

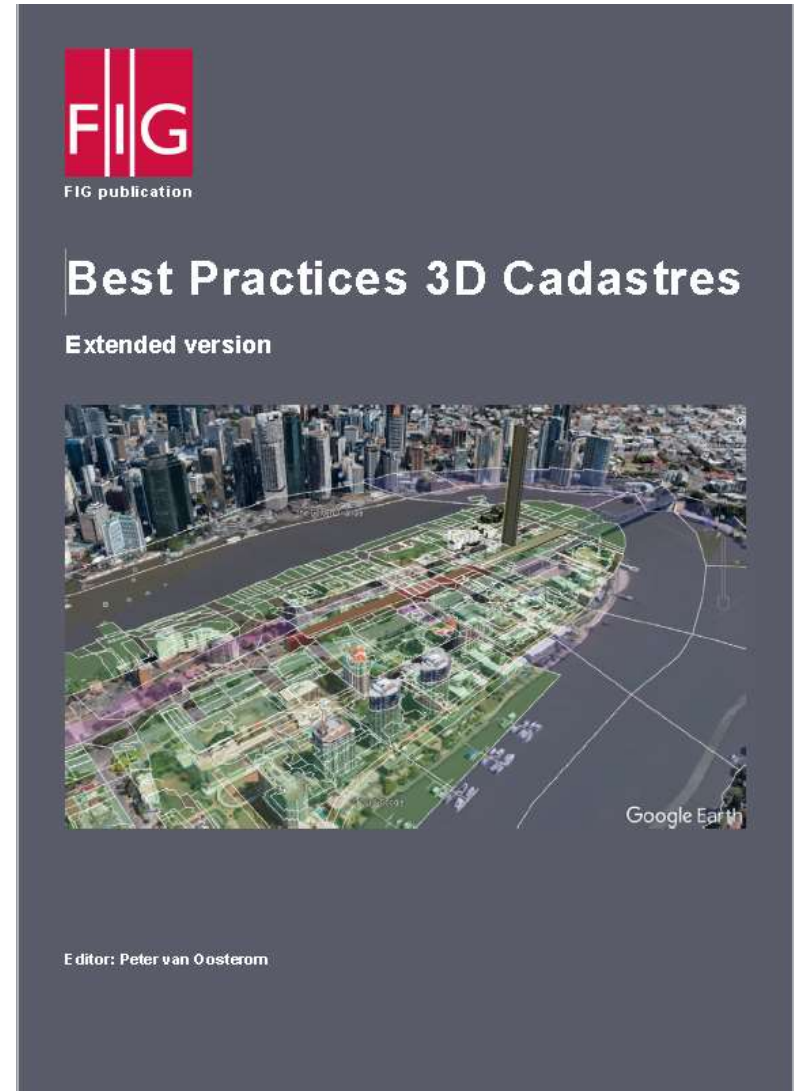
Best Practices 3D Cadastres

Chapter 1: Legal foundations, p. 1-66

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3. Discussion and comparison

