



Lands Department

GBP BIM Checking Tool for ArchiCAD User Manual

for

**PROVISION OF SERVICES FOR THE IMPLEMENTATION OF TOOLS FOR FACILITATING
AUTOMATED CHECKING PROCESS ON ELECTRONIC BUILDING PLANS TO THE LANDS
DEPARTMENT AND BUILDINGS DEPARTMENT**

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GBP BIM Checking Tool for ArchiCAD - User Manual

Table of Contents

| | | |
|---|---|----|
| 1 | Introduction | 1 |
| 2 | Prepare ArchiCAD File | 1 |
| 3 | Area Checking Tool – Buildings Department..... | 8 |
| 4 | Area Checking Tool – Lands Department | 8 |
| 5 | Area Checking Excel Result..... | 9 |
| 6 | Auto Coloring Tool..... | 11 |
| 7 | Transfer Template Settings (for existing projects only) | 12 |

1 Introduction

Lands Department provides the following two tools:

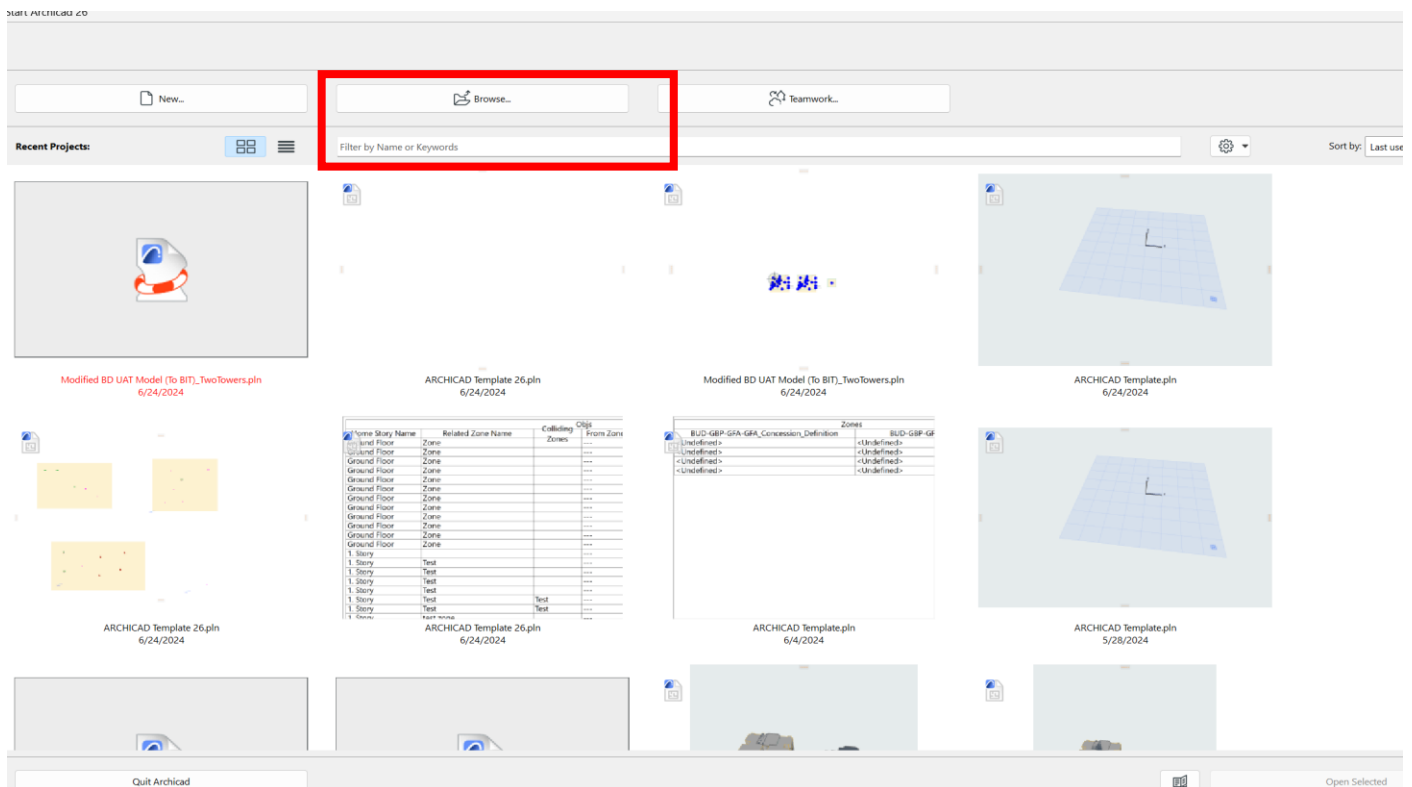
- i) Area Checking Tool – for generation of Lands Department General Building Plan Area Checking Report; and
- ii) Auto Coloring Tool – for automatic generation of area plans according to Lands Department requirements.

This manual will illustrate procedures to use the tools.

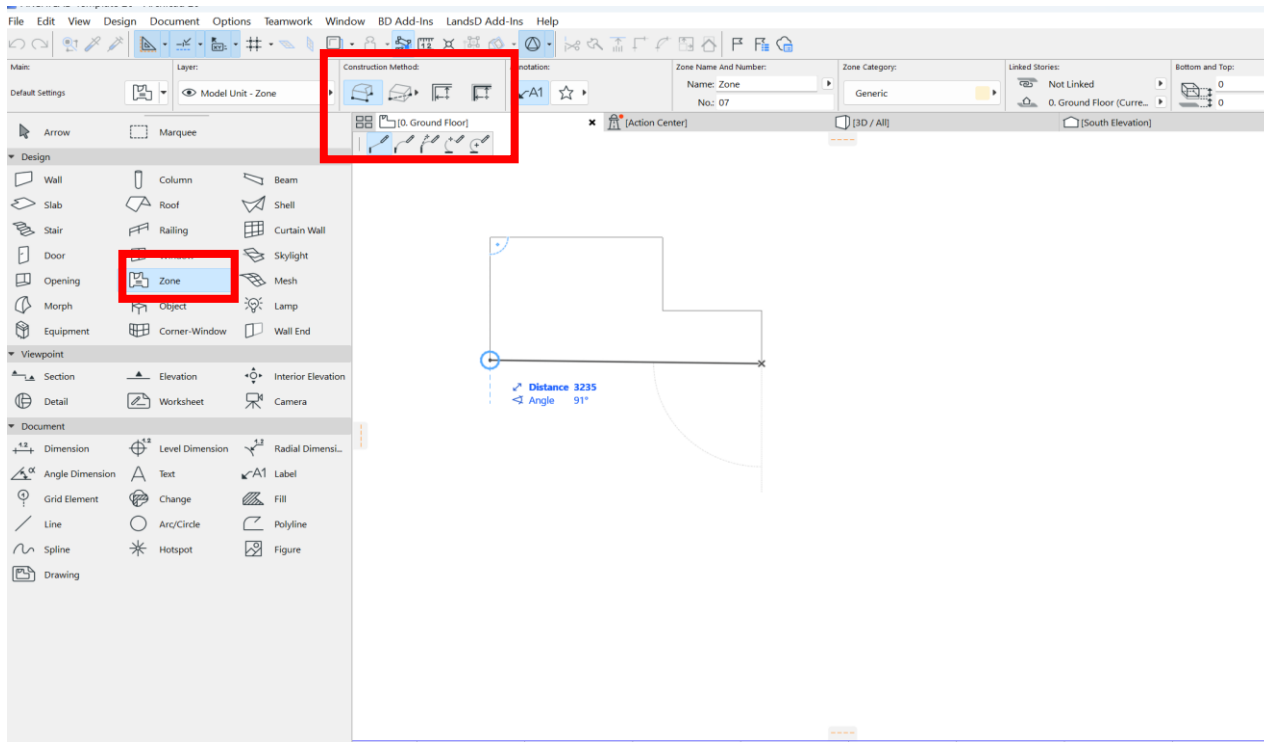
2 Prepare ArchiCAD File

2.1 Prepare ArchiCAD Zones

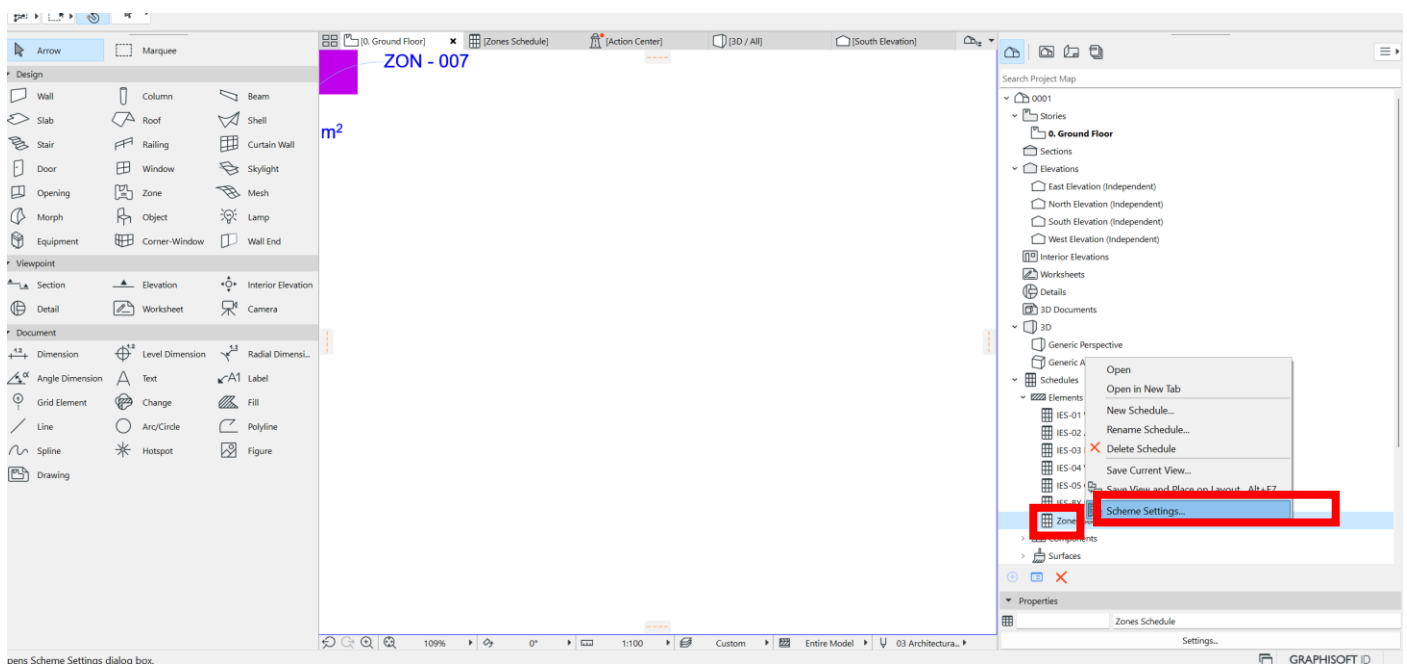
- i) Start a new project by clicking “Browse” to select the provided template file “ARCHICAD Template 26.pln” or refer to Section 7 to transfer relevant standards to your existing projects.



ii) Define zones using construction method boundary.

