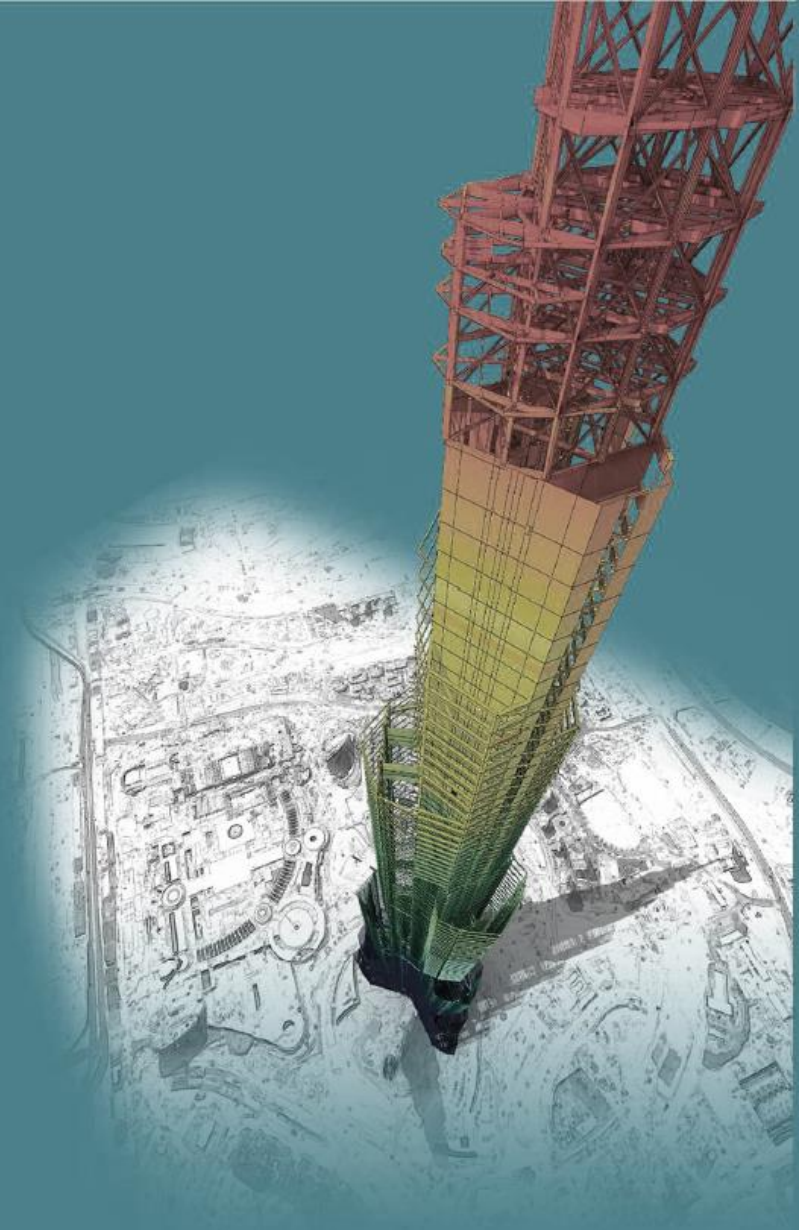


Release Note

Release Date: Jan. 2025

Product Version : midas Gen 2025 (v1.2)
Design + 2025 (v1.1)



Design System of General Structures

Integrated Design System for Building and General Structures

Index

midas Gen

- 新墨西哥設計規範 (NMX 2023 & NTC 2023) : [See Appendix 01](#)
- 俄羅斯新設計規範 (Russian Standard): [See Appendix 02](#)
- 新增 BS 5950-2000 鋼結構設計
- NSCP 2015 新增功能
- 依照 IS 規範改善地震及風力設計
 1. 根據 IS:18168-2023 的鋼結構耐震設計規定
 2. 根據 IS : 1893 (Part 1) – 2016 的正交荷載組合效應
 3. 根據 IS : 875 (Part 3) – 2015 的動態風荷載應用改善
 4. 小錯誤修正
- [ETC](#)
 1. 新增冷軋型鋼的組合類型斷面
 2. 修正 DTP (泰國) 規定中側向荷載的錯誤
 3. 增加 “Master Design” 新介面 (僅意大利版本)
 4. 改善 Gen-IDEA statica Connection 介面 (載重組合)
 5. 增加新鋼筋資料庫 (Rebar DB)

