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THE 2030 AGENDA, CITIES AND URBAN GOVERNANCE

A CENTRAL ROLE FOR LAND AND GEOSPATIAL INFORMATION

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GLOBAL AGENDA FOR SUSTAINABLE DEVELOPMENT

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THE 2030 AGENDA AND SDGS

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THE 2030 AGENDA AND SDGS

NEED TO LINK DATA RESOURCES

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LAND, PEOPLE AND SUSTAINABILITY

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BY 2030…

“Make cities and human settlements inclusive, safe, resilient and sustainable.”

Indicators:

- Housing and basic services
- Transport systems and road safety
- Inclusive and sustainable urbanisation
- Protect and safeguard cultural and natural heritage
- Reduce impact of disasters; Hyogo framework
- Reduce environmental impact of cities
- Access to green and public spaces
- National and regional planning
- Sustainable and resilient buildings using local materials

BY 2030…

60 % world's population will live in cities

600 cities will account for

60 % global GDP

11 SUSTAINABLE CITIES AND COMMUNITIES

"Cities will play a key role in the success of achieving SDGs"

– Habitat III

Dobbs et al., 2011; Bouton et al., 2013

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URBANISATION TREND WILL CONTINUE

COMPLEX STRUCTURES















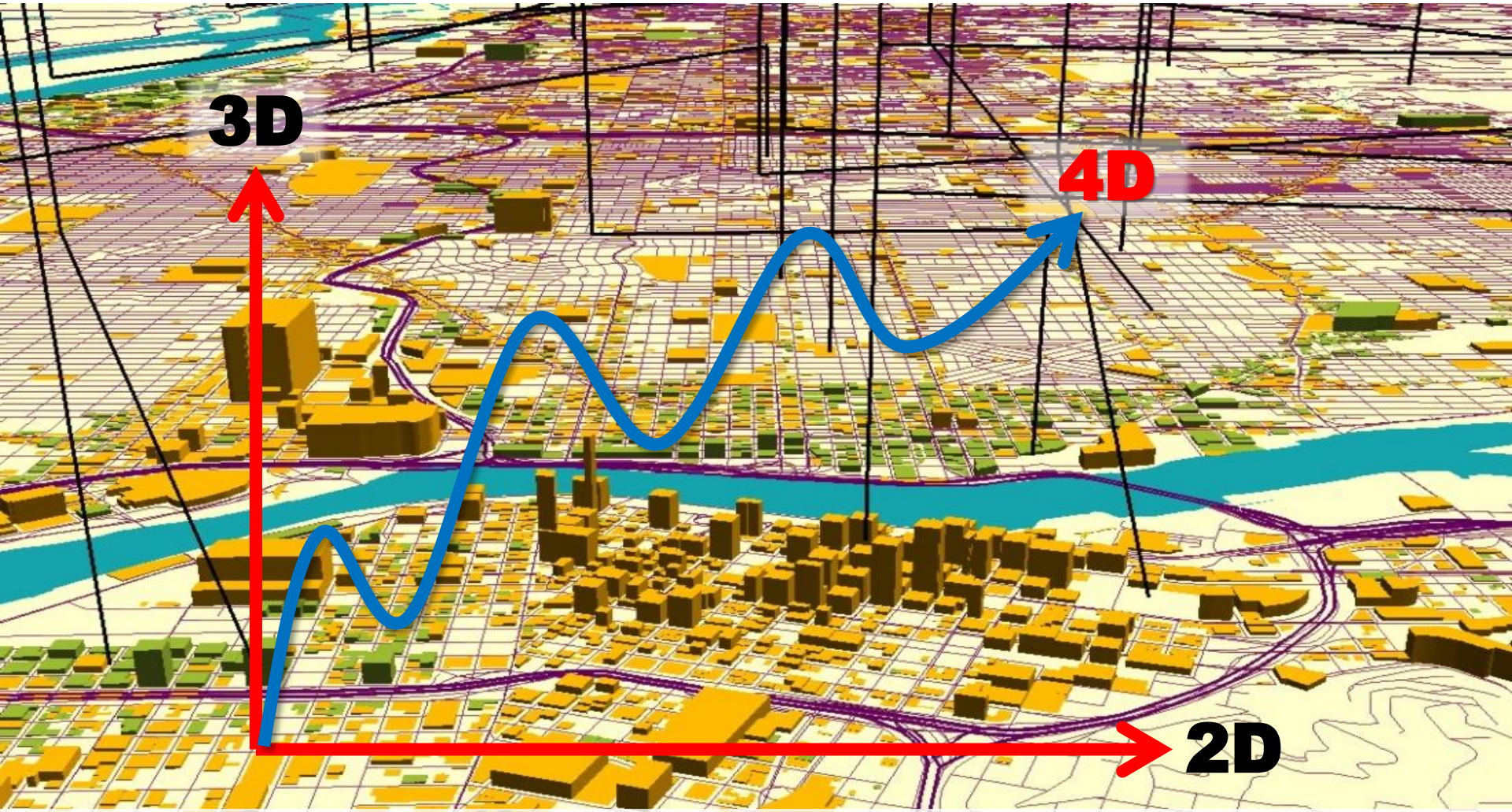






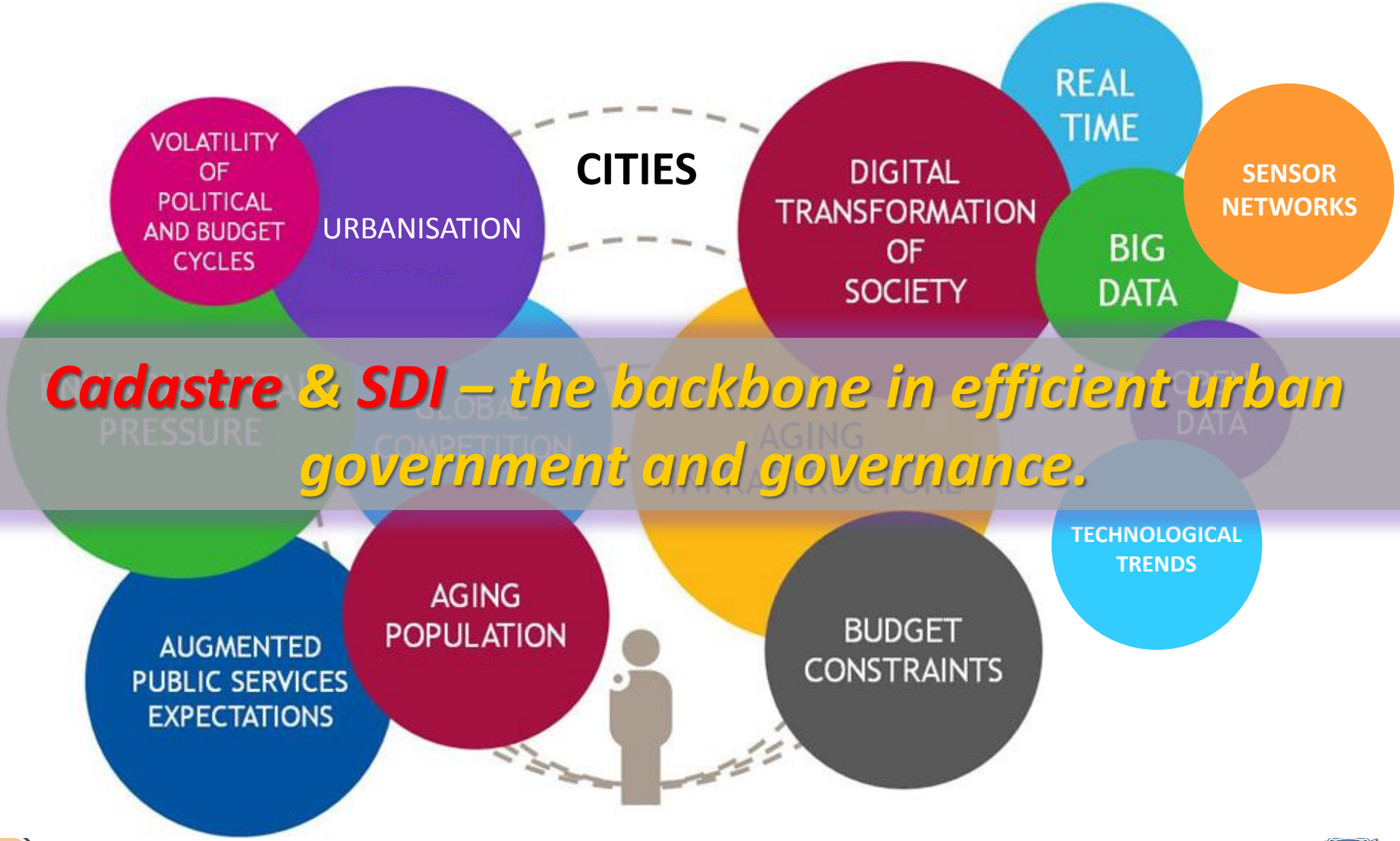



COMPLEX URBAN INTERDEPENDENCIES



***Need** for multi-dimensional land/spatial information.*

COMPLEX URBAN INTERDEPENDENCIES



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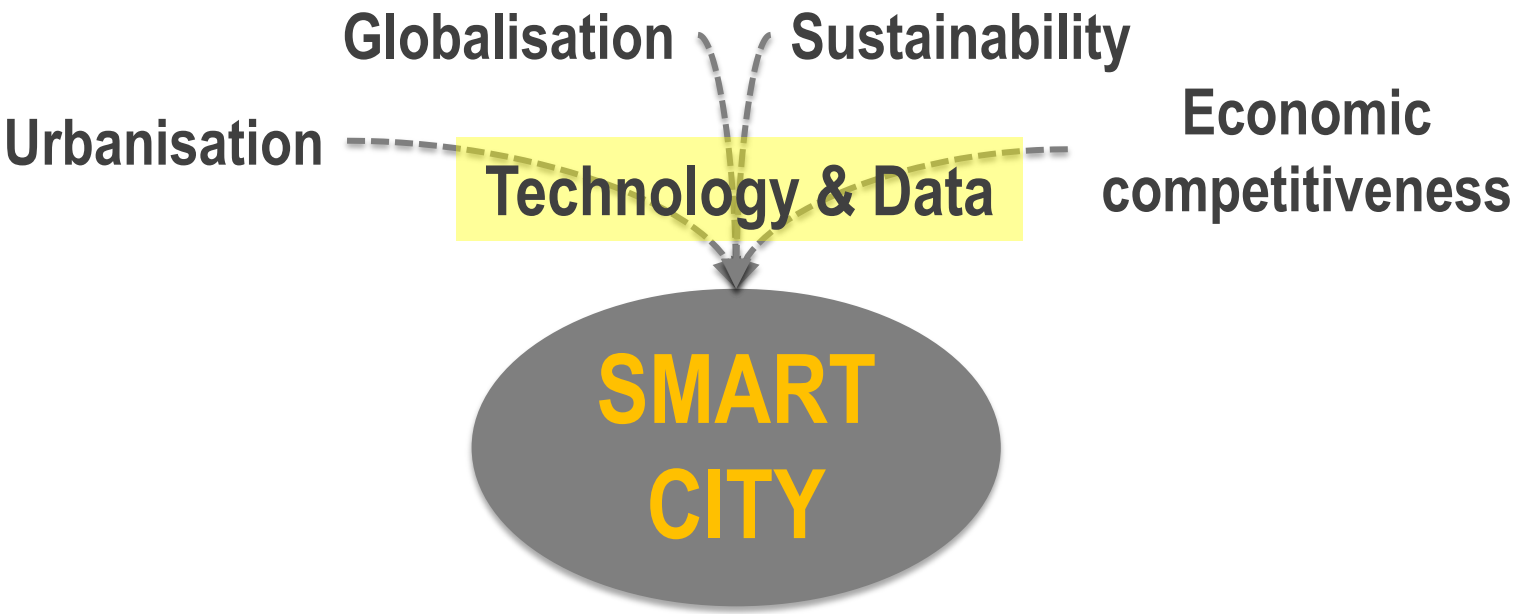
‘SMART CITY’ CONCEPT



Use ICT to develop intellectual capital and participatory practices in the governance of a city’s resources…

(Holland, 2008; Caragliu et al, 2011)

