



SURVEYING & CADASTRE RESEARCH DIVISION
FACULTY OF EARTH SCIENCES AND TECHNOLOGY
INSTITUT TEKNOLOGI BANDUNG

3D CADASTRE

Utilisation of Spatial Unit Above and Beneath the Surface in Indonesia

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ABDULHARIS**





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OUTLINE

- Introducing Spatial Unit
- Recent Situation
- Strata Title Act
- Research Progress
- Case Studies
- Improvement
- Conclusion





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Spatial **UNIT (1)**

Working Definition

A 3D unit that is wholly enclosed by either physical or imaginary surface(s), which is located partly or completely on, above and beneath the surface of the earth and sea





Spatial **UNIT (2)**

Scope



Copyright of My-topup





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Recent **SITUATION**



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Strata Title **ACT (1)**



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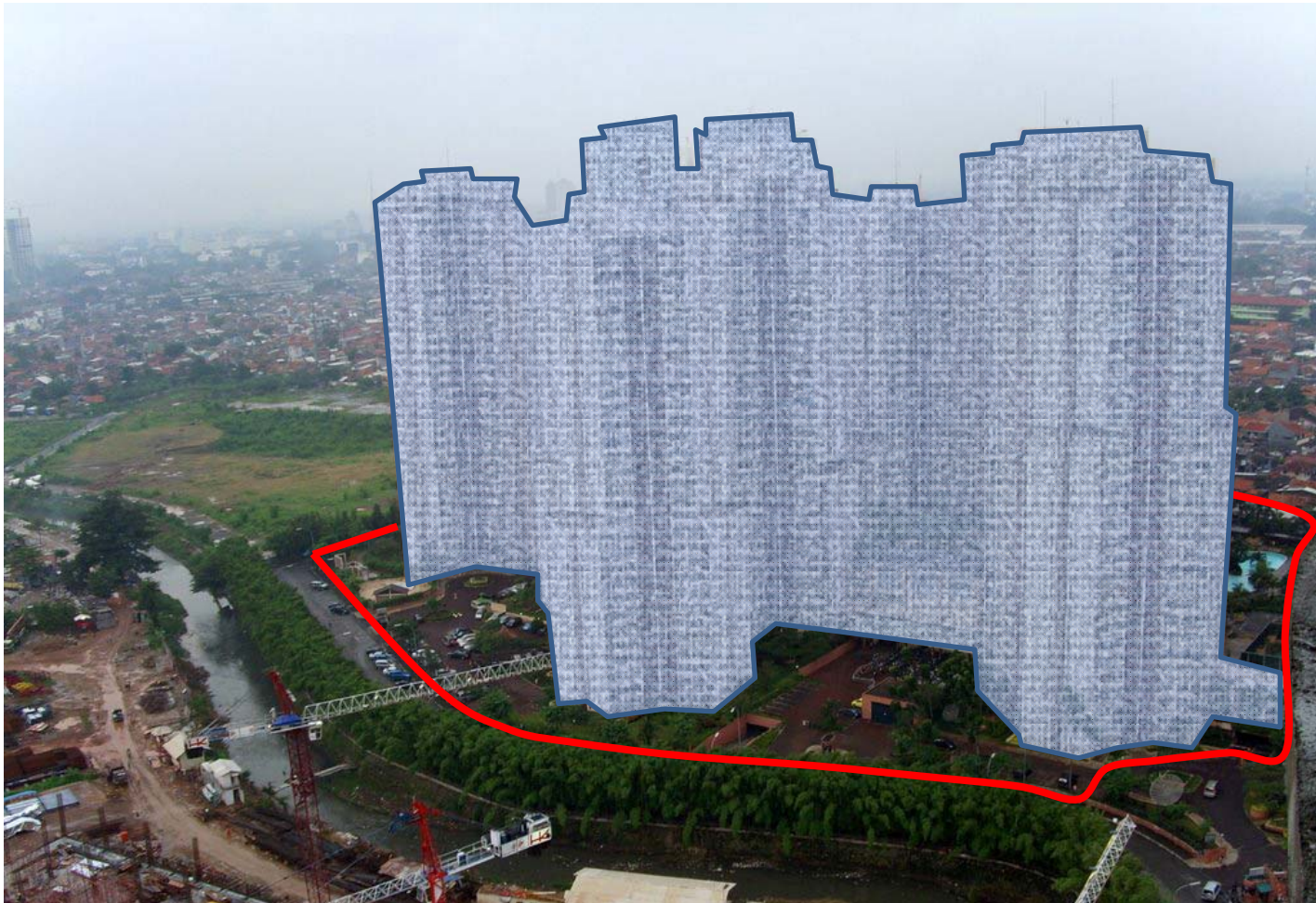


