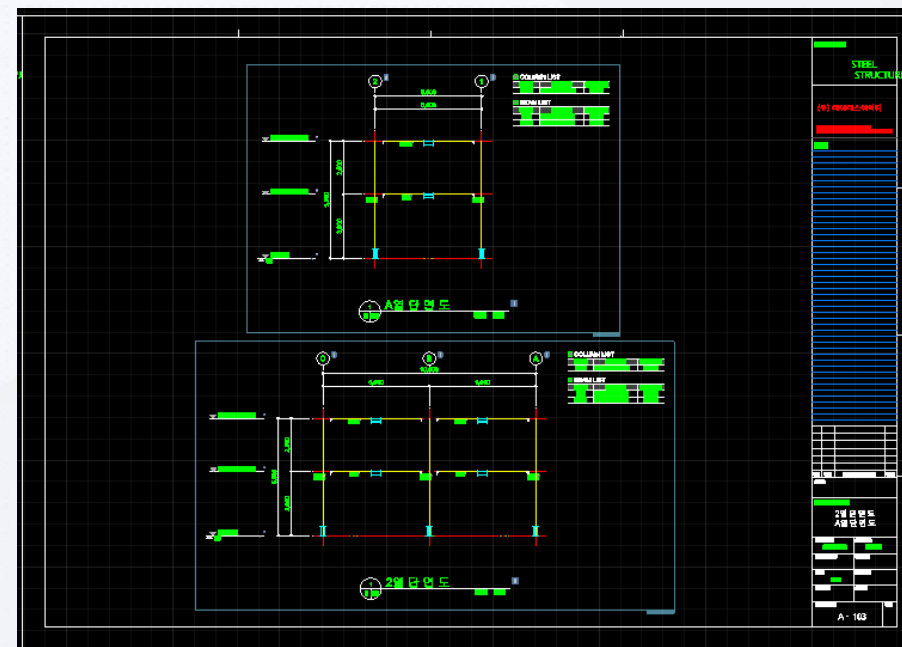


Basic Tutorial of midas Drawing

User Guide

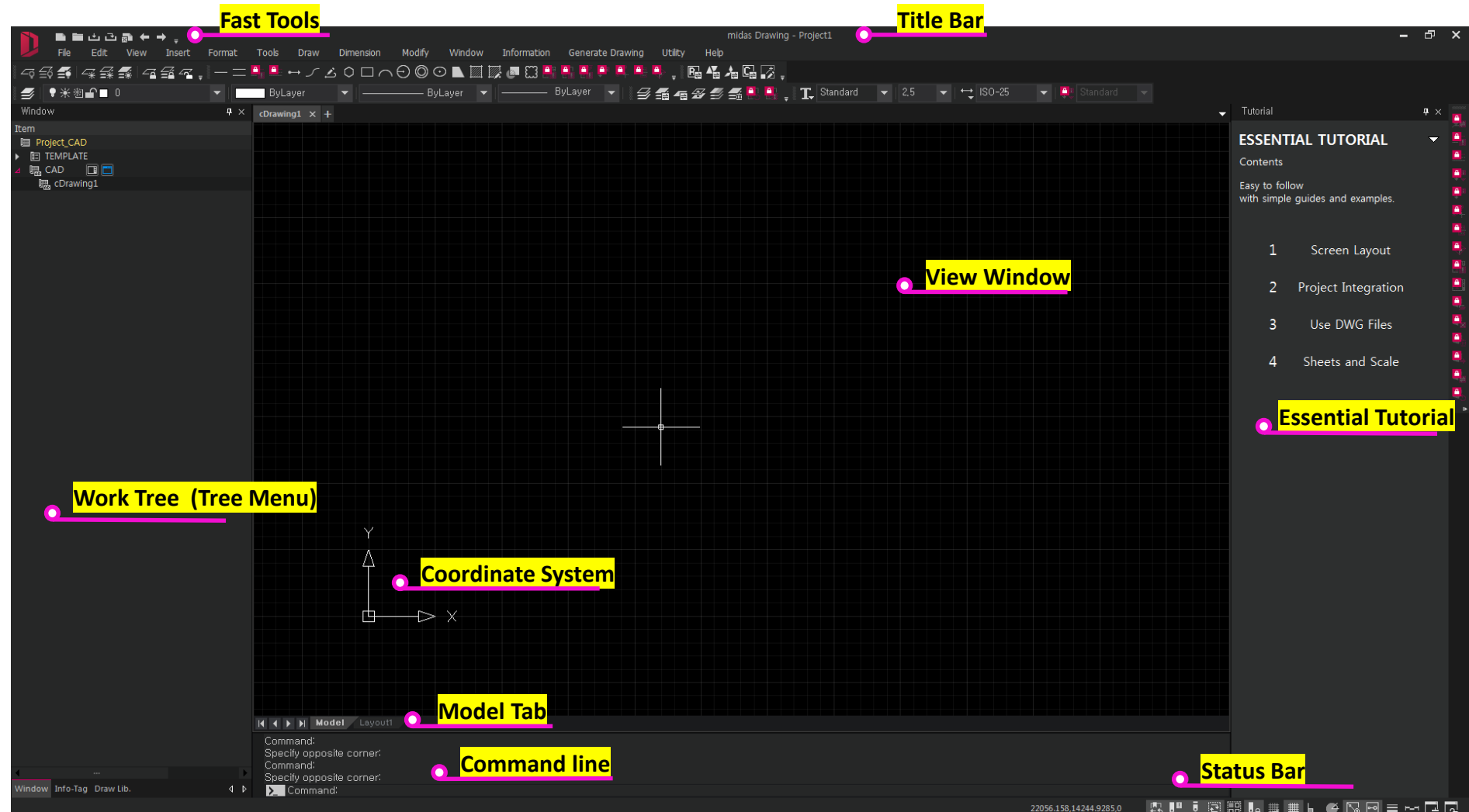
Basic Tutorial for midas Drawing

- STEP 1. Program Environment 01
- STEP 2. midas Drawing Working Process 02
- STEP 3. Registration of Sheet 03
- STEP 4. Generate Drawing 04
- STEP 5. Edit Template Function 05
- STEP 6. Etc (Other Functions) 06



STEP 1. Program Environment

Drawing Menu



Consist of work Tree

Window : It is divided into 3 types: TEMPLATE mode, DRAWING mode, and CAD mode. When double-clicking, the mode can be changed.

Template mode is a function to set the drawing to be displayed according to the specified drawing style. You can also register the template in a new style.

The auto-generated drawing mode is a mode in which the types of drawings automatically generated are listed on the drawing mode.

The CAD mode is the same as AutoCAD.

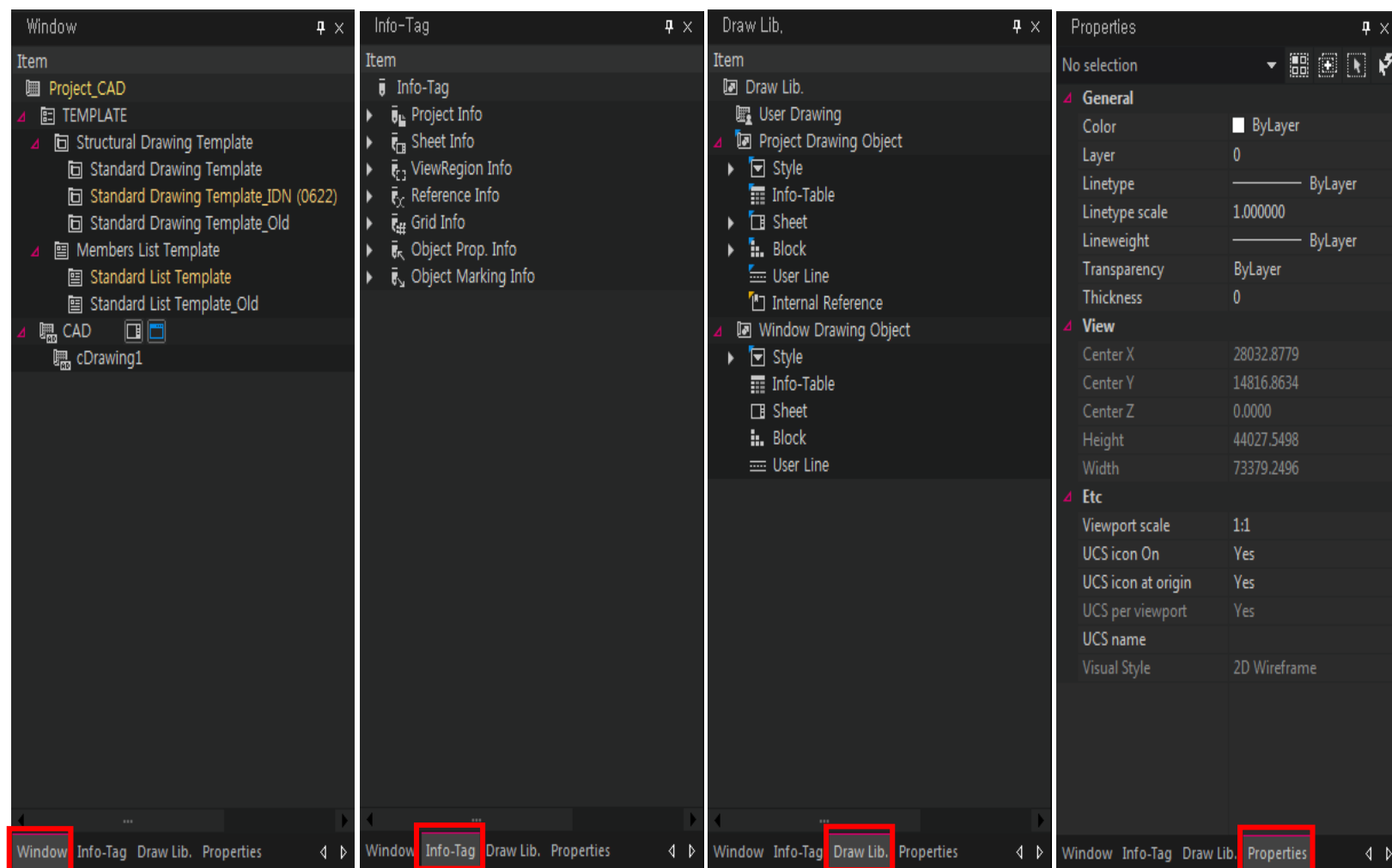
Therefore, not only the existing CAD commands and functions, but also the information CAD work can be performed.

Info-Tag : A window that contains information needed for an object or drawing.

You can use the information contained in the object created with the information.

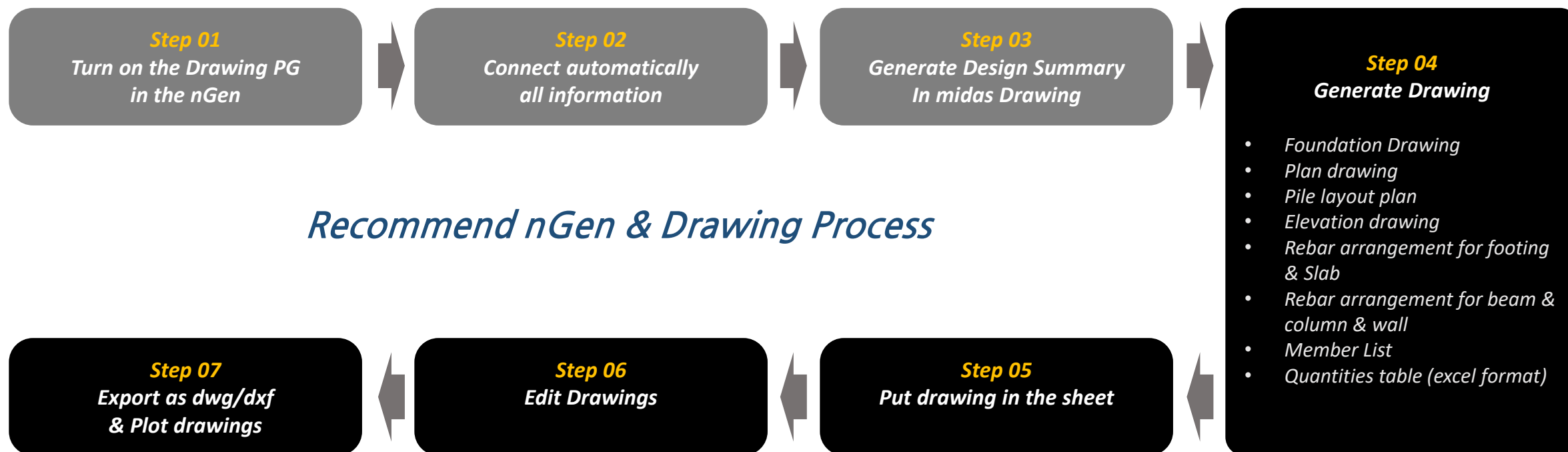
Draw Lib : It is a window that can efficiently manage and edit components such as text style, dimension style, sheet, and block required for drawing.

Properties : It shows the properties of the selected object and you can edit it. If no objects are selected, the current settings of the general properties are displayed.