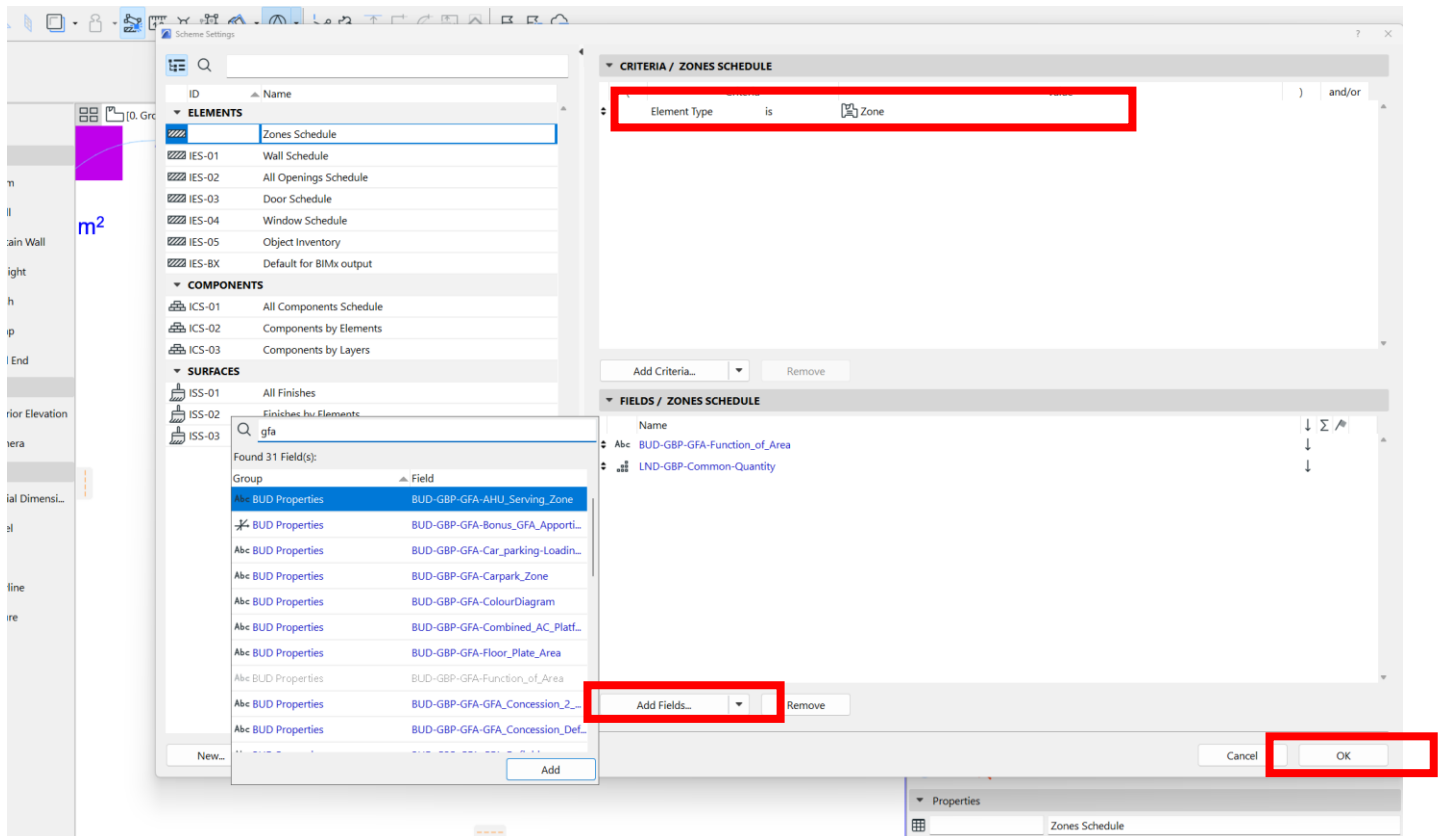


iii) Right click "zones schedule" in template, then pick "Scheme Settings" from the context menu to select the necessary parameters.

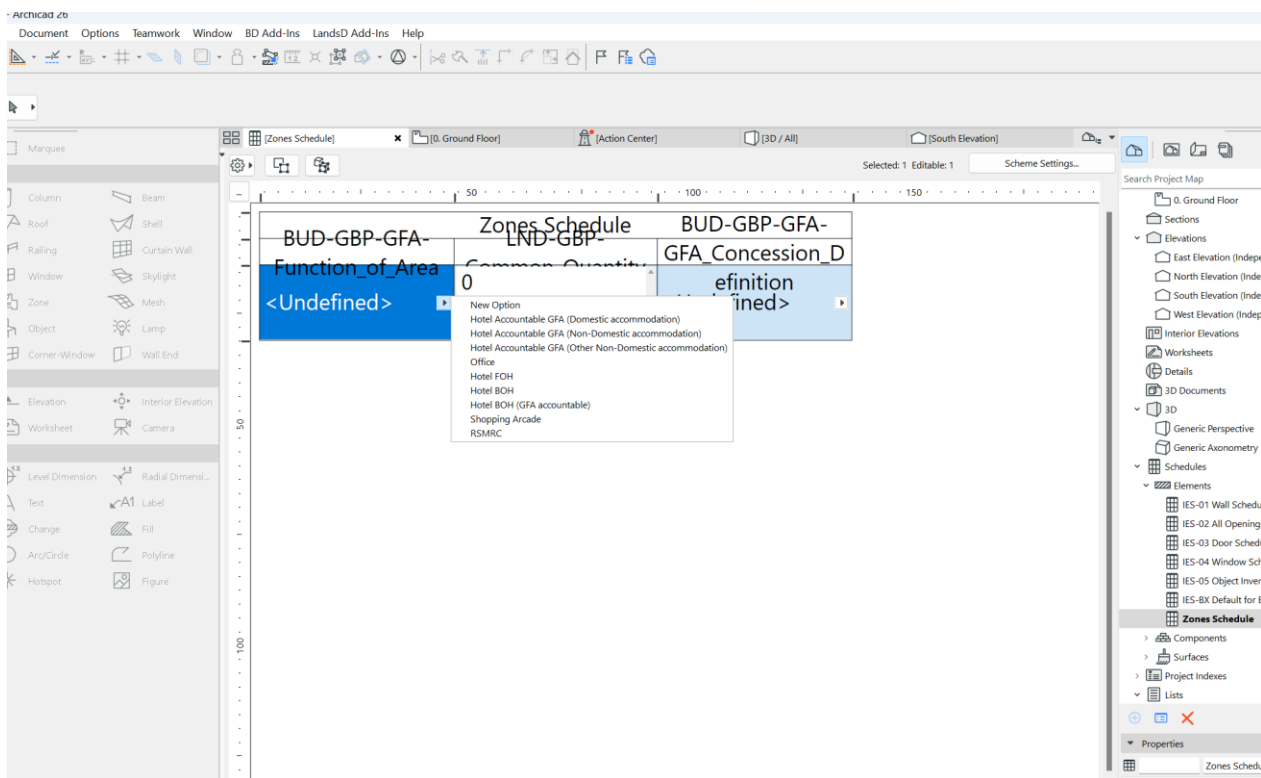


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- iv) Click “Add Fields...” to select zones parameters to be displayed in Zones Schedule in the template.

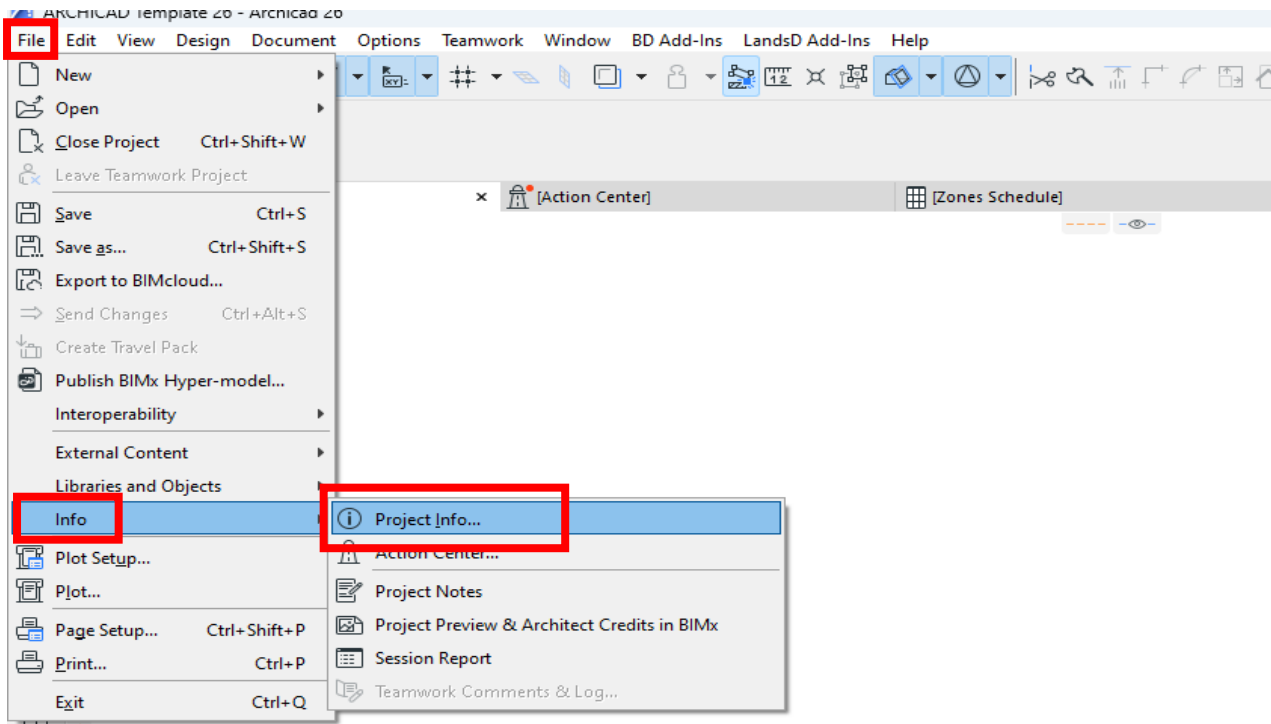


- v) Provide relevant zones parameters values via zones schedule.

