

# Guidelines for submission of CAD files to URA

## Table of Contents

### ➤ General

### ➤ File Naming

- File Naming Standards for EDA Submissions

### ➤ Proposal Plan

- Format Of Endorsement For Drainage Interpretation And Road Line
- Endorsement For Owner Consent
- List of layers to be included in the Proposal Plan

### ➤ Sketch (Floor, Section & Elevation) Plan

- List of layers to be included in the Sketch (Floor, Section & Elevation) Plan

### ➤ Calculation Plan

- Sample of a summary of GFA breakdown by floors
- List of layers to be included in the Floor Plans For GFA calculation

### ➤ Proposal/Diagrammatic Plan for Subdivision of Lands/Strata Subdivision of Buildings

- Declaration And Endorsement by Surveyor
- List of layers to be included in the Proposal/Floor for Subdivision of lands/Strata Subdivision of Buildings

### ➤ Landscape Plan

- Submission requirements

### ➤ Proposal Plans for Works to Conservation Building

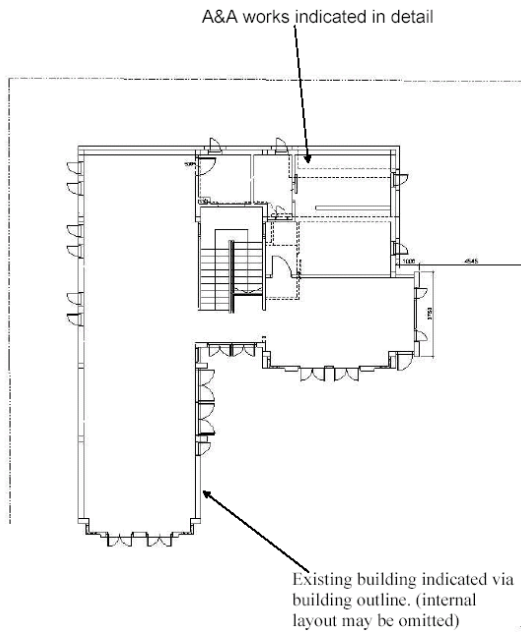
- Format of Architect's endorsement
- Format of Engineer's endorsement

## General

1. Each CAD file contains only one title block.
2. "Limit" of the drawing in each CAD file matches the boundary of the title block (i.e. no information is included outside the title block).
3. "Last saved view" of the CAD files covers only the title block and information within it.
4. "Maximum Extents" view should be shown in the "Last saved view".
5. No external reference files should be referenced by the CAD files submitted (i.e. The external reference files, if any, should be binded before submission).
6. No raster images should be attached to the CAD file submitted.
7. "Draft Work"/Construction lines should not be included in the CAD files submitted.
8. Hatch pattern in CAD files should be kept to minimum.
9. No proprietary fonts should be used.
10. All layers except layers on area calculation should be set to "on" in the "last saved view".
11. Same CAD files (with changes incorporated to comply with the requirements) should be used in resubmission (i.e. no shifting of co-ordinates in the re submitted files).
12. Format of CAD layer as indicated in Singapore CAD layering standards (CP83 part 1) should be used.
13. No hidden CAD layers should be included in the CAD files.
14. For "Additions and Alterations" or Amendment proposal, the following colours should be used:

<b>Usage</b>	<b>Colour</b>	<b>DWG Colour Code</b>	<b>DGN Colour Code</b>
Proposed /Additional Elements	Magenta	6	5
Existing /Approved Elements	Cyan	4	7
Deleted Elements	Yellow	2	4

