Architectural BIM Template Guide

Autodesk Revit 2015

This template guide shall be used together with the Architectural BIM Template.

Doc Name:
Architectural BIM Template Guide-Autodesk Revit 2015

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Contents

INTRODUCTION

The objective of this document is to assist qualified persons (QPs) in developing BIM models to meet the new requirements of the Building Information Model (BIM) Submission.

The document describes the features of the Architectural BIM Template for Revit 2015 and provides a step-by-step guide to apply them in projects. The template creates a basic structure to assist the QPs in preparing the BIM models for regulatory approval according to the Code of Practice for BIM e-Submission. It is by no means an exhaustive template and QPs are allowed/required to edit/change it accordingly to suit their needs.

For any additional requirements that require customisations to a certain extent, QPs are also advised to make reference to the training materials distributed or to consult the respective software vendor for any enquiries on the application.

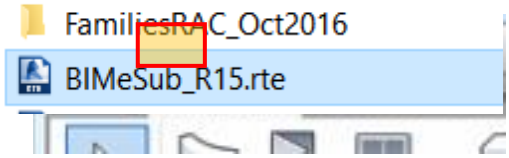
If there are contradictions between this submission guideline and vendor's instructions, BCA BIM team shall be contacted for clarification. Please note that any BIM Submission templates shall be collected from the BCA BIM team.

This training material is to serve as a reference for Autodesk Revit 2015 users only.

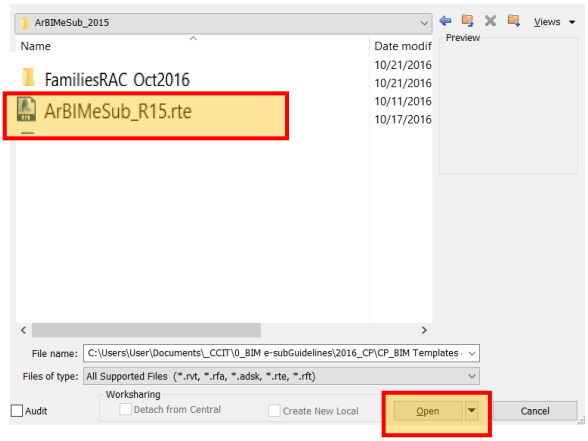
1. GETTING STARTED

Once you have downloaded and unpacked the ZIP file from the CORENET website, do the following preparations before using the template for the first time.

1 Under the Quick Access Toolbar, click



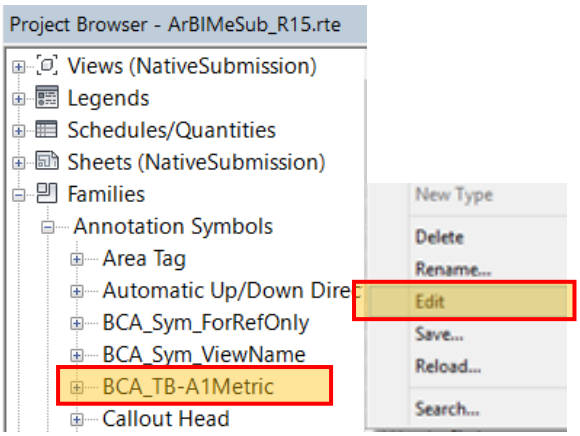
2 In the open dialog, navigate to the folder where the ArBIMeSub_R15 (.rte) resides.



> **Note:** *To ensure originality, please make sure that you get the Architectural BIM Template and Template Guide from* ***https://www.corenet.gov.sg/general/building-information-modeling-(bim)-e-submission.aspx***

3 Select the template (*ArBIMeSub_R15.rte*) and click Open.

4 Once the template is opened, scroll down to Families of the Project Browser.



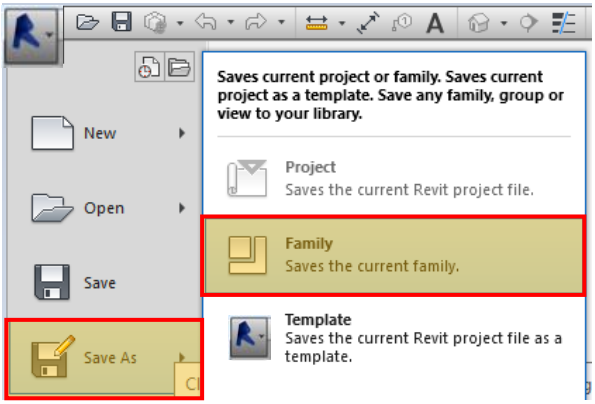
5 Under the Annotation Symbols, select the object library of BCA_A1Metric_TB. Right click and select Edit.

> **Tips:** *Click Yes when prompted a message whether to open the object library for editing.*

6 When the family library is opened in a separate window for editing, you may navigate to the title block on the right side of the sheet/layout (as highlighted in RED) to customise it according to your company's standard, including your company's logo.

> **Note:** *Please try not changing other parts of the sheet/layout (including the top corner of the title block), as this will mess up the automated feature available within the template*

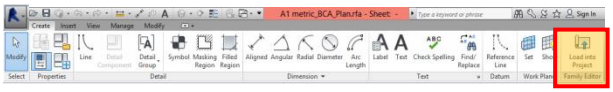
7 Once done, click  ➤ Save As ➤ Family. Replace the existing *BCA_TB-A1Metric.rfa* inside the *FamiliesRAC_Oct2016* folder.



8 Click Create tab ➤ Family Editor panel ➤ Load into Project.

Tips: *When prompted, select Overwrite the existing version and its parameter values.*

9 Repeat *Steps 4-8* for customising the title blocks for URA, FSSD and other technical departments.

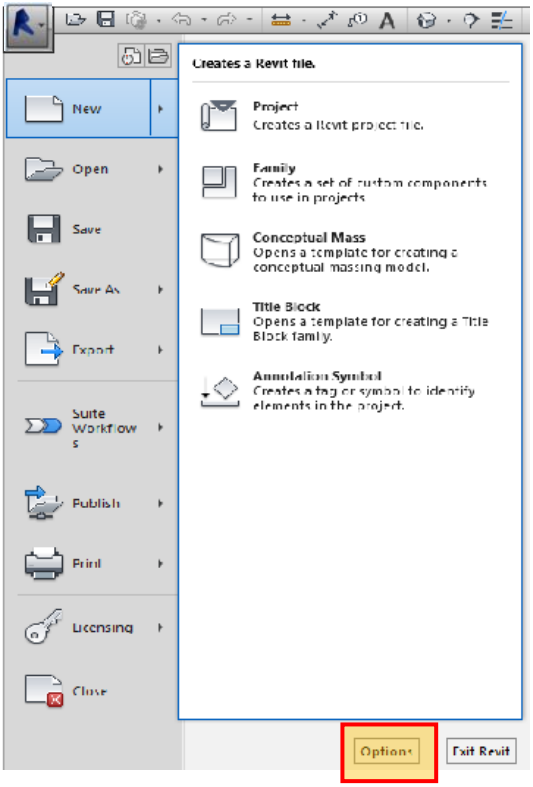


Note: *This is a one-time setting ONLY so that you could apply this in all your future projects.*

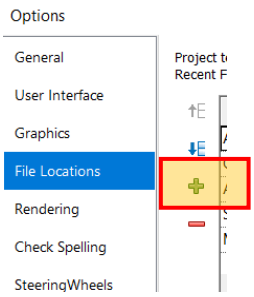
10 Click  ➤Save As ➤ Template to replace the existing *ArBIMeSub_R15.rte*

11 To load the BIM submission template into your Revit application, click  ➤ Options

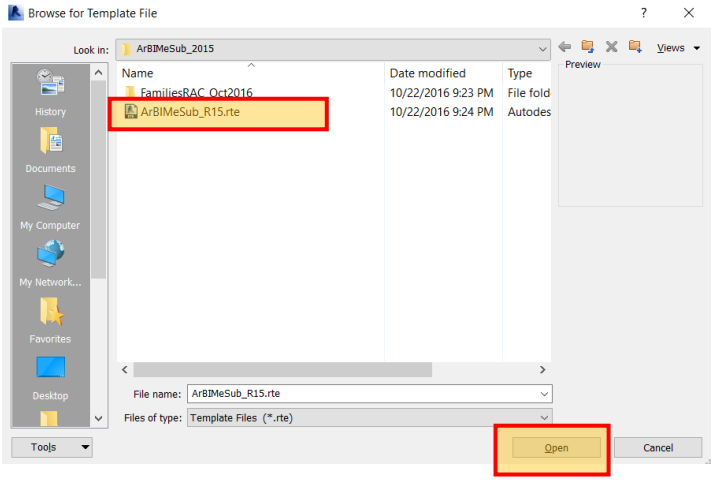
Note: *This is a one-time setting, such that the template is always loaded when you launch the Revit application.*



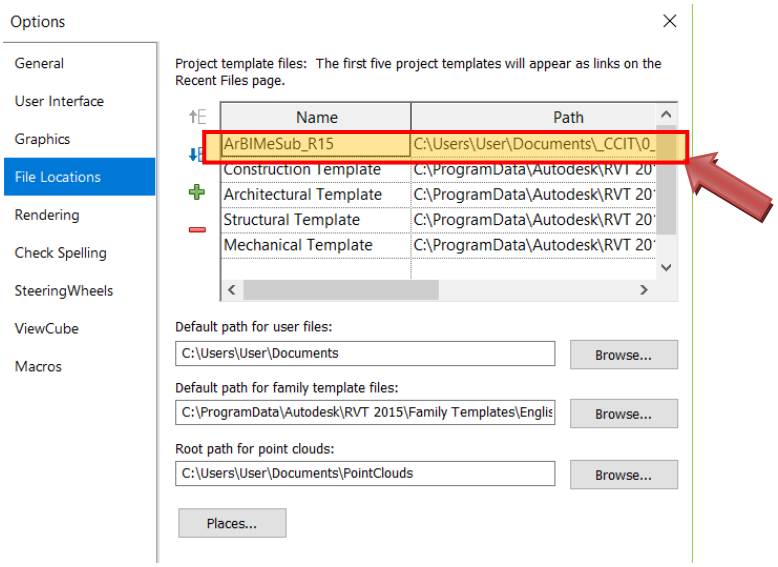
12 In the Options dialog, click File Locations ➤ 



