Release Note

Release Date : Aug. 2021

Product Ver. : nGen 2022 (v1.1)

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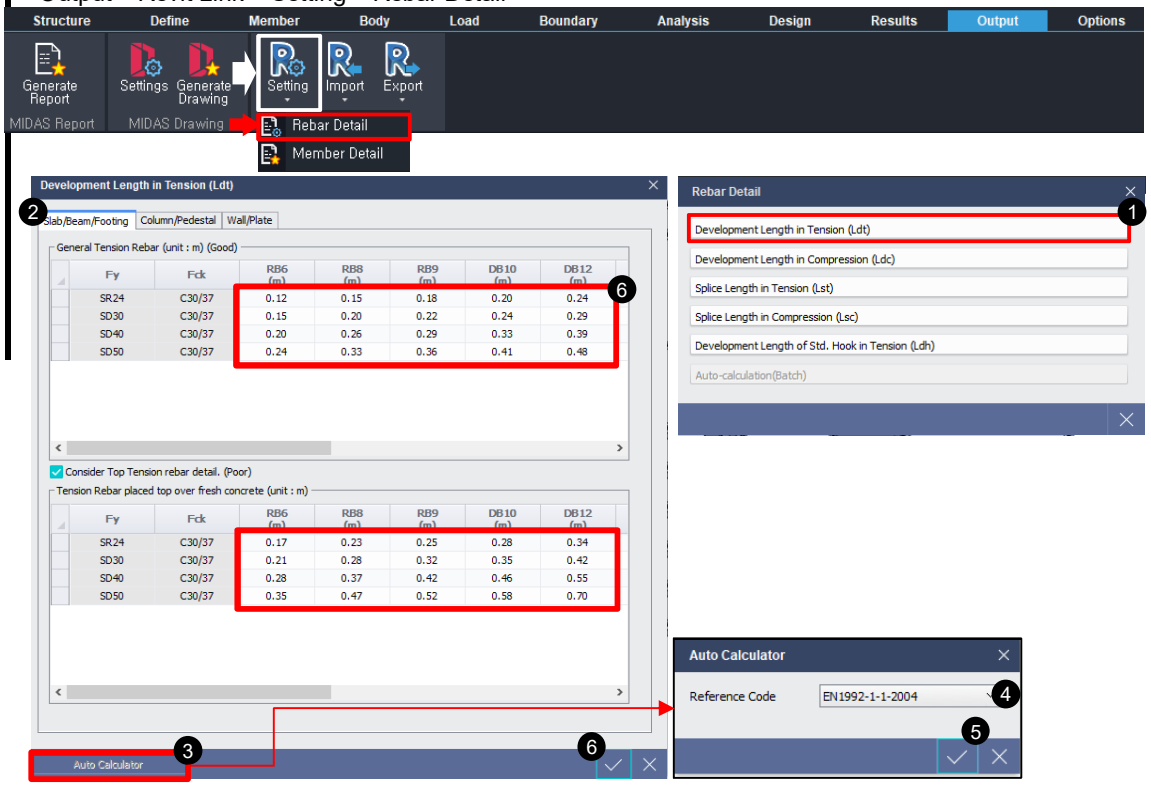
Contents

1. nGen-Revit link : Export Rebar to Revit

Export the rebar information of nGen to Revit model.

Set Rebar Detail

Output > Revit Link > Setting > Rebar Detail



Set the length for the development and splice of the rebar. Auto-calculation only supports Eurocode. For other design codes, copy & paste the values calculated in Excel.

❶ Click the type of development or splice.

❷ Select the member type tap.

❸ Click “Auto Calculator”.

❹ Select the reference code.

❺ Click “V” button.

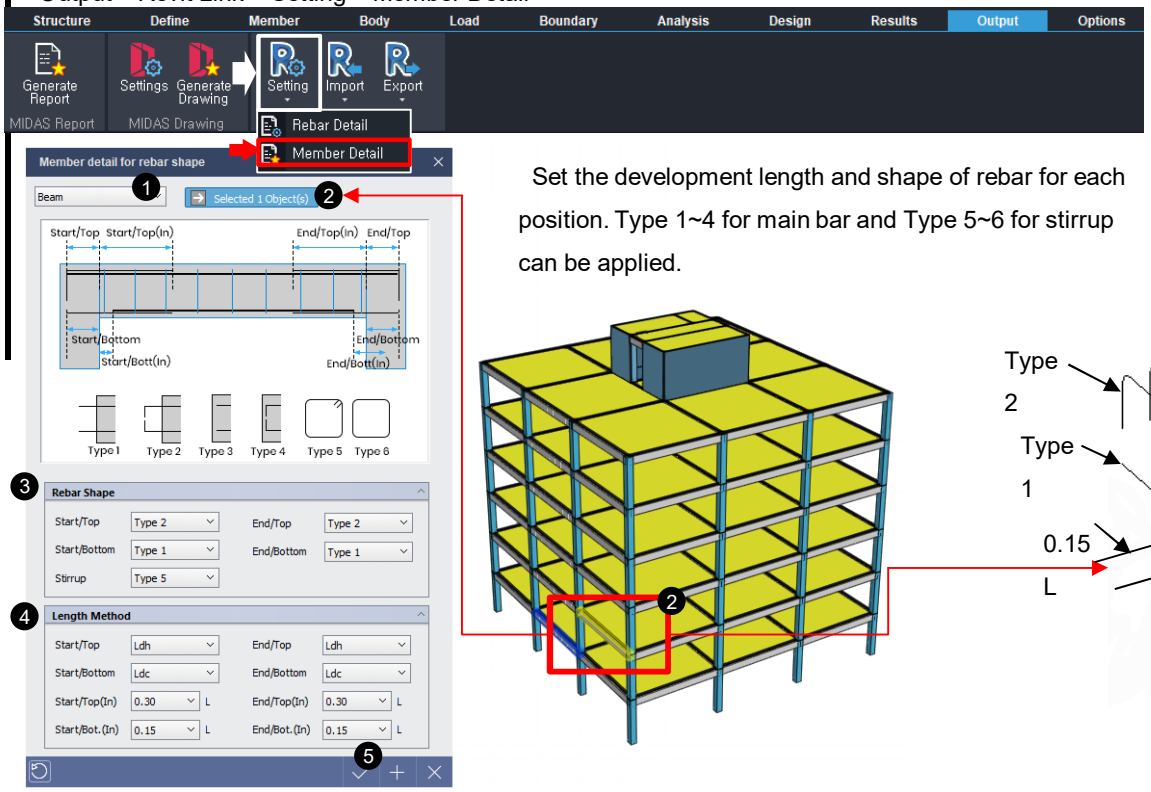
❻ Click “V” button.

