LISCAD ePlan Manual

Version 2019

June 2019

VICTORIA State Government | Environment, Land, Water and Planning

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Contents

1. Introduction To ePlan

ePlan is a national initiative spearheaded by the Intergovernmental Committee on Surveying and Mapping (ICSM) to replace the existing paper and PDF plans of subdivision with a new electronic file format (ePlan). This enables the computerisation and automation of many industry and government processes resulting in a more efficient land administration business with higher quality cadastral data.

This manual provides support in creating ePlans by using the ePlan supported survey software package – LISCAD. A knowledge of cadastral surveying and Liscad is required to use this manual.

The following dealing types are currently not supported in ePlan:

- Building subdivisions with cross sections – however plans with boundaries defined by building are supported
- Transfer of Land Act (TLA) plans
- Local Government Act (LGA) plans
- Crown plans

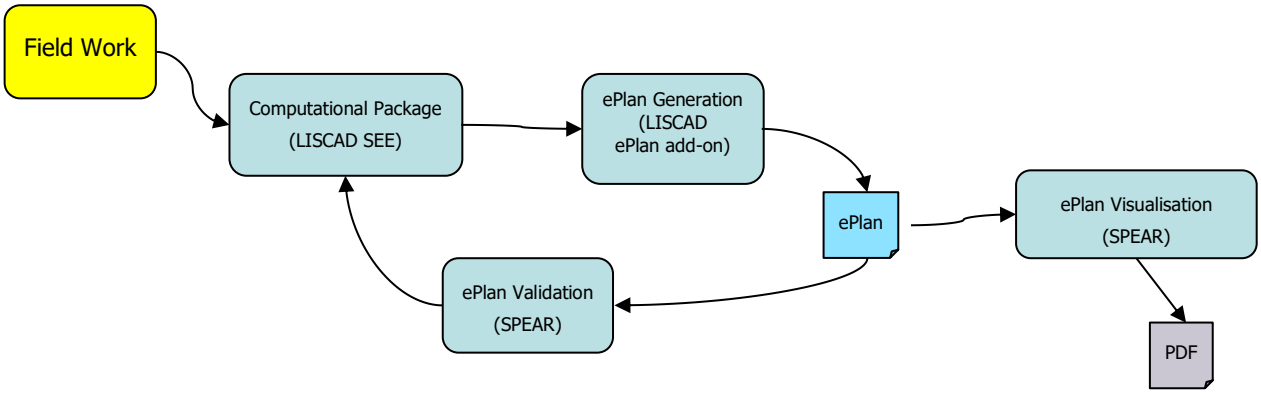
These features will be rolled out progressively. Please contact the ePlan support team for information for options regarding these types of plans.

The following sections provide a guide on elements and terminology of ePlan that differ in some way to the information captured on paper/PDF plans.

1.1 ePlan Preparation Process

ePlan-enabled surveyors can lodge an ePlan in SPEAR. Once the ePlan is uploaded successfully to SPEAR, the ePlan Validation Service checks for completeness and correctness to the ePlan Protocol and plan examination rules and provides the surveyor with an ePlan Validation Report. The ePlan Visualisation Service then generates a fully drafted PDF plan from the ePlan file.

The following figure illustrates the current process for the creation, validation and visualisation of ePlan.



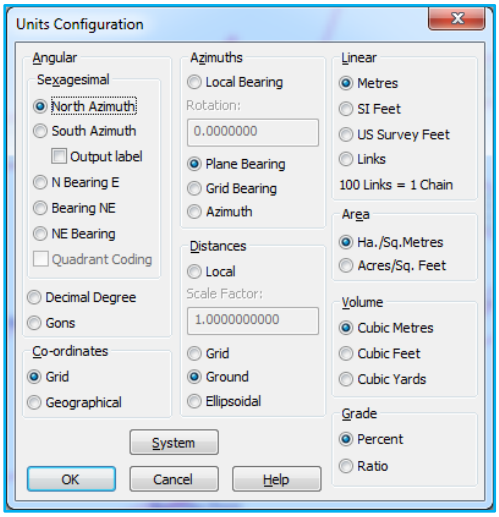
2. Getting Started with ePlan in LISCAD

NOTE: When referring to menu options, the bracketed menu indicates the LISCAD task mode that must be selected before going to the menu item e.g. (Task→Utilities) Configure→Units indicates to first select Task→Utilities and then Configure→Units.

2.1 Units Configuration

Upon installing or upgrading LISCAD, units configuration should be performed to prepare the workstation for ePlan creation. Go to **(Task→Utilities) Configure→Units**.

NOTE: You are not able to save the changes until you have an opened project. The table on the right displays the recommended settings.



Configuration Item	Setting
Angular > Sexagesimal	North Azimuth
Co-ordinates	Grid
Azimuths	Plane Bearing
Distances	Ground
Linear	Metres
Area	Ha./Sq.Metres
Volume	Cubic Metres
Grade	Percent

2.1.1 Unit Rounding/Precision

In **(Task→Utilities) Configure→Distances, Angles and Areas**, set distance rounding to the millimetre (0.001), bearings to the second (1") and areas to the square centimetre (0.01).

2.1.2 Resolution of Bearings and Distances in ePlan

ePlan requires all bearings and distances to be captured to second-of-arc and millimetre resolution. **There is no need to apply rounding for any measurements in Liscad**. The rounding will be automatically applied by the ePlan Visualisation Service according to the Victorian Survey Practice Handbook.

2.1.3 Closure Rules

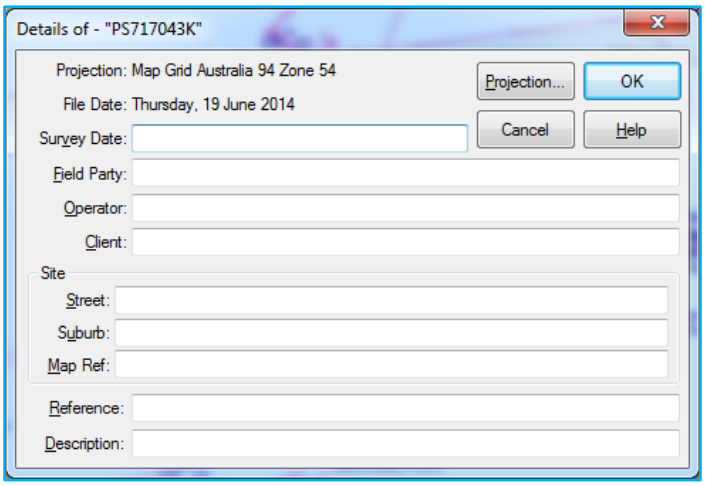
When preparing an ePlan, all closures on title, traversing and observations where there are discrepancies must be within the misclosure vector of 1.4mm. This is the maximum misclosure allowed for bearings and distances shown to the stated resulting in section 1.7.1 *Surveying (Cadastral Surveys) Regulations 2015*. If a title closes within survey tolerance specified by the Surveyor-General but does not close within the 1.4mm misclosure vector, then an adjustment must be made to the title boundary dimensions. The preferred method to use in this situation is to maintain title bearings and adjust the misclosure out of the distances only. A Crandall adjustment (least squares on distance only) is suitable for this purpose. If there are survey differences causing misclosures, then existing Surveyor-General's guidelines apply.

Any adjustment to title dimensions must be accompanied by a Surveyor's Report Annotation justifying the adjustment. If the adjustment purpose is to remove rounding errors, then only a simple statement is required e.g. '*Title adjusted to close within millimetre tolerance*.'

NOTE: All ePlans must be connected to MGA.

2.2 Plan Details

The plan details can be entered through menu **(Task→Utilities) Edit→Details**. The 'Operator' name in the Details window will be exported to ePlan as the author of ePlan file. If the 'Operator' name is not entered in this window, the author of the ePlan would be exported as 'LISTECH Pty Ltd'.



2.3 ePlan Code Table

Import the ePlan code table for Victoria -. ctb file (a sample is available on the SPEAR website) to the following directory:

in Windows XP→ C:\Documents and Settings\All Users\Application Data\LISCAD\2018\uk

In Windows 7 and 10→ C:\ProgramData\LISCAD\Release\uk

Select the ePlan code table through menu **(Task→Utilities) Configure→Code Table**.

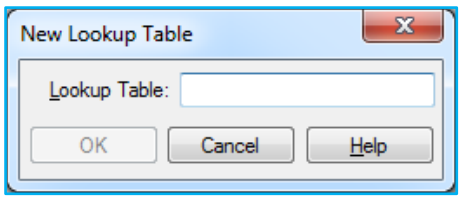
2.3.1 Adding Codes to the Code Table

If a required code is not present in the code table, it can be added. All the available codes are listed in the LISCAD Code Table Reference. To add a code to the code table, go to **(Task→Utilities) Tables→Code Tables→Open**. Select the ePlan code table, tick 'Table View' and click 'OK' . Once the table is shown, go to 'View' and select the feature type among point, line and polygon types. Add the code you require by typing into the bottom row of the table. Type in an appropriate group for the new code and any other preferences and then save and close the table.

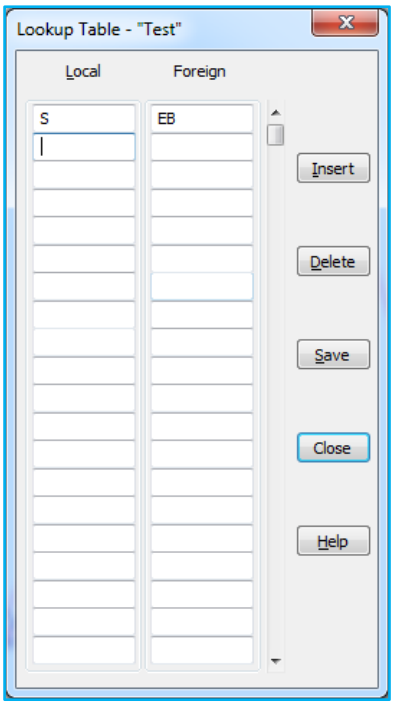
2.4 Lookup Table

Surveyors usually create diagrams using their own defined codes. Mapping these codes to ePlan codes, required by LISCAD, may be very error prone and tedious for large and complex diagrams. Using the Lookup Table in LISCAD, users can map their own specific codes to ePlan codes automatically.

To create a new Lookup Table, go to **(Task →Utilities) Tables→Lookup Table→New** and enter a name.



In the Lookup Table, you can add, change and delete the codes. The **Local** column is used for entering existing surveyor's codes in the diagram and **Foreign** column is used for entering the corresponding LISCAD ePlan codes.

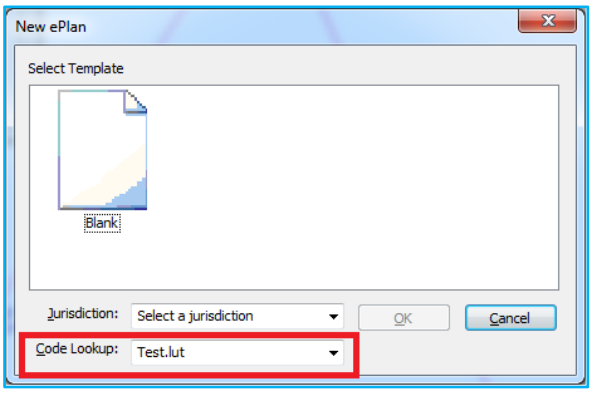


The above figure shows a Lookup Table which maps features with code 'S' to 'EB' (Existing Boundary) once the LISCAD drawing file is converted to ePlan.

NOTE 1: Lookup Table does not change the codes in the diagram.

NOTE 2: There must be a one-to-one relationship between the surveyor's codes and ePlan codes. Also, each code stored in Local column must only include a unique feature type (point, line or polygon). A combination of feature types under the same surveyor's code is not allowed when the Lookup Table is used. For example, if you have used the same code for capturing multiple feature types (e.g. you have used code 'S' for both boundary corners and boundary lines), you need to separate them before setting up the Lookup Table.

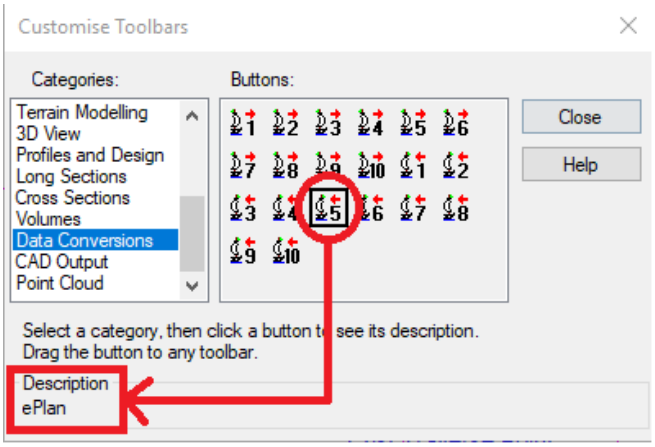
The Lookup Table should be selected within the ePlan Export Tool (below figure). Refer to the next section regarding how to set up the Export tool in LISCAD.



2.5 Set up ePlan Export Tool (ePlan Add-on)

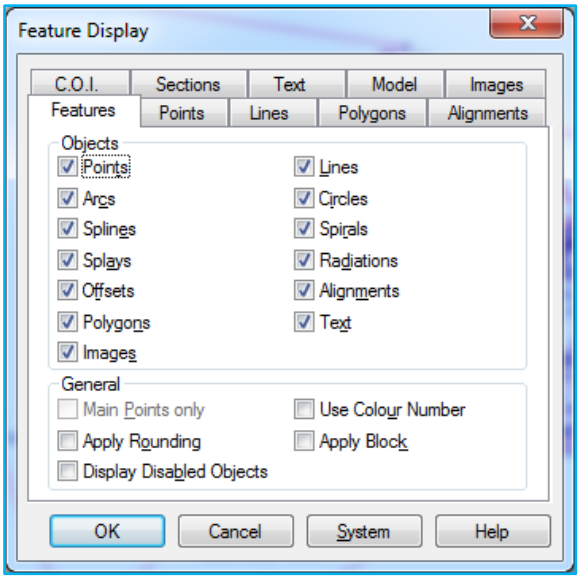
The ePlan Export Tool is in **(Task→Data Conversions) Export→ePlan**. To add the tool after a fresh installation, select **Export→ Add/Remove**, select 'ePlan' and click '**Add'**.

To add the ePlan Export Tool to the toolbar, go to **(Task→Utilities) Configure→Toolbars**. Click Customise, select the Data Conversions category and drag one of the icons with description of ePlan onto your preferred toolbar.

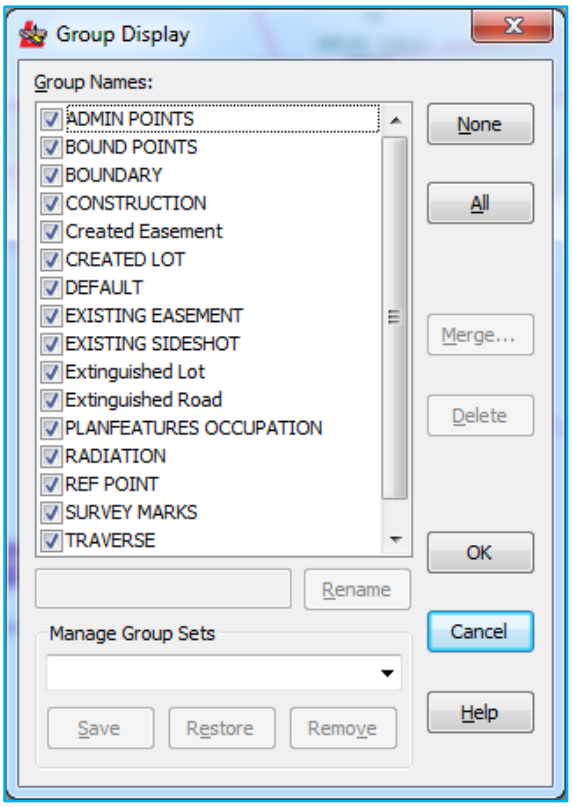


2.6 Display Features and Groups

To generate an ePlan from the ePlan Export Tool, all display features must be turned on. To ensure this go to **(Task→Utilities) Display→Features**. Click the Features tab and check everything in the **Objects** section is ticked. You can turn on anything you like in the other tabs without affecting the ePlan export.

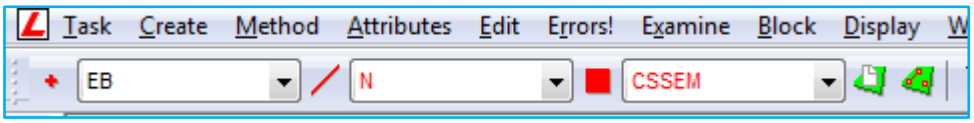


Similarly, all viewing groups must be turned on before generating an ePlan (through the ePlan Export Tool). These are accessed through **(Task→Utilities) Display→Groups**.



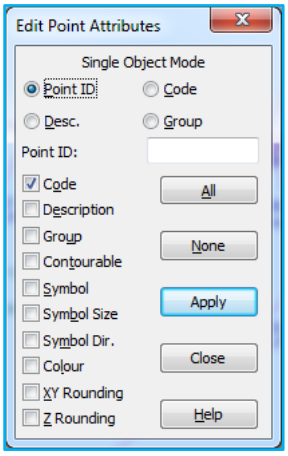
3. Diagram Creation in LISCAD

For drawing any points, lines and polygons the appropriate code must be selected using the code toolbar at the top of the screen.



3.1 Points (Boundary Corners, Survey Marks)

Creating a diagram begins with plotting survey marks, traverse points and boundary corners. These can be drawn using your preferred method. Each point must be correctly coded to the ePlan coding conventions (see LISCAD's ePlan Code Table document[1]). If you forget to assign a correct code to a point, the code can be modified later through **(Task→Computations) Edit→Attributes→Point**.



Select the point on the diagram by clicking on it. Tick the '**Code'** box in the window (with '**Point ID**' selected) and then select a new point code from the toolbar and click '**Apply**'.

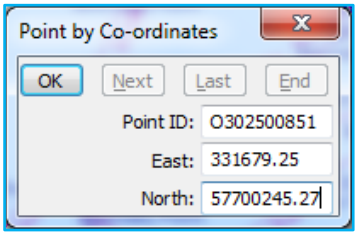
Every point in LISCAD will translate to a Coordinate Geometry Point (CgPoint) in the ePlan. Redundant points can sometimes be hard to find in large diagrams so be sure to keep track of all the points you create.

Every point must be used by a line or polygon, otherwise, the Validation Service will fail, flagging the redundant point. See Section 3.4 Removal of Duplicated Points and Lines.

[1] Available for download on http://www.spear.land.vic.gov.au/spear/pages/eplan/surveyors/liscad-pilot-resources.shtml

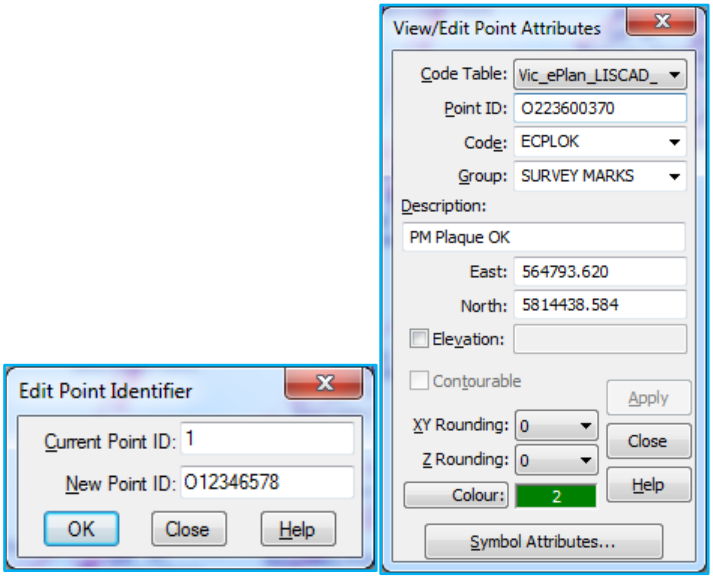
3.1.1 Capturing Permanent Marks (PMs) and Primary Cadastral Marks (PCMs)

When capturing a PM or PCM, several pieces of information are required against the point attributes. Choose the point code from the code table, for example, code '**ECPLOK**' needs to be selected for a PCM of which its state is **E**xisting, point type is **C**ontrol, monument type is **Pl**aque, and condition is **OK**. For new survey marks that you will add to SMES with your application, ensure the point code starts with '**N**' for New point state (e.g. '**NHPGPL**' for **N**ew **H**orizontal **Pe**g **Pl**aced).