13 Browse for template file, select the ArBIMeSub_R15, Click Open.



14 Click  to move the **ArBIMeSub_R15** on top.

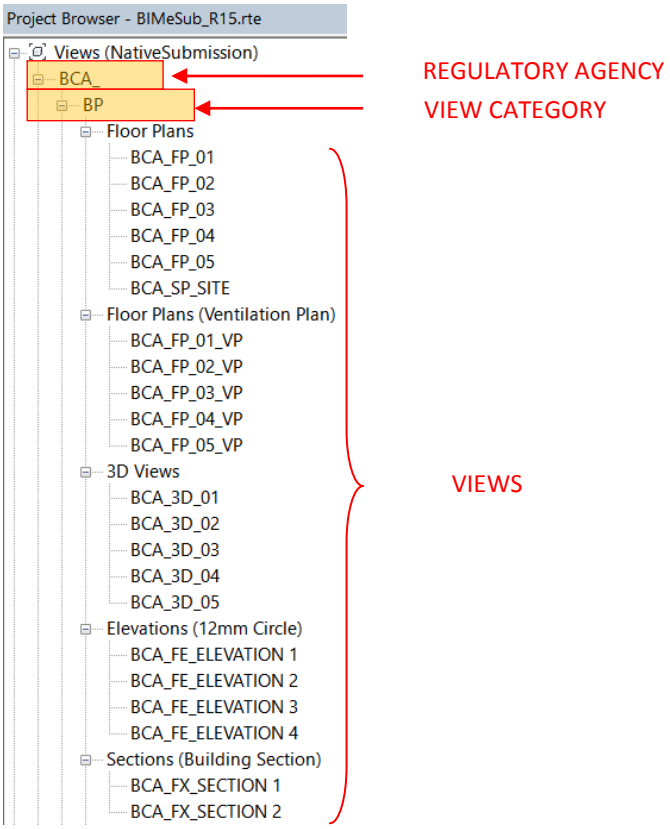


2. PROJECT BROWSER

Familiarisation of BIM e-Submission template settings.

15 To begin new project, click  ➤ New ➤ Project (Ctrl+ N).

16 The project browser contains the structure organisation for BIM submission (as highlighted in RED).



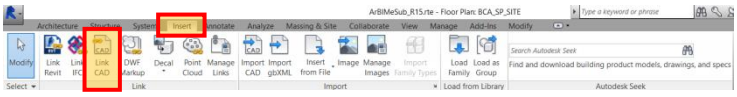
Note: *The BIM e-Submission template creates a basic platform that could help in preparing the model for regulatory approval. It is not mandatory and you are free to edit according to your needs, as long as the final results presented to the authorities meet the requirements as specified in the* ***Code of Practice for BIM e-Submission Architectural Requirements***

3. SITE MODEL SET-UP

Site Configuration and Site Modelling

17

To import the topographic map (.dwg) given by your land surveyor, click Insert tab ➤ Link panel ➤ Link CAD.

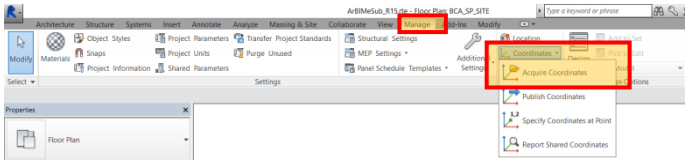


Note: *Check the surveyor Import Units, select Auto-Origin to Origin in Positioning Tab.*

Tips: *It is advisable to start requesting your land surveyor to provide you the topographic map with Z-values or contour line. This will facilitate you in auto-creating the 3D topographic profile in Revit, using the following steps.*

18

After the CAD topographic map is imported, click Manage tab ➤ Project Location panel ➤ Coordinates ➤ Acquire Coordinates, and select the CAD link.



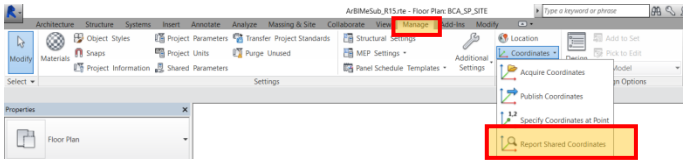
Tips: *Alternatively, you may also use **Specify Coordinates at Point.***

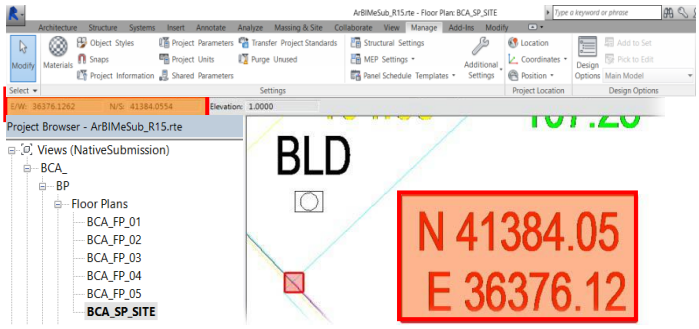
19

Place the cursor on a linked CAD topographic map and click.

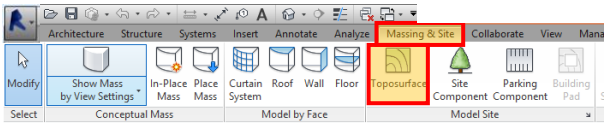
The model file now has the same shared coordinates as the linked CAD topo map file.

Tips: *To double check if your model file shares the same coordinates system as the land surveyor topographic map, Click Manage tab ➤Project Location panel ➤ Coordinates ➤ Report Shared Coordinates. Then place the cursor on a reference point of the linked CAD topographic map (normally the point with indication of numbers given by your land surveyor so that you could verify).*

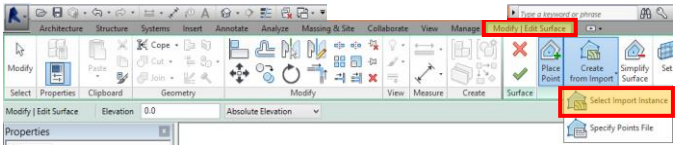




20 To create the 3D topographic, click Massing & Site tab ➤ Model Site panel ➤ Toposurface.

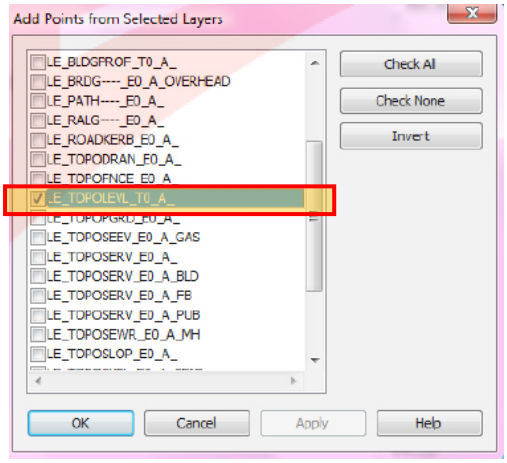


21 Click Edit Surface panel ➤ Tools panel ➤ Create from import ➤ Select Import Instance.



22 Select the imported 3D contour data in the drawing area. The Add Points from Selected Layers dialog displays.

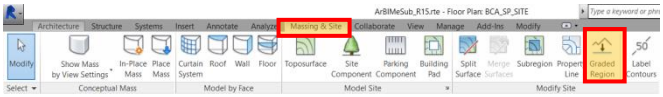
23 Select the layers to which you want to apply elevation points (the CAD layer with points/contours given by your land surveyor), and click OK.



Note: *Revit analyses the imported 3D contour data and generates a toposurface based on the elevation points placed along the contour lines.*

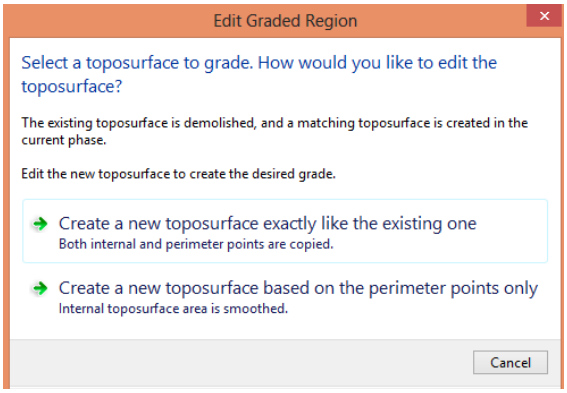
24 Click Finish Surface.

25 Click Massing & Site tab ➤ Modify Site panel ➤ Graded Region.



In the Edit Graded Region dialog, select either one of the following:

- Create a new toposurface exactly like the existing one.
- Create a new toposurface based on the perimeter points only.



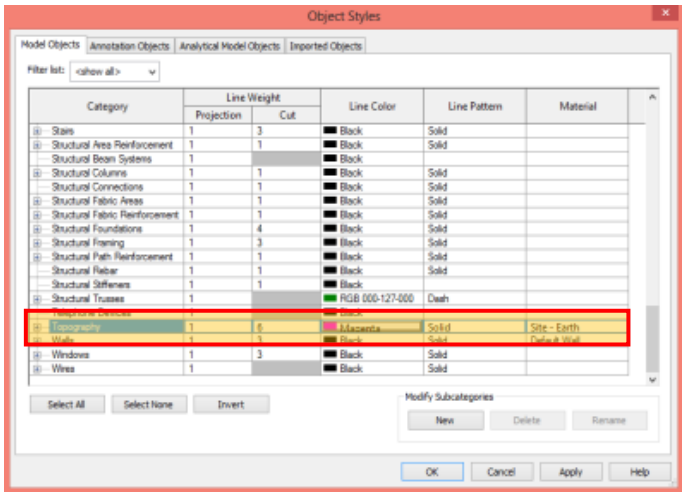
26 Select the existing 3D topography.