1. nGen-Revit link : Export Rebar to Revit

Export the rebar information of nGen to Revit model.

Set Member Detail

Output > Revit Link > Setting > Member Detail



Set the development length and shape of rebar for each position. Type 1~4 for main bar and Type 5~6 for stirrup can be applied.

❶ Select the member type.

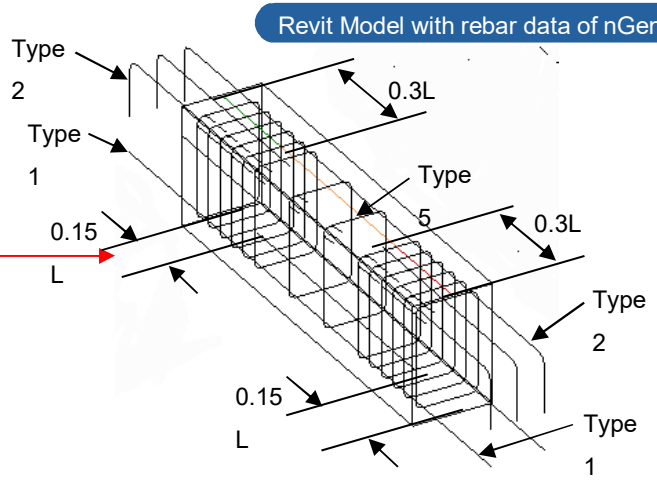
❷ Select the target elements.

❸ Set the shape type of rebar at each position.

❹ Set the length of rebar at each position.

❺ Click “V” button.

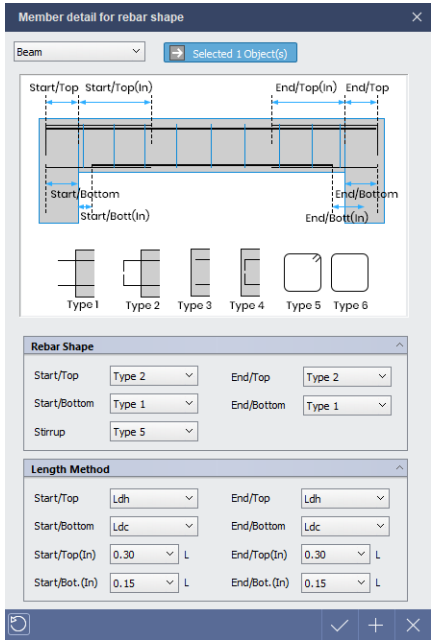
Revit Model with rebar data of nGen



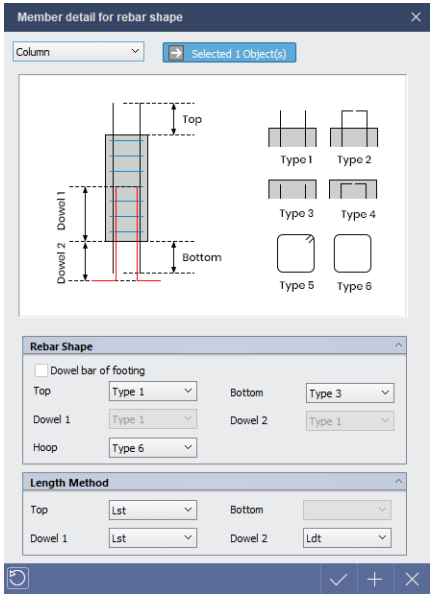
1. nGen-Revit link : Export Rebar to Revit

Export the rebar information of nGen to Revit model.