STEP 2. midas Drawing Working Process

midas Drawing Working Process

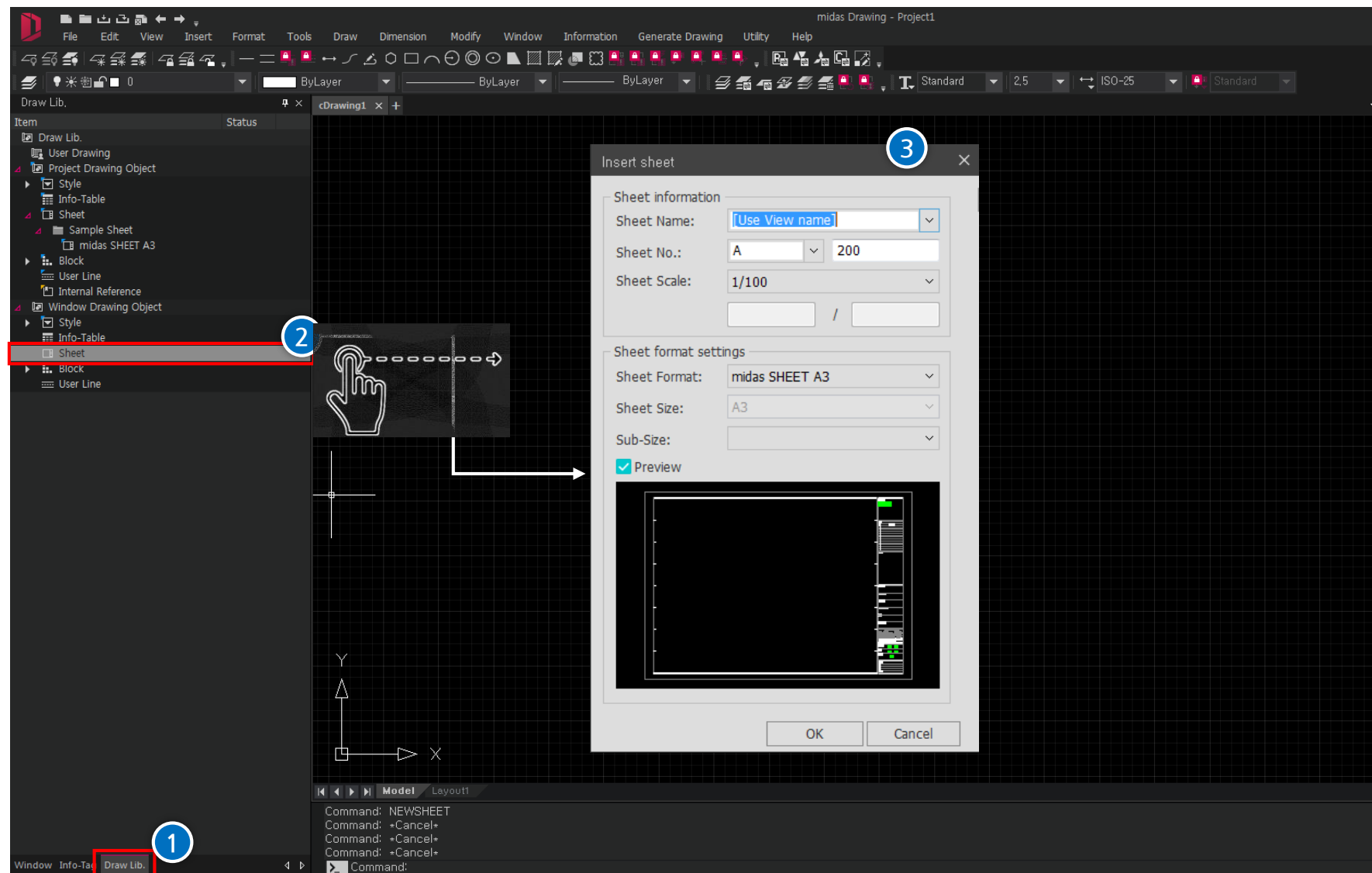


Recommend nGen & Drawing Process

STEP 3. Registration of Sheet

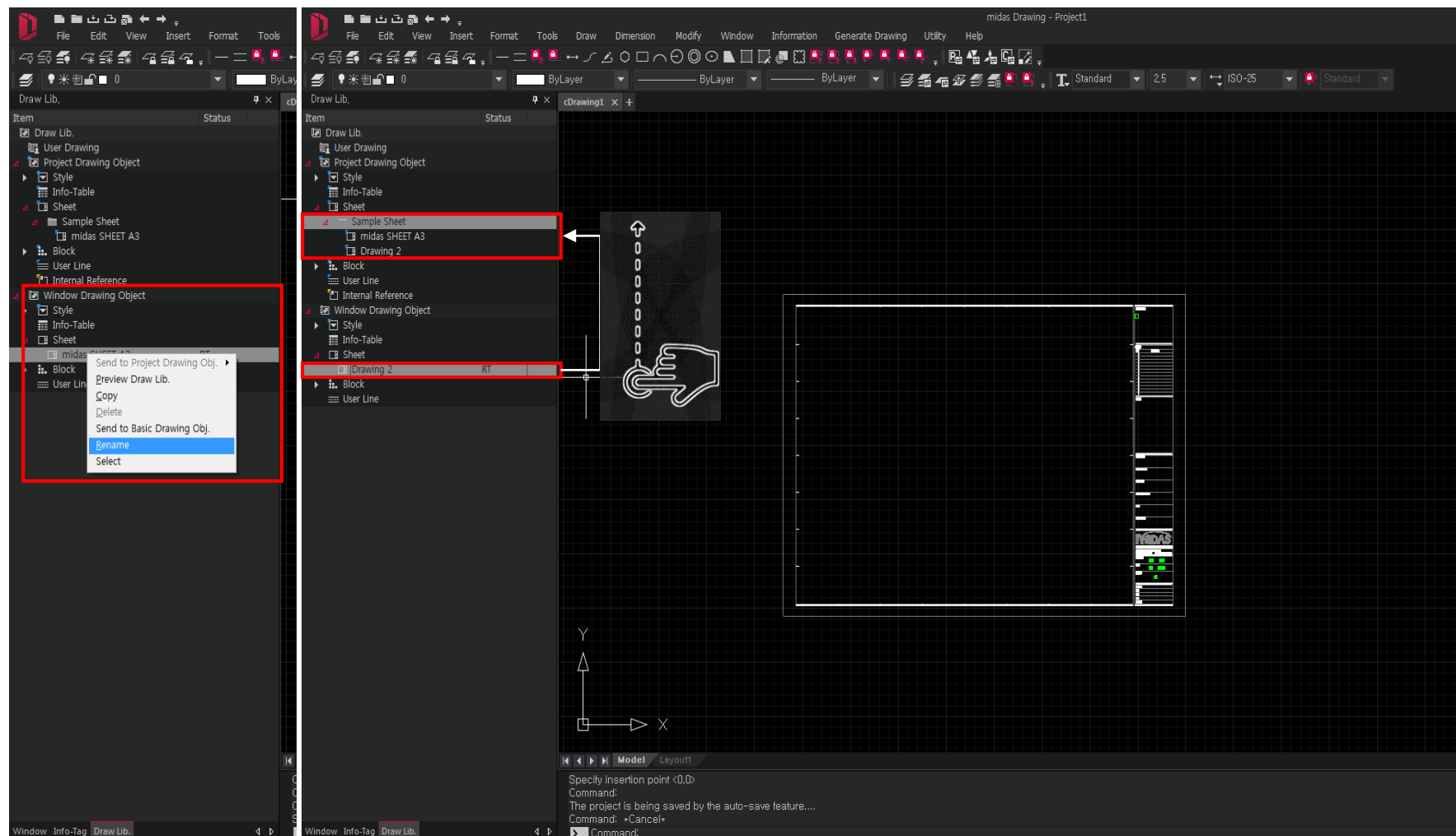
Create basic sheet

- ① Draw Lib Tab in the work tree.
- ② Window Drawing object > Sheet > Drag & Drop in view window.
- ③ Complete the information to register the basic sheet.



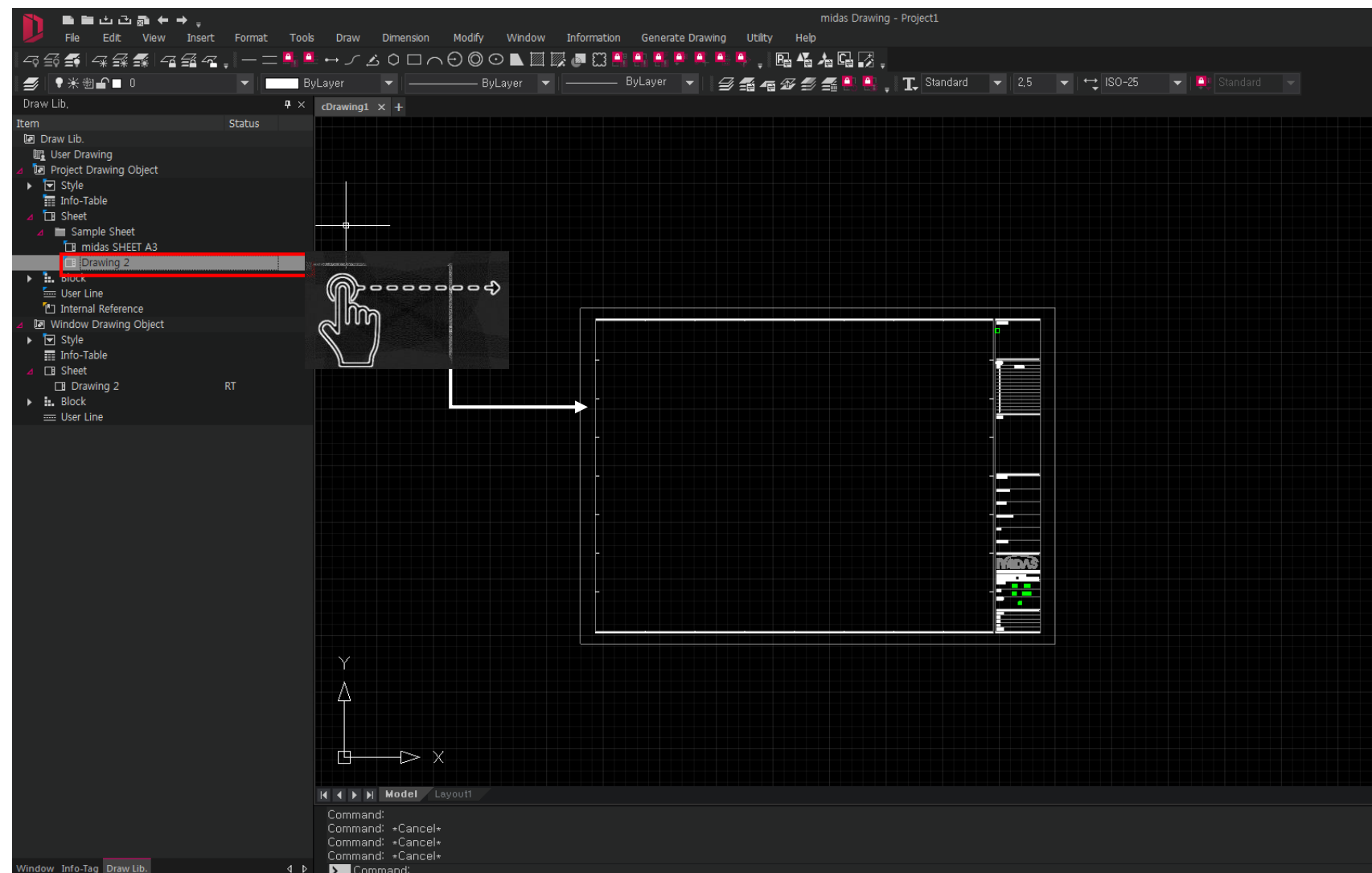
Register the sheet

- ① Mouse right click on the defined sheet > Click the 'rename'
- ② Typing the name as 'Drawing 2'
- ③ Drag & Drop to register 'Drawing 2'



Use the sheet

- ① Drag & Drop to Use the 'Drawing 2'

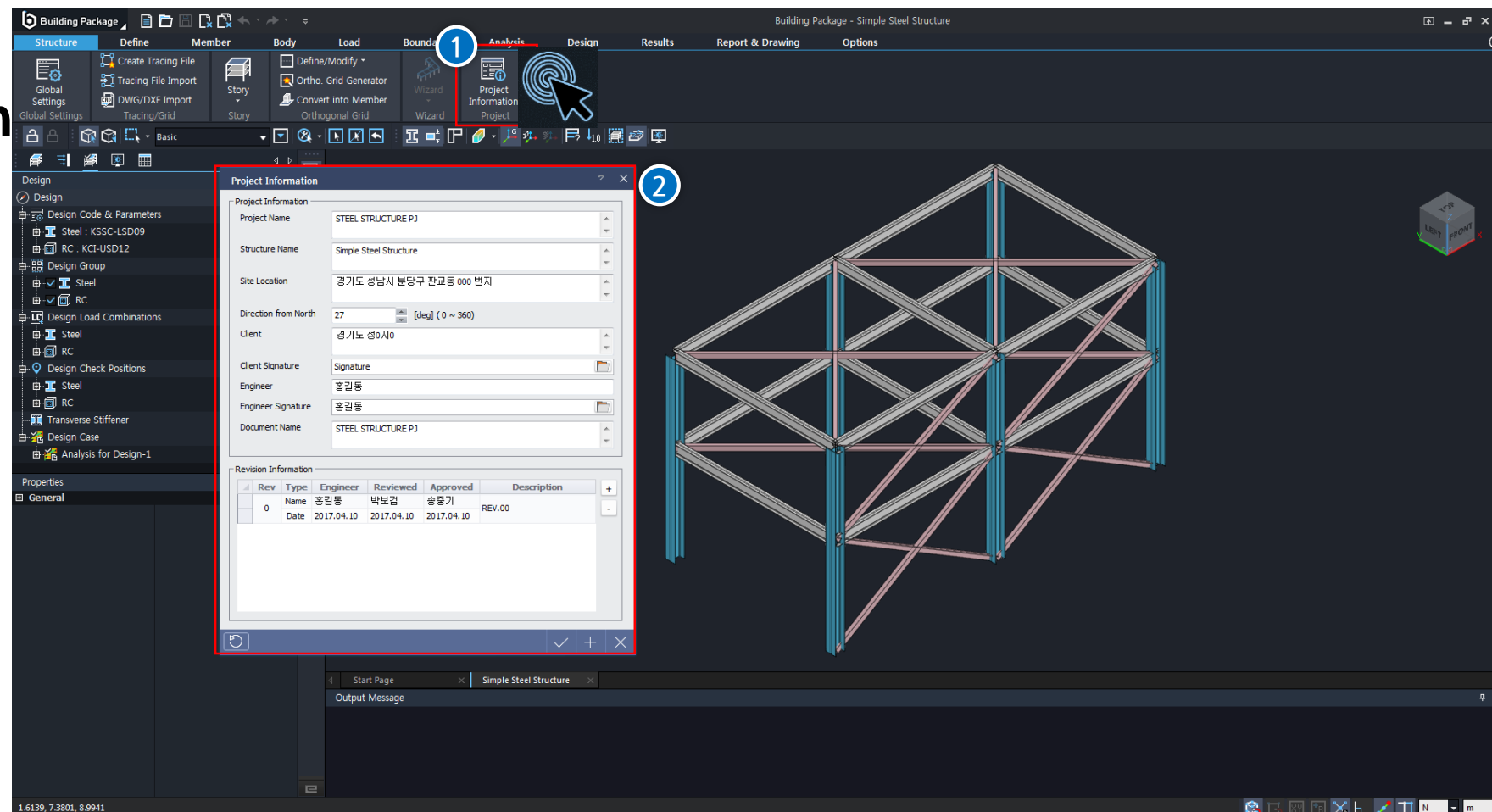


STEP 4. Generate Drawing

Input Project Information

In order to automatically allocate information tags in the Drawing program, the Project Information must be inputted in the nGen.

