



Developing a 3D Digital Cadastral System for New Zealand

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Anselm Haanen | Deputy Surveyor-General
Office of the Surveyor-General

XXV International Federation of Surveyors Congress, Kuala Lumpur, Malaysia, 16 – 21 June 2014

New Zealand Government

FIG Congress 2014, Kuala Lumpur, 16-21 June 2014

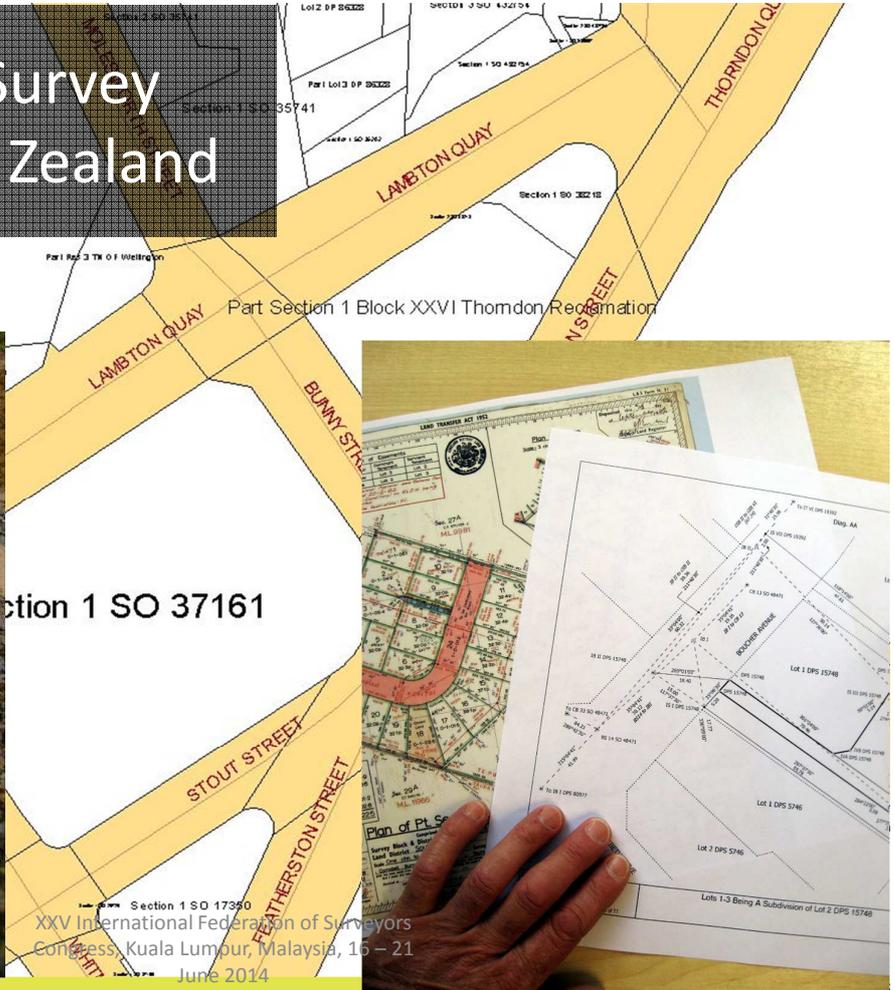


Overview

- Cadastral survey system in New Zealand
- Why do we need a 3D digital cadastral system?
- Moving from 2D to 3D
- Progress

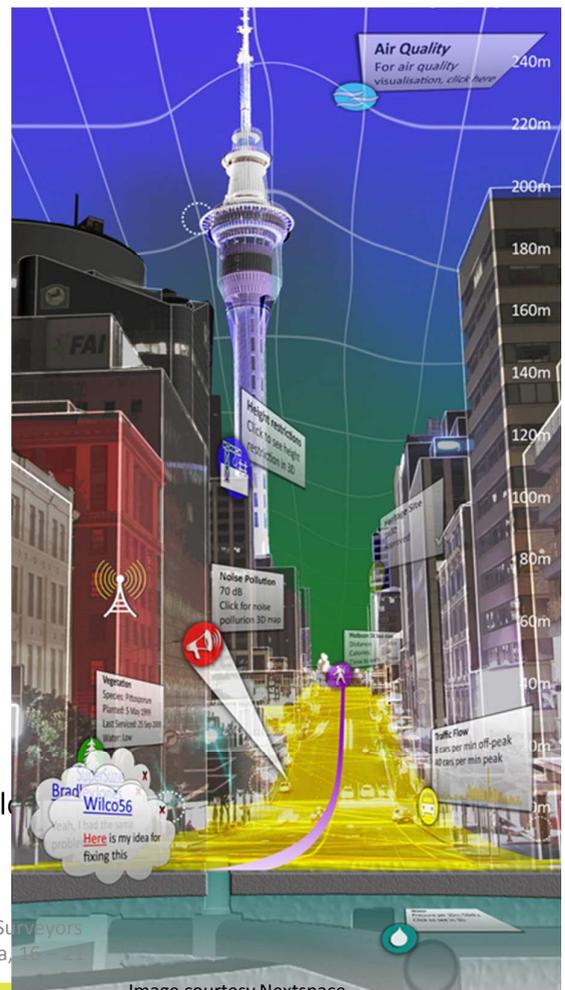
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The Cadastral Survey System in New Zealand



