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FIG WORKING WEEK 2017
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KLAS KLimaAnpassungsStrategie EXTREME REGENEREIGNISSE

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Flood risk in urban areas - data analysis, communication and mitigation

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Increase in heavy rainfall and infrastructure failure

Dortmund, Jul. 2008
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Bremen, Jul. 2011
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Cannes, Cote d'Azur, Okt. 2015
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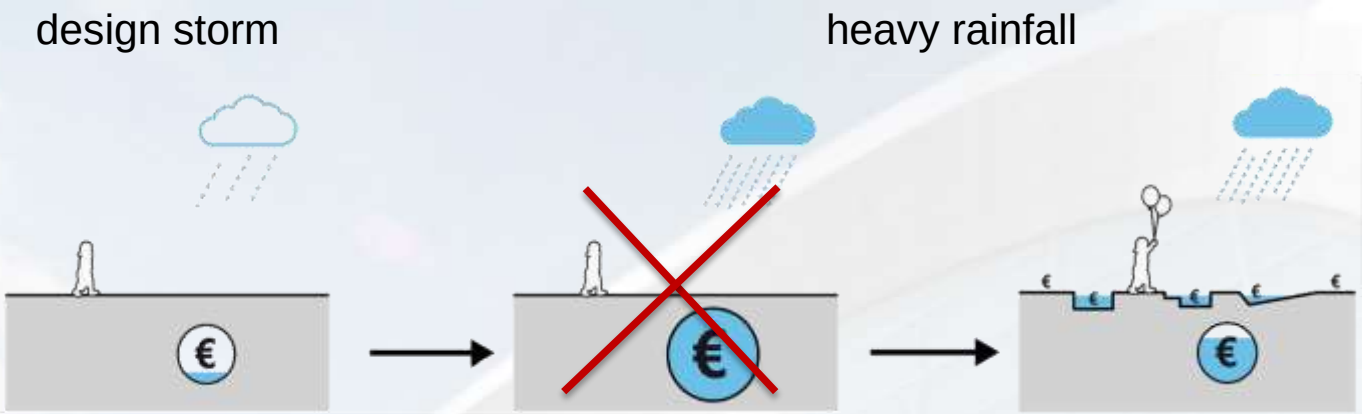
Flood prevention as an impulse for a water sensitive urban development



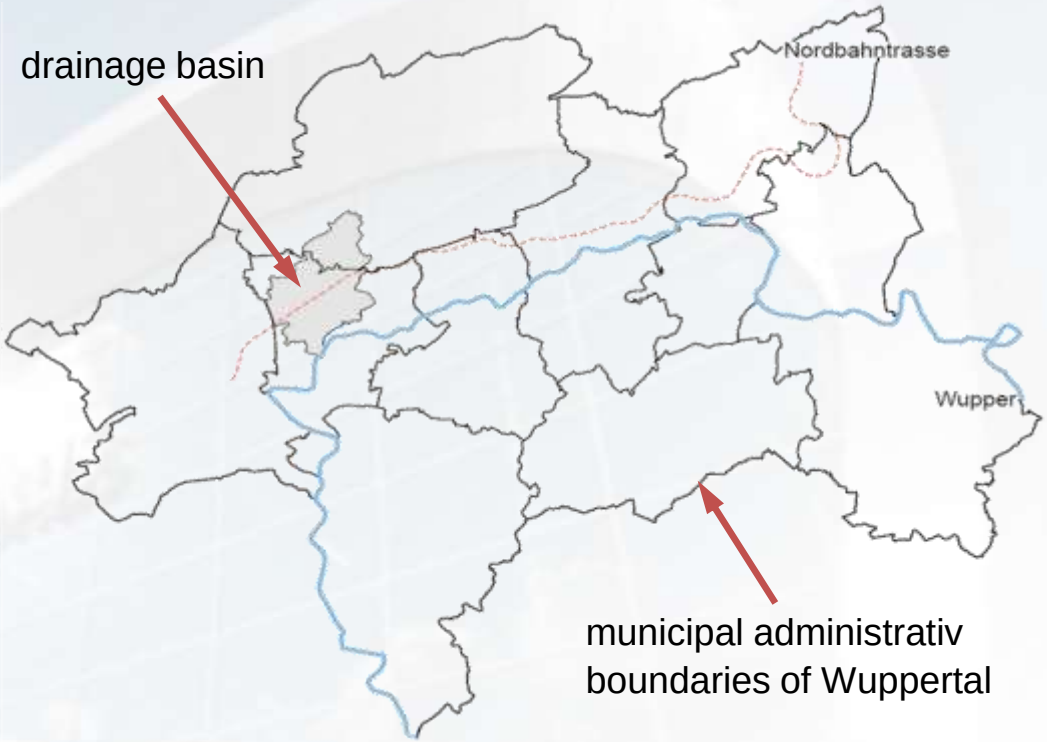
- Enlargement and remediation of sewage systems and the construction of underground storm water retention basins alone cannot solve the problem efficiently
- The overall goal is to establish integrated planning processes between urban and drainage planners in order to develop adaptive, flexible and cost-effective measures for the retention of rainwater on the surface