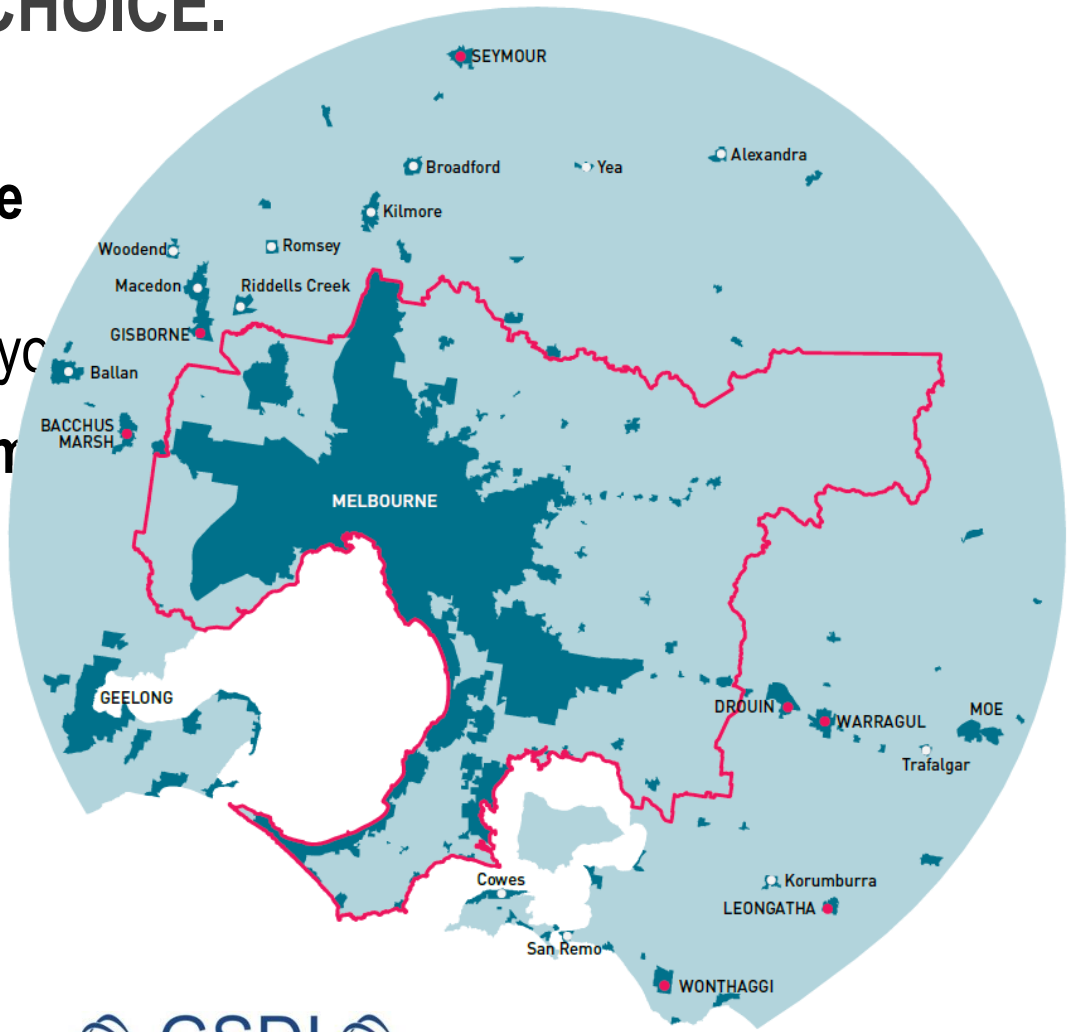

Enabling evidence-based planning and decision making ..
..with location (3D land & property) to manage and deliver information.

‘PLAN MELBOURNE’ (TO 2050)

PLANMELBOURNE
METROPOLITAN PLANNING STRATEGY

“MELBOURNE WILL BE A GLOBAL CITY OF OPPORTUNITY AND CHOICE.”

- **House**, **employ** and **move** more people around the metropolitan area, and beyc
- Build **confidence**, **investm** and **employment**
- Become a **global city of opportunity and choice**.



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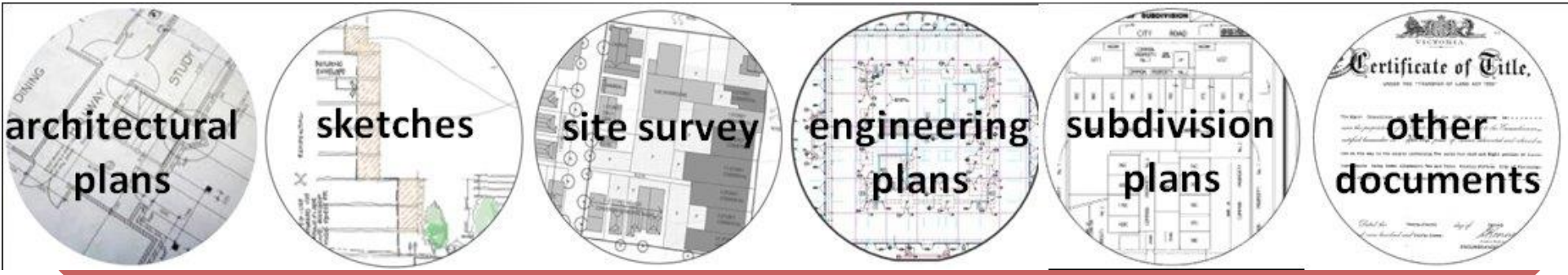
DRIVERS FOR 3D



planning

development

Need for integrated information.

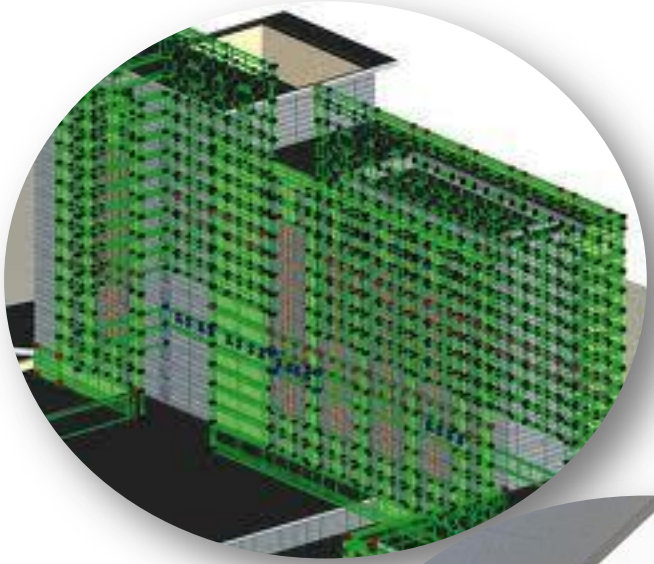
management

community

knowledge

NEW TECHNOLOGICAL OPPORTUNITIES

BIM



Digital data

3D trends

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SPATIAL PLANNING TOOLS & OPEN DATA

- There are **two major improvements** on application of spatial planning tools.

  1. Current generation of **spatial data infrastructure** allow the geospatial information partnering across stakeholders and different jurisdictions, called **open data infrastructure**.

  2. The advantages of migrating from **2D** to **third and fourth dimensional SDI** in planning and decision making tasks.