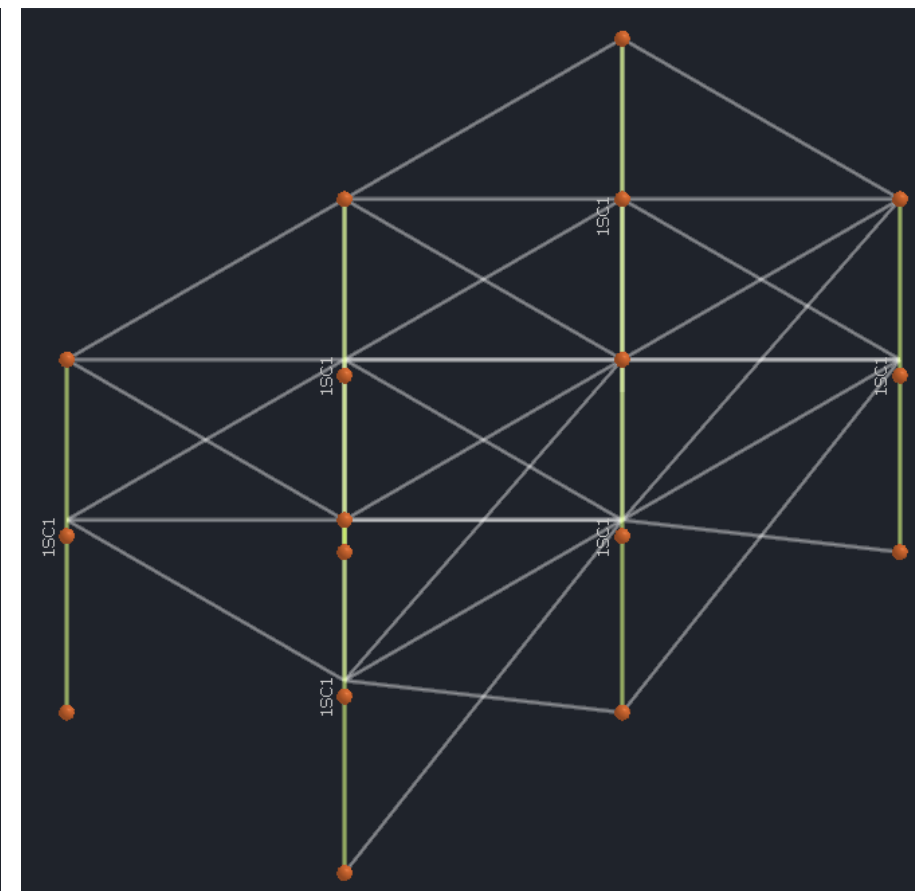
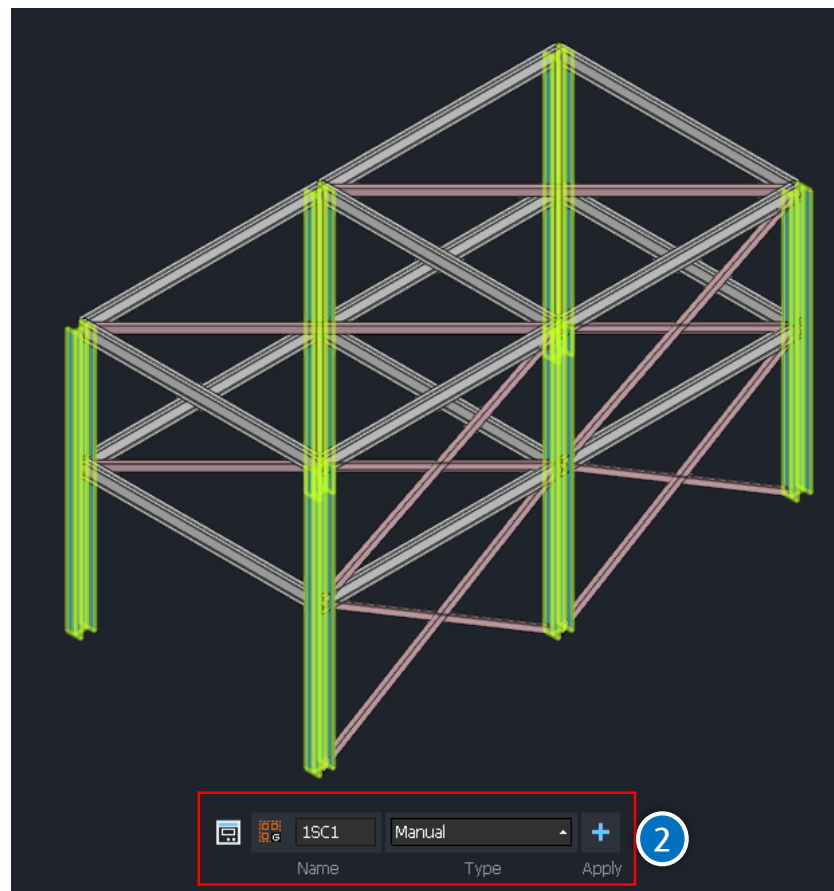
- ① nGen Structure Tab in the main menu > Click the 'Project Information'
- ② Create an overview of the project in the dialog box.



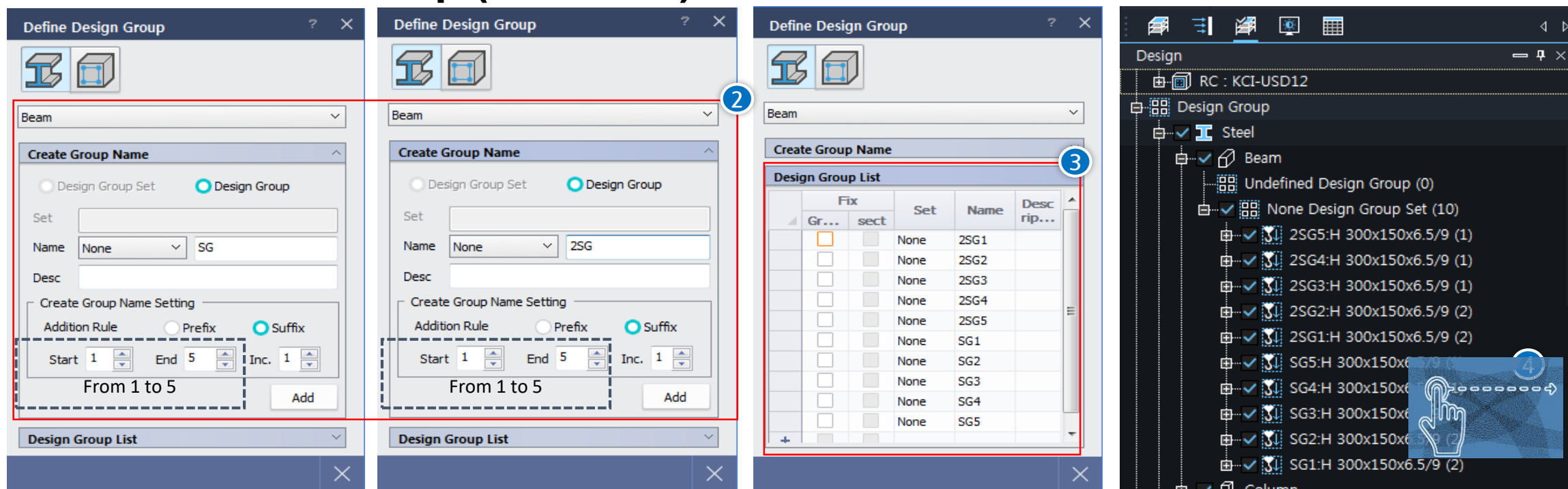
Define Member Group (Method 1)

Define design grouping of members. In order to automatically generate member list at drawing, there must be grouping information. You can create a structural drawing automatically by passing it from nGen to drawing without performing analysis and design in nGen.

- ① Design Tab in the main menu > Design Group > Click “Assign Design Group”.
- ② In the GLUI menu below, input the name directly by typing > Click the member in the View window and Apply.



Define Member Group (Method 2)

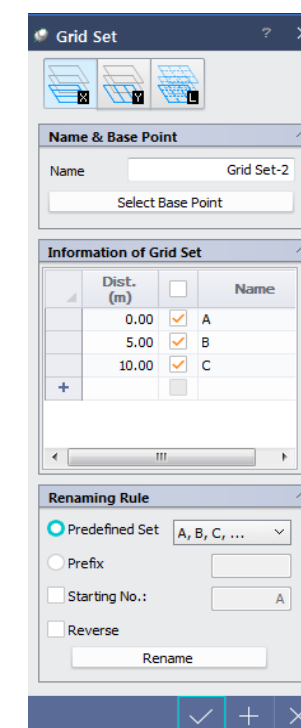
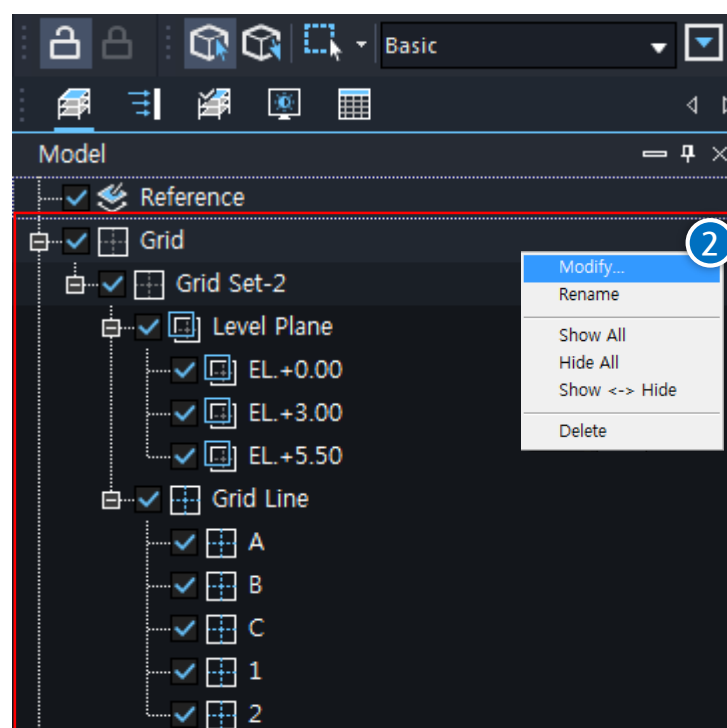
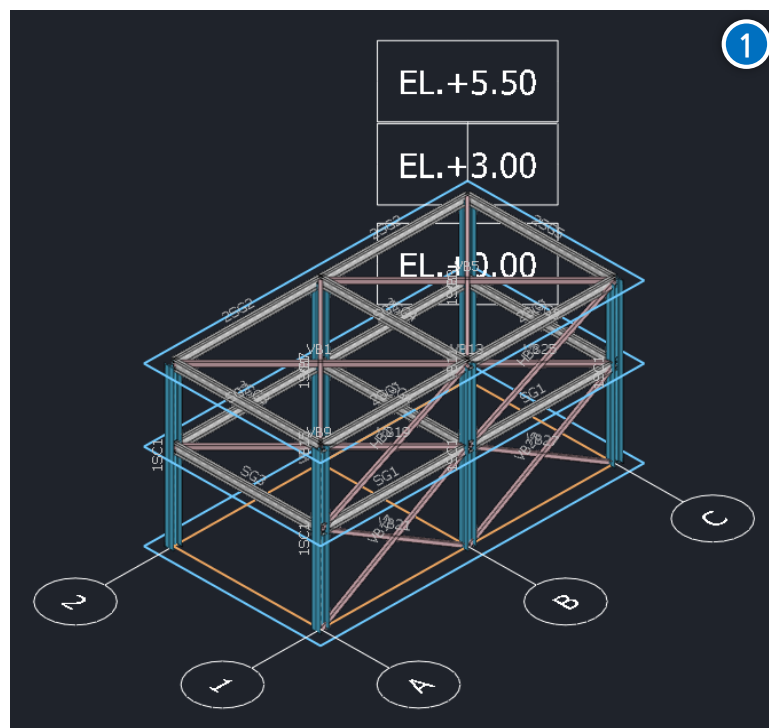


Set design grouping of members. In order to automatically generate member list from drawing, there must be grouping information.

At this time, I will explain the second method of grouping.

- ① Design Tab in the main menu > Design Group > Click 'Define Design Group'
- ② Select the member type in the dialog > Create Group Name as shown figure then Add
- ③ Check the Design Group List (From SG 1 to 5, & From 2SG 1 to 5)
- ④ Drag and drop from the work tree to the View window to assign the member group

Generating Grid Method



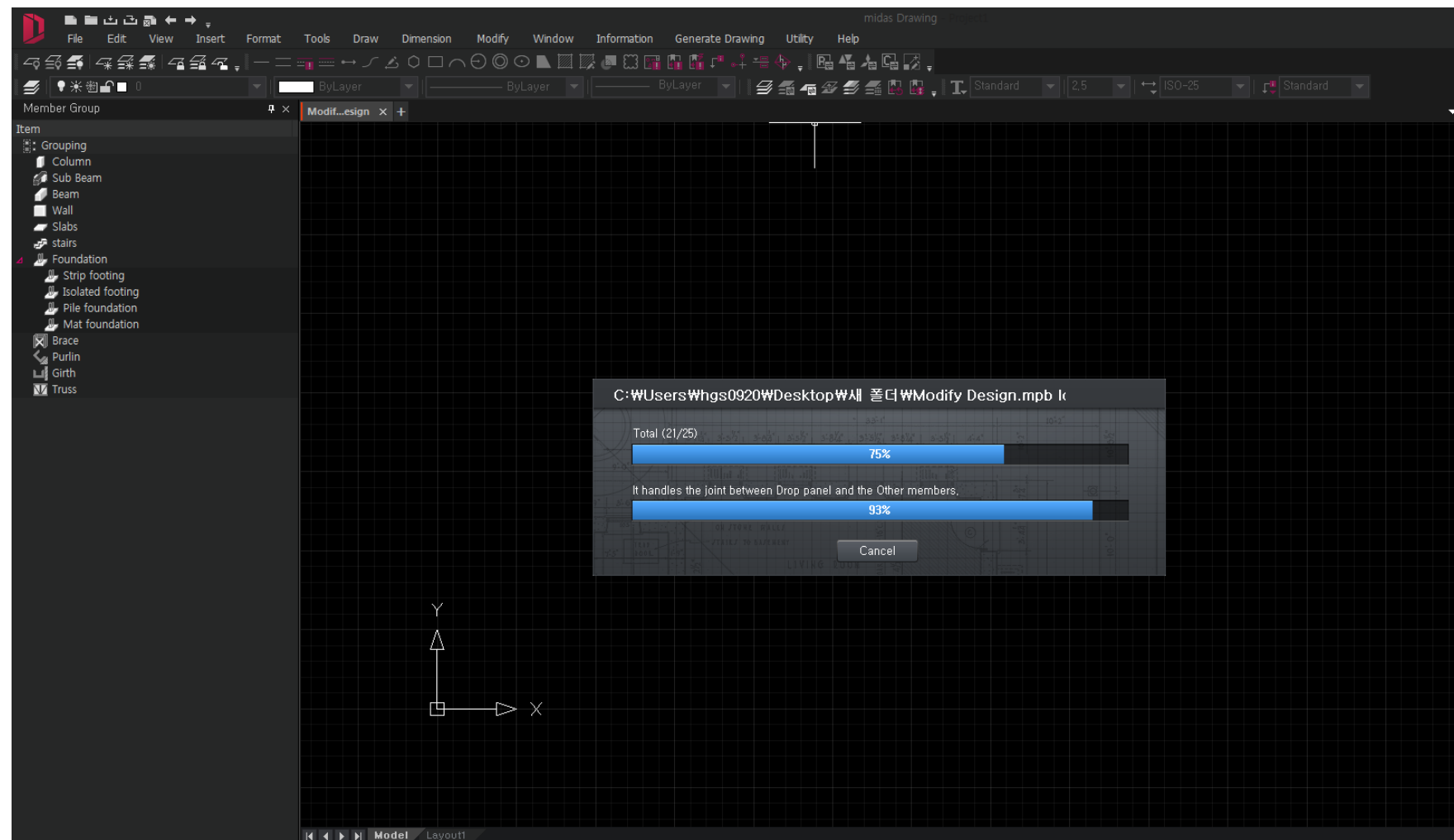
Grid is required to automatically generate structural drawings by drawing for steel structures. There are two ways to create a grid. First, create a grid directly before modeling. Second, modeling first and then to extract the grid. In the case of RC structures, the grid is not necessary because the floor information becomes the floor plan information.

- ① Check the created Grid in the View window
- ② Right-click on the Grid Set in the work tree and click Modify > Check the Grid information (X, Y, Z Level)

Generate Drawing

All model Information will be moved to drawing SW after processing data

- ① Drawing program is automatically executed and the process of exporting modeling information is in progress.
- ② Click OK on the midas Drawing DS dialog when all data information is converted.



Structural Drawing Manager

Structural Drawing Manager

Structural Drawings

Member list

Rebar Arrangement

Center line Plan

Display column dim line:

Display dimension based on the floor

Structural Plan

Single

Double

Spacing of steel connection

1

Display options for exposed / hidden line

Display hidden line.

Display Web of Steel Members

Do not display Brace that is out of cutting plane and visible range.

Structural Section

Single

Double

Spacing of steel connection

1

Display options for exposed / hidden line

Display hidden line.

Display Web of Steel Members

Do not display Brace that is out of cutting plane and visible range.

Single line Brace

Single line Truss webs

Display boring

Single line Truss webs

Display lower part of Piles

Location of skipped

1.5

m

Display options for contact members

No classification

Classification all members

Classification only type of members

Cut-line of columns display as a closed poly line.

