority Square

23<sup>rd</sup> – 24<sup>th</sup> September 2009

## Report





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- Working group planner WG 1
- Working group planner WG 2 (with list of possible twinning activities)
- Working group planner WG 3 (with time schedule for evaluating measures and list of criteria)
- Working group planner WG 4
- List of participants
- Presentations (on CD ROM)

## Programme

<b>Wednesday, 23<sup>rd</sup> September 2009</b>	
<b>Welcome and introduction</b>	<i>by Anke Althoff, Lippeverband</i>
<b>Working Group Session I</b> , plenary discussion:	<i>moderated by Anke Althoff, Lippeverband</i>
<ul style="list-style-type: none"> <li>Report of meeting of WG 1 in June 2009 - Status of assessment check</li> <li>"Guideline City Climate"</li> <li>Fact sheets on Future Cities – measures</li> </ul>	<i>Ton Verhoeven, Nijmegen</i> <i>Dr. Steinrücke, Regionalverband Ruhr</i> <i>Birgit Haupter, INFRASTRUKTUR &amp; UMWELT</i>
<b>Working Group Session II</b> , split up in parallel groups:	
WG 1 "Climate Assessment"	<i>moderated by chair Ton Verhoeven, Nijmegen</i>
<ul style="list-style-type: none"> <li>Topic "Module 5" – Adaptation measures</li> </ul>	
WG 2 "Action Plans"	<i>moderated by chair Hans van Ammers, Arnhem</i>
<ul style="list-style-type: none"> <li>Experiences from 1<sup>st</sup> twinning event</li> <li>Conclusions and road map for next twinning(s)</li> </ul>	
<b>Working Group Session III</b> , split up in parallel groups:	
WG 3 "Implementation"	<i>moderated by chair Torsten Frehmann, Emschergerossenschaft</i>
<ul style="list-style-type: none"> <li>Time schedule of investments</li> <li>Determination of input of WG 3 for assessment check module 5b and concept for evaluation report</li> </ul>	
WG 4 "Awareness Rising"	<i>moderated by chair Eveline Huyghe, West Vlaamse Intercommunale</i>
<ul style="list-style-type: none"> <li>Topic: Results questionnaire on additions</li> <li>Communication actions of Tiel: "Game "Living with water"</li> </ul>	<i>Annemieke de Kort-Spits, Tiel</i>
<b>Plenary Session IV</b>	
City climate research of Arnhem -results/ possible integration of other partners	<i>Hans van Ammers, Arnhem</i>
<b>Site Visit – Climate sensitive buildings</b>	
Introduction to site visit	<i>John Williams, Sea Space</i>

<b>Thursday, 24<sup>th</sup> September 2009</b>	
<b>Session VI, Plenary</b>	
Introduction to day, Conclusions of day 1 / starting points for day 2	<i>Anke Althoff, Lippeverband</i>
Contribution to mitigation at WWTP	<i>Eberhard Holtmeier, Emschergerossenschaft</i>
<b>Session VII</b> , split up in parallel groups:	<i>moderated by chairs</i>
General Topics:	
<ul style="list-style-type: none"> <li>Follow-up on day 1</li> <li>Update work group planner</li> </ul>	
WG 1 "Climate Assessment"	
<ul style="list-style-type: none"> <li>Topic "Module 1" – Vulnerability assessment</li> <li>"Experiences with the Local Climates impact profile"</li> </ul>	<i>Jörn Peters, South East England Partnership Board</i> <i>Chantal Lass, Hastings</i>
WG 2 "Action Plans"	
<ul style="list-style-type: none"> <li>Presentation: GreEnergy Roofs Nijmegen</li> <li>Road map for next twinning(s) (continued)</li> </ul>	<i>Antal Zuurman, Nijmegen</i>
<b>Working Group Session VIII</b> , split up in parallel groups:	<i>moderated by chairs</i>
WG 3 "Implementation"	
WG 4 "Awareness Rising"	
<b>Plenary Session</b>	
Work Group Planners WGs	<i>presented by chairs</i>
Conclusions and Wrap-up	<i>Anke Althoff, Lippeverband</i>



## Introduction

For the 3<sup>rd</sup> working group meeting the Future Cities project partners and working group members assembled in Hastings to further develop the joint products – such as the “climate assessment” and the “twinning actions”. In plenary sessions themes of interest for all four working groups were presented. In the individual working group sessions each working group discussed and elaborated their topics. Furthermore, a site visit provided insight in sustainable and “climate-adapted” building techniques.



## Plenary presentations

Anke Althoff, the project manager of the Lead Partner, welcomes the working group members to the meeting. She highlights the importance of the 3<sup>rd</sup> meeting which shall produce remarkable steps forward towards the “climate assessment” which preliminary version is due to be presented at the mid-term conference in October 2010.

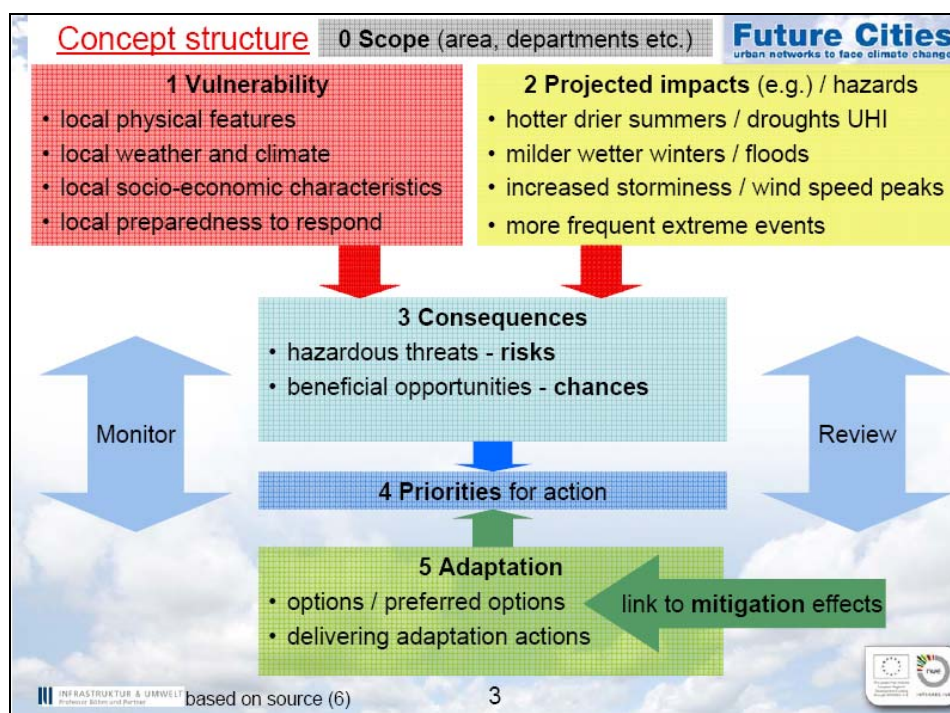
## Results of WG 1 meeting in June 2009 – status of assessment check

The chair of working group 1, Ton Verhoeven (Nijmegen) presents the results of the meeting of WG 1 which took place on 17<sup>th</sup>-18<sup>th</sup> June 2009 in Nijmegen. There, a basic structure was decided on which now provides the general framework for the Future Cities “climate assessment” (see figure on next page).

The concept comprises five major modules:

- A vulnerability check
- The assumptions/ projected impacts
- The determination and assessment of the resulting consequences
- The determination of priorities for action
- Determining, assessing and delivering adaptation actions.





Within this structure the project partners have to decide which parts will be in the main focus of the work.

In the **vulnerability check (1)** the current vulnerability of the local physical features and socio-economic conditions should be checked against weather events in order to be able to detect critical thresholds.

The **projected impacts (2)** of a changed climate need to be combined with the vulnerability. It has to be known, where to get the information and – because of the manifold uncertainties – how to use it.

At the moment, a vulnerability assessment is undertaken by Jörn Peters (South East England Partnership Board) for the regional level. It was experienced

that many uncertainties due to missing local information as well as possible developments are encountered. Ton Verhoeven concludes that it has to be discussed how the projected impacts can be included in the vulnerability check since more uncertainties are added up.

In the next step the **consequences (3)** of the projected impacts with view to the local vulnerability can be assessed. The assessment may deliver threats, but also may unveil opportunities.

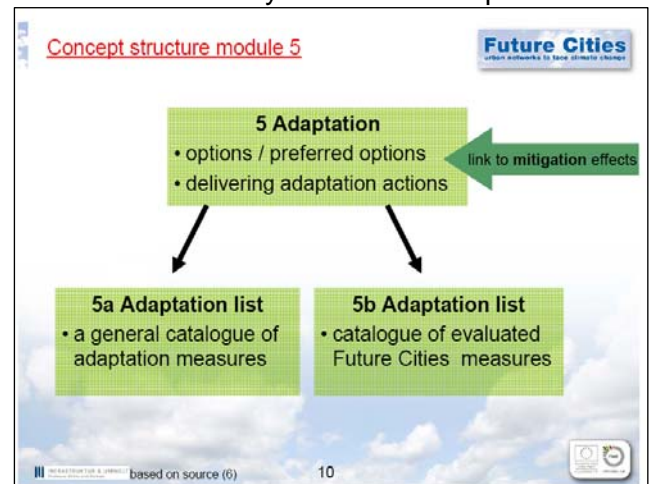
Following the risk assessment the **local areas for priorities (4)** can be defined, e.g. areas of extreme and high risk. However, further criteria such as the legal framework or political focus or funding/ financing possibilities might be applicable. In general, the aim of this step is to localise the “hot-spots” (e.g. geographically or regarding sectors) where action should be taken predominantly.

Concept - Vulnerability Check					
Module 1: Vulnerability check - Check local/regional conditions of vulnerability on					
Remarks of mini group A (blue lettering), mini group B (violet lettering) and mini group C (green lettering)					
Check	General weather sensitivity (catalogue?) Split up in climate change effects: heat, floods, storm... Weight	Former events/ consequences/ responses taken Has something been done before? Should be column 3 Example	Regional / Local / spatial relevance Needed?	Capacity to adapt Should be column 2 Can do	Uncertainties Needed? Range
Catalogue of Topics (e.g.)					
x Population					
important					
Public health					
Vulnerable groups					
Built environment					
Working places + homes					
important					
Existing building stock					
Construction material					
Urban spaces					
important infrastructure					

For the modules 2,3 and 4 it is proposed to develop a manual (or apply an existing one) on how to get the information and how to use it. Possibly this could include describing the experiences how the *Future Cities*-partners did these steps.