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Drivers for 3D Cadastre



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Image courtesy Nextspace

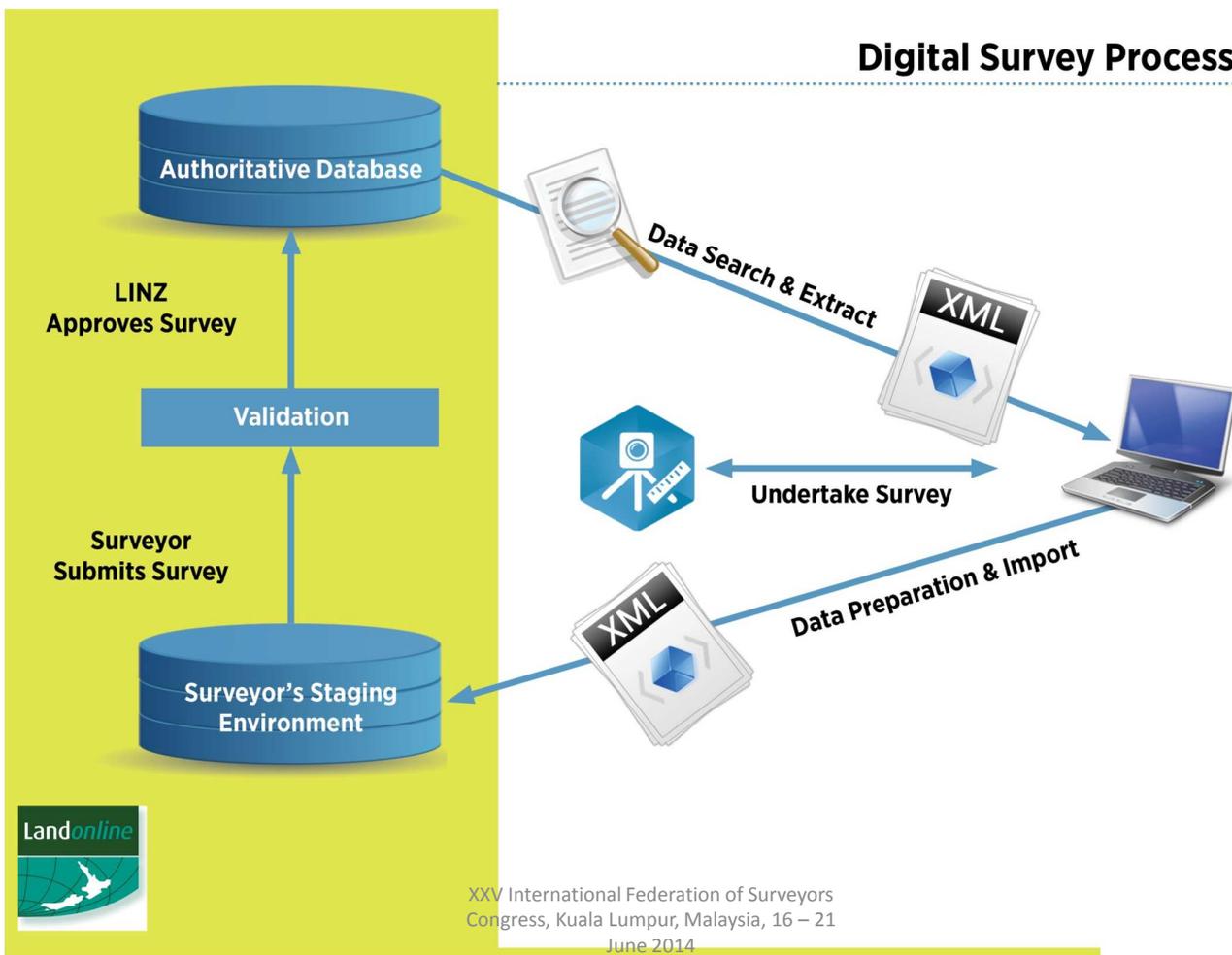
Going 3D



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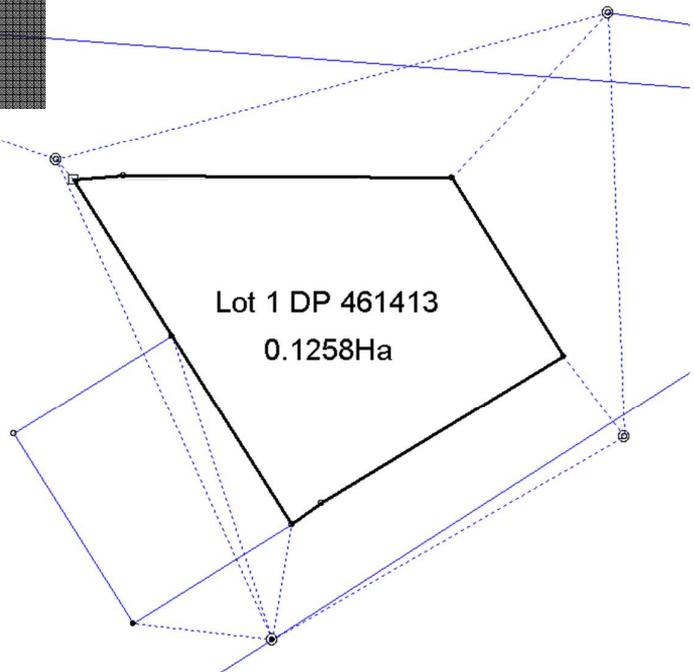
Digital Survey Processes