Display members group block and dimensions of members

Display each member by groups

Display non-overlapping and optimized location

Display dimensions of Column in the Center line plan only

Options for Skipping Marks

Group

:Scale 1/

200

Or more in length or in a

0.5

Less than m

Dimension

:Scale 1/

200

Or more in length or in a

4

Less than m

Axis Symbol

:Scale 1/

200

Or more in length or in a

1.5

Less than m

Detail setting

Member types

...

Legend items

...

Hatch

...

Help (F1)

OK

Cancel

Rebar Arrangement Manager

Rebar Arrangement Manager

General Beam/Girder Column Wall Rebar Schedule

Setting of Unit

Length Precision

Display option for rebar

Rebar definition type

Transverse Rebar Arrangement Type

Setting Rebar Detail (EN1992-1-1-2004)

Set Rebar Fabrication Lengths Splice Method

Standard Hooks Splice length in Tension(Lst)

Development lengths in Tension(Ldt) Splice length in Compression(Lsc)

Development lengths in Compression(Ldc) Development of Std. Hooks in Ten.(Ldh)

Auto Calculate Batch Setting

Close

Rebar Arrangement Manager

General Beam/Girder Column Wall Rebar Schedule

Type of rebar arrangement rule

Rebar arrangement [Detailing Setting...](#)

Type of representation

☐ Detail information shown at the rebar location

☒ Rebar information represented as assembly drawing [...](#)

Splice Method

☒ Each Girder ☐ Max Length

Anchorage for Beam/Girder Main Rebar

☒ Typical Anchorage(Ld) ☐ Typical Anchorage hooks ☐ Std. hooks (Ldh)

Mark of detail

☒ Key Plan ☒ BOM Table ☒ All Section

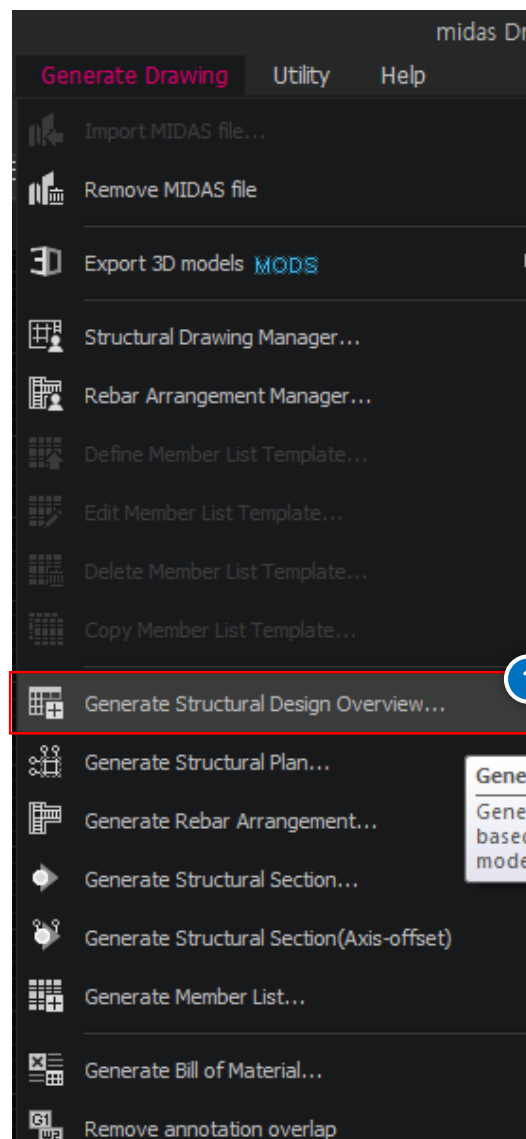
☒ Show Grid ☐ Section Rebar Leader

Close

Generate Design Overview

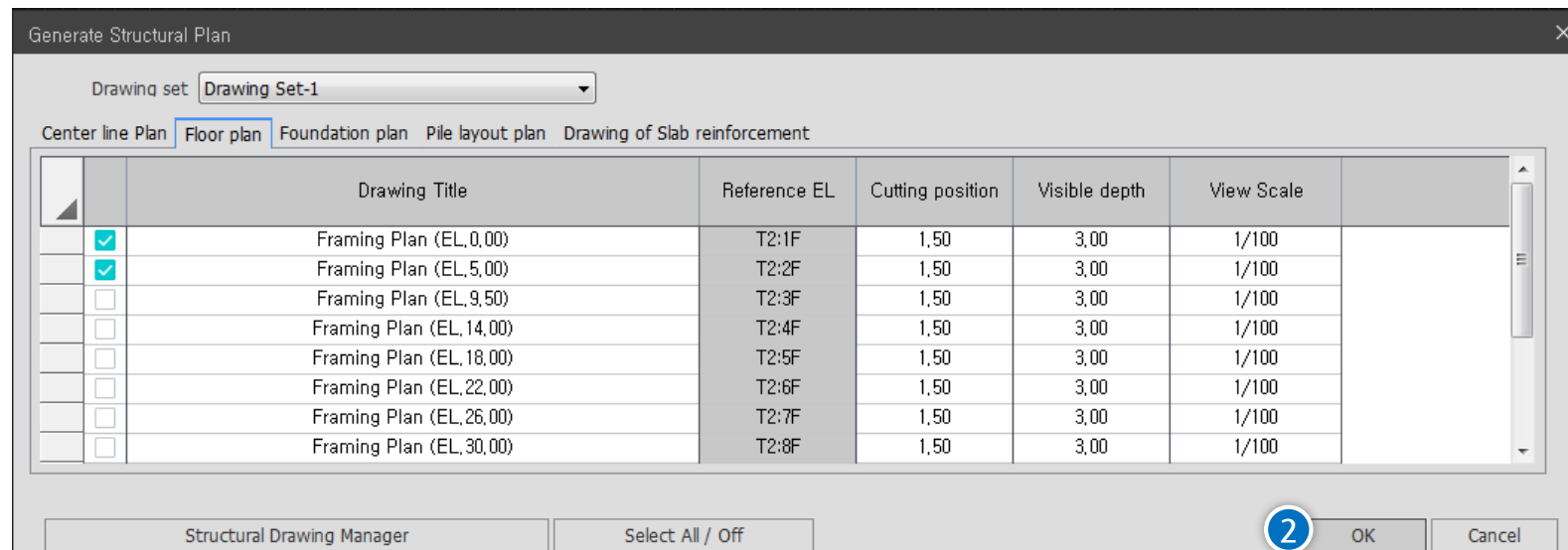
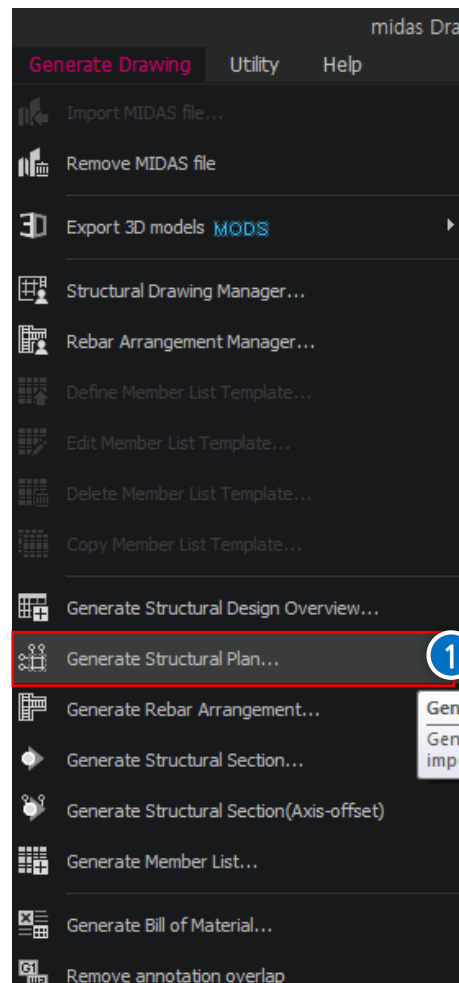
The design outline of the contents created in Project Information of the nGen program is automatically shown in the drawing.

- ① Click Generate Drawing tab on the main menu > Click “Generate Structural Design Overview”.
- ② Specify the insertion point at the command line or Click point in the View window.



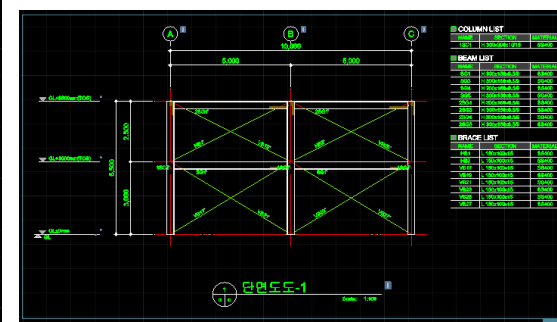
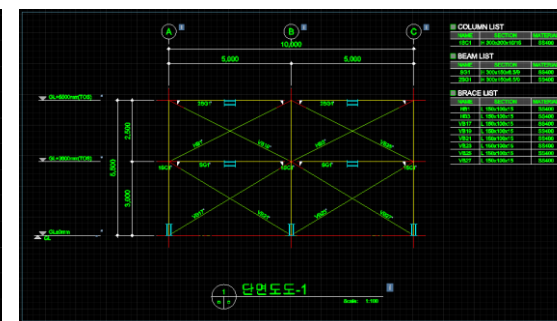
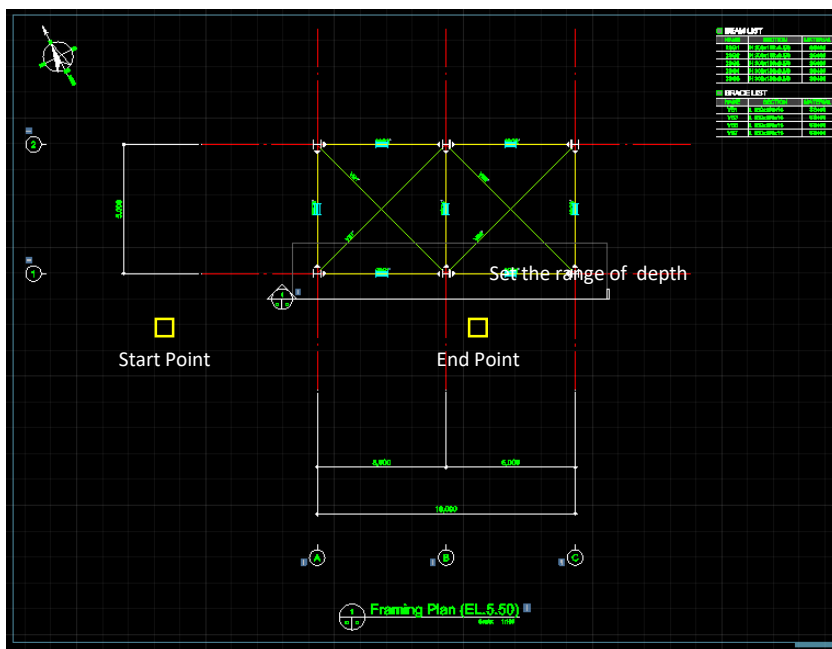
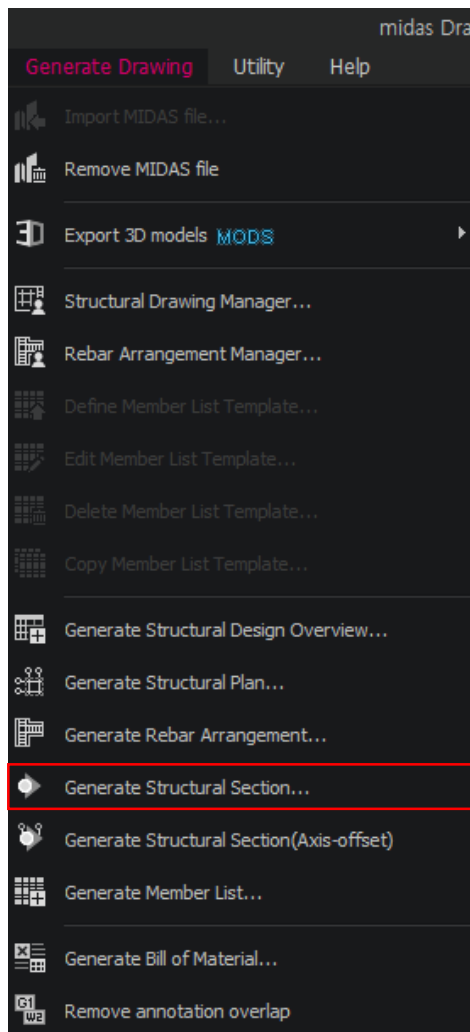
1. GENERAL INFORMATION			
PROJECT NAME	INDO TEST		
STRUCTURE NAME	0"		
SITE LOCATION	BBBBB		
DIRECTION FROM NORTH	0°		
2. DESIGN CODES AND STANDARDS			
COUNTRY CODE	EuroCode		
NATIONAL ANNEX	Recommended		
STEEL DESIGN	EN1993-1-1-2005		
CONCRETE DESIGN	EN1992-1-1-2004		
3. MATERIALS			
STEEL			
CONCRETE	EN04 C25/30, EN04 C25/30		
	EN04 C25/30, EN04 C25/30		
	EN04 C25/30, EN04 C25/30		
4. REBARS			
MEMBER TYPE	DIAMETER	MAIN BAR	SHEAR BAR
BEAM	P5	Class A	Class A
	P6	Class A	Class A
	P7	Class A	Class A
	P8	Class A	Class A
	P9	Class A	Class A
	P10	Class A	Class A
	P11	Class A	Class A
	P12	Class A	Class A
	P13	Class A	Class A
	P16	Class A	Class A
	P20	Class A	Class A
	P25	Class A	Class A
	P32	Class A	-
	P5	Class A	Class A

Generate the plan drawing



- ① Click the Generate Structural Plan
- ② After checking on the list, click OK button
- ③ Specifying the insertion point from the command line or Click the point in the View window > Click once again to specify the arrangement distance

Generate the section drawing

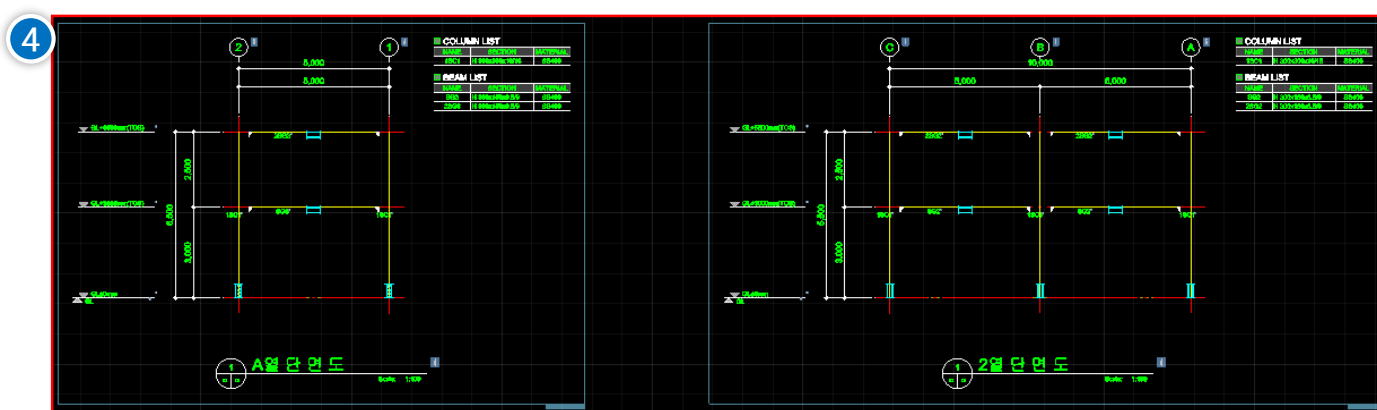
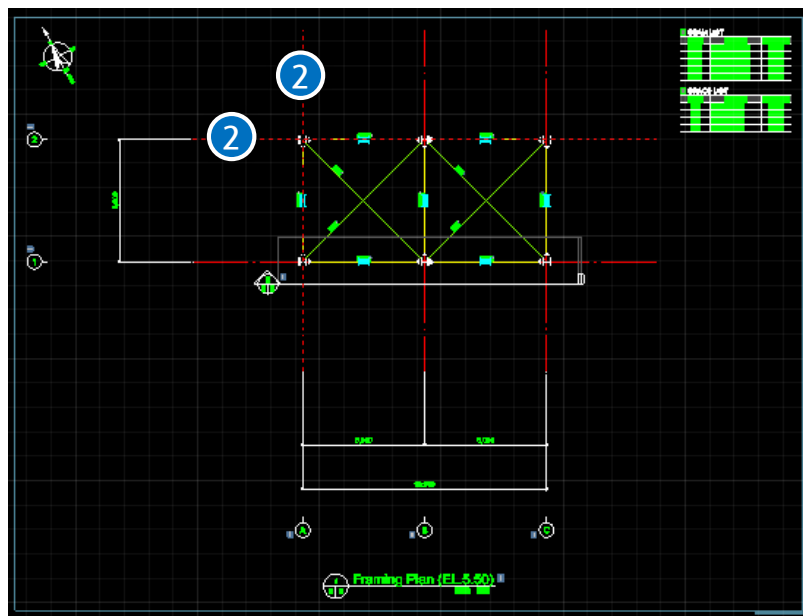


There are two ways to create structural sections. (Generate Structural section / Generate Structural section(Axis Offset))

To create the structure section drawing is a method of extracting by clicking the desired location on the floor plan.