4. Conclusions

5. Further research

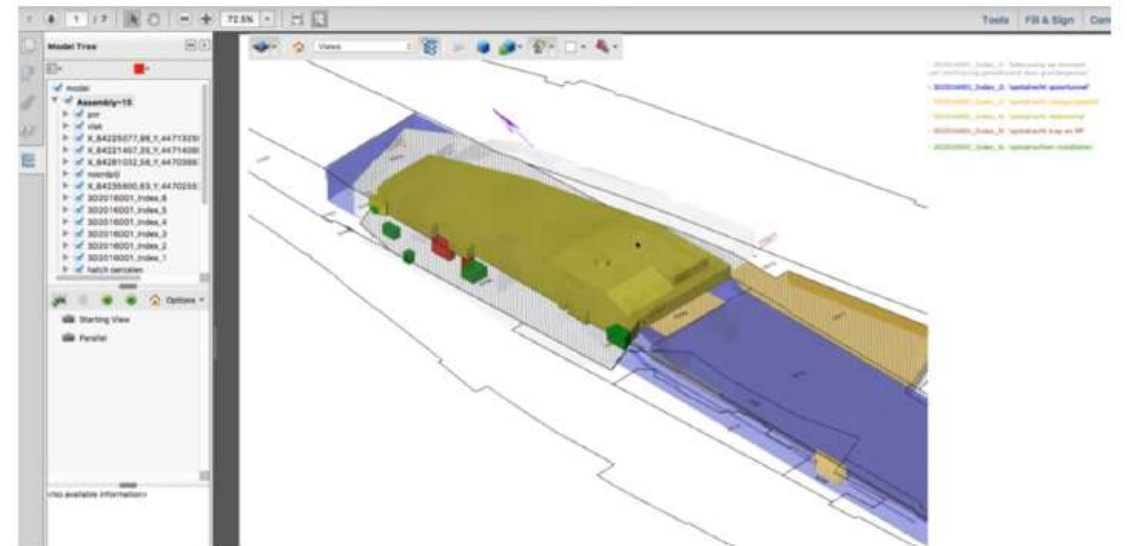


Map: Mila Koeva

Section 1: Introduction

Aim

- Comparison and discussion of legal 3D property concepts
 - Legal focus
 - Different stages of 3D development
- Provide input to countries that are exploring or are in the midst of the process of developing a 3D cadastral system, especially from a legal perspective
- Providing examples from 15 countries / states



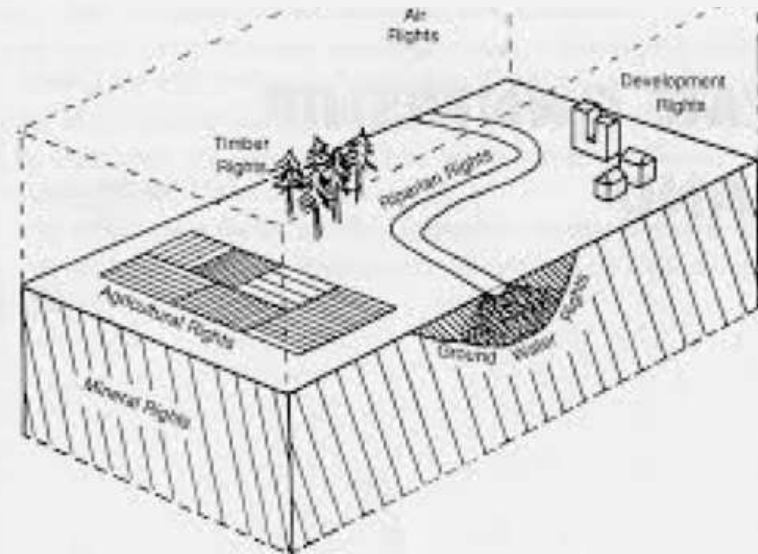
Complex situation of rights, restrictions and responsibilities (RRRs)



Source: <http://www.xyht.com/wp-content/uploads/2014/08/3D-City-Map.png>



How can rights in 3D space be secured?



Source: Platt, 1991



Source: http://fig.netwww.fig.net/resources/monthly_articles/2013/march_2013/fig14.jpg