The 5<sup>th</sup> module comprises the assessment of possible **adaptation (5)** options and the selection of preferred measures which finally shall be implemented. A two-step-catalogue of possible adaptation measures is proposed for *Future Cities*:

- **A general catalogue of adaptation measures** which is clearly linked to the impacts on different urban / regional features e.g. the topics according to the vulnerability assessment.
- **A catalogue of evaluated *Future Cities* measures** which is linked to the *Future Cities* key components as well as to the possible effects regarding the impacts on urban features. It could provide the basis for deciding on priority adaptation measures (in combination with the priority action areas or sections as determined in module 4).



Ton Verhoeven explains that the catalogues of module 1 (vulnerability assessment) and module 5 (adaptation option) will be the main focus for discussion in working group 1 on both days of this working group meeting.

## Guideline City Climate

Monika Steinrücke from the Regionalverband Ruhr (Ruhr Regional Association) presents first results of the “Guideline City Climate” which shall comprise measures and action plans for cities and urban agglomerations for adaptations to climate change. Here, the focus is on cooperation of urban climatology and urban water management being main factors in addressing impacts such as the urban heat island and the impairment of urban infrastructure by intense rain (or dryness).

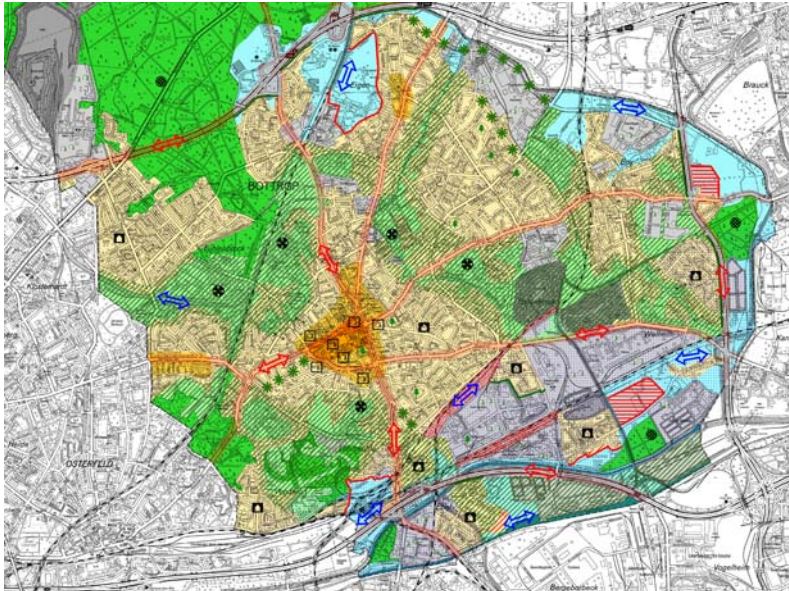
Aim of the guideline is to provide a reference book and an action plan for climate-compatible urban planning. This shall be achieved within three parts of the guideline:

1. Develop an increased awareness of climate change impacts by providing information, e.g. on basic principles of urban climatology and water management, the global and regional climate change.
2. Classification of problem areas by producing maps, e.g. based on vulnerability factors such as high density of population/ rate of inhabitants over 65 years which is intersected with areas of heat island of different severity.
3. Establish an action plan of adaptation to climate change by developing action plans addressing three different impact factors of climate change: Heat, intense rain and dryness.





At the example of the impact “heat” Monika Steinrücke explains the structure of the action plan. For four different categories – basic condition of the system, stresses/sensitivity, malfunctions of the system and the damage potential – various possible measures are assigned, which may improve or relieve the situation. For example the malfunctioning of the system could mean lack of cooling at nighttime or poor ventilation. Appropriate measures could be to fix a building area limit (within urban planning codes) and / or to create or safeguard fresh air areas as well as airflow corridors.

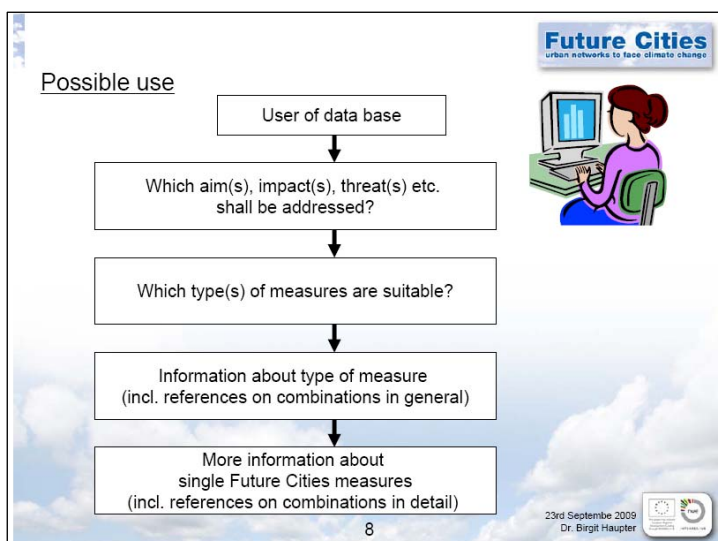


At the example of the city of Bottrop a planning reference map was produced based on appropriate measures related to the climate functions of the city parts.

City climate reference map: e.g. indicating “Protection of compensation areas and airflow corridors” (e.g. building limits); “Improvement of climate conditions” (e.g. planting in the streets, opening the built-up area to regional green tracts, extending green areas)

## Results of Fact Sheets

Birgit Haupter (transnational support/ INFRASTRUKTUR & UMWELT) explains the results of the compilation of fact sheets on Future Cities adaptation measures. At the meeting of working group 1 in Nijmegen it was decided that project partners should fill in fact sheets describing their measures as well as providing available information about costs and benefits and lessons learned (e.g. efficiency, good combination with other measure). These fact sheets shall be one basic input in module 5b (Adaptation options – possible measures – evaluated Future Cities measures) of the “climate assessment”.



So far, 33 fact sheets were filled in by the project partners. The description parts could be mostly filled in whereas information especially on economic issues and lessons learned is – due to the pre-implementation status of many measures – still to be compiled in more detail.

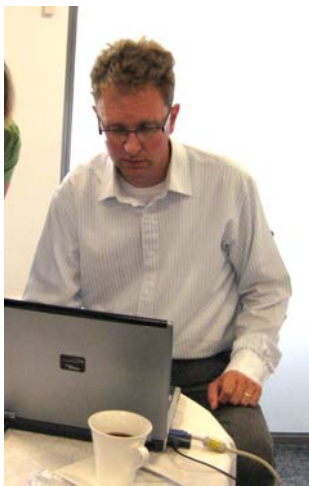
Birgit Haupter concludes that this also makes clear that the headlines of table 5b should be given some thought to when discussing the table of adaptation options in working group 1: Are the headlines used practical and applicable headlines for Future Cities measures?



Birgit Haupter proposes a possible use of the fact sheets as follows (see figure): The user of the data base being guided to find the information and measure to address his / her problems. Of course, the guidance through the adaptation options has to be linked to the other modules from vulnerability assessment to risk assessment.

In the discussion it is agreed that the fact sheets can be a valuable information tool. The process of updating and integrating in the “climate assessment” needs to be developed further in working group 1.

## City climate research – results of Arnhem



In the presentation Hans van Ammers (Arnhem) and Vincent Kuypers from Alterra-WUR give an overview of the results of the research which was undertaken during summer 2009. Three types of activities were executed:

1. With the thermographic heat scan at night in Arnhem it was detected that the discrepancy between hot and cold surfaces was 9° C which is much more than theoretically expected (only ca. 2° C difference). Wet greenland is colder than water surfaces, accordingly the floodplains are colder than the Rhine itself. It is concluded that if you want to build on a “cool open space” the buildings should get a roof with material which allows for similar coolness at night as the former open space.

2. The thermo scan was

complemented by measurement of temperatures in low height on bike. It was detected that the urban heat island is a phenomenon of the night. The maximum temperature range over 7 degrees Celcius (like in Rotterdam) and the greatest difference was encountered after sunset.

3. This above named research informs the urban climate analysis map. Based on the analysis map the urban climate recommendation map could be developed to give strategic urban planning recommendations in order to improve the wind and thermal environment from the climatic point of view, which could help planners to take action more appropriately in design process.

Hans van Ammers explains where these research items could feed the “joint climate assessment”. The temperature measurements are one factor to help to detect the vulnerability. The climate recommendation map can provide basic information to go on with module 4 (and module 5). A “toolbox” for adaptation measures is integrated in the so-called map table which comprises a GIS-system and the possibility to determine priorities. In order to validate the map table the project partner Arnhem is interested to get information from other project partners to improve the method. It is agreed that Hans van Ammers will specify the kind of information needed and the project partners will check on the availability of data.

