Enhancements of the Cadastral System in Switzerland

«Cadastre of Public-Law Restrictions on Landownership» and «National Utility Cadastre»

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Content

1. Cadastre of Public-Law Restrictions on Landownership

2. National Utility Cadastre
We are surrounded by PLR …

101 laws, ordinances and regulations have to be considered in everyday situations (source: FACTS, 02.09.2004)
Private-law rights – public-law restrictions

Private-law rights
are agreed upon between 2 parties.
Example: purchase of real estate
They are recorded in the land register and are already publicly and centrally available today.

Public-law restrictions
come into existence through a decision by the legislator or the public administration.
Example: definition of noise protection zones.
They are publicly accessible in certain regions of Switzerland and a central information website is available for consultation.
What are public-law restrictions?

- Official restrictions that apply to landowners.
- Public interests take precedence over private interests. For example:
  - A protection zone can be created to secure the public interests associated with the extraction of groundwater.
  - In a land-use zoning map the legislator can specify what kind of land use is permitted.
- In Switzerland there are more than 150 different public-law restrictions.
Land-use planning
The PLR-Cadastre offers numerous benefits

The total value of mortgages covering landownership in Switzerland is currently more than 9 billion Swiss francs (status: 2015). In view of this, it is important to ensure that legally binding information about plots of land is provided without delay.

Benefits

• Easy access to reliable information
• Greater legal certainty thanks to official information
• Simplified decision-making process for the public administration

Users

• Landowners
• Players on the mortgage market
• Public administrations
The 17 most important PLR

**Spatial planning**
- Land-use planning (cantonal/municipal)

**Motorways**
- Project planning zones for motorways
- Building lines for motorways

**Railways**
- Project planning zones for railways
- Building lines for railways

**Airports**
- Project planning zones for airports
- Building lines for airports
- Security zone plan for airports

**Contaminated sites**
- Cadastre of contaminated sites
- … military sites
- … civil airfields sites
- … public transport sites

**Groundwater protection**
- Groundwater protection zones
- Groundwater protection area

**Noise**
- Noise sensitivity levels (in land-use zones)

**Forests**
- Forest perimeters (in build-up areas)
- Forest distance lines
Comprehensive information in the form of a map and texts

A PLR on landownership comprises:

- **The relevant legal provisions**
  Rulings on which the restriction and its effects are based.

- **A map**
  Depicting the region in which the public-law restriction is applicable.

- **Legal bases**
  General regulations on which the rulings are based.

- **Additional information**
  For example, name and address of the authority to contact for further information.
Easy Access to information about PLR on landownership

• Search engine that greatly simplifies the search for information

• Complete, reliable, comprehensible and wide-ranging information available via a central source

www.cadastre.ch/ch
Access to information about PLR on landownership
Dynamic extract: web-based visualization

Individual public law restrictions can be displayed in a variety of ways for all users via the corresponding cantonal geoportal.

- Multiple public law restrictions can be viewed simultaneously, i.e. overlapping one another.
- It is possible to view individual plots of land as well as entire regions.
- This makes dynamic extracts valuable aids for dealing with questions and discussing spatial issues.
Static Extract of PLR-Cadastre

Static extract: decision-making basis

- Detailed information about a specific plot of land
- PDF-A1a
- Several pages
- Official document
- **Upon request:** notarisation by the authority responsible for the cadastre
Initial developments

The first cantons went online with their PLR geo-portals in 2014. This means that users in these cantons can now obtain an overview of the most important public law restrictions on landownership, and download them.
Content

1. Cadastre of Public-Law Restrictions on Landownership

2. National Utility Cadastre
Initial situation for a utility cadastre

In 2016 a survey was carried out over all of Switzerland in order to find out the need for a national utility cadastre. Infrastructure companies (utility owners), public data integrators and users participated on a broad scale.

The legal basis for an utility cadastre exists in only 14 cantons.

Basic question: If – and if yes, how – a utility cadastre has to be established on a national level, and for what purposes should it be built?
Definition of terms by the national utility standard SIA405

Information about the utility network (UN)

• Represents all data of one specific media within the perimeter of an infrastructure company (utility owner) for operating and maintaining its network.

• Includes position data and a multitude of thematic data.

• Serves the infrastructure company for the planning of its infrastructure (new construction, replacement, upgrading, maintenance), network simulations, or financial calculations.
Graphical example UN media waste

Ausschnitt Werkinformation (hier: Medium Abwasser)
Definition of terms by the national utility standard SIA405

Utility cadastre (UC)

- Is the sum over all media of a certain amount of utility network data. This data allows to describe the space, which is occupied by conducts of different media. It mainly consists of the planimetric network, the visible objects and few thematic data.

- Is an important coordination instrument for information and planning tasks in the public space.
Graphical example UC

In der Informationszeile unten sind die wichtigsten Informationen zur angewählten Kommunikationsleitung (grüne Ellipse) bei Haus Nr. 27 angegeben.
Participants of the survey

354 received answers, enclosing 22 associations
-> 344 «true» participants

141 Owner (exploitant) of a utility network
142 Integrator – responsible for utility cadastre – authority
62 User of utility cadastre data (today or in future)
10 I am not affected by the topic resp. not interested in the survey

languages: 8 Italian + 71 French + 275 German
Opinion of utility network owners

- About 10% have their utilities fully or about 75% partly described in the land register as a servitude.

- The network data exists mostly in digital form and with a huge amount of thematic data, mostly in 2D or 2.5D. The third dimension doesn’t exist at all.
Opinion of integrators

• Approx. 80% of the integrators transfer data to third parties or make the data available to them.

• On average, 10 data requests from other parties are counted per week and integrator. Integrators, who offer a data presentation service, report a much higher number of requests.
Opinion of users (incl. owners and integrators)

- The main users of utility data are the private sector and municipality administrations with both 40%.
- The respective purpose of use is very different, dispersed and broad:
  - tool for planning, projecting, and maintenance;
  - information systems;
  - overview, complete view and localization of conducts.
- The level of data access authorisation B (data partly accessible to public) is broadly accepted.
- The data of the utility cadastre is accessed several times per week; queries are done not only for the main network, but also for utilities connecting the buildings. The minimal periodicity of data deliveries by the utility owners is expected on a monthly to 3 monthly basis.
Opinion of users (incl. owners + integrators)

• About 45% of users are satisfied with the level of detail according to SIA405 (LKMap). The 30% not satisfied ask for a separation of waste water in mixed, dirty and clean water, followed by the material and age of the utilities.

• Only 25% are satisfied by the existing 2D data model, 45% wish 2.5D, and 30% expect the data to be in 3D in the future.

• About 65% of the users would see a great or very great benefit in a homogeneous, nationwide utility cadastre for Switzerland.
Conclusions

A national utility cadastre is not only considered doable, but there is a clearly expressed need for it. This is even articulated by cantons, which do not have regulations about a utility cadastre up to now.

The role of the confederation should be the coordination; the operational responsibility should be with the cantons.

No new utility cadastre should be created, but rules for gathering a homogeneous nationwide utility cadastre should be established.
Conclusions

Points to be clarified are:
• what aim and purpose should a homogeneous utility cadastre serve?
• what quality standards are required?

Only after these points have been clarified, a serious calculation, a costs/benefits analysis, and decisions for further steps are possible.
Thank you for your attention!