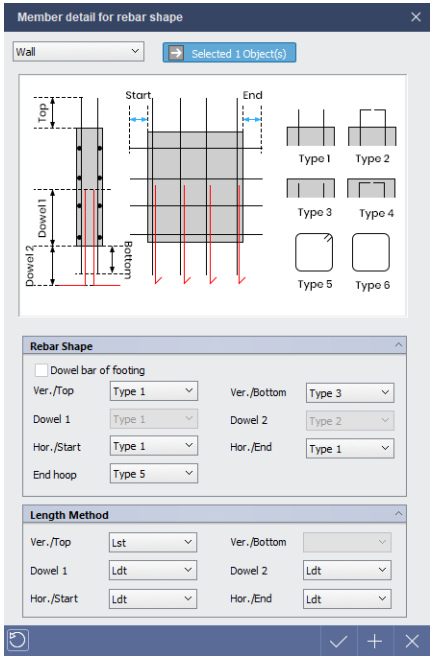
Member detail & Default setting



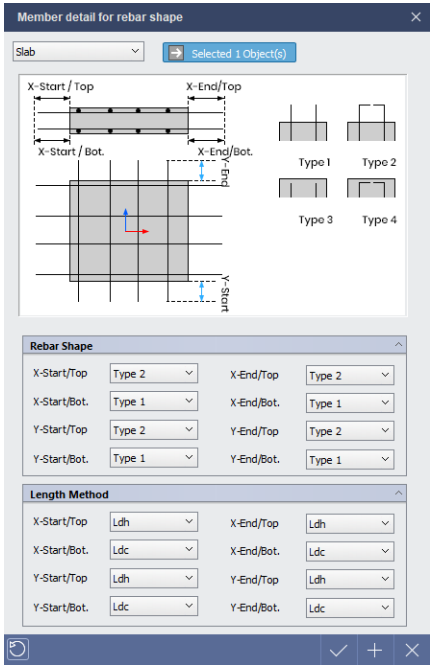
Beam Type



Column Type



Shear Wall



Slab Type

1. nGen-Revit link : Export Rebar to Revit

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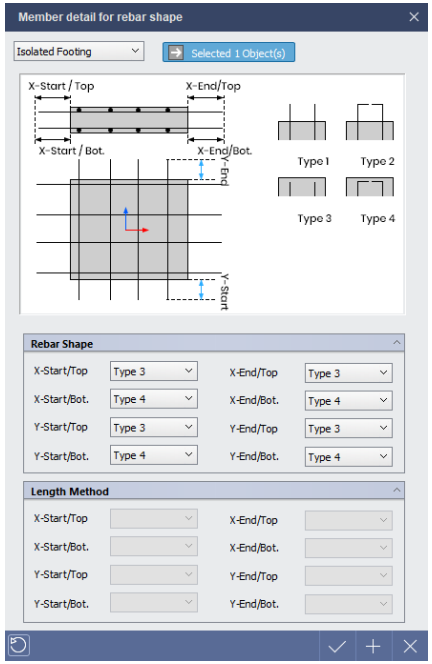
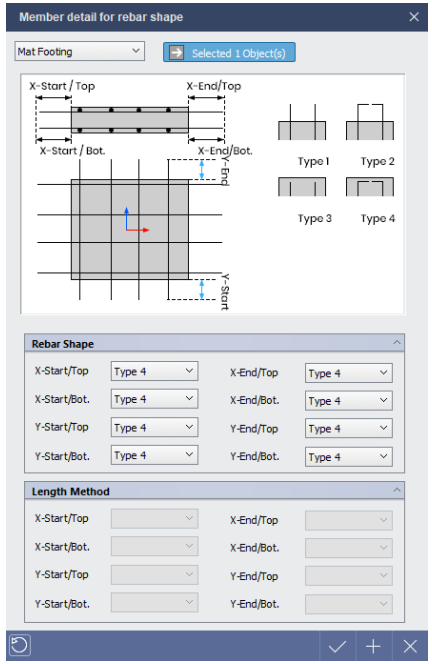
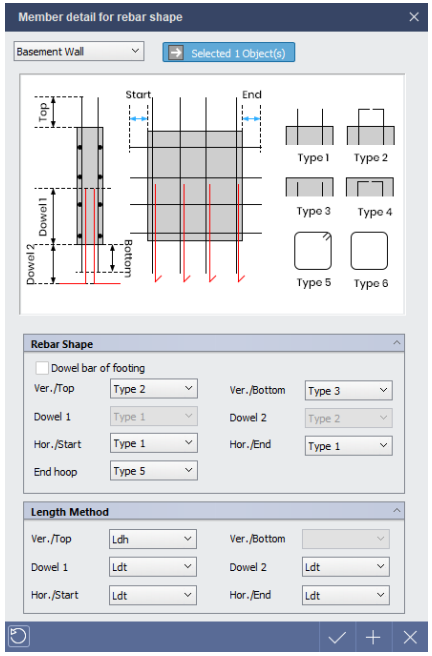
Member detail & Default setting



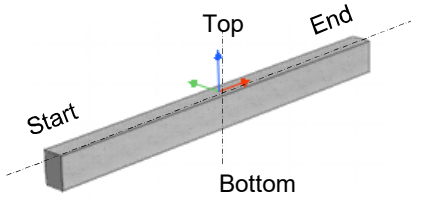
Isolated & Strip Footing

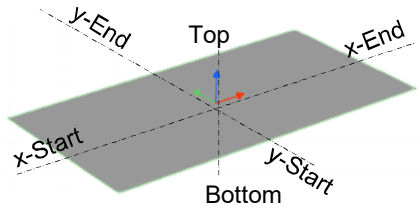


Mat Footing



Basement wall





The position of the rebar is along the local axis of member.

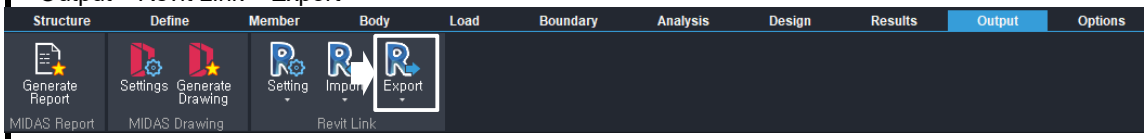
Rebar position

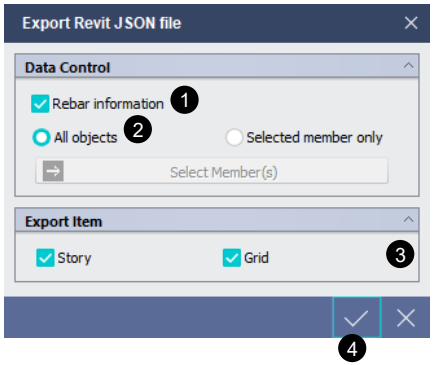
1. nGen-Revit link : Export Rebar to Revit