Note: *If you are editing the surface, Revit Architecture enters sketch mode. You can add or delete points, change the elevation of points, or simplify the surface.*

27 Click Finish Surface once done.

Note: *If you drag the new graded region, notice that the original remains and is changed to demolished state (yellow dotted line).*

28 Click Manage tab ➤ Project Settings panel ➤ Settings ➤ Object Styles



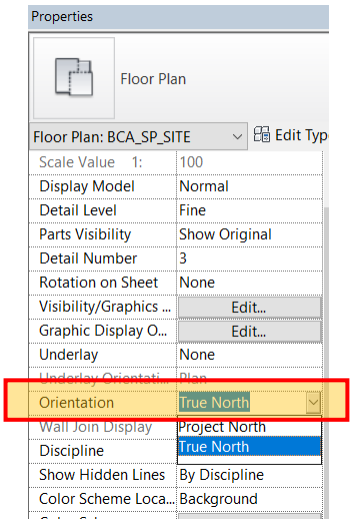
29 In the Object Styles dialog, change the line colour of Topography to magenta. Then click OK.

Tips: *This will make the proposed 3D topography appears magenta in all drawing views.*

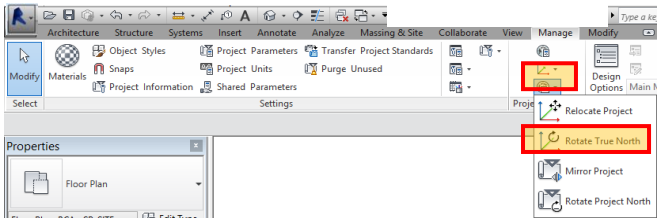
Model Orientation

30 To change the building orientation to the true north on site plan, double click on the site plan.

In the Instance Properties dialog, for Orientation, select True North, and click Apply.



31 Click Manage tab ➤ Project Location panel ➤ Rotate True North.



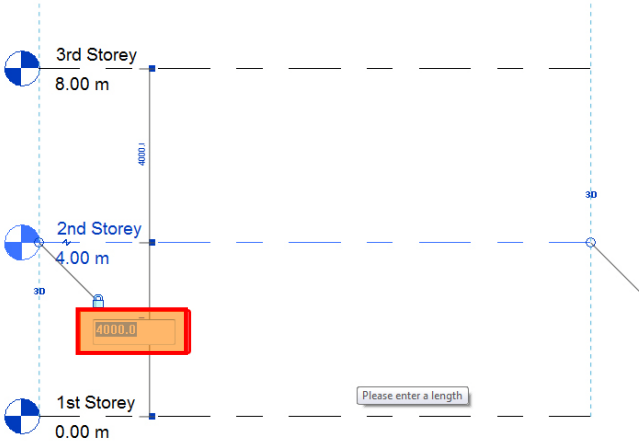
Click in the site plan view to rotate the model to True North graphically.

Note: *This is a one-time setting ONLY and you could apply the same orientation any time at other views. But for submission for regulatory approval, you are only required to orient the site plan view to true north.*

Project Elevation

Elevation levels of the model shall be set up based on Singapore Height Datum (SHD) of 0.000m. Refer to your Surveyor's Drawing for the actual values.

32 By default, the template provides a consistent floor-to-floor height as 4m for all the 5-storeys. You may need to edit according to your project requirements.



Tips: *If your project have storeys less than 5, highlight the remaining storeys and click Delete button on your keyboard .*

If your project have storeys more than 5, add additional storeys. Click Home tab ➤ Datum panel ➤ Level. When new storeys are added, you need to rename the related floor plans according to the naming convention specified in the Code of Practice for BIM e-Submission-General Requirements.

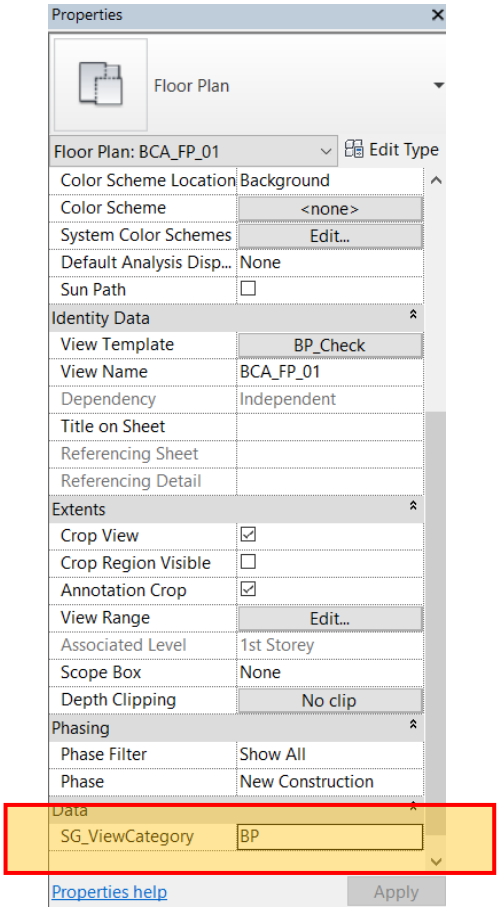
4. PREPARING THE FILE FOR SUBMISSION

View Category

Open any view.

33 In the properties palette, indicate a text value on the View category Under Data ➤BIMe_ViewCategory

Refer to *Table 1* below.



Note: *Once specified, the views in the project browser will be under the View Category as indicated.*

Table 1. View Categories		
Submission Authority - Type of Submission		SG_ViewCategory (to indicate in View Properties)
Building & Construction Authority (BCA)		
	Building Plans	BP
	Civil Defense	CD
Urban Redevelopment Authority (URA)		
	Development Control	DC

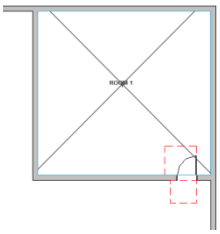
Note: *All views for submission shall be on the correct BIMe_ViewCategory.*

Room

To indicate Room usage, open the floor plan view.

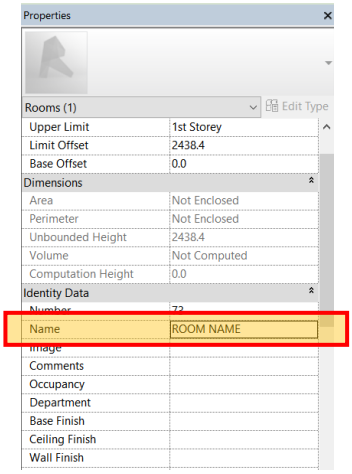
34 Click Architecture tab ➤ Room & Area panel ➤ Room.

Click within the room boundary to place the room.



35 Select the Room created in *Step 34.*

In the properties palette, specify Name (under Identity data) as required.



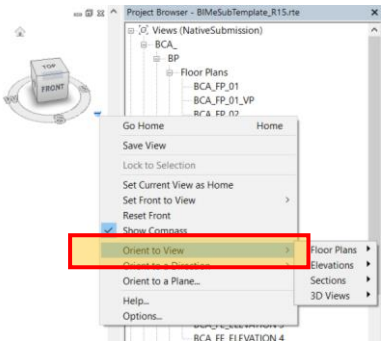
Note: *Show Room tag in Floor Plan view.*

Part 3D View

Adjust the cut-level height as necessary.

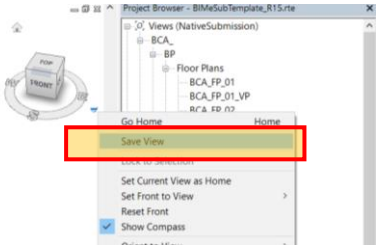
To create a Part 3D View, open the default 3D view,

36 Click the context menu (small arrow down next to the View Cube, Select Orient to view ➤ Floor Plans➤ Floor Plan: *BCA_FP_01.*



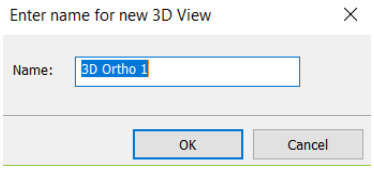
37 Orient the Part 3D view in the desired position.

38 Click the context menu (small arrow down next to the View Cube, Select *Save View.*



39 Enter name for new 3D view.

Note: *Follow the naming convention as stated in Code of Practice General requirements.*



Annotations and Symbols

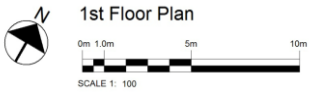
Annotations and Symbols shall be placed in each 2D View (if applicable)

BCA_Sym-ViewName shall be placed in all 2d views.

40 Click Annotate Tab ➤ Symbol Panel ➤ Symbol ➤ select *BCA_Sym-ViewName.*

41 Click on the 2D view to place.

42 Click on the <*name*> to rename the view name. (synchronise it with the project browser) and the scale (synchronise it with the scale under View Control Bar).



43 To change the angle of north arrow, select the symbol and click Modify Generic Annotations. In the Type Properties, insert the true north angle under Dimension parameter, then click ok.