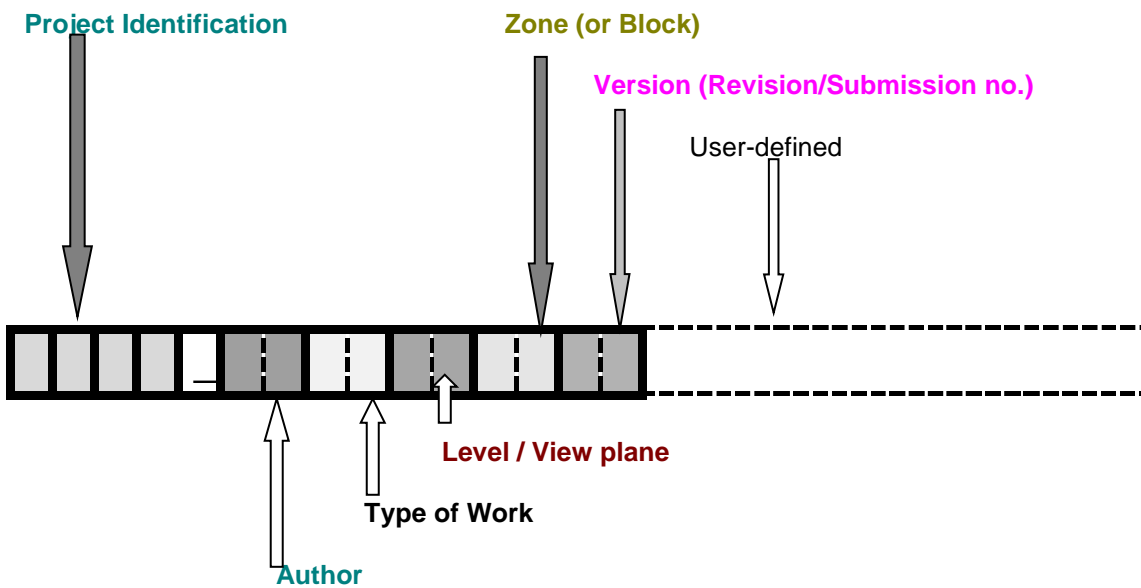
15. Except for development applications that require the re-computation of the gross floor area for the entire development, all other development applications and lodgments for addition and alteration works can be submitted with details on the additions and alterations of the affected areas only. For the other areas of the existing development, only the building outline is required (Please see example below).



Example of acceptable illustration for Addition and Alteration Works

## File Naming

16. File Naming convention as indicated below should be used:



### Project Identification

User-defined field. E.g. MLP1 for Merlion Park Project.

### Author

Individual /company /organisation responsible for creating the file. E.g. A- for Architect.

## Type of Work

SP	Site Plan (If the submission contains only one CAD file with all details such as site layout and floor layout , then Type of Work should be indicated as SP)
FP	Floor Plan ( If the CAD file contains floor layout and 'section and or elevation drawing' then Type of Work should be indicated as FP )
FE	Floor plan – elevation view ( If the CAD file contains section and elevation drawing, then Type of Work should be indicated as FE )
FX	Floor plan - cross section view
SX	Site cross section view
SE	Site elevation view
SV	Survey Plan
TP	Topo Plan
PP	Land Profile Plan
RD	Road Interpretation plan
DN	Drainage Interpretation plan
RW	Retaining walls
BC	Bin Centres
SN	Substations
LS	Landscaping
LT	Lighting Plan
OA	Other ancillary structure( eg bin centre, Guard house on same CAD File )

## Level/View plane

02	2nd storey
12	12 storey, or typical floor from 12 storey and above
A-	Attic
B2	Basement 2
E2	Elevation 2
M3	Mezzanine 3
R-	Roof
--	Whole project / Site plan

BB	Section BB
NE	Northeast elevation plan
-A	1st drawing in the submission with multi-levels, multi-View Plane in the same CAD file
-B	2nd drawing in the submission with multi-levels, multi-View Plane in the same CAD file

**Zone or Block**

01 for block 1, .....- - for all blocks

A1 for Zone A1

**Version(revision /Submission)**

- A - 1<sup>st</sup> submission
- B - 2<sup>nd</sup> submission
- C - 3<sup>rd</sup> submission

**Proposal Plan**

17. For new erection applications, the following declaration of DIP and RLP should be properly done

**Drainage Interpretation**

I, (type name of Architect/Professional Engineer), confirm that the drainage details as shown in the layout plan are in accordance with the current information provided by the Chief Engineer, Central Building Plan Unit, NEA.