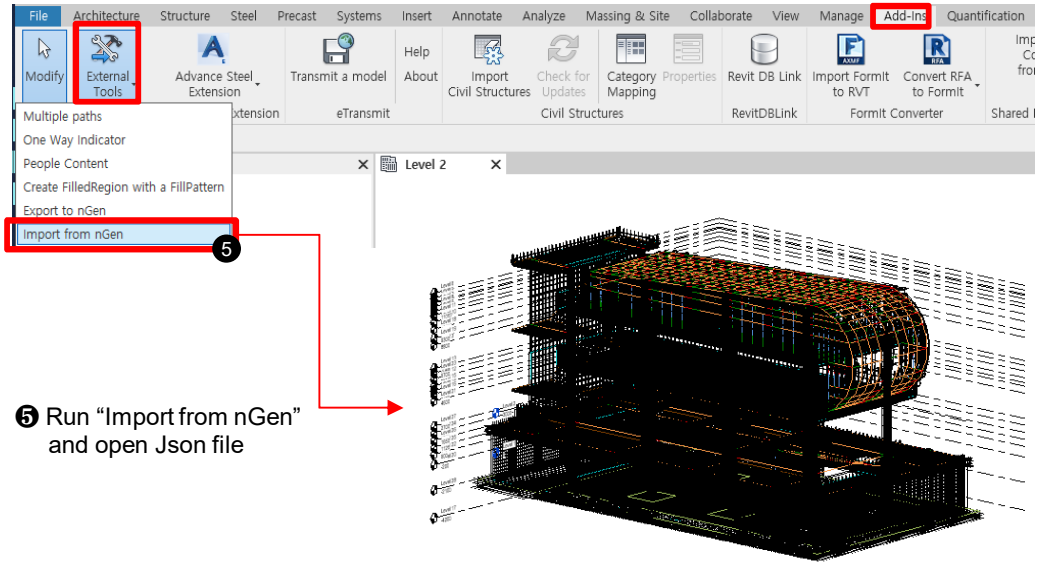
Export the rebar information of nGen to Revit model.

Export nGen model to Revit

Output > Revit Link > Export







❶ Check on “Rebar Information”.

❷ Select all objects

❸ Check on story or grid date

❹ Click “V” button and save as Json file.

❺ Run “Import from nGen” and open Json file

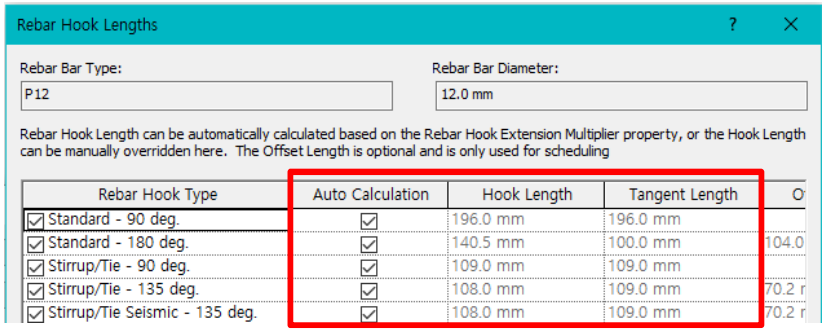
1. nGen-Revit link : Export Rebar to Revit

Export the rebar information of nGen to Revit model.

Scope of support

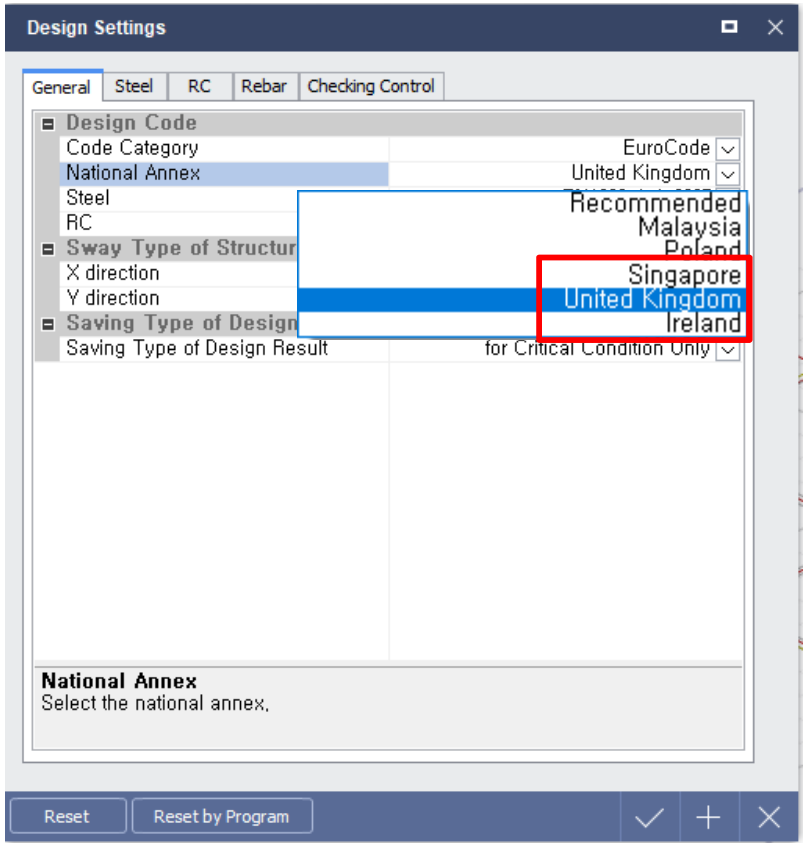
Items (Member)	*Supporting*	*Detail*
Beam / sub Beam / Footing Girder	*O*	• *Support to input rebar in critical zone of beam, column and wall.* • *Support to input dowel rebar for wall and column.* • *Support the rebar data to 2D members with slopes and irregular s hapes*
Column / sub Column / Pedestal	*O*	
Wall / Basement Wall	*O*	
Plate	*O*	
Slab / Flat Slab	*O*	
Isolated / Strip / Mat Footing	*O*	
Brace	*X*	
Wall column / Plate Beam	*X*	