3D MODELS AND SPATIAL PLANNING

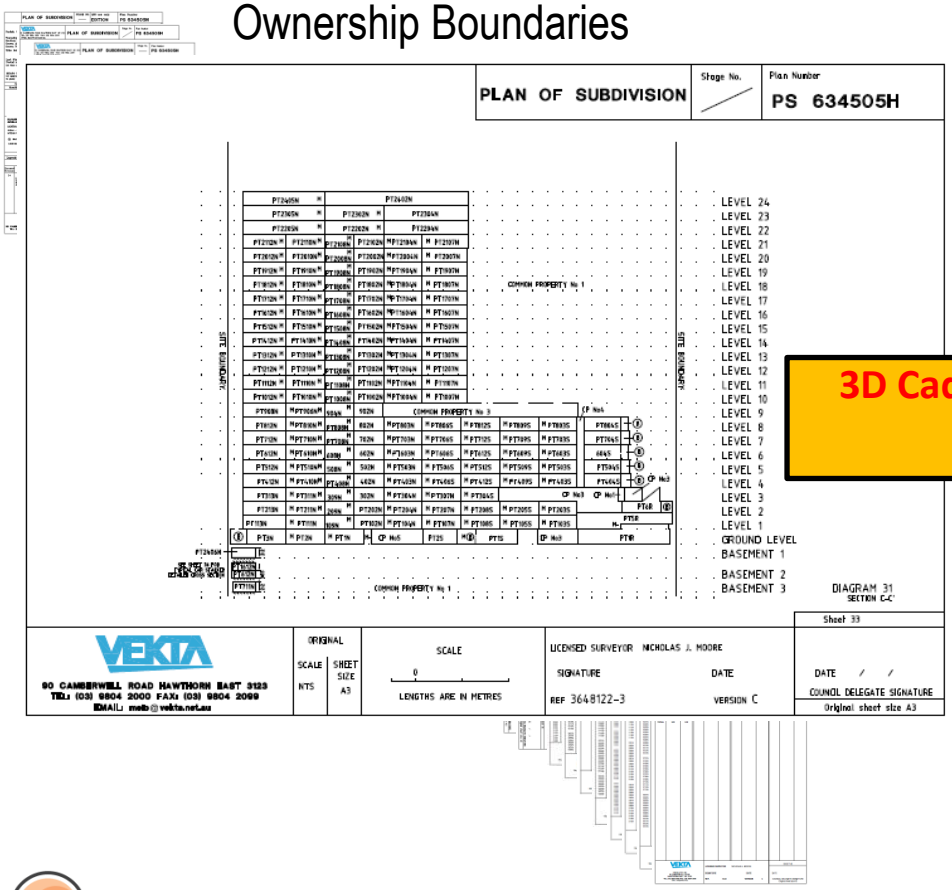
Current 3D Models and technologies:

- 3D City Models such as City Geography Markup Language (CityGML)
- Building Information Models (BIM)
- 3D Cadastre

Added more value to **sustainable information sharing** and **semantic** for representing volumetric urban objects, such as buildings, vegetation objects, waterbodies, and other urban infrastructures.

3D CADASTRE DATA MODEL (3DCDM)

Paper based Representation of Ownership Boundaries



3D Cadastral Data Model (3DCDM)

Includes:

✓Legal objects

✓Physical objects

Digital Representation of Ownership Boundaries and Physical objects, including BIM

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3D LAND & PROPERTY INFORMATION

Building

From an **individual** property and building level to a **city level**

This requires a spatially accurate map-base and cadastre as a foundation.