Note: *Site plan shall be in True North orientation.*

All floor plans shall be in Project North orientation

44 Click Annotate Tab ➤ Symbol Panel ➤ Symbol ➤ select *BCA_Sym-ForReferenceOnly.*

45 Click on the 2D view to place.

Note: *This symbol is specific to re-submission (URA) or amendment plans submission for regulatory approval, in which QP is required to indicate this symbol on the drawings views that are not affected in the amendments.*

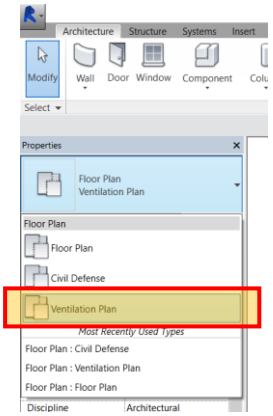
5. VENTILATION REQUIREMENTS

Ventilation Plan

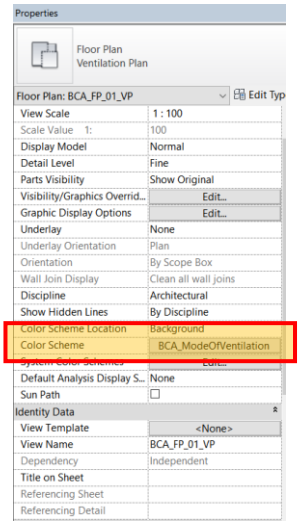
Ventilation Plan is a duplicated view of the Floor Plan view.

Open the Ventilation Plan.

46 In the Instance properties type view selector, change the Floor Plan into Ventilation Plan.



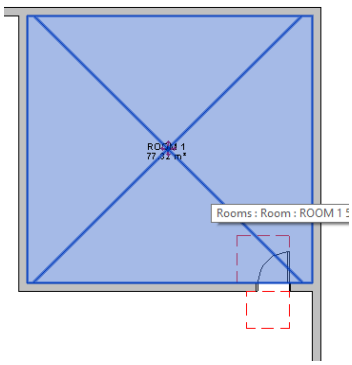
47 In the instance properties, change the Color Scheme into *BCA_ModeOfVentilation*.

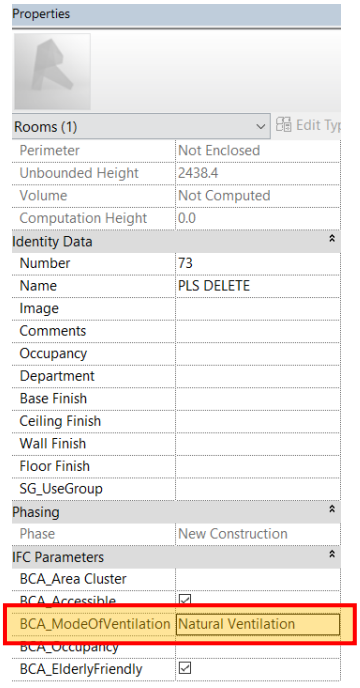


Mode Of Ventilation

Select the Room you have created in *Step 34.*

48 In the instance properties, specify the parameter *BCA_ModeOfVentilation*.



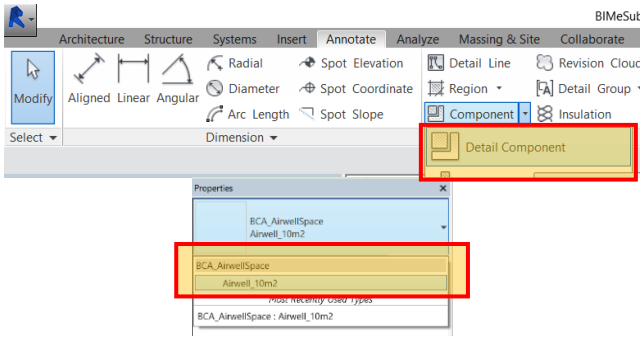


Airwell spaces

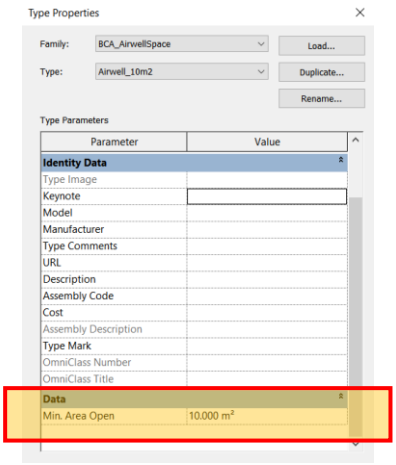
BCA_AirwellSpace.rfa shall be placed in ventilation plan (if applicable)

Open the Ventilation Plan.

49 Click the Annotate Tab ➤ Detail Panel ➤ Component ➤ Detail Component ➤ select *BCA_AirwellSpace*.



50 Duplicate and modify the parameter: *Min. Area Open* as the project needs.

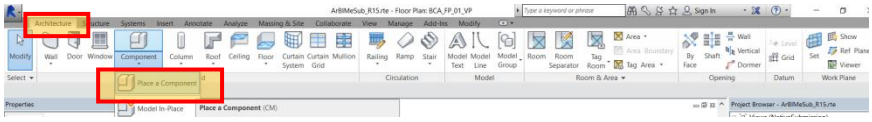


Note: *BCA_AirwellSpace is created as 2D component family with a fixed width of 3000mm. Edit this family if necessary.*

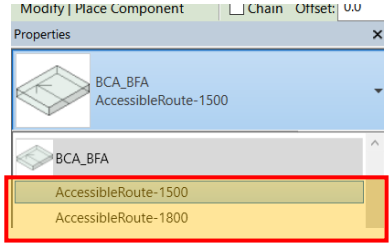
6. ACCESSIBILITY REQUIREMENTS

Barrier-Free Accessibility Route

51 Click Architecture tab ➤ Build panel ➤ Component ➤ Place a Component



In the properties type selector, select *BCA_BFA AccessibleRoute-1500* or *AccessibleRoute-1800.*



52 Place in the drawing area.

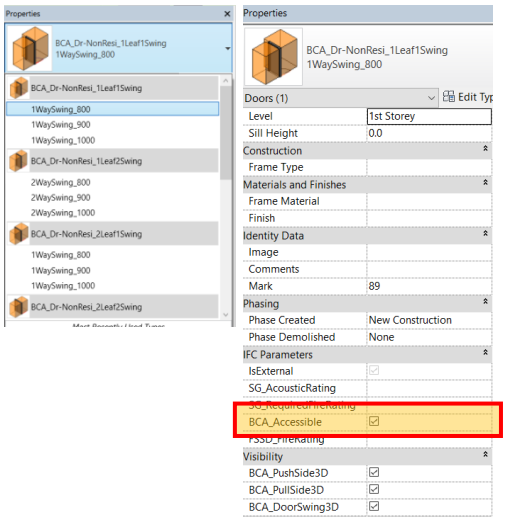
Note: *BCA_BFA is created as line-based family.*

For non-linear routes, you may use/ create other Generic family with subcategory: Accessibilty.

Accessible Door

53 Click Architecture tab ➤ Build panel ➤ Door.

In the properties type selector, select any *BCA_Dr*



Note: *Accessible doors shall be placed on accessible areas.*

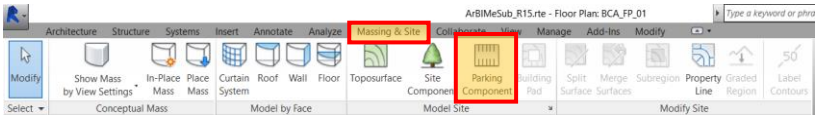
Tips: *BCA_Dr families and types are limited to generic door types for the purpose of accessibility.*

54 Click on the wall to place a door.

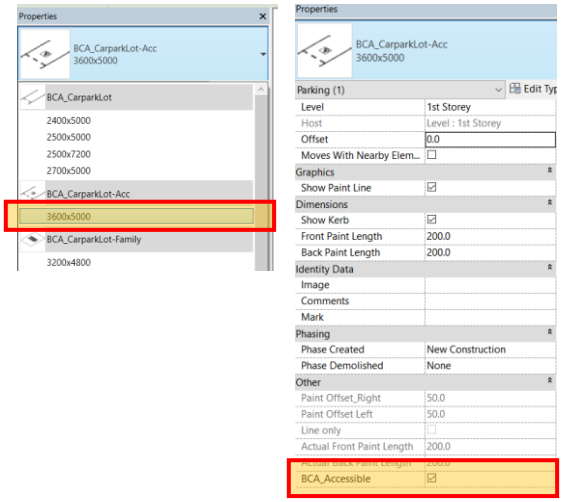
Note: *By default, all doors are accessible when placed. Uncheck* ***BCA_Accessible*** *if needed.*

Accessible Parking Lot

55 Clicck Massing & Site tab ➤
Model Site Panel ➤ Click Parking Component



In the properties type selector, select any *BCA_ParkingLot*

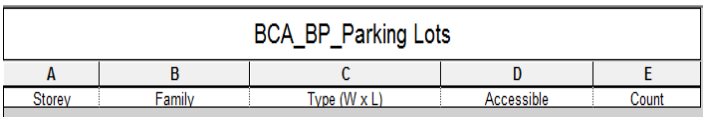


56 In the properties palette, check the *BCA_Accessible* checkbox.

> **Note:** *For Family Parking Lots, check the BCA_Accessible checkbox.*

57 Click on the drawing area to place the Parking Lot.

58 In the Project Browser ➤ Schedule ➤ Open *BCA_BP_Parking Lots*



BCA_BP_Parking Lots

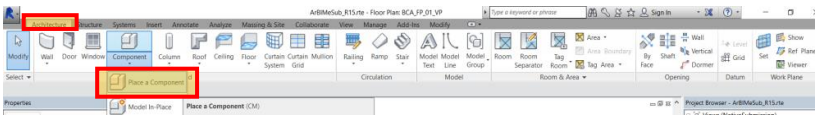
A	B	C	D	E
Storey	Family	Type (W x L)	Accessible	Count

All the information is auto- tabulated for you according to format.