Fietsende thermometers in Arnhem



ARNHEM - Onderzoeker Bert Heusinkveld rijdt op een fiets met meetapparatuur door de Arnhemse Wielakerstraat. Het vervoermiddel, ingericht als mobiel weerstation, reed gisteren door de stad om temperaturen, wind, straling en luchtvochtigheid te meten. De metingen werden uitgevoerd door Wageningen Universiteit. De onderzoeksgegevens worden gebruikt om in te kunnen spelen op de klimaatverandering. foto Marc Plein

Zie ook pagina 22: Fietsende thermometers meten warmte in de stad van alle kanten

## Contribution to mitigation at Waste Water Treatment Plant



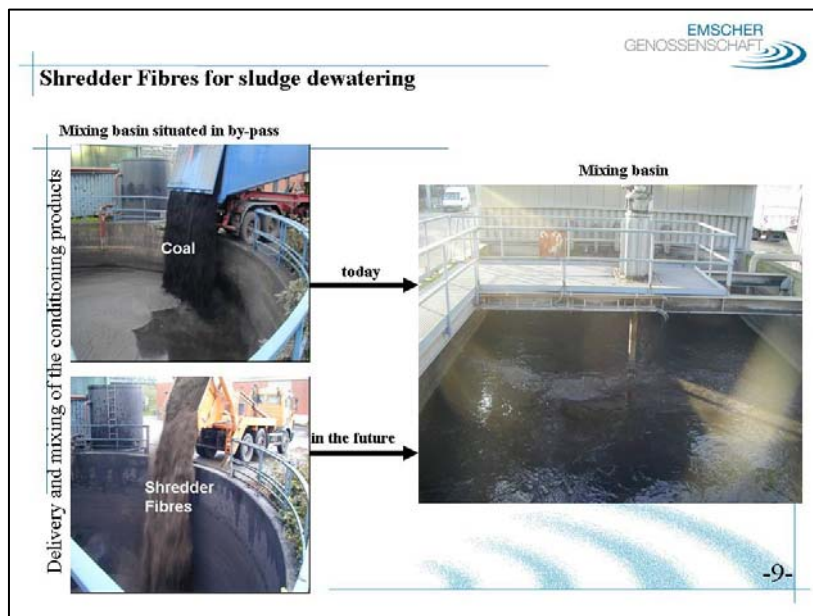
Eberhard Holtmeier from Emscher Genossenschaft presents the results of the test phase of replacing coal by a material from car recycling for the dewatering process of sludge from the waste water treatment plant.

Former days the dewatering of the sludge – as a prerequisite for incineration – was facilitated by the coal dust which was already introduced with the sewage water, because of the coal mining processes everywhere in the Ruhr area. Nowadays, because of less coal mining and better cleaning procedures fine coal must be added to the sludge to enhance the caloric value for incineration.

A substitution for this additive is looked for. Here, the use of shredder fibres from car recycling was tested. It was found out that no extra harmful substances are added to the process. The exhaust emission is regularly checked by the Environment agency of North-Rhine Westphalia.

Eberhard Holtmeier explains that some technical problems due to the different additive had to be solved:

- The station for dumping the shredder fibres had to be completely enclosed in order to avoid dust explosion.
- The stirring gear for mixing the fibres with the sludge had to be newly designed to overcome a tendency of the light fibres to stay on the surface.



The speaker concludes that the test has been successful and it is envisaged to avoid 12,000 tons of fossil coal which sums up to an equivalent of 32,000 tons of CO<sub>2</sub> emissions per year at the WWTP in Bottrop. Chantal Lass from Hastings Borough Council reports that they try to reduce 100 tons per year of CO<sub>2</sub> emission which is not easy. So the reduction due to the use of shredders fibres in the waste water treatment plant is rather effective.

## Results of working groups

### Working Group 1

#### Participants:

Anke Althoff	PP1 Lippeverband
Albert Anijs	PP2 Municipality of Arnhem
Jos Verweij	PP2 Municipality of Arnhem
Eberhard Holtmeier	PP3 Emschergerossenschaft
Chantal Lass	PP4 Hastings
Helene Mogelhoj	PP4 Sub-Partner Sea Space
Jörn Peters	PP4 Sub-Partner SEEPB
Ton Verhoeven (chair)	PP5 Municipality of Nijmegen
Veroniek Bezemer	PP5 Municipality of Nijmegen
Bénédicte Salle	PP6 Rouen Seine Aménag.
Annemieke de Kort	PP7 Municipality of Tiel
Eveline Huyghe	PP8 West-Vlaamse Intercomm.
Nathalie Garré	PP8 West-Vlaamse Intercomm.
Vincent Kuypers	Alterra, WUR (with PP2)
Barry de Vries	Alterra, WUR (with PP2)
Dick van Dorp	VHL (with PP2)
Ilse Dries	Flemish Government
Ron Josten	City Region Arnhem-Nijmegen
Monika Steinrücke	Regionalverband Ruhr
Birgit Haupter	INFRASTRUKTUR & UMWELT
Stefanie Greis	INFRASTRUKTUR & UMWELT



The chair of WG 1, Ton Verhoeven welcomes the participants of the working group and explains the programme of both sessions. The aim of the working group meeting is to further work on the adaptation (table 5a/5b), options as well as the vulnerability assessment.

#### Adaptation options on module 5

With regard to the adaptation options the summary of fact sheets provided by Birgit Haupter and their classification concerning key elements are discussed. In the Future Cities application the three key components – green structures, water systems and energy efficiency – (and as a fourth – the combination of single key components) were addressed to describe the focussed actions of Future Cities. So far this was the basis for the classification in module 5 and accordingly for the fact sheets.

On behalf of partner 2 Arnhem, Vincent Kuypers explains the necessity of adding the element “urban morphology”. The discussion reveals different views on the term “urban morphology”. Chantal Lass remarks that this term is not used in England and the naming should be given some thought to. E.g. does it mean “local physical features” as already described in module 1? Project partner 2 will provide a clear definition of the term which should be coordinated with Jörn Peters. After discussion it is agreed that INFRASTRUKTUR & UMWELT will revise the summary table of the fact sheets introducing the category. The project partners will add or revise fact sheets accordingly.



### Procedure of updating the fact sheets

The procedure of updating the fact sheets is discussed and agreed. INFRASTRUKTUR & UMWELT will ask before each working group meeting for additions and update the summary table. The summary and the underlying fact sheets will be available on the website of Future Cities in the area for working group members. The project partners are requested to inform INFRASTRUKTUR & UMWELT about different assignments to key elements with regard to the element “urban morphology” (preliminary expression, to be developed).

### Discussion of table 5b – Adaptation options – evaluating Future Cities measures

The structure and headlines of the table are discussed. The aim of the table is clarified. One major aim should be to enable a possible user to find out the most effective measures. Therefore, in column 3 the possible effect of the measures is described and in the last column the concrete experiences as worked out in WG 2 (regarding action plans) and WG 3 (regarding implemented measures of Future Cities) are included. Also, in the structure of the table the element “urban morphology” is amended. With these changes the general structure of the table is agreed as basis for further work.

### Vulnerability assessment

Jörn Peters presents the status of the regional vulnerability assessment which is being undertaken to provide a framework for the South East of England. A wide range of sectors is being explored concerning:

- What affects current vulnerability?
- What are consequences currently experienced?
- What are the adaptation opportunities?



Jörn Peters stresses the point that with the regional developments already many uncertainties are connected (e.g. the development of the water supply situation, surplus-deficit forecast) where the climate projections add more uncertainties. Therefore, his organisation has decided to look at current vulnerability.

The focus of the assessment is laid on:

- Deprived areas: Because they might be more vulnerable
- Areas important for water supply: Their future deficits might develop.
- Police reports which reveal severe weather events and what damage was done to lives and assets
- Drought risk rating according to the community risk register
- Areas with high flood risk and their preparedness to respond
- Transport networks and other critical infrastructure being in flood zones

Next steps will be to improve the indicators, to work with local authorities and to identify vulnerability “hotspots” per sector. The influence of socio-economic factors will be reflected and based on this the identification of adaptation measures and spatial implications will start.

Jörn Peters concludes that the future challenges comprise among others how to install a resilient and flexible infrastructure and adequate development and how to include global

impacts on the region, such as might be caused by migration and the development of resources.

In the discussion it becomes clear that the vulnerability assessment is very important since only then the adaptation measures can be tailored. Also, the approach of using maps (GIS) which show “hot spots” of different sectors could be very helpful.

#### Experiences with developing a “Local Climate Impacts Profile (LCIP)”



Chantal Lass from Hastings B.C. presents the experiences made with undertaking the steps for a LCIP which is a tool to explore the types of impacts presented by extreme weather events. She explains that the LCIP is also a tool for awareness raising since all departments concerned in the administration are requested to gather the necessary information. In this way they get confronted with the topic. Also, the main consequences of weather events can be identified to which an area is currently exposed and based on this an adaptation strategy can be prepared.

A “severe weather impact questionnaire” was developed to connect weather events and the impacts they caused on the municipal services and communities. For the past 10 years 20 events of flooding, 14 events of draught and each 7 events of heat waves and high winds are noted. Heat waves can have positive and negative consequences. More tourists come to visit Hastings because the sea and wind lowers the temperatures. Negative consequences range from more complaints due to more noise in the streets during mild nights and the administration not having enough capacity to deal with the number of complaints.

As next steps the health department and services will be interrogated, insurance claims will be assessed and a map of vulnerability to heat waves is aimed at.

In the discussion it is questioned how the work on the regional level (done by the South East England Partnership Board) and the local level (here Hastings) is connected. An exchange is ongoing, e.g. from the regional flood risk assessment local building restrictions are derived.

#### Conclusions for the structure of table 1 (module 1 – vulnerability assessment)

All working group members agree on the procedure of the LCIP being a very practical way to find out about the current situation. Accordingly the structure of table 1 which is built on the basis of the LCIP (column former events/consequences/responses taken) can be used further. It is agreed that the list of topics (1<sup>st</sup> column) shall be revised by INFRASTRUKTUR & UMWELT according to the comments given at the meeting in Nijmegen. As a first step partner Hastings will exemplarily fill in the table with the information available from the LCIP survey. However, the consideration of projected impacts might not be neglected in a next step, since especially for long term investments they have to be taken into account.

#### Agreement on working steps until the next working group meeting

- A. Update fact sheets (IU / PP)
- B. Table Adaptation options (table 5b): Add “urban morphology” (IU)
- C. Define term “urban morphology” (PP2)
- D. Revise table Vulnerability assessment (table 1) (IU), fill in example (PP4)
- E. Develop concept for elaborating and presenting preliminary assessment check at midterm conference (IU / chair / LP).