**Road Line**

I (type name of Architect/Professional Engineer), confirm that the road reserve lines, the category of the proposed and existing roads and other related road information as shown in the layout plan is in accordance with the current information provided by the LTA.

18. The following declaration of ownership should be properly done

I/We, (type in name of person e-signing the plan), hereby declare that -

(a) I/we am/are not the owner(s) of the land within the meaning of the term "owner" as defined in Section 2 of the Planning Act (Cap 232, 1998Ed) ; and

(b) I/we have shown this plan to the owner(s) of the land, and have obtained the consent of the said owner(s) to submit this plan to the Competent Authority under the Planning Act (Cap 232, 1998Ed).

19. Cadastral based site plan with a surrounding radius range of 10m to 50m is incorporated in the proposal plans. (Note: If this is not possible, applicant is to provide a cadastral key plan as an insert onto the proposal plans or submit the cadastral key plan separately as a scanned image).
20. Relevant information required for planning consideration should be indicated according to layers as listed below

S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
1	<b>ENDOURA-</b>		Plan endorsement	7	0
2	<b>ANOTTBLK</b>		Title block, Scales, Drawing boundary Legend text Company Logo	7 or any other colour	0 or any other colour
3	<b>LNSPBUFF</b>		Green buffer line with dimension , physical buffer line with dimension	94	130
4	<b>LNSPVERG</b>		Planting verge with dimension	94	130
5	<b>RETW----</b>		Retaining walls with dimension	1	3
6	<b>ROAD----</b>		Roadways, Road category text Road Name text Road centre lines Kerbs	14	131
7	<b>ROADWIDL</b>		Road widening lines, Plot Numbers for Road reserve	14	131
8	<b>SDRNRESV</b>		Drainage reserve lines, Plot Numbers for Drainage reserve	5	1
9	<b>SITE----</b>		Site, external works, earth work	7	0
10	<b>SITEBNRY</b>		Site boundary	1	3
11	<b>CADI----</b>		Cadastral information, Lot Number, Lot Boundary	7	0
12	<b>SITEKPLN</b>		Key plan	7	0
13	<b>SITENRTH</b>		North point	7	0
14	<b>SITESTBK</b>		Building setback dimensions	1	3
15	<b>SITEWALL</b>		Boundary wall, site fencing	174	129
16	<b>SITEBLDG</b>		Building Outline	4	7
17	<b>SITEBASE</b>		Basement Outline	214	133
18	<b>TOPOPLVL</b>		Platform level	7	0
19	<b>SPACBLDG</b>		Building plot boundaries, building plot numbers	14	131
20	<b>SPACCOSS</b>		Plot boundaries and plot numbers for communal use/open space	94	130
21	<b>SPAC----</b>		Plot boundaries and plot numbers for right of way/easement, parkway reserve	7	0

21. Site boundary should be indicated in the CAD layer with element name **SITEBNRY**
22. All building setbacks should be indicated in the CAD layer with element name **SITESTBK**
23. All building plots, and area for communal use/open space should be shown as separate plots in the CAD layer with element name **SPACBLDG** and **SPACCOSS** respectively.
24. Parcels of land for vesting such as road widening and drainage reserve etc should be shown as separate plots in the CAD layer with element name **ROADWIDL** and **SDRNRESV** respectively.
25. Existing ground levels for the subject site and adjoining sites immediately across the common boundaries & proposed platform levels should be indicated in the CAD layer with element name **TOPOPLVL**. Singapore Height Datum (SHD) should be used when indicating the relevant levels.
26. Retaining walls if any, should be indicated in the CAD layer with element name **RETW-- --**.
27. Boundary walls if any, should be indicated in the CAD layer with element name **SITEWALL**.
28. Buffer zone provisions should be indicated in the CAD layer with element name **LNSPBUFF**.
29. 2m wide planting strip along the boundary should be indicated in the CAD layer with element name **LNSPVERG**.
30. Access arrangement should be indicated in the CAD layer with element name **ROAD-- --**.