- Development type : Support the straight and 90° hook shape (135 ° hook in hoop bar)
- Hook dimension : Use the auto-calculation in Revit



2. UK, Ireland and Singapore National Annex

Add National Annex



Applied UK & Singapore & Ireland NA for EN1993-1-1:2005

Prevision	RECOMMENDED	UK (United Kingdom) & Singapore	Ireland
6.1(1) partial safety factor (default)	γ_{M2} = 1.25	γ_{M2} = 1.10	γ_{M2} = 1.25
6.3.2.3(1) parameter $\lambda_{LT,0}$	$\lambda_{LT,0}$ = 0.4	$\lambda_{LT,0}$ = 0.4 (rolled) $\lambda_{LT,0}$ = 0.2 (welded)	$\lambda_{LT,0}$ = 0.4
7.2.1(1)B deflection limit (default)	Beam = L/250 Colum =L/250	Beam = L/360 Colum = L/300	Beam = L/360 Colum = L/300
Annex B. kyy~kzz	calculated as Annex A.	calculated as Annex A (UK). max(λz, λLT) (Singapre)	calculated as Annex B.
[EN 1993-1-5] 5.1(2) NOTE 2	Fy ≤ 460 : 1.2 ETC : 1.0	All : 1.0 (Only UK)	All : 1.0

2. UK, Ireland and Singapore National Annex

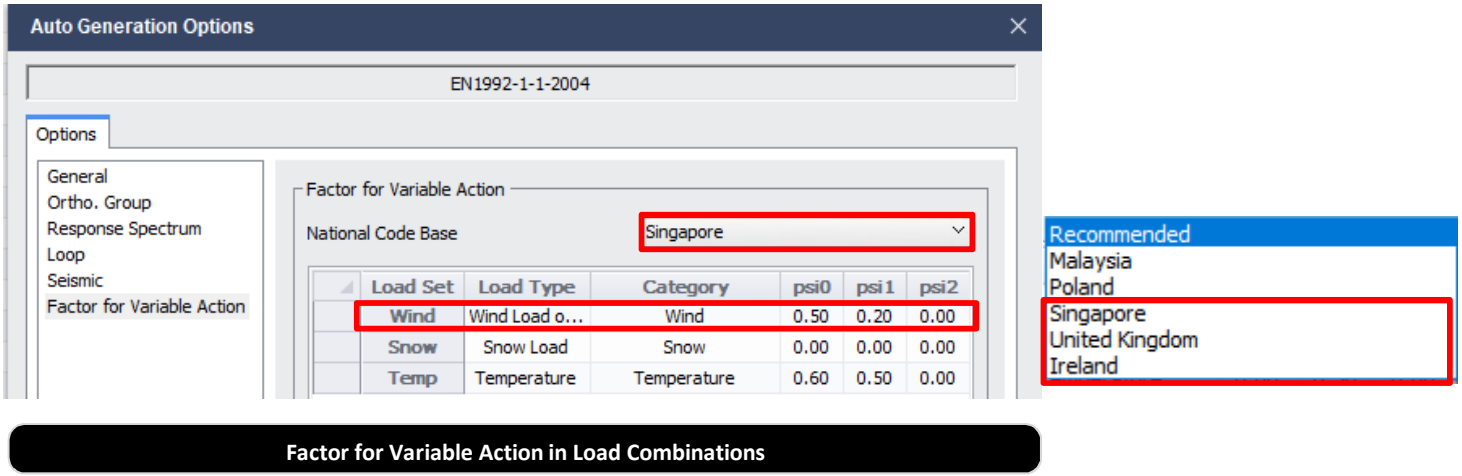
Applied UK & Singapore & Ireland NA for EN1992-1-1:2004

Prevision	RECOMMENDED	UK(United Kingdom) & Singapore	Ireland
3.1.2(2) value of C_{max}	C90/105	(…) Alternatively, shear strength of concrete strength classes higher than C50/60 may be limited to that of C50/60	(…) Alternatively, shear strength of concrete strength classes higher than C50/60 may be limited to that of C50/60
3.1.6(1) value of α_{cc} (default)	α_{cc} = 1.0	α_{cc} = 0.85	α_{cc} = 0.85
6.2.2(1) value of $C_{Rd,c}$, v_{min}, → $V_{Rd,c}$, $\sigma_{cp,limit}$		use the reduced fck → refer 3.1.2(2)	use the reduced fck → refer 3.1.2(2)
6.2.2(6) value of v		use the reduced fck → refer 3.1.2(2)	use the reduced fck → refer 3.1.2(2)
6.2.3(3) value of v_1 and α_{cw}	v_1 = 0.6 (f_{ck}<60MP) v_1 = 0.9-f_{ck}/200 > 0.5 (f_{ck} > 60MPa)	[If the design stress of the shear reinforcement is below 80% of the characteristic yield stress fyk,] v_1 = 0.54(1-0.5*cosα) (f_{ck}<60MP) v_1 = (0.84-f_{ck}/200)*(1-0.5*cosα) > 0.5 (f_{ck} > 60MPa)	[If the design stress of the shear reinforcement is below 80% of the characteristic yield stress fyk,] v_1 = 0.54(1-0.5*cosα) (f_{ck}<60MP) v_1 = (0.84-f_{ck}/200)*(1-0.5*cosα) > 0.5 (f_{ck} > 60MPa)
6.4.5(3) v_{Ed} limit	$v_{Rd,max}$ = 0.5vf_{cd}	$v_{Rd,max}$ = 0.5vf_{cd} In addition, v_{Ed} should be limited to 2$v_{Rd,c}$ at the first control perimeter.	$v_{Rd,max}$ = 0.5vf_{cd} In addition, v_{Ed} should be limited to 2$v_{Rd,c}$ at the first control perimeter.
9.5.3(3) column transverse reinforcement	$s_{cl,tmax}$ = min[20$D_{bar,min}$, Hc, Bc, 400mm]	$s_{cl,tmax}$ = min[20$D_{bar,min}$, Hc, Bc, 400mm] check $\alpha_n\alpha_s\omega_{wd}$ ≥0.04 (>C50/60)	$s_{cl,tmax}$ = min[20$D_{bar,min}$, Hc, Bc, 400mm] check $\alpha_n\alpha_s\omega_{wd}$ ≥0.04 (>C50/60)