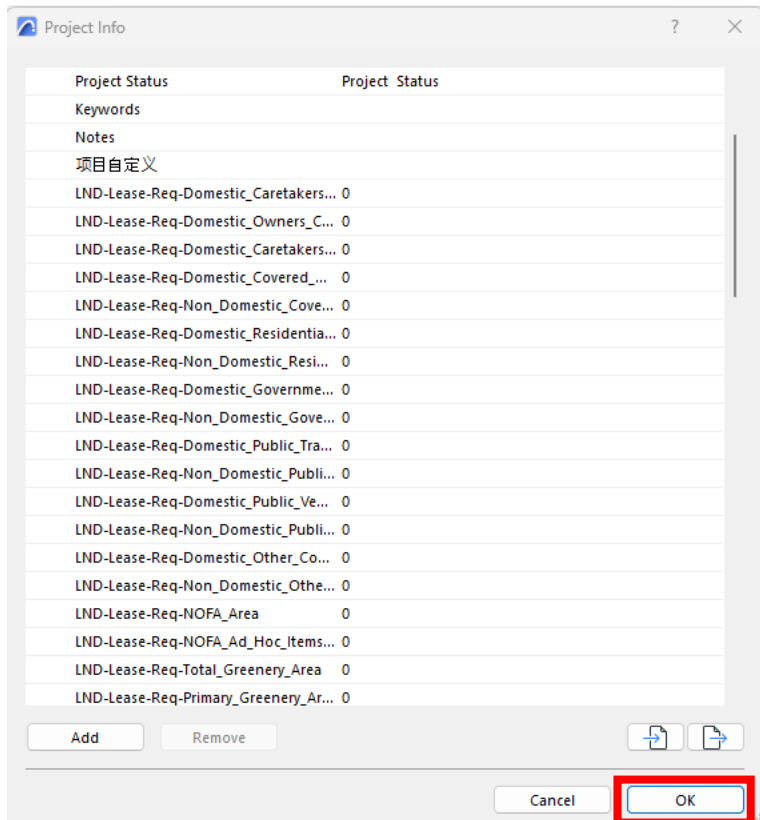


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- vi) Open “File” tag, then select “Project Info...” under “Info” to input LandsD areas under land lease requirements.



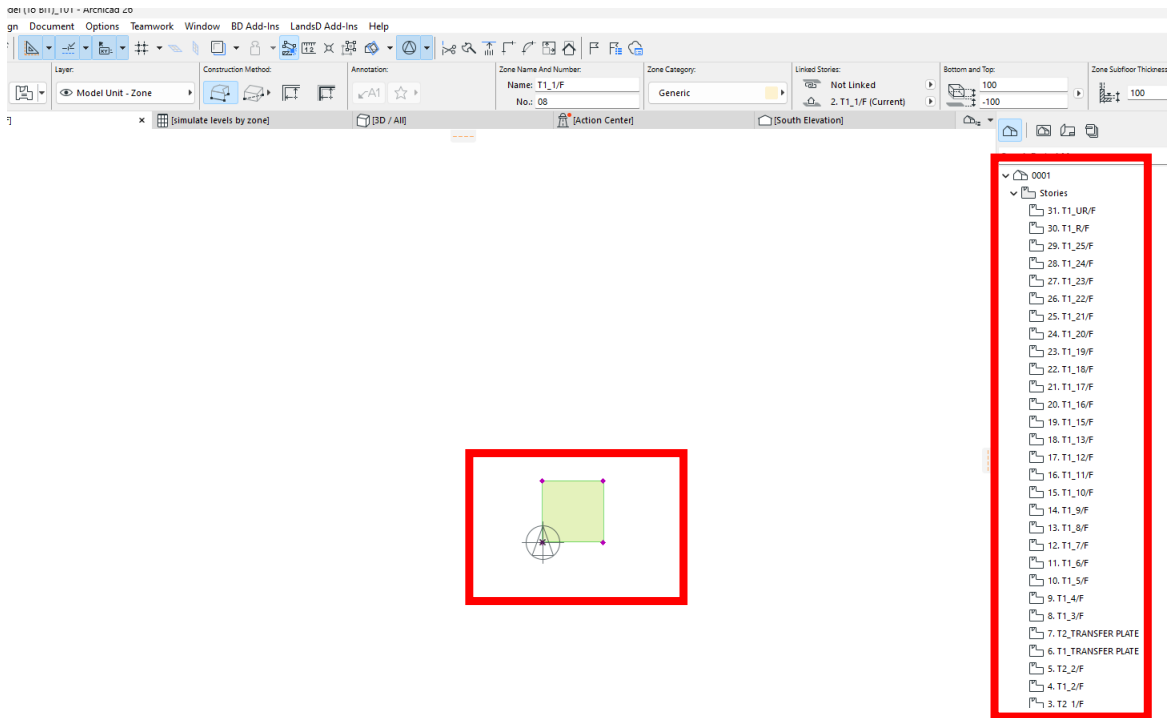
- vii) Provide areas under land lease requirements in the value of parameters starting with “LND-Lease-Req”, then click “OK”.



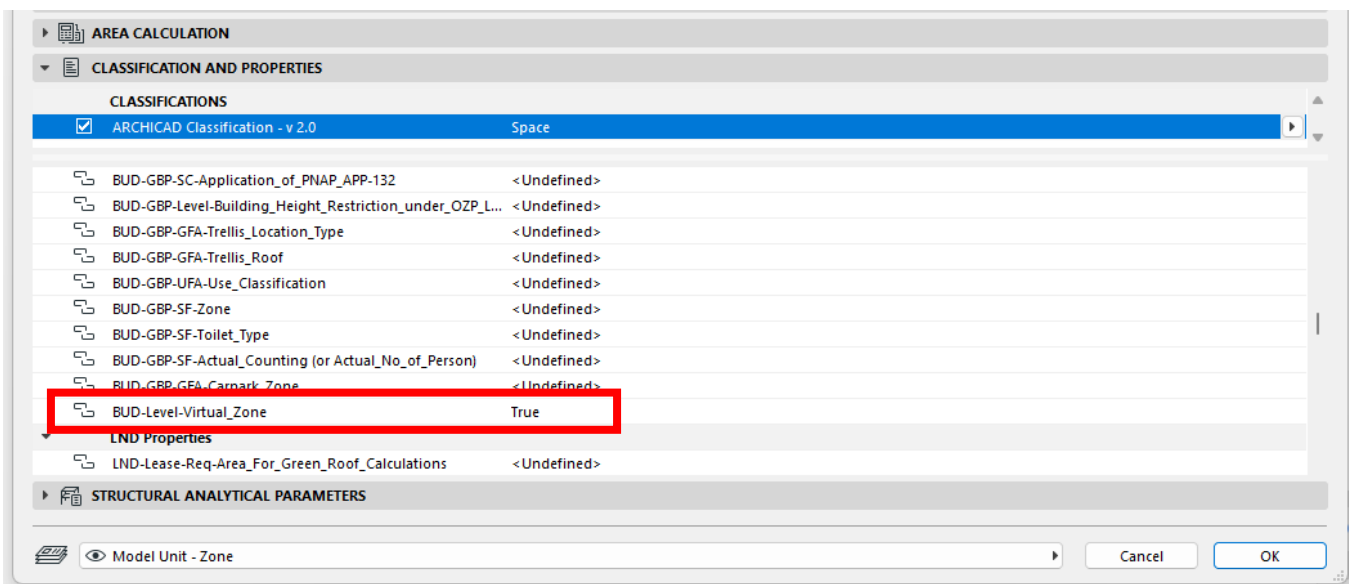
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2.2 Prepare ArchiCAD storey information

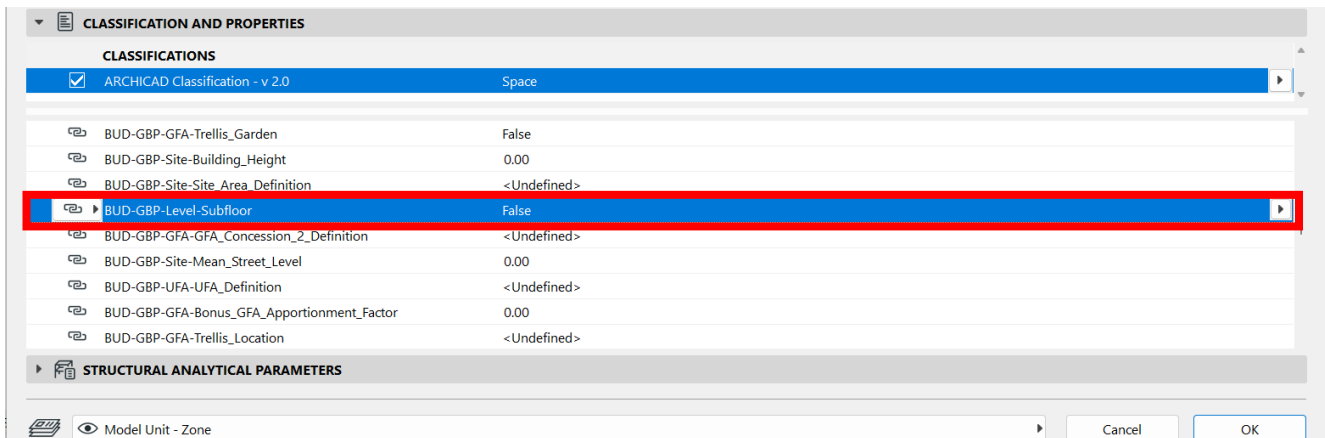
- i) Define a zone in each storey as a virtual zone. Required story property data will be entered to the virtual zone.



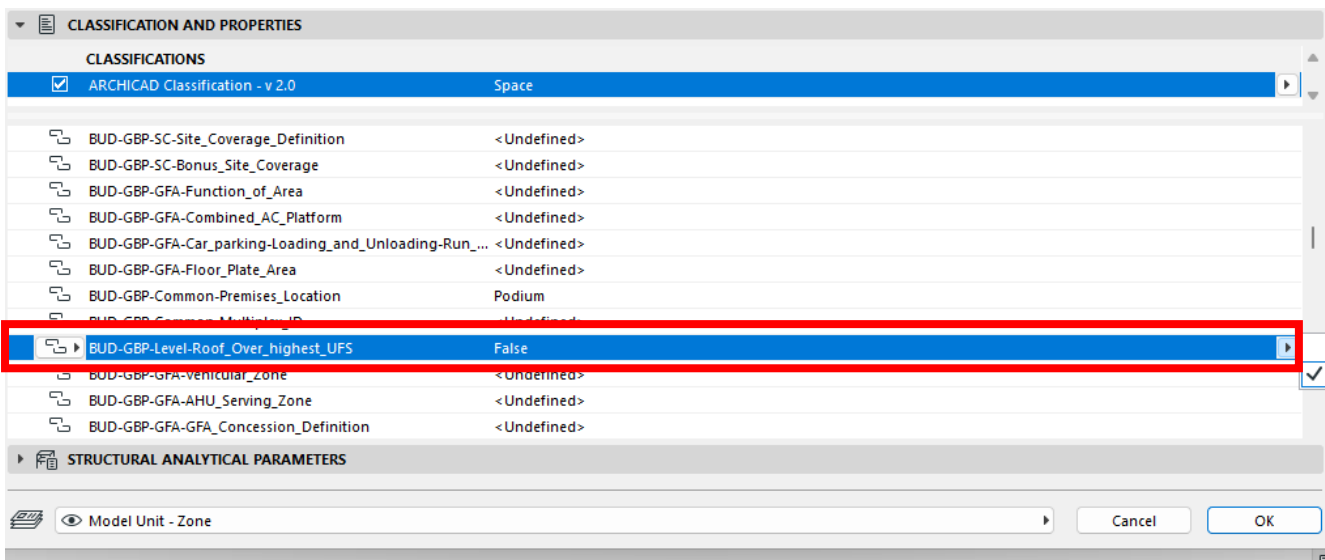
- ii) Select the virtual zone and in the "Zone Selection Settings" assign the "BUD-Level-Virtual_Zone" parameter with the value "True".