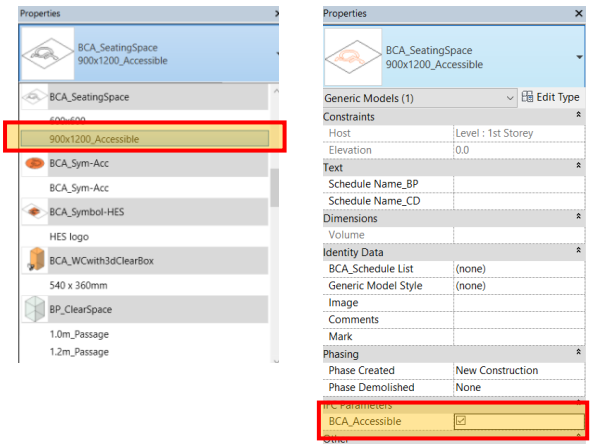
Others (if Applicable)

Audience Seating

59 From the Architecture Tab ➤
Component ➤ Place a Component



In the properties type selector, select *BCA_SeatingSpace*



60 In the properties palette, check the *BCA_Accessible* checkbox.

61 Click on the drawing area to place the Seating space.

62 In the Project Browser ➤ Schedule➤ Open *BCA_BP_Audience Seating*

BCA_BP_Audience Seating				
A	B	C	D	E
Room: Level	Type	Room: Name	Accessible	Count

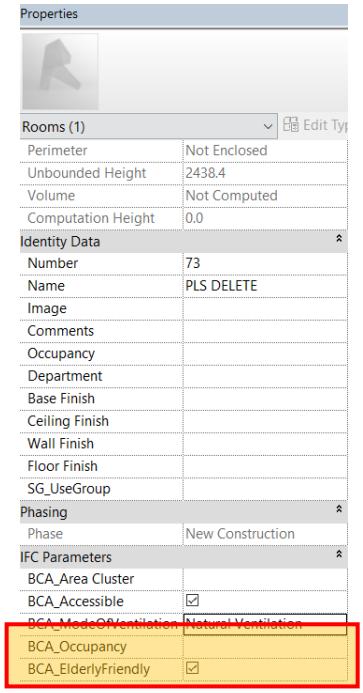
All the information is auto- tabulated for you according to format.

Rooms (for Hotels, Serviced Apartments, etc.)

Open any floor plan view.

63 Select the Room you have created in *Step 34.*

In the properties palette, specify the following:
(1) *BCA_Occupancy*
(2) *BCA_ElderlyFriendly*



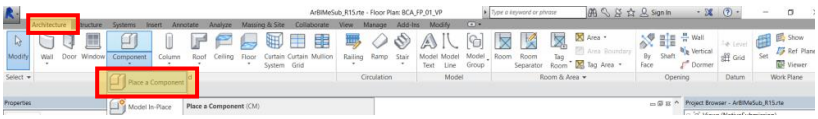
65 In the Project Browser ➤ Schedule ➤ Open *BCA_BP_Rooms (for *Hotels, *Serviced Apartments, etc.)*

All the information is auto- tabulated for you according to format.

Note: **delete as necessary*

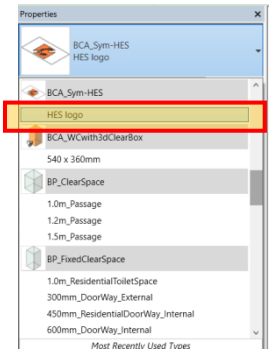
BCA_BP_Rooms (Hotels, Serviced Apartments, etc)					
A	B	C	D	E	F
Level	Room Name	Area	Accessible	Occupancy	Count

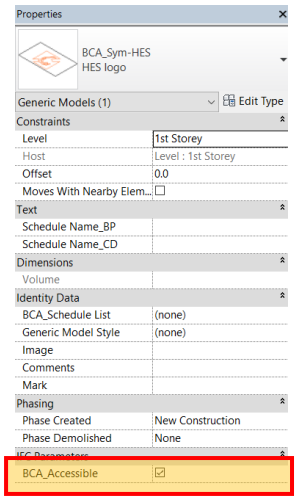
Hearing Enhancement System



66 Click Architecture tab ➤ Component ➤ Place a Component

In the properties type selector, select *BCA_Sym-HES.*



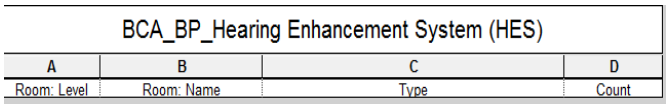


67 In the properties palette, check the *BCA_Accessible* checkbox.

68 Click on the drawing area to place.

69 In the Project Browser ➤ Schedule ➤ Open *BCA_BP_Hearing Enhancement System (HES)*

All the information is auto- tabulated for you according to format.



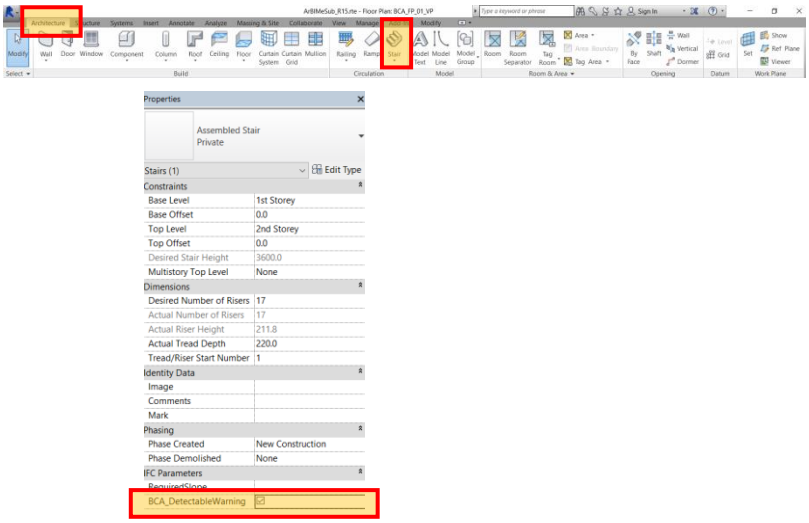
BCA_BP_Hearing Enhancement System (HES)

A	B	C	D
Room: Level	Room: Name	Type	Count

7. STAIRCASE REQUIREMENTS

70 Click Architecture tab ➤ Circulation Panel ➤ click Stair.

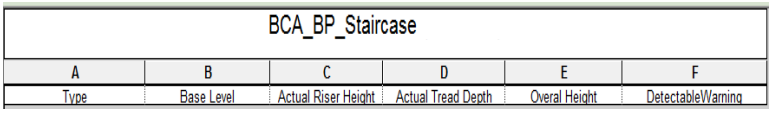
In the properties type selector, check the parameter *BCA_DetectableWarning* checkbox.



78 Model the staircase as needed.

79 In the Project Browser ➤ Schedule ➤ Open *BCA_BP_Staircase (*Industrial, *Non-Industrial, *Within Residential Units)*

All the information is auto- tabulated for you according to format.



BCA_BP_Staircase

A	B	C	D	E	F
Type	Base Level	Actual Riser Height	Actual Tread Depth	Overal Height	DetectableWarning

Note: **delete as necessary*

Staircase schedule has pre-set filter to highlight the non-compliant staircase.

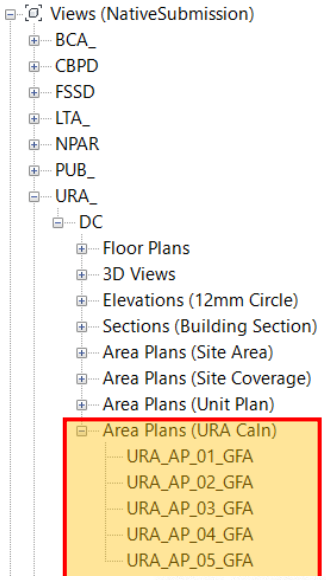
8. AREA TABULATION

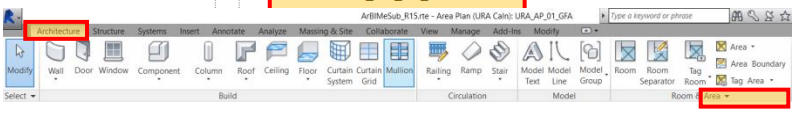
GFA (for URA)

Open the URA Area Plans (URA Caln)

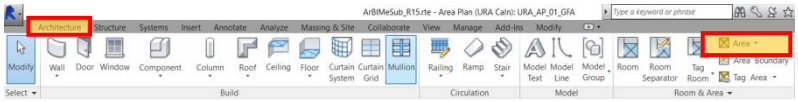
80 Click Architecture tab ➤ Room & Area panel ➤ Area Boundary Line.

Draw the area boundaries of the floor GFA.





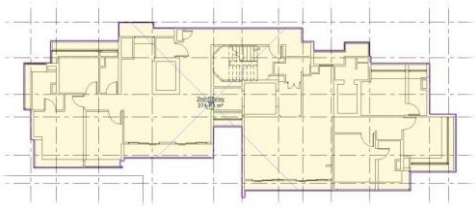
81 Click Architecture tab ➤ Room & Area panel ➤ Area.



Click within the area boundary drawn in *Step 80* to place the Area.

