Subsurface Utility Network Registration and the Publication of Real Rights: Pending for a Full 3D Cadastre.

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SUMMARY

Burying utility networks is a global trend. Power and telecom networks are joining gas and water pipelines in an already dense underground. Underground space is becoming more complex, bringing restrictions and obligations to surface owners. Moreover, land management complexity is increased by the fact that utility networks often share complex geometric dimensions not easily represented in current 2D cadastral frameworks. For that reason, some countries have decided to register utility networks in a special land register to provide them the publication of rights despite an absence of cadastral registration. This is the case in the Canadian province of Quebec.

In the context of a Canadian research grant, we hypothesized that, in Quebec, the geographic data available in the Land Register are insufficient to accurately locate utility networks, possibly mitigating the benefits of the publication of real rights. For the sake of this presentation, we analyzed the legal procedures surrounding the registration of utility networks in the Land Register and examined methods used to locate them.

Quebec law imposes minimal obligations in terms of geographic localization and none in terms of geometric description of utility networks. The Civil Code of Quebec merely requires the designation of the “territory” the networks serves. Any additional details are left to the discretion of the utility network owner or the official authority (notary). Having access to information about the real rights of the utility network requires the land file number, but this number is not disseminated. While the name of the owner can be queried, if the same owner holds rights on several networks, it becomes impossible to identify the correct land file without consulting all its files.

Without a comprehensive linkage between cadastre and at least the path of a the network, identification of the affected land parcel is nearly impossible. To circumvent this problem, notaries

and surveyors are tempted to use accompanying easements to locate networks. Unfortunately, mapping the associated Rights, Restrictions and Responsibilities (RRR) as a surrogate is hazardous. The Law offers utility network owners implied easements, which are enforceable without registration. Also, when an easement is registered on a land file, its concordance with network location is not guaranteed by Law.

The mission of the Quebec Land Registry does not include providing data that could be used to produce an integrated map representing the position and shape of underground networks and their relationship with surrounding land parcels. The creation of a full 3D cadastre may solve many of these problems, but while research and technology concerning registration and data acquisition of three-dimensional objects are multiplying, this will not occur tomorrow. 2D cadastre maps with the projection of the footprint of the underground networks may also be a worthwhile solution. More significantly, we advocate the development of rigorous registration standards in terms of network designation to maintain the utility of the real rights publicity system and promote the better planning, development and management of underground spaces.