In the **Point by Co-ordinates** tool, be sure to enter the 9-figure number as the mark in the Point ID field. The mark identifier (9 figure number) must be preceded by the letter 'O'.

If required, the Point ID can be modified by going to **Edit→Point Identifiers→By Point**, clicking on the point to select it and typing the 9 Figure Number into **New Point ID**.



Monument information can be added through **(Task→Computations) Edit→View/Edit→Points**. Select the mark on the diagram, type into the **Description** field and click '**Apply**'. The Description field is optional (Figure above).

3.2 Lines (Parcel/Building boundary, Traverses, Connections)

The surveyor is required to capture the 'traverse lines' in an ePlan. This consists of connecting all the permanent marks, reference marks, and traverse points. Traversing, radiations and boundary dimensions are captured using the Reduced Observation element in ePlan. Most of the attribute information is self-explanatory however unconventional terminology is explained below.

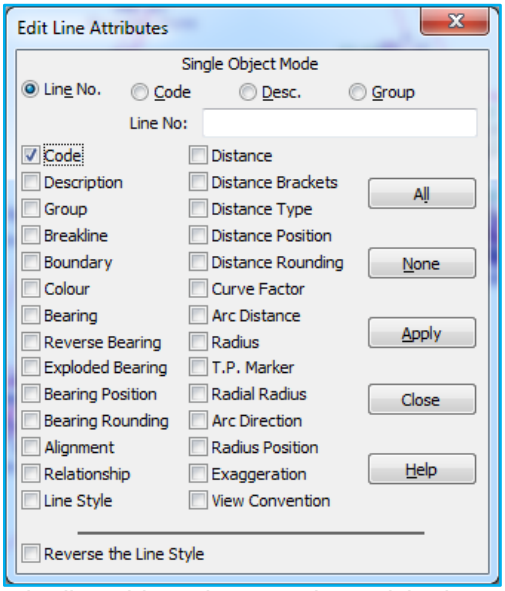
3.2.1 Observation Purpose

Observation purpose defines what the observation is used for. The purpose types used in ePlan are:

Observation Type	Usage
Normal	Parcel boundaries including lots, roads, common property, easements, restrictions etc.
Traverse	Traversing to/from marks

Observation Type	Usage
Sideshot	Radiations to/from marks
Topo	Connection lines for fixing floating easements and restriction footprints, and road splays. Alternatively used to label overall distances or the distance labels that are not visualised on PDF.

Once points have been plotted, lines can be generated by joining the points. Use **(Task→Computations) Create→Line**, **Method→Existing Points**. Each line must be coded using the ePlan coding conventions (see LISCAD Code Table Reference[1]). If you forget to assign a correct code to a line, the code can be modified later through **(Task→Computations) Edit→Attributes→Line**.



Select the line on the diagram by clicking on it. Tick the '**Code**' box in the window (make sure that '**Line No.**' is selected) and then select a new line code from the toolbar and click '**Apply**'.

Each line in LISCAD corresponds to an Observation in the ePlan file. When creating lines, it is possible to end up with overlapping and redundant lines. If extra lines are required for construction purposes, use a different code other than the ePlan codes.

It is important to remove any redundant lines as this will prevent validation errors when generating the ePlan. See Section 3.4 Removal of Duplicated Points and Lines.

If creating a regular boundary or traverse line, ensure that **(Task→Computations) Create→Line Segment** is ticked.
If creating a natural boundary or some other freehand irregular line, this option must be unticked.

3.2.2 Arc Lines

There are several methods to create arcs for ePlan purposes. An arc consists of the arc line and a centre point. Therefore, when selecting the codes for an arc, both the point and line code must be selected. **Use 'ES' (Existing Sideshot) for centre point code**. The line will generally be '**N**' for normal boundary lines.

If deleting an arc line, be sure to also delete the centre point. Although it will not affect validation, maintaining a clean file is good practice.

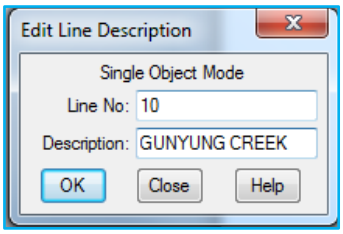
3.2.3 Irregular Lines (Natural Boundaries)

Natural boundaries and freehand lines are represented by an irregular line. To create an irregular line, ensure that **(Task→Computations) Create→Line Segment** is **unticked**.

Point code is '**EN**' (**E**xisting **N**atural Boundary)

Line code is '**N**' (**N**ormal) - if using the Land Use Victoria supplied code table, use code '**N_irregu'**

ePlan requires the surveyor to textually describe all irregular lines. For instance, a river boundary could be described as 'edge of river'. Descriptions must be added after the line is created. To annotate an irregular line, select **(Task→Computations) Edit→Attributes→Line Description**. Then select the irregular line and enter the text into the dialog box.

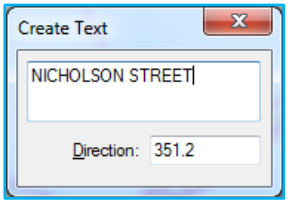


3.2.4 Building Boundaries

ePlan does not need the bearing and distance to be recorded for the lines representing building boundaries. Each building boundary line can be described in an ePlan as an 'Interior Face', 'Exterior Face', 'Median', or 'Other'. The combination of code '**N**' (for Normal boundary) with any of codes in **C_2** is to be used to depict the building boundary lines.

By selecting any of the combined codes (e.g. '**NI**') from the code table the line would be drawn with no bearing and distance and the relevant description (e.g. Interior Face) would be recorded for the line in ePlan.

3.2.5 Road Abuttals and Connections



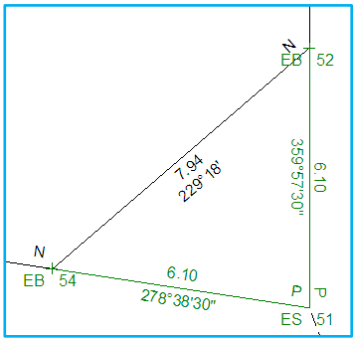
The necessary diagram elements for abuttals and connections are:

- Lines representing the abutting/connecting boundary (e.g. road, crown allotment, etc.)
- Text label identifying the abuttal, placed on the correct side of the boundary. This is created using **(Task→Computations) Create→Text**.

Abuttals and connections are created through the ePlan Export Tool. Refer to Section 4.3.2 Other Elements | Title Connections and Abutting Administrative Boundaries for further details.

3.2.6 Road Splays

Road splays can be created using two topo lines (code '**P**'). The road splay corners on the title boundary are plotted using point code '**EB**' (**E**xisting **B**oundary) and the external corner is plotted using point code '**ES**' (**E**xisting **S**ideshot).



3.2.7 Plan Features

For capturing a Plan Feature in LISCAD, the following steps should be undertaken:

1. If the Plan Feature is a Line containing two points only, tick **(Task→Computations) Create→Line Segment** and then draw the line using the Codes in the following Table.

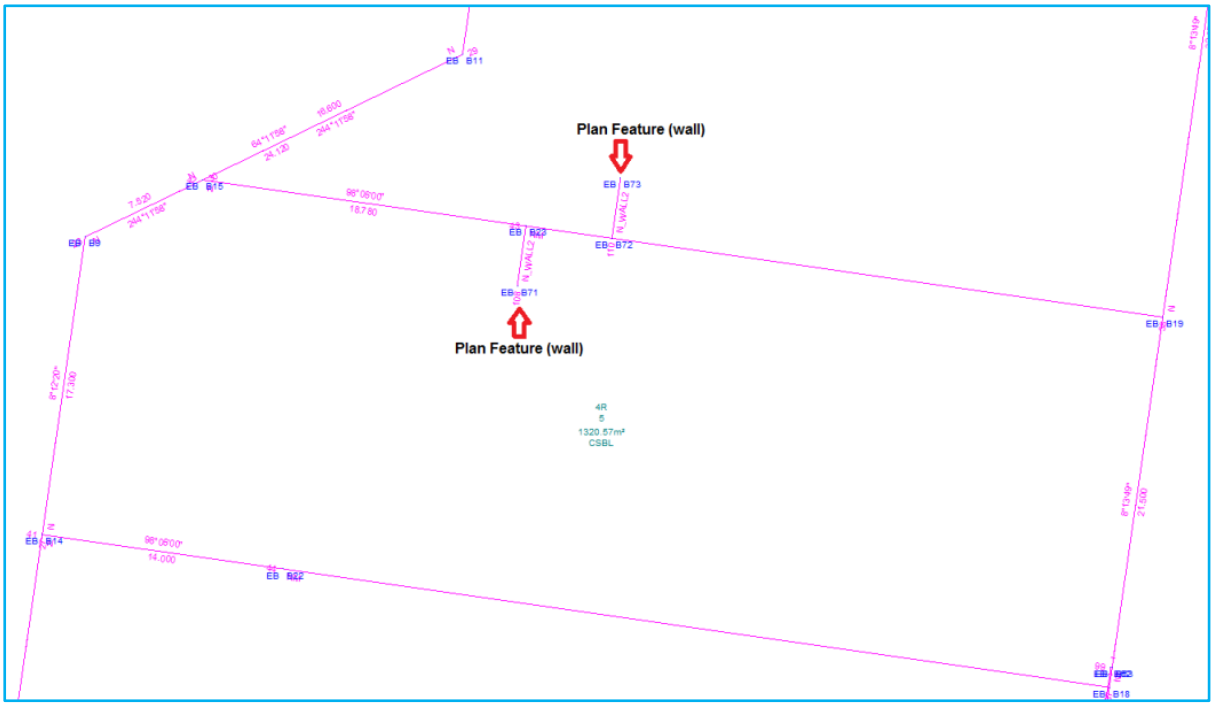
However, if the Plan Feature is a Line consisting of multiple points (e.g. a chainage), untick **(Task→Computations) Create→Line Segment** and then draw the line using the Codes in the following Table. Make sure that the bearing and distance for new line code are turned off and the Line Code has no description.

Occupation (PlanFeatures) type	Group Name	Code
Building Return (hatched walls on Plan of Subdivision)	PLANFEATURES BRT	N_BRT
Masonry Wall (to cover brick walls, buildings, etc.)	PLANFEATURES WALL	N_WALL
Timber Wall	PLANFEATURES TWALL	N_TWALL
Fence	PLANFEATURES FEN	N_FENCE
Offset	PLANFEATURES OFF	N_OFFSET
Chainage	PLANFEATURES CHAIN	N_CHAIN
Kerb	PLANFEATURES KERB	N_KERB
Gate	PLANFEATURES GATE	N_GATE
Centreline	PLANFEATURES CNTL	N_CNTL

Occupation (PlanFeatures) type	Group Name	Code
No symbol (e.g. Not Fenced, Not Defined)	PLANFEATURES NSMB	N_NSMBL
Railway	PLANFEATURES RAIL	N_RAIL
Rockwall	PLANFEATURES RWALL	N_RWALL
Hedge	PLANFEATURES HDG	N_HEDGE
Other (e.g. verandah, roller door)	PLANFEATURES OTH	N_OTHER

2. If needed, describe the Plan Feature through **(Task→Computations) Edit→Attributes→Line Description**.

In the following diagram, two walls are plan features.



3.3 Polygons

The Parcel element captures information about an interest over land. It contains attributes that define the interest, and geometry to define the spatial extent of the interest.

The core attributes of a Parcel that define the interest are as follows:

Parcel Attribute	Usage
Name	The parcel's SPI or equivalent unique identifier
Type	e.g. single or multipart
State	e.g. extinguished, created or affected in this plan
Class	e.g. Lot, Road, Reserve, Easement, Restriction, etc
Additional attributes are used for specific purposes such as:	
Description	Used for road names, TP reference for Crowns or Not-in-subdivision (N.I.S) parcels

Parcel Attribute	Usage
Owner	Used to capture authority beneficiaries for easements, or vesting authority for roads/reserves
Use of parcel	Captures easement/Owners corporation purposes

3.3.1 Primary Parcels

A primary parcel/interest is a parcel with a class of Lot, Stage Lot, Road, Reserve, Common Property, Crown Allotment and Crown Portion. These parcel classes form the base cadastral layer.

Extinguished parcels are the parcels to be subdivided in the plan. A full spatial definition of them is required in ePlan. Created parcels are the new subdivided parcels that sit over the extinguished parcels. The area covered by created parcels should fully 'consume' the area covered by extinguished parcels.

3.3.2 Secondary Interests (Easements and Restrictions)

Secondary interests are defined as parcels with a class of Easement, and Restriction (a type of restriction). The method for capturing these types of parcels in ePlan is different to the way they are represented on paper plans. This is because ePlan is a data centric file, while paper plans are created for visual interpretation.

3.3.3 Polygon Creation

There are 3 methods for creating polygons, 'existing points', 'element selection' and 'traced'. It is highly recommended that **you do not use 'existing points' to create polygons**. This method creates duplicate lines which will be hard to manage and will ultimately result in validation errors.

To generate the polygons, first choose the correct polygon code e.g. '**CSSL**' for **C**reated **S**ingle **S**tandard **L**ot, or '**CSBL**' for **C**reated **S**ingle 2D **B**uilding **L**ot (lot including building boundary). Then use **(Task→Computations) Create→Polygon, Method→Element Selection** and in sequential order, click each line of the polygon and then click 'end' to create the polygon. Alternatively, for simple polygons use Trace and select a starting point. LISCAD will trace the lines and calculate a closed polygon.

When capturing the Staged Plans, the following codes can be used:

- XSSSL (e**X**tinguished **S**tandard **S**ingle **S**taged **L**ot) for extinguished staged lot, and
- CSSSL (**C**reated **S**tandard **S**ingle **S**taged **L**ot) for created staged lot.

3.3.4 Parcel Identifiers in ePlan

ePlan uses a standardised element identification system based on the Standard Parcel Identifier system used for titles in Victoria. Every interest type has a specific identifier format that must be used when creating new interests on a plan. The basis of the format is as follows:

[Parcel ID] \ [Plan Number]

For example, Lot 1 on plan PS123456 is represented as 1\PS123456.

NOTE: For ePlans that do not have a Plan Number at the time of submission to SPEAR, the term 'LV-To-Supply' must be entered as the Plan Number. This value will be replaced with the relevant Dealing Number from the Victorian Online Title System (VOTS) once the ePlan is registered at Land Use Victoria.

Various software packages will provide various levels of functionality when it comes to generating and assigning identifiers. Ensure you understand how parcel IDs are created in your specific package. Different interest types have different ID formats as below:

Parcel Class	Format	Example
Lot	[#] \ [Plan Number]	1\PS123456
	[%] \ [Plan Number]	A\PS123456, AA\PS123456
	[#] [%] \ [Plan Number]	1A\PS123456
	[%] [#] \ [Plan Number]	G101\PS123456
	NOTE – A, E, R and S are not acceptable as % when % is followed by a number (e.g. A1)	
* Balance Lot	BL [#] \ [Plan Number]	BL1\PS123456
* Consolidated Lot	[Plan Number starting with PC/CP]	PC123456
Common property	CM [#] \ [Plan Number]	CM1\PS123456
Reserve	RES [#] \ [Plan Number]	RES1\PS123456
* Reserve Abuttal (@state="existing")	RESERVE – [#]	RESERVE-1
Road and Road Abuttal		
Road (@state="created")	R [#] \ [Plan Number]	R1\PS123456
* Road Abuttal (@state="existing")	ROAD – [#]	ROAD-1
Easement (`@parcelFormat="Standard" / "2D Building"`)	EAS [#] \ [Plan Number]	EAS1\PS123456
* Encumbering Easement (`@parcelFormat="Geometry"`)	E [#]	E1
* Appurtenant Easement (`@parcelFormat="Geometry"`)	A [#]	A1
* Encumbering Easement (Road) (`@parcelFormat="Geometry"`)	R [#]	R1
Restriction	RST [#] \ [Plan Number]	RST1\PS123456
Owners Corporation	OC [#] \ [Plan Number]	OC1\PS123456
Stage Lot	S [#] \ [Plan Number]	S1\PS123456
Depth Limitation	DL [#]	DL1
Crown Parcel		
Crown Allotment	[Allotment %] ~ [Section %] \ PP [Parish or Township Code]	31~2\PP5509
	If there is no Crown Section, [Allotment %] \ PP [Parish or Township Code]	31\PP5509
Crown Portion	[Portion %] \ PP [Parish or Township Code]	1\PP4568
Parcels without SPI	NOSPI – [#]	NOSPI-1
Not in Subdivision	NIS – [#]	NIS-1
Administrative Area Parcels – Code is the Land Use Victoria official identifier, as stored in Vicmap Admin		
LGA	LGA – [VMADMIN Code]	LGA-301
Parish	PSH – [VMADMIN Code]	PSH-355
Township	TWN – [VMADMIN Code]	TWN-23

Parcel Class	Format	Example
Special Parcel Usages – Special usages of Parcel element, doesn't represent an actual parcel type		
Part Parcels (`@parcelType="Part"`)	[Prefix] [#] – p [#] \ [Plan Number]	1-p1\PS123456
Exception for Part Geometry Easements (`@parcelType="Part" & @parcelFormat="Geometry" & @class="Easement"`)		E1-p2
and Part Existing Road (`@parcelType="Part" & @state="existing" & @class="Road"`)		Road-1-p2

NOTE 1: Parcel identifies can have the check digit following the plan number e.g. "PS123456X".

NOTE 2: If there is no plan number at the time of ePlan submission for Section 23, 24A, 32 or 32B applications of the *Subdivision Act 1988*, the term 'LV-To-Supply' must be used instead. This value will be replaced in ePlan with a Dealing Number from VOTS after the plan is registered at Land Use Victoria.

NOTE 3: If there is no SPI for a parcel, name it as 'NOSPI – [#]' e.g. NOSPI-1. These parcels must have a description.

NOTE 4: Not in Subdivision (NIS) lots are defined on parcels with state of "referenced" and the expected visualised text on PDF can be entered as "Description" for the parcel (e.g. N.I.S).

3.3.5 Parcel Identifier in Polygon Description

Parcel identifier needs to be set for each polygon in **Edit→Attributes→Polygon Description**.

Existing/Cancelled Parcels

The Survey Parcel Identifier (SPI) must be put in the polygon description, in the form of lot\plan number (e.g. 1\PS123456). Created parcels only need the parcel (lot) number.

SPIs can be found using LASSI-SPEAR[2]. If the SPI is of a cancelled or referenced parcel e.g. old crown allotment, the SPI should be reconstructed using the guidelines in Parcel Identifiers in ePlan.

Created Parcels

Created parcels only need the parcel (lot) number.

By only entering the parcel number of created parcels into the **Polygon Description** attribute of a polygon, LISCAD generates the SPI by combining this with the plan number entered in the ePlan Export Tool. Parcel numbers should be unique for each class of parcel. For example, lot number should not clash with other lots. When entering numbers for parcels other than lots, it is a good idea to maintain the same naming convention as for SPIs to make identification of these parcels easier e.g. 'CM1' for common property, 'R1' for road, 'RES1' for reserve, 'E1' for easement and 'RST1' for restriction. See Section Parcel Identifiers in ePlan.

[2] https://www.spear.land.vic.gov.au/lassi/SpearUI.jsp

Extinguished Crown Parcels

The Parcel Identifier must be put in the polygon description according to the naming convention for crown parcels in section 3.3.4.

If the extinguished parcel is a crown parcel, then parcel description must contain a name to replace the crown name (e.g. "TP123456"). Note that parcel description is different with Polygon description and it needs to be entered in the ePlan Export Tool using “Parcel Descs” tab page under “Attributes” menu.

** A consolidated parcel only needs the plan number (starting with PC), if nothing is entered the **Polygon Description** attribute of a consolidated polygon LISCAD generates the SPI using the plan number entered in the ePlan Export Tool.

Modify Parcel Codes

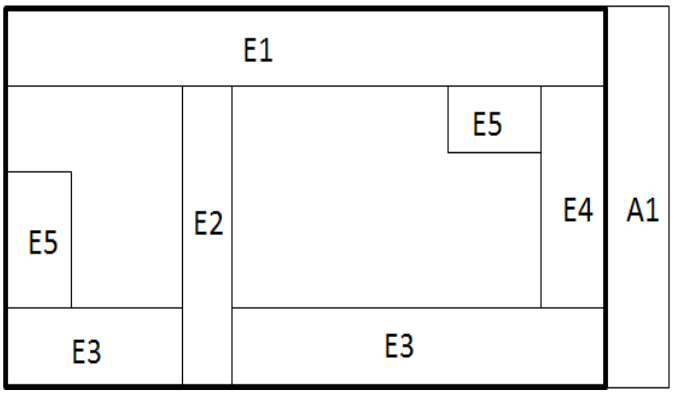
To modify the code of a polygon, go to **(Task→Computations)** Edit→Attributes→Polygon.