- ① Click 'Generate Structural Section'
- ② Type the name of the section in the command line and press Enter on the keyboard.
- ③ Click the start point when prompted to specify the start point and scale in the command line.
- ④ If you want to create a different section scale, click S and typing the desired scale. ex) 1: 50 or 1:200
- ⑤ In the View window, specify the starting point and then click the next point Space > Set the visible range

Generate the section drawing (Axial Offset)



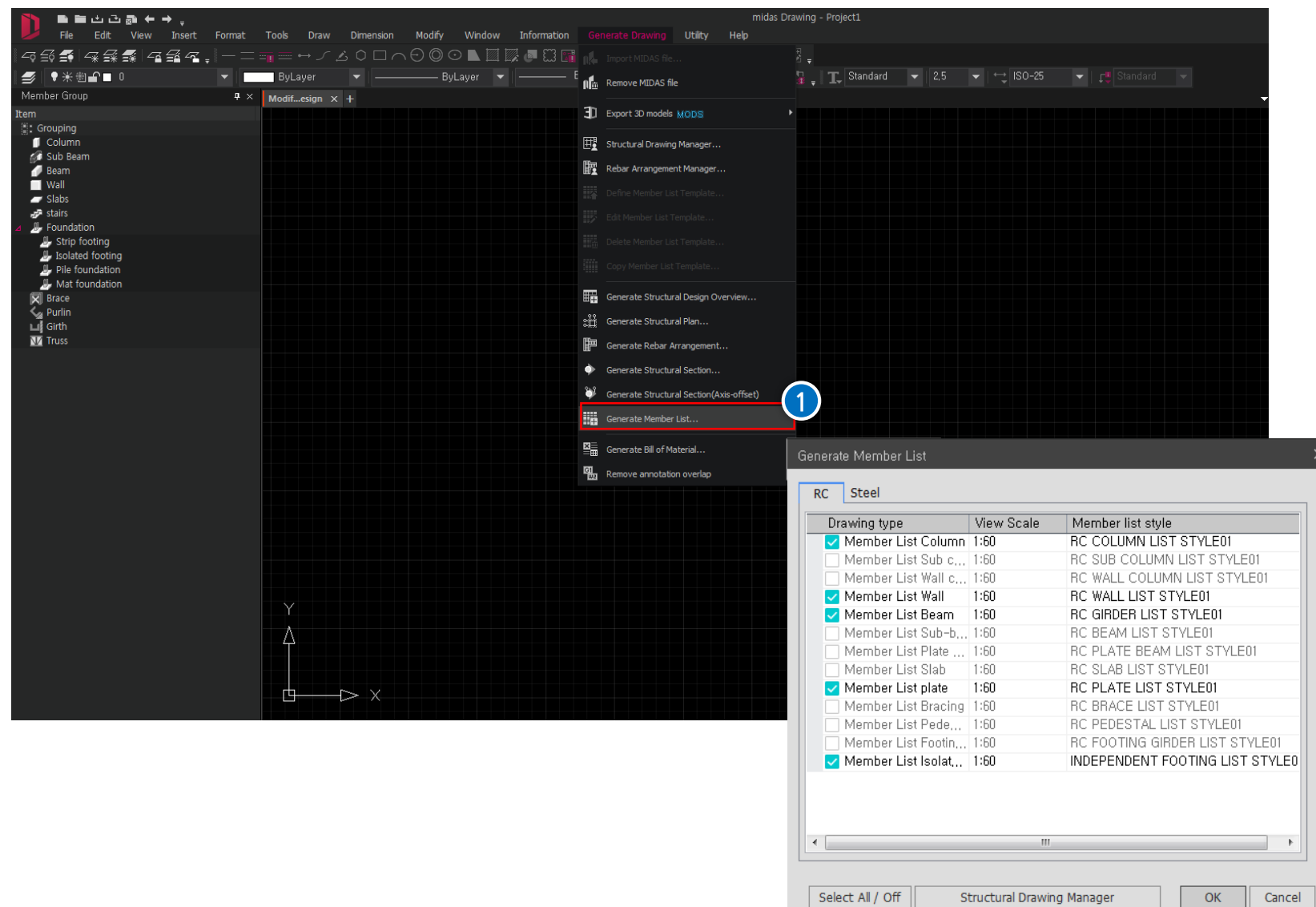
There are two ways to create structural sections. (Generate Structural section / Generate Structural section(Axis Offset))

The other method of generating a section drawing is the axis specified by using the Grid to extract the section drawing.

- ① Click 'Generate Structural Section(Axis Offset)'.
- ② From the command line, select the axis you want to extract or click the entire grids.
(In this tutorial, we will select two grid lines, Column A and Column 2.) (Multiple section drawings can be output at the same time.)
- ③ Click then Space Bar > Set the range of depth.
- ④ After clicking the arrangement interval in the view window, the section drawing will be extracted.

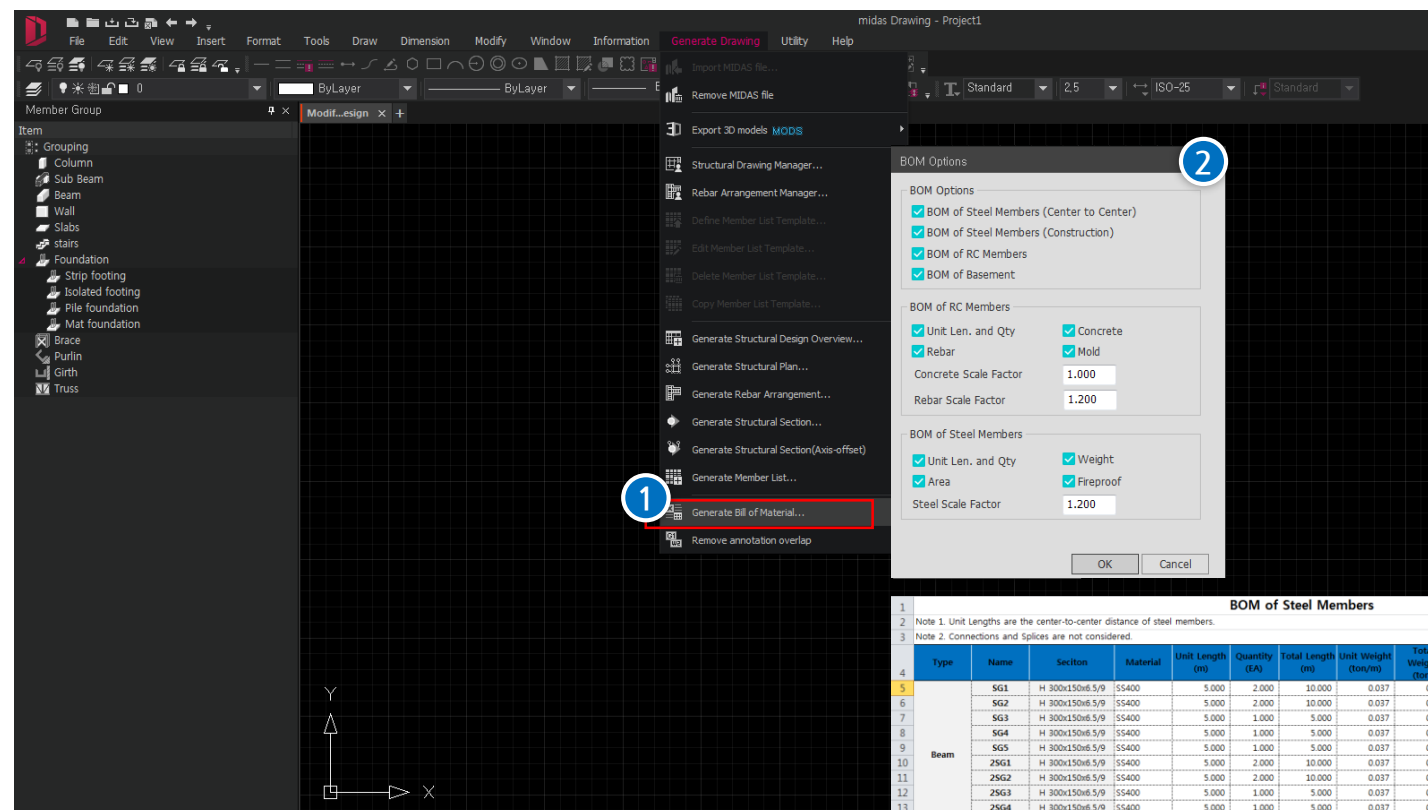
Generate the member list

- ① Click Generate Drawing tab on the main menu > Click 'Generate member list'.
- ② Steel tab in the dialog > Confirm the list (Automatically check on modeled members only.)
- ③ After confirming the insert point on the command line, click the point at the appropriate position in the View window.



Generate Quantities (B.O.M)

- ① Click Generate Drawing tab on the main menu > Click 'Generate Bill of Material'.
- ② Check the items in the Quantity in the BOM Options dialog box and click OK.
- ③ Check the quantity calculation by Excel.



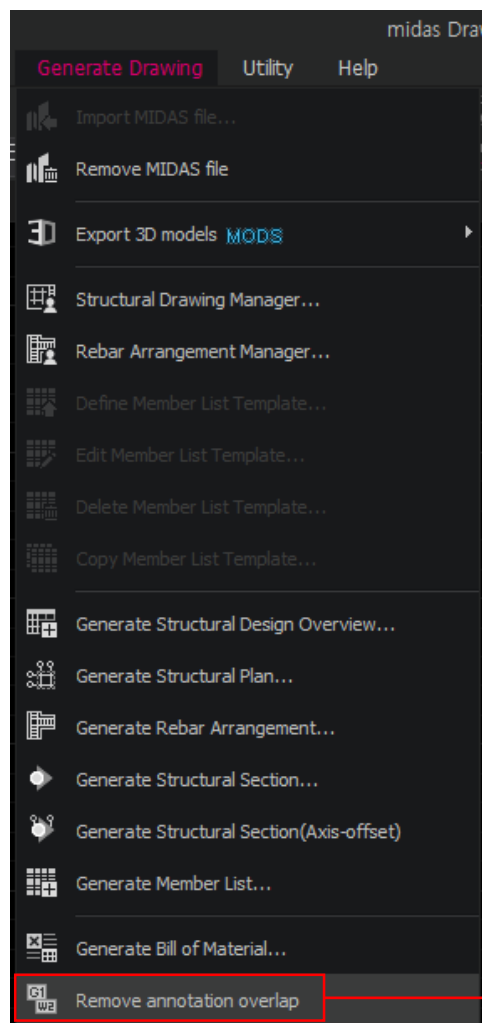
[Note]

Steel Type2 means cutback quantity. It means the subtracted quantity. Therefore, Type2 quantity is always calculated less than Type1 quantity.

BOM(steel type2)

BOM of Steel Members												
Note 1. Unit Lengths are the center-to-center distance of steel members.												
Note 2. Connections and Splices are not considered.												
Type	Name	Section	Material	Unit Length (m)	Quantity (EA)	Total Length (m)	Unit Weight (ton/m)	Total Weight (ton)	Perimeter (m)	Outer Surface(m ²)	Fire Proofing(m ²)	Remark
Beam	SG1	H 300x150x6.5/9	SS400	5.000	2.000	10.000	0.037	0.367	1.187	11.870	-	-
	SG2	H 300x150x6.5/9	SS400	5.000	2.000	10.000	0.037	0.367	1.187	11.870	-	-
	SG3	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
	SG4	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
	SG5	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
	2SG1	H 300x150x6.5/9	SS400	5.000	2.000	10.000	0.037	0.367	1.187	11.870	-	-
	2SG2	H 300x150x6.5/9	SS400	5.000	2.000	10.000	0.037	0.367	1.187	11.870	-	-
	2SG3	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
	2SG4	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
	2SG5	H 300x150x6.5/9	SS400	5.000	1.000	5.000	0.037	0.184	1.187	5.935	-	-
Column	1SC1	H 300x300x10/15	SS400	5.900	8.000	47.200	0.094	4.437	1.760	58.740	-	-
	1B1	L 150x100x15	SS400	5.590	1.000	5.590	0.028	0.155	0.470	2.627	-	-
Brace	1B1	L 150x100x15	SS400	5.590	1.000	5.590	0.028	0.155	0.470	2.627	-	-
	VB1	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB5	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB7	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB9	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB11	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB13	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB15	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB17	L 150x100x15	SS400	5.831	1.000	5.831	0.028	0.161	0.470	2.741	-	-
	VB19	L 150x100x15	SS400	5.590	1.000	5.590	0.028	0.155	0.470	2.627	-	-
	VB1	L 150x100x15	SS400	7.071	1.000	7.071	0.028	0.196	0.470	3.323	-	-
	VB21	L 150x100x15	SS400	5.831	1.000	5.831	0.028	0.161	0.470	2.741	-	-
	VB23	L 150x100x15	SS400	5.831	1.000	5.831	0.028	0.161	0.470	2.741	-	-
	VB25	L 150x100x15	SS400	5.590	1.000	5.590	0.028	0.155	0.470	2.627	-	-
	VB27	L 150x100x15	SS400	5.831	1.000	5.831	0.028	0.161	0.470	2.741	-	-
Total						205.254	0.028	5.903		189.889	-	-