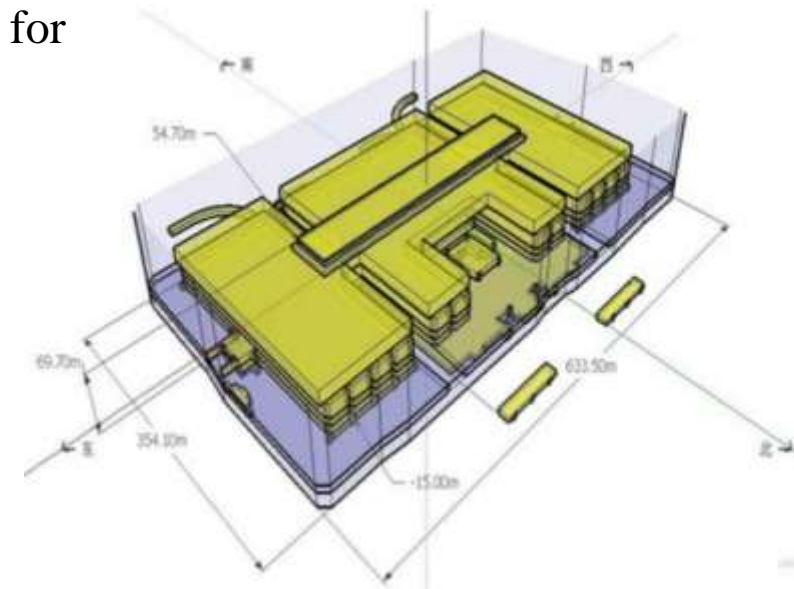
Partition in 3D space

“Concept” of 3D property

Section 2: 3D legal issues exemplified by case studies

Information on general characteristics of national real property legislation

- What were the reasons to introduce a 3D system or why would it be necessary?
- What is the current status?
- What is the legal definition of 3D legal objects and what are the possibilities for delimitations?
- What types of RRR can be registered in 3D?



The following aspects are examined in each case study

- How is real property defined in law (Land Code, Civil Code, or any other legal document in each country that defines land)? Is the third dimension implied/clearly defined in the legal definition?
- What are the 3D object situations (including every situation regardless its recording in cadastre, or if it is defined by law)?
- What are the 3D objects recorded in national registries and how are they recorded (e.g. 2D plans + floor number, 3D pdfs, 2D projections etc.)?
- Which registries are used to record these objects?
- Are there any restrictions or responsibilities implying 3D aspects (or directly defined in 3D) defined by law?
- How is 3D space separated from land ownership in case of underground/above ground infrastructures (e.g. real property stratification, specific legislation, servitude establishment, etc.)?

E.g.

deed registration

title registration

variety of 3D objects

centralized cadastral systems

level of cadastral infrastructure

municipal cadastres

provincial cadastres

Each case study contains

- *Background information*
e.g. History of legislation
- *Status of 3D objects' recording*
e.g. "Currently cadastre is able to accept analogue and digital graphical data about every floor, but it is not an obligation by law. Only the land book has an obligation to accept elaborate on partition of real property"
- *Legal definition of 3D objects*
e.g. "The types of boundaries that are used in legally defining the 3D RRRs include structural, ambulatory and projected"
- *Types of rights that can be registered in 3D*
e.g. Easements, Leases, Covenants; 3D Roads; Air spaces
- *Concluding remarks*
e.g. "The 2D digital cadastral map which covers the whole territory... the 3D Cadastre is currently mostly academic research"