Tips: *Make sure **Tag on Placement** is toggled when placing Area.*

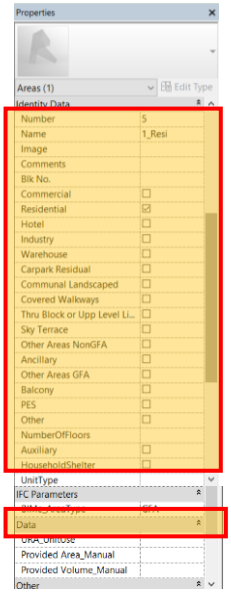
82 Click the area defined in *Step 81.*



Tips: *When the defined area is selected, it will be highlighted as shown on the right, with the area crossed.*

83 In the instance properties palette, specify the following (if applicable):

(1) Name
(2) Blk No.
(3) Area Usage (checkbox; example: Residential)
(4) BIMe_AreaType (GFA of Non-GFA)



84 Repeat *Steps 80- 83* to define GFA boundaries of other floors.

85 In the Project Browser ➤ Schedule ➤ Open *URA__Summary of Gross Floor Area (GFA)*

<URA_Summary of Gross Floor Area (GFA)>

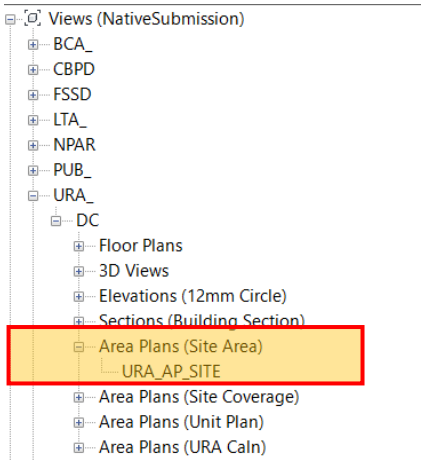
A	B	C	D	E	F	G	H	I	J	K
Level	Name	No. of Floors	GFA (sqm)	Commercial	Residential	Hotel	Industry	Warehouse	Ancillary	Other Areas GFA

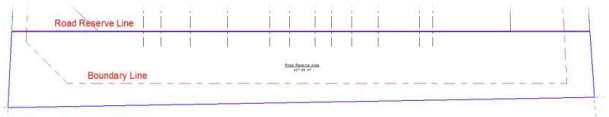
The GFA is auto- tabulated for you according to format.

Open the URA Area Plans (Site Area)

86 Click Architecture tab ➤ Room & Area panel ➤ Area Boundary Line.

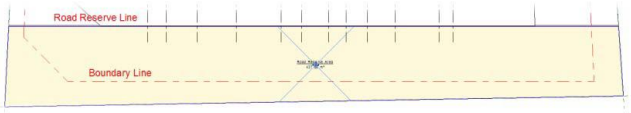
Draw the area boundaries of the plots to be excluded.





87 Click Architecture tab ➤ Room & Area panel ➤ Area.

Click within the area boundary drawn in *Step 86* to place the Area.

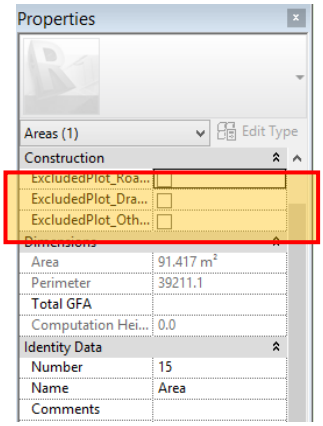


Tips: *Make sure **Tag on Placement** is toggled when placing Area.*

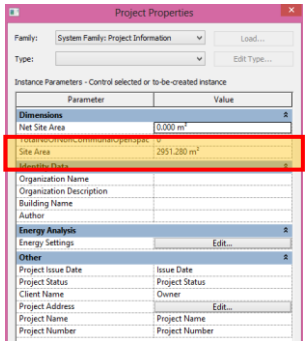
88 Click the area defined in *Step 87.*

Tips: *When the defined area is selected, it will be highlighted as shown on the right, with the area crossed.*

89 In the instance properties dialog, under Construction group parameter, select the correct excluded area type of your project, then click Apply.



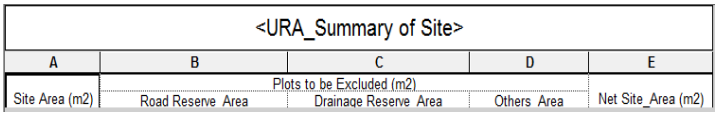
90 Click Manage tab ➤ project Settings panel ➤ Project Information.



91 In the instance properties dialog, under Dimensions, insert the value of Site Area that your land surveyor has provided you.

Open

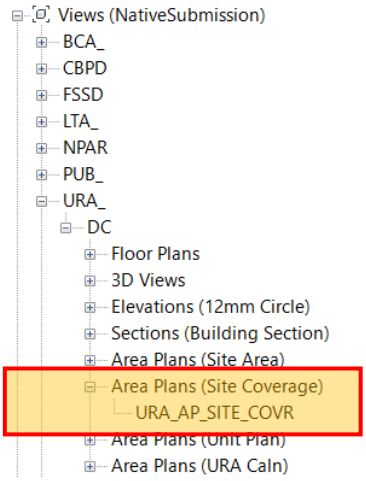
92 In the Project Browser ➤ Schedule ➤ Open *URA_Summary of Site*



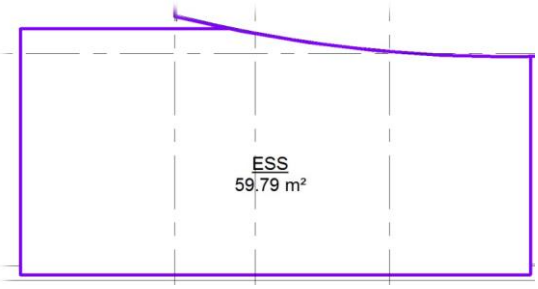
<URA_Summary of Site>				
A	B	C	D	E
	Plots to be Excluded (m2)			
Site Area (m2)	Road Reserve Area	Drainage Reserve Area	Others Area	Net Site Area (m2)

The site info and its excluded plots is auto- tabulated for you according to format.

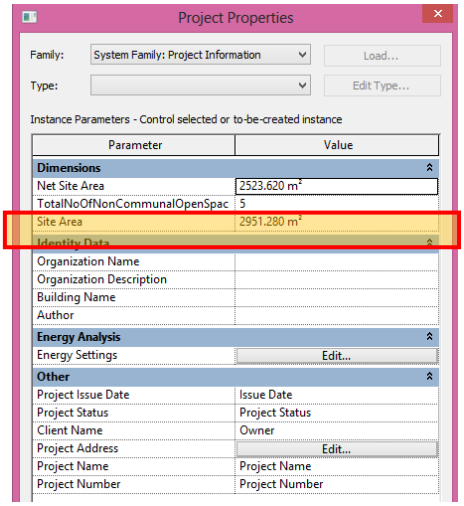
Open the URA Area Plan (Site Coverage)



93 Repeat *Steps 81-83.*



94 In the Project Browser ➤ Schedule ➤ Open *URA__Summary of SIte Coverage & Communal Open Space.*

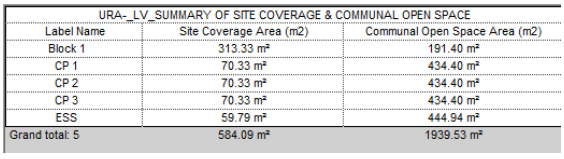


95 Click Manage tab ➤ Project Settings panel ➤ Project Information.

In the Project Properties dialog, under Dimension, insert the value of Net Site Area that you got from *Step 92* (*URA_Summary of Site*) and the total number of label name (*URA_Summary of Site Coverage & Communal Open Space*).

96 In the Project Browser ➤ Schedule ➤ Open *URA__Summary of Gross Floor Area (GFA)*

The GFA is auto- tabulated for you according to format.

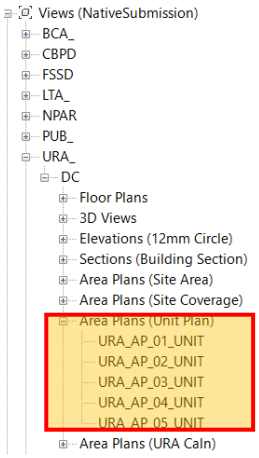


URA-_LV_SUMMARY OF SITE COVERAGE & COMMUNAL OPEN SPACE

Label Name	Site Coverage Area (m2)	Communal Open Space Area (m2)
Block 1	313.33 m²	191.40 m²
CP 1	70.33 m²	434.40 m²
CP 2	70.33 m²	434.40 m²
CP 3	70.33 m²	434.40 m²
ESS	59.79 m²	444.94 m²
Grand total: 5	584.09 m²	1939.53 m²

UNIT (for URA)

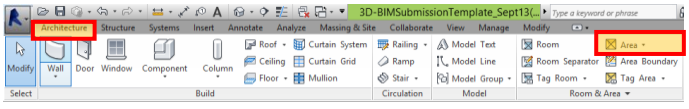
Open the URA Area Plans (Unit Plan)



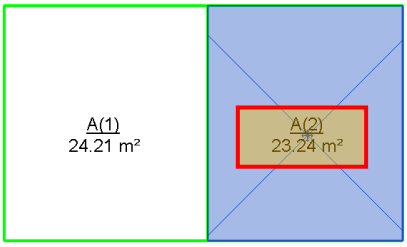
97 Click Architecture Tab ➤ Room & Area panel ➤ Area Boundary Line.

Draw the area boundaries of the Unit.

98 Click Architecture Tab ➤ Room & Area panel ➤ Area.



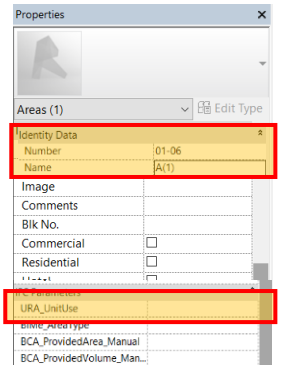
Click within the area defined in *Step 97* to place the Area.