Design+

- 增加圓管鋼筋混凝土柱設計
- 改善擋土牆設計
- 增加聯合基礎模組(印度規範)
- 增加新鋼筋規範(Rebar DB)

Appendix

[01 : Revised provisions reflected in Gen of NTC & NMX 2023](#)

[02 : Implemented Russian code in midas Gen](#)

midas **Design+**

1. Added RC pipe column design as per ACI 依照ACI增加圓管鋼筋混凝土柱設計

- Supported Design Code : ACI 318(M) -11, ACI 318(M) -14, ACI 318(M) -19, KDS 41 20 : 2022, KDS 41 20 : 2018, NSR-10
- Supported Features : Column Design, Patch Column Design, Drawing, Quantity

RC Design Procedures

Option

Design Code : ACI 318(M)-19

Live Load : 30C2012

Rebar DB : 10

Design Option

Drawing Option

Report Option

Performance

Slab

Beam

Column (2)

1C01(1)

CS1

Column (General)

Shear Wall

Shear Wall (Combined)

Footing

Footing (Combined)

Basement Wall

Stair

Corbel / Bracket

Retaining Wall

Beam Table

Slab Table

Barb Beam (1)

Barb Column (2)

Barb Wall

General

Member Name : 1C01(1)

Apply this Member to : Draw & Report

Section : Force

Design

Material

Concrete : 30 MPa

Main Bar : 300 MPa

Hoop Bar : 300 MPa

Light Weight Concrete

Factor : 1

Stress-Strain : Equivalent Rectangle

Shape

Shape : Pipe

Section

Diameter : 600.00 mm

Thickness : 150.00 mm

Length(x) : 4.00 m

Length(y) : 4.00 m

Kx : 1.00

Ky : 1.00

Rebar

Layer

Rein

Rein

Main

CL

Corner

Outer

8

-

0

-

83.5

mm

Inner

-

-

-

-

D19

mm

Center

-

-

-

-

-

mm

Max Rein

Maximum Rebar No = 3284

Hoop Bar

End

D4

200.00

mm

Use User Input

Start

D4

200.00

mm

Splicing Limit of Main Rebar

Do not splice

50% Splice

100% Splice

Design(F4)

Check(F5)

Report...

Apply(F3)

Double click to Zoom

Section

PH Curve

MM Curve

Rebar

Layer

Rein

Rein

Main

CL

Corner

Outer

8

-

0

-

83.5

mm

Inner

-

-

-

-

D19

mm

Center

-

-

-

-

-

mm

Max Rein

Maximum Rebar No = 3284

Hoop Bar

End

D4

200.00

mm

Use User Input

Start

D4

200.00

mm

Splicing Limit of Main Rebar

Do not splice

50% Splice

100% Splice

Design(F4)

Check(F5)

Report...

Apply(F3)

Report

100%

Print...

Save...

Report...

Options...

Detail Report

Include Input Data

1. Calculation Summary

(1) Check Magnified Moment

Category	Value	Criteria	Ratio	Note
Moment Magnification Factor (Dir. X)	1.033	1.400	0.738	M_{2max} / M_{1max}
Moment Magnification Factor (Dir. Y)	1.033	1.400	0.738	M_{2max} / M_{1max}

(2) Check Design Parameter

Category	Value	Criteria	Ratio	Note
Rebar Ratio (Min.)	0.0108	0.0100	1.080	ρ_{min} / ρ
Rebar Ratio (Max.)	0.0108	0.0800	0.135	ρ / ρ_{max}

(3) Check Moment Capacity (Neutral axis)

Category	Value	Criteria	Ratio	Note
Moment Capacity (Dir. X) (kN-m)	81.88	171	0.477	$M_u / \phi M_{nX}$
Moment Capacity (Dir. Y) (kN-m)	45.14	84.53	0.534	$M_u / \phi M_{nY}$
Axial Capacity (kN)	1,414	2,884	0.490	$P_u / \phi P_n$
Moment Capacity (kN-m)	80.45	196	0.410	$M_u / \phi M_{nX}$

(4) Shear Strength (Dir. X)