Copyright of Green Palace Apartment





Strata Title **ACT (2)**



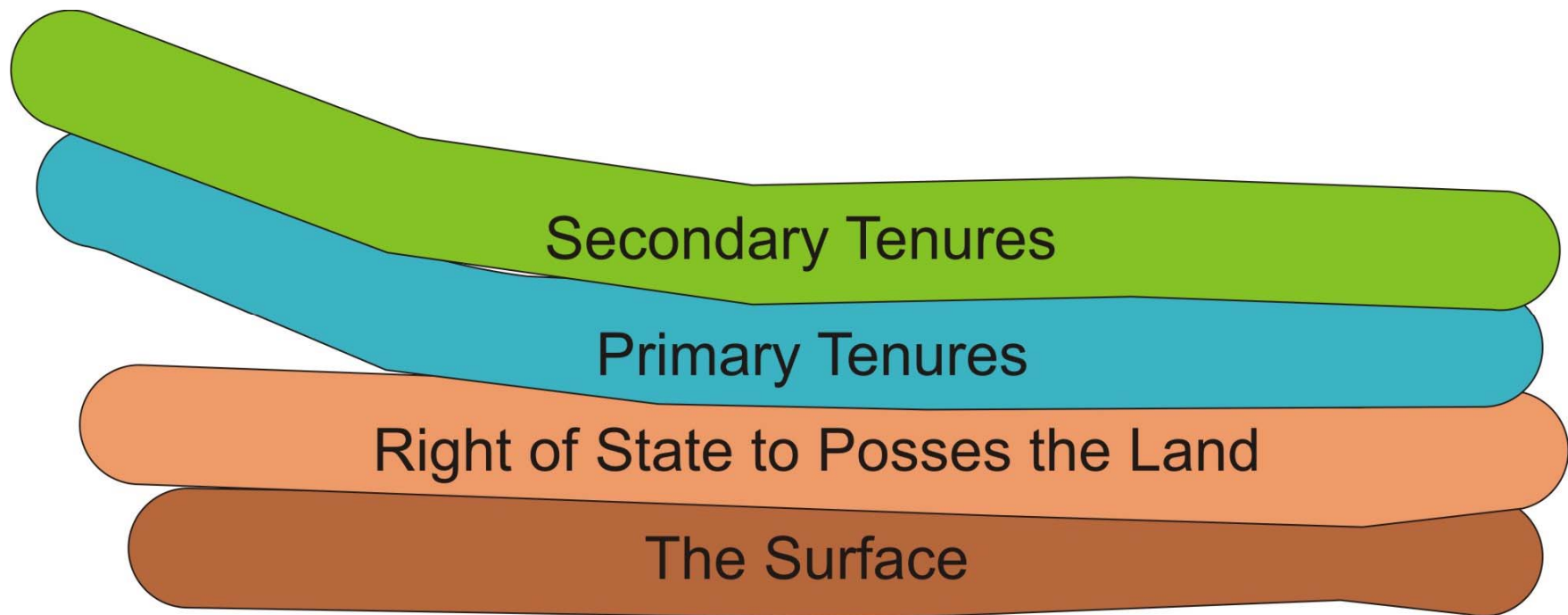
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Strata Title **ACT (3)**