2. UK, Ireland and Singapore National Annex

Applied UK & Singapore & Ireland NA for EN1992-1-1:2004

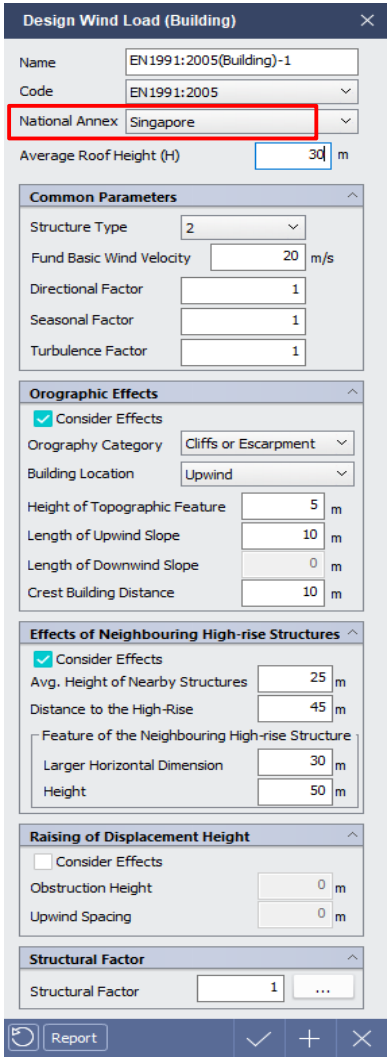
Prevision	RECOMMENDED	UK(United Kingdom) & Singapore	Ireland
Category H : roofs	ψ0 = 0.0 ψ1 = 0.0 ψ2 = 0.0	ψ0 = 0.7 ψ1 = 0.0 ψ2 = 0.0	ψ0 = 0.6 ψ1 = 0.5 ψ2 = 0.0
A1.2.2 (Table A.1.1) Wind	ψ0 = 0.6 ψ1 = 0.2 ψ2 = 0.0	ψ0 = 0.5 ψ1 = 0.2 ψ2 = 0.0	ψ0 = 0.6 ψ1 = 0.2 ψ2 = 0.0



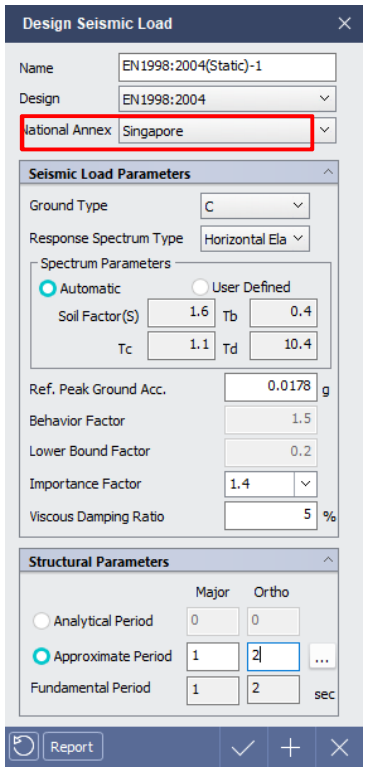
Factor for Variable Action in Load Combinations

2. UK, Ireland and Singapore National Annex

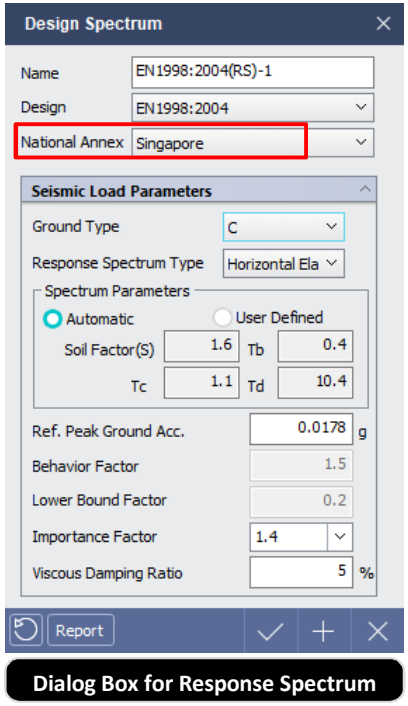
Add Singapore NA for Wind Load (EN1991:2005) & Seismic Load (EN1998:2004)