picture credit: ILPÖ, based on „DE Urbanisten“

A 5-step methodology to use findings from urban flood prevention to support development and planning processes in urban areas

work step 1

Definition of the spatial frame of referenz and way of understanding water system in an urban context



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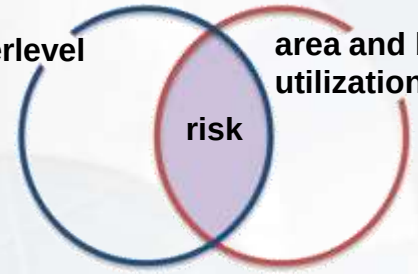
A 5-step methodology to use findings from urban flood prevention to support development and planning processes in urban areas

work step 1

Definition of the spatial frame of referenz and way of understanding water system in an urban context

work step 2

Risk analysis – urban flooding



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A 5-step methodology to use findings from urban flood prevention to support development and planning processes in urban areas

work step 1

Definition of the spatial frame of referenz and way of understanding water system in an urban context

work step 2

Risk analysis – urban flooding

work step 3

Development of a water-related urban planning model

- overall urban development plans
- development scenarios for the project area
- flow paths (step 2)

areas to retain rainwater
areas to shift floodings
interlink and upgrade green spaces for a multi-used purpose

picture credit: ILPÖ

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A 5-step methodology to use findings from urban flood prevention to support development and planning processes in urban areas