Horizontal Separation





Strata Title **ACT (4)**

Principles

- New secondary tenure
- Attached to any of primary land tenure, accordingly to land surface
- A bundle of rights comprises of right to possess individual Spatial Unit, as well as rights to common properties
- Strata Title registration document: primary tenure certificate, Strata Title certificate, Land Book in the registrar comprises of separation deeds, occupancy worthiness permit, sketches, field notes, floor plan or blueprint and proportional value of Spatial unit when necessary





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3D Cadastre **RESEARCH PROGRESS (1)**

Proposal on New Primary Tenures

Right to Spatial Unit Above the Surface
and
Right to Spatial Unit Below the Surface





3D Cadastre **RESEARCH PROGRESS (2)**

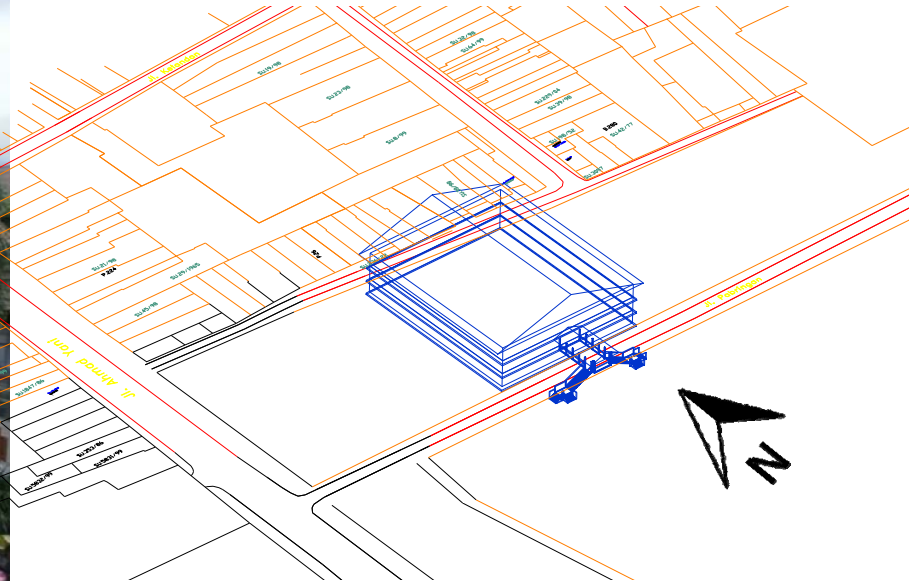
Cons

- Article 17 of Government Regulation on Apartment Unit: Spatial Unit could be located partly or wholly on, above and/or beneath the surface
- Different allocation of use of land and spatial unit: as long as the land is registered under any of the primary tenure, Strata Title could be applied