Dialog Box for Wind Load



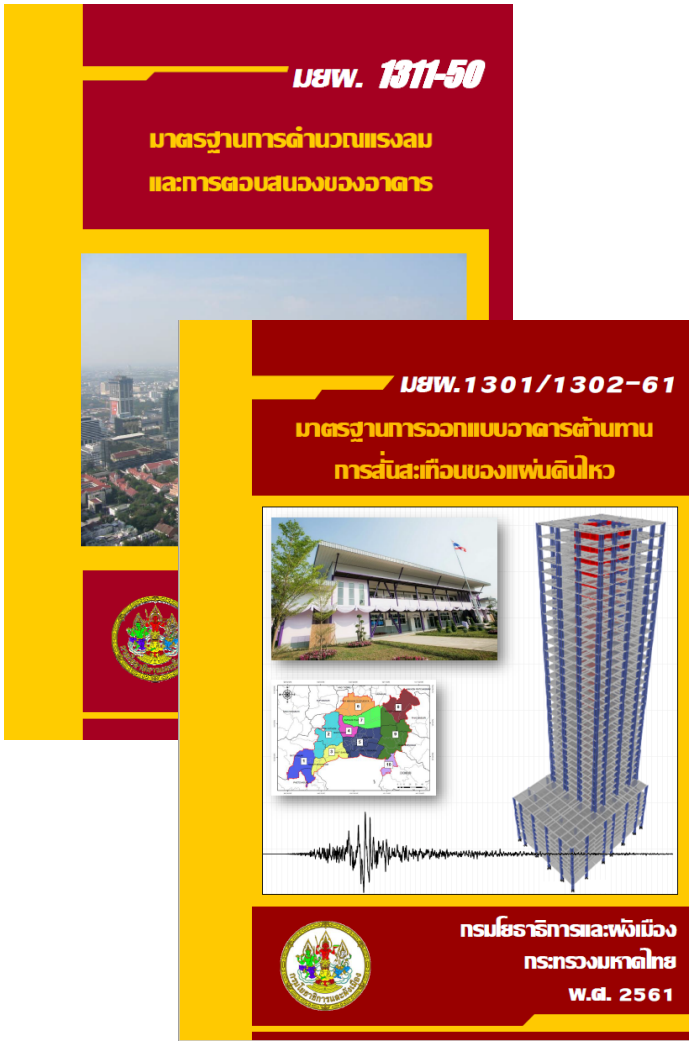
Dialog Box for Static seismic Load

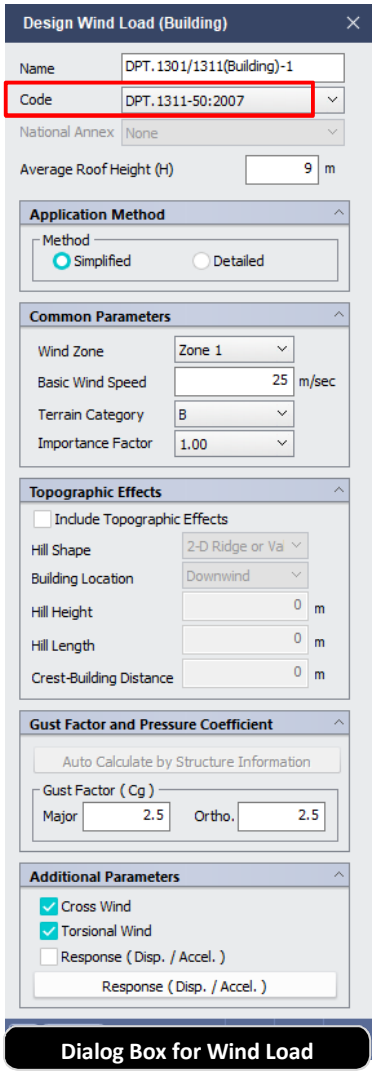


Dialog Box for Response Spectrum

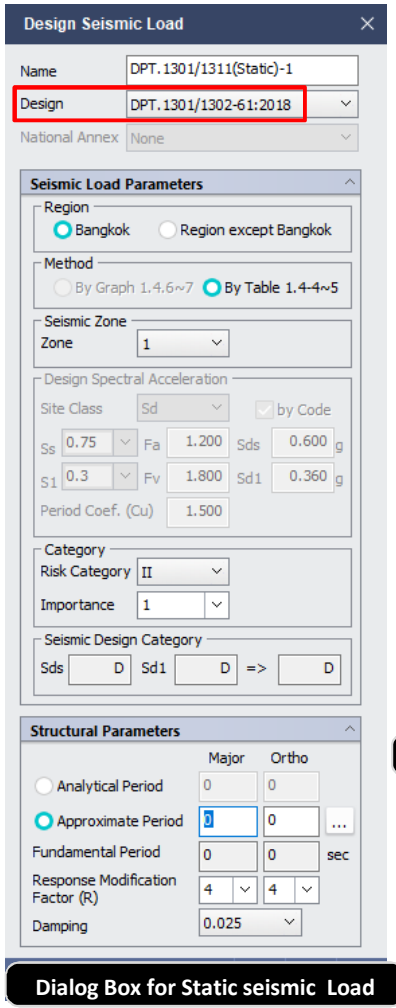
3. Thailand Code : DPT (Wind and Seismic load)

Add DPT.1311-50:2007 (Wind Load) & DPT,1301/1302-61:2018 (Seismic Load)