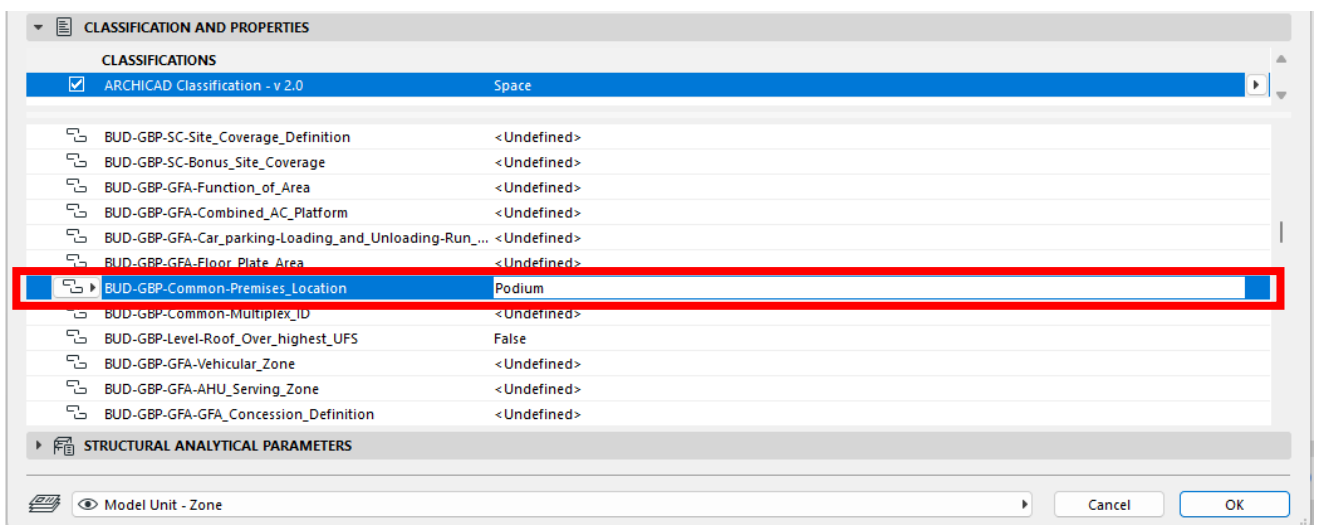
- iii) Assign appropriate values to the following parameters if applicable:
 - BUD-GBP-Level-Subfloor



- BUD-GBP-Level-Roof_Over_highest_UFS



- BUD-GBP-Common-Premises_Location






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2.3 Handling Hotlink/Separate Models.

The GBP BIM Checking Tool could support submission involving multiple ArchiCAD files via two methods:

- i) Method 1 – submission of one hotlinked ArchiCAD file. With this method, all individual ArchiCAD files should be hotlinked to a single master ArchiCAD file. Such master ArchiCAD file should be stored in one independent folder without any other separate ArchiCAD files. When submission of separate ArchiCAD files are required, they should be stored under a separate folder.

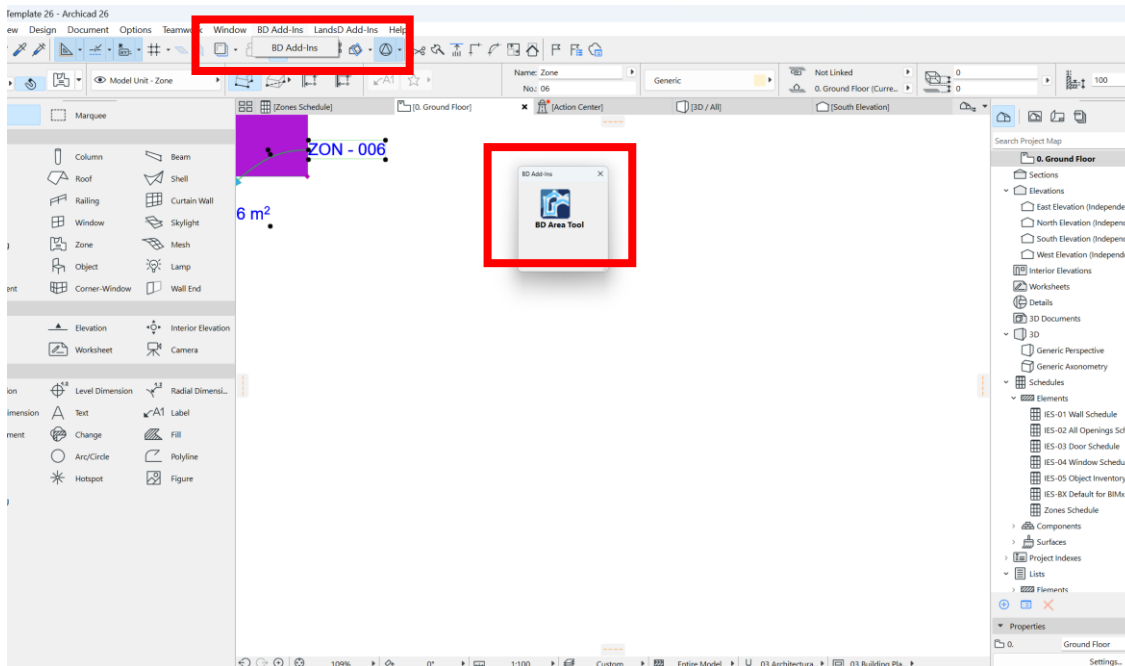
| Name | Status | Date modified | Type | Size |
|--|---|-------------------|-----------------------|-----------|
|  Master |   | 5/25/2024 4:26 PM | ArchiCAD Solo Proj... | 40,438 KB |

- ii) Method 2 – direct submission of separate ArchiCAD file without any master files. For method 2, all separate ArchiCAD files should be stored under the same folder.

| | | | | |
|--|---|-------------------|-----------------------|-----------|
|  Master-Deck |   | 5/25/2024 4:27 PM | ArchiCAD Solo Project | 12,064 KB |
|  Master-House A |   | 5/25/2024 4:28 PM | ArchiCAD Solo Project | 11,659 KB |
|  Master-House B |   | 5/25/2024 4:28 PM | ArchiCAD Solo Project | 11,658 KB |
|  Master-House C |   | 5/25/2024 4:29 PM | ArchiCAD Solo Project | 11,652 KB |
|  Master-House D |   | 5/25/2024 4:30 PM | ArchiCAD Solo Project | 11,675 KB |
|  Master-Tower A |   | 5/25/2024 4:31 PM | ArchiCAD Solo Project | 15,695 KB |
|  Master-Tower B |   | 5/25/2024 4:32 PM | ArchiCAD Solo Project | 14,309 KB |
|  Master-Tower C |   | 5/25/2024 4:33 PM | ArchiCAD Solo Project | 13,035 KB |
|  Master-Tower D |   | 5/25/2024 4:34 PM | ArchiCAD Solo Project | 13,494 KB |

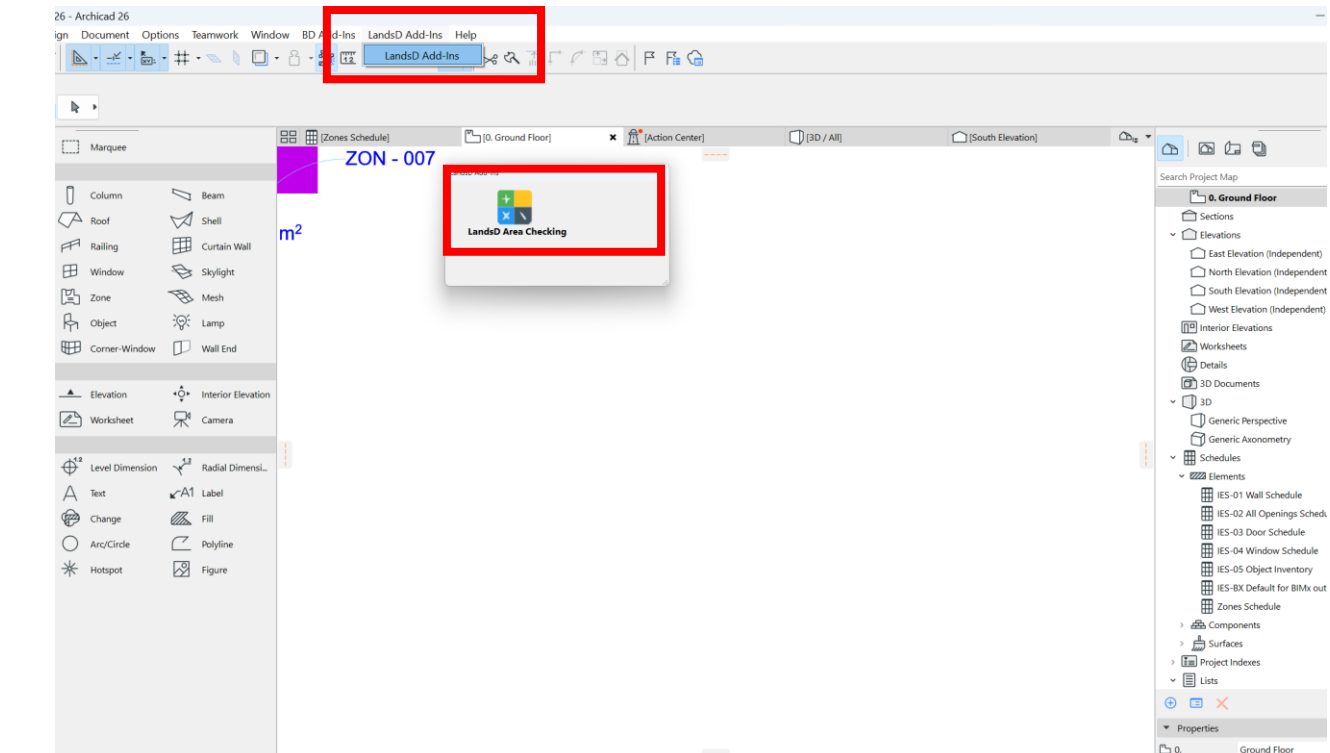
3 Area Checking Tool – Buildings Department