Category	Value	Criteria	Ratio	Note
Maximum Shear Strength (kN)	14.55	749	0.019	$V_u / \phi V_{nXmax}$
Shear Strength (kN)	14.55	236	0.062	$V_u / \phi V_{nXmax}$
Spacing Limit for Reinforcement (mm)	200	200	1.000	s_x / s_{xmax}
Shear Capacity (SRSS)	6.177	1.886	3.277	

(5) Shear Strength (Dir. Y)

Category	Value	Criteria	Ratio	Note
Maximum Shear Strength (kN)	35.33	749	0.047	$V_u / \phi V_{nYmax}$
Shear Strength (kN)	35.33	236	0.150	$V_u / \phi V_{nYmax}$
Spacing Limit for Reinforcement (mm)	200	200	1.000	s_y / s_{ymax}
Shear Capacity (SRSS)	6.177	1.886	3.277	

2. Check Magnified Moment

Start Page

Member

Member List

Drawing

Quantity

Name	Size (mm)	Section					Quantity per Unit Length						
		Main			Hoop		Concrete (m³)	Form (m²)	Main (kN)	Hoop		Sum	
		Layer 1	Layer 2	Layer 3	END (mm)	MIDDLE (mm)				END (kN)	MIDDLE (kN)	END (kN)	MIDDLE (kN)
1C01(1)	D600(T=150)	8-D19	-	-	D4@200	D4@200	0.212	2.827	0.177	0.013	0.013	0.190	0.190
C01	D500	10-D19	-	-	D4@100	D4@100	0.196	1.571	0.221	0.014	0.014	0.234	0.234

NAME

SECTION

1C01(1)

(Ø600)

OUTER

INNER

CENTER

HOOP (MID)

HOOP (END)