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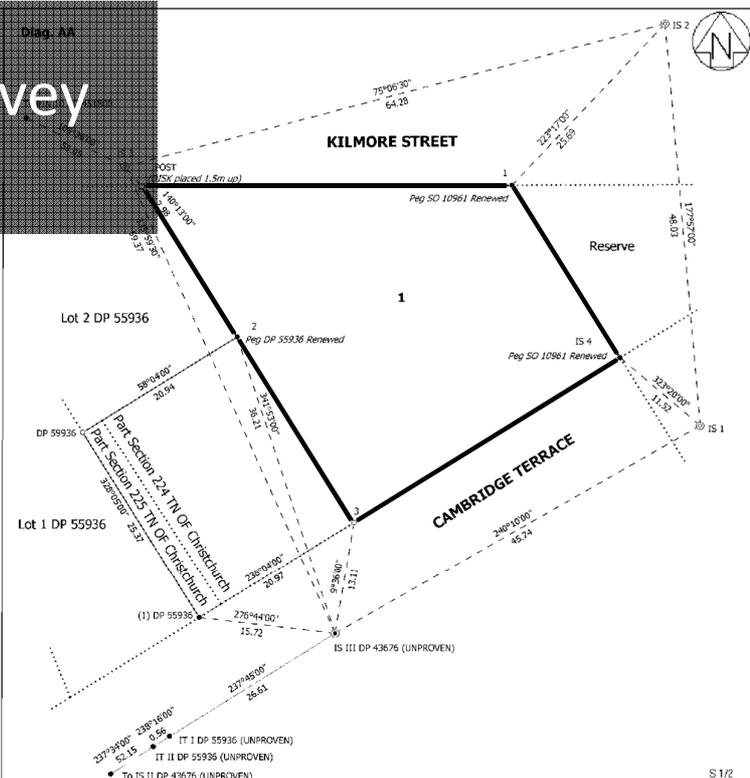
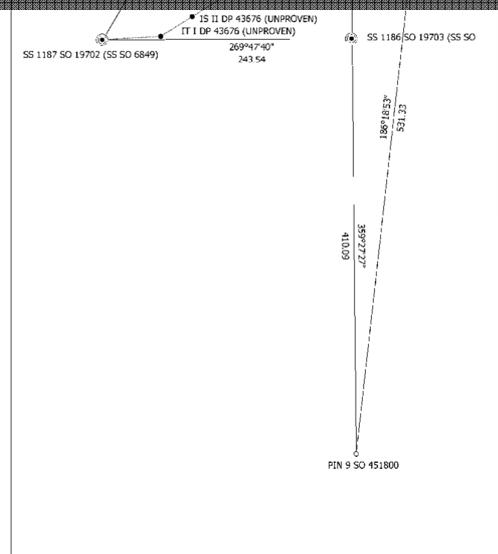
Landonline 2D digital capture

- Bdy / Non Bdy (New / Old)
- Bdy / Non Bdy (Old)
- Non Bdy Vectors
- Measured Non Boundary
- Adopt/Calc Vectors
- Non Primary Centreline
- Non Primary Centreline
- Non Primary Parcels
- Non Primary Parcels
- Primary Parcels
- Primary Parcels
- Dimension Vectors
- Dimension Vectors
- Live-Primary Parcel
- Live-Road
- Live-Hydro



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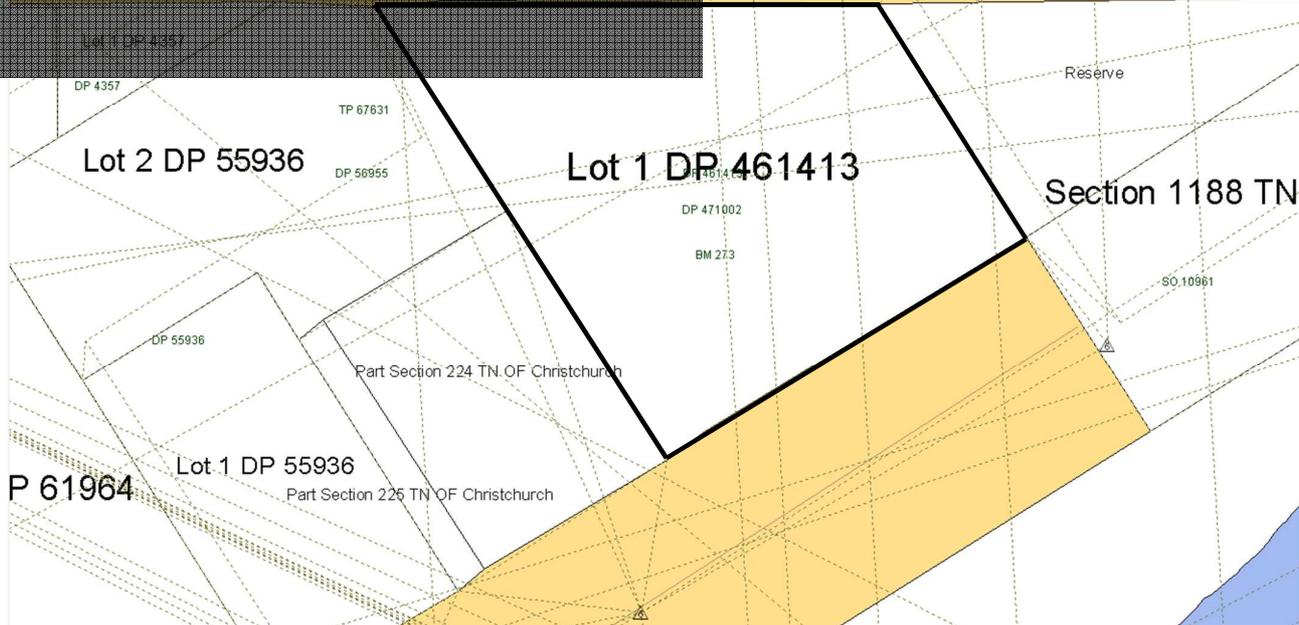
Landonline 2D survey plan generation