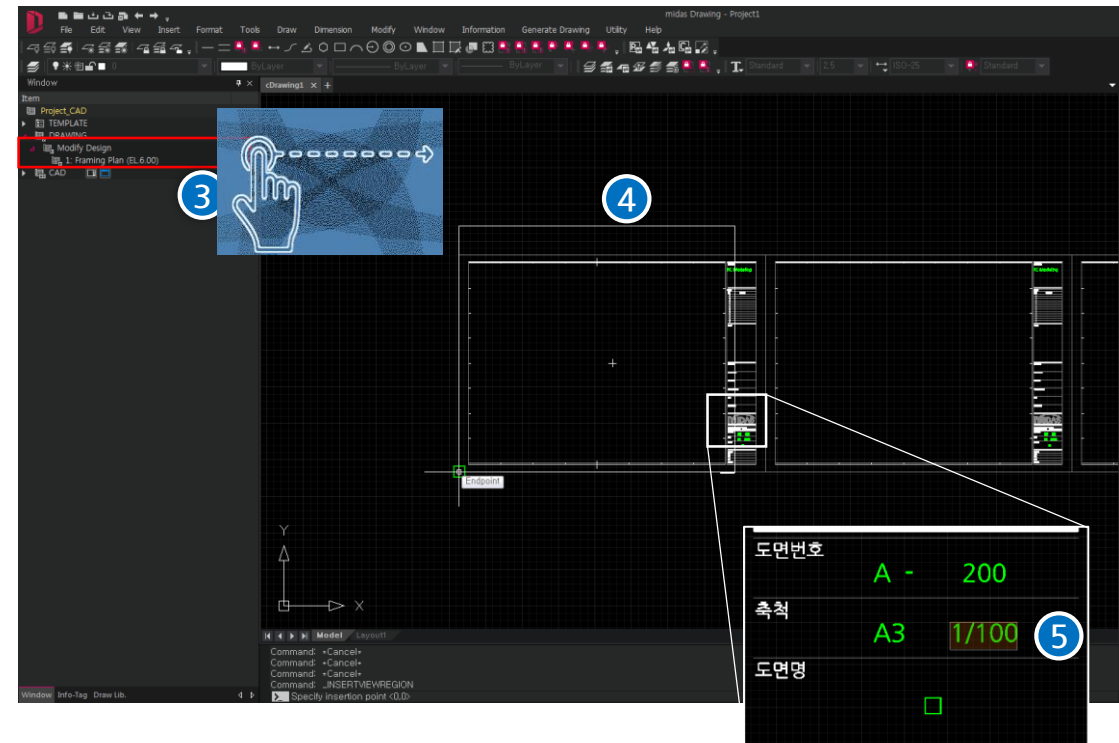
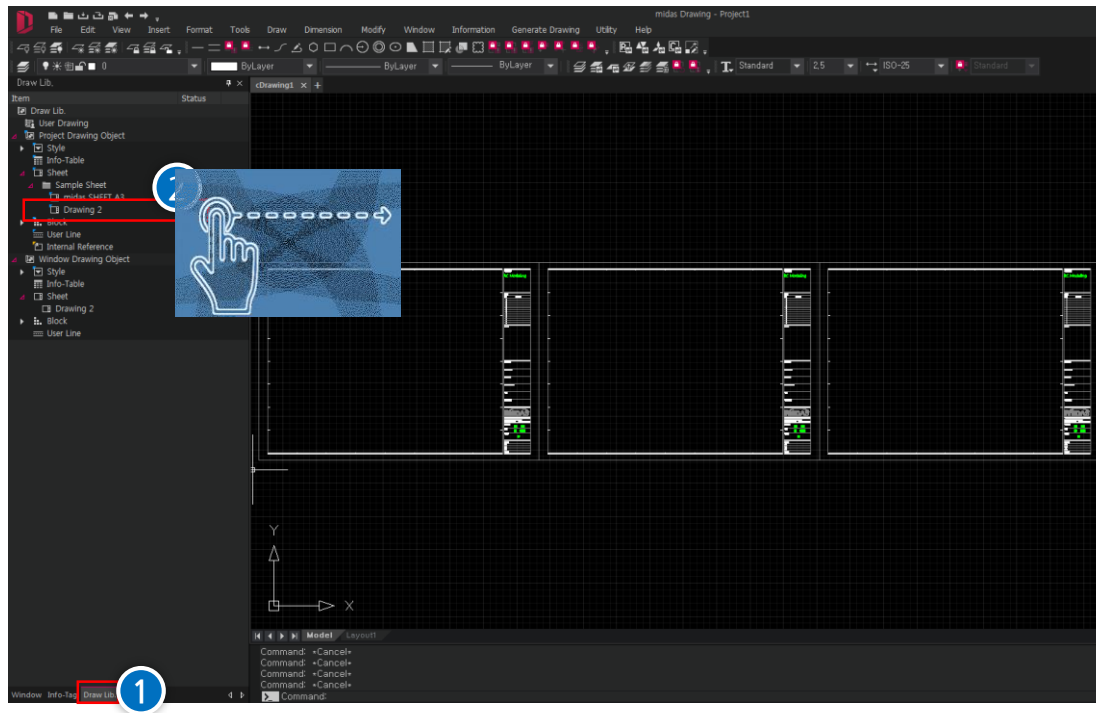
Remove annotation overlap



- ① Click Generate Drawing tab on the main menu > Click 'Remove annotation overlap'.
- ② By selecting the objects for overlapping layers and removing them, the object is automatically separated so that it does not overlap.

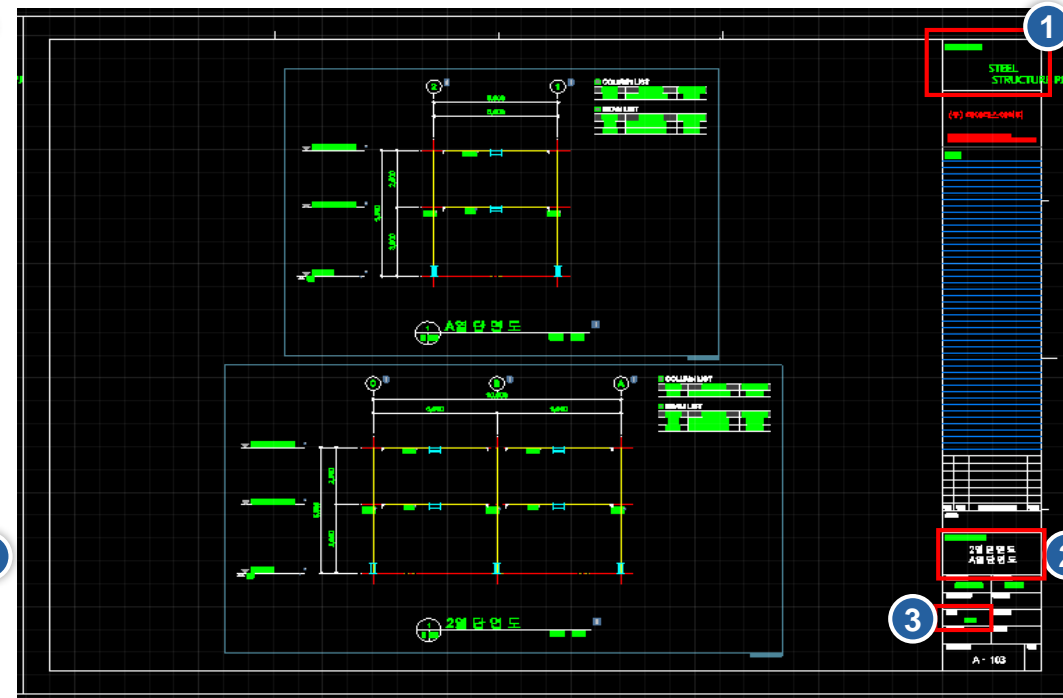
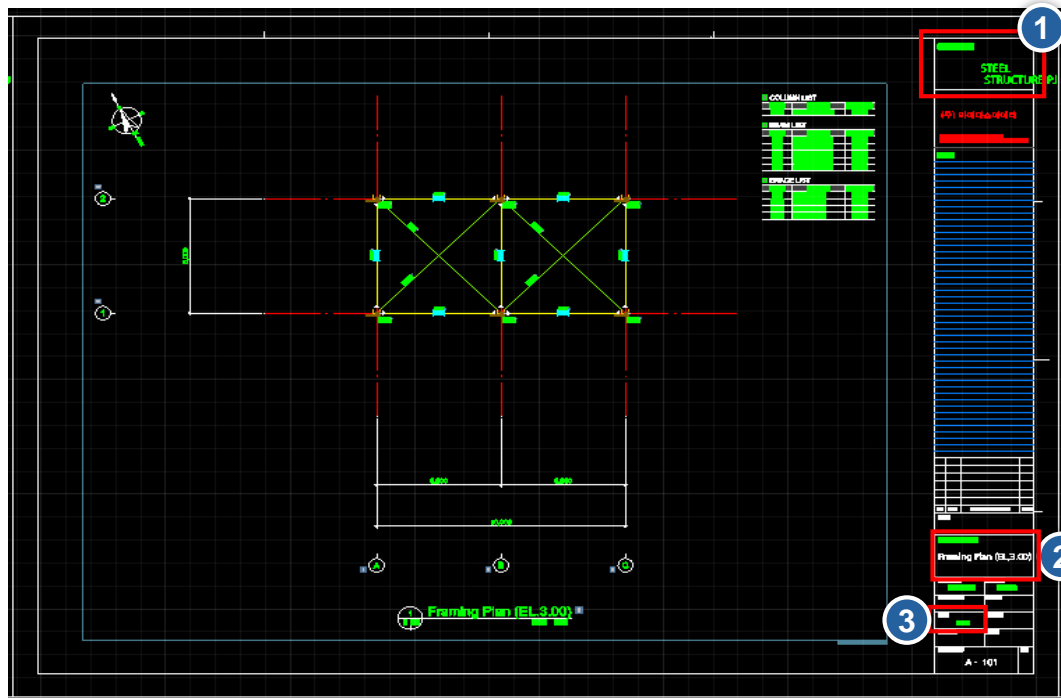


Arrangement for drawing on sheet



- ① Move to the Draw Lib Tab on the work tree
- ② Drag & Drop registered sheet to the view window
- ③ Arrange the sheets (for example 3 sheets in this tutorial)
- ④ Window Tab in the work tree > Double click the CAD Mode > Drag & Drop generated drawing in the sheet
- ⑤ If the drawing does not match a scale, revise the scale value in the sheet

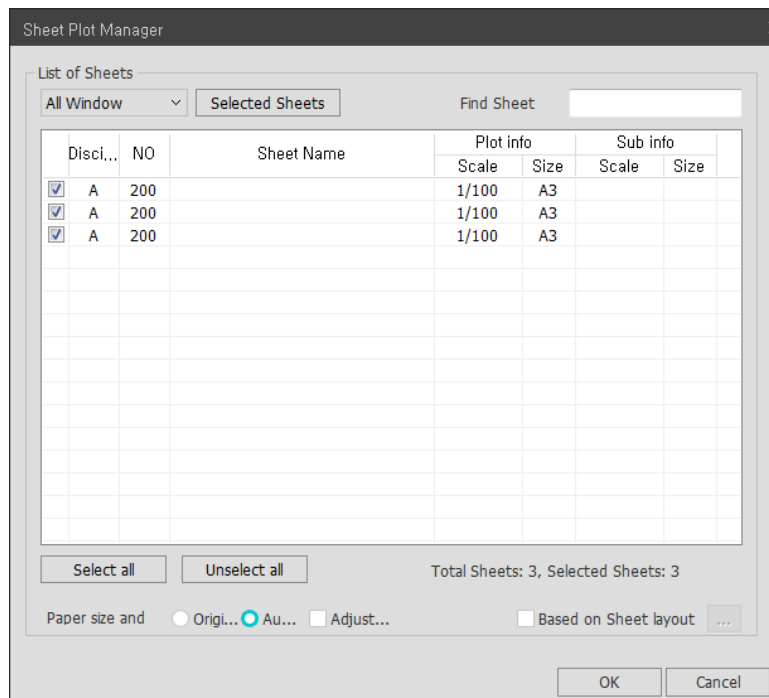
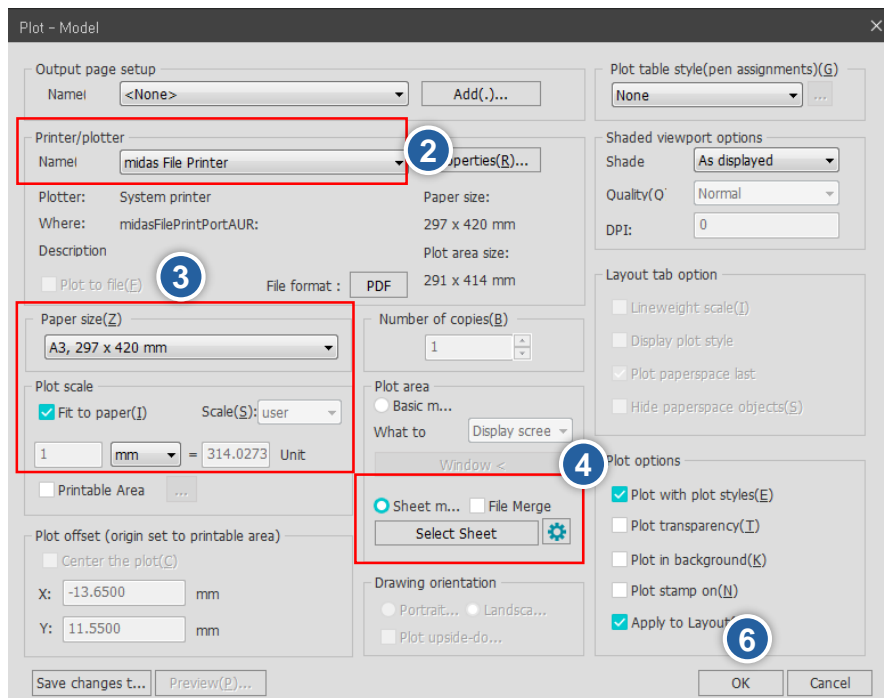
Arrangement for drawing on sheet



When placing automatically generated drawings on 5 sheets as in the previous page, various items described below (parts with a red box) are automatically updated through the information tag function.

- ① PROJECT TITLE changes through the automatic update function of the project information
- ② DRAWING TITLE changes through the automatic update function of the project information
- ③ SCALE is changed through the automatic update function of the project information
- ④ Select object > Properties Tab in the work tree > Any modification to object information is possible

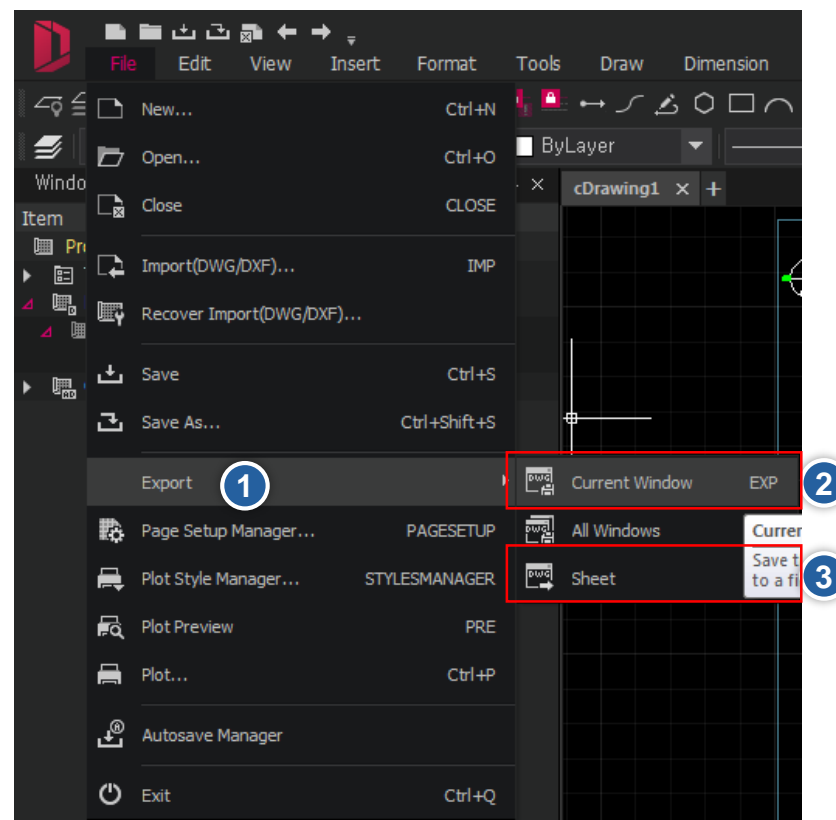
Plot Model



- ① File Tab in the main menu > Plot (Short key : Ctrl + P)
- ② Print/plotter in the dialog > Select the midas File Printer
- ③ Check On the 'Fit to paper'
- ④ Click the 'select sheet' of the continuous output in the plot area
- ⑤ Select all in the Sheet Plot Manager dialog box and confirm
- ⑥ Click OK in the Plot-Model dialog > PDF or EMF (EMF can use the Auto generate report in nGen.)