Click on the polygon you wish to change and tick 'Code' box in the above window (make sure that ‘**Polygon No**’ is selected). Alternatively, type the polygon number. Select the correct code in the code toolbar and click ‘**Apply**’.

3.3.6 Easements

In LISCAD, there are two steps for capturing easements as follows:

1. An individual polygon should be drawn on the diagram to include the geometry of each easement, similar to how easements are currently shown on PDF Plans (see below figure).



Depending on the state (existing, created, etc.) and type (single, part, etc.) of easements, a correct easement code (e.g. CSSEM, ESSEM, CPSEM, EPSEM, etc.) should be assigned to each polygon.

On the diagram, the easements should have a description of ‘E#’ (for encumbering easement), ‘A#’ (for appurtenant easement) or ‘R#’ (for encumbering easement (road)). Part easements should have a description of ‘P#-E#’, ‘P#-A#’, or P#-R#. No origin should be included within the description of easements drawn on the diagram.

NOTE: For any Encumbering Easement (Road), there must be one created Road (with code CSSR) in the diagram with the same geometry and description (‘R#’).

2. For each unique combination of purpose/origin/land benefitted, a Standard/2D Building easement should be created within the ePlan add-on. The Standard/2D Building easement should include the reference(s) to the geometry segment(s) created in step 1 as well as some information about that easement (e.g. purpose, origin, land benefitted).

NOTE: For an overlapping easement, users can create a polygon on the overlapping area and name it as they would like to be shown in their plan. This is the only way to control the naming

of easements for overlapping parts rather than relying on the visualiser service to label those areas randomly.

The below table illustrates the information that needs to be assigned to Standard/2D Building easements in step 2.

LandXML Parcel Name (Standard/2D Building easement created in step 2)	Subject Land (geometry segment created in step 1)	Purpose	Width (m)	Origin	Land Benefited/In Favour Of
EAS1\PS700472	E1 & E4	Sewerage	See Diagram	This plan	City West Water Ltd
EAS2\PS630826		Carriage Way	See Diagram	PS630826H	Maribyrnong City Council
EAS3\PS630826		Transmission of Telecommunication Signals	See Diagram	PS630826H	Vol. 5489 Fol.726
EAS4\PS700472		Gas Pipeline	See Diagram	PS630826H - Section 146 of the Gas Industry Act 2001	SPI Networks (Gas) Pty Ltd
EAS5\PS700472	E2	Carriage Way	2	This plan	Maribyrnong City Council
EAS6\PS700472		Carriage Way	2	This plan	Lot 2 PS630826H
EAS7\PS700472		Carriage Way	2	This plan	Lot 1 & Lot A on this plan
EAS8\PS700472		Gas Pipeline	2	This plan - Section 146 of the Gas Industry Act 2001	SPI Networks (Gas) Pty Ltd
EAS9\PS700472	E3	Carriage Way	3	This plan	Lot 1 & Lot A on this plan
EAS10\PS700472	E4	Sewerage	3	This plan	City West Water Ltd
EAS11\PS700472	E5	Carriage Way	See Diagram	This plan	Lot 1 & Lot A on this plan
EAS12\PS630826	A1	Carriage Way	3	PS630826H	Maribyrnong City Council

This step is described in more details in Section 4.3.4 Other Elements | Easements.

3.3.7 Restrictions

Restrictions are captured as Parcel elements in ePlan. Existing restrictions must be given a SPI code in ePlan. The process to do this, is very simple. Restriction 1 on PS123456X becomes RST1\PS123456. It is possible multiple surveyors will come across existing restrictions that require a derived SPI code for ePlan. Correctly using this rule to derive the SPI should result in consistency between ePlans. Any errors will be picked up at examination time.

Restrictions frequently show footprints for the area affected. In many cases, a restriction applies to multiple footprints. To handle this, the restriction is captured as a multipart parcel with each footprint polygon as a part of the multipart.

NOTE: The ePlan Visualisation Service has been enhanced to support the Land Use Victoria's policy on covenants and restrictions which came into effect on 1st July 2018.

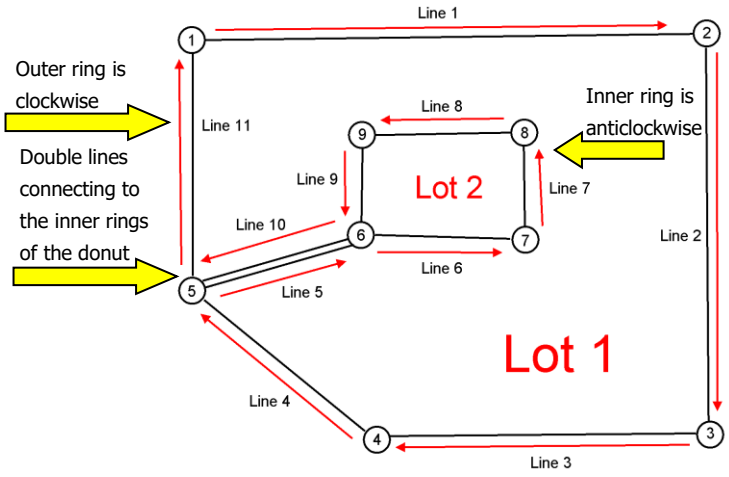
3.3.8 Title Connections

A title connection is shown in ePlan as an adjoining existing road or crown allotment parcel. Only the abutting boundary of the parcel needs to be drawn (the parcel does not need to be a closed polygon). The centroid of the parcel (the label) needs to be placed on the correct side of the boundary indicating the position of the parcel.

3.3.9 Donut Polygons

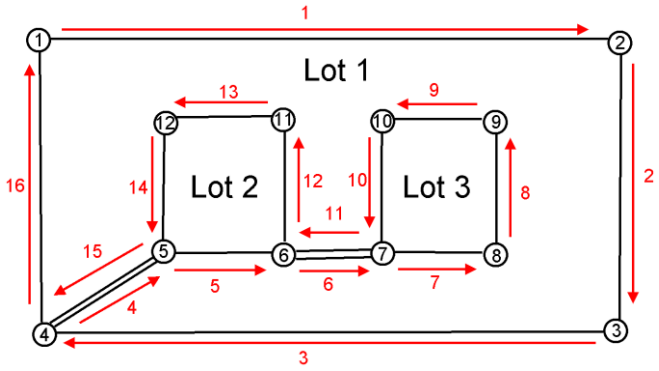
ePlan supports all types of donut polygons including donuts within donuts. Donut polygons consist of polygons with internal holes. They are captured in LISCAD as a single continuous simple polygon using an ordered continuous sequence of lines beginning and ending on the outer ring of the donut.

To connect the inner rings of the donut, '**double lines**' need to be drawn (diagram below). One line traces into the inner rings and the other line traces out. The connecting lines must have the normal boundary code ('N'). It should be noted that the direction of inner rings reverses with each level of internal ring. If the outer ring is clockwise, then the first level internal ring will be anticlockwise, then the second level internal ring will be clockwise, and so on.

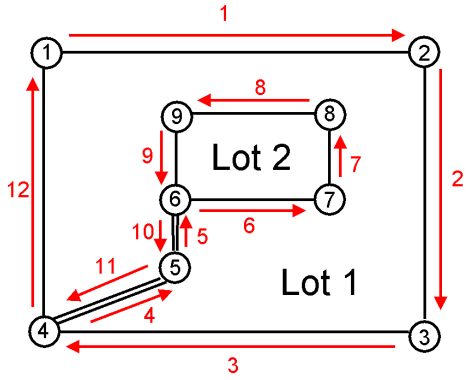


Below are some examples showing the different types of donut polygons. The red arrows illustrate the direction of the rings along with the order of line segments selection for polygon creation.

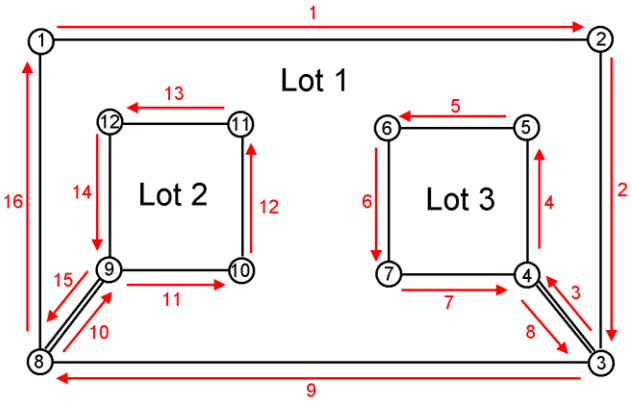
Daisy Chained Donut



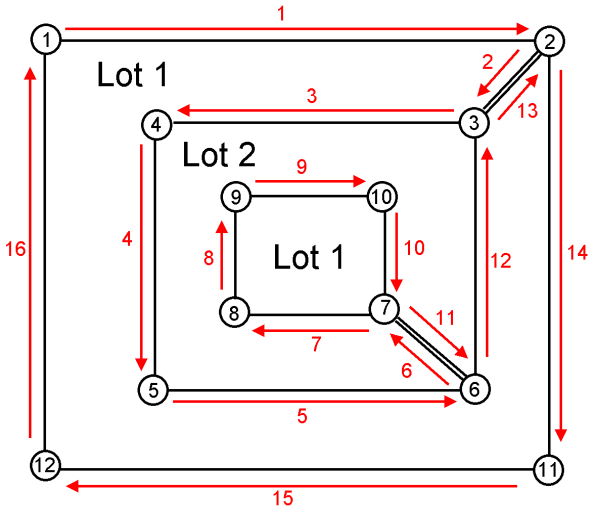
Multiple connection lines



Multiple connections from different points

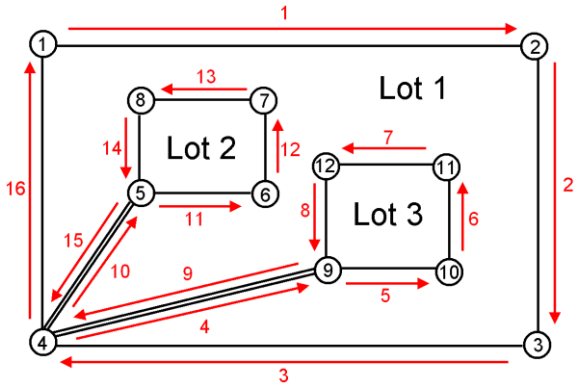


Donut within donut

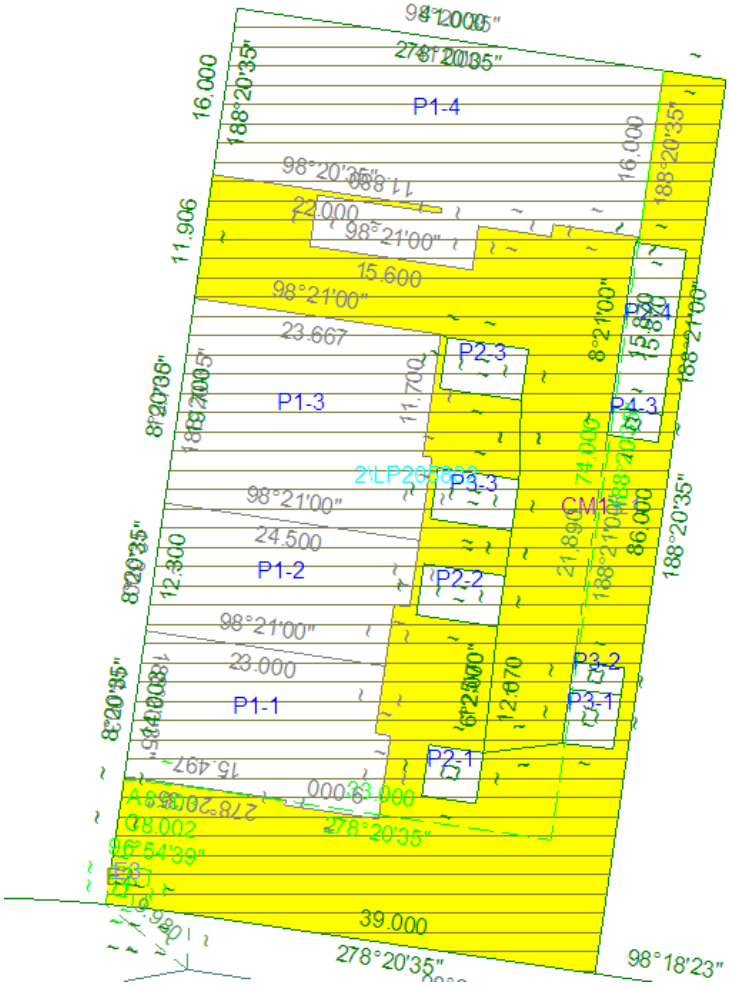


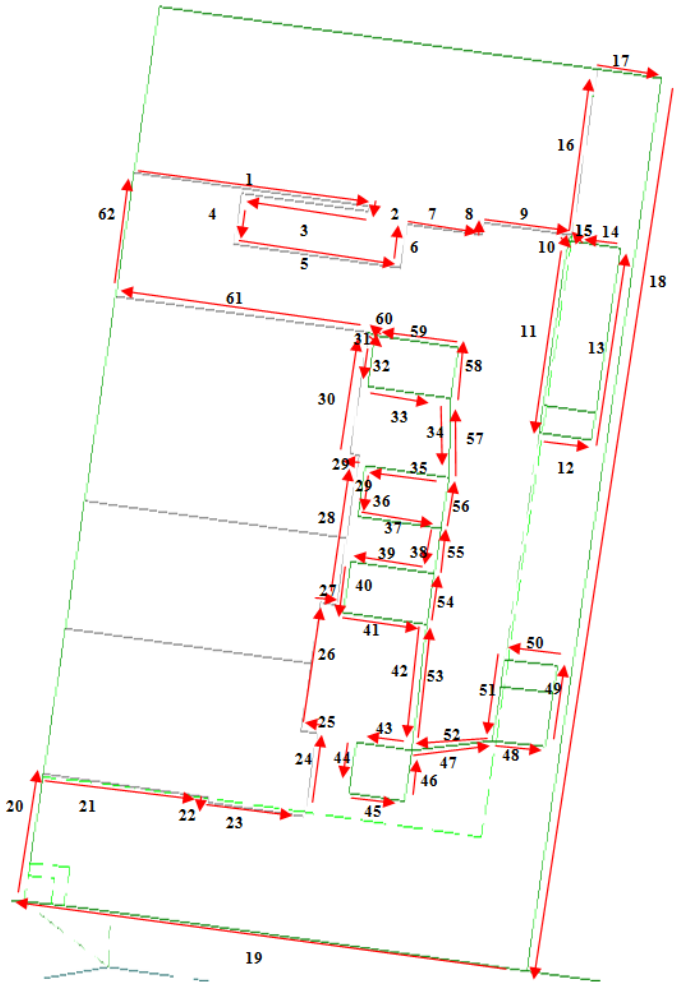
Multiple connections from the same point

Multiple connections from the same point can be done in any order provided all the double lines are followed before the single line.



NOTE: It is recommended to plan the selection of line segments before creating the donut polygon. For instance, the selection of the line segments for creating the common property polygon in the below diagram has been planned as per the diagram on right.



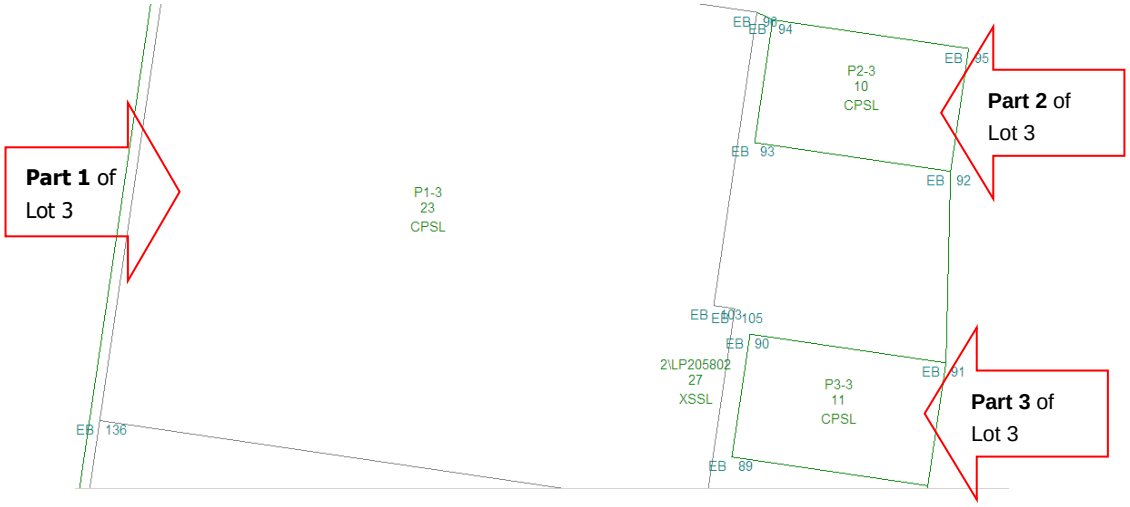


3.3.10 Multipart Parcels with Part Polygons

Creating multipart parcels on the diagram is the same process as any parcel (see Section 3.3 Polygons).

Each part lot is coded using the **P** code for part (e.g. C**P**SL for Created **P**art Standard Lot). The part number is required in the polygon description**. LISCAD looks for the first number in the polygon description to use as the part number**. This allows you to enter extra text to help identify the polygon on screen. For example, a polygon description of '**P1-14**' equates to Part 1 of Lot 14. The 'P' and '-14' are stripped out by LISCAD. This is useful if you want to include the lot number in the description to help identify the polygon.

Part polygons are linked together using the ePlan Export Tool. See Section 4.3 Other Elements for details.



3.4 Removal of Duplicated Points and Lines

Three tools for removing duplicated (redundant) lines and points can be found under **(Task→Utilities) Maintenance→Filter Points / Filter Lines / Filter Points on Line and Grade.**

These tools allow you to remove all redundant points and lines in the diagram so that they are not exported into the ePlan.

NOTE: Be aware that it will not remove orphaned or stranded points that are not connected to the diagram by a line. These still need to be removed manually.

4. ePlan Export Tool (ePlan Add-on)

The LISCAD ePlan Export Tool (ePlan add-on) is used to generate an ePlan compliant LandXML file from a LISCAD drawing file (.SEE). All data is saved to a working file called EPL (.EPL file extension). Each time you open the ePlan add-on, you will be prompted to either create a new EPL file or browse to a previously created EPL file. It is important to keep EPL and SEE files together, so they do not get mixed up with other plans.

Before starting up the ePlan add-on, all the diagram elements described in the previous section must be complete and correctly coded. In the add-on, you can choose your defined Lookup Table to map your codes in the diagram file to ePlan codes.

Validation of the ePlan (.xml) file can be performed via the SPEAR website. Validation checks most components of the plan to ensure that the data entered conforms to the Victorian ePlan requirements.

The Export Tool includes the following windows:

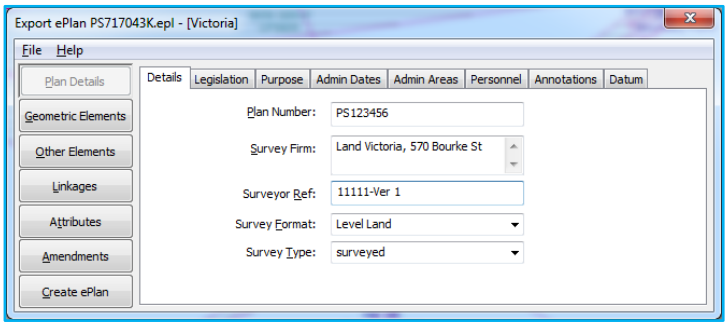
- Plan Details
- Geometric Elements
- Other Elements
- Linkages
- Attributes
- Amendments, and
- Create ePlan.

4.1 Plan Details

The Plan Details window captures most of the information traditionally found in the plan cover sheet, including plan number, surveying firm, location of land and notations.