Precinct

City

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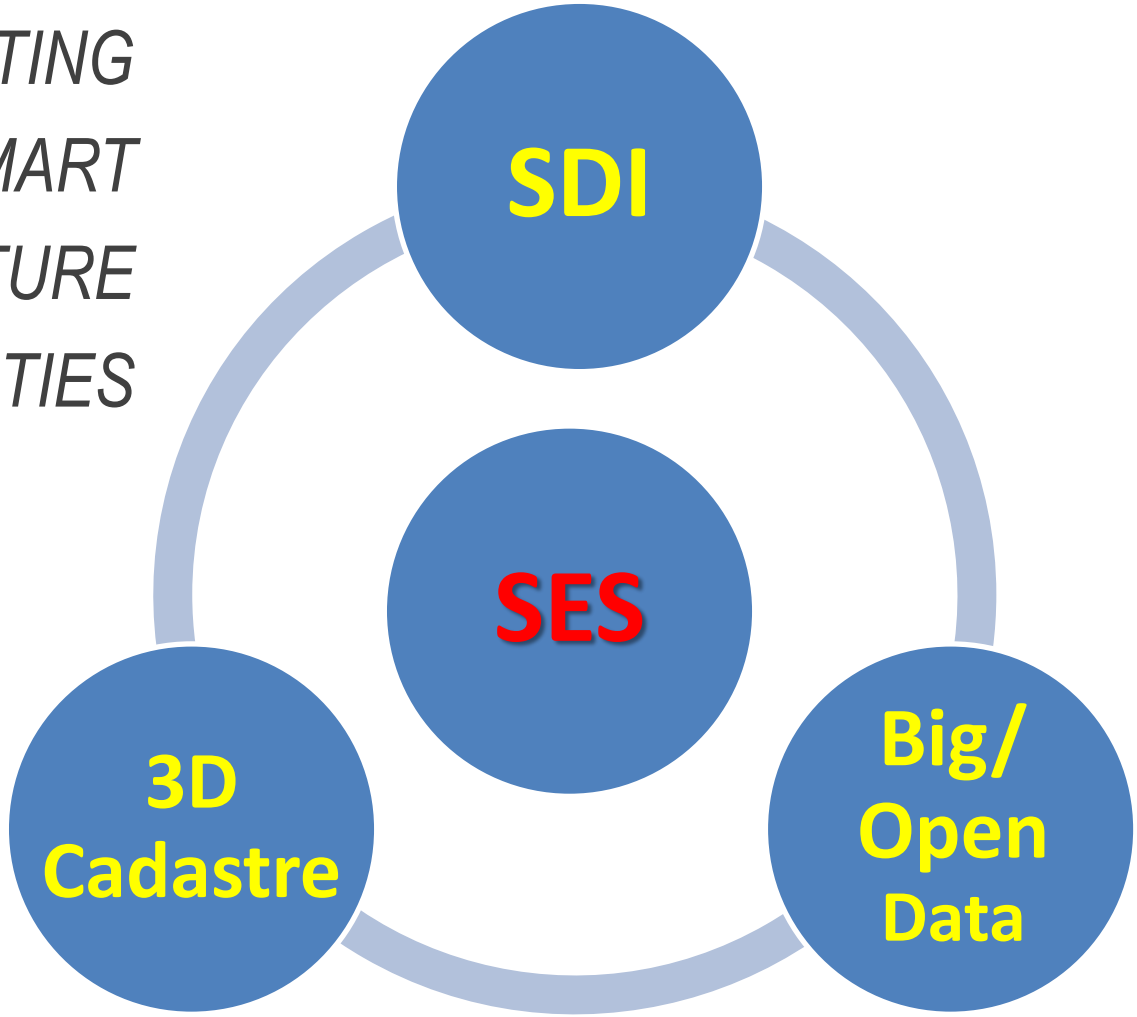
SPATIALLY ENABLED SOCIETY

SUPPORTING

SMART

FUTURE

CITIES



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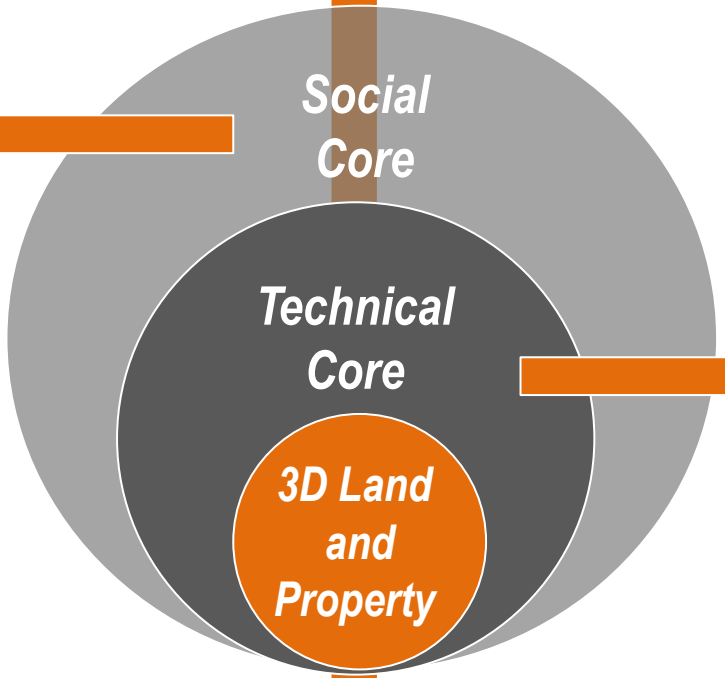
ROADMAP AND POTENTIAL STRATEGIES