- i) Click “BD Add-Ins” tab, then click “BD Area Checking” button



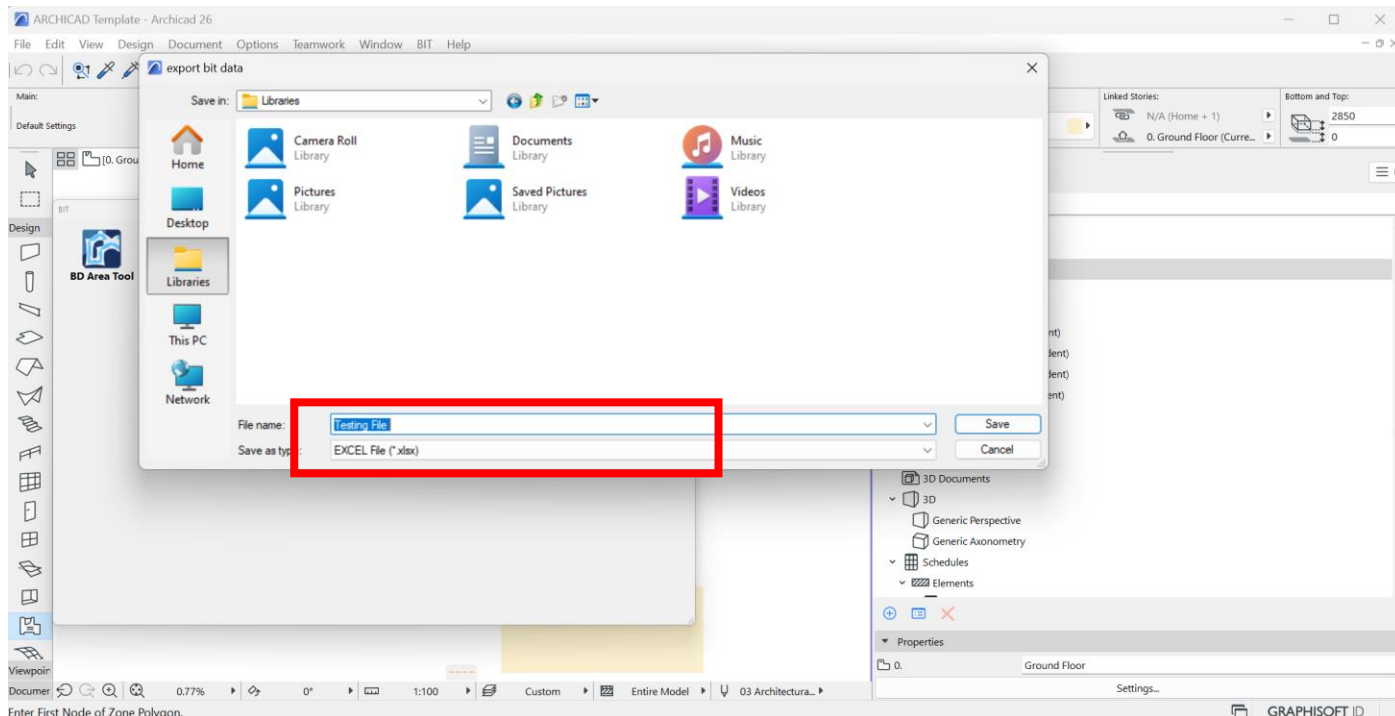
4 Area Checking Tool – Lands Department

- i) Click “LandsD Add-Ins” tab, then click “LandsD Area Checking” button.

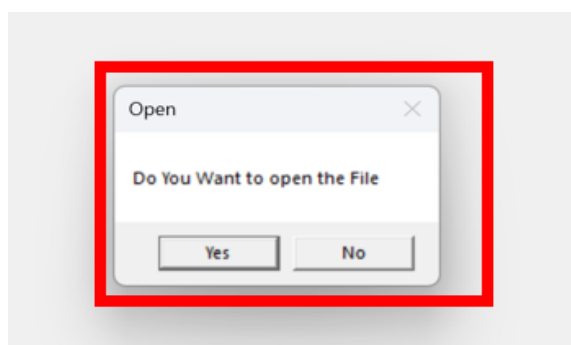


5 Area Checking Excel Result

- i) After selecting the calculation tool, a prompt window will open for selecting the Excel result path and name the file.



- ii) Results will be shown in Excel. Please do not interrupt the Excel process until a complete message is prompted in ARCHICAD. Click "Yes" to open the Excel file.



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The screenshot displays an Excel spreadsheet with the following data tables:

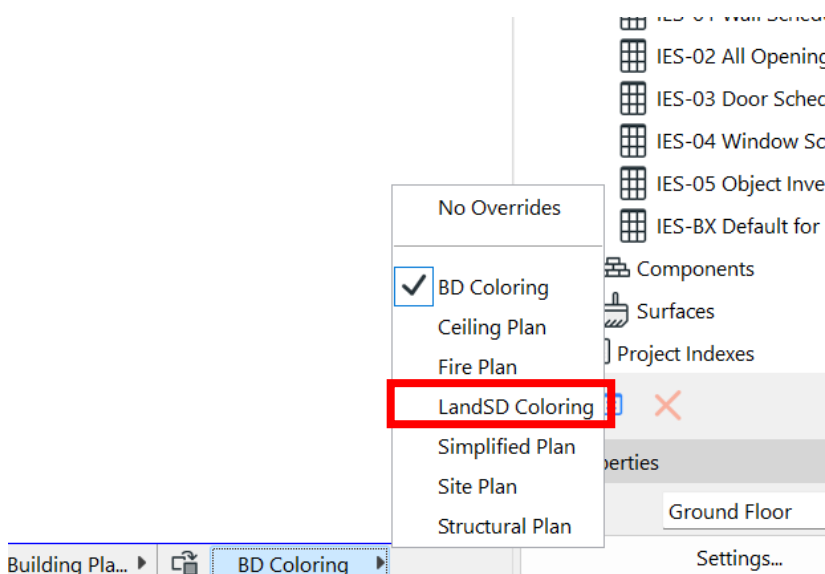
| Storey/Flat Room Schedule of Podium | | | | | | | |
|-------------------------------------|--------------------------|-------------|--------------------------------|----------------------------|-----------------------|-----------------------|--------------|
| Level | No. of Storey (Quantity) | Premises ID | No. of Flat/Room | Sub-total no. of flat/room | UFA (m ²) | UFS (m ²) | Multiplex ID |
| T1_B/F | 1 | | 0 | 0 | 0 | 0 | |
| T1_G/F | 1 | House A | 1 | 1 | 98.01 | 98.01 | |
| T1_1/F | 1 | House A | 1 | 1 | 48.51 | 48.51 | |
| T1_2/F | 1 | | 0 | 0 | 0 | 0 | |
| Total no. | 4 | | Total no. of flat/room: | 2 | | | |
| Total no. | 2 | | | | | | |

| Storey/Flat Room Schedule of T1 | | | | | | | |
|---------------------------------|--------------------------|-------------|------------------|----------------------------|-----------------------|-----------------------|--------------|
| Level | No. of Storey (Quantity) | Premises ID | No. of Flat/Room | Sub-total no. of flat/room | UFA (m ²) | UFS (m ²) | Multiplex ID |
| T1_3/F | 1 | Flat A | 1 | 1 | 20.225 | 20.225 | |
| T1_3/F | | Flat B | 1 | 1 | 38.387 | 38.387 | |
| T1_3/F | | Flat C | 1 | 1 | 38.386 | 38.386 | |
| T1_3/F | | Flat D | 1 | 1 | 20.217 | 20.217 | |
| T1_4/F-T1_12/F | 9 | Flat A | 1 | 9 | 20.233 | 20.233 | |
| T1_4/F-T1_12/F | | Flat B | 1 | 9 | 38.387 | 38.387 | |
| T1_4/F-T1_12/F | | Flat C | 1 | 9 | 38.386 | 38.386 | |
| T1_4/F-T1_12/F | | Flat D | 1 | 9 | 20.217 | 20.217 | |
| T1_13/F | 1 | | 0 | 0 | 0 | 0 | |
| T1_15/F | 11 | Flat A | 1 | 11 | 20.233 | 20.233 | |

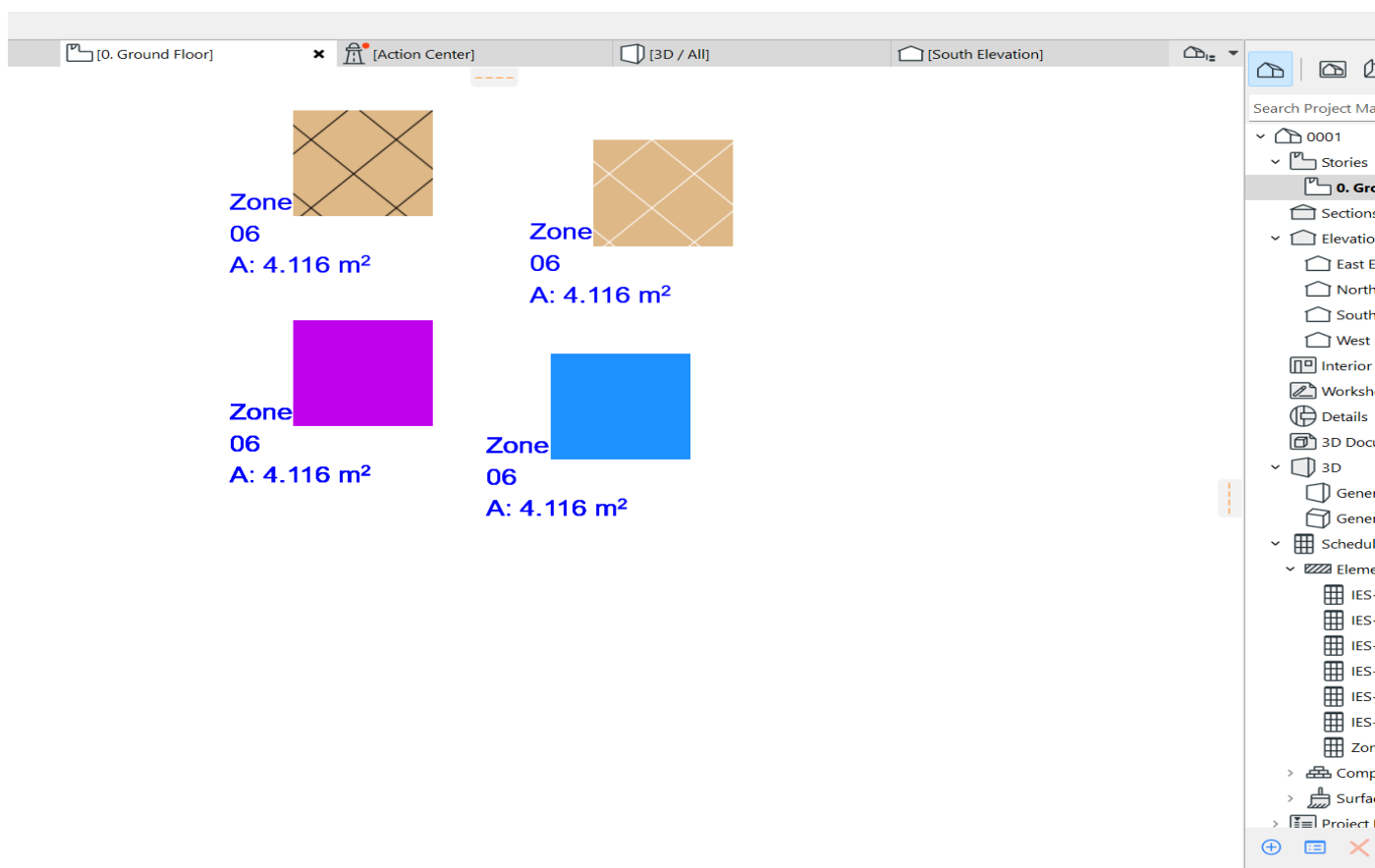
| Raw data of Elevation | | | | | |
|-----------------------|-----------------|---------|-----------------------|---------------|--------------|
| Premises Location | Elevation (mPD) | Level | Roof Over highest UFS | Invalid Level | Premises Loc |
| T1 | -3.150 | T2_B/F | No | No | T2 |
| T1 | 0.000 | T2_G/F | No | No | T1 |
| T1 | 3.150 | T2_1/F | No | No | |
| T1 | 6.300 | T2_2/F | No | No | |
| T1 | 12.600 | T1_3/F | No | No | |
| T1 | 15.750 | T1_4/F | No | No | |
| T1 | 18.900 | T1_5/F | No | No | |
| T1 | 22.050 | T1_6/F | No | No | |
| T1 | 25.200 | T1_7/F | No | No | |
| T1 | 28.350 | T1_8/F | No | No | |
| T1 | 31.500 | T1_9/F | No | No | |
| T1 | 34.650 | T1_10/F | No | No | |
| T1 | 37.800 | T1_11/F | No | No | |
| T1 | 40.950 | T1_12/F | No | No | |
| T1 | 44.100 | T1_13/F | No | No | |
| T1 | 47.250 | T1_15/F | No | No | |
| T1 | 50.400 | T1_16/F | No | No | |
| T1 | 53.550 | T1_17/F | No | No | |
| T1 | 56.700 | T1_18/F | No | No | |
| T1 | 59.850 | T1_19/F | No | No | |

6 Auto Coloring Tool

- i) Select graphic override and LandsD Colouring in template.



