

TACKLING THE CHALLENGE OF LOW-DENSITY HOUSING IN THE METAPOLIS

[1] THE METAPOLIS-PROJECT

METAPOLIS is the network of large, medium and small municipalities in a rural matrix, linked by flows of traffic, data, goods and services. Together with stakeholders, an interdisciplinary team of scientists from the Technische Universität Braunschweig and the Leibniz Universität Hannover studies the networks that shape rural-urban relationships in Lower Saxony, Germany, with the aim of making these relationships more sustainable. The METAPOLIS project focusses on two parts of Lower Saxony (Fig. 1).



Fig. 1: The METAPOLIS study region in Lower Saxony, Germany.

[2] LOW-DENSITY HOUSING IN THE METAPOLIS

In the first METAPOLIS forum, held in October 2016, scientists and stakeholders started a discourse on paths to sustainable development in Lower Saxony. A great challenge in parts of the study region is high demand for housing, resulting in low-density sub- and exurban housing development. This is despite the fact that much is known about the negative impacts of this development form, e.g., increase in traffic, or inefficient use of land, resources and energy.



Fig. 2: METAPOLIS-Forum 2016. Foto: K- Neu.

In order to improve our understanding of the sustainability impacts, we started an interdisciplinary assessment of low density housing developments, looking at ecological, mobility, energy and resource aspects.

[3] IDENTIFICATION OF CASE STUDY AND FIRST ASSESSMENT

Together with stakeholders, we selected a housing development west of Braunschweig. It is part of a commuter town with roughly 17,000 inhabitants and typical of exurban development in the region. It consists of 87 single-family homes and a daycare center on a total area of 7,46 ha. Comparing the draft in the development plan (Fig. 3 A) with the actual implementation (digitized from May 2016 orthophotos; Fig. 3 B), shows that buildings, terraces, driveways and footpaths take up much more space than probably anticipated.

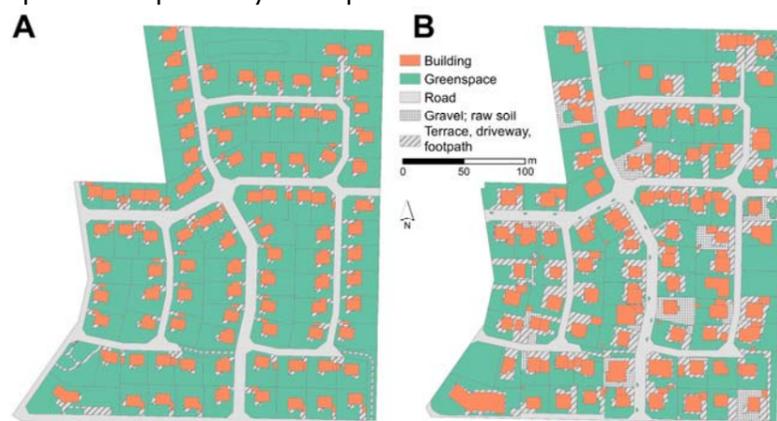


Fig. 3: Draft in the development plan (A) and actual implementation digitized from May 2016 orthophotos (B).

The estimated amount of impervious surface in 2016 was 2.6 ha, which is actually the upper legal limit stated in the development plan. This is despite the fact that six lots had not been developed by May 2016. A household survey returned by 15 households revealed that 13 had two or more cars. Commuter distance to work was 10-20 km or more for 88% of household members.

[4] NEXT STEPS

We are currently gathering data on energy use and building materials, conducting a garden survey, and are setting up hydrological models. Similar assessments will be carried out for other development types in the METAPOLIS-region. In addition, scenarios are being developed throughout the summer.

By bringing all this together, we outline pathways to more sustainable rural-urban relationships in Lower Saxony. Our findings and the scenarios will be discussed with stakeholders at our next METAPOLIS meeting this coming autumn and will also be made available on a platform for the general public.

More information at the talk: *Exo Village, Peri Urb, and Meta Town: TOPOI of settlement types in the METAPOLIS*, Thursday, 15 June, 16:30 – 18:00.

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