| | | | |
|---------------------------|---|--|---|
| Land District: Canterbury | Lot 1 Being Town Section 223 and Part Town Section 224 City of Christchurch | Surveyor: Russell Thomas Benze Firm: Davis Ogilvie & Partners Ltd (Christch) Survey Date: 23/01/2013 | CSD Plan DP 461413 Deposited on: 17/09/2013 |
|---------------------------|---|--|---|

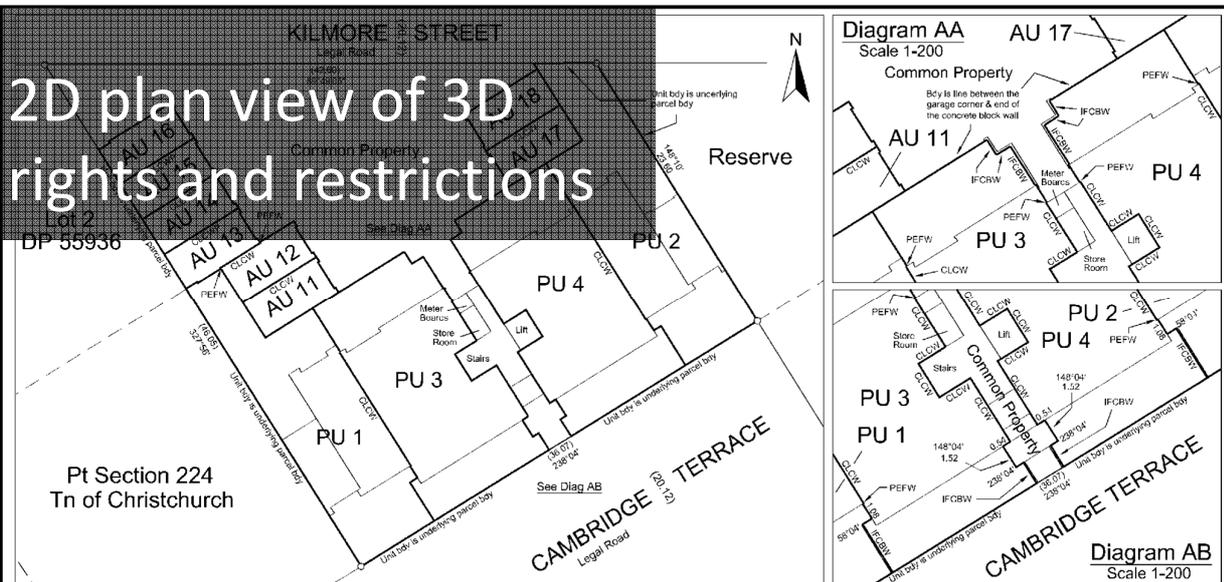
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Landonline Spatial View



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2D plan view of 3D rights and restrictions



| PERMANENT STRUCTURE BOUNDARY LEGEND | |
|-------------------------------------|--|
| CLFS | Unit boundary is centreline of floor slab & its production |
| CLCW | Unit boundary is centreline of common wall |
| CLCWP | Unit boundary is centreline of common wall & its production |
| IFCBW | Unit boundary is internal face of concrete block wall & its production |
| OBEFR | Unit boundary is offset 0.1m below the external face of roof |
| EFRP | Unit boundary is external face of roof & its production |

| PERMANENT STRUCTURE BOUNDARY LEGEND | |
|-------------------------------------|---|
| PEFW | Unit boundary is production of external face of wall |
| UEVPRG | Unit boundary is underside of eaves & their vertical production upwards of the roof guttering |

Address of Body Corporate
 281 Cambridge Terrace
 Christchurch

Peripheral boundaries and marks are adopted from DP 461413

Unit floorplans are taken at floor level for each representative unit

Boundaries of Principal Units 1-10, Accessory Units 11-18 and Common Property is external face of external walls & balconies & their productions unless shown otherwise.