- ii) Zones will be colored automatically based on pre-defined rules.



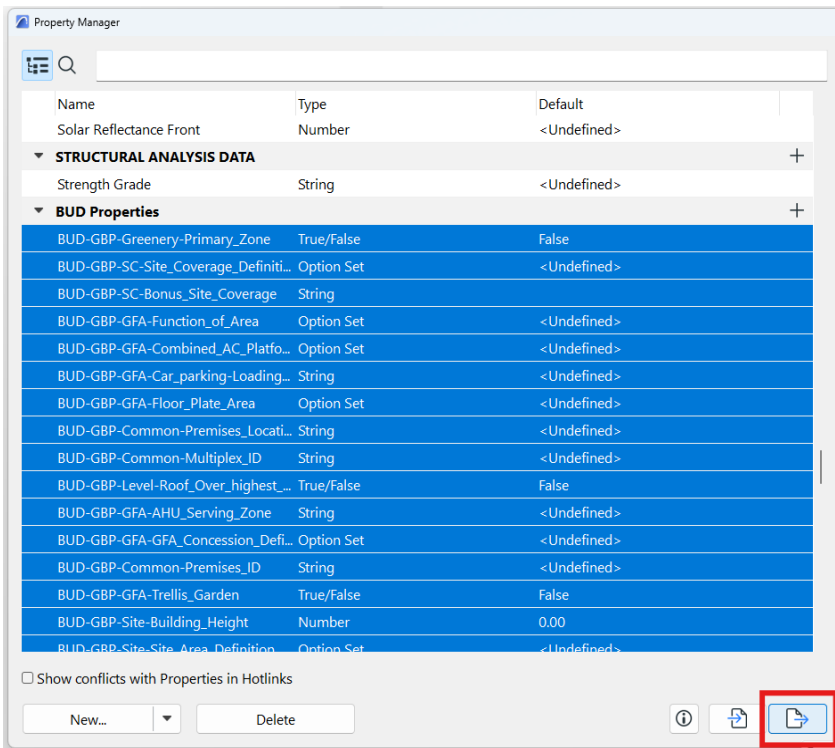
7 Transfer Template Settings (for existing projects only)

7.1 In order to transfer template settings to your existing project, you may follow the following procedures:

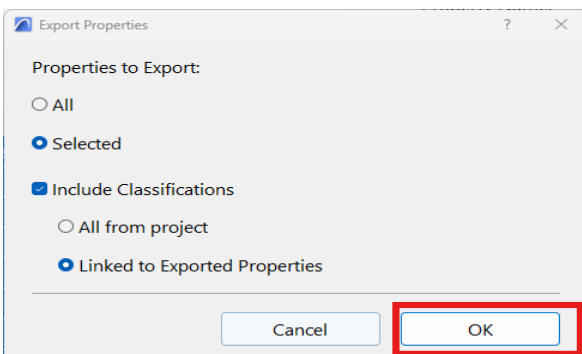
- i) **Template Parameter Settings:** Export from Property Manager and import into your project.
- ii) **Project Info Parameters:** Export project information from the template and import it into your active file.
- iii) **Fill Types:** Export and import fill types using the Attribute Manager.
- iv) **Graphic Overrides:** Export and import graphic override settings from the Graphic Override dialog box.

7.2 To export parameter settings from the template file, follow procedures below:

- i) Open template file.
- ii) Open property manager (Options > Property > Manager).
- iii) Select all properties or groups for export.
- iv) Click the export button.

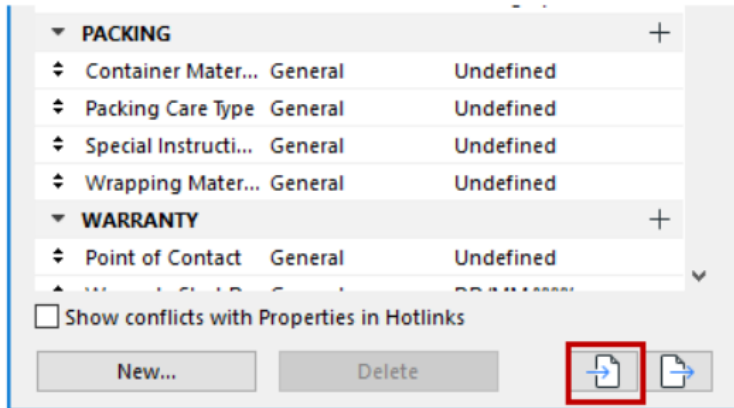


v) Set preferred options in the dialog box:

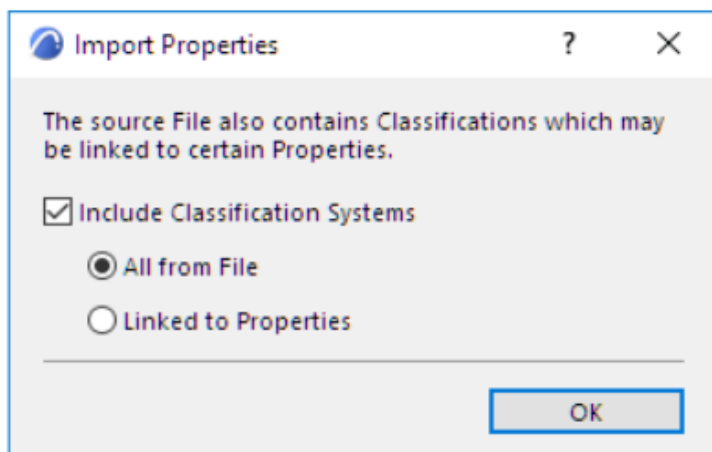


7.3 To import template parameter settings to your existing project, follow procedures below:

- i) Open active file containing the area information.
- ii) Open Property Manager (Options > Property Manager).
- iii) Click the import button.



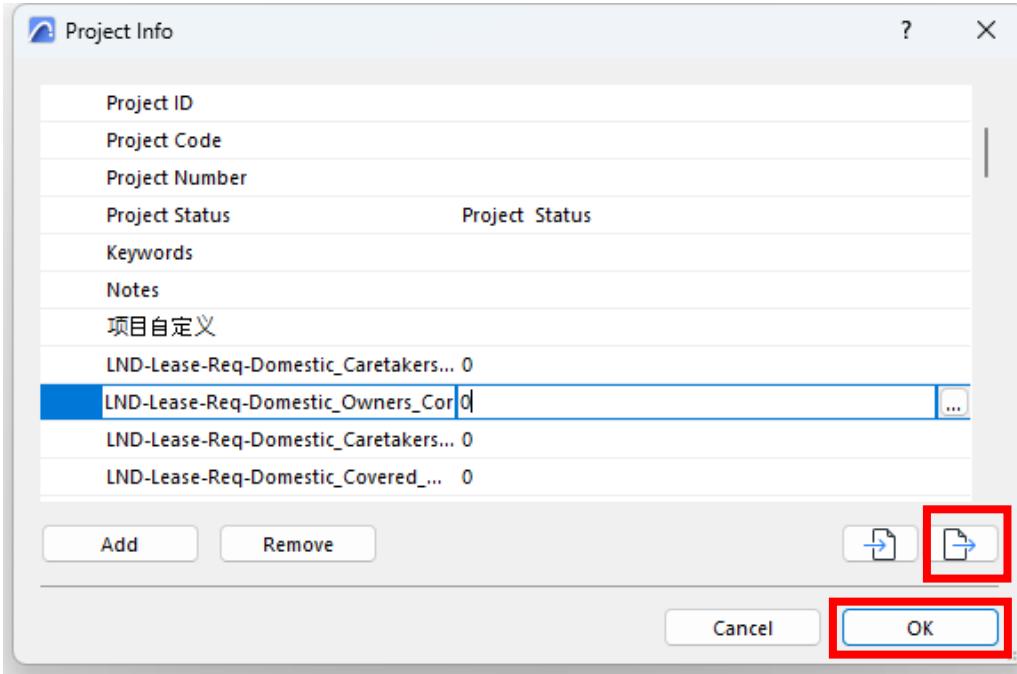
- iv) In the open file dialog box, browse the XML file that contains the properties you need, then click "OK".
- v) Set preferred options in the dialog box:



GBP BIM Checking Tool for ArchiCAD - User Manual

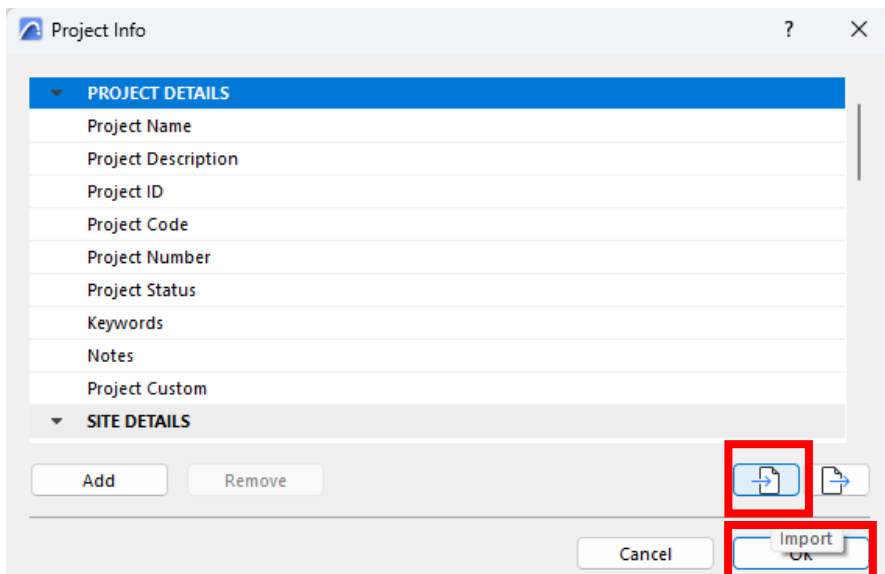
7.4 To export project Info parameters from the template file, follow procedures below:

- i) Open template file.
- ii) Open project info (File > Info >Project Info).
- iii) Click the export button and “OK”.



