



C&A SURVEYORS

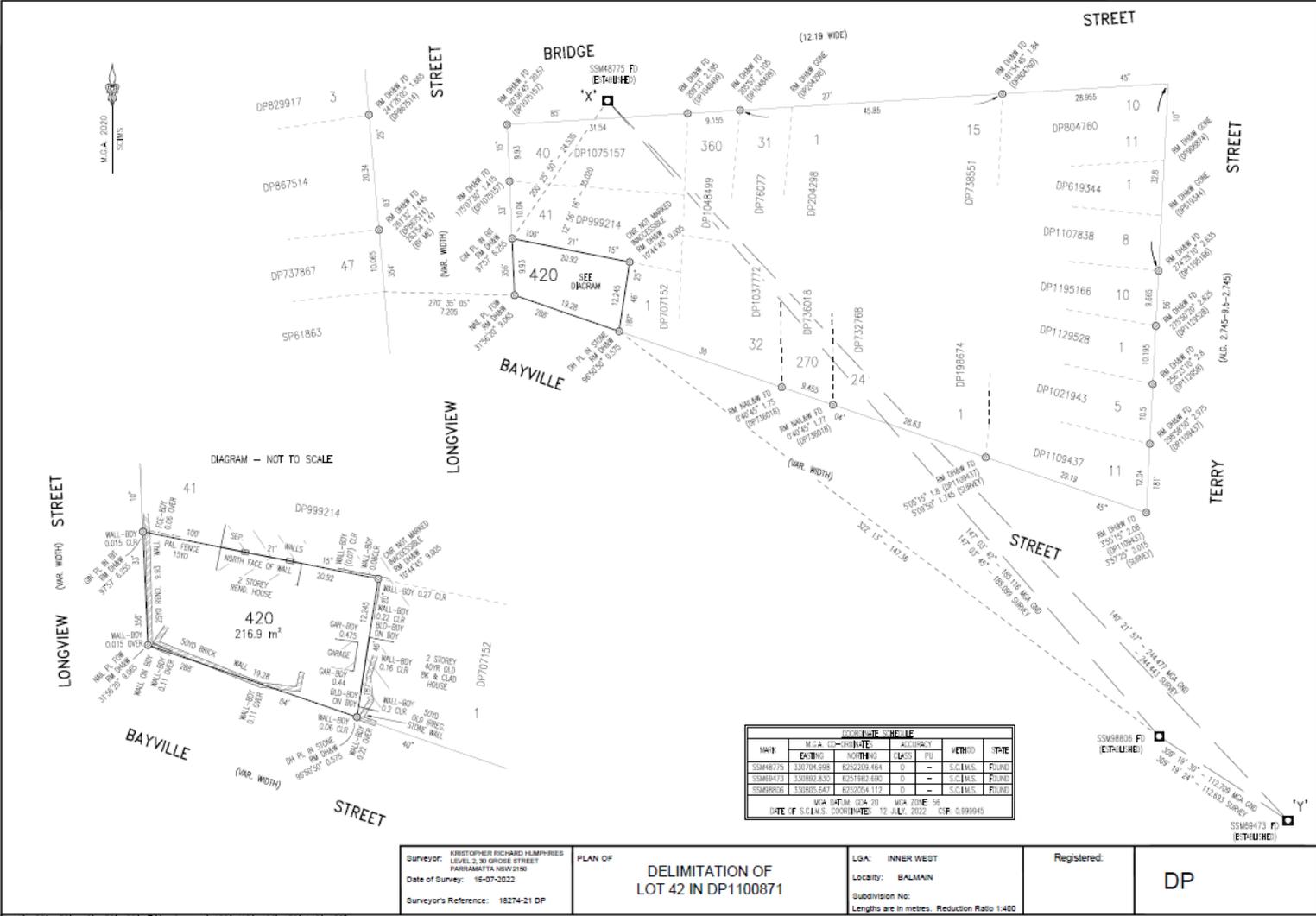
Designing for Construction - Surveying

Kristopher Humphries – C&A Surveyors



Types of Surveys

- Detail + Ident Surveys
- Boundary Surveys
- Setout Surveys
- 3D Modelling
- Preservation of Survey Infrastructure



BOUNDARY SURVEYS

- Many types of boundary surveys that have different purposes
- Guarantees the boundary location on title once the plan is registered
- Is on public record in perpetuity



3D Modelling

Modern Technology and How it can benefit you



TOOLS USED FOR 3D MODELLING

- Laser Scanners
- Drones



C&A SURVEYORS

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PROJECT NAME:	DETAIL SURVEY, FLOOR PLANS, ELEVATIONS & 3D MODEL	REVISION:	1
CLIENT NAME:	PROJECT FLOW	MODELER:	DT
PROJECT NO.	22233-22	CHECKED BY:	MR
PROJECT ADDRESS:	286 LAKEDGE AVENUE BERKELEY VALE	ISSUE DATE:	28/07/2022



NOTES: This model is made using a combination of 3D laser scanning and conventional survey instruments. It should be noted that the accuracy of the model is based on the selection made when completing the C & A modeling checklist

