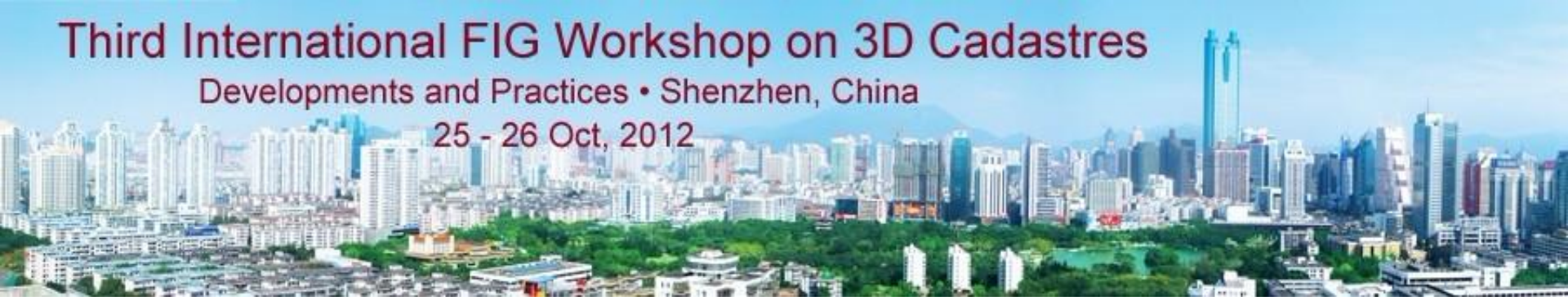


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Combining 3D Cadastre and Public Law – An Austrian Perspective

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Outline

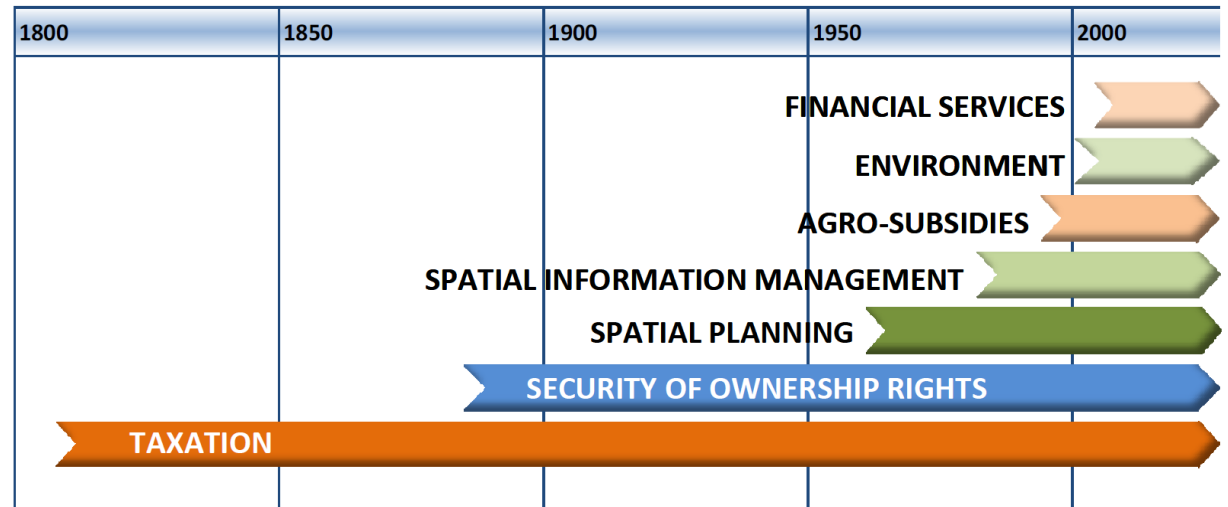
- Introduction
- Documentation of Rights
- Mechanisms connecting Rights in 2D
- Moving to 3D
- Conclusions

Introduction (1)

Historical cadastre: Land tax

Later: Other purposes

Result: Dynamic framework



(Muggenhuber et al. 2011)

Introduction (2)

Upcoming problem: Scarce space in cities

- efficient use of available space
- vertical separation between different kinds of use
- Spatial planning needs to go 3D
- Documentation of public law restrictions necessary

Introduction (3)

Classical cadastral system: Private law

- **Private Law:** Agreements between persons on same level
- **Public Law:** Public authority defines rules

Is the documentation of public law regulations necessary?

Does it require changes?

Introduction (4)

Public law restrictions limit possible use

→ Impact on value

→ Essential for land market

→ Documentation is (at least) beneficial

Documentation of Rights (1)

Private law rights

- Defined by a contract (oral, written, etc.)
- Movable things: Possession as an indication of ownership
- Immovable things: other systems
e.g., a register (use may be compulsory or optional) (compare, e.g., Navratil & Frank 2004)
- Large variety of rights (compare Paasch 2011)

Documentation of Rights (2)

Public law rights

- Product of various administrative or legislative processes → defined by laws, decrees, acts
- Not registered in a central place
- Range from general rules to specific solutions for a single case
- Huge variety (Austria: at least 40 federal laws)
- Switzerland started the development of a cadastre for public law restrictions (Kaufmann, 2010)

Documentation of Rights (3)

Public law rights (cont.)