31. Road categories should be indicated in the CAD layer with element name **ROAD- -- -**.

### Sketch (Floor, Section & Elevation) Plan

32. The following declaration of ownership should be properly done

I/We, (type in name of person e-signing the plan), hereby declare that -

(a) I/we am/are not the owner(s) of the land within the meaning of the term "owner" as defined in Section 2 of the Planning Act (Cap 232, 1998Ed) ; and

(b) I/we have shown this plan to the owner(s) of the land, and have obtained the consent of the said owner(s) to submit this plan to the Competent Authority under the Planning Act (Cap 232, 1998Ed).

33. Relevant information required for planning consideration should be indicated according to layers as listed below

S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
1	<b>ENDOURA-</b>		Plan endorsement	7	0
2	<b>ANOTTBLK</b>		Title block, Scales, Drawing boundary Legend text Company Logo	7 or any other colour	0 or any other colour
3	<b>FLORLEVL</b>		Floor level	7	0
4	<b>RETW----</b>		Retaining walls with dimension	1	3
5	<b>SITENRTH</b>		North point	7	0
6	<b>SITEWALL</b>		Boundary wall, site fencing	174	129
7	<b>TOPOPLVL</b>		Platform level	7	0
8	<b>BEAM----</b>		Beams	7	7
9	<b>COLN----</b>		Column	7	7
10	<b>CPRK----</b>		Car Parking lots	214	7
11	<b>DOOR----</b>		Door	7	7
12	<b>FLOR----</b>		Floor	7	7
13	<b>GRID----</b>		Grids	4	7
14	<b>LIFT----</b>		Lifts	7	7
15	<b>STRC----</b>		Staircases	7	7
16	<b>WALL----</b>		Walls	1	7
17	<b>WIND----</b>		Windows	7	7

34. Floor to floor heights should be indicated on section and elevation plans and in the CAD layer with element name **FLORLEVL**.

35. Basement protrusions if any, should be indicated on section and elevation plans and in the CAD layer with element name **FLORLEVL**.

36. Lines of existing ground level should be indicated on section and elevation plans and in the CAD layer with element name **TOPOPLVL**.

37. Maximum building height in m SHD should be indicated on section and elevation plans and in the CAD layer with element name **FLORLEVL**.

38. Retaining walls if any, should be shown on the section/elevation plans and in the CAD layer with element name **RETW---**.

39. Boundary walls if any, should be shown on the section/elevation plans and in the CAD layer with element name **SITEWALL**.

## Calculation Plan

40. All polygons demarcate area for calculation should be drawn using lightweight polylines for dwg files and complex shape (or shapes) for dgn files. All area included in GFA calculation should be demarcated and all polygons should be "closed". All parcellations of area should be presented by floors and not by individual units.
41. Labels represent each area demarcated and tabulation of area calculations should be indicated on top right hand corner of the plan.
42. Area included in layer "AREAGFAD" (i.e red polygons) should be within the area in the layer "AREAGFAA" (i.e green polygons).
43. Service Ducts without floor slabs and voids should be indicated clearly with crosses.
44. Details calculations on quantum use and secondary use (if applicable) should be incorporated.
45. Detailed calculations on area of balconies to be computed over and above the Master Plan allowable gross plot ratio (if applicable) should be incorporated .
46. Detailed calculations on area of outdoor refreshment area to be computed over and above the Master Plan allowable gross plot ratio (if applicable) should be incorporated.
47. A summary of GFA breakdown by floors ( see example below )should be incorporated in the site plan.