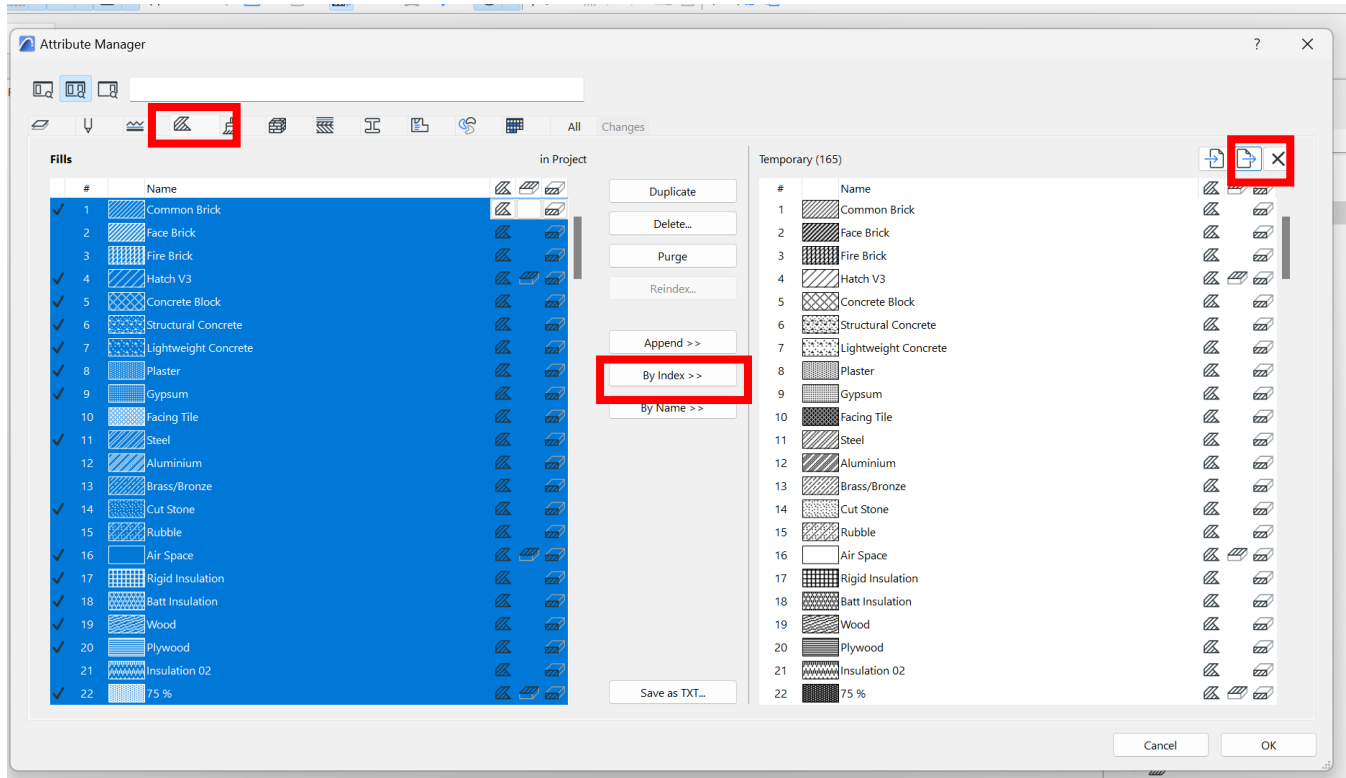
7.5 To import template project Info parameters to your existing project, follow procedures below:

- i) Open your active file containing the area information.
- ii) Open project info (File > Info >Project Info).
- iii) Click the import button.
- iv) Click “OK” to save changes.



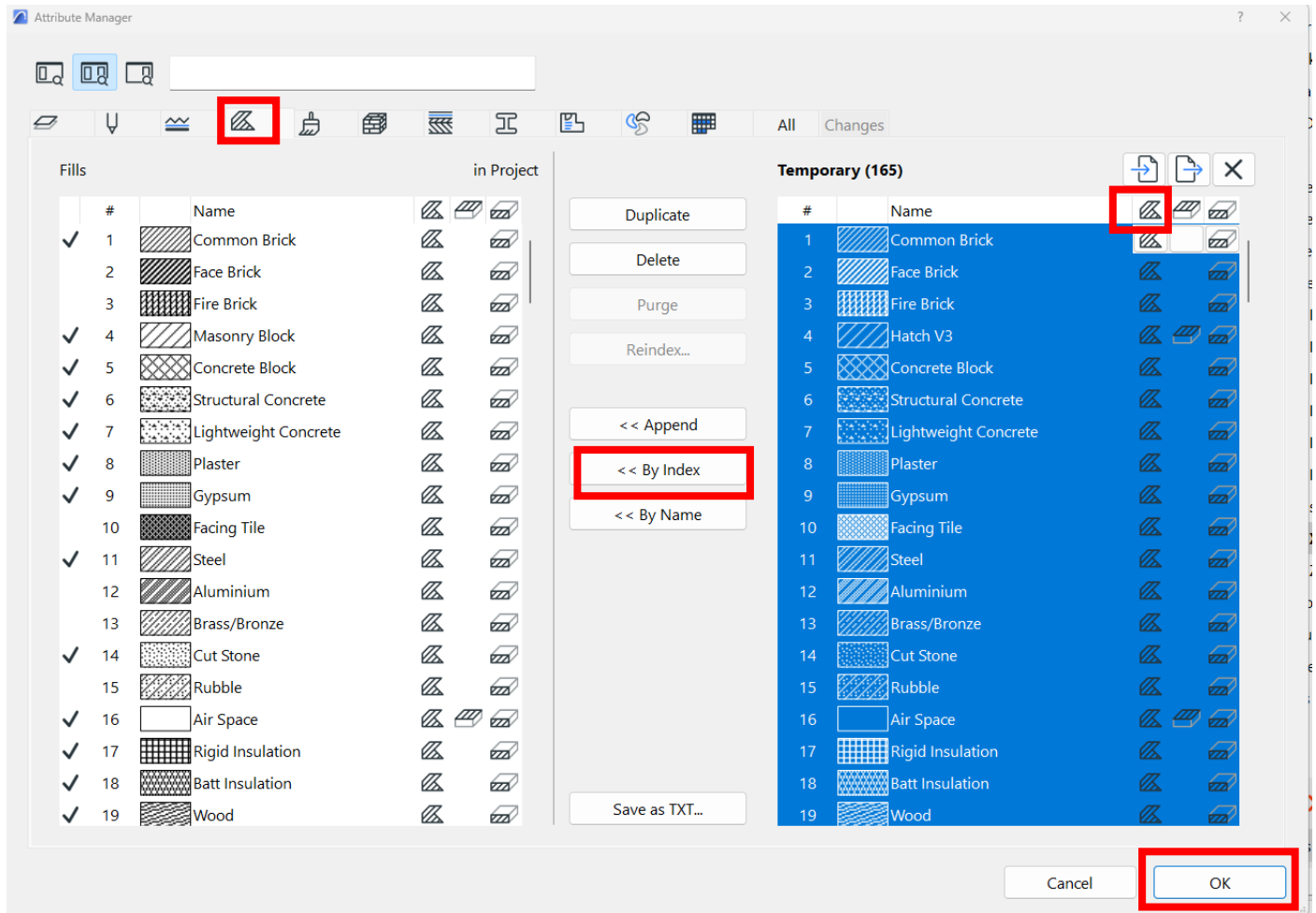
7.6 To export fill types in template from the template file, follow procedures below:

- i) Open your active file in ArchiCAD.
- ii) Open the attribute manager dialog box: navigate to (Options > Element Attributes > Attribute Manager).
- iii) In the attribute manager dialog box, switch to the fills tab to view all fill types.
- iv) Select all fill types.
- v) Click “By Index >>” to move selected fill types to the right list.
- vi) Click the export button to export the selected fill types.



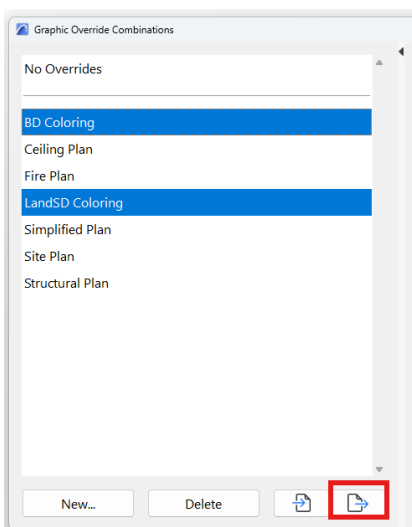
7.7 To import fill types in template to your existing project, follow procedures below:

- i) Open your active file containing the area information.
- ii) Open the attribute manager dialog box: (navigate to Options > Element Attributes > Attribute Manager).
- iii) Click the import button for the selected fill types.
- iv) In the attribute manager dialog box, switch to the fills tab to view all imported fill types.
- v) Select all Imported fill types.
- vi) Click “<< By Index” to move selected fill types to the left list.
- vii) Click “OK” to save changes.



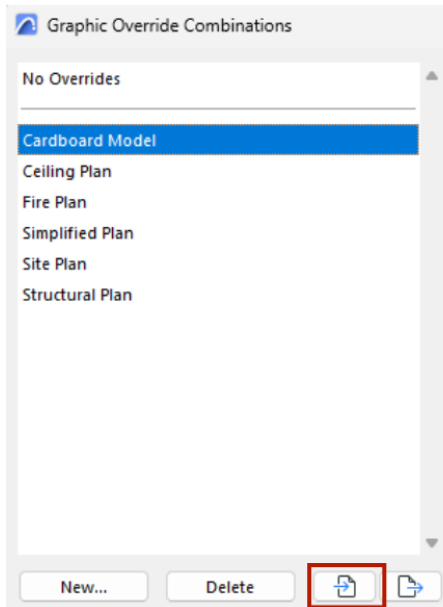
7.8 To export graphic overrides settings from the template file, follow procedures below:

- i) Open template file.
- ii) Open graphic override dialogue box (Document > Graphic Overrides > Graphic Override Combinations).
- iii) Select one or more graphic override combinations.
- iv) Use the buttons at the bottom of the combinations dialog to export selected combinations in XML format.



7.9 To import template graphic overrides setting to your existing project, follow procedure belows:

- i) Open your active file containing the area information.
- ii) Open graphic override dialogue box (Document> Graphic Overrides > Graphic Override>Combinations).
- iii) Select one or more graphic override combinations.
- iv) Use the buttons at the bottom of the combinations.
- v) Import selected combinations in XML format.