TIE BAR

8-D19

-

-

D4@200

D4@200

-

▲ Drawing : Member List

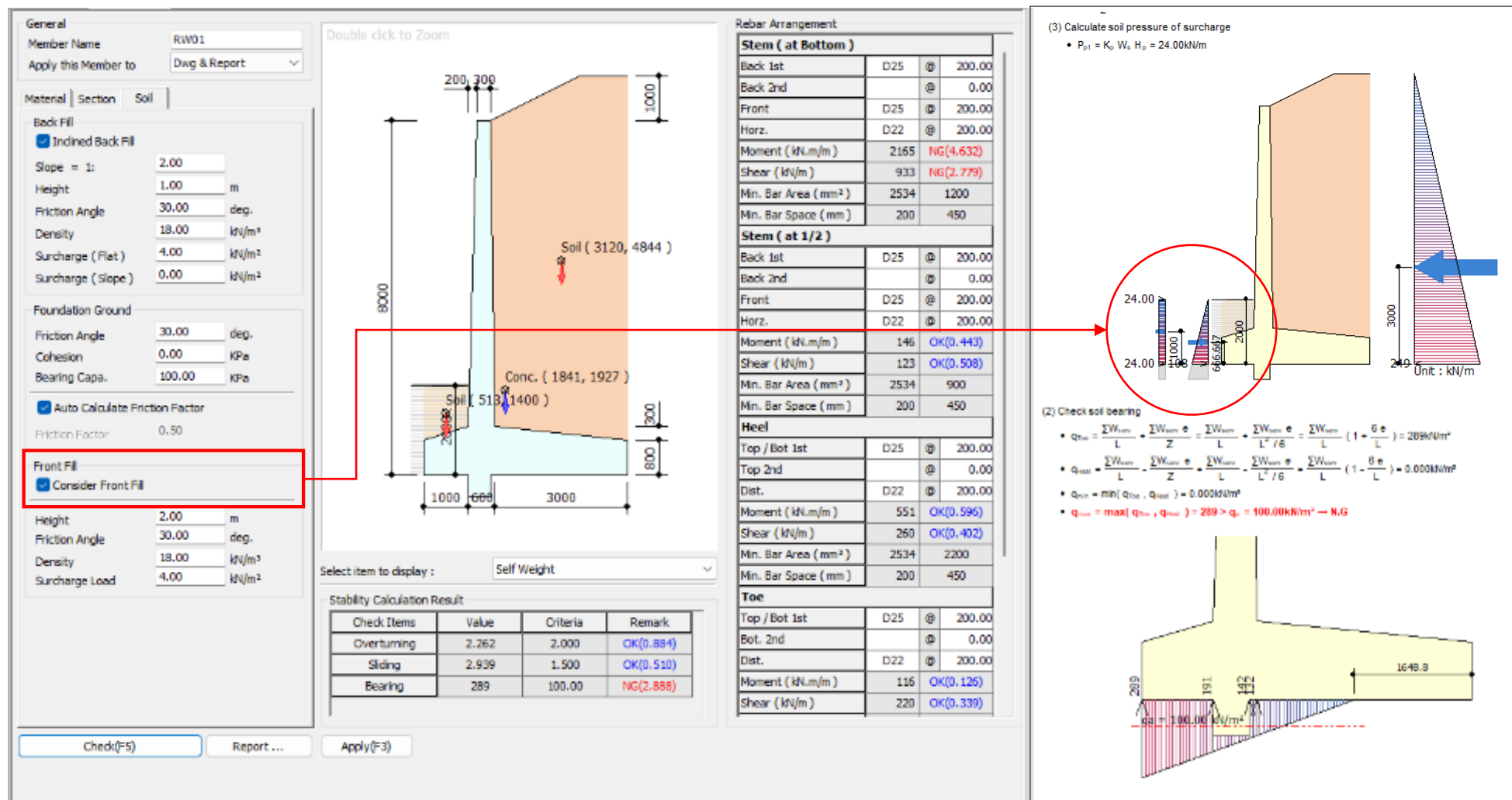
▲ Quantity

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1. Improved retained wall design as follows 改善擋土牆設計

- Application of load (Active Soil Pressure) by Front Fill 考慮牆前的主動土壓力載重應用
- Reinforcement of Detail Report. : Explain the design process and formulas in more detail 詳細報表包含鋼筋配置・說明設計流程公式計算等

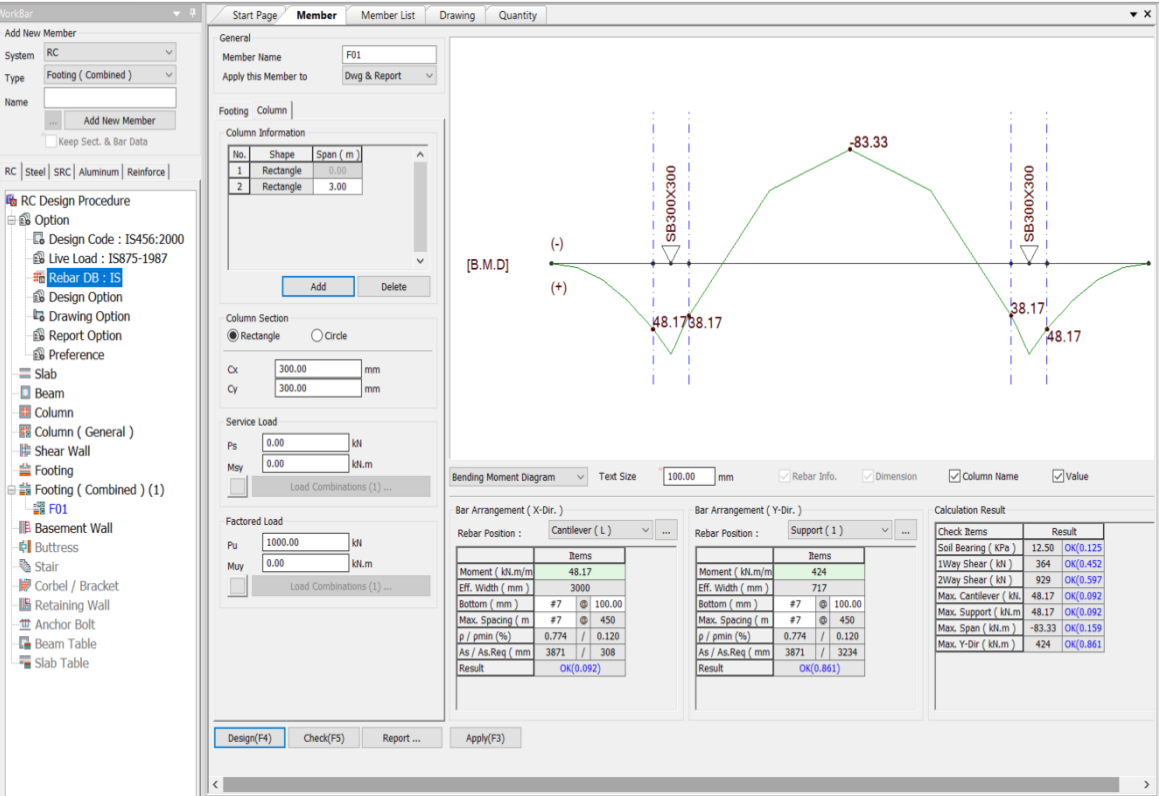


Combined Footing Module (IS code)