## Working Group 2

### Participants:

Hans van Ammers (chair)	PP2 Municipality of Arnhem
Albert Anijs	PP2 Municipality of Arnhem
Jos Verweij	PP2 Municipality of Arnhem
Torsten Frehmann	PP3 Emscher-Genossenschaft
Matthias Stumpe	PP3sub Municipality of Bottrop
Jane Dodson	PP4 Hastings
Henk Jan Nijland	PP5 Municipality of Nijmegen
Antal Zuurmann	PP5 Municipality of Nijmegen
Thierry Verrier	PP6 Rouen Seine Aménag.
Ine van den Hurk	PP7 Municipality of Tiel
Trui Naeyaert	PP8 West-Vlaamse Intercomm.
Stijn Saelens	PP8 West-Vlaamse Intercomm.
Vincent Kuypers	Alterra, WUR (with PP2)
Ad Koolen	VHL (with PP2)
Peter Heiland	INFRASTRUKTUR & UMWELT



Hans van Ammers welcomes all participants to the working group and explains the agenda. The main topic for the first part of the session is the review of the twinning activities which took place in the last months. The aims of the twinning activities are to jointly approve the plans and procedures and to improve the communication between the partners. The first twinning activity took place in Brugge in cooperation of the partners WVI, Bottrop and Tiel in early September 2009. The results are documented in the twinning reports of all participating partners. The reports give a good overview about the actions and the conclusions of this twinning activity.

The conclusions concerning the twinning actions are discussed with the following results: The visit was a good instrument to exchange information between the countries. Especially knowledge exchange, legal matters like tax systems or storm water policy in Germany and others were intensively discussed with view to the practical examples. The participating partners were very happy with a good preparation of the twinning meeting, which is very important for the success. Before the mission an inventory of questions and goals should be prepared jointly by the participants. Based on that, each partner should bring good examples and questions regarding the other partners to ensure a fruitful discussion. It is discussed that the twinning actions should be closely linked with the modules of the Future Cities working plan and of the assessment tool (like shown as modules 1 – 5). This makes it possible to generate clear outcomes of twinning towards the joint products of the whole project. This also could lead to a list of criteria towards the next twinning action (like a check list for actions and outcomes). This may be developed by each hosting partner. All participants agree that they learned a lot regarding solutions for their own problems. The scientific results are documented in the twinning reports and they are presented in the working group.

Further conclusions are made regarding organisational issues: Each twinning action should focus on one project in general to give a chance to go into details. Participants point out that not too many issues should be discussed in one visit but it should focus on specific questions. Beside site visits much time should be reserved for discussion and evaluation of the activities.

All participants agree that a maximum of three partner organisations should participate in one twinning action. Then twinning is a good instrument to work directly and fast and get feedback on one's activities and reflect the activities of other partners.



Another discussion focuses on the twinning reports. At the moment each partner is asked to deliver one twinning report. This inherits some double work. An improvement might be that all participating partners prepare one joint twinning report which consists joint parts and individual sections. In any case individual contributions of each partner have to be made. The host of the twinning activity is responsible to merge all contributions to one twinning report. Besides that the Lead Partner and the coordinators of the work packages shall receive the single input of all partners to keep an overview on the status of preparation. IU is asked to make a proposal for an improved twinning report form. The first twinning report shall be transferred into the new form together with the three participants. The forms shall also reflect the modules of the assessment tool.

It is discussed whether twinning always calls for exchange visits or if also exchange by e-mail or other discussion platforms can be called twinning. It is agreed that twinning is based on a structured clear outcome and preparation so that the results and messages can be used for the improvement of all modules of the project. It should be clear that a twinning report is delivered. If this is ensured, each exchange activity of two or three partners can serve as a twinning activity.

The most important topics of the first twinning activity were regarding contributions to the assessment tool. For example adaptation measures and vulnerability and the conclusion regarding the modules 1 and 5 played an important role in the visit. Also the impacts of climate change on different plans were discussed in the meeting.

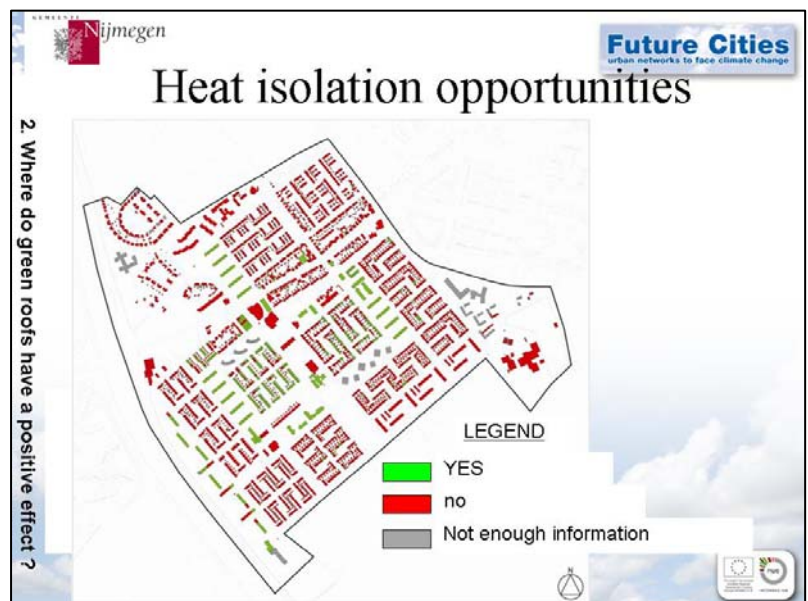
The next twinning actions are planned by Arnhem and Rouen about energy strategies and building techniques. This will be done in the next months. Furthermore a twinning action of Arnhem, Hastings and WVI about energy strategies is planned in early 2010.

Possible twinning activities as they were basically discussed during project development are presented by Hans van Ammers and listed in the annex.

#### Presentation of GreEnergy Roofs Nijmegen

In the second session of working group 2, Antal Zurmann presents the status of the green roofs study in Nijmegen. The study focuses on four main questions: 1. Where are green roofs possible? 2. Where do green roofs have a positive effect? 3. Where is success available with the owners? 4. What are the costs/benefits?

The study is in the starting phase at the moment. An evaluation of the study area in Nijmegen has served to evaluate the type of roofs and the vulnerability. A heat isolation map was produced to evaluate the opportunities for additional measures like green roofs. Based on that, a cooling isolation map was developed. A study on ownership serves to determine the chance to implement new techniques. Based on that, in the next steps a proposal for realisation of green roofs in the study area will be developed.



Subject of the following discussion are supporting measures like subsidies and information campaigns. The question of combinations between green roofs and white roofs (white roofs to reflect heat) is another interesting subject. For the study case a subsidy of 25 Euro per square metre will be offered (10 Euro from disconnection funds and 15 Euro for the climate heat effect). This is about 15 % of the total additional costs. So far no conclusions can be made on the success of these measures since they were not realised yet. The effects on heat islands and energy saving are not sufficiently measurable yet.

In the next half year, the evaluation of the approaches and the experiences will be further developed and reported in the next meeting. In Rouen similar approaches can be discussed. In Tiel green roofs are also an important issue and will be linked with the studies in Nijmegen.

To complement the Future Cities activities Hans van Ammers proposes to exchange the knowledge of Dutch and German waterboards on mitigation measure.

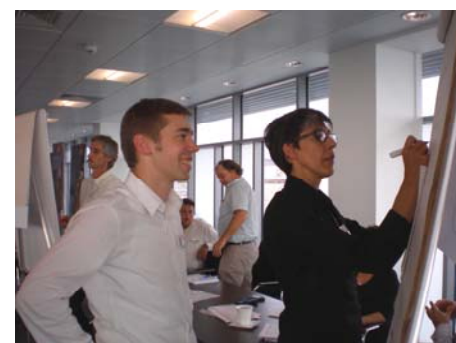
#### Agreement on working steps until the next working group meeting

- A. Revise twinning report formats; (also revise request format, if necessary) (IU/chair);
- B. Adapt report of 1st twinning accordingly (PP8)
- C. Report / presentation on twinning actions (PP2/PP4/PP6/PP8)
- D. Prepare presentation of status and progress of twinning reports (chair with PP2/PP4/PP6/PP8)
- E. Prepare concept for evaluation (IU/chair)
- F. Input about green roofs from Rouen and WVI to Nijmegen (PP6/PP8/PP5); present further results of Green roofs study in Tiel (PP5)

## Working Group 3

### Participants:

Jos Verweij	PP2 Municipality of Arnhem
Torsten Frehmann (chair)	PP3 Emschergerossenschaft
Eberhard Holtmeier	PP3 Emschergerossenschaft
Matthias Stumpe	PP3sub Municipality of Bottrop
Jane Dodson	PP4 Hastings
John Williams	PP4 Sub-Partner Sea Space
Ton Verhoeven	PP5 Municipality of Nijmegen
Antal Zuurmann	PP5 Municipality of Nijmegen
Bénédicte Salle	PP6 Rouen Seine Aménagement
Ine van den Hurk	PP7 Municipality of Tiel
Trui Naeyaert	PP8 West-Vlaamse Intercomm.
Vincent Kuypers	Alterra, WUR (with PP2)
Peter Heiland	INFRASTRUKTUR & UMWELT
Stefanie Greis	INFRASTRUKTUR & UMWELT



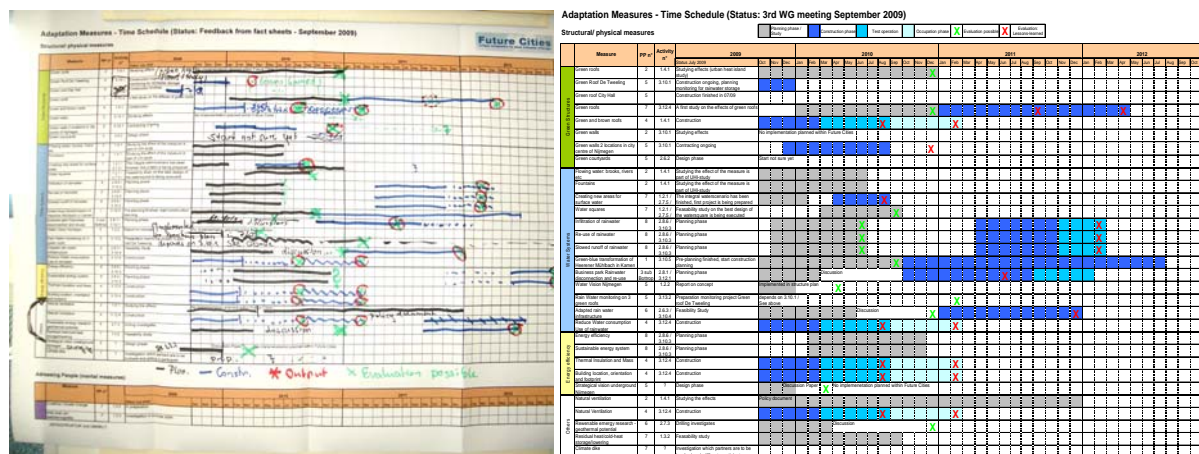
Torsten Frehmann introduces to the working group 3 and resumes the work done so far since the first working group meeting. The working group is going to evaluate the implementation measures in the light of the whole assessment tool and to reflect the assessment criteria. From the discussion of the other working groups it has become clear that this working group might also create adequate criteria itself to build up the assessment

tool. The modules for the assessment will form as framework for the development of the criteria.