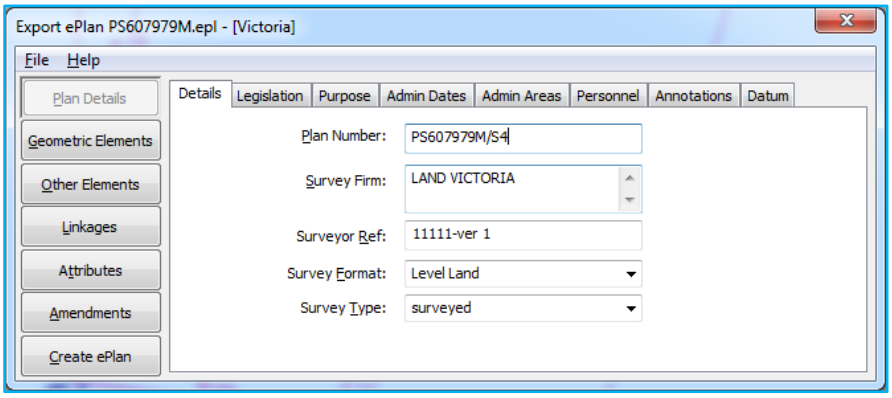
4.1.1 Plan Details | Details

Add the relevant plan details as required. Be sure that you enter the 'surveyor version number' into the '**Surveyor Ref**' box. The version number should be entered right after the surveyor reference starting with '-Ver' (see figure below).



Survey Type corresponds to the notation, 'This plan is based on survey/non-survey'. The translation to ePlan values:	
Computed	Non-Survey
Surveyed	Survey
Compiled	Partial Survey

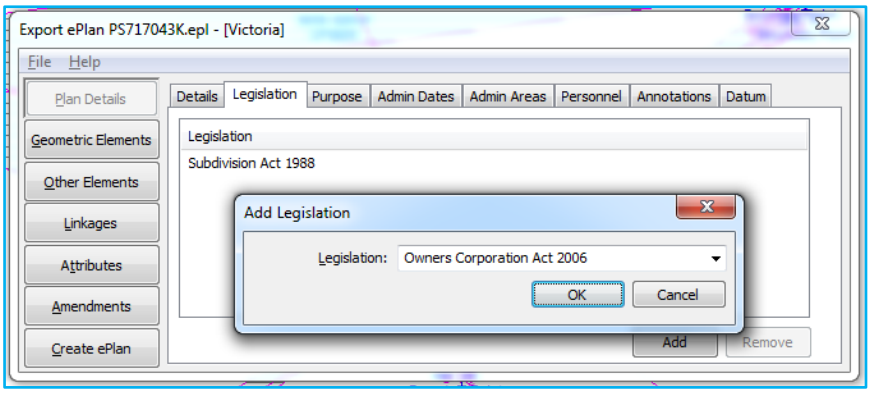
If it is a staged Plan, based on the naming convention, the plan number format must be: PSXXXXXXX/S#. S# is referred to stage number.



NOTE: To submit an ePlan under Section 23, 24A or 32B that does not have any Plan Number, insert 'LV-To-Supply' into 'Plan Number' box. This value will be replaced with the relevant Dealing Number from VOTS once your ePlan is registered at Land Use Victoria.

4.1.2 Plan Details | Legislation

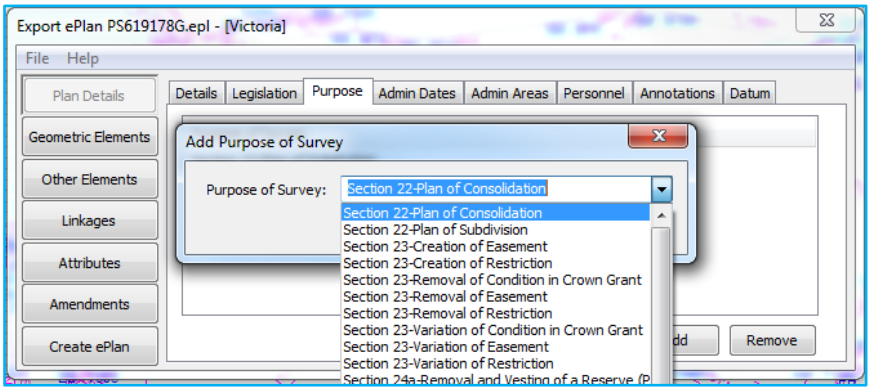
Although this is generally not annotated on plans, ePlan requires the surveyor to specify the Act or Acts that apply on the plan. Generally, all plans use the *Subdivision Act 1988*. Select the relevant legislation that applies to the plan.



If there is any Owners Corporation in the plan, the *Owners Corporation Act 2006* needs to be added.

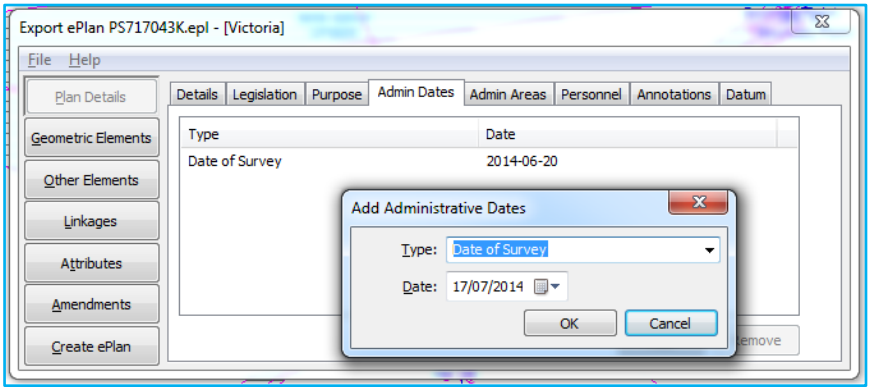
4.1.3 Plan Details | Purpose

Purpose of Survey corresponds to the section under the Act this plan is created under. Both the primary purpose and additional secondary purposes must be defined here. For example, if a Section 22 plan also creates easements as an additional purpose, Section 23 must be specified. If this plan removes a reserve vesting status, then specify Section 24A.



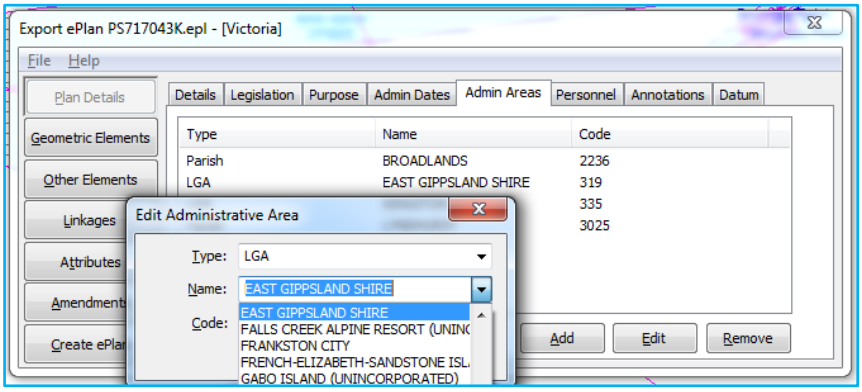
4.1.4 Plan Details | Administrative Dates

If a plan is based on survey, the 'Date of Survey' must be specified.



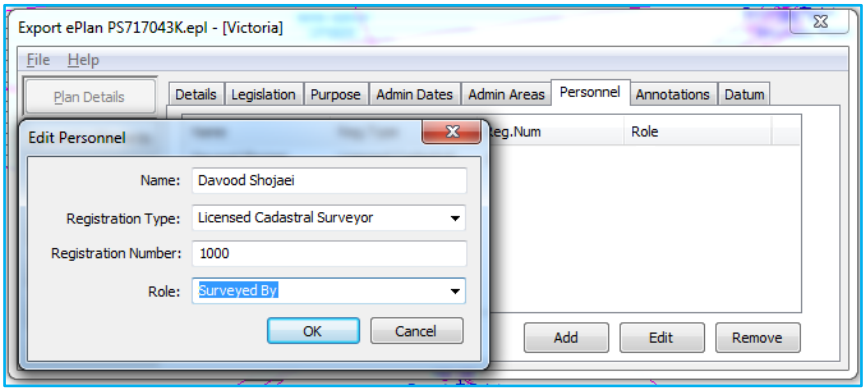
4.1.5 Plan Details | Administrative Areas

These values correspond to the Location of Land panel. Only LGA, Parish and Township are required. Codes are automatically populated when a Name is selected, or they can be obtained from LASSI-SPEAR.



4.1.6 Plan Details | Personnel

Enter the details of the Licensed Surveyor signing the plan.

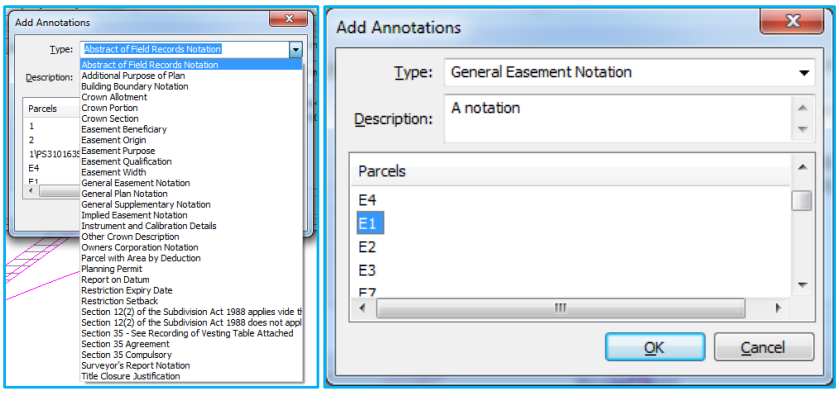


4.1.7 Plan Details | Annotations

ePlan Annotations are used to capture miscellaneous information about the plan and survey. It includes some information that is traditionally shown in the notations panel, surveyors report and abstract of field records, as well as data specific to ePlan.

Annotations can be accompanied by a description and parcel references. A description is required for annotations where further information is necessary such as 'Planning Permit'. **NOTE: Where a description is not required, copy the Type text in the description field to not leave the field blank**. For example, 'Parcel with Area by Deduction' requires no further description so copy the Type text into the Description box.

Certain annotations require parcel references such as 'Easement Width' or 'Restriction Expiry Date'. Select the parcel that the annotation applies to from the list box. To select multiple parcels, hold the keyboard CTRL key when selecting. Annotations that apply to the whole plan do not require a parcel reference.



The following table outlines the usage of all available annotations:

Annotation	Requires Description	Requires Parcel Reference
Planning Permit	Yes	No
Report on Datum	Yes	No
Instrument and Calibration Details	Yes	No
Crown Allotment	Yes	No
Crown Section	Yes	No
Crown Portion	Yes	No
Other Crown Description	Yes	No
Section 12(2) of the Subdivision Act 1988 applies vide this plan	Yes	No
Section 12(2) of the Subdivision Act 1988 does not apply vide this plan	Yes	No
Purpose of Plan	Yes	No
Additional Purpose of Plan	Yes	No
Grounds for Removal	Yes	No
Grounds for Variation	Yes	No
Grounds for Vesting	Yes	No
Future Plan Number	Yes	No
Easement Qualification	Yes	Yes
Easement Purpose	Yes	Yes
Easement Beneficiary	Yes	Yes
Easement Width	Yes	Yes

Annotation	Requires Description	Requires Parcel Reference
Easement Origin	Yes	Yes
Building Boundary Notation	Yes	Yes
Restriction Expiry Date	Yes	Yes
Purpose Of The Owners Corporation	Yes	Yes
Owners Corporation Notation	Yes	Yes
The Basis For Allocation Of Lot Entitlement And Liability	Yes	Yes
Details Of The Limitations Of The Owners Corporation	Yes	Yes
Functions Or Obligations Referred By The Limited Owners Corporation	Yes	Yes
Functions Or Obligations Referred To The Unlimited Owners Corporation	Yes	Yes
Section 35 Compulsory	Yes	Yes
Section 35 Agreement	Yes	Yes
Parcel with Area by Deduction	Yes	Yes
General Plan Notation	Yes	Optional
Abstract of Field Records Notation	Yes	Optional
Surveyor's Report Notation	Yes	Optional
Title Closure Justification	Yes	Optional
Supply of Supplementary Field Record Notation	Yes	Optional
General Easement Notation	Yes	Optional
Section 35 - See Recording of Vesting Table Attached	Yes	Optional
Implied Easement Notation	Yes	Optional
Prior Survey	Yes	No
Balance Of Existing OC Entitlement	Yes	Yes
Balance Of Existing OC Liability	Yes	Yes

NOTE 1: 'Easement Width' annotation must be only linked to geometry easements drawn on the diagram (specified as 'E-#', 'A-#' or 'R-#') and not the Standard/2D Building easements created in the ePlan add-on (specified as 'EAS-#').

NOTE 2: 'Implied Easement Notation', 'Easement Purpose', 'Easement Origin' and 'Easement Beneficiary' must only be linked to Standard/2D Building easements created in the ePlan add-on (specified as 'EAS-#').

NOTE 3: If there is only one Crown Description in the plan, use a combination of the following three annotations to describe it:

1. Crown Allotment
2. Crown Section
3. Crown Portion

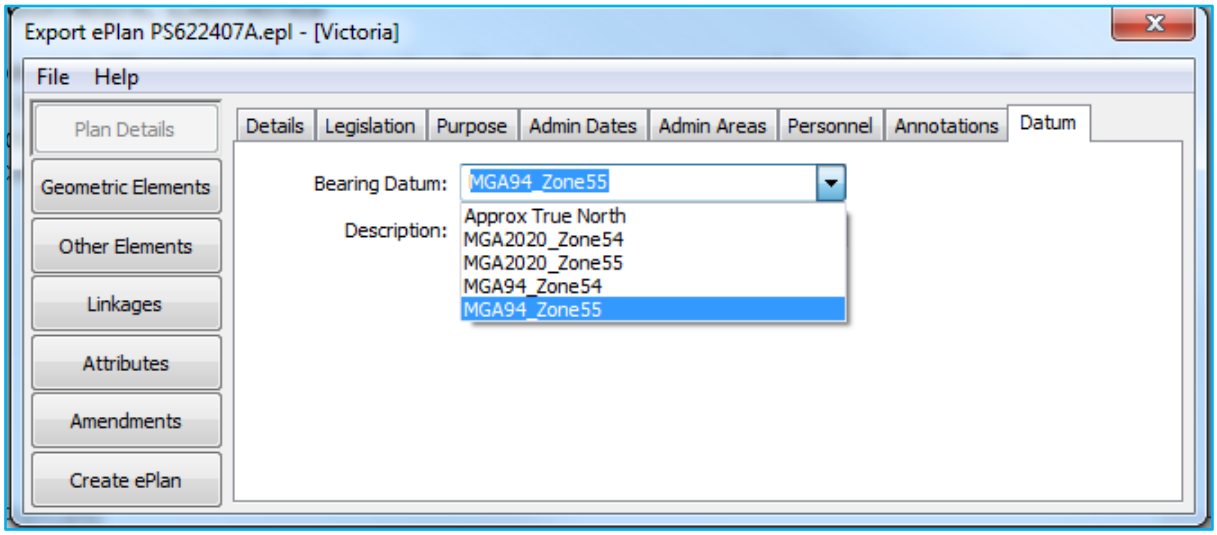
However, if there is more than one Crown Description, only use 'Other Crown Description' annotation to describe multiple Crown Descriptions.

NOTE 4: The following traditional notations are not entered as annotations and are captured elsewhere in an ePlan:

- Survey / Non-Survey
- Permanent Mark connections
- Staged plan notation

4.1.8 Plan Details | Datum

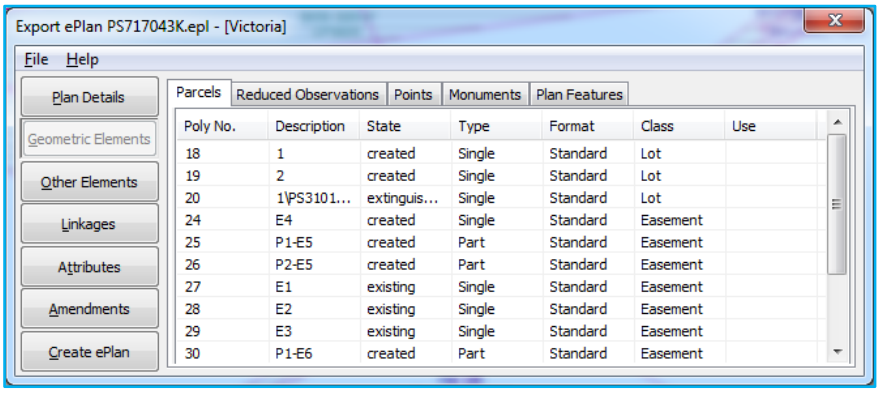
Select the Bearing Datum of the plan and enter the description or leave blank.



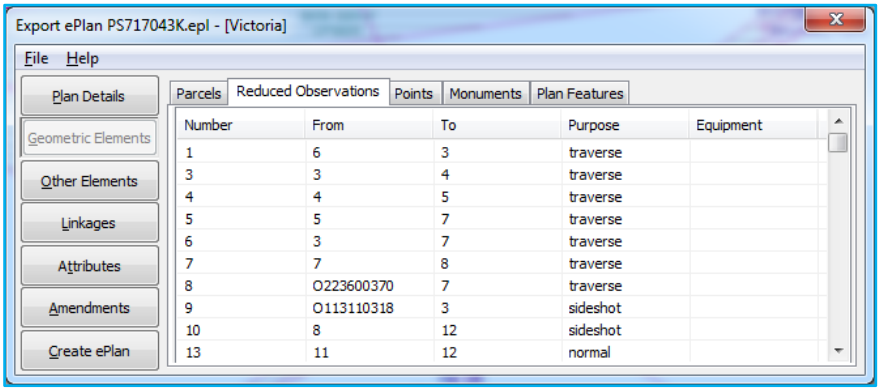
4.2 Geometric Elements

The **Geometric Elements** tabs display the ePlan elements generated from the diagram. These tabs are used to preview the created ePlan elements in tabular format. If an error is detected, the ePlan Export Tool must be closed and the error corrected on the diagram. Once the correction is made, the EPL file can be re-opened.

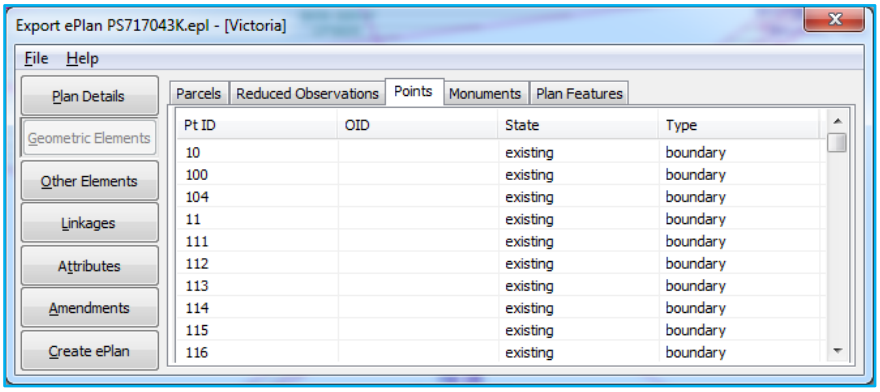
Parcels



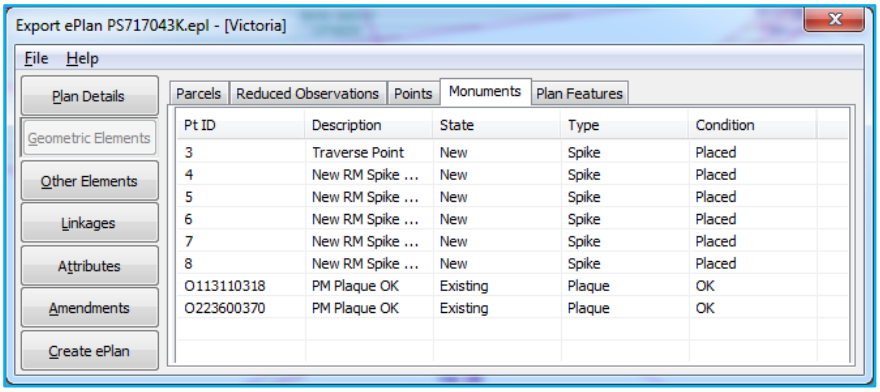
Reduced Observations



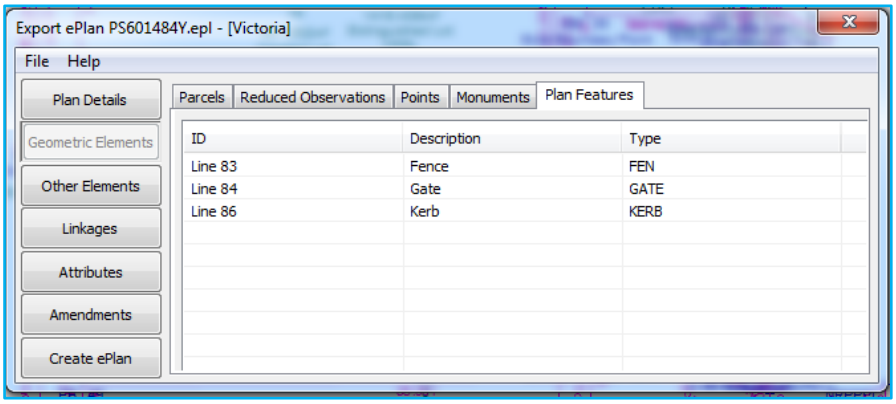
Points



Monuments



Plan Features



4.3 Other Elements

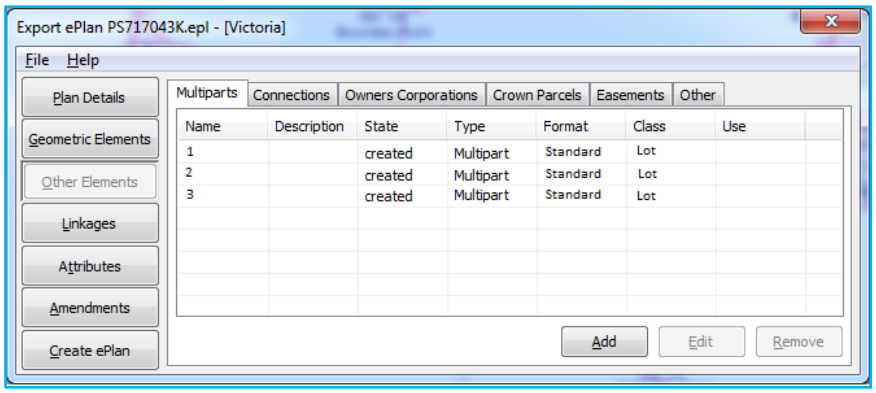
In this section, the components of the 'Other Elements' window are described.