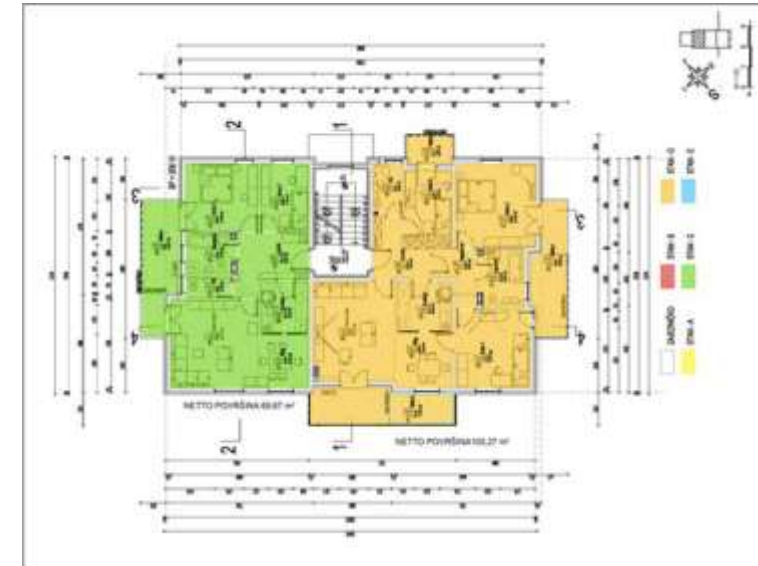
3D perspective of Escazu - Costa Rica

Section 3: Discussion and comparison

Incl. summary of the national case studies

Table 1: Summary of national case studies

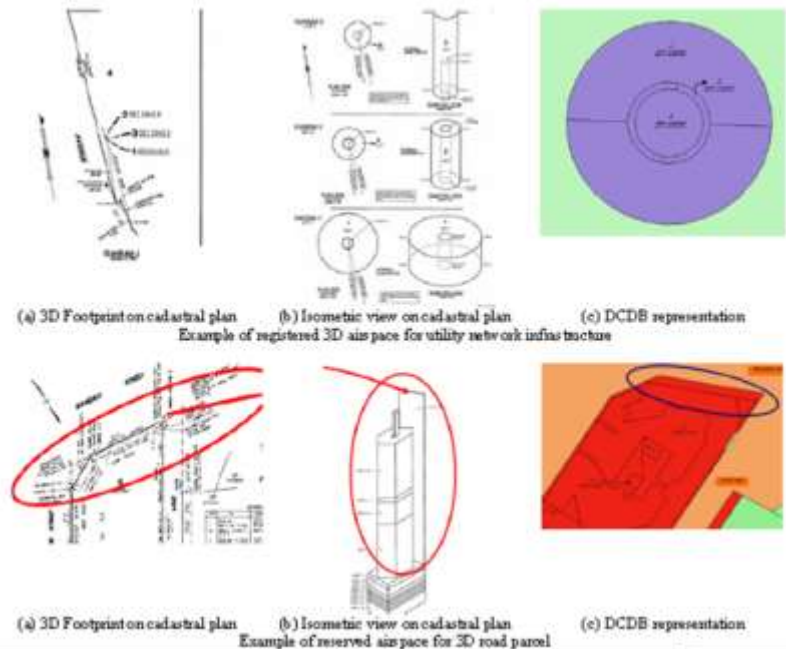
Country	Background information	Status of 3D objects' recording	Legal definition of 3D objects	Rights that can be registered in 3D
Argentina	-Civil law jurisdiction (National and Provincial, hierarchically). - Provincial cadastral system. -Transition from Deeds to Titles in Provincial real property registration system	-2D models with tags (high, levels) -2D registration -Under and above ground utilities are maintained by each Service Company. -Unified real property cadastre in 2D database and thematic cadastre in some cases.	2D (orthogonal projection) and different kind of levels (floor, roof, terrace, subsoil, basement, etc.)	No rights registered in 3D.



Section 4: Conclusions

For example

- Variety of legal solutions for securing 3D space
- Variation of level of 3D Cadastre legislation implementation
- Different (national) terminology is applied
- Lack of international terminology
- Sometimes very old national (legal) definitions
- Introduction of e.g. 3D Public Law regulatory frameworks are needed



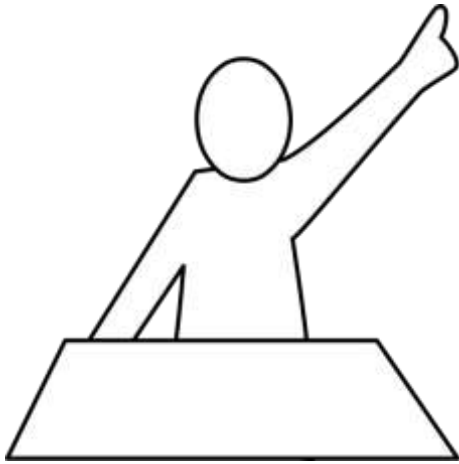
Section 5: Further research

For example

- To what extent do authorities realise the need for 3D and how can it be facilitated?
- What are the necessary extensions to existing legislation to be set if advancing an existing cadastre from 2D to 3D?
- What are the departments or expert fields that should be involved in each country to facilitate a 3D cadastre system?
- To what extent is it possible to create a theoretical framework for a 3D cadastre that is independent of the national legislation?



Thank you!



Questions?