3d Modelling Examples



MARK ANTHONY REID
(REGISTERED SURVEYOR)
SURVEYOR ID No. SU000183

SYMBOLS

ASPH	ASPHALT SURF FINISH DATUM	PAV	PAVERS
ASPH	ASPHALT	PP	POWER POLE
BLK	BLK MARK	RL	REINFORCED LEVEL
CONC	CONCRETE	RTK	RTK OF RETIE
CL	CLIMB IN OR OUT	S	STAIRS
CLM	CLIMB IN OR OUT	SC	SERVICE COVER
D	DOOR	SV	STOP VALVE
EC	EDGE OF CONCRETE	TEL	TELESTRA FIT
ES	EDGE & GUTTER	TK	TOP OF KERB
H	HOLE MARK	TM	TOP OF MOUNT
IR	IRRAWADDI	V	VEHICLE CROSSING
IR	IRRAWADDI	VM	VEHICLE CROSSING
L	LAMP LEVEL	WM	WATER METER
LPI	LAMP POLE	WS	WINDROW SIGN
MR	MATERIAL MARK	WT	TOP OF WINDOW

1 SURVEY PLAN
1 : 150

NOTE: THIS SURVEY WAS COMPLETED USING LASER SCANNING TECHNOLOGY AND CONVENTIONAL SURVEY EQUIPMENT. THE DATA WAS ACCURATE AT TIME OF SURVEY TO ± 10 MILLIMETRES.

90000 SCHEDULE 9 NOTIFICATIONS AS SEARCHED ON 11/07/2022
1. EASEMENTS AND EASEMENTS IN THE CROWN GRANT
2. EASEMENTS AND EASEMENTS TO ACQUIRE BANK LIMITED

NOTES:
A. SERVICES SHOWN HAVE BEEN LOCATED FROM VISUAL OBSERVATION AND AT THE TIME OF SURVEY. SERVICE PROVIDERS SHOULD BE CONTACTED TO VERIFY THE EXISTENCE AND POSITION OF SERVICES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OR DEMOLITION WORK.
B. SERVICES SHOWN ARE FOR INFORMATION ONLY.
C. LIFT IS SHOWN AND OF AUSTRALIAN MANUFACTURE.
D. SERVICES SHOWN ARE FOR INFORMATION ONLY.
E. SERVICES SHOWN ARE FOR INFORMATION ONLY.
F. SERVICES SHOWN ARE FOR INFORMATION ONLY.
G. SERVICES SHOWN ARE FOR INFORMATION ONLY.

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DETAIL SURVEY, FLOOR PLANS, ELEVATIONS & 3D MODEL OF LOT 49 ON DP31935 AT
286 LAKEDGE AVENUE BERKELEY VALE

INSTRUCTING PARTY: PROJECT FLOW

No.	Description	Date
01	DETAIL SURVEY, FLOOR PLANS, ELEVATIONS & 3D MODEL	28/07/2022
02		
03		
04		

DATUM:	AHD	SURVEYED BY:	CS
SURVEY DATE:	12/07/2022	DRAWN BY:	DT
DATE DRAWN:	15/07/2022	SCALE:	1 : 150@A1
REFERENCE:	22233-22	SHEET:	2 OF 9

3d Modelling Examples



<https://a360.co/3S0Yyg9> - Free viewer for Client

[dwg file](#)

3d Modelling Examples



Preservation of Survey Infrastructure

How to protect yourself

Permanent Survey Marks

- State Network Marks
- Used for connection to State Network, mapping and Engineering



Trig Station



Permanent Mark



State Survey Mark

Cadastral (Boundary) Marks

- Lesser known often hidden underground



Concrete Block references boundary corner (peg)



Galvanised Iron Pipe references boundary corner



Drill Hole & Wing in Kerb references adjacent boundary corner



Alignment Pin references road alignment

Cadastral (Boundary) Marks



Reference Tree

A blazed tree may indicate a permanent mark or a cadastral boundary corner is located near by. It is most common in rural areas.



Alignment marks

Alignment stones, posts, pins and old stone kerbs are important cadastral marks.

Preservation of Survey Infrastructure

Surveying and Spatial Information Act 2002

24 Removal etc. of survey marks

(1) A person must not remove, damage, destroy, displace, obliterate or deface any survey mark unless authorised to do so by the Surveyor-General

Maximum penalty: 25 penalty units = \$2,750 per mark

(2) A court that finds a person guilty of an offence under this section may, in addition to any penalty it imposes, make either or both of the following orders

(a) it may order the person to **pay compensation, totalling not more than \$10,000**, to the Surveyor-General towards the cost of reinstating the survey mark

(b) it may order the person to **pay compensation, totalling not more than \$10,000, to any other person** towards any loss or damage suffered by that person as a consequence of the offence

(3) An order for compensation referred to in subsection (2) is enforceable by the person to whom the compensation is ordered to be paid as if it were a judgment of the Local Court exercising jurisdiction under the *Civil Procedure Act 2005*



Solutions to Prevent Fines

- Be aware of these marks (request for them to be shown on survey provided) and design around them
- Contact a Surveyor to reinstate in a different location if not possible to work around



Questions

Fire Away