Data and the Urban Underground: Towards an n-dimensional city

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Cyber Agora #1
Underground Urbanism
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Deep City Project

Reversing the ‘needs to resources’ paradigm

- (re)source potentials *before* projects or planning
- think multi-use and in terms of synergies and conflicts: buildable space, groundwater, geothermal energy and geomaterials
- underground: a complement to surface development/preservation
Deep City Project

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Some Outputs of Deep City

• Development of an investigative mapping method
• Matrix of interactions between the resources
• Cost/energy simulations of a commercial UG project
• Spatial econometric analysis of surface/subsurface multilevel spaces.
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Resource Potentials

Quantification

- meetings with local actors (planners / geologists)
- survey of geologists / geotechnical engineers via the web.
Urban Centrality

Spatial analytics

• accessibility to built volume (latent centrality potential)

• multiplication of metrics (measures and network radii)

• centrality: can be ‘good’ or ‘bad’
Underground Potential

0-15 m deep (AHP); four resources + urban centrality

Aggregation of potentials

Advantage
- quantitative representation

Disadvantage
- potentials blend together
- few layers (‘small data’)
Characterization of the Urban Volume (Geneva)

All depths; four resources + urban centrality; ‘relationships’ by Self-Organizing Model

Indexing of potentials (similar colors = similar characteristics; ordinal values)
Towards an n-dimensional city

To think of urban data in general as form of heritage, but a natural one (it is ‘given’ and not always by someone in particular).

- Digitize as much as possible: keep the stable things circulating (the immobile must be mobile)
- Organize the data in a generic form with unique identifiers for cross-comparison (or at least similar geographic projections)
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To think of this urban data as a commons, that which belongs to everyone by belonging to no one in particular (with codes of conduct of course).

• Open access to as much as possible (perhaps not all fields); RAW DATA not PDFs

• Education and entrepreneurship: training sessions or workshops, competitions for application production; with regards to developing a literacy in coding, computer algorithms and data.
Publications