3D Cadastre **CASE STUDY (1)**

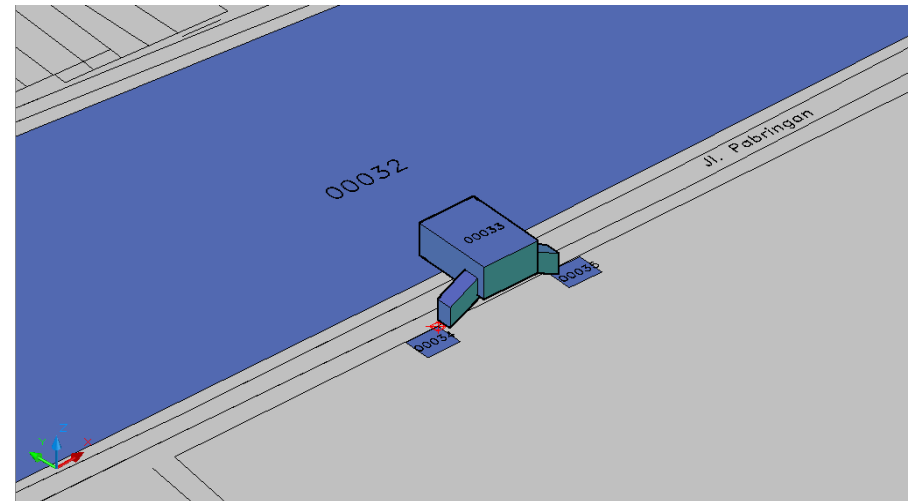
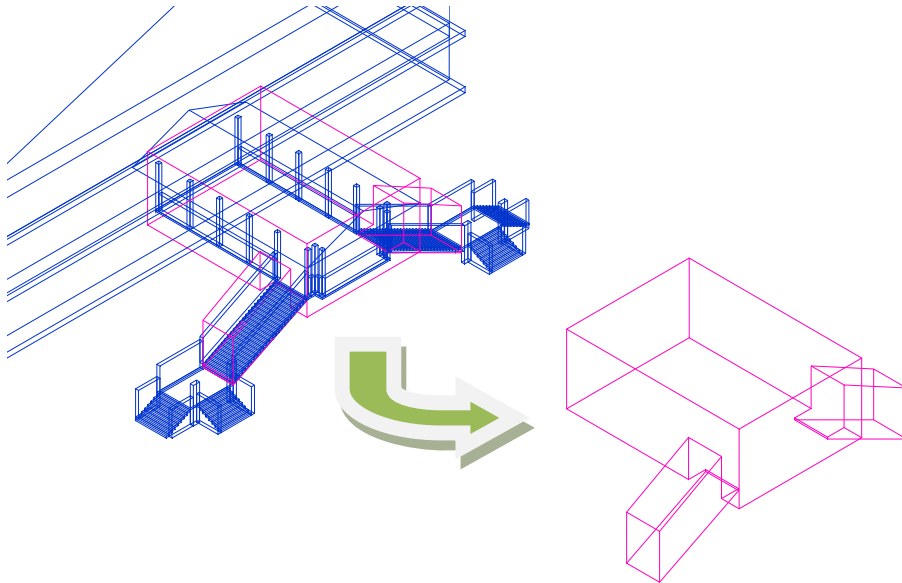
Beringharjo Market (1)





3D Cadastre **CASE STUDY (2)**

Beringharjo Market (2)





3D Cadastre **CASE STUDY (3)**

Beringharjo Market (3)

Legal problems:

- Strata Title could be registered only until the Sultanate's land is registered
- The Sultanate is not considered as eligible subject of land tenure in Indonesia
- The street below the bridge is not registered in the registrar as commonly happened in the case of public infrastructure, even though the land is possessed by the State