A Appendix – List of Area Information and Parameter Naming

| Calculations | Area Information | Related Parameter Name 1 | Related Parameter Name 2 | Remarks |
|-------------------------------------|--|---|----------------------------|--|
| Non-Domestic SC calculations | Site Coverage Definition | BUD-GBP-SC-Site_Coverage_Definition | | |
| | Curtain walling system | LND-GBP-SC-Curtain_Wall | | required only when accountable under lease |
| | Ad hoc items under lease | LND-GBP-SC-Non_Domestic_Ad_Hoc_Items_Under_Lease | | |
| Domestic SC calculations | Site Coverage Definition | BUD-GBP-SC-Site_Coverage_Definition | | |
| | Curtain walling system | LND-GBP-SC-Curtain_Wall | | required only when accountable under lease |
| | Caretaker's/watchman office | LND-GBP-SC-Caretaker_Office | | |
| | Caretaker's/watchman quarters | LND-GBP-SC-Caretaker_Quarter | | |
| | Owners' corporation / owners' committee office | LND-GBP-SC-Owner_Office | | |
| | Ad hoc items under lease | LND-GBP-SC-Domestic_Ad_Hoc_Items_Under_Lease | | |
| | Non-Domestic GFA calculations | GFA Definition | BUD-GBP-GFA-GFA_Definition | BUD-GBP-GFA-Function_of_Area |
| | Car parking / Loading and unloading / Run-in/out or Driveway Zone ID | BUD-GBP-GFA-Carpark_Zone | | |
| | Apportionment Factor | BUD-GBP-GFA-Bonus_GFA_Apportionment_Factor | | |
| | GFA Concession Definition | BUD-GBP-GFA-GFA_Concession_Definition | BUD-GBP-GFA-GFA_Definition | |
| | GFA Concession 2 Definition | BUD-GBP-GFA-GFA_Concession_2_Definition | BUD-GBP-GFA-GFA_Definition | |
| | Curtain walling system | LND-GBP-GFA-Curtain_Wall | BUD-GBP-GFA-GFA_Definition | required only when accountable under lease |
| | Covered Walkway required under lease | LND-GBP-GFA-Covered_Walkway_Required_Under_Lease | BUD-GBP-GFA-GFA_Definition | |
| | Residential Care Homes for the Elderly | LND-GBP-GFA-Home_Elderly | BUD-GBP-GFA-GFA_Definition | |
| | Government Accommodation | LND-GBP-GFA-Government_Accommodation | BUD-GBP-GFA-GFA_Definition | |
| | Public transport terminus | LND-GBP-GFA-Public_Transport_Terminus | BUD-GBP-GFA-GFA_Definition | |
| | Public Vehicle Park | LND-GBP-GFA-Public_Vehicle_Park | BUD-GBP-GFA-GFA_Definition | |
| | Ad hoc items under lease | LND-GBP-GFA-Non_Domestic_Ad_Hoc_Items_Under_Lease | BUD-GBP-GFA-GFA_Definition | |
| Domestic GFA calculations | GFA Definition | BUD-GBP-GFA-GFA_Definition | | |

GBP BIM Checking Tool for ArchiCAD - User Manual

| | | | | |
|--------------------------------|--|--|----------------------------|--|
| | Car parking / Loading and unloading / Run-in/out or Driveway Zone ID | BUD-GBP-GFA-Carpark_Zone | | |
| | Apportionment Factor | BUD-GBP-GFA-Bonus_GFA_Apportionment_Factor | | |
| | GFA Concession Definition | BUD-GBP-GFA-GFA_Concession_Definition | BUD-GBP-GFA-GFA_Definition | |
| | GFA Concession 2 Definition | BUD-GBP-GFA-GFA_Concession_2_Definition | BUD-GBP-GFA-GFA_Definition | |
| | Curtain walling system | LND-GBP-GFA-Curtain_Wall | BUD-GBP-GFA-GFA_Definition | required only when accountable under lease |
| | Covered Walkway required under lease | LND-GBP-GFA-Covered_Walkway_Required_Under_Lease | BUD-GBP-GFA-GFA_Definition | |
| | Residential Care Homes for the Elderly | LND-GBP-GFA-Home_Elderly | BUD-GBP-GFA-GFA_Definition | |
| | Public Vehicle Park | LND-GBP-GFA-Public_Vehicle_Park | BUD-GBP-GFA-GFA_Definition | |
| | Ad hoc items under lease | LND-GBP-GFA-Domestic_Ad_Hoc_Items_Under_Lease | BUD-GBP-GFA-GFA_Definition | |
| NOFA calculations | NOFA Definition | LND-GBP-NOFA-Classification | LND-GBP-Common-Quantity | |
| | Ad hoc items under lease | LND-GBP-NOFA-Ad_Hoc_Items_Under_Lease | LND-GBP-Common-Quantity | |
| Greenery calculations | Greenery Definition | BUD-GBP-Greenery-Greenery_Definition | LND-GBP-Common-Quantity | |
| | Primary Zone | BUD-GBP-Greenery-Primary_Zone | LND-GBP-Common-Quantity | |
| | Area for green roof calculations | LND-GBP-Greenery-Green_Roof | LND-GBP-Common-Quantity | |
| | Ad hoc items under lease | LND-GBP-Greenery-Ad_Hoc_Items_Under_Lease | LND-GBP-Common-Quantity | |
| Open Space calculations | Open Space Definition | LND-GBP-OpenSpace-Classification | LND-GBP-Common-Quantity | |
| | Ad hoc items under lease | LND-GBP-OpenSpace-Ad_Hoc_Items_Under_Lease | LND-GBP-Common-Quantity | |
| Site Information | Lot Area under lease | LND-GBP-Common-Lot-Area-Under-Lease | | |
| Common Properties | Area ID | BUD-GBP-Common-Area_ID | | |

B Appendix – Automatic Colouring Logic

| Color | Parameter Name | Parameter Value |
|--|--|--|
| ORANGE | BUD-GBP-GFA-GFA_Definition | Domestic area or Domestic area to be disregarded from BD GFA calculations only |
| DEEP BLUE HATCHED WHITE | BUD-GBP-GFA GFA_Concession_Definition | 05 Balcony or 12 Utility platform |
| DEEP BLUE CROSS HATCHED WHITE | BUD-GBP-GFA-GFA_Definition | Domestic area to be disregarded from GFA calculations or Domestic area to be disregarded from BD GFA calculations only or Non-Domestic area to be disregarded from GFA calculations or Non-Domestic area to be disregarded from BD GFA calculations only |
| | BUD-GBP-GFA GFA_Concession_Definition | 14 Counters, Kiosks, Offices, Stores, Guard Rooms, and Lavatories for Watchmen and Management Staff (serving domestic) or 14 Counters, Kiosks, Offices, Stores, Guard Rooms, and Lavatories for Watchmen and Management Staff (serving non-domestic) |
| DEEP BLUE CROSS HATCHED BLACK | BUD-GBP-GFA GFA_Concession_Definition | 14 Caretakers' Quarters |
| DEEP BLUE STIPPLED WHITE | BUD-GBP-GFA GFA_Concession_Definition | 14 Owners' Corporation Office |
| DEEP BLUE STIPPLED BLACK | BUD-GBP-GFA GFA_Concession_Definition | 15 Residential recreational facilities including void, plant room, swimming pool filtration plant room, covered walkway, etc. serving solely the recreational facilities |
| RED CROSS HATCHED WHITE | BUD-GBP-GFA-GFA_Definition | Non-domestic area or Non-domestic area to be disregarded from BD GFA calculations only |
| | BUD-GBP-GFA-Function_of_Area | Office |
| RED CROSS HATCHED BLACK | BUD-GBP-GFA-GFA_Definition | Non-domestic area or Non-domestic area to be disregarded from BD GFA calculations only |
| | BUD-GBP-GFA-Function_of_Area | Shopping Arcade |
| RED STIPPLED WHITE | BUD-GBP-GFA-GFA_Definition | Non-domestic area or Non-domestic area to be disregarded from BD GFA calculations only |
| | BUD-GBP-GFA-Function_of_Area | Hotel FOH or Hotel BOH (GFA accountable or Hotel Accountable GFA (Domestic accommodation) or Hotel Accountable GFA (Non-Domestic accommodation) |
| Red | BUD-GBP-GFA-GFA_Definition | Non-domestic area or "Non-domestic area to be disregarded from BD GFA calculations only |
| DEEP BLUE | BUD-GBP-GFA GFA_Concession_Definition | Concessions With Cap |
| | BUD-GBP-GFA-GFA_Definition | Domestic area to be disregarded from GFA calculations or Domestic area to be disregarded from LandsD GFA calculations only |
| LIGHT BLUE | BUD-GBP-GFA GFA_Concession_Definition | Concessions With Cap |
| | | And |

GBP BIM Checking Tool for ArchiCAD - User Manual

| | BUD-GBP-GFA-GFA_Definition | Non-domestic area to be disregarded from GFA calculations or Non-domestic area to be disregarded from LandsD GFA calculations only |
|-------------------------------|--|--|
| PURPLE | BUD-GBP-GFA GFA_Concession_Definition | Not contains Concessions With Cap |
| WOOD | BUD-GBP-GFA GFA_Concession_Definition | 01 carpark, loading/unloading areas and driveway that are 100% disregarded |
| WOOD HATCHED BLACK | BUD-GBP-GFA GFA_Concession_Definition | 01 carpark, loading/unloading areas and driveway that are 50% disregarded |
| WOOD HATCHED WHITE | BUD-GBP-GFA GFA_Concession_Definition | 01 driveway/carpark ancillary areas that are disregarded on pro rata |

The table above provides a colour schema based on the value of certain parameters and below explains the conditions of “Or”, “And” and “Not Contains”:

- Or: This means that the colour applies if any of the listed conditions are met.
- And: This means that the colour applies only if all the listed conditions are met simultaneously.
- Not Contains: This means that the colour applies when a certain condition is not met.

“ConcessionsWithCap” values

1. "02.3 A/C plant room"
2. "02.3 AHU room"
3. "02.3 other Non-mandatory/non-essential plant rooms disregarded under B(P)R 23(3)(b)"
4. "11 Non-structural prefabricated external wall"
5. "14 Owners' Corporation Office"
6. "15 Residential recreational facilities including void, plant room, swimming pool filtration plant room, covered walkway, etc. serving solely the recreational facilities"
7. "17 Horizontal screen/covered walkway subject to 10% overall cap"
8. "18 Larger lift shaft - Office"
9. "18 Larger lift shaft - Hotel"
10. "19 Chimney shaft"
11. "20 Non-mandatory/non-essential plant room exempted under B(P)R 23(3)(a) such as boiler room, SMATV, filtration plant room"
12. "22 Pipe duct, air duct for non-mandatory or non-essential plant room"
13. "25 Void over main common entrance (prestige entrance) in non-domestic development"
14. "29 Other projection not covered in paragraph 3(b) and (c) of PNAP APP-19"
15. "05 Balcony"
16. "05 Covered area underneath Balcony"
17. "06 Wider common corridor and lift lobby for residential buildings"
18. "12 Utility platform"
19. "12 Covered area underneath Utility Platform"
20. "14 Counters, Kiosks, Offices, Stores, Guard Rooms, and Lavatories for Watchmen and Management Staff (serving domestic)"
21. "14 Caretakers' Quarters"
22. "18 Larger lift shaft - Domestic"
23. "26 Void in duplex domestic flat"
24. "26 Void in house"