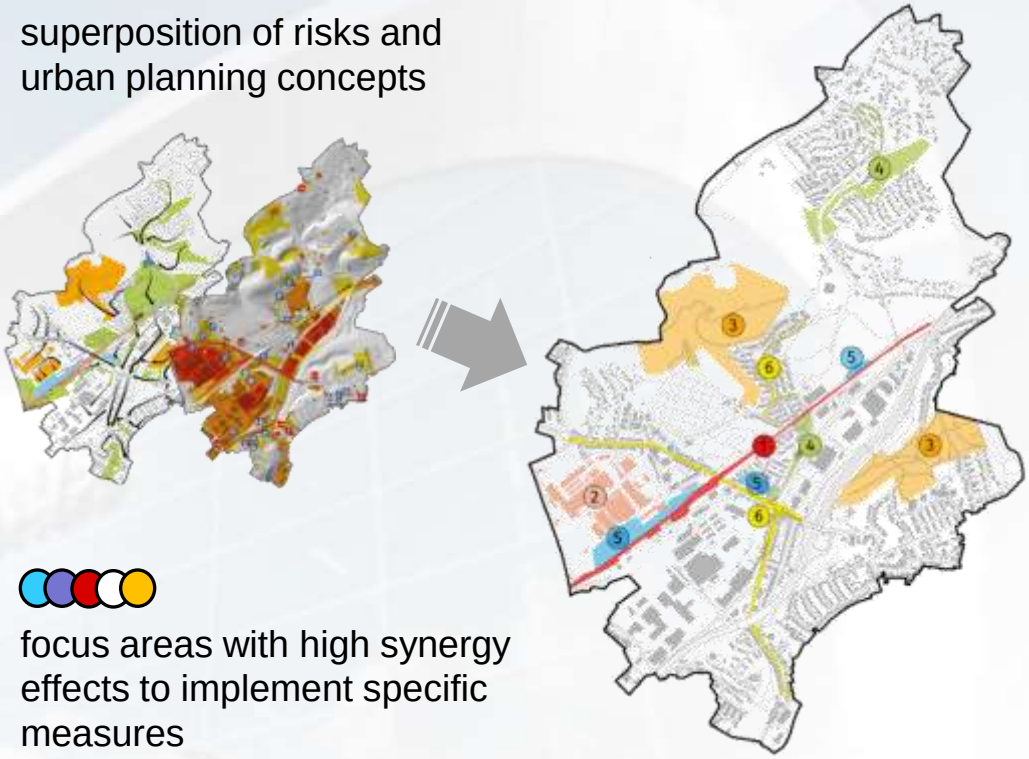
work step 4

Risk analysis

Water-related urban planning model

Identification of focus areas by revealing any possible links between the necessity for flood prevention and strategic urban development projects and measures

superposition of risks and urban planning concepts



focus areas with high synergy effects to implement specific measures

picture credit: ILPÖ

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A 5 step methodology to use findings from urban flood prevention to support development and planning processes in urban areas

work step 4

Risk analysis

Water-related urban planning model

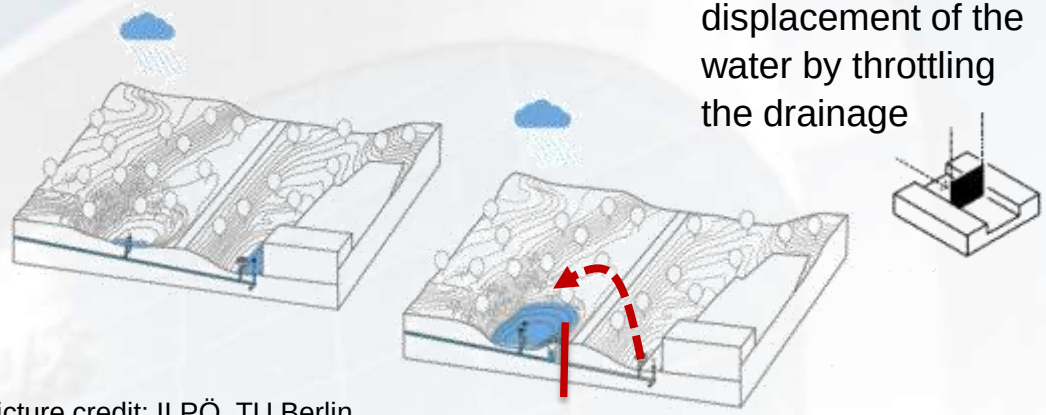
Establishment and prioritization of focus areas

work step 5

Development of integrated action and design-related concepts

5 focus area 5: near-natural retention of rainwater by using existing topological structures