- Complete documentation not realistic (CH: Only 17 restrictions on federal level)
- 8 categories: Spatial planning, national roads, railways, airports, contaminated sites, groundwater protection, noise, forests
(swisstopo 2009)
- Implementation would also be beneficial for other countries, e.g., Austria (Spangl & Navratil 2012)

Mechanisms connecting Rights in 2D (1)

Ownership = Right to do anything with the object and bar anybody else from using it

Some limitations for ownership of land:

- Physical processes influence spatial extent
- Some disturbances must be tolerated, e.g., water runoff (no heavy modifications)
→ chain of automatic permissions

Extreme Water Runoff: Flooding



(News file photo, 2012)

(Axel Springer Verlag, 2002)

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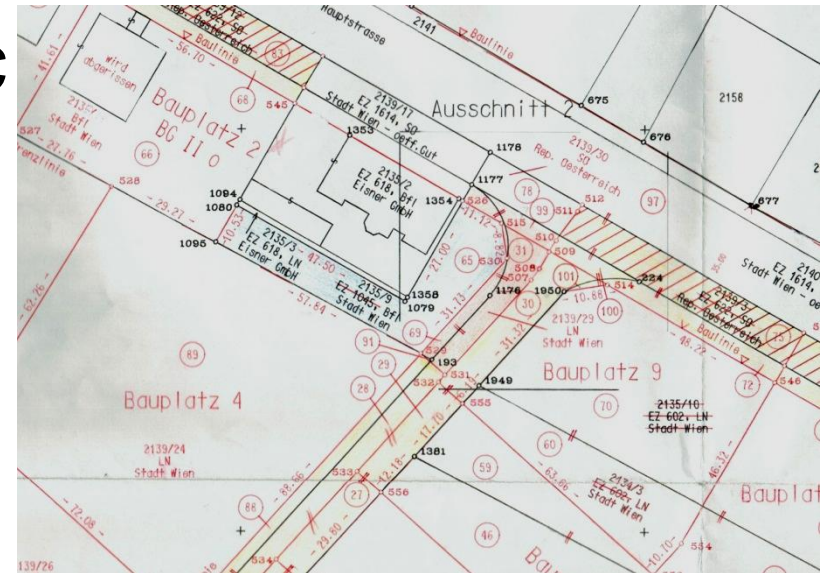
Mechanisms connecting Rights in 2D (2)

Public law restrictions influence use of land and possibly even the geometry

Providing land for public purpose (e.g., roads) is compulsory!

Debatable parameter:
Compensation (value)

(Kalbro and Lind 2007; Navratil and Frank 2008)



Building plot construction based on planning regulations

Moving to 3D (1)

- Rights attached to volumes may interact similar to those attached to areas
- New restrictions may emerge, e.g., condominium in apartment building
 - Destruction/change of object?
 - Support weight of upper floors – extend a building by 2 more floors?



Santorini (WikiPedia, 2009, user: Simm)

Moving to 3D (2)

- If ignoring the mechanisms:
 - Ownership of building and condominium must be separated – main structure excluded (graphical representation?)
- Solution in Austria: Shared ownership of land, exclusive right of use for apartment

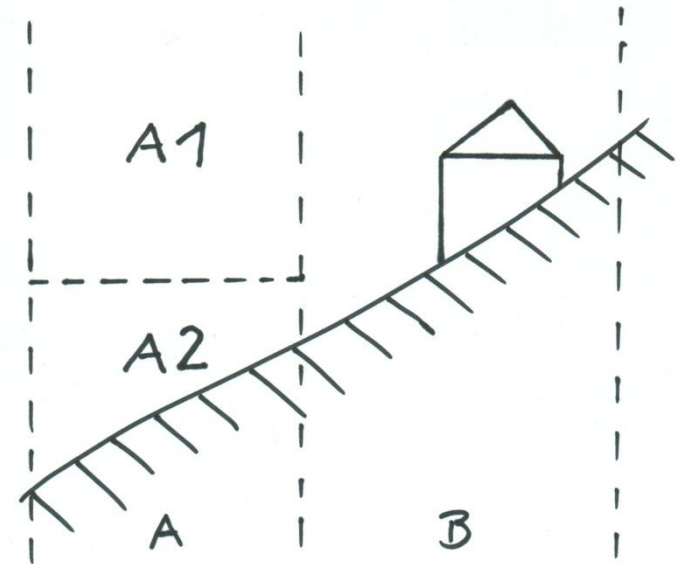
Moving to 3D (3)

Effect of spatial planning: Compulsory purchase

What if the owner of A2 has to build higher than his property reaches?

Solutions

- Compulsory purchase
- Private law over public law



Protecting the view ...

Conclusions

- 3D objects are independent – geometrically and legally
- Better protection of personal interest of land owners only guaranteed if no contradicting public interests
- Effect of 3D cadastre on other aspects of public law, e.g., land tax?
- We have to include law experts in the discussion
- Interaction of laws based on jurisdiction – how far is harmonization possible?