4.3.1 Other Elements | Multipart Parcels

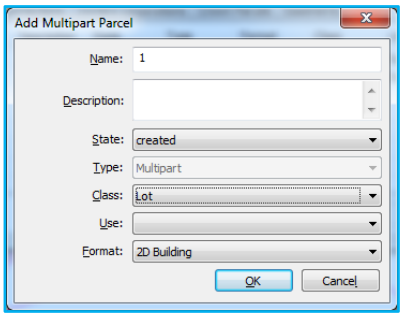
Multipart Parcels are created by linking 2 or more 'part' polygons together through a Multipart entity. Before performing the steps in this section, all the part polygons must be created, correctly coded and their part numbers assigned (see *Section 3.3.10 Multipart Parcels with Part Polygons*).

Multipart Parcel Entity

A multipart parcel entity is created in the **Multiparts** tab in the **Other Elements** window. All types of multipart parcels are created here including lots, geometry easements, restrictions and depth limitations.



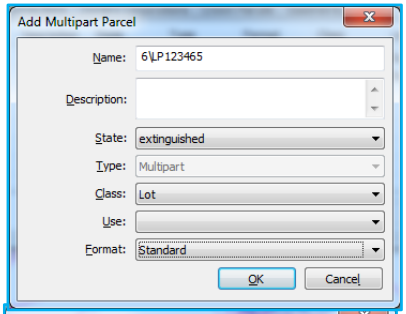
Multipart Created Primary Parcels (Lots, Roads, Reserves and Common Property)



To create a multipart primary parcel, at least 2 'part' coded polygons must exist in the diagram e.g. 'C**P**SL' for created **part** standard lot. The attributes entered in the '**Add**' window should match the coding of the part polygons.

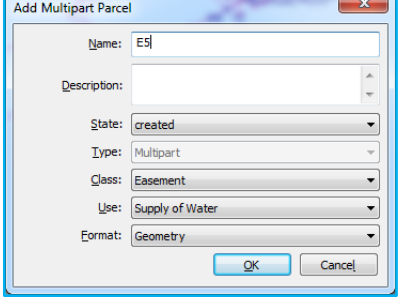
Name is the parcel ID that will form the new SPI. **Use** and **Description** should be left blank. **Format** should be selected from the drop-down list. If the multipart parcel contains one or more 2D Building part parcel(s), then '2D Building' should be selected, otherwise select 'Standard'.

Multipart Extinguished, Affected and Existing Primary Parcels



Multipart extinguished, affected or existing primary parcels are created the same way as above except that the name must contain the complete SPI retrieved from LASSI-SPEAR.

Multipart Easements



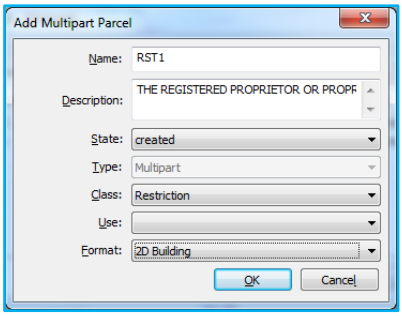
To create a multipart easement, at least 2 'part' coded easement polygons must exist in the diagram e.g. 'CPSEM' for created part standard easement. The attributes entered in the **'Add'** window should match the coding of the part polygon.

Name is the easement identifier. Only E or A and the easement number is necessary, and it should not clash with any other easement IDs. Refer to *Section 3.3.4 Parcel Identifiers in ePlan* for more information about easements' naming convention.

NOTE: The format of easements should be defined as Geometry.

Multipart Created Restrictions

Multipart restrictions are used to represent building envelopes and other spatial areas where the restriction applies. A minimum of 2 polygons coded as created **p**art standard restriction ('C**P**SRT') are required for a multipart restriction.

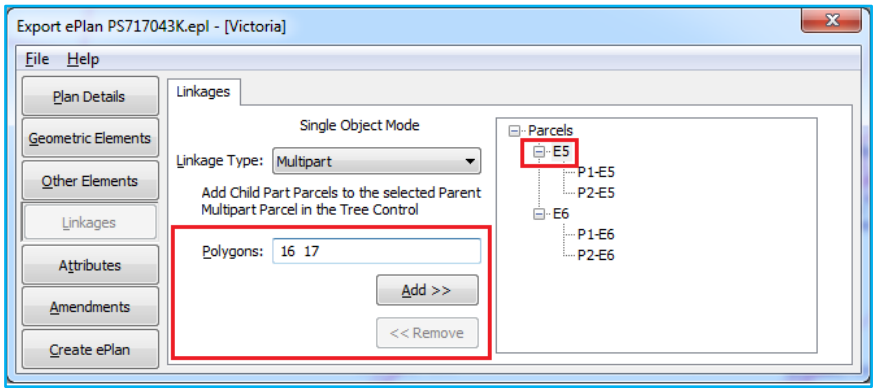


As with easements, the name field for restrictions only requires a number that does not clash with any other restrictions. Letters can be used to help identify it in the linkages window. In the example below 'RST1' has been used. The restriction description should be entered in the 'Description' field.

Multipart Parcels Linkages

Once created, the necessary multipart parcels must be linked to the associated part polygons from the diagram. LISCAD will attempt to automatically link part polygons where unambiguous situations exist. For more complex plans, manual linking will be required.

To link polygons to a multipart parcel, select the parcel name from the tree on the right, and enter the polygon numbers (separated by a space) that correspond to part polygons and click '**Add**'. To find corresponding polygon numbers from parcel IDs, go to the **Parcels** tab in the **Geometric Elements** window.



4.3.2 Other Elements | Title Connections and Abutting Administrative Boundaries

The **Connections** tab under the **Other Elements** window is used to establish the title connection of the plan e.g. a road abuttal connecting to a road corner. Road, crown parcel, and administrative area boundaries can be specified for abuttal and connection purposes.

To correctly capture the abuttals and title connections complete the following steps:

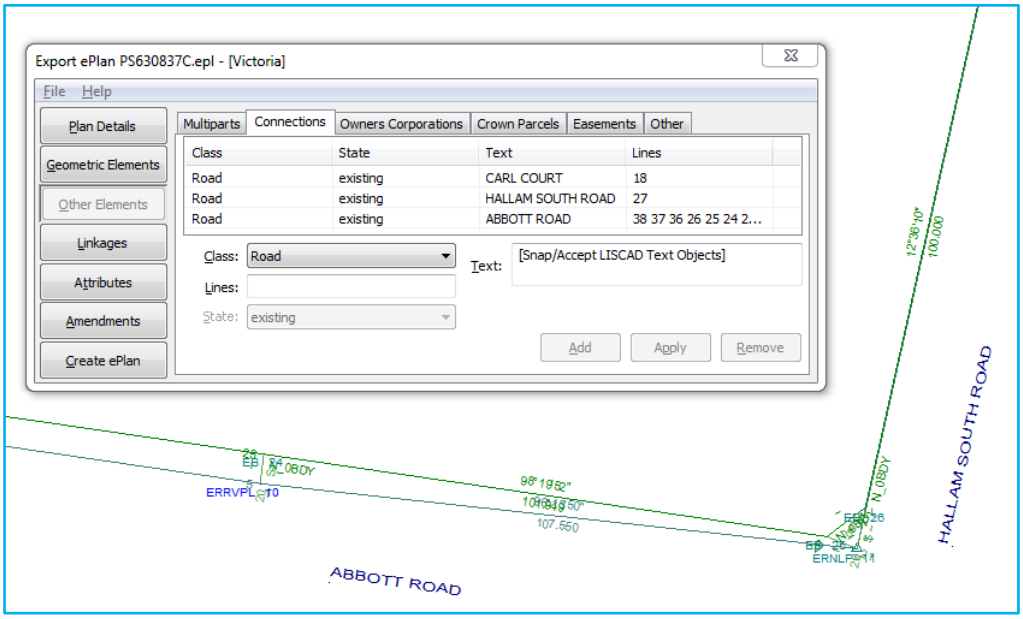
- Place the appropriate street name, crown allotment SPI or administrative area name on the diagram using the **Text by Freehand** tool in a location within what would be the (Vicmap) road/crown parcel/administrative area
- Open the EPL Tool and navigate to **Other Elements→Connections**
- Select the text element in the diagram by clicking on the point below the first character
- Select a **Class** of 'Road', 'Crown Allotment', 'Crown Portion' or 'Administrative Area'
- Select the lines that represent the boundary of the abuttal and connection by clicking each line on the diagram
- If Crown Allotment or Portion, select either 'Existing' or 'Referenced'. 'Referenced' is used when the original crown allotment has since been subdivided but the boundary is still intact
- If Administrative Area, select 'Existing'.
- Click '**Add**'.

See the next three sections for examples on capturing abutting Roads, Crown Parcels and Administrative Areas.

Abutting Roads

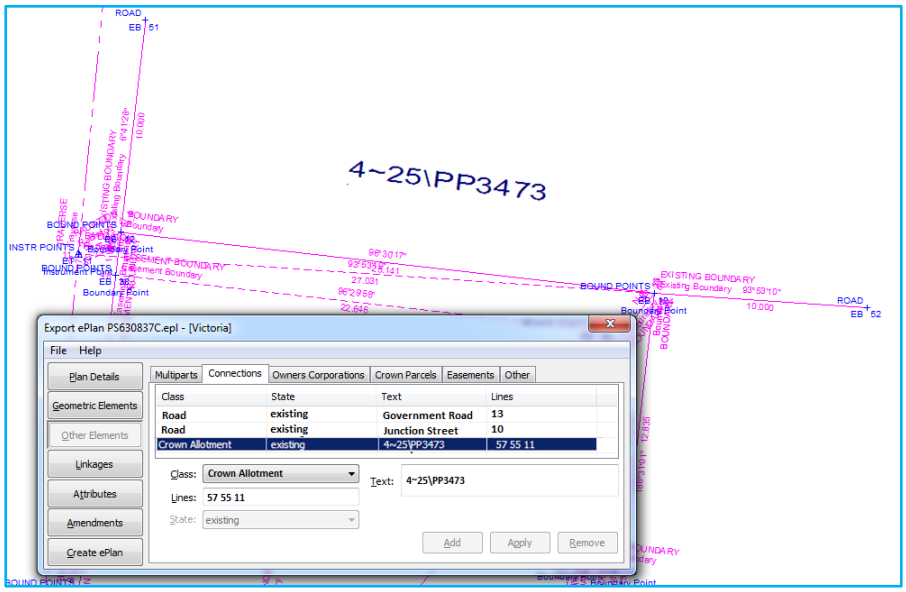
In the example below, there are 2 entries created for the 2 roads that comprise the title connection. ‘Abbott Road’ was created using the abutting boundaries and an extended line to the road corner. ‘Hallam South Road’ was created using an arbitrary length line to represent the other side of the corner.

The length of the line used for the road corner is not important. However, an appropriate length should be used for future visualisation purposes.



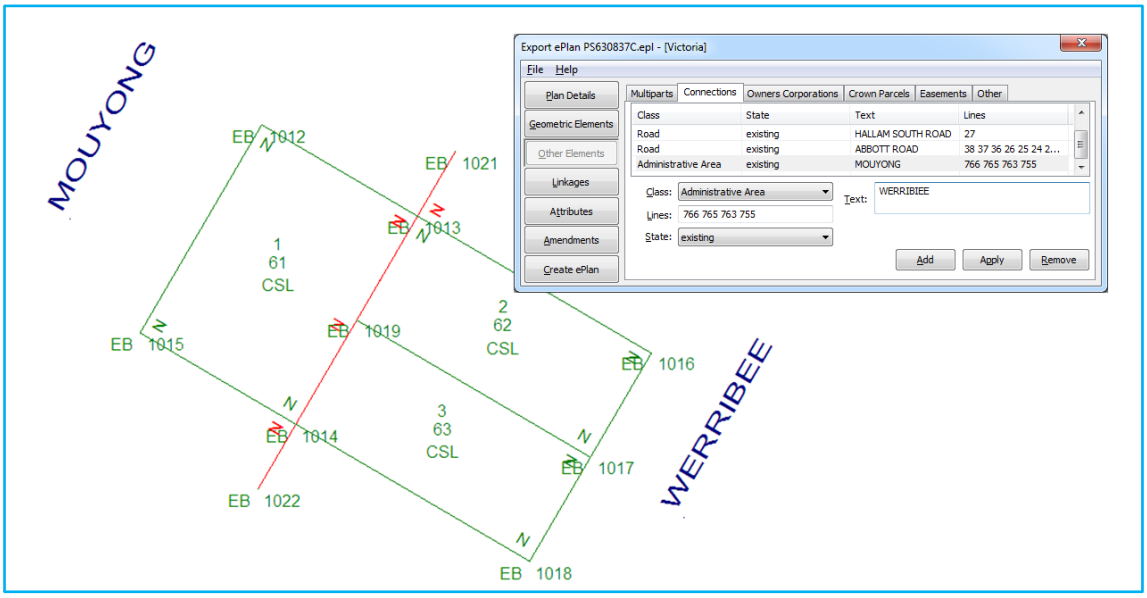
Abutting Crown Parcels

In the example below, the abutting boundary of a crown allotment has been created using an arbitrary length line with normal boundary code (‘**N**’). The crown allotment SPI has also been created on the diagram. In the **Connections** tab in **Other Elements** window, the Class of ‘Crown Allotment’ is selected and the abutting boundary lines of the crown allotment and the SPI are selected on the diagram.



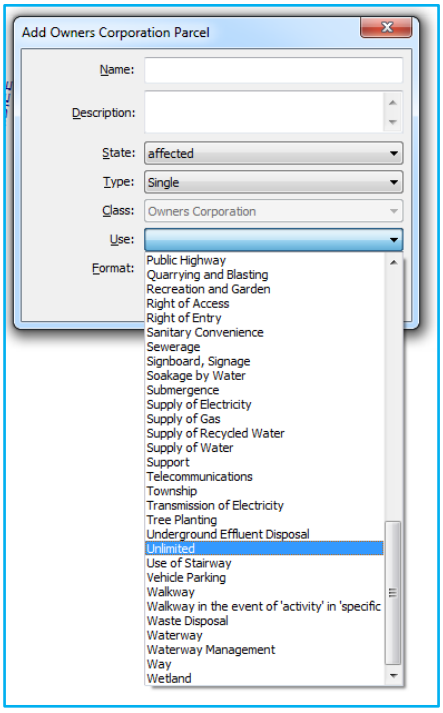
Abutting Administrative Boundary (Municipal Boundary)

If lots on a plan are in more than one municipality or very close to the municipal boundary, it is expected that the abutting administrative areas are defined. In the example below, lot 1 is in Parish of MOUYONG and lots 2 and 3 are within Parish of WERRIBEE. The Parish names have been created on the diagram using **Text by Freehand** tool. In the **Connections** tab in **Other Elements** window, the Class of ‘Administrative Area’ is selected and the abutting boundary line(s) of the MOUYONG parish and its name are selected on the diagram. This is also done for WERRIBEE parish.



4.3.3 Other Elements | Owners Corporations

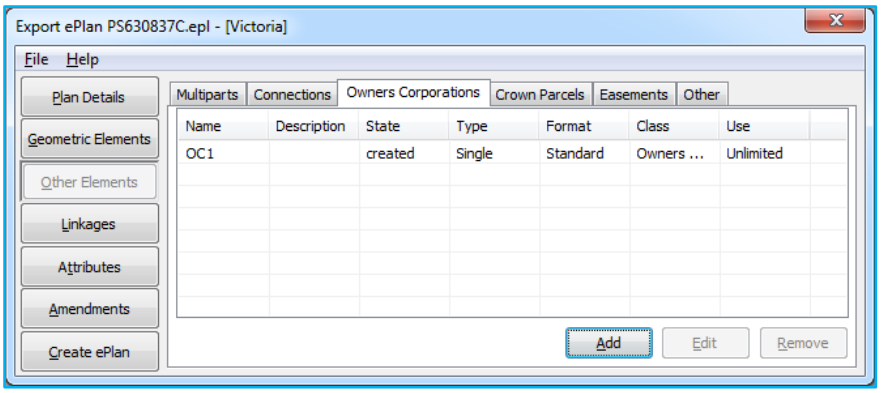
If the plan contains Common Property, an Owners Corporation Schedule should be created. There are 3 components to create the Owners Corporation Schedule.



Create Owners Corporation Entity

The OC entity must first be created in the **Owners Corporation** tab (under the **Other Elements** window). The OC name is the number of the OC. It can be prefixed with letters to help identify it in the linkages screen, e.g. 'OC1' or 'Owners1'. Do not use spaces or symbols.

- **Description** (Optional) Used to enter a long name.
- **State** is always 'created'.
- **Type** is always 'Single'.
- There are 3 OC usages in the **Use** drop down. They are 'Unlimited', 'Limited' and 'Limited to Common Property'.
- **Format** is always 'Standard'.

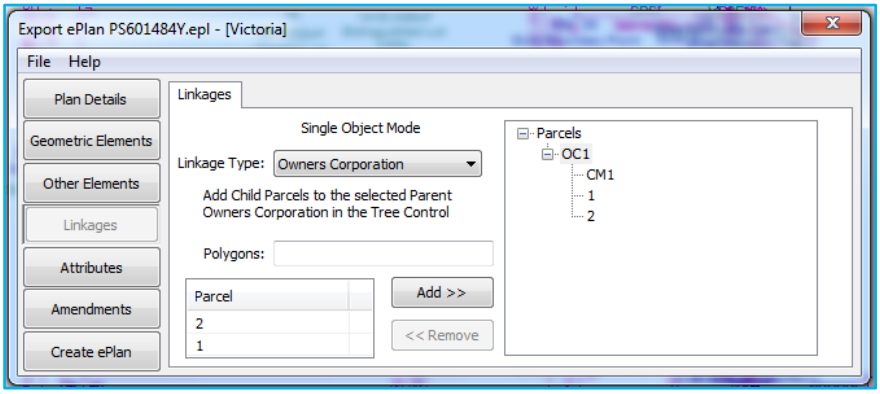


Owners Corporation Linkages

Once the OC entity is created, it must be linked to the lots and common property that comprise the OC. This is performed in the **Linkages** tab under the **Owners Corporation Linkage** type. Simple plans with 1 OC will be automatically linked by LISCAD. However, you can manually add and remove parcels as required.