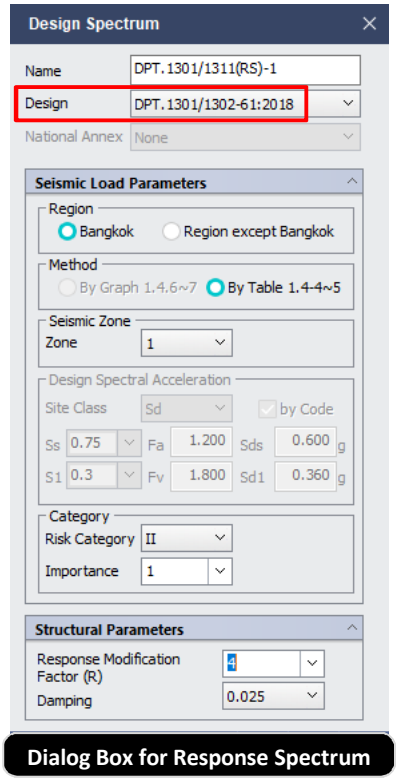




Dialog Box for Wind Load



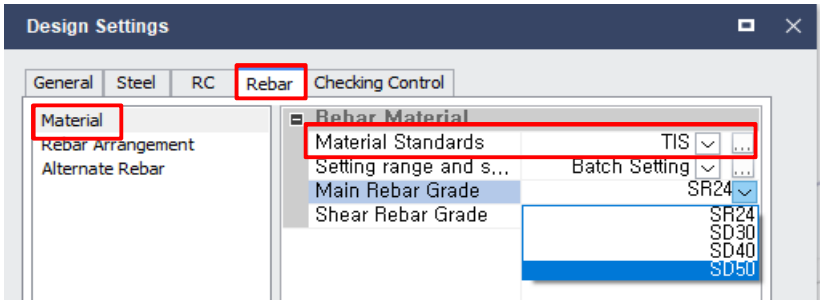
Dialog Box for Static seismic Load



Dialog Box for Response Spectrum

4. Thailand DB : Rebar & Material

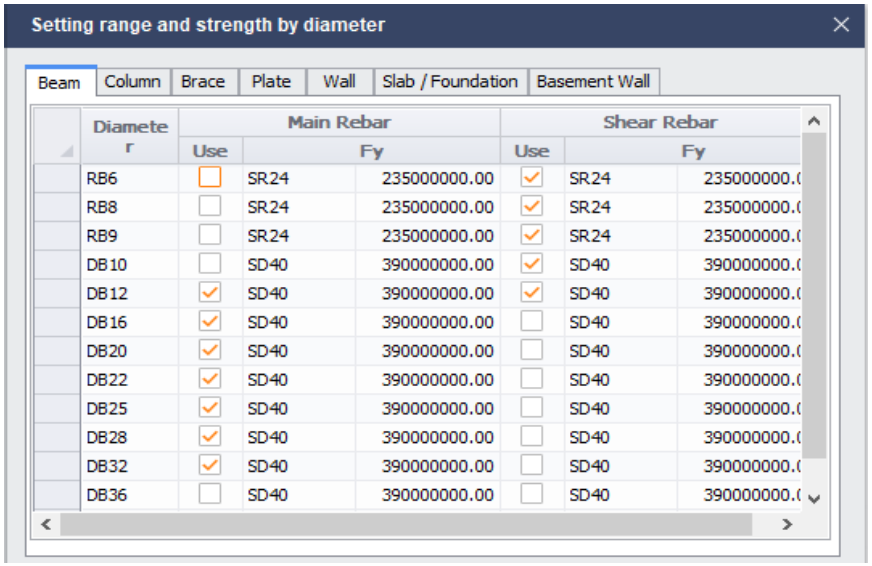
Add Rebar DB and material as per TIS



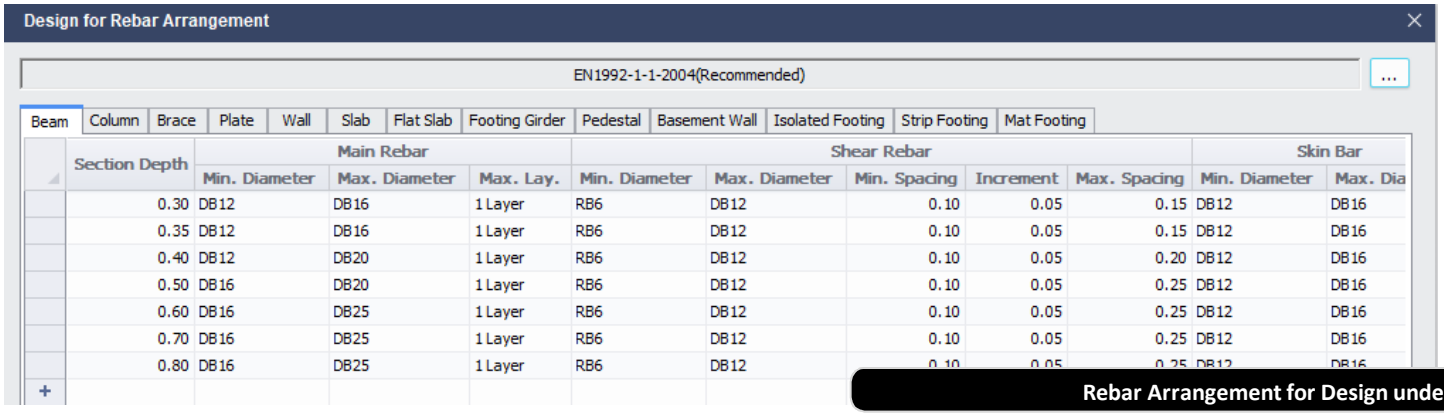
Set Rebar material

	Tensile Strength Fu (Mpa)	Yield Strength Fy (Mpa)
SR 24	385	235
SD 30	480	295
SD 40	560	390
SD 50	620	490

Rebar strength as per TIS



Rebar DB as per TIS & Setting range and strength by diameter



Rebar Arrangement for Design under TIS

5. Improvement of Snap

Separate Cad snap and Modeling Snap

- ***Improved modeling convenience by separating cad snap and model snap***
- ***Control the default settings for cad snap in Global settings.***