The next step (in 2010) will be the evaluation of the first implementation results as test case for the future assessment tool. Therefore in this working group meeting two goals shall be achieved:

- Create an overview of the investment implementation schedule to identify the best moment for a test evaluation (and to answer the question: Which state of implementation can be assessed in September 2010?)
- Development of a set of criteria from the implementations for the assessment check.

Working group members are asked to create a schedule overview of their implementation activities. A plan is created with the information on planning phase, construction phase, milestone for outputs and the time for a possible interim evaluation and final evaluation. After all partner groups have created an own overview all activities are put together in one plan (see figure below, more detailed see annex).



In the second part of the working group meeting the partners create criteria to access the implementation actions. The group works out a list with the main categories (detailed list see annex):

- I. Functionality criteria
- II. Economic criteria
- III. Acceptance criteria
- IV. Others

This list of criteria is discussed and adjusted. It will serve as starting point for the future discussion. All partners are asked to test the criteria and to extend or detail the list until the next working group meeting. The partners are further asked to prepare examples for using the assessment criteria for their own investments.

As additional input for the criteria list following activities are agreed to conduct until the next working group meeting:

- A. Describe the criteria (chair / IU)
- B. Review and reflection of the criteria list and find examples for your investments (all project partners)
- C. Add criteria for geothermal energy (PP6 Rouen / Bénédicte Salle)



- D. Add or review the green roof criteria from the study of Arnhem (PP2 Arnhem / Antal Zuurman)
- E. Prepare a concept for a test evaluation (chair / IU).

## Working Group 4

### Participants:

Anke Althoff	PP1 Lippeverband
Hans van Ammers	PP2 Municipality of Arnhem
Albert Anijs	PP2 Municipality of Arnhem
Chantal Lass	PP4 Hastings
Helene Mogelhoj	PP4 Sub-Partner Sea Space
Veroniek Bezemer	PP5 Municipality of Nijmegen
Henk Jan Nijland	PP5 Municipality of Nijmegen
Thierry Verrier	PP6 Rouen Seine Aménagement
Annemieke de Kort	PP7 Municipality of Tiel
Eveline Huyghe (chair)	PP8 West-Vlaamse Intercomm.
Nathalie Garré	PP8 West-Vlaamse Intercomm.
Barry de Vries	Alterra, WUR (with PP2)
Dick van Dorp	VHL (with PP2)
Ilse Dries	Flemish Government
Ron Josten	City Region Arnhem-Nijmegen
Birgit Haupter	INFRASTRUKTUR & UMWELT



Eveline Huyghe welcomes the working group participants and introduces the programme.

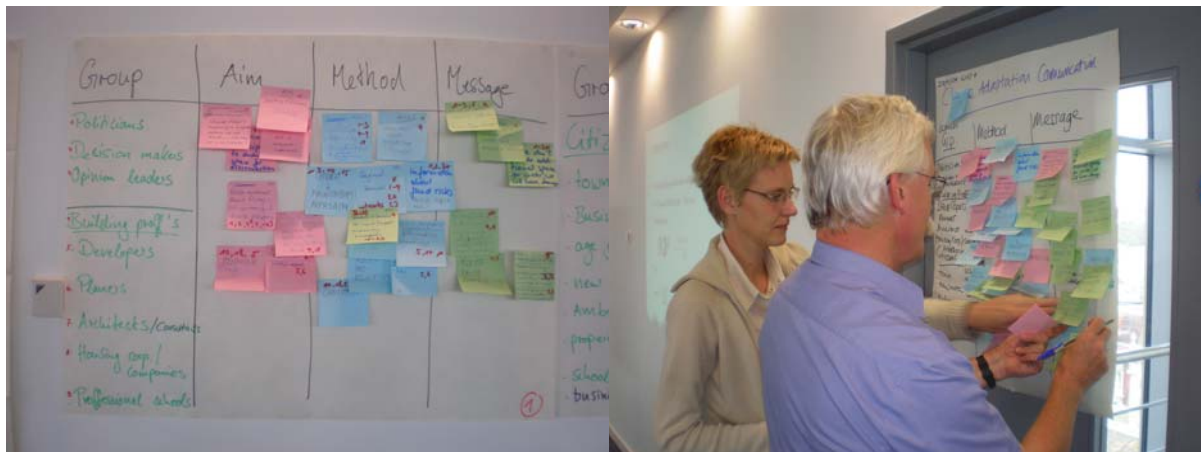
- Summary conclusions WG4 meeting Rouen and results extra input
- Module 5: link WG1 & WG4: discussion headings
- Presentation best practice awareness raising: Water Game, Tiel
- Update workgroup planner.

Following she reports that the additional questionnaire which was sent to the partners after the last working group meeting had not supplied real new findings, the conclusions drawn at the 2<sup>nd</sup> working group meeting are still valid and were confirmed. The follow-up of the best practice data base is discussed. It is agreed that the data bases can be closed for the moment until new aspects come up.

From the results of the questionnaire as well as from the ongoing discussion it is concluded that monitoring the communication actions is very difficult. The aim and tools of monitoring have to be adapted to the aim of the communication action which is being monitored.

Therefore the aim of a communication action with regard to different target groups is one basic prerequisite for executing effective communication. In a brainstorming session target groups, possible aims, methods and messages are collected. In a 2<sup>nd</sup> step aims, methods and messages are assigned to the different target groups according to their feasibility.

It is concluded that this overview has a clear link to table 5b of the module "Adaptation options" which addresses the "mental measures", if the headlines are chosen accordingly.



### Presentation of good practice example – Water game, Tiel

Annemieke de Kort-Spit presents the tool “Water game” which was developed on behalf of the municipality of Tiel together with the water board.

The game should increase the awareness between stakeholders in terms of their interests, roles and measures, thus increasing the change for a better (integral, durable and widely supported) urban planning.

The project area comprises Tiel East, an area of 2 by 3 kilometers between the river Waal and Amsterdam-Rijn canal where renovations, a new city block are planned and an old water system causes problems.

In the water game four actors (stakeholders) with different interests and assignments are connected by a computer network and work together making plans for the area. They score on performance indicators, which can be shared, e.g. water, building, quality of life and nature or which are actor unique, e.g. PR and finance. Each actor has unique measures based on realistic data from reports. The water board plans new waterways, dikes, etc. and real-estate developer builds new houses, apartments, etc.. The housing corporation renovates or rebuilds old houses. Actors should also contribute to the shared costs. For example a real-estate developer contributes to the waterways keeping the new houses dry. Stakeholders play the game and discuss possibilities with each other.



The game provides a good insight in each other's interests, especially since it can be played in a way that e.g. the inhabitants' representative plays the part of a real-estate developer. The background information was gained by interviews with “real” stakeholders such as the water board. Different outcomes are possible according to the interactions. The game has been played once in Tiel, it took 3 hours.

In the discussion all working group members agree on this game being a very interesting tool for awareness raising but also it can be used as a simulation tool, since it shows the impact and consequences of different measures and options. All feasible measures for Tiel East were integrated in the game.

Hans van Ammers remarks that the “Map table” which is being developed for Arnhem is a similar example for a simulation tool that raises awareness. An underlying GIS system will allow to integrate the available local data for different locations.

The working group agrees that it is worth to gain deeper insight in the “water game” and the “Map table”. At the 4<sup>th</sup> W’G meeting in Tiel the game will be available in English. Tiel as host will set up the game and the working group will reserve one hour’s time to get an impression of the game.

Agreement on working steps until the next working group meeting

- A. Bring the brainstorming matrix in a readable form / sum up results (IU/chair)
- B. Send matrix to WG4 members for additions (chair/additions by chair members)
- C. Integrate additions (IU/chair)
- D. Develop concept to link the results of the matrix to module 5 of assessment check and the data base of best practises (IU/chair)

## Conclusions and Wrap-up



The four chairs of the working groups present the results and the next steps which were agreed on (see previous pages and updated working group planner in the annex).

Anke Althoff announces the date of the next (4<sup>th</sup>) working group meeting, which will take place on

10<sup>th</sup> / 11<sup>th</sup> March 2010 in Tiel.

The mid-term conference with the adjoining 5<sup>th</sup> working group meeting is scheduled for

29<sup>th</sup> September 2010 in Essen (conference day)

28<sup>th</sup> / 30<sup>th</sup> September 2010 (Project Steering group / 5<sup>th</sup> Working Group meeting).

Anke Althoff thanks Chantal Lass and her team for the perfect organisation which provided a pleasant atmosphere for the 3<sup>rd</sup> working group meeting.



## Site Visit

John Williams from Sea Space informs the working group participants about the places the site visit is going to. Main point of interest is the location of the innovation exchange building which is being constructed at the moment with funding within the Future Cities project.



Next to an existing business site an innovation exchange building will be constructed as a cornerstone of a new business development (Enviro21). The aim is to initiate sustainable development at regional and national level. The innovation exchange building will provide a combination of exhibition and conference facilities and will be a central social and meeting space for the whole area.

At the site the participants have a closer look to the building which addresses the following adaptation measures:

- Building orientation and shading roof forms to adapt to more heat in the summer.
- Roof mounted wind cowls utilise the natural site exposure for effective natural ventilation and thermal insulation for cooling down in the summer.
- Thermal mass: Utilising exposed thermal mass coupled with natural ventilation and night cooling will reduce the need for 'active' air conditioning.
- Green roof and infiltration concept: Adds to insulation standards and attenuate increased rainwater run off during winter.



The next stop is at the Bridge Community Centre with its green roof which is planted with sedum and changes its colour throughout the seasons. The working group members are told by the centre manager about the structural and social functioning of the building.

With regard to the green roof not only positive aspects apply because of the maintenance costs since the community centre has to raise the money for the costs of having the roof checked twice a year by an expert.