displacement of the water by throttling the drainage

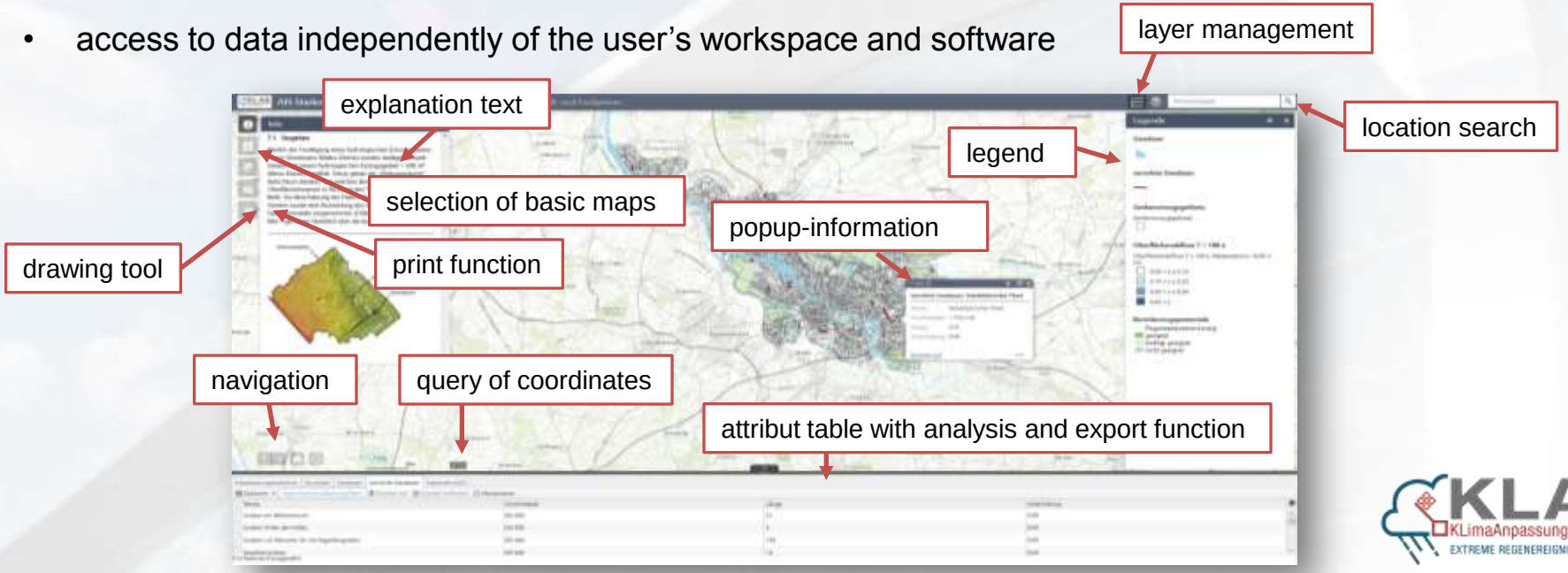


picture credit: ILPÖ, TU Berlin

Development of an information system to support urban flood prevention

The main goals of the information system:

- central management of data, ensuring that data are up-to-date,
- the user-specific provision of data
- access to data independently of the user's workspace and software



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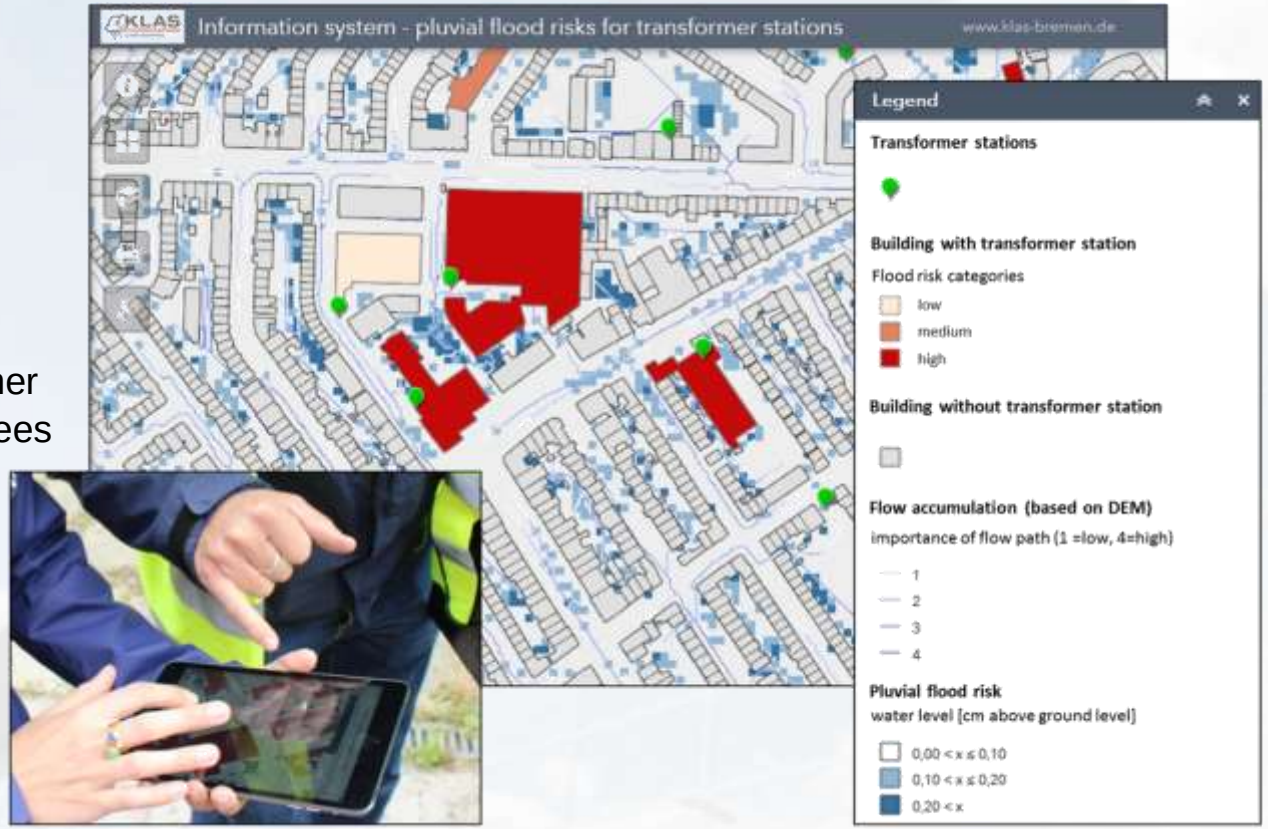
Risk management for transformer stations