SUMMARY OF GROSS FLOOR AREA									
Blk No	Storey	GFA (m2)	Breakdown of Gross Floor Area (m2)						
			Commercial	Residential	Hotel	Industry	Warehouse		
1	Basement								
	1st								
	2nd								
	Roof								
	Subtotal								
2	1st								
	2nd								
	3rd								
	Roof								
	Subtotal								
Total									
Quantum(%)									

48. Layers with the following element name should be included in the floor plans for GFA calculations:

S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
1	<b>AREAGFAA</b>		Area to be included in GFA calculation	3	2
2	<b>AREAGFAD</b>		Area included in layer AREAGFAA but to be excluded from GFA calculation	1	3
3	<b>AREAGFAB</b>		Area of balconies to be computed over and above the Master Plan (MP) allowable gross plot ratio (GPR) - Please see URA circular URA/PB/01/19-DCD & URA/PB/2007/01-DCD for details	94	130
4	<b>AREAGFAR</b>		Area of outdoor refreshment area to be computed over and above the Master Plan allowable gross plot ratio	94	130
5	<b>AREAGFAR</b>		Area to be to be excluded from outdoor refreshment area as in item 4 above	6	5



S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
6	AREAGFAQ		Area to be included in the 60% (minimum) hotel room & hotel related use quantum	4	7
7	AREAGFAQ		Area to be included in the 60% (minimum) industrial use quantum	4	7
8	AREAGFAQ		Area to be computed under the 50% (minimum) prayer quantum	4	7
9	AREAGFAQ		Area to be included in the Business Park White (15%)	4	7
10	AREAGFAQ		Area to be to be excluded from Industrial use quantum, prayer quantum or Business Park white quantum calculation	6	5
11	AREAGFAS		Area to be computed as secondary use in an industrial development	4	7
12	AREAGFAS		Area to be computed as commercial use in a mixed use development	4	7
13	AREAGFAS		Area to be to be excluded from secondary use calculation in an industrial development or commercial use calculation in a mixed use development	6	5

49. Layers with the following element name should be included in the site plans for calculation of Communal Open Space and Building Coverage:

S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
1	AREABDBA		Building block area	6	5
2	AREABDBD		Area to be deducted from building coverage	2	4
3	AREACOSA		Communal open space area	4	7
4	AREACOSD		Area to be deducted from communal open space	2	4

**Proposal/Diagrammatic Plan for Subdivision of Lands/Strata Subdivision of Buildings**

50. The following declaration of ownership should be properly done on the proposal / diagrammatic plan

I/We, (type in name of person e-signing the plan ), hereby declare that -

(a) I/we am/are not the owner(s) of the land within the meaning of the term "owner" as defined in Section 2 of the Planning Act (Cap 232, 1998Ed) ; and

(b) I/we have shown this plan to the owner(s) of the land, and have obtained the consent of the said owner(s) to submit this plan to the Competent Authority under the Planning Act (Cap 232, 1998Ed).

51. The following declaration should be properly done by the surveyor on the proposal plan

I, (name of surveyor) declare that the building layout tallies with the development approved plans registered as plan ( ) in DC/AP\_ES \_\_\_\_\_ dated \_\_\_\_\_. I also declare that the setbacks shown on this plan do not deviate more than 3% of the setback as approved under the said development plans.

52. The following endorsement should be properly done by the surveyor on the diagrammatic plan

- I, (name of surveyor) certify that the strata unit layout is in accordance with the Building Plan approved on \_\_\_\_\_ under BP number \_\_\_\_\_.
- I, (name of surveyor) declare that the strata unit excludes all common properties indicated and referred to in the planning permission granted by the Competent Authority under the Planning Act (Cap 232).

