

Specialised Data Specifications

Section 3 – Master Site Plan Dataset

Not GEMS Geo-enabled	
GEMS Geo-enablement Planned	
Content GEMS Geo-enabled	✓

3 MASTER SITE PLAN DATASETS

Summary of changes with the Introduction of GEMS:

1. New or updated features must be attributed with their Estate Business Identifier (EBI) via AutoCAD Extended entity data (XData).

3.1 Scope of Specification

3.1.1 The specification covers the capture and update of the Master Site Plan Dataset that E&IG collects for Defence Properties, including Training Areas. The Master Site Plan Dataset stores the position of infrastructure and asset features as listed in Table 3-1 and is a E&IG Key (or Foundation) Spatial Dataset upon which other spatial data is developed and referenced.

Table 3-1 Scope of Master Site Plan Data

Feature Descriptions	
Air Conditioning Services	Road Features
Airport Infrastructure	Security Services
Compressed Air Services	Sewerage Services
Communications Networks	Steam Services
Stormwater Drainage	Structures
Electricity Services	Survey Features
Fire Services	Topographic Features
Fuel Services	Traffic Features
Gas Services	Vegetation
Oxygen Services	Water Features
Property Features	Water Reticulation

3.1.2 This dataset is used to manage and maintain existing infrastructure, to plan new infrastructure on properties, and as a basis for the capture of Land Management data. A sample of data from a Master Site Plan Dataset is shown in Figure 3-1.

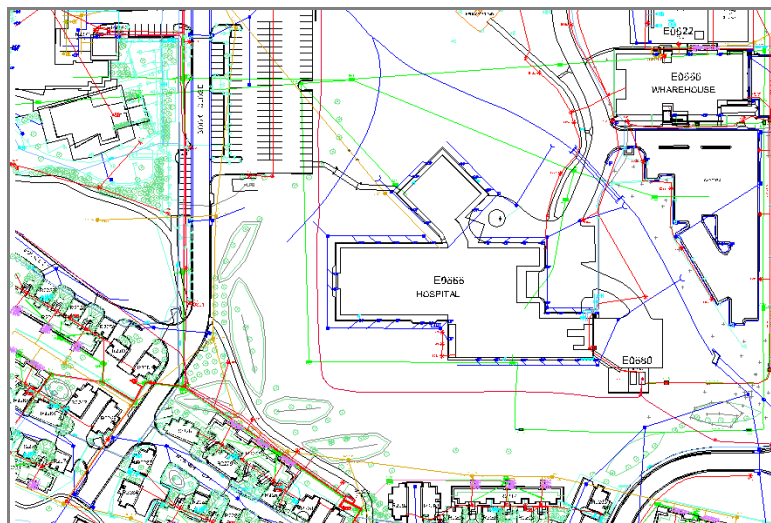


Figure 3-1 Master Site Plan Dataset - example data

3.1.3 The Master Site Plan data is collated from as-constructed design certified drawings and verified through an Engineering Detail Survey and is accurate to ± 0.05 m. To maintain the integrity of the data source the Master Site Plan Dataset must be updated to remain current and must be collected to the nominated accuracy.

3.2 Deliverables

3.2.1 The following deliverables shall be provided:

- A dataset containing Master Site Plan data for all features that have been created or updated.
- A separate dataset shall be provided for each Defence Property.
- Metadata record for each Master Site Plan Dataset.

3.3 Deliverable Templates

3.3.1 A dataset template in AutoCAD and an AutoCAD file containing sample data is available on the Defence Estate Quality Management System at the following location:

<http://www.defence.gov.au/estatemangement>

3.4 Data Deliverable Specification

3.4.1 Data Format

3.4.1.1 Data shall be delivered in either:

- AutoCAD Drawing format. A detailed data specification is documented in Appendix G respectively. It is recommended that the deliverable templates are used as the basis of creating Master Site Plan Data.
- An alternate GIS data format is currently being developed. Users wishing to utilise this data format should contact GEMS & Business Transformation.

3.4.2 Data Accuracy

3.4.2.1 The Master Site Plan Dataset shall have a horizontal and vertical accuracy of ± 0.05 m.

3.4.3 Engineering Detail Survey – Data Capture Requirements

3.4.3.1 Detail survey shall include all significant infrastructure and asset features from the building line out.

3.4.3.2 Structures and buildings capture shall include the external walls of the building, the roofline and the height of the roofline shall be captured.

3.4.3.3 Kerbs capture shall include the kerb profile, top and lip levels at tangent points, changes of direction and grade, and changes in kerb type shall be

captured. Maximum 25 m intervals on straights and large radius bends, and at nominal 5 m intervals on small radius bends.

- 3.4.3.4 Storm water and sewerage capture shall include manhole surface shape, perimeter levels and invert levels, and the size and direction of pipes shall be captured. Any change in direction of the pipes shall be recorded.
- 3.4.3.5 Underground Cables / Conduits capture shall include a single polyline which shall be used to delineate the location of the cables and shall include any change in direction.
- 3.4.3.6 Concrete lined drains and other surface drainage structures e.g. drop structures capture shall include detail survey at 25 m intervals for long runs.
- 3.4.3.7 Road furniture and line-marking capture shall include edge lines to define existing carriageway widths.
- 3.4.3.8 Trees with a trunk diameter greater than 0.2 m shall be located and the type, trunk diameter and the spread defined. The diameter of the trunk shall be measured 1 m above natural surface level. Trees shall be represented to scale, with spot heights, diameter, species and height to be shown as text in the drawing.
- 3.4.3.9 Readily observed information regarding features and services shall be noted such as the size/diameter of culverts and lines between power poles.

3.5 Specific Data Requirements

3.5.1 Estate Business Identifiers

- 3.5.1.1 Appendix G – Master Site Plan Dataset AutoCAD Standards contains specific requirements for attribution of features with Estate Business Identifiers (EBI) to provide a linkage with SAP and Objective records.

3.5.2 Topology Specifications

- 3.5.2.1 Data must be captured so that it can be used within a GIS topological model of points, lines, and polygons that can then be linked to a database.
- 3.5.2.2 The SDMP specifications were initially designed to meet CAD software requirements where the data and information is designed to provide a detailed drawing providing a good picture (rendering) of the data. Although the data and information in a CAD file consist of symbols, points, lines, and poly-lines these elements are referred to as simple features and do not have any topology or link to a database.
- 3.5.2.3 A topologically structured GIS supports feature (object) relationships which enables the GIS to perform advanced analysis of the data such as determining the best route from point A to point B as is commonly performed by in-car navigation systems. Capturing data using the topology specifications will support the ability to perform spatial analysis (network analysis) on connecting or adjacent features such as points, lines and polygons.

3.5.3 Topology Guidelines

- 3.5.3.1 The following features shall be collected in accordance with the topology requirements defined within Section 2 of this document.

Polygons:

- Buildings

Linework:

- Storm Water/Drainage
- Sewage pipelines
- Water Supply pipelines
- Communication cables
- Electricity cables
- Gas pipeline
- Fuel pipelines
- Fire water pipelines

Points related to:

- Storm Water/Drainage
- Sewage

- Water Supply
- Communications
- Electricity
- Gas
- Fuel
- Fire water infrastructure

Text related to:

- Storm Water/Drainage
- Sewage
- Water Supply
- Communications
- Electricity
- Gas
- Fuel
- Fire water infrastructure