The site visit ends with a reception by representatives of Hastings Borough Council and the organisations involved in Future Cities. In her speech Mayor Maureen Charlesworth stresses the point that for Hastings the integration in the European project Future Cities is of high value since all the topics addressed are of great importance for a sustainable development Hastings is aiming at. Anke Althoff thanks the Mayor for her warm welcome to Hastings and agrees with her that the European partnership is of value to every single project partner with Hastings bringing valuable experience into the Future Cities-partnership especially about municipal adaptation planning.



Mayor Maureen Charlesworth, Roy Mawford (Hastings Borough Council Chief Executive), Jane Harknell (Hastings Borough Council Head of Service), Councillor Peter Armstrong, Councillor Robert Cook, John Snaw (Sea Space Director), Carol Biggs (Hastings Trust) at the reception for the Future Cities-partnership

## **Annexes**

List of presentations (included on CD ROM)

Working group planner WG 1

Working group planner WG 2 (with list of possible twinning activities)

Working group planner WG 3 (with time schedule for evaluating measures and list of criteria)

Working group planner WG 4

List of participants

## **Presentations and materials (included on CD ROM)**

### **23<sup>rd</sup> and 24<sup>th</sup> September 2009**

#### Plenary Sessions

1\_ResultsWG1\_Verhoeven.pdf

2\_GuidelineCityClimate\_Steinruecke.pdf

3\_Results of Fact Sheets \_Haupter.pdf

4\_City climate research\_van Ammers.pdf

5\_Shredderfibres\_Holtmeier.pdf

#### Working group sessions

6\_WG1\_Vulnerability Assessment\_Peters.pdf

7\_WG1\_Results LCIP\_Lass.pdf

8\_WG2\_Introduction\_vanAmmers.pdf

9\_WG2\_Greenenergy Roofs Nijmegen\_Zuurman.pdf

10\_WG3\_Introduction\_Frehmann.pdf

11\_WG4\_Introduction\_Huyghe.pdf

12\_WG4\_Watergame Tiel\_de Kort.pdf



### Working Group Planner: WG1 – Climate Assessment

Meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP (action no. as in application)
2 3/2009	<ul style="list-style-type: none"> <li>Background: list of direct/indirect impacts (prepared by PP2/Alterra)</li> <li>Review on existing research results (prepared by PP4/SEERA)</li> </ul> <p><b>ROUGH OUTLINE OF ASSESSMENT preparation table</b> (prepared by chair)</p>	◀ presentation for WG	◀ Report cost-effective low carbon design; 3/PP4 SEERA
		◀ finished input for WG, if sensible	◀ Report ground water policy plan for adaptation; 2/PP5 NI
		◀ Part 1 “Keep dry feet” done; Part 2 “Experimental Building” 2010	◀ Report water adapted development; 2/PP7 TI
		◀ Exchange existing information of project partners, determine gaps (organised by chair)	
2bis 6/2009	<ul style="list-style-type: none"> <li>further discussion of the input papers and reports</li> <li>Discussion and improvement of the outline</li> </ul> <p><b>ROUGH OUTLINE OF ASSESSMENT</b></p>	◀ definition of criteria, presentation for WG 2bis	◀ Regional climate change guideline; 5/PP1 LV, PP3 EG
		◀ definition of criteria, presentation for WG 2bis draft	◀ Report on vulnerability/adaptation examples; 4/PP4 SEERA
3 9/2009	<ul style="list-style-type: none"> <li>Discussion of inputs / criteria to the assessment check list</li> <li>combination of different inputs</li> </ul> <p><b>PRELIMINARY ASSESSMENT CHECK (LIST)</b></p>	◀ Case study city of Arnhem available	◀ Climate map of City region UHI; 4/PP2 AR
		◀ Only draft –very rough version available	◀ Rough Outline climate toolkit; 4/PP2 AR
		◀ Direct input for checklist	◀ Regional sustainability guideline wvi; 5/PP8 WV
		◀ Combined use of energy and groundwater	◀ Masterplan underground Nijmegen; /PP5 NI (link to report ground water policy plan see above?)
		◀ Contribution to assessment check	◀ Report /maps for energy measures in urban structures; 3/PP5 NI
		◀ definition of criteria, presentation for WG 3	◀ Energy study cold/heat storage; 3/PP2 AR
		◀ definition of criteria, presentation for WG 3	◀ Energy map Arnhem and area with manual explanation; 3/PP2 AR
		◀ definition of criteria, presentation for WG 3	◀ Report combination green/water in the city (courtyards; roofs, walls) – general part, 1/PP5 NI
4 3/2010	<ul style="list-style-type: none"> <li>Concept for elaborating and presentation of preliminary assessment check for midterm conference</li> </ul> <p><b>PRELIMINARY ASSESSMENT CHECK – CONCEPT (DRAFT, TABLES FILLED IN EXEMPLARY)</b></p>	◀ Working steps until 4 <sup>th</sup> WG meeting (decided at 3 <sup>rd</sup> WG meeting) <ul style="list-style-type: none"> <li>Update fact sheets (IU / PP)</li> <li>Table Adaptation options (table 5b): Add “urban morphology” (IU)</li> <li>Define term “urban morphology” (PP2)</li> <li>Revise table Vuln. assessment (table 1) (IU), fill in example (PP4)</li> <li>Develop concept for elaborating and presenting preliminary assessment check at midterm conference (IU / chair / LP)</li> </ul>	
4 (cont.)			

Meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP (action no. as in application)
3/2010		◀ List of possible measures to reduce heat island effect	◀ Rough Outline climate toolkit; 4/PP2 AR
		◀ Direct input for checklist	◀ Regional sustainability guideline wvi; 5/PP8 WV
		◀ Contribution to assessment check	◀ Business Plan for “Retrofit Demonstration”; 3/PP4 HA
		◀ INPUT FOR WG 2	◀ Plan for local Green Homes Service; 3/PP4 HA
		◀ Contribution to assessment check / WG 4	◀ Report on state of art green/ water in the city (courtyards, roofs, walls) - details; 1/PP5 NI
		◀ presentation for WG 4	◀ Report on climate robust development (energy efficiency, durable energy); 3/PP7 TI
5 10/2010 Conf.	<ul style="list-style-type: none"> <li>Improve assessment check with input from evaluation interim results WG 2 and 3</li> </ul>	◀ Available for City region Arnhem Nijmegen	◀ Climate map of City region UHI 4/PP2 AR
		◀ List of possible measures to reduce heat island effect	◀ Rough Outline climate toolkit; 4/PP2 AR
6 3/2011	<ul style="list-style-type: none"> <li>Improve and adjust assessment check</li> </ul>	◀ Check: Experiences for participation strategy (WG 4?)	◀ Cooperation with housing companies/other parties 1/PP5 NI
7 10/2011	<ul style="list-style-type: none"> <li>Improve and adjust assessment check with confirmed evaluation results from WG 2 and 3</li> </ul>		
8 3/2012	<ul style="list-style-type: none"> <li>Prepare input for final report</li> <li>Climate model as one building stone of assessment check</li> </ul>	◀ Including experiences of <i>Future Cities</i> partners	◀ Climate model, adapted, tested in City Region 4/PP2 AR
9 6/2012	◀ FINAL RESULT INPUT REPORT	◀ Check: Interim results earlier available?	◀ Synthesis report of possible options for combined measures 4/PP6 RS
11/2012 Conf.	◀ FINAL ASSESSMENT CHECK/ PRESENTATION		

**Working Group Planner: WG2 - Action Plans**

Meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP
2 3/2009	<ul style="list-style-type: none"> <li>Definition of “Action Plan” (vrs. Master Plan, other terms); (prepared by WVI)</li> <li>Examples for actions: (1) green roofs (prepared by NIJM)</li> <li>Which information is needed in which phase by whom? (prep. by ARNH)</li> <li><b>ISSUE FOR TWINNING</b></li> <li>Outline of the Heat Island Study (prepared by ARNH) presented</li> <li>Twinning concept and schedule (WG chair)</li> </ul>	<ul style="list-style-type: none"> <li>◀ presentation of the status for WG on going</li> <li>◀ presentation of the status for WG</li> </ul>	<ul style="list-style-type: none"> <li>◀ Feasibility study groundwater and 3 action plans on climate adapted use of groundwater for more energy efficiency ; (PP5 NI)</li> <li>◀ Feasibility for replacing coal with shredder fibres for sludge dewatering in at the waste water treatment plant; (PP3 EG)</li> </ul>
3 9/2009	<ul style="list-style-type: none"> <li>Definition of criteria for the evaluation report for twinning actions</li> <li>Paper on twinning approach (prepared by chair/ IU)</li> <li>Discussion / Improvement of Formats: twinning report/ twinning search (prepared by chair/ IU)</li> <li>Review on 1 twinning action (prepared by chair and PP)</li> <li>Concept and agreement for next twinning activities</li> <li><b>4 twinning reports on the improvement of the action plans</b></li> </ul>	<ul style="list-style-type: none"> <li>◀ Report on twinning activities (PP, chair)</li> <li>◀ contribution to the definition of evaluation criteria; presentation of proposals</li> <li>◀ presentation of the status for WG</li> </ul>	<ul style="list-style-type: none"> <li>◀ Jointly designed action plan for a climate friendly industrial zone (EG/Bottrop); (PP3 EG)</li> <li>◀ Integrated plan to face climate change and for a sustainable industrial park (EG/Bottrop); (PP3 EG)</li> <li>◀ Implementation programme for roofs combining green structures and water management for an industrial zone (Tiel-East) ; (PP7 TI)</li> <li>◀ A feasibility study on wateradapted and energy efficient development in Tiel East; (PP7 TI)</li> </ul>
4 3/2010  4(cont.) 3/2010	<ul style="list-style-type: none"> <li>Concept for Evaluation report on twinning actions, results, messages (and organisation) prepared and discussed</li> <li>Presentation on 2 twinning activities (PP2/PP6 on energy strategy/building techniques and PP2/PP4/PP8 on energy strategy)</li> <li><b>Outline of evaluation report</b></li> </ul>	<ul style="list-style-type: none"> <li>◀ Revise twinning report formats (also revise request format, if necessary) (IU/chair); adapt report of 1<sup>st</sup> twinning accordingly (PP8)</li> <li>◀ Report / presentation on twinning actions (PP2/PP4/PP6/PP8)</li> <li>◀ Prepare presentation of status and progress of twinning reports (chair with PP2/PP4/PP6/PP8)</li> <li>◀ Prepare concept for evaluation (IU / chair)</li> <li>◀ Input about green roofs from Rouen and WVI to Nijmegen (PP6/PP8/PP5); present further results of Green roofs study in Tiel (PP5)</li> </ul>	



Meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP
		◀ Presentation of the status	◀ Integral design plans of combining green structures with water retention in public city courtyards (Nijmegen); (PP5 NI)
		◀ Topic for twinning activity	◀ Feasibility study/action plan for renewable energy measures in the district of Luciline; (PP6 RS)
		◀ Topic for twinning activity	◀ Energy strategy for Arnhem including a report with concepts/measures/ SMART targets per type of urban project; (PP2 AR)
		◀ Presentation of the status	◀ Action plan for implementation of green structures with water retention (Nijmegen) ; (PP5 NI)
		◀ presentation of the status (was presented at 3 <sup>rd</sup> WG meeting)	◀ Action plan for the use of energy roofs including energy saving/production, green roofs and water retention; (PP5 NI)
4bis 6/2010 ?	<b>INTERIM EVALUATION REPORT FOR TWINNING ACTIONS</b> <b>5 twinning reports on the improvement of the action plans</b>	◀ input to evaluation report; presentation of examples; ◀ exemplary evaluation	◀ Energy city-map with best practices examples to disseminate results - support awareness raising; (PP5 NI) ◀ Checklists/handouts for project developers (Arnhem); (PP2 AR) ◀ Concepts for adapting water infrastructure to climate change with green spaces (feasibility studies, architectural concepts, plans ; (PP6 RS)
5 10/2010	• further development / improvement of the evaluation concept, improvement of test evaluation method	◀ • Map and Toolkit: presented to WG	◀ Scenarios for reconstruction sites ; (PP2 AR)
6 3/2011	• twinning reports • presentation and discussion of twinning results	◀ • presentation of the working plans	◀ Detailed working plans (PP8 WV)
7 10/2011	• Preparation of the evaluation report <b>4 twinning reports on the improvement of the action plans</b>	◀ presentation of the status ◀ presentation of the status ◀ presentation of the status	◀ A climate proof master plan for leper Oostsector (WVI); (PP8 WV) ◀ Evaluated planning to see, if ecological planning complies with improving the climate proofness of cities (Kamen); (PP1 LV) ◀ 4 twinning reports on the improvement of the action plans;
8 3/2012	• Evaluation report of partner experiences; to improve the preliminary check WP1; use for spreading integrated results <i>Future Cities</i> in WP4 action 16.; WG 2 <b>EVALUATION REPORT</b>	◀ presentation of the status ◀ presentation of the status ◀ presentation of the status	◀ An example climate change adaptation plan (strategy and implementation plan) for a city; (PP4 HA) ◀ Map of the City Region Arnhem Nijmegen with bottlenecks and opportunities to reach a climate proof region; (PP2 AR) ◀ Toolkit “city climate”: models, guidelines, roadmaps for municip. to estimate effects of climate change, effective measures; (PP2 AR)

## WG 2:List of possible twinning activities (as proposed during project development)

Action	Activity	Activity name	PP	"Twin"	Reports	Comment
2.6	2.6.1	Check "climate friendly planning"	1	5	By PP 1	
	2.6.2	Feasibility studies and action plan	5	1	By PP 5	
	2.6.3	Concepts for water flood manage	6	2	By PP 6	
	2.6.4	Translation ideas on plans with ur	6	2	(1 report by PP 6)	
	2.6.5	Implementation programme	7	3	BY PP 7	Twinning event Sept. 09, report written
2.7	2.7.1	Measures in the water system	3	7	BY PP 3	
	2.7.2	Feasibility to reduce fossile energy	3	7	(1 report by PP 3)	
	2.7.3	Renewable energy research, for	6	2	By PP 6	
	2.7.4	Feasibility studies and action plan	5	1	By PP 5	
	2.7.5	Feasibility study 'Wateradapted	7	3	BY PP 7	
2.8	2.8.1	Sustainable development of indu	3	7	BY PP 3	Twinning event Sept. 09, report written
	2.8.2	Energy strategy Arnhem	2	6	By PP 2	
	2.8.3	Scenarios for the reconstruction	2	6	(1 report by PP 2)	
	2.8.4	Building a toolkit 'city climate'	2	6	(1 report by PP 2)	
	2.8.5	Feasibility studies and action plan	5	1	By PP 5	
	2.8.6	Development of a master plan for	8	4	By PP 8	Twinning event Sept. 09, report written
	2.8.7	Adaptation policy and implement	4	8	By PP 4	
3.10	3.10.1	Transformation of roofs/walls, city	5	1	By PP 5	
	3.10.2	Realisation of green roofs in the	7	3	By PP 7	
	3.10.3	Development of sustainable quarter	8	4	By PP 8	
	3.10.4	Adapted water infrastructure with	6	2	By PP 6	
	3.10.5	Ecological transformation of a water	1	5	By PP 1	
3.11	3.11.1	Planning for measures in the water	3	7	By PP 3	
	3.11.2	Potential for substitution of fossil	3	7	(1 report by PP 3)	
3.12	3.12.1	Sustainable development of indust	3	7	By PP 3	
	3.12.2	Measures for sustainable/climate	5	1	By PP 5	
	3.12.3	Retrofit' of existing poorly insulate	4	8	By PP 4	
	3.12.4	Innovation exchange building Env	4	8	(1 report by PP 4)	

**Working Group Planner: WG3 – Implementation of combined measures**

WG - meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP
3 10/2009	<ul style="list-style-type: none"> <li>• Concept for the evaluation: process of evaluation, criteria etc.</li> <li>• Restraints for measures (WVI)</li> <li>• Twinning concept (also check with twinning concept in WG 2)</li> </ul>	◀ presentation of the status of the implementation measures	Interim results are not finished in this phase)
4 3/2010	<ul style="list-style-type: none"> <li>• Concept for the evaluation (test run 2010)</li> <li>• each PP: national view on framework conditions for projects on climate change</li> <li>• each PP: identify 2-3 actions that can serve as test case for the evaluation test in 2010</li> <li>• Energy criteria</li> <li>• Monitoring of green roofs: Why, how and what: (NIJM)</li> </ul>	◀ Develop evaluation criteria (success, failure): RO: geothermal measures NI: green roofs ◀ Prepare presentation of the evaluation criteria for the pilot actions (chair / IU) ◀ PP: identify test actions	◀ Demonstration/Training exemplar installed for retrofitting buildings to climate change; (PP4 HA) ◀ Outline / concept and interim results of Monitoring report (PP5 NI) ◀ Start: transforming roofs, input WP2 / -2010 (PP7 TI)
5 10/2010	<ul style="list-style-type: none"> <li>• Preparation of test evaluation (interim evaluation, test evaluation) of measures</li> <li>• selection of exemplary measures to be evaluated</li> </ul>	◀ PP: prepare test evaluation for selected measures ◀	◀ Transformed urban sewer water system at a wastewater treatment plant for energy efficiency by substitution of fossile energy (EG); (PP3 EG) ◀ “Kamen” Interim result (PP1 LV)
6 3/2011	<ul style="list-style-type: none"> <li>• 1<sup>st</sup> evaluation (interim check)</li> </ul> <div>Presentation of the test evaluation for the CONFERENCE</div>	◀ identify test cases for the interim evaluation; contribution to the evaluation from the pilot actions ◀	◀ Implemented solutions green structures and water retention: 2.000 m <sup>2</sup> green roofs, 1.000 m <sup>2</sup> green walls, 2 public courtyards 2 ha (Nijmegen, NL); (PP5 NI) ◀ Built innovation exchange building with combinations of all measures for excellent performance; (PP4 HA) ◀ Monitoring reports: ground water effects on buildings/ energy savings; green structures on energy savings/water retention, heat effects; (PP5 NI)
6bis 6/2011	<ul style="list-style-type: none"> <li>• Discussion paper (interim check) WG 1, WG 2</li> </ul> <div>1 report on the results of the twinning assessment</div>	◀ Interim result of transferring ◀	◀
7 10/2011	<ul style="list-style-type: none"> <li>• Review of interim evaluations</li> </ul> <div>5 reports on the results of the twinning assessment</div>	◀ input the evaluation report	Sustainable industrial area; e.g. green roofs, facades with renewable energy and rainwater disconnection in Bottrop ; (PP3 EG)



WG - meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP
8 3/2012	<b>INTERIM EVALUATION REPORT</b> <ul style="list-style-type: none"> <li>Preparation fo the final evaluation report: conclusions for improvement of the preliminary check of WP 1, of action plans and for use in awareness raising ; WG 3</li> </ul> <b>5 reports on the results of the twinning assessment</b>	◀ input the evaluation report	◀ Implemented measures for sustainable and climate proof buildings (planned: 10 different measures incl. monitoring); (PP5 NI)
		◀ input the evaluation report	◀ Ecologically improved water body in Kamen to improve city micro climate, length 2,14 km (Kamen, DE); (PP1 LV)
9 6/2012	<b>FINAL RESULT INPUT REPORT</b>	◀ Evaluation	◀ 20 transformed roofs in an industrial site, 7.500 m <sup>2</sup> (Tiel-East, NL); (PP7 TI)
		◀ Evaluation	◀ Implemented parts of a sustainable and climate-adapted master plan; citizens to learn about sustainable adaptation; (PP8 WV)
		◀ Evaluation	◀ Multifunctional water infrastructure which is prepared to cope with climate change impacts, 5.000 m <sup>2</sup> ; (PP6 RS)

### Structural/ physical measures

	Planning phase / Study	Construction phase	Test operation	Occupation phase	X	Evaluation possible	X	Evaluation: Lessons-learned
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[illegible]