Ground floor level is defined as the top of the ground floor concrete slab of PU 3

PU - Principal Unit
 AU - Accessory Unit

Principal Units 1 & 2 - Townhouses
 Principal Units 3-10 - Apartments
 Accessory Units 11-18 - Garages
 Canterbury Land District

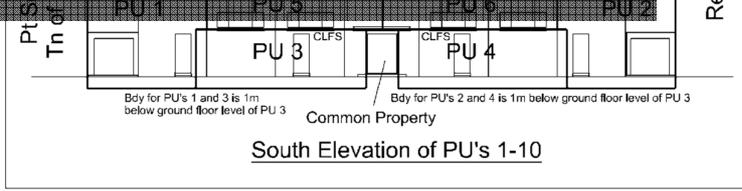


Unit Development on Lot 1 DP 461413
 Ground Floor Plan
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date 01.14
 scale 1:250@A3
 job no. 31393

DP 471002

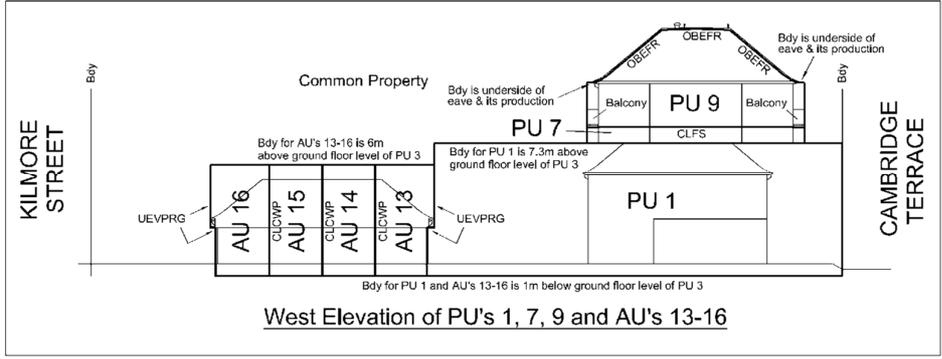
2D elevation view of 3D rights and restrictions



| PERMANENT STRUCTURE BOUNDARY LEGEND | |
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Canterbury Land District

Davis Oallivie
P.O. Box 1053
185 Havelock Road, Wellington
Christchurch, New Zealand
P.O. Box 268, Christchurch 8140
PHONE: 03 366 1111
FAX: 03 366 1111

Unit Development on Lot 1 DP 461413
South and West Elevations

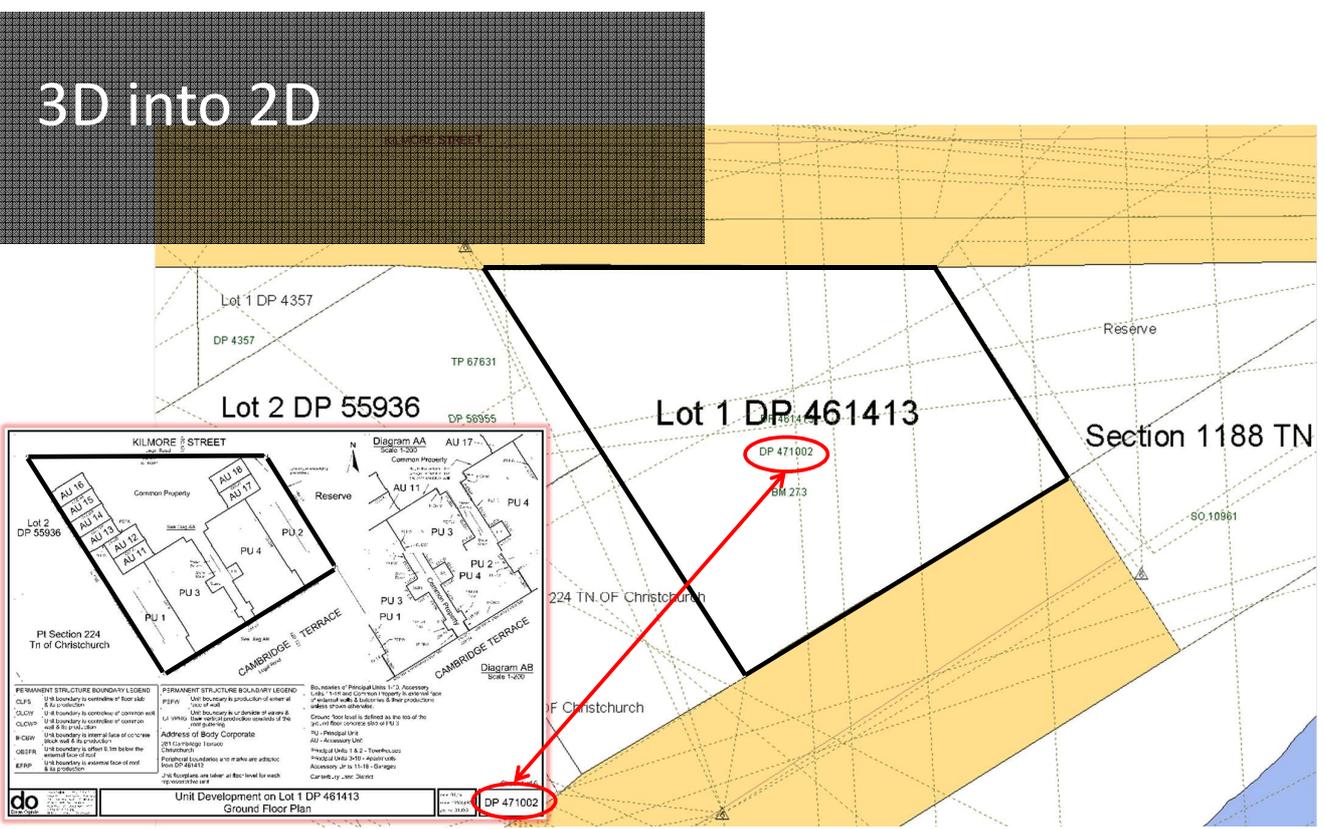
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DP 471002