PROJECT FOCUS

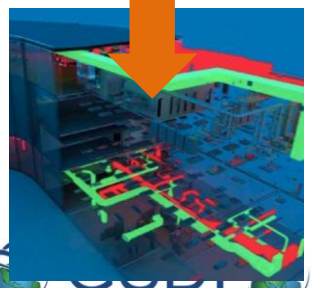
INSTITUTIONAL CHALLENGES

- Regulatory
- Social
- Cultural



TECHNICAL CHALLENGES

- Data source
- Data model
- Data visualisation
- BIM



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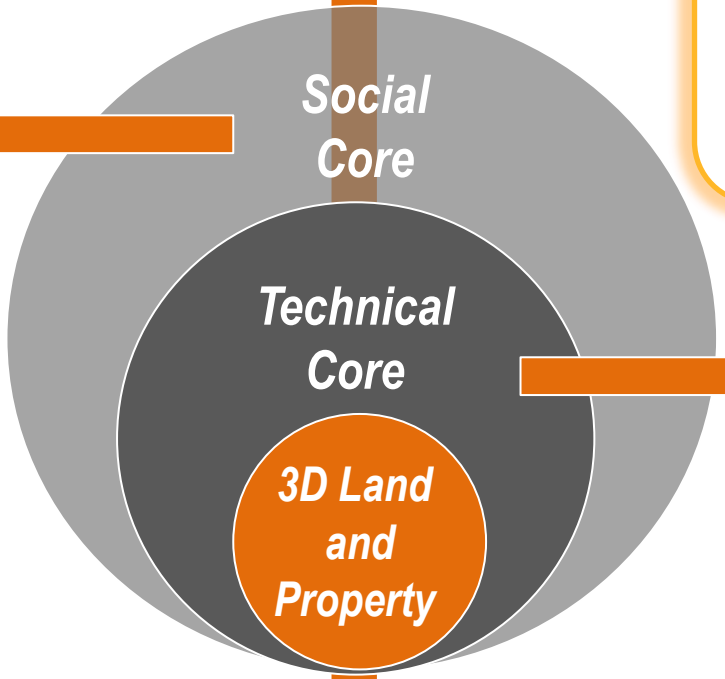
PROJECT OUTCOMES



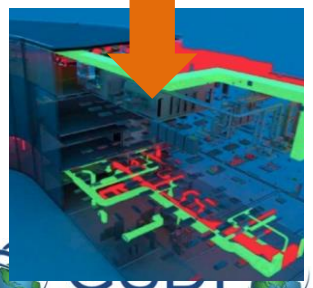
4 prototypes
2 data models
26 publications
10 new expert resources into the market

STRATEGY DEVELOPMENT

- Cultural change
- Collaboration
- Adoption
- Implementation

TECHNICAL TOOLS

- Data model
- Web-based visualisation platform
- Specifications



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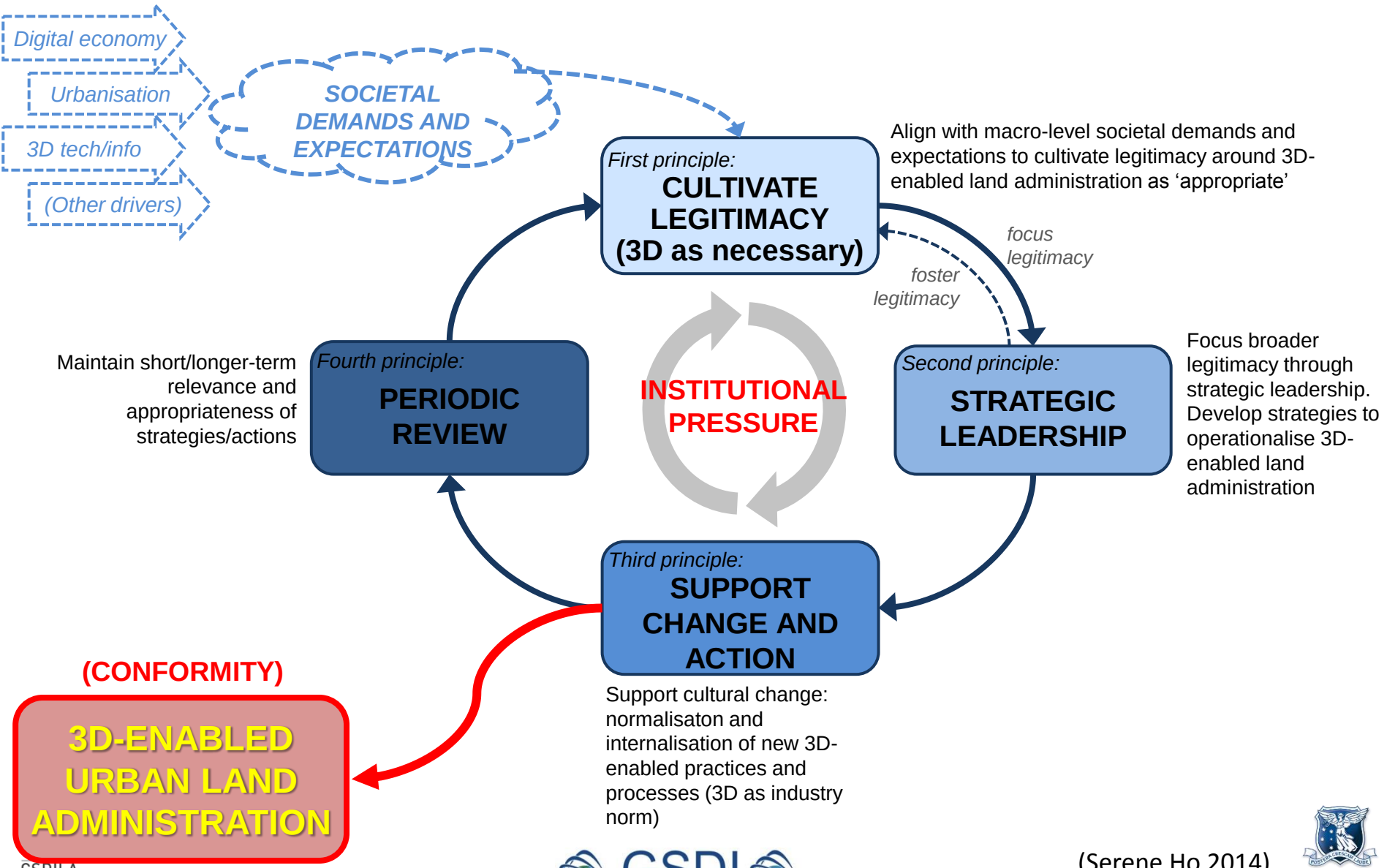
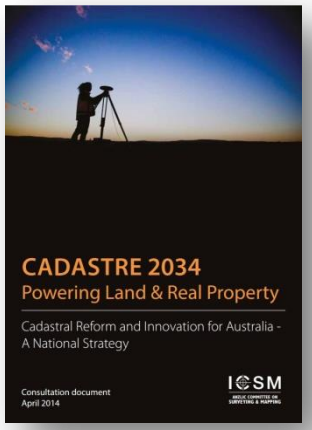
PROJECT OUTCOMES

