



Mitigation of floods by retention systems in urban areas – one of the WaReLa topics

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Flooding on rivers is a perseverative natural phenomenon. The extent of a particular flood event is influenced by the precipitation event and the landscape properties. Their frequency and intensity have increased during the last years – amongst others due to human impact. Especially after the flood disasters on the River Moselle and Rhine in the 1990th a general process of rethinking has started. Among technical flood protection (e.g. dykes) the measurements of flood management (e.g. retention, renaturation of waterbodies) and flood provision come to the fore.

The aim of this study is to analyse the practicability of precautionary flood protection in the Region of Trier, especially concerning the spatial planning. Thereby we investigate how the flood protection is implemented in the spatial planning and which possibilities there are to transfer the flood protection measurement in different areas. Assisted by a visual interpretation of remote sensing data, land cover changes during the last decades were elaborated. With the aid of the spatial planning instruments and taking into account the precautionary flood protection measurements problems and solutions concerning the implementation could be acquired. Especially the water retention on the surface area is of utmost importance.

One example of precautionary flood protection is the Petrisberg in Trier which is part of the WaReLa-investigation area. As new buildings on Petrisberg are planned and partially realised, one challenge is to decrease the surface run-off. Therefore retention measures on both private and public areas are realised. Function control and the maintenance of the measures can be facilitated by semicentral retention: a combination of storage on private areas and in large parts on public areas.

Whenever retention areas are given preferential treatment, like on Petrisberg, this does not mean a loss of potential building land. Modern retention systems are a combination of functional rainwater management, local recreation (playground, sunbathing area) and aesthetic aspects. On Petrisberg also a proprietary biotope has been integrated into the concept. Besides the multifunctionality of retention areas there are also several financial savings. For example costs for sewers and the waste water charge can be cut.

As water is kept back on private areas too, residents are integrated in the water management concept as well and become conscious of the water flows in residential areas. Important for the success of retention measures are a professional realisation and a good knowledge of the measures as these aspects have great influence on the public acceptance. As residents of different settlement areas had problems with their retention ditches, because of deficiencies in construction, one aim of the project is to help increase the acceptance by public relations work. A brochure will inform about sustainable retention systems, their realisation, how to prevent problems and how to solve them. In addition to this a demonstration plant will show how retention measures work. Besides this all stakeholders and especially the local authorities are to be integrated and informed for creating awareness and acceptance.