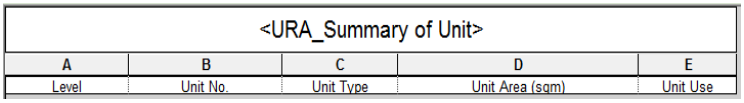
Tips: *Make sure **Tag on Placement** is toggled when placing Area.*

99 Select the Area defined in *Step 98.*

In the instance properties palette, specify the following:
(1) Name- *for Unit Type,*
(2) Number- *for Unit Number*
(3)URA_UnitType



100 In the Project Browser ➤ Schedule ➤ Open *URA_Summary of Unit*

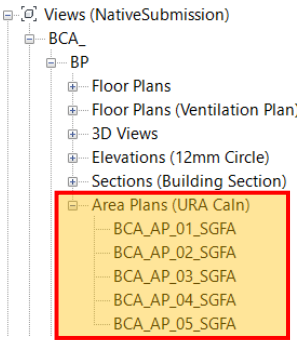


<URA_Summary of Unit>				
A	B	C	D	E
Level	Unit No.	Unit Type	Unit Area (sqm)	Unit Use

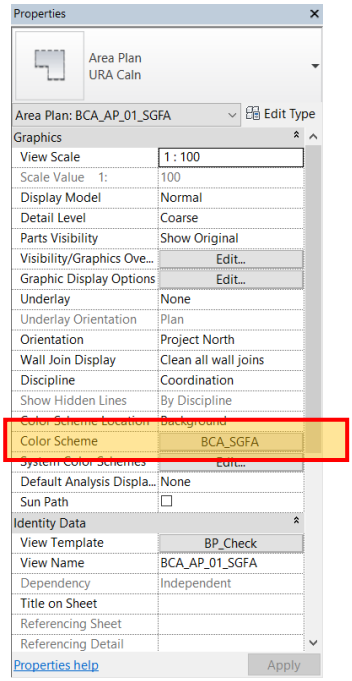
The schedule is auto- tabulated for you according to format.

SGFA (for BCA)

Open the BCA Area Plans (URA Caln)



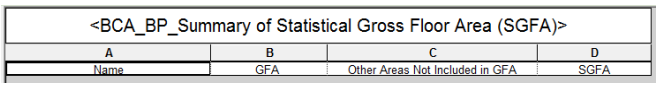
101 In the properties palette, change the Color scheme to *BCA_SGFA*.



Note: *All other areas not included in GFA computation will be filled with Red.*

102 In the Project Browser ➤ Schedule ➤ Open *BCA_BP_Summary of Statistical Gross Floor Area (SGFA)*

All the information is auto- tabulated for you according to format.

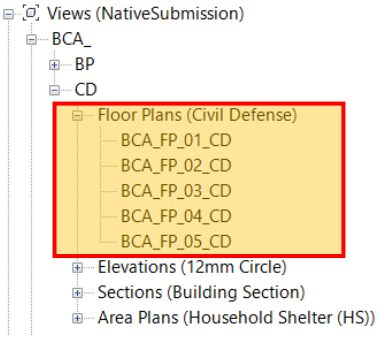


<BCA_BP_Summary of Statistical Gross Floor Area (SGFA)>			
A	B	C	D
Name	GFA	Other Areas Not Included in GFA	SGFA

Note: *The tabulation of SGFA is dependent on URA Area Computation.*

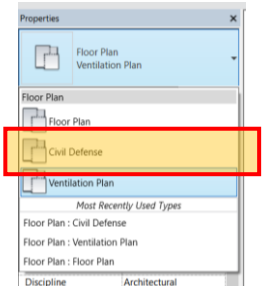
9. CD SHELTER REQUIREMENTS

103 Open the Civil Defense Plan.



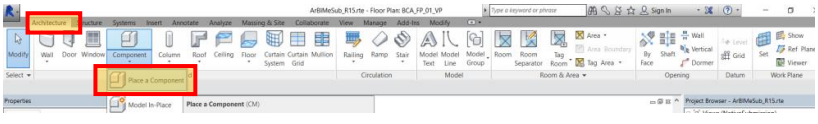
> ***Note:*** *BCA_FP_01_CD is a duplicated view of BCA_FP_01. Pre-sets of 5 views are create as a reference, you may create/ remove according to project needs.*

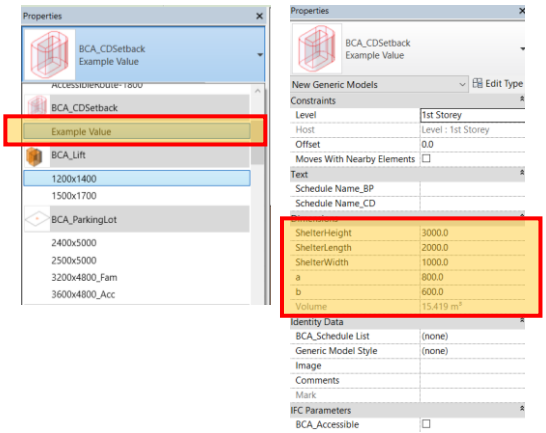
104 In the properties type view selector, change the Floor Plan into *Civil Defense Plan*.



Setback

105 Click Architecture tab ➤ Component ➤ Place a Component ➤ select *BCA_CDSetback*





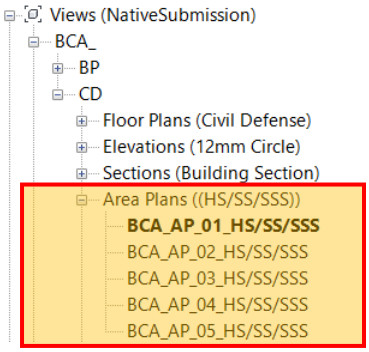
106 Click on the CD space to place.

> ***Note:*** *BCA_CDSetback family can be adjusted to comply with CD Shelter Requirements.*

Data of HS/ SS/ SSS

- **Data of Household Shelter**

107 Open the BCA Area Plan (HS/ SS/ SSS)

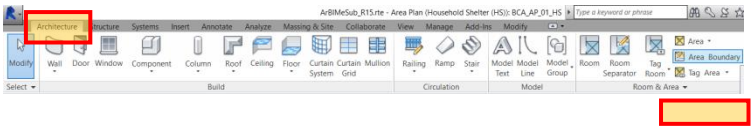


> **Note:** *Pre-sets of 1st-5th Area Plan views are created for reference, you may create/ remove according to project needs.*
>
> *Rename the view to: BCA_AP_01_HS, BCA_AP_02_HS, BCA_AP_02_HS, …*

108 Click Architecture tab ➤ Room & Area panel ➤ Area Boundary Line.

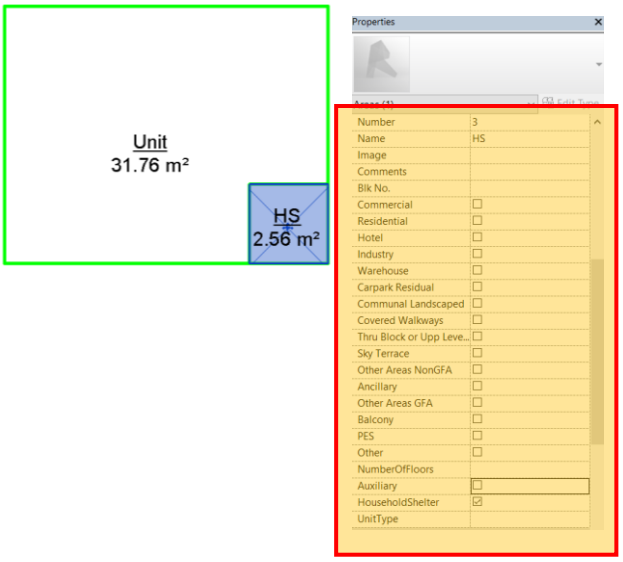
Draw the area boundaries of the Household Shelter (HS).

109 Click Architecture tab ➤ Room & Area panel ➤ Area.



110 Click within the boundaries to place Area.

> **Tips:** *Make sure **Tag on Placement** is toggled when placing Area.*

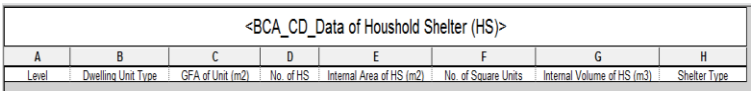


In the properties palette, specify the following:
(1) Name- (*Dwelling Unit Type)*
(2) Number of Floors
(4) Height of Shelter
(5)CD Shelter (Yes/No); *check if the area is Household Shelter (HS)*
(6) Shelter Type (*HA/ HB*)

111 Repeat *Steps 107-109* for the Unit-less than HS area.

112 Click within the boundaries to place Area.
In the properties palette, specify the following:
(1) Name- (*Dwelling Unit Type)*
(2) BCA_NumberOfHS
(4) BCA_HeightOfShelter
(5) Residential (Yes/No); *check if the area is Unit*
(6) BCA_Shelter Type- (*HA/ HB*)

113 In the project browser ➤ Schedule ➤ Open *BCA_CD_Data of Household Shelter (HS)*

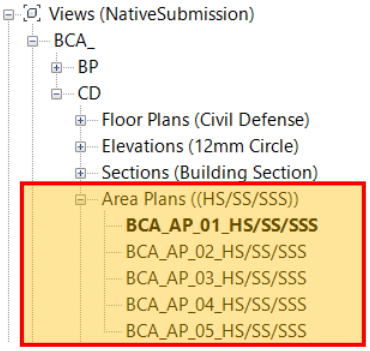


<BCA_CD_Data of Houshold Shelter (HS)>							
A	B	C	D	E	F	G	H
Level	Dwelling Unit Type	GFA of Unit (m2)	No. of HS	Internal Area of HS (m2)	No. of Square Units	Internal Volume of HS (m3)	Shelter Type

All the information is auto- tabulated for you according to format.

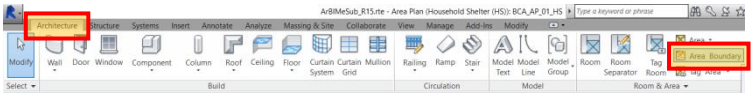
- **Data of Storey Shelter**

114 Open the BCA Area Plans (HS/ SS/ SSS)



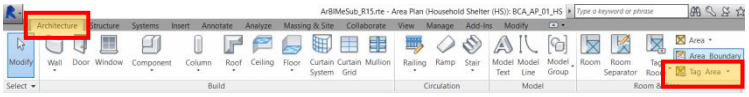
> ***Note:*** *Pre-sets of 1st-5th Area Plan views are created for reference, you may create/ remove according to project needs.*
>
> *Rename the view to: BCA_AP_01_SS, BCA_AP_02_SS, BCA_AP_02_SS, ...*

115 Click Architecture Tab ➤ Room & Area panel ➤ Area Boundary Line.



Draw the area boundaries of the Storey Shelter (SS).