Sheet 5 of 6

3D into 2D



36

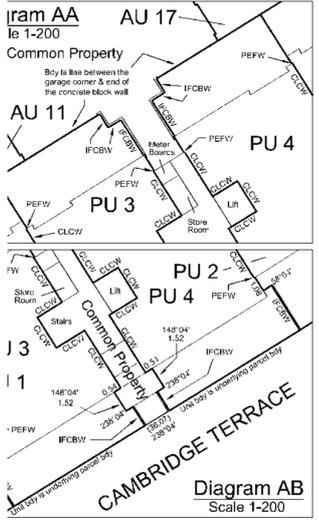
IP 07/031

DP 56955

Lot 1 DP 461413

DP 471002

BM 273



224 TN. OF Christchurch

OF Christchurch

CAMBRIDGE TERRACE

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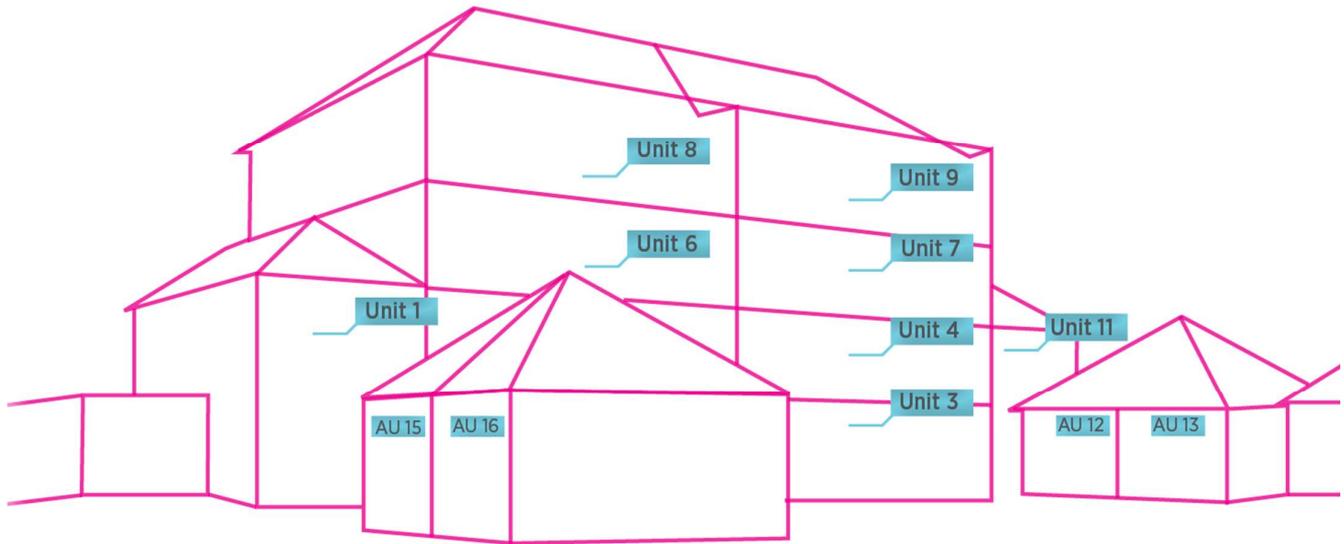
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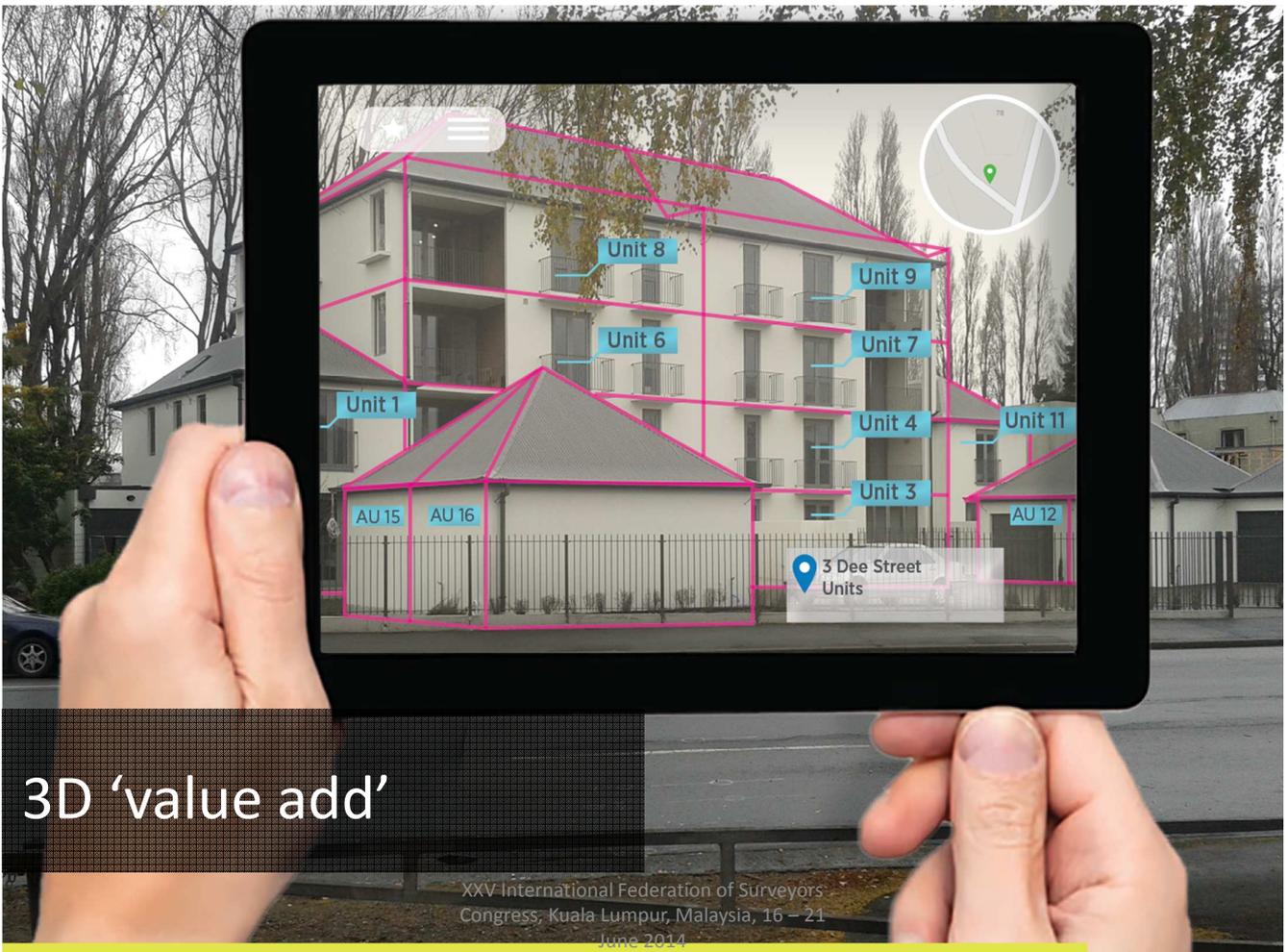
DP 471002