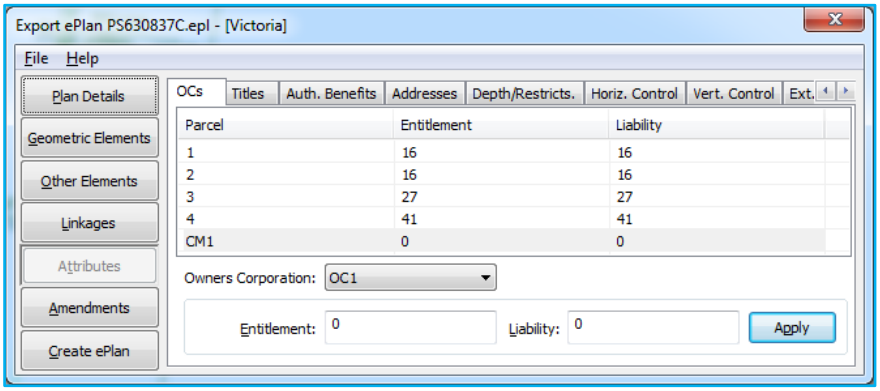
To add a list of parcels, enter their LISCAD polygon numbers into the **Polygons** field separated by a space. Then click '**Add'**. Polygon numbers and their corresponding parcel ID can be found in the **Geometric Elements** tab.

When adding a multipart parcel to an OC, enter the polygon number of 1 of the parts only. This will automatically assign the entire multipart to the OC.



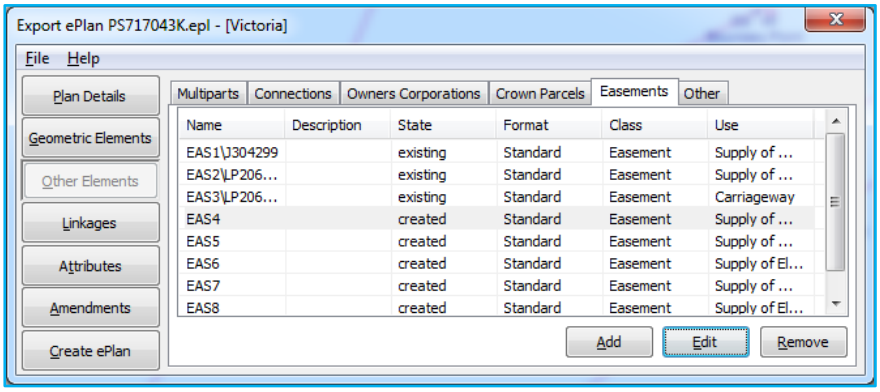
Entitlement and Liability Apportionment

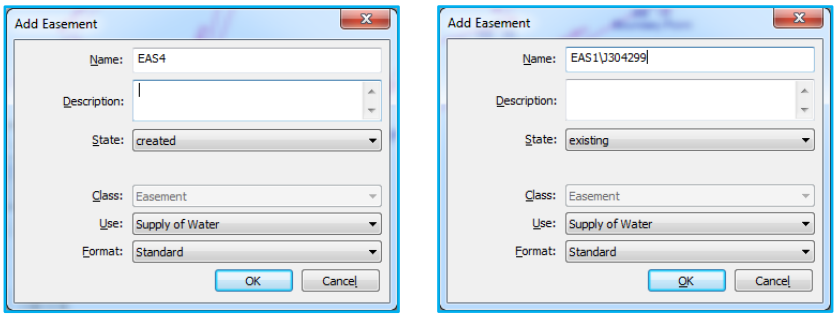
The final step to creating an OC is to assign the entitlement and liability apportionment values to the member lots. This is done through the **Attributes** screen. Select the OC if there is more than 1, click on each parcel and set the values in the form below. The common property parcel **must** have its values set to '0'.



4.3.4 Other Elements | Easements

In this tab, for each unique combination of **purpose/origin/land benefitted** a Standard/2D Building easement should be defined. For existing, extinguished or affected Standard/2D Building easements, **Name** must contain the complete SPI of the easement (specified as 'EAS#\Origin Plan Number'). However, for created easements, **Name** is specified without any SPI ('EAS#'). The format of easements must be selected as 'Standard' or '2D Building'.





4.3.5 Other Elements | Other

Text Only Restrictions

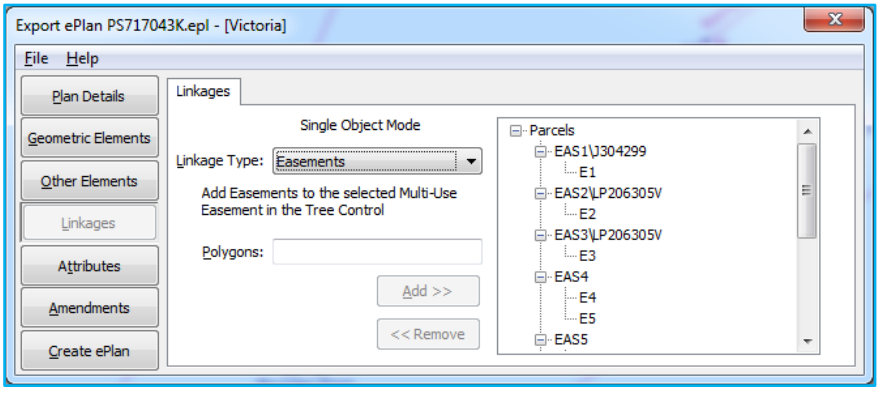
Text only restrictions can be created using the **Other** tab under the **Other Elements** window. A **Type** of 'Single' should be used in all cases. Once created, these parcels must have their appropriate linkages created in the **Linkages** window.

4.4 Linkages

In this Section, the method used for linking the geometry easements to a Standard/2D Building, beneficiaries to a Standard/2D Building easement and benefit/burden to a restriction is described.

4.4.1 Linkages | Easements

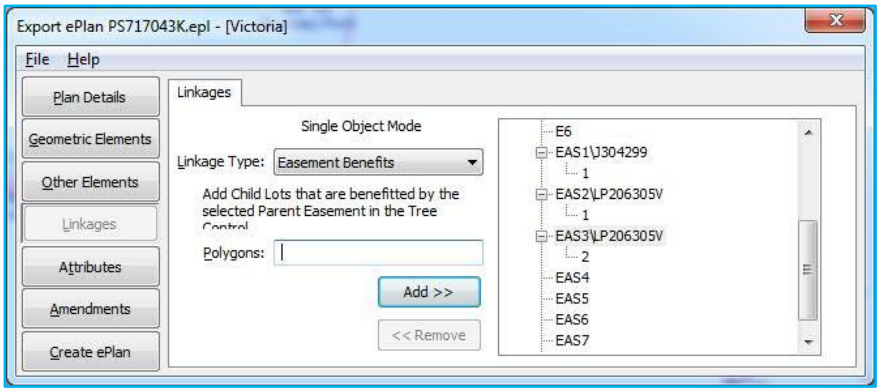
This tab is used to link the geometry easements drawn in the diagram to Standard/2D Building easements created in Section 4.3.4 Other Elements | Easements. The following figure shows an example of this.



4.4.2 Linkages | Easement Beneficiary

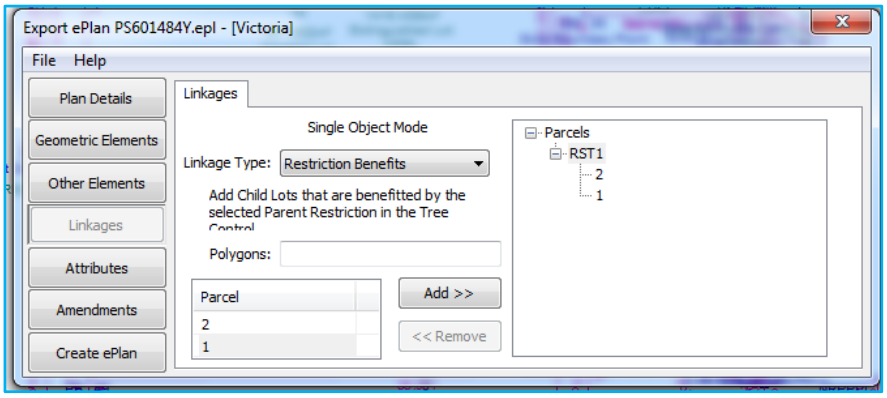
To define lots on the plan as beneficiaries to Standard/2D Building easements (specified as 'EAS-#'), they must be linked through the **Linkages** window. To define all land in the plan as benefiting, the polygon numbers of all parcels must be added as a linkage.

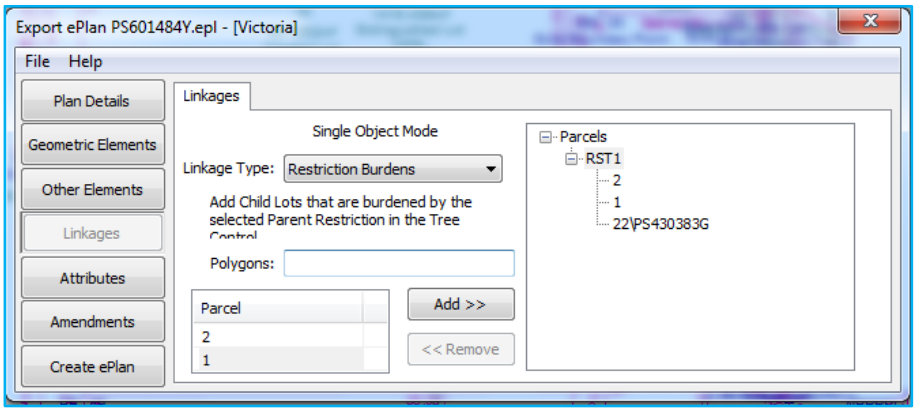
Multiple polygon numbers must be separated by a space. To find corresponding polygon numbers using parcel IDs, go to the **Parcels** tab under the **Geometric Elements** window.



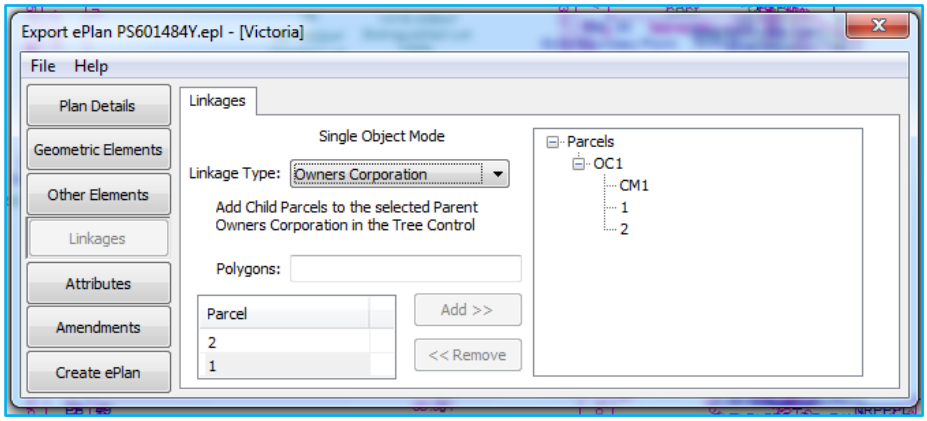
4.4.3 Linkages | Restriction Benefit and Burden

Benefiting and burdened lots are defined by linking the associated parcels in the **Linkages** window. Multiple polygon numbers must be separated by a space. To find corresponding polygon numbers using parcel IDs, go to the **Parcels** tab under the **Geometric Elements** window.





If there is an Owners Corporation, you need to link the lots to the Owners Corporation (including spatial and non-spatial parcels).

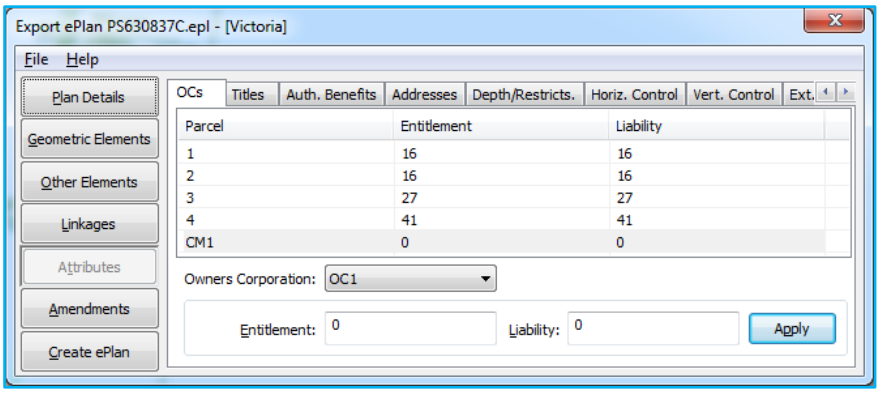


4.5 Attributes

The **Attributes** window allows additional information to be recorded against parcels and should be filled in where applicable.

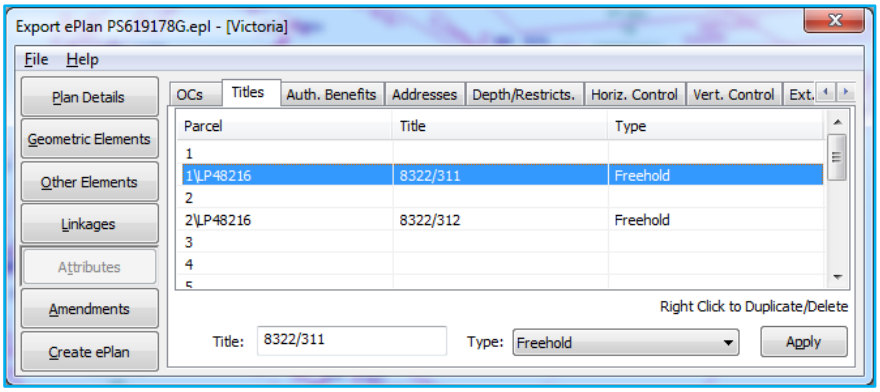
4.5.1 Attributes | OCs

In the Owners Corporation tab, the entitlement and liability values are assigned to the member lots. Select the OC if there is more than 1, click on each parcel and set the values in the form below. The common property parcel **must** have its values set to '0'.



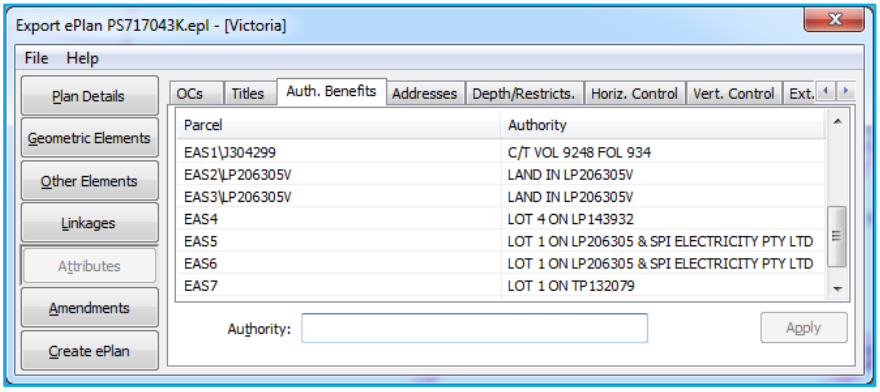
4.5.2 Attributes | Title References

Title references are recorded against every extinguished parcel. To record title references, go to the **Titles** tab under the **Attributes** window and select a parcel entry from the list to add title information to. Enter the VOTS volume and folio number, select the title type and click '**Apply**'.



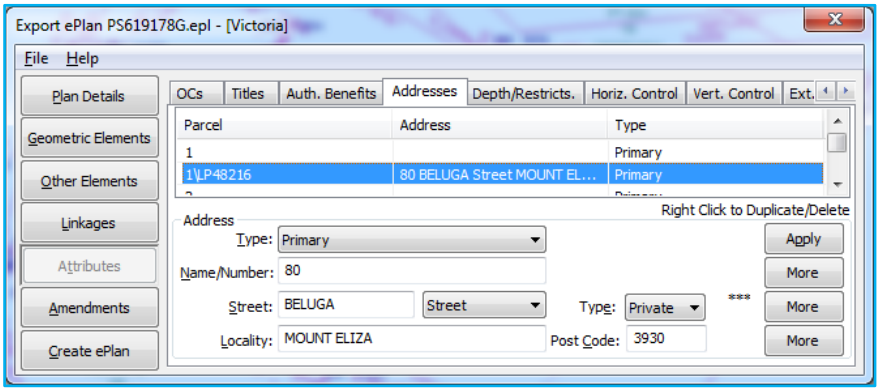
4.5.3 Attributes | Authority Benefits

To add vesting authorities against roads and reserves, and to add authority beneficiaries against easements, use the **Authority Benefits** tab under **Attributes**. Select the parcel to add the authority to, type the authority name into the **Authority** field and click '**Apply**'. Any **Easements** or **Lots on a Plan** can be specified in the authority field.

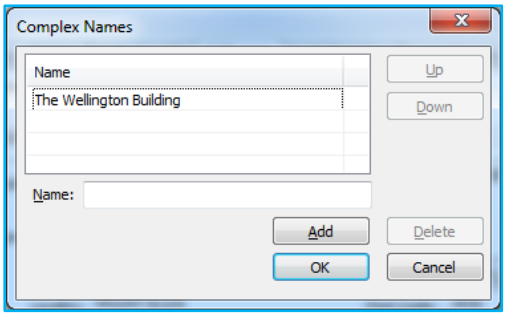


4.5.4 Attributes | Parcel Addresses

Street addresses for parcels are entered through the **Addresses** tab under the **Attributes** window. Select the parcel from the list to add an address to and fill in the form.



The **Name/Number** field is a multipurpose field that records unit number, flat number, street number or range and the number suffix. The following is an example of the complete usage of the field.



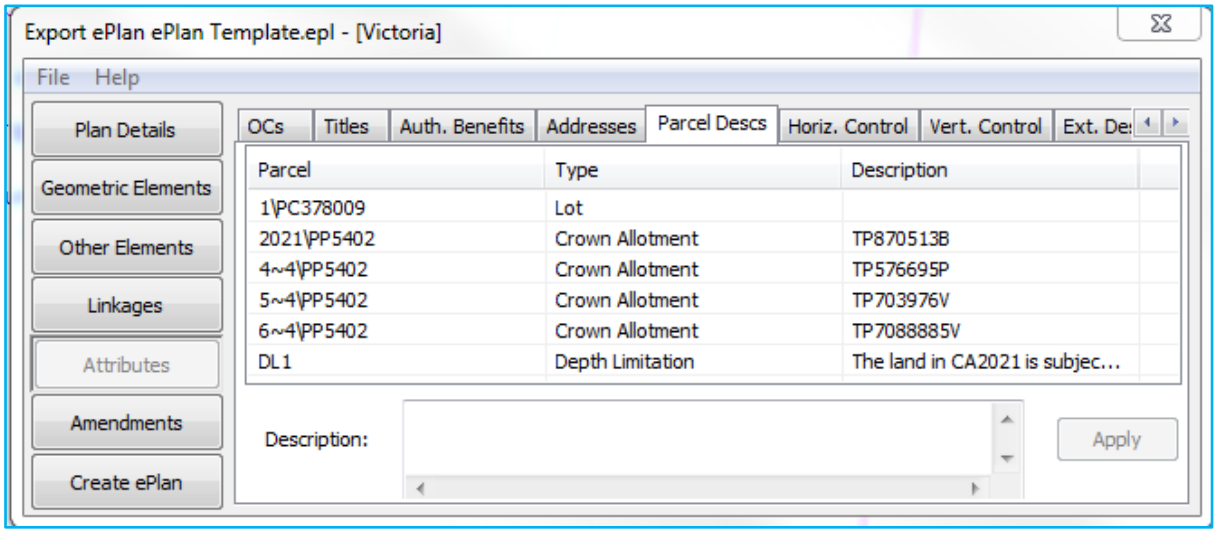
Unit 25 Floor 4 45A-49B

This equates to unit 25 on floor 4 for the building in street number range 45A to 49B. Simply omit the unneeded components when entering the name/number for your address.

If a building or complex name is required, click the first '**More'** button to reveal the **Complex Name** dialog. Type the name of the building and click '**Add**'.

4.5.5 Attributes | Parcel Description

Any parcel like Crown Allotment, Lot, and Restrictions parcels, created by drawing a polygon on the diagram, can have their description entered in the ePlan add-on under the **Attributes→Parcel Descs** tab. All the parcels other than Roads and Administrative Areas drawn on the diagram will appear in the list where their descriptions can be edited.