3D Cadastre **CASE STUDY (4)**

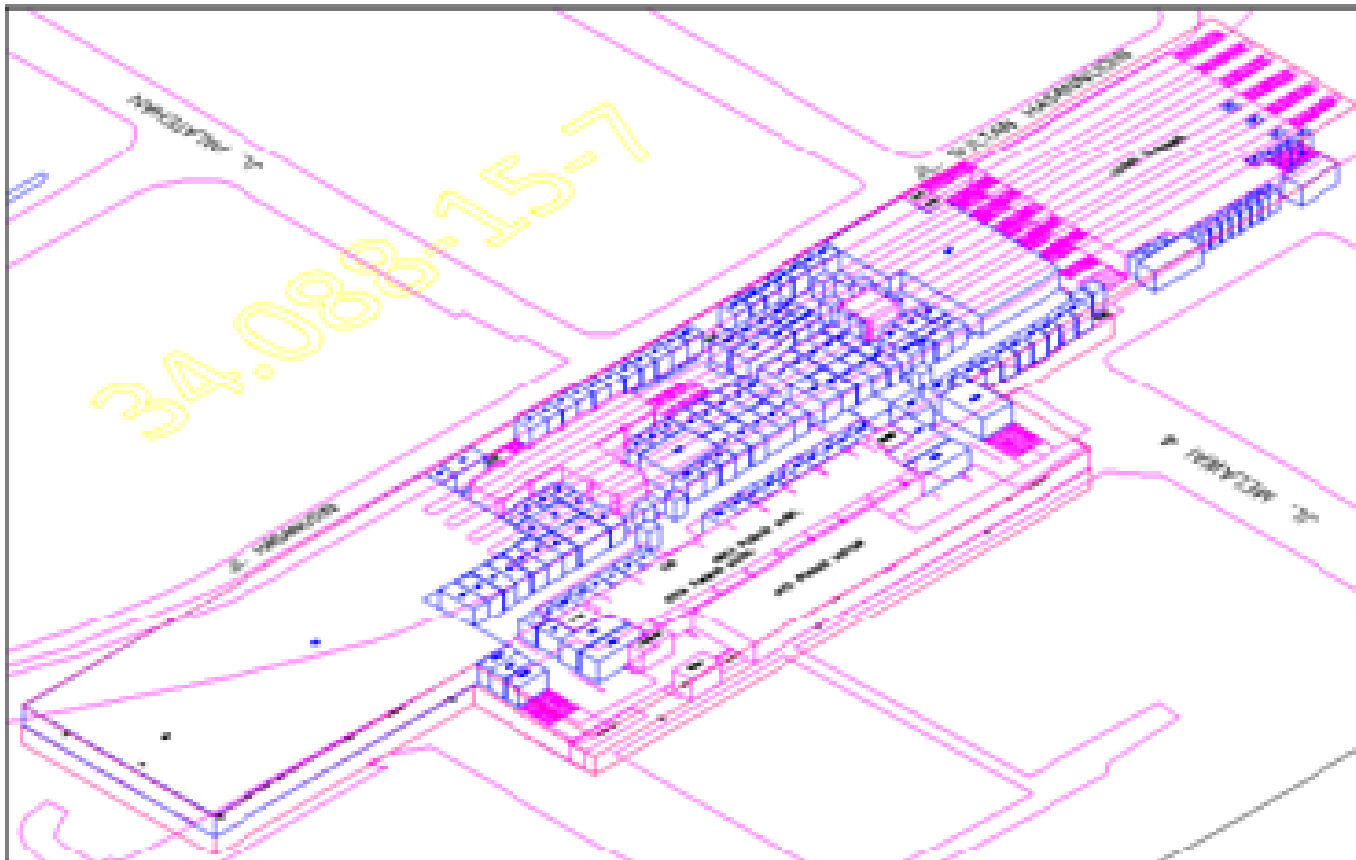
Blok M Shopping Centre(1)





3D Cadastre **CASE STUDY (5)**

Blok M Shopping Centre(2)





3D Cadastre **CASE STUDY (6)**

Blok M Shopping Centre(3)

Legal problems:

- Spatial units are not registered yet
- Tenants are legally bonded to their spatial units through leasehold deeds of units in question



3D Cadastre **CASE STUDY (7)**

Lessons Learned

Issues on linking Strata Title and primary tenure:

- Strata Title is not necessarily attached to land but to primary tenure
- When no primary tenure attached to land, the right of State to possess the land is always there





3D Cadastre **IMPROVEMENT (1)**

2D Cadastre with 3D Tags

- Operational at the moment, no legal improvement needed
- Issues on linking Strata Title to eligible tenure are unresolved
- Issuance of new tenures are hardly necessary, except followed by at least hybrid approach
- Quality of paper-based 3D registration is still questionable
- Increasing the quality by digitalising 3D registration offers limited spatial relationship





3D Cadastre **IMPROVEMENT (2)**

Hybrid Cadastre

- Cadastral legal principles could be maintained, no legal improvement needed except assigning the right of State to possess the land for upholding Strata Title on top of public infrastructure
- 3D cadastral database improvement is indispensable, eg. 3D cadastral survey
- Issuance of new tenures could be an alternative, however it is best to treat them as primary tenures
- Great chance to employ right to use space





3D Cadastre **IMPROVEMENT (3)**

Full 3D Cadastre

- Legal improvement is indispensable: abolishment the requirement to overlay right to Spatial Unit over primary tenure and re-issuance of Strata Title, right to use space or the proposed tenures as primary tenure
- 3D cadastral database and representation improvement, as well as application of full 3D cadastre procedures, is a necessity for representing spatial relationship among 3D Spatial Units and 2D parcels



Concl**USION**

- 3D cadastral system improvement, both juridical and technical one, is essential
- Costly on any institutional sectors
- Based on institutional cost analysis: hybrid approach is suggested, bundled with its technical and juridical improvement requirement





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Thank you

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