53. Layers with the following element name should be included in the proposal / diagrammatic plan where applicable

S/No	Element name		Description of elements	DWG Colour Code	DGN Colour Code
	Main	Sub			
1	ENDOURA-		Plan endorsement	7	
2	ANOTTBLK		Title block, Scales, Drawing boundary Legend text Company Logo	7 or any other colour	0 or any other colour
3	ROADWIDL		Road widening lines, Plot Numbers for Road reserve	14	131
4	SDRNRESV		Drainage reserve lines, Plot Numbers for Drainage reserve	5	1
5	SITEBNRY		Site boundary	1	3

6	<b>CADI----</b>	Cadastral information, Lot Number, Lot Boundary  -Existing lot boundaries and numbers are to be in layer with status "E"  - Proposed new lot boundaries and numbers are to be in layer with status "N"	4 6	7 5
7	<b>SITENRTH</b>	North point	7	0
8	<b>SITESTBK</b>	Building setback dimensions	1	3
9	<b>SPACSTRA</b>	Strata unit boundary on floor plans for strata subdivision	1	3
10	<b>SPACBLDG</b>	Building plot boundaries, building plot numbers	14	131
11	<b>SPAC----</b>	Plot boundaries and plot numbers for right of way/easement, parkway reserve	7	0

54. Existing lot boundaries should be shown by dotted lines together with their lot number and indicated in the CAD layer with element name **CADI----**.
55. Boundary of land to be subdivided should be indicated in the CAD layer with element name **SITEBNRY**
56. All proposed new lot boundaries with dimensions should be indicated in the CAD layer with element name **CADI----**
57. All building plots and parcels of land for vesting such as splay corner, road widening, drainage reserve, etc should be shown as separate plots and indicate in the appropriate CAD layers.
58. Strata unit boundary should be indicated on floor plans for strata subdivision in the the CAD layer with element name **SPACSTRA**.

## Landscape Plan

Landscape plan is to be provided with the application, for the submission on the objective-based guidelines on the minor ancillary structures within the green buffer and 2m planting strip along common boundaries. The requirements as follows:

59. Location and species of proposed small to medium size shade trees are to be shown.
60. A legend for the proposed trees is to be provided.
61. Computation of number of trees are to be clearly indicated.
62. Types of ancillary structures with justifications (in separate document, if necessary), the height and width are to be clearly shown.
63. All proposed green buffer/planting verges are indicated as tree-planting strip only.
64. Widths of all proposed planting provision provided are indicated.
65. All slopes are shown on plan with standard symbols. The gradients of all proposed slopes are shown.

## Proposal Plans for Works to Conservation Buildings

66. The following endorsements by Architect and Professional Engineer are to be included in the proposal plans for works to conservation buildings.

Architect's endorsement - The following endorsement should be properly done

**URBAN REDEVELOPMENT AUTHORITY  
CONSERVATION REQUIREMENTS**

**FLUE**

Flues and vents shall be located either on the rear slope of the main roof or the rear secondary roofs or abutting the wall of the rear façade / rear service block within the rear court. The roof of the flue can be pitched or flat and shall not be higher than the ridge of the main roof.

**AIR-CONDITIONING**

The installation of air-conditioning units shall comply with the conservation guidelines.

**SIGNAGES**

Detailed drawings of signage design indicating the size, location, lettering typeface and method of support and illumination shall comply with the conservation guidelines and shall be submitted to the Building and Construction Authority (BCA) for licensing.

Engineer's endorsement - The following endorsement should be properly done. Please note that the Professional Engineer's (PE) endorsement shall be accompanied with the official stamp of the PE.

**ENGINEER'S ENDORSEMENT**

As a qualified person, I agree with and endorse the alterations to the structure as shown on this plan and that they are generally in accordance with conservation principles and good engineering practice. Where further strengthening or additional structural members are required to support addition and alteration work, formal approval will be sought from the Competent Authority under Planning Act and Building Authority under Building Control Act prior to commencement of work on site.