

## THE URBAN GREEN MANAGEMENT SYSTEM GRIS FOR THE UNIVERSITY OF ROSTOCK

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The University of Rostock is currently building up a green area management GIS (called GRIS) for the inventory, documentation and analysis of their public urban green areas. The property of the University of Rostock is wide spread over the city. In a total of 31 locations the University has to manage more than 55 ha of property and green areas. The management of the green areas of the property of the University of Rostock was conventionally done by visual inspection and in paper format. This approach has two major drawbacks:

1. *It is very costly and requires a lot of qualified personnel.*
2. *It is not in a digital form in which it may be used in a GIS.*

Therefore the University of Rostock was looking for alternatives. Beside the detailed coverage of all university green areas (type of green, management status, costs) GRIS should focus on the following goals

- *Information of deficits of current green area management*
- *Development of a schema for a management concept with different intensities levels of care for green areas*
- *Optimization and modification of green area management contracts*
- *Control of costs of existing and future management contracts*

The aerial survey was conducted on 7.7.2004 with the digital airborne system PFIFF, developed by the author (i). The ground resolution was 15 cm. The 140 images were orthorectified and mosaicked. For the digital stereoscopic interpretation of the images a hierarchical interpretation key was developed. The interpretation key is a subset of the "Wolfsburger Modell" which was originally developed for a terrestrial survey and includes all relevant categories for the management of green areas (ii).

The visual interpretation of the images does not cover all of the relevant information, e.g. small shrubs. Therefore a ground survey is necessary. With mobile mapping strategies using pen computers and GPS the effort in the field can be reduced dramatically. Further more handling errors can be reduced, in field plausibility checks are possible and the process of data maintenance can be speed up. In this research a combination of Trimble Geoexplorer XT pen computer / DGPS with ESRI ArcPad 6.0.3 software and. The BEACON DGPS-correction service was used. For an efficient workflow the ArcPad software was modified.

The GIS-data was used to generate land use maps as well as maps for the tendering procedure. Furthermore the degree of imperviousness was determined in order to fulfil environmental regulations.

In the paper a detailed description of the different data sets, the workflow and the results will be given.

### REFERENCES

- i. Grenzdörffer G 2005. Flexible High Resolution Urban Remote Sensing with PFIFF – A Digital Low Cost System.- 2005 Urban Remote Sensing Conference, 13.-16.3.2005, Tempe USA
- ii. Ständige Konferenz der Gartenamtsleiter beim Deutschen Städtetag (Galk) „Leitfaden Grünflächeninformationssysteme,“ 2002 Available [http://www.galk.de/gris/lf\\_kap2\\_3.htm](http://www.galk.de/gris/lf_kap2_3.htm)