116 Click Architecture Tab ➤ Room & Area panel ➤ Area.



116 Click within the boundaries to place Area.

> **Tips:** *Make sure **Tag on Placement** is toggled when placing Area.*

117 In the instance properties palette, under Identity Data, specify the following:
(1) Name- (*Dwelling Unit Type*); Unit Type/ SS
(2) Residential (Yes/No); Check for Units; Uncheck for SS
(3) BCA_HeightOfShelter
(4) BCA_ShelterName- Name of SS where the unit go
(7) Shelter Type (*SA/ SB*)

118 Chang the color scheme into: BCA_Shelter Name

Tips: *You may assign other colours aside from the default given in the template.*

119 In the project browser ➤ Schedule, Open *BCA_CD_Data of Storey Shelter (SS)*

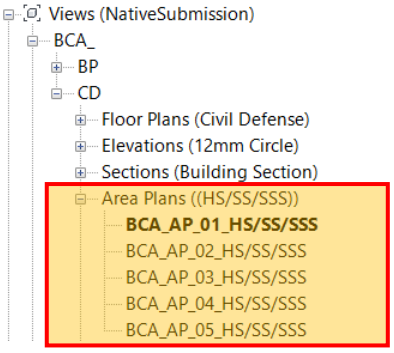
All the information is auto- tabulated for you according to format.

<BCA_CD_Data of Storey Shelter (SS)>

A	B	C	D	E	F	G	H
				AREA OF SCSS		VOLUME OF SCSS	
STOREY	UNIT TYPE	UNIT GFA	TNO	MIN. REQ. PE	ACTUAL PRO	MIN. REQ.	ACTUAL PRO

- **Data of Staircase Storey Shelter**

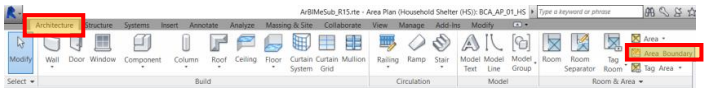
120 Open the BCA Area Plans (HS/SS /SSS)



Note: *Pre-sets of 1st-5th Area Plan views are created for reference, you may create/ remove according to project needs.*

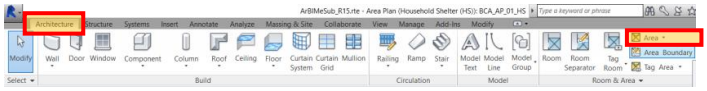
Rename the view to: BCA_AP_01_SSS, BCA_AP_02_SSS, BCA_AP_02_SSS, …

121 Click Architecture Tab ➤ Room & Area panel ➤ Area Boundary Line.



Draw the area boundaries of the Staircase Storey Shelter(SSS).

122 Click Architecture Tab ➤ Room & Area panel ➤ Area.



Click within the boundaries to place Area.

Tips: *Make sure **Tag on Placement** is toggled when placing Area.*

123

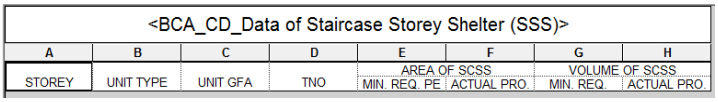
In the properties palette, specify the following:
(1) Name- (*Dwelling Unit Type*); Unit Type/ SS
(2) Residential (Yes/No); Check for Units; Uncheck for SS
(3) BCA_HeightOfShelter
(4) BCA_ShelterName- Name of SS where the unit go
(7) Shelter Type (*SA/ SB*)

Chang the color scheme into: BCA_Shelter Name

Tips: *You may assign other colours aside from the default given in the template.*

124

In the project browser ➤ Schedule ➤ Open *BCA_CD_Data of Staircase Storey Shelter (SSS)*



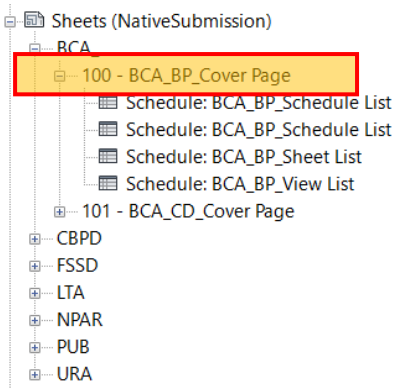
<BCA_CD_Data of Staircase Storey Shelter (SSS)>

A	B	C	D	E	F	G	H
				AREA OF SCSS		VOLUME OF SCSS	
STOREY	UNIT TYPE	UNIT GFA	TNO	MIN. REQ. PE	ACTUAL PRO.	MIN. REQ.	ACTUAL PRO.

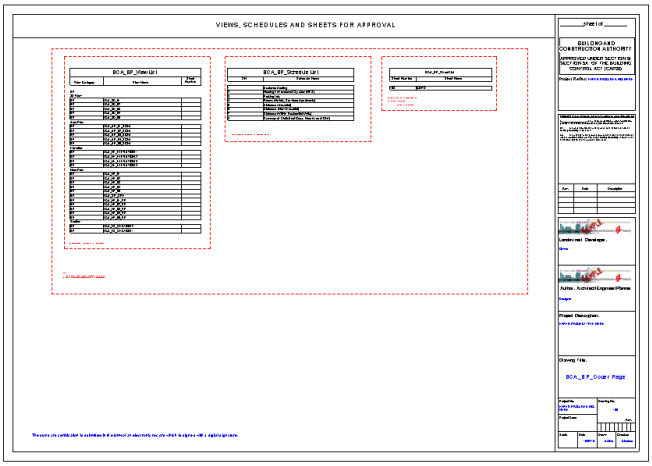
All the information is auto- tabulated for you according to format.

10. COVER PAGE

125 Open the sheet *BCA_BP_Cover Page*



126 The Cover Page shall have the following listed for approval: (1) Views, (2) Schedules and (3) Sheets.



> **Note:** *Cover Page is a sheet that is customised on Step 6(BCA_TB-A1Metric).*
>
> *Follow the pre-set format that is created in the Architectural BIM Template.*

View List

View list shall show:
(1) View Category
(2) View Name
(3) Sheet Number

> **Note:** *Part 3D views are not required to place on sheets.*

BCA_BP_View List

View Category	View Name	Sheet Number
BP		
3D View		
BP	BCA_3D_01	
BP	BCA_3D_02	
BP	BCA_3D_03	
BP	BCA_3D_04	
BP	BCA_3D_05	
Area Plan		
BP	BCA_AP_01_SGFA	115
BP	BCA_AP_02_SGFA	115
BP	BCA_AP_03_SGFA	115
BP	BCA_AP_04_SGFA	114
BP	BCA_AP_05_SGFA	114
Elevation		
BP	BCA_FE_ELEVATION 1	113
BP	BCA_FE_ELEVATION 2	113
BP	BCA_FE_ELEVATION 3	112
BP	BCA_FE_ELEVATION 4	112
Floor Plan		
BP	BCA_FP_01	108
BP	BCA_FP_02	108
BP	BCA_FP_03	108
BP	BCA_FP_04	109
BP	BCA_FP_05	109
BP	BCA_SP_SITE	109
BP	BCA_FP_01_VP	110
BP	BCA_FP_02_VP	110
BP	BCA_FP_03_VP	110
BP	BCA_FP_04_VP	111
BP	BCA_FP_05_VP	111
Section		
BP	BCA_FX_SECTION 2	111
BP	BCA_FX_SECTION 1	111

Schedule List

Schedule list shall show:
(1) No. of schedules prepared
(2) Schedule Name

Note: *Schedule List is manualy created using Keynote. Add/ Remove the schedule as needed.*

BCA_BP_Schedule List	
SN	Schedule Name
1	Audience Seating
2	Hearing Enhancement System (HES)
3	Parking Lots
4	Rooms (Hotels, Serviced Apartments)
5	Staircase (Industrial)
6	Staircase (Non- Industrial)
7	Staircase (Within Residential Units)
8	Summary of Statistical Gross Floor Area (SGFA)

Sheet List

Sheet list shall show:
(1) Sheet Number
(2) Sheet Name

BCA_BP_Sheet List	
Sheet Number	Sheet Name
103	CBPD
108	BCA_BP_Floor Plans
109	BCA_BP_Floor Plans
110	BCA_BP_Ventilation Plans
111	BCA_BP_Ventilation Plans, Sections
112	BCA_BP_Elevations
113	BCA_BP_Elevations
114	BCA_BP_SGFA Plans
115	BCA_BP_SGFA Plans

11. THE SUBMISSION FILE FORMAT

Checklist

- ✓ All views are located on the correct View Category
- ✓ Remove worksets
- ✓ Quality BIM
- ✓ Refer to *Code of Practice for BIM e-Submission Architectural Requirements* (11- Last saved Views)

Single File

Submit one (1) single .rvt file.

Federated Files

Submit multiple .rvt files.

(1) Compressing into .ZIP files

(2) Using e-Transmit

Note: *All linked files shall not be located on the company's server.*

Make sure the location path (of linked files) are readable upon submission.

12. MERGING THE TEMPLATE INTO AN EXISTING COMPANY TEMPLATE

The following settings shall be transferred/ copied from the template:

Schedules

Refer to schedules provided in ***ArBIMeSub_R15.rte***

Project standards

Refer to settings provided in ***ArBIMeSub_R15.rte***

Families

Refer to families provided in ***FamiliesRAC_Oct2016*** folder.

Shared Parameters

Refer to ***ArBIMeSubSharedParam.txt***

Note: *To ensure the originality of files, download from:* ***https://corenet.gov.sg/general/building-information-modeling-(bim)-e-submission.aspx***