WG 3: List of evaluation criteria worked out at 3rd WG meeting

<p><b>I. Functionality criteria</b></p> <p><u>I.1 Water</u></p> <ul style="list-style-type: none"> <li>- Volume of water storage</li> <li>- Create natural space / green area</li> <li>- Reduction of discharge in sewers (reduction of flow)</li> <li>- Area disconnected</li> <li>- Reduction of drink water request</li> <li>- Lowering the temperature of certain areas</li> <li>- Interlinks between flooding and draught are integrated</li> </ul> <p><u>I.2 Energy</u></p> <ul style="list-style-type: none"> <li>- Reduction of energy demand / energy need</li> <li>- CO<sub>2</sub> - Reduction</li> <li>- Sound management structure for combined systems</li> <li>- (Feasibility criteria for geothermal energy supply; to be further detailed from experience of Rouen)</li> </ul> <p><u>I.3 Green roofs criteria</u></p> <ul style="list-style-type: none"> <li>- m<sup>2</sup> green roofs</li> <li>- cooperation success with owners</li> <li>- overcome lack of knowledge                         <ul style="list-style-type: none"> <li>- in administrations</li> <li>- owners</li> <li>- capacity building for professionals</li> </ul> </li> <li>- knowledge about effects and costs and their relations</li> </ul>	<p><b>II. Economic criteria</b></p> <ul style="list-style-type: none"> <li>- Reasonable costs</li> <li>- Cost effectiveness</li> <li>- Reasonable maintenance costs</li> <li>- “Economic success” (Success has to be further determined)</li> <li>- Realisation time</li> </ul> <p><b>III. Acceptance criteria</b></p> <ul style="list-style-type: none"> <li>- Political decision making (availability of budgets, staff and resources)</li> <li>- Time for decision making</li> <li>- Civil engagement</li> <li>- Copy effects / repeatability</li> <li>- Mobilising campaigns, functioning as show cases, communication and promotion activities</li> <li>- Marketing concepts</li> <li>- Measures are attractive for public</li> <li>- Trust / Believe in new techniques</li> </ul> <p><b>IV. Others</b></p> <ul style="list-style-type: none"> <li>- Integration of all themes and criteria</li> <li>- Link to policies / Link of policies to real investment projects</li> </ul>
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**Working Group Planner: WG4 – Targeted Awareness Raising**

WG - meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP and dates
		◀	◀ “Wonen ++” / Nijm / Energy saving advice for citizens, 2008 (PP5 NI)
		◀	◀ Forum discussions Nijmegen, 2007 (PP5 NI)
		◀	◀ Nijmegen energy agreement, 2008 (PP5 NI)
		◀	◀ Climate campaign / Citizens of Nijmegen, 2008 (PP5 NI)
		◀	◀ Brochure Tiel East, 2008, Target groups: residents, external parties (promotion) (PP7 TI)
3 10/2009	<ul style="list-style-type: none"> <li>Send results of questionnaire (= collection of measures) to WG members to add what's missing</li> <li>Make compilation of all measures, assess</li> <li>As a result: joint list of good practices of the partners</li> </ul> <p>COLLECTION OF COMMUNICATION ACTIVITIES OF PP</p>	◀ ◀ preparation of reports on status of the activities ◀ prepare good practice examples	◀ Information of members of LV and EG about effects of climate change and options. Set up an action plan in regional consensus. (PP1 LV, PP3 EG) ◀ Website Tiel East 2008 newsletters 2009 – 2012 (PP7 TI) ◀ Tiel game 'living with water', 2008 / 2009; Target groups: project developers, residents, decision makers, water boards, etc. (PP7 TI)
4 3/2010	<ul style="list-style-type: none"> <li>Gain more insight of the “water game” by Tiel</li> <li>Monitor communication strategies (on going)</li> <li>Link results of matrix to module 5 of assessment check</li> </ul> <p>LIST OF COMMUNICATION MEASURES (AIM, METHOD, MESSAGE) ASSIGNED TO TARGET GROUPS AND ADAPTATION OPTIONS</p>	<ul style="list-style-type: none"> <li>Matrix: target groups, aims, methods, messages – sum up results from 3<sup>rd</sup> WG meeting, develop readable form (prepared by IU / chair)</li> <li>Send matrix to WG4 members for additions (chair / additions by WG members)</li> <li>Integrate additions (IU / Chair)</li> <li>Concept to link results of matrix to module 5 of assessment check and the data base of best practices (IU / chair)</li> </ul> ◀ preparation of reports on status of the activities ◀ prepare good practice examples	◀ Innovation exchange: project website, blog-overall project brand, complete by end 2009; sea space PP4sub HA) ◀ Forum / Network: Sustainable Construction + Environmental Technologies, commence → Nov. 2009 (PP4 HA) ◀ Sustainable Construction Conference, Oct. 2009 PP4 HA) ◀ Training for individuals and businesses: “Eco-retrofit” + “Training” video; Sept. 2009 (PP4 HA)

WG - meeting n° /date	WG – topics / agenda	Preparation by PP / chair / Input	Output / products of PP and dates
5 10/2010 Conf.	BEST PRACTICE COMMUNICATION STRATEGIES OF PP		<ul style="list-style-type: none"> <li>◀ Site visits, 2010 – 2011 (PP8 WV)</li> <li>◀ Further complementary outputs as stated in the communication plan, 2008 – 2012</li> <li>◀ The results of action plan on energy measures on buildings are communicated to the citizens, PP5 NI, June / 2011</li> </ul>
6 3/2011	<ul style="list-style-type: none"> <li>• Focus on participation strategies</li> </ul>	◀ Check: Experiences for participation strategy)	◀ Cooperation with housing companies/other parties action 1/PP5 NI
7 10/2011	<ul style="list-style-type: none"> <li>• Best practice participation strategies</li> </ul>		<ul style="list-style-type: none"> <li>◀ Disconnection at Heerener Mühlbach, 2011 Information flyer produced, article placed, (PP3 EG)</li> <li>◀ Awareness leaflet, Hastings, 2011 (PP4 HA)</li> <li>◀ Sustainable construction conference Oct. 2011 (PP4 HA)</li> </ul>
8 3/2012	<ul style="list-style-type: none"> <li>• Prepare communication input for final report</li> <li>• Support editing of final report</li> </ul>		<ul style="list-style-type: none"> <li>◀ Information sessions (2 or 3) Information counter (1), 2011 – 2012 (PP8 WV)</li> <li>◀ Citizens, persons concerned with construction work are informed about innovative techniques (of storm water disconnection), 1 / 2012, (PP3 EG)</li> <li>◀ Information sessions – on possibilities in the water system (with inhabitants next to Heerener Mühlbach), 2 /2012, (PP3 EG)</li> <li>◀ Information brochure, 2012 (PP8 WV)</li> <li>◀ Activities targeted at university students, school children Nov. 2012 PP4 HA</li> <li>◀ Rouen: Partnership with the “Maison de l’Architecture” to elaborate exhibition materials / brochure(s) / slides / presentations(s) on the topic of “adapting the architecture in Luciline” to climate change: 2009 – 2010 – 2011 (Note: Maison de l’Architecture: association of architects, firms and institutions interested in promoting architecture. Rouen Seine Aménagement is a member of it)</li> </ul>
11/2012 Conf.	<ul style="list-style-type: none"> <li>• COMMUNICATION AND PARTICIPATION STRATEGIES FOR ADAPTATION – PRESENT</li> </ul>		

## Participants 3<sup>rd</sup> Working Group Meeting

<b>Name</b>	<b>Project Partner</b>
Anke Althoff	PP1 Lippeverband
Daniel Wischniewski	PP1 Lippeverband
Hans van Ammers	PP2 Municipality of Arnhem
Albert Anijs	PP2 Municipality of Arnhem
Jos Verweij	PP2 Municipality of Arnhem
Torsten Frehmann	PP3 Emschergenossenschaft
Eberhard Holtmeier	PP3 Emschergenossenschaft
Matthias Stumpe	PP3 sub partner Municipality of Bottrop
Chantal Lass	PP4 Hastings
Dean Morrison	PP4 Hastings
Jane Dodson	PP4 Hastings
John Williams	PP4 Sub-Partner Sea Space
Helene Mogelhoj	PP4 Sub-Partner Sea Space
Jörn Peters	PP4 Sub-Partner South East England Partnership Board (SEEPB)
Ton Verhoeven	PP5 Municipality of Nijmegen
Veroniek Bezemer	PP5 Municipality of Nijmegen
Henk Jan Nijland	PP5 Municipality of Nijmegen
Antal Zuurmann	PP5 Municipality of Nijmegen
Thierry Verrier	PP6 Rouen Seine Aménagement
Bénédicte Salle	PP6 Rouen Seine Aménagement
Annemieke de Kort	PP7 Municipality of Tiel
Ine van den Hurk	PP7 Municipality of Tiel
Eveline Huyghe	PP8 West-Vlaamse Intercommunale
Nathalie Garré	PP8 West-Vlaamse Intercommunale
Trui Naeyaert	PP8 West-Vlaamse Intercommunale
Stijn Saelens	PP8 West-Vlaamse Intercommunale
Vincent Kuypers	Alterra, WUR (with PP2)
Barry de Vries	Alterra, WUR (with PP2)
Ad Koolen	VHL - Van Hall Larenstein University (with PP2)
Dick van Dorp	VHL - Van Hall Larenstein University (with PP2)
Ilse Dries	Flemish Government
Ron Josten	City Region Arnhem-Nijmegen
Monika Steinrücke	Regionalverband Ruhr
Birgit Haupter	INFRASTRUKTUR & UMWELT - facilitation
Peter Heiland	INFRASTRUKTUR & UMWELT - facilitation
Stefanie Greis	INFRASTRUKTUR & UMWELT - facilitation

## **Lead Partner of the INTERREG IV B project *Future Cities***

Lippeverband  
Kronprinzenstraße 24  
45128 Essen  
Germany

### **Contact:**

Dipl.-Ing. Anke Althoff  
Project management *Future Cities*  
Telephone: +49 (0)201 104 2361  
Fax: +49 (0)201 104 2231  
<http://www.eglv.de>

### **Reporting:**

INFRASTRUKTUR & UMWELT  
Professor Böhm und Partner  
Julius-Reiber-Str. 17  
64293 Darmstadt  
Germany  
Dr. Birgit Haupter  
Dr. Peter Heiland  
Telephone: +49 (0)6151 8130-0  
Fax: +49 (0)6151 8130-20