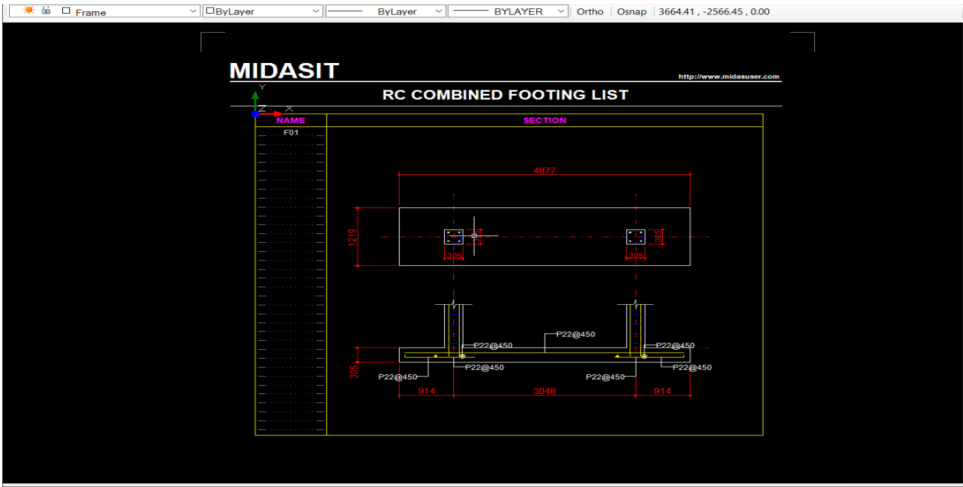
1. Added Combined footing Module for IS : 456 – 2000 增加聯合基礎模組(印度規範)

- Added combined footing module for IS : 456-2000

Design / Check



Drawings



Quantity

Name	Section						Quantity per Unit Length				
	Footing			Dir X		Dir Y	Concrete (m³)	Dir X			Total (kN)
	Lx (m)	Ly (m)	Thick (mm)	Top Rebar	Bottom Rebar	Bottom Rebar		Top Rebar (kN)	Bottom Rebar (kN)	Bottom Rebar (kN)	
F01(Cant.L)	5.00	3.00	500	-	#7@100	-	0.002	0.000	0.000	0.000	0.000
F01(Colm1)	5.00	3.00	500	-	#7@100	#7@100	0.002	0.000	0.000	0.000	0.000
F01(Span1-2)	5.00	3.00	500	#7@100	-	-	0.002	0.000	0.000	0.000	0.000
F01(Colm2)	5.00	3.00	500	-	#7@100	#7@100	0.002	0.000	0.000	0.000	0.000
F01(Cant.R)	5.00	3.00	500	-	#7@100	-	0.002	0.000	0.000	0.000	0.000

Items	Detail	
Addition of Rebar DB	- Thailand : TIS(SI), TIS(MKS) - Mexico : NMX-2013 (SI), NMX-2013 (MKS) - Russia : GOST-SP, GOST-SNiP, SP 63-2018 - Australia : AS - South Africa : TMH7	Rebar Option Rebar Code Rebar Code KS Rebar Option for RC-1RC-2 JIS CNS CNS560-18 ASTM BS EN IS UNI SS GB CSA U.S.C(US) U.S.C(SI) SNI ENIS46 GOST(SP) GOST(SNiP) SP63-2018 AS17 TIS(SI) TIS(MKS) NMX-2013(SI) NMX-2013(MKS) TMH7 Default Spacing List MomentShear ☐ 100.00 ☐ 150.00 ☐ 200.00 ☐ 250.00 ☐ 300.00 ☐ 350.00 ☐ 400.00 ☐ 450.00 Add Remove ☐ Use user-defined space. Apply Close

Thank you