FRAMEWORK FOR CHANGE: 2D TO 3D



(Serene Ho 2014)

FUTURE CADASTRES: NEW CONNECTIONS



Government

Aus

States

Location/ Spatial Strategies

Cadastre 2034

Smart Community Cities

apps

VA

Private sector DB

3D Data

Industry

International

Collaborate. Leverage. Community-focused.

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INTEGRATED KNOWLEDGE SYSTEMS

3D cadastres and smart future cities

KEY MASSAGES ARE

- **3D cadastre** offers new **engagement opportunities** and is **fundamental for the future**.
- Future cadastre needs to take into account the **expectations** of all stakeholders.
- Future cadastre requires the consideration of how the **needs of current users** should be balanced against the needs of **future users**.

NEW INTERNATIONAL TRAINING PROGRAM

International Professional Development Program

TRAINING LAND AND SPATIAL PROFESSIONALS FOR SMART CITIES

3D LAND AND PROPERTY MANAGEMENT

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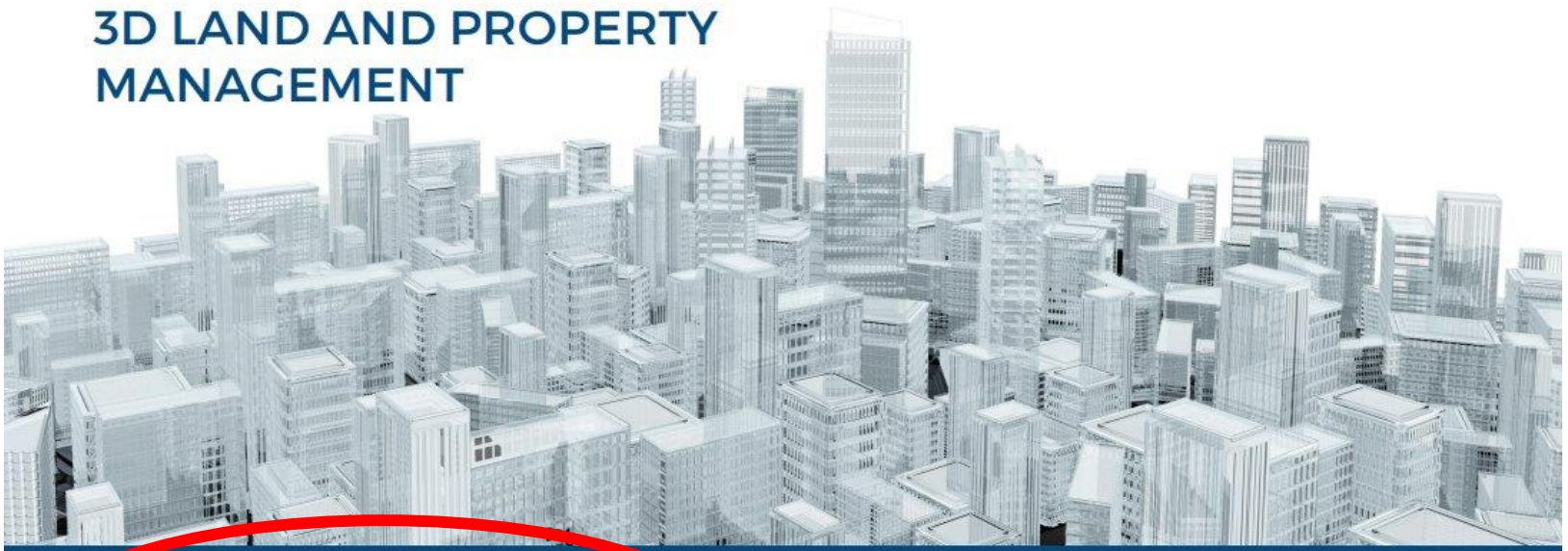

26-29 September 2016
The University of Melbourne, Australia

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THANK YOU

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