

# GENERAL COLUMN

DESIGN ANY SHAPE OF REINFORCED COLUMN  
DESIGN | DETAILING | C13

## Summary

**General Column** designs columns with any general shape. Rather than using the simplified design approach set out in most codes, **General Column** designs the column section from first principles.

## What makes this module special?

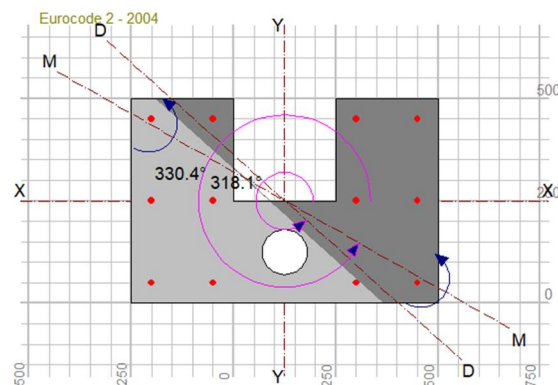
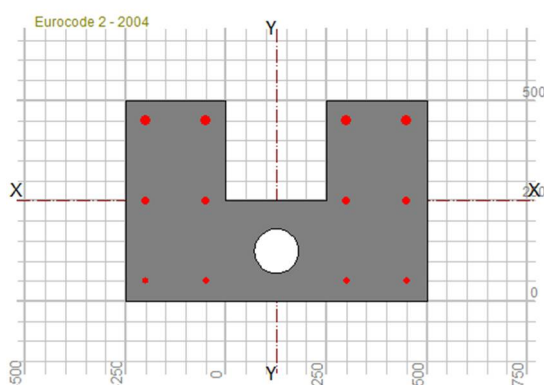