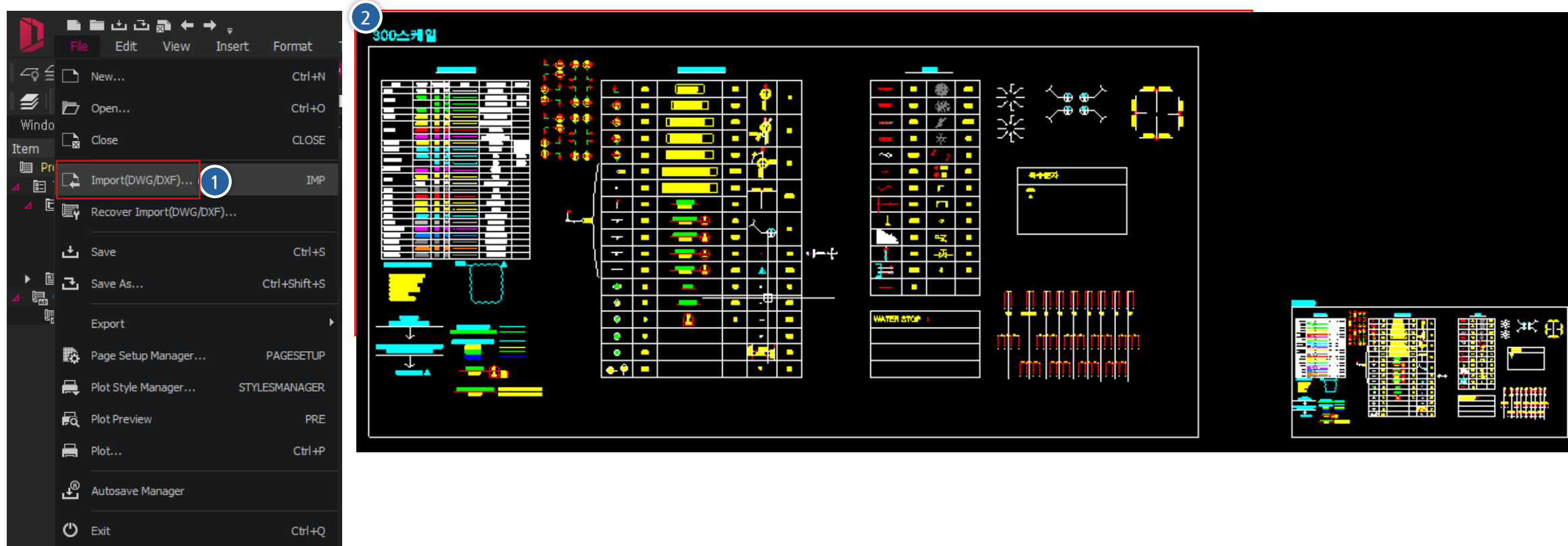
Export dwg file

- ① File Tab in the main menu > Click the 'Export'.
- ② Click the current window : Export a dwg file for all sheets shown in the view window.
- ③ Export sheets as dwg files : Each sheet will be exported individually as a single dwg file.



STEP 5. Edit Template Function

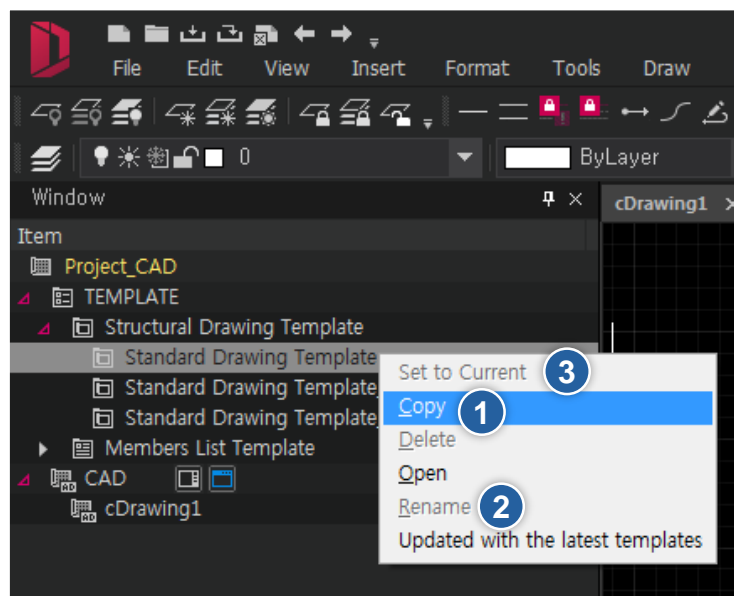
Setting of Template : Import 'Sample Layer' file



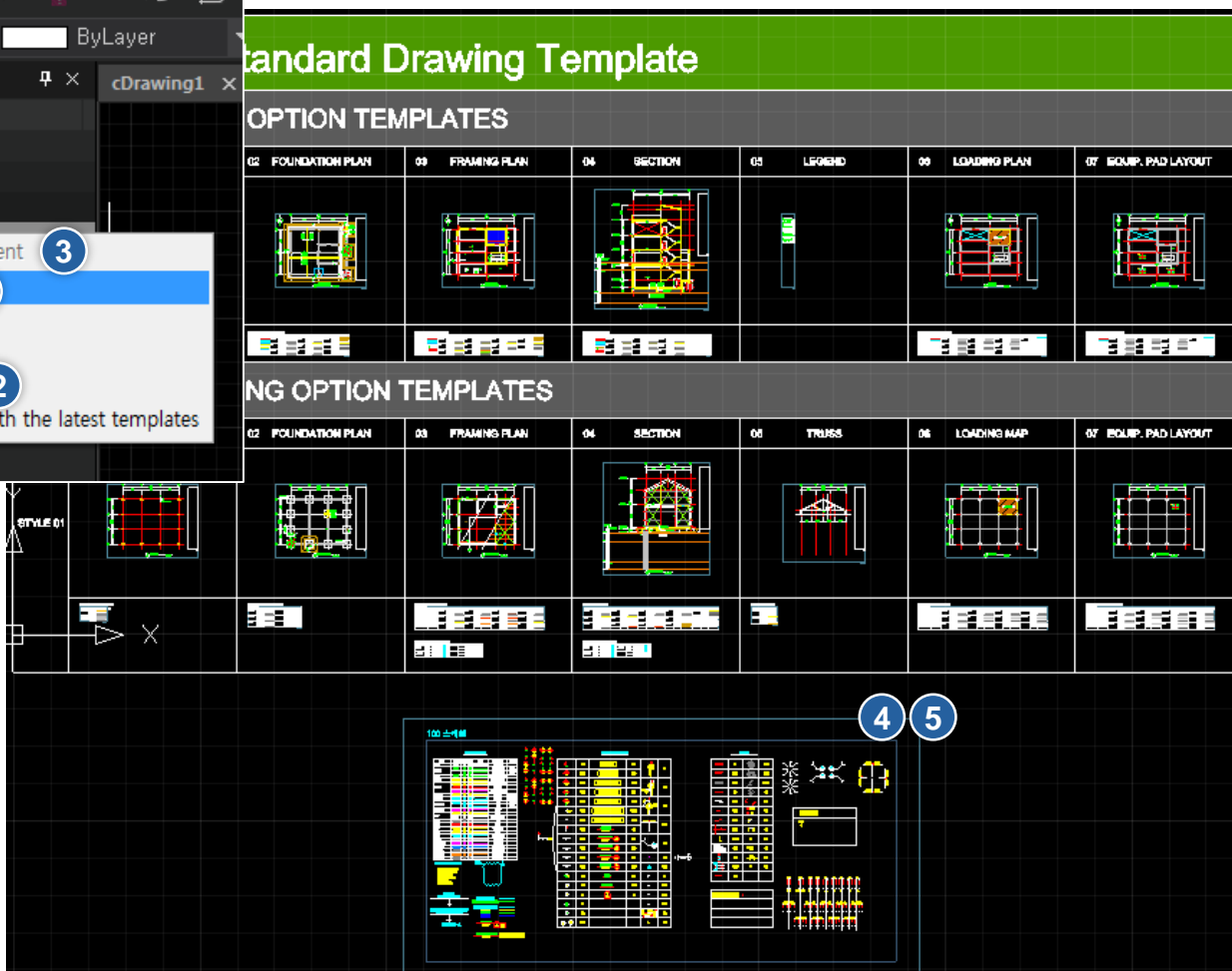
- ① Click Import > Import Sample Layer. dwg
- ② Change the scale from 1:300 to 1:100

Setting of Template

: Setting for Template modification

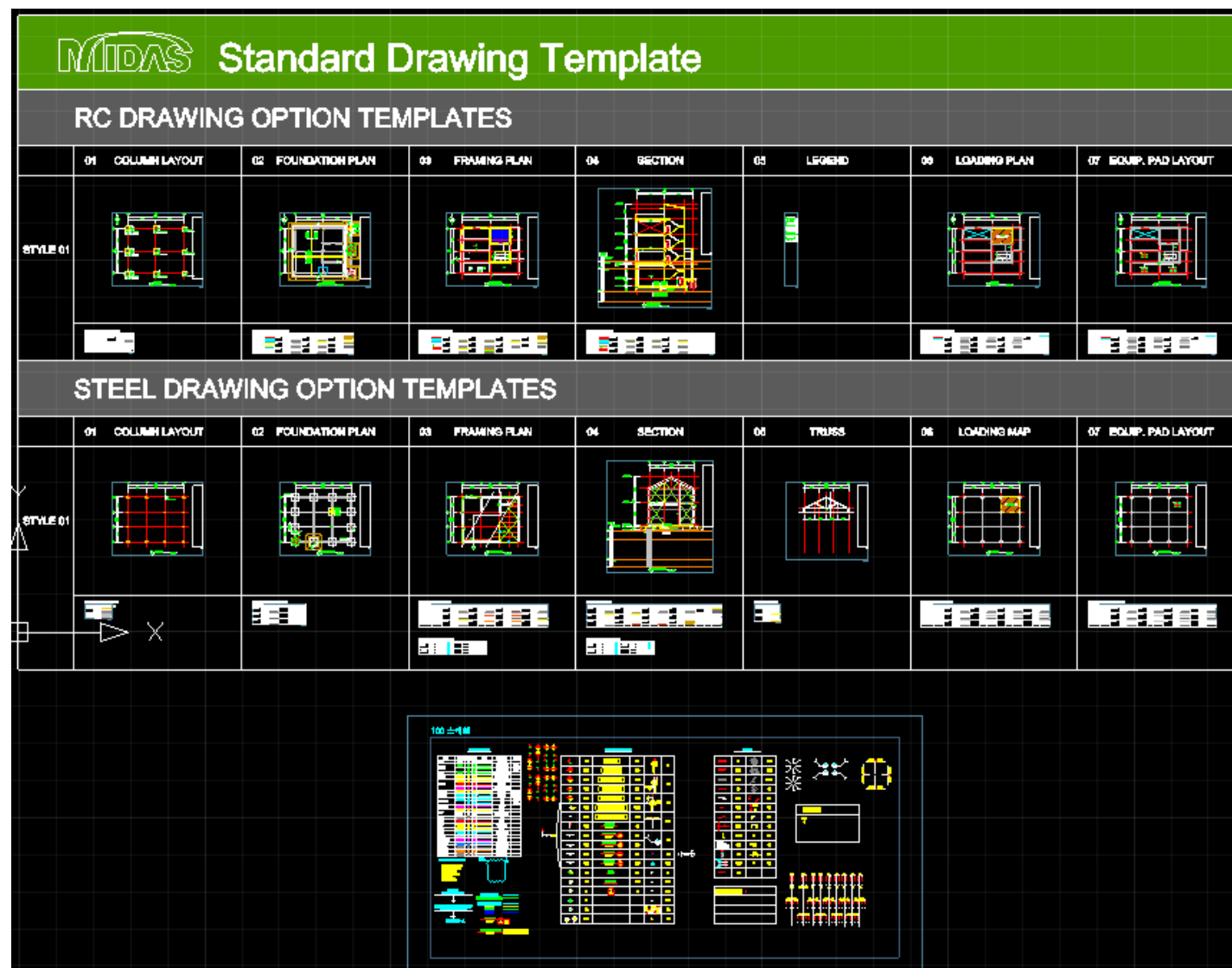


- ① Window Tab in the work tree > Copy the temporary template you want to use.
- ② Mouse right click > Change the name as "Sample".
- ③ Double click & Click 'set to current'.
- ④ Import all the layers at the 1:100 scale of the previous page as sample templates with Copy & Paste.
- ⑤ Enter the view scale from the command line <1:100> and Space Bar > Place it where you want it.



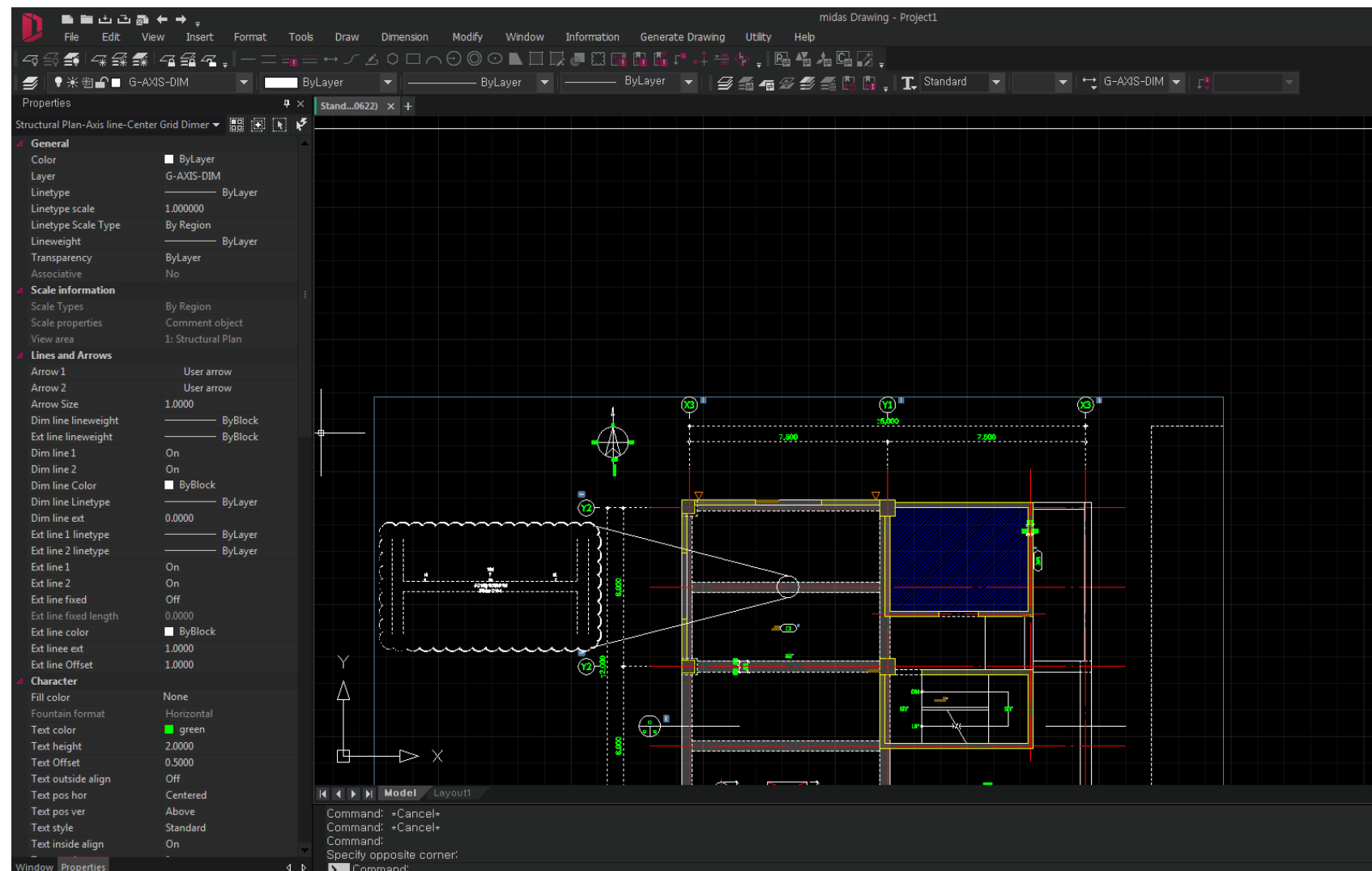
Edit the template layer (Method 1)

- ① Short cut “ma” in the command line > Setting the layer style you want using the Match function in the template.
- ① When the drawing is automatically generated again, the drawing is generated with the changed template.