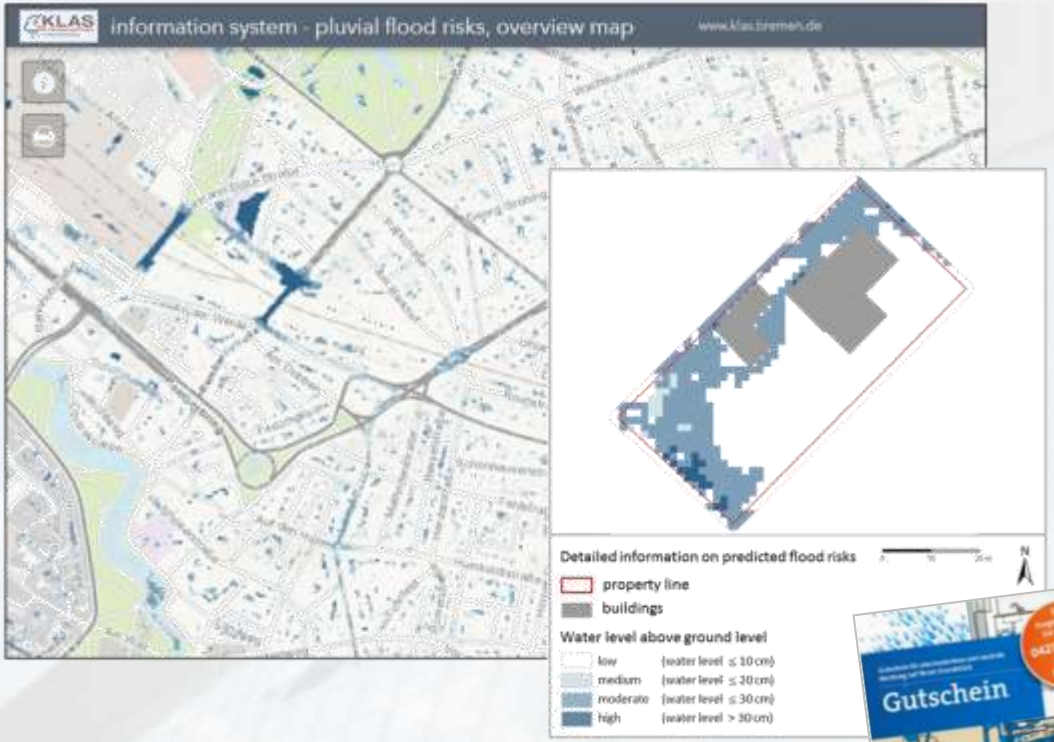
Site visits together with the employees of the engergy supplier to determine the flood risk for transformer stations



Information on flood risk for property owners

…to sensitize people generally to the topic of heavy rainfall

…to increase their self-precaution (protection measures for their buildings, backflow traps)



Steps of information

1) Overview map for sensitizing the public
2) Detailed information on flood risks for own property on request
3) Personal on-site consultation on the part of the local drainage company

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Thank you for your attention!
Kiitos mielenkiinnosta!

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