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3D 'Spatial View'



Christchurch City - pre earthquakes



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Image courtesy ZNO Ltd

Christchurch City - post earthquakes



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Image courtesy ZNO Ltd

Christchurch City - rebuild



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Image courtesy ZNO Ltd

Christchurch City - pre earthquakes



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Image courtesy ZNO Ltd

Christchurch City - post earthquakes



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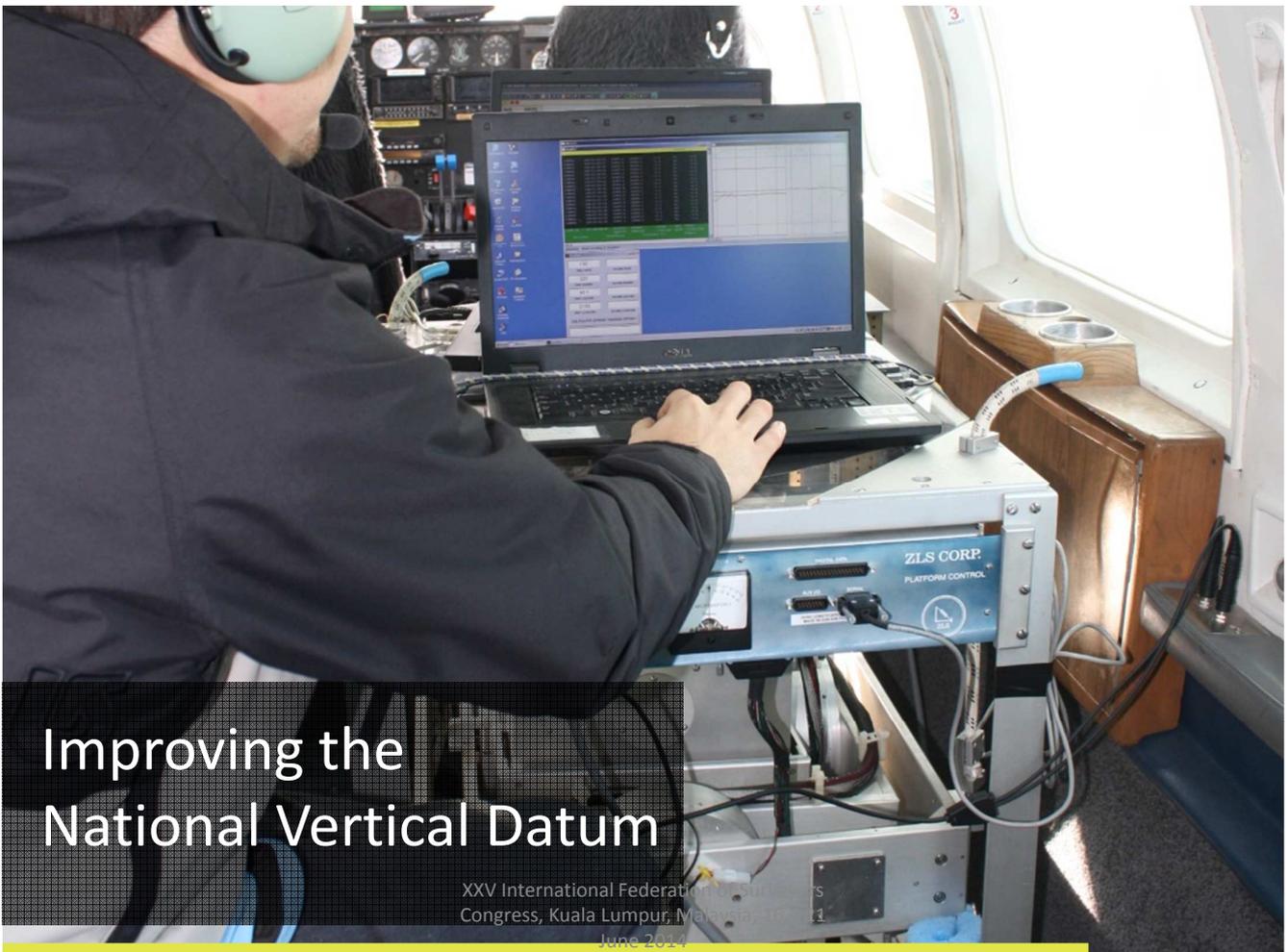
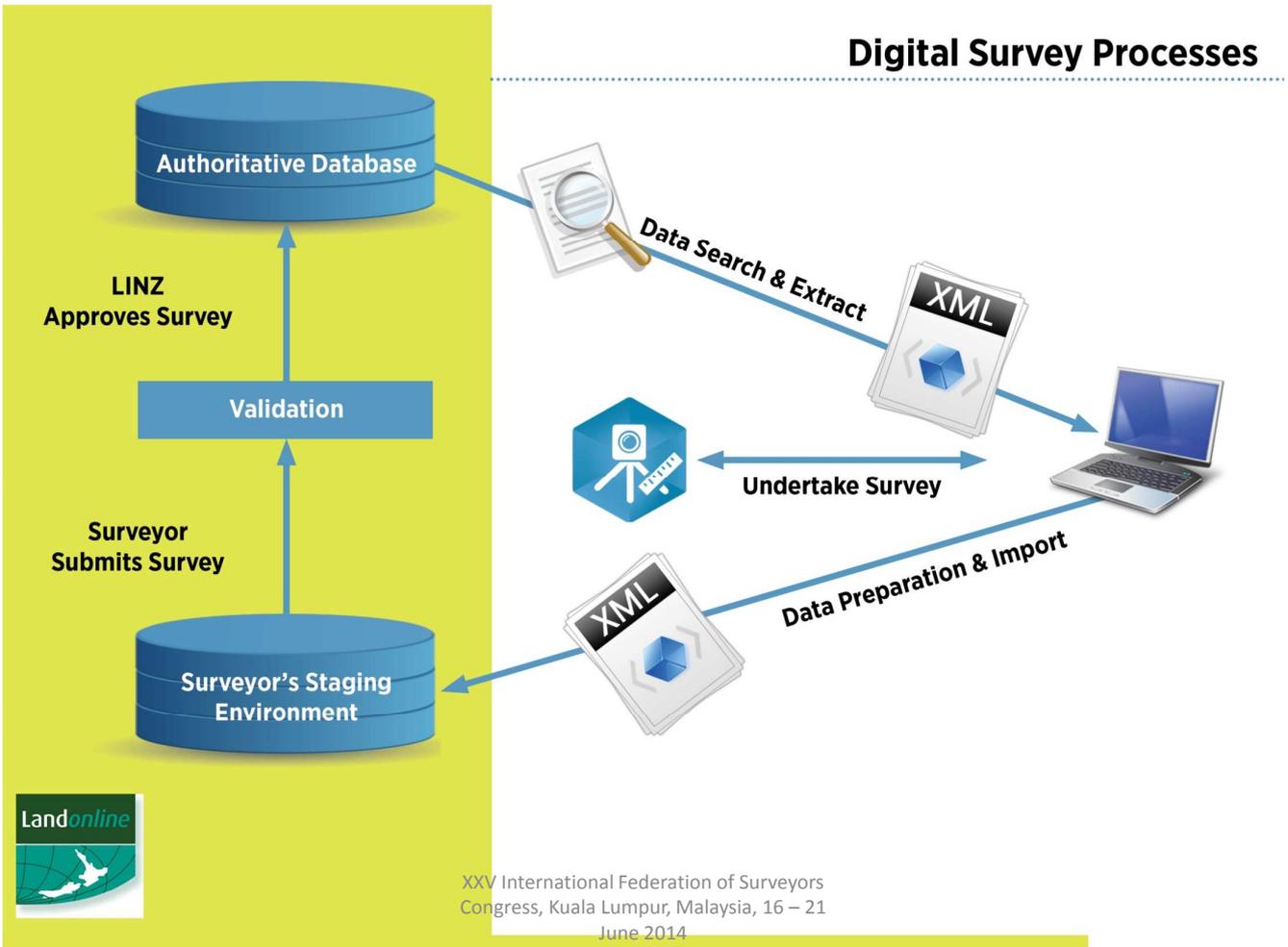
Christchurch City - rebuild



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Image courtesy ZNO Ltd

Digital Survey Processes





Going 3D Research & Development

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Week
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New Zealand
2–6 May 2016

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