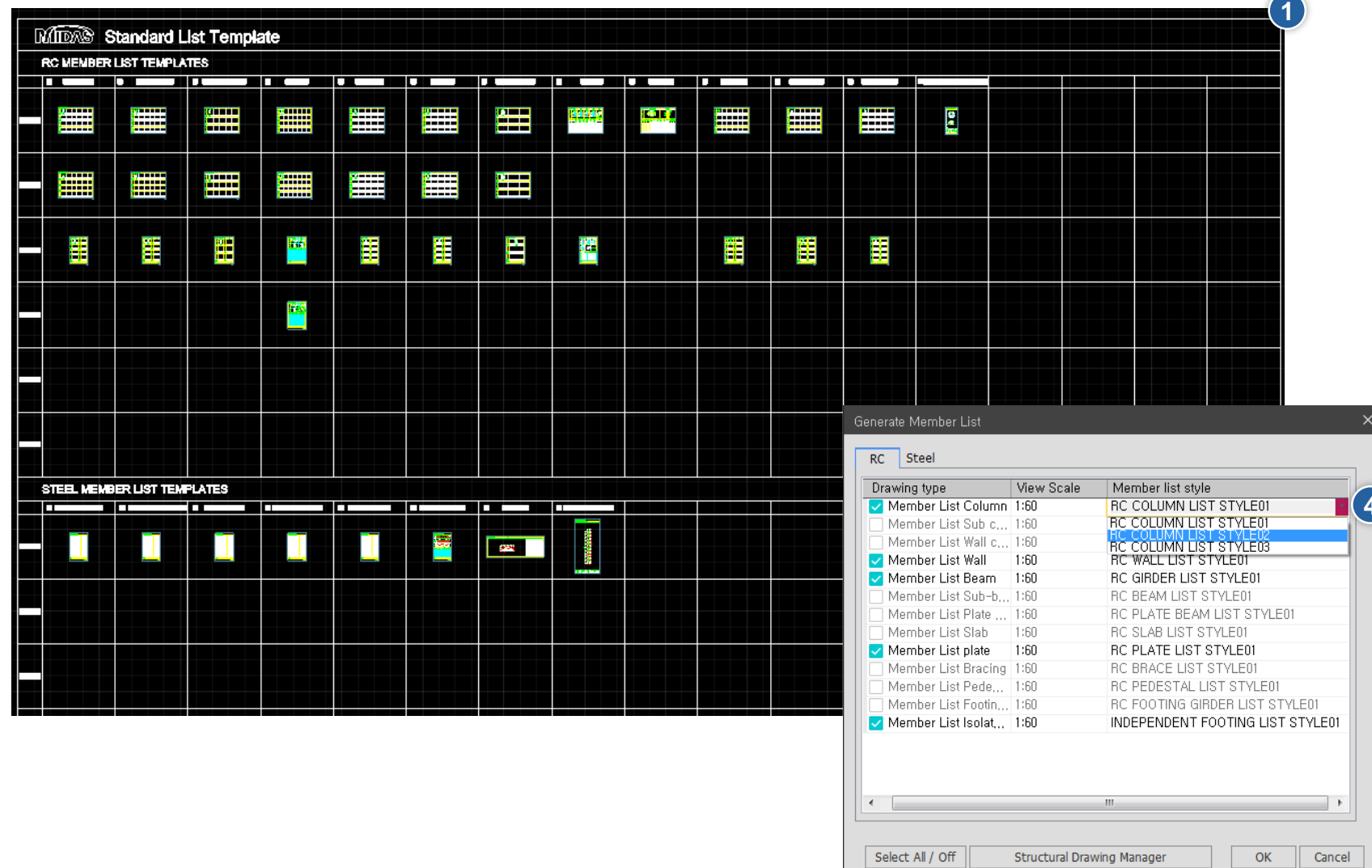
Edit the template layer (Method 2)

- ① If there is a layer to be modified other than using the “ma” shortcut, select the layer first and then go to the tree menu properties tab.
- ② General, Scale information, Lines and Arrows, Character can be modified of the properties tab.
- ③ In the same way, you can select and modify information on the properties tab for various layers.
- ④ when several layers are selected at once, the common properties appear on the Properties tab.
- ⑤ It is recommended to change each layer.



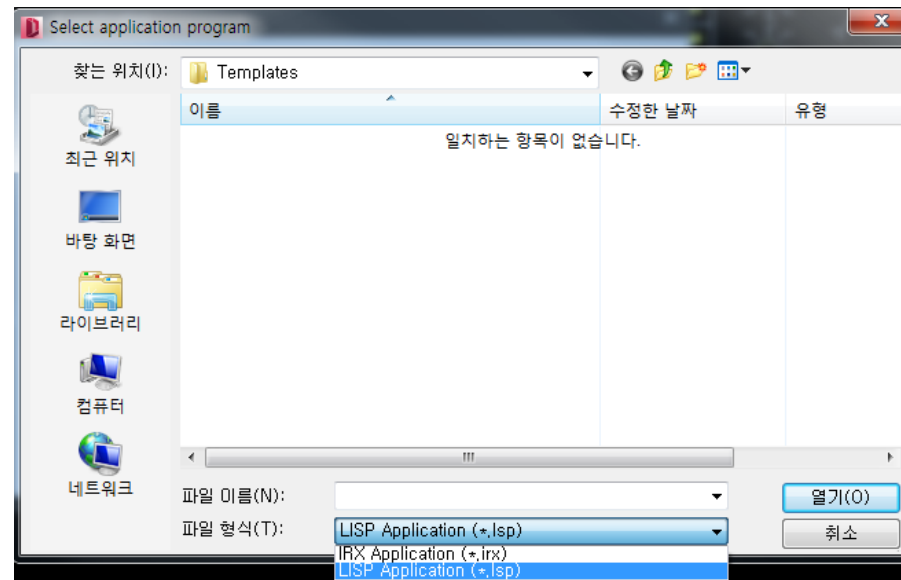
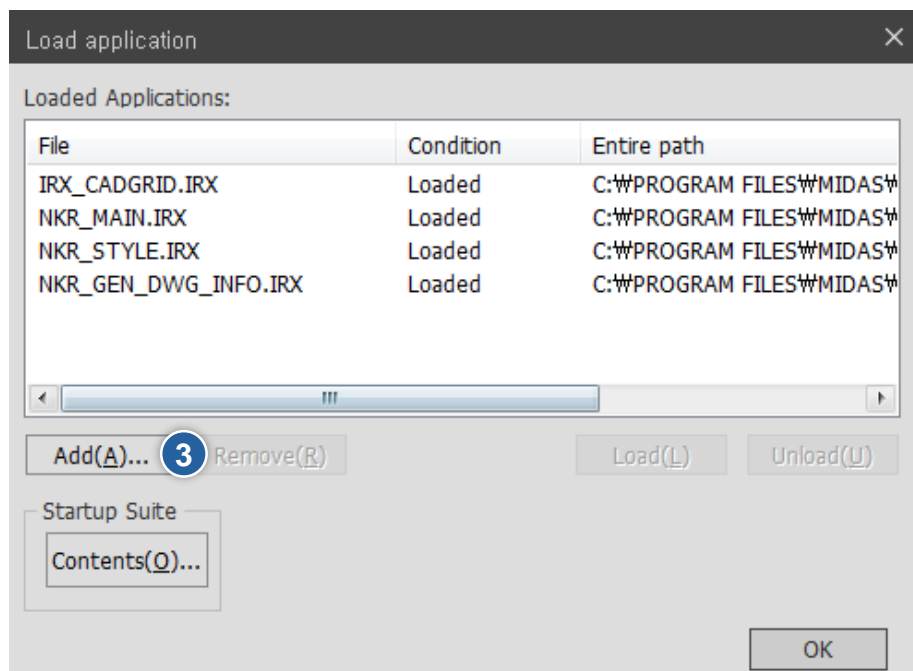
Edit member list templates

- ① Window Tab in the Work Tree > Templates > Members List Template > Standard List Template
- ② Double click the DRAWING MODE to change the environment.
- ③ Generate Drawing Tab in the main menu > Click 'Generate Member List'.
- ④ You can change the member list style in the generate member list dialog.



STEP 6. ETC. (Other Functions)

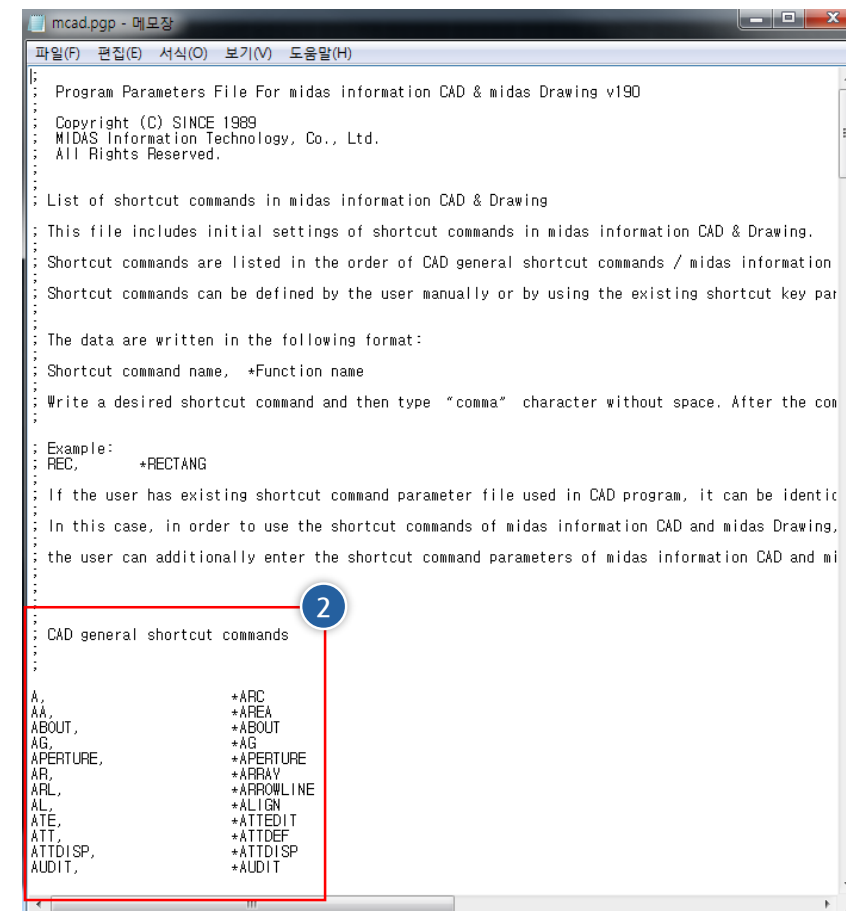
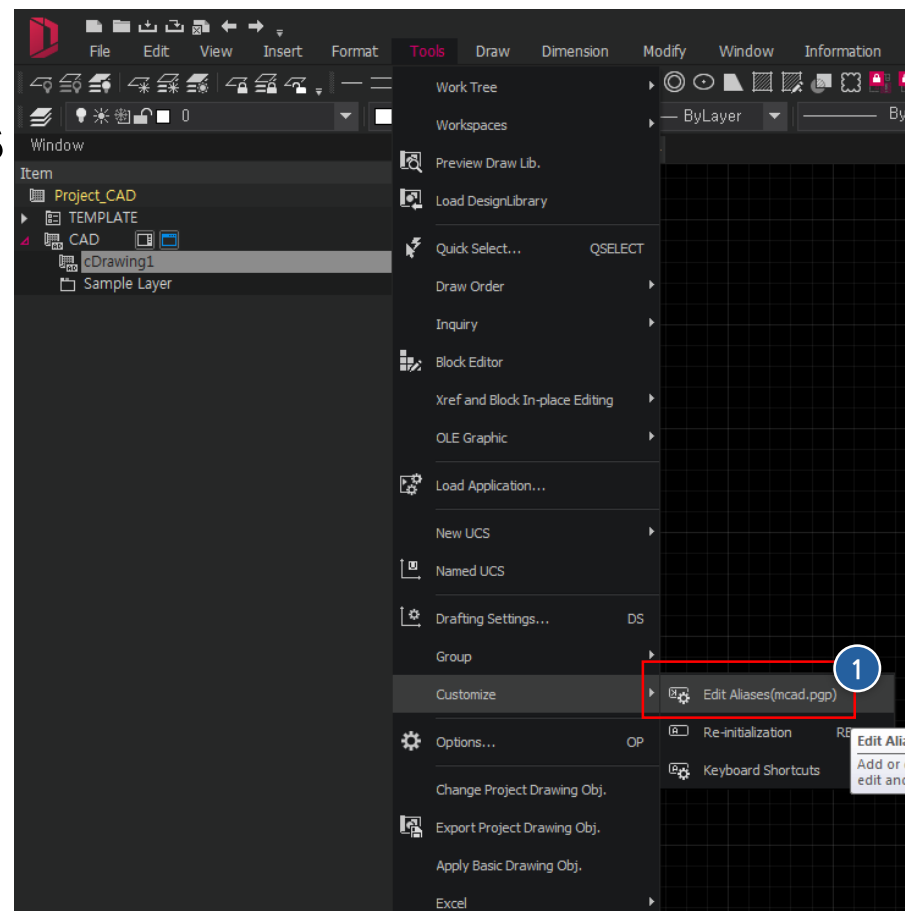
Register the LISP



- ① After typing "appload" in the command line then enter
- ② Apply in drawing program after loading LISP file (same method like Autocad)
- ③ Click the 'Add(A)' button
- ④ Open with *.lsp file

Modify custom commands

- ① Tools in the main menu > Customize > Edit Allases (mcad.pgp)
- ② Modify custom commands.
- ③ Edit the notepad then save & close.



Thank you