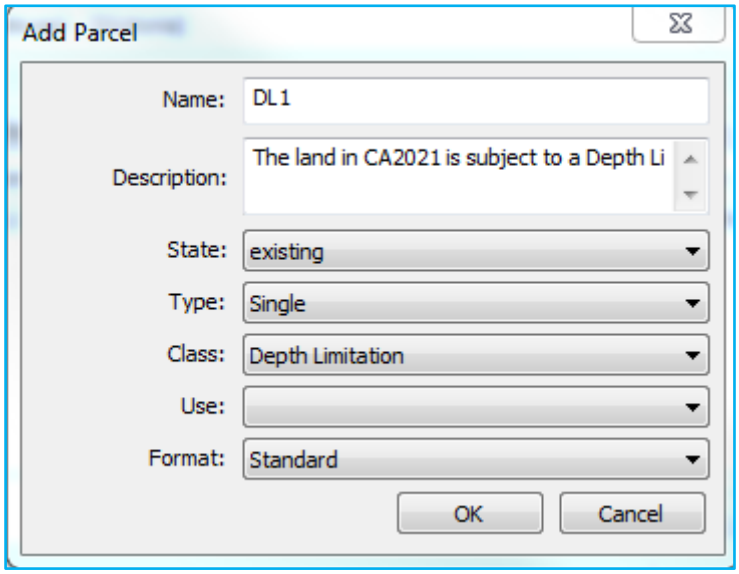


NOTE: For those plans that have extinguished Crown Allotment, the ePlan Visualisation Service, by default shows the name of Parcel as Last Plan Reference. You may need to show a TP plan number as the Last Plan Reference. In this case, you can enter a description with TP plan number. Then the ePlan Visualisation Service replaces the Parcel name by the Description. This logic works for Crown Allotment and Reserves.

Depth Limitations

Depth Limitation is a type of restriction that originates from the original crown grant. It is classically captured as a notation on the plan but in ePlan is captured as a non-spatial parcel. The format for the name of a depth limitations is: DL [#], e.g. DL1

To create a non-spatial depth limitation, go to the **Other** tab under the **Other Elements** window of the ePlan Export Tool. Click '**Add'**, fill in the attributes and click '**OK**'.

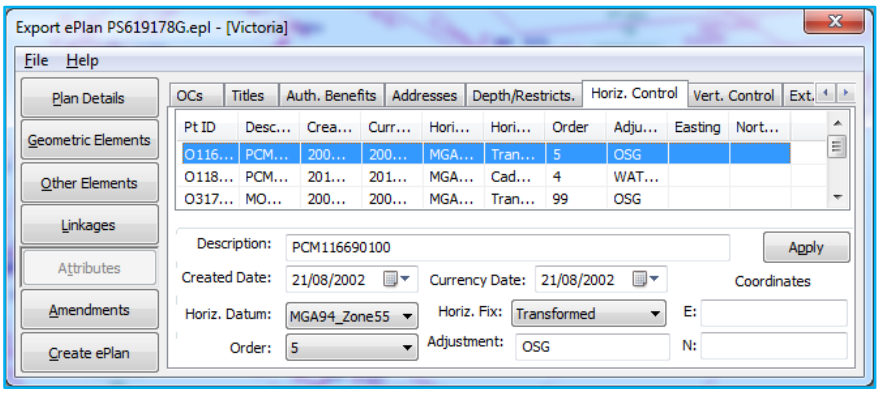


4.5.6 Attributes | Horizontal and Vertical Control

The horizontal and vertical control tabs capture Permanent Mark and PCM attributes. All PM and PCM coded points will appear in the list. If the ePlan has not been prefilled from a digital data download, the information will be filled in manually from a SMES report. The table on the right translates the LISCAD field names to the SMES report field names.

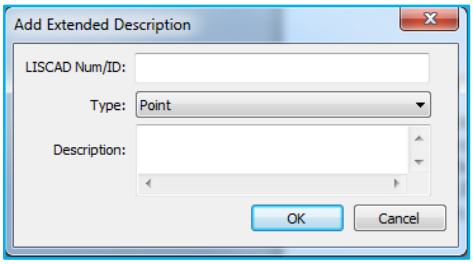
The mark number and status are based on the code assigned to the point (see Section 3.1.1 Capturing Permanent Marks (PMs) and Primary Cadastral Marks (PCMs).

LISCAD	SMES Report
Description	Official Mark Name
Created Date	Coordinates Date
Currency Date	Date Last Used
Horiz. Fix/Vert. Fix	Technique
Adjustment	Source



4.5.7 Attributes | Extended Description

A description attached to a LISCAD feature (point, line or polygon) can only be a maximum 32 characters long; sometimes, especially for Restrictions, this is not long enough to hold the required data. Therefore, if you need to add a longer description for ePlan purposes, this tab allows that to happen. The **Number** is the LISCAD number, the **Type** is either Polygon, Point or Line and the **Description** is what you want it to be.



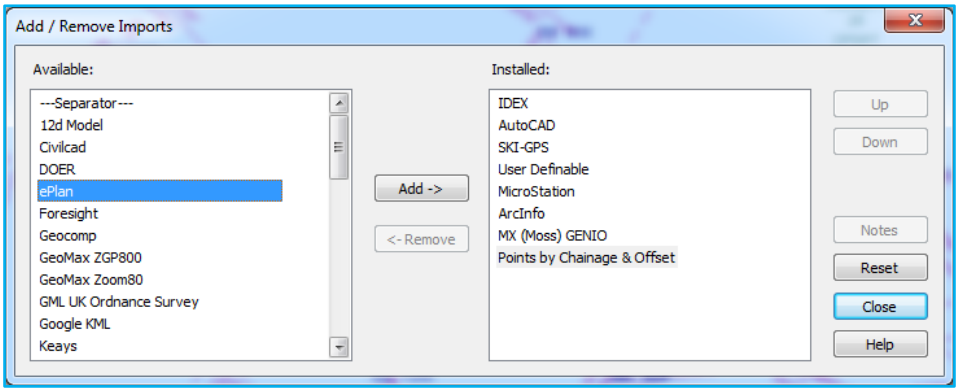
5. ePlan Import Tool

One of the key benefits of ePlan to the surveying industry is improved access to survey information in readily usable format. ePlan can facilitate the construction of surveys by pre-populating the previous surveys' information including parcellation and metadata (e.g. administrative areas, datum, location addresses, survey marks information, road abuttals, etc.).

LISCAD includes an **ePlan Import Tool** which supports the import of both ePlan and Cadastral Infrastructure Search (CIS) file. CIS is the digital data file in ePlan format downloaded from LASSI – SPEAR.

5.1 Setting up the ePlan Import Tool

The ePlan Import Tool is in **(Task→Data Conversions) Import→ePlan**. To add the tool after a fresh installation, select **Import→Add/Remove Imports**, select '**ePlan**' and click '**Add**'.



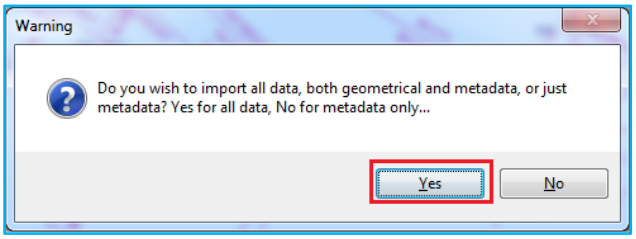
The following sections explore the scenarios for importing ePlan/CIS files into LISCAD.

5.2 Starting a New Survey with Available Survey Information

This scenario is recommended when you want to use the available ePlan files of the previous surveys or the CIS file downloaded from LASSI – SPEAR, to pre-populate the base information (including the parcellation and metadata) for constructing the survey.

To import an ePlan or a CIS file into LISCAD complete the following steps:

1. Generate a new SEE file in LISCAD using **File→New** and set the File name and Projection (MGA94 or MGA2020).
2. Import the xml file using ePlan Import Tool **(Task→Data Conversions) Import→ePlan**.
3. Click 'Yes' in the popup window to import both parcellation and metadata.



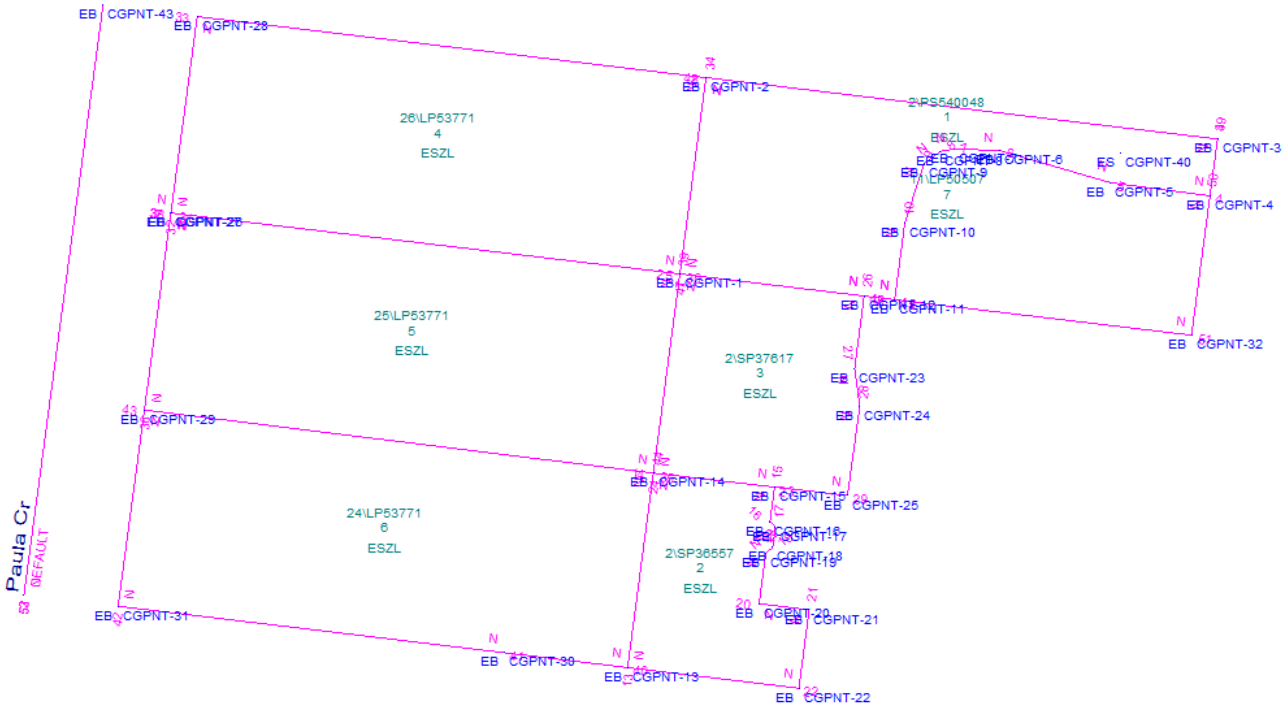
Once the file is imported successfully, the system shows another popup window to advise that an EPL file including metadata has been created for the SEE file.

NOTE: The EPL file is created in the same folder that SEE file has been created in Step 1.

4. Display the required attributes of points, lines and polygons that need to be exported to ePlan (according to Section 2.6 Display Features and Groups).

If a CIS file is imported, you will be able to see the following features in the diagram:

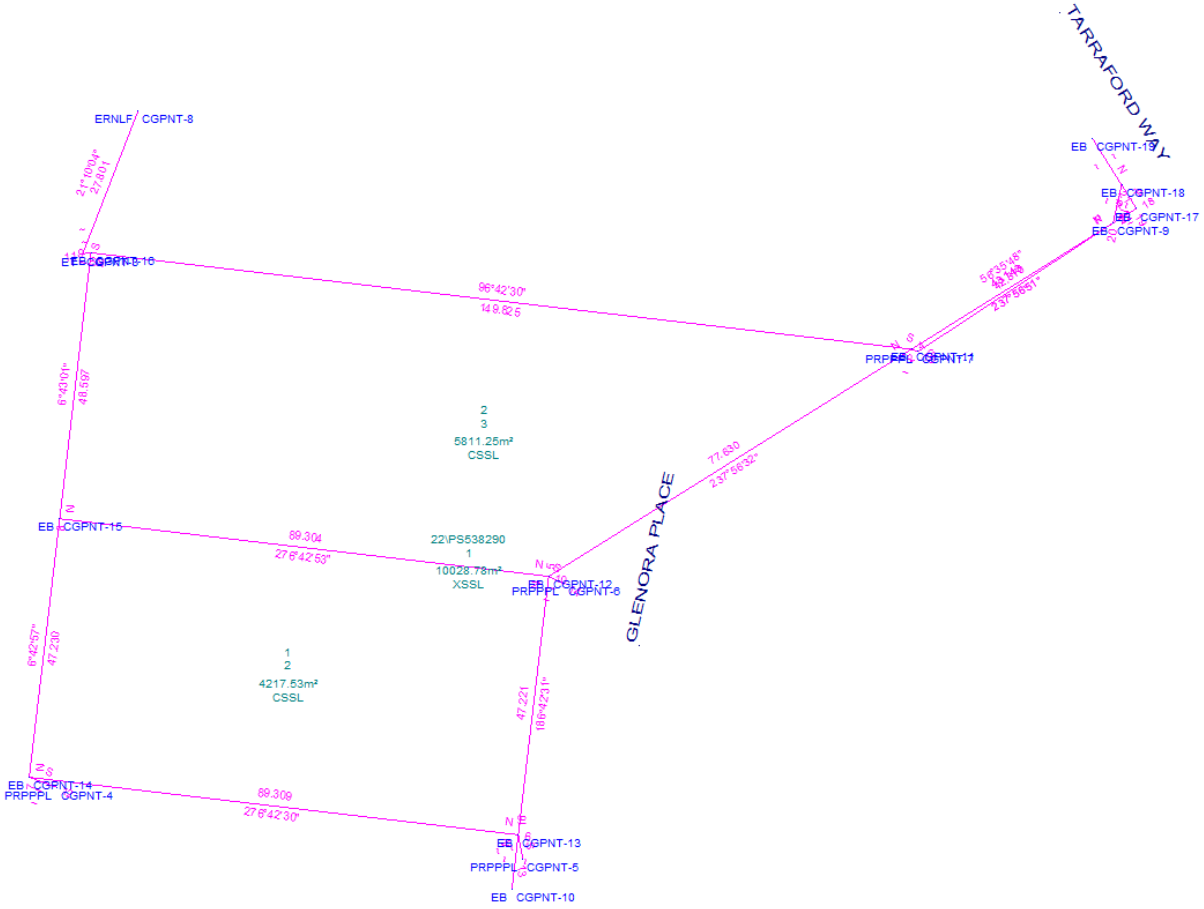
- Points with ePlan-LISCAD compliant coding and appropriate point identifier for PM/PCM
- Monuments
- Boundary lines with ePlan-LISCAD compliant coding
- Road abuttals
- Parcellation (lots, common properties, roads, reserves and crown parcels) with ePlan-LISCAD compliant coding
- Descriptions (Standard Parcel Identifier (SPI))
- Road names



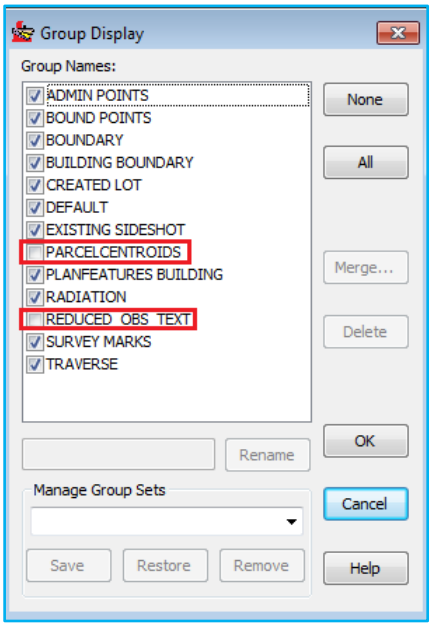
However, if an ePlan file is imported you will be able to see more information as follows:

- Points with ePlan-LISCAD compliant coding and appropriate point identifier for PM/PCM
- Monuments with ePlan-LISCAD compliant coding
- Boundary lines with bearing, distance and ePlan-LISCAD compliant coding
- Traverses and radiations with bearing, distance and ePlan-LISCAD compliant coding
- Road abuttals

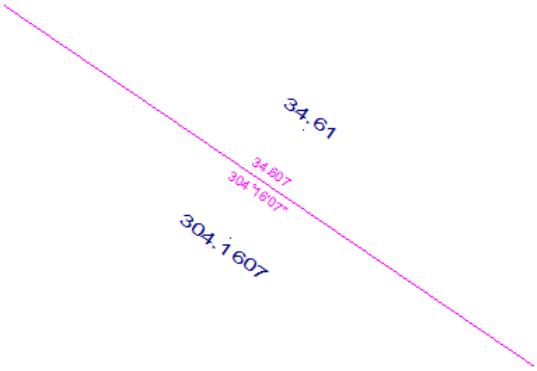
- Parcellation (lots, roads, reserves, common properties, crown parcels, easements, and restrictions) with ePlan-LISCAD compliant coding
- Descriptions (Standard Parcel Identifier (SPI))
- Road names



NOTE: When an ePlan is imported, two groups are created which are not visible by default. The first group is named 'PARCEL CENTROIDS' and includes the centroids of parcels in the original ePlan which has been imported. After import, a new centroid is generated automatically for each parcel by LISCAD. The second group, 'REDUCED OBS TEXT' includes the bearings and distances of observations in the original ePlan which has been imported. These two groups have been provided for comparison.



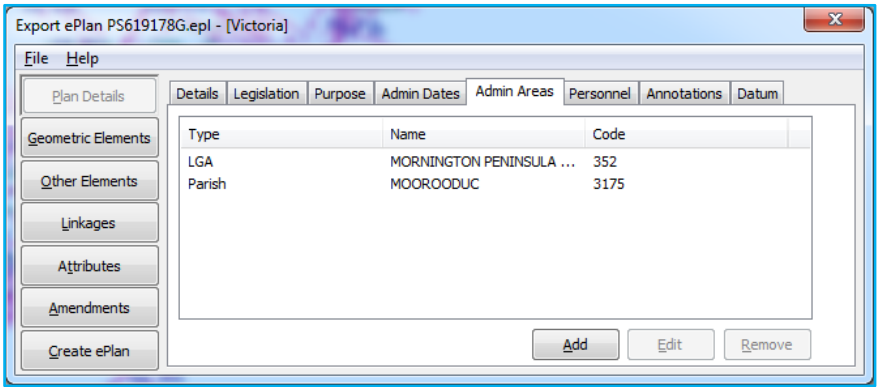
By turning on the 'REDUCED OBS TEXT' group, you would be able to compare the bearings and distances of imported observations with the corresponding values in the original ePlan. Texts in blue show the original bearing and distance of an observation in figure below.

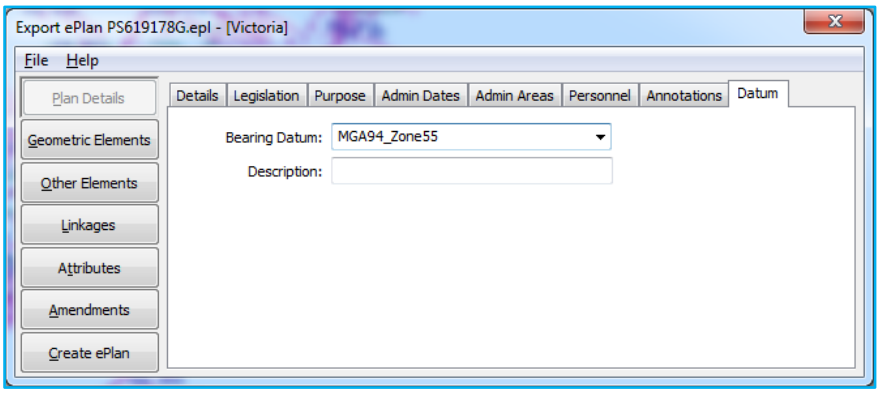


5. Review the created EPL file using **(Task→Data Conversions) Export→ePlan**, in case you would like to use the pre-populated metadata in addition to the parcellation.
6. You will be able to see and review the metadata which are pre-populated from imported ePlan/CIS as follows:

Plan Details Window

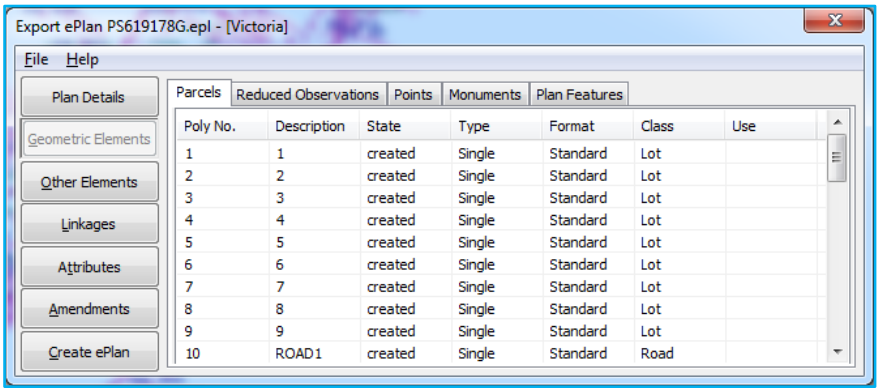
- Details, Legislation, Purpose, Administrative Areas, Personnel, Annotations and Datum for imported ePlan
- Administrative Areas (LGA, Parish, etc.) and Datum for imported CIS



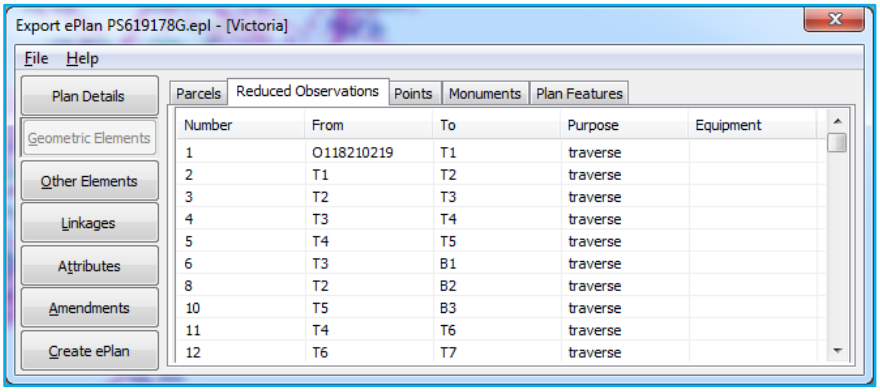


Geometric Elements Window

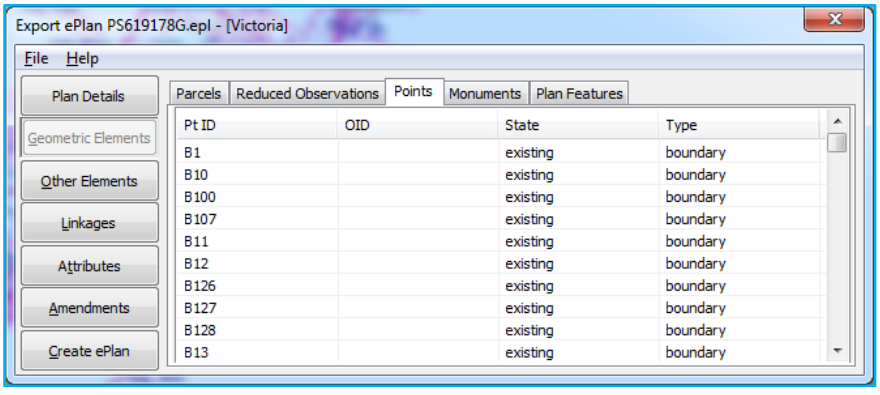
- Parcels information (for both imported ePlan and CIS)



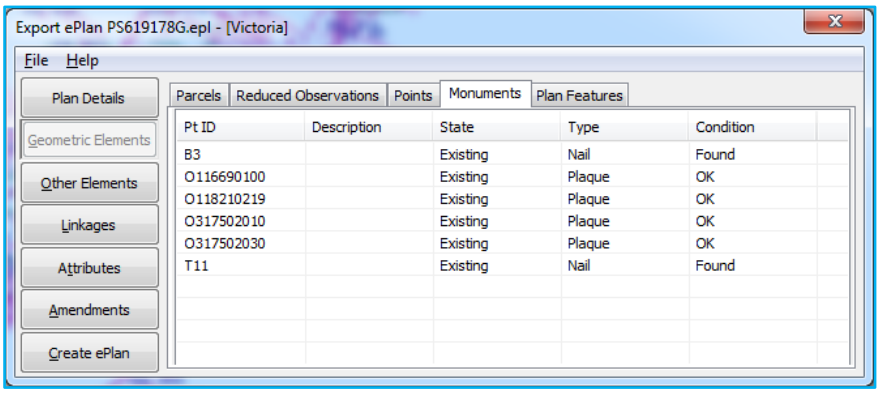
- Reduced Observations (only for imported ePlan)



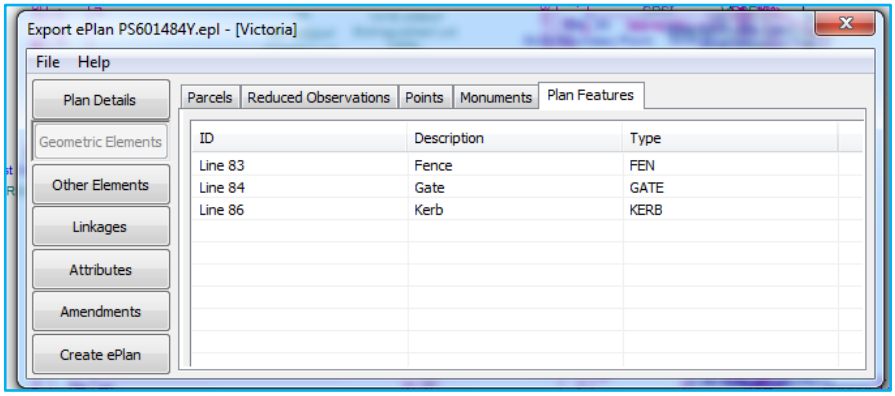
- Points information (for both imported ePlan and CIS)



- Monuments information (for both imported ePlan and CIS)

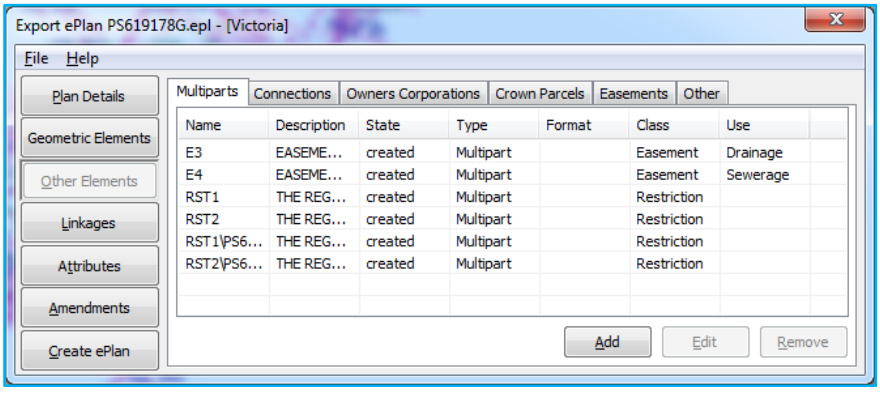


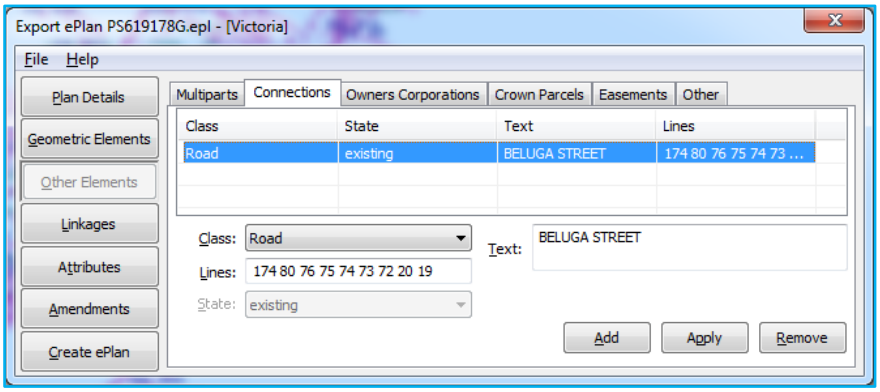
- Plan Features (only for imported ePlan)

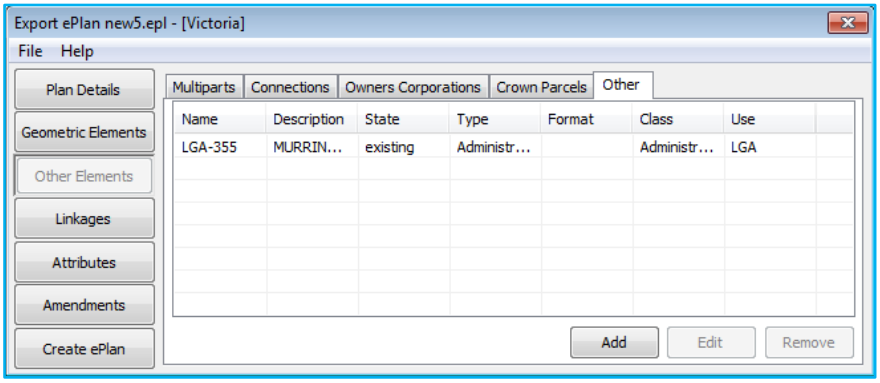


Other Elements Window

- Multiparts, Connections (abuttals), Owners Corporations, Crown Parcels, Easements and Other for imported ePlan
- Multiparts, Connections (abuttals) and Other for imported CIS

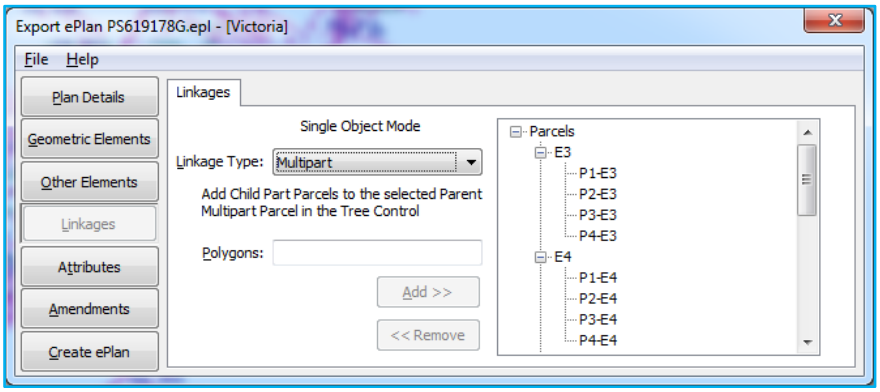






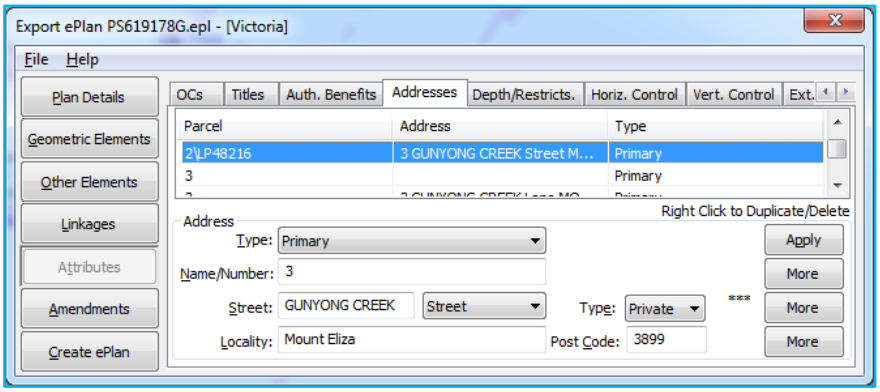
Linkages Window

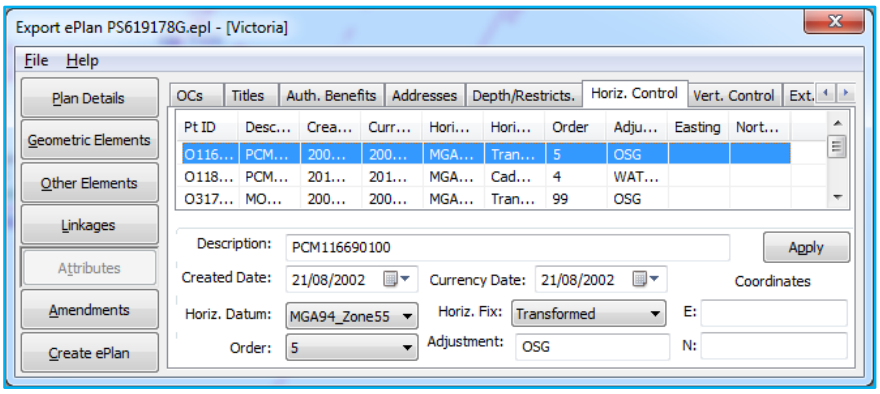
- Multipart, Owners Corporation, Easement, Restriction Benefit/Burden, etc. for imported ePlan
- Multipart for imported CIS



Attributes Window

- Owners Corporations Schedule, Titles, Easements Authority Benefits, Location Addresses, Parcel Description, Horizontal and Vertical Survey Marks' information for imported ePlan
- Location Addresses, Horizontal and Vertical Survey Marks' information for imported CIS



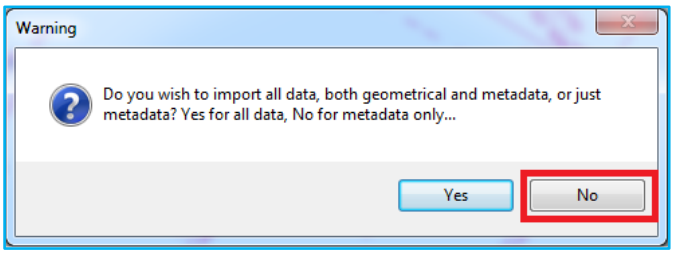


Step 6 – construct your survey using the pre-populated data in both diagram and ePlan Export Tool environments.

5.3 Pre-populate Known Metadata Based on Provided Survey Information

This scenario is recommended when you have drawn the diagram (SEE file) and want to add some of the required metadata from a CIS file and convert SEE file to an ePlan. To import a CIS file to your SEE file, follow the steps below:

1. Open the SEE file that you want to convert to ePlan
2. Import the CIS file (in xml) to LISCAD using ePlan Import Tool
3. Click 'No' in the popup window to import metadata only.



Once the file is imported successfully, the system shows another popup window to advise an EPL file including metadata has been created for the SEE file.

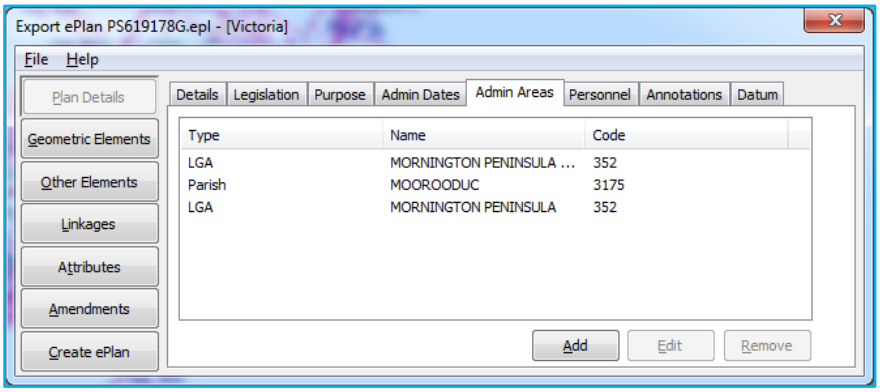
NOTE: The EPL file is created in the same folder that SEE file exists.

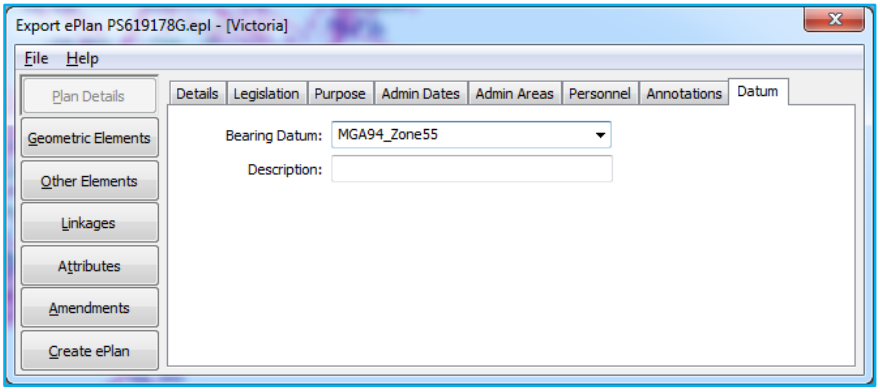
4. Review the created EPL file using (Task→Data Conversions) Export→ePlan.

In this step, you will be able to see and review the metadata which is pre-populated from imported CIS, as following:

Plan Details Window

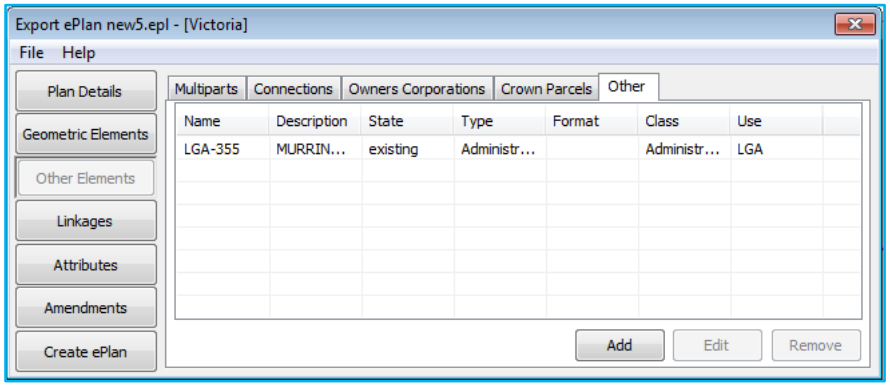
- Administrative Areas (LGA, Parish, etc.) and Datum





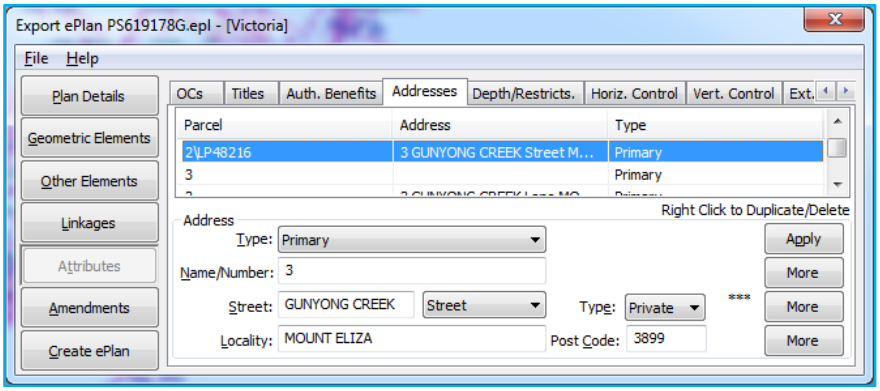
Other Elements Window

- Other (non-spatial parcels for admin areas)

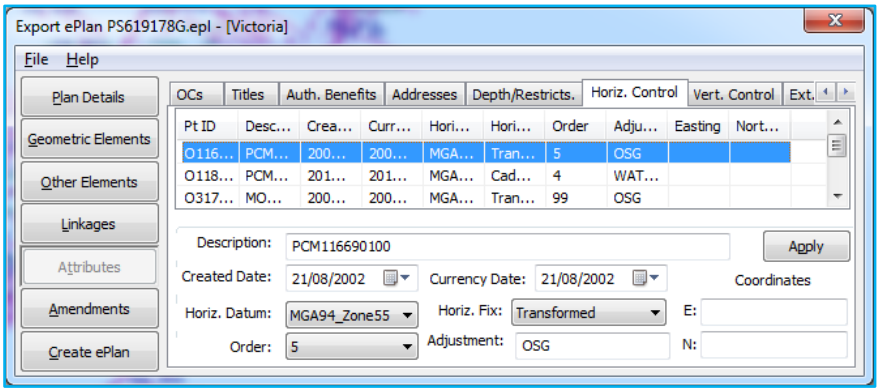


Attributes Window

- Location Addresses (for any parcel in diagram of which its SPI matches the parcel SPI in imported CIS)



- Horizontal and Vertical Survey Marks' information (for any survey mark in diagram of which its oID matches the oID of survey marks in imported CIS)



NOTE: The ePlan Import Tool compares the SPI of parcels and the oID of PMs/PCMs in both diagram and imported CIS file and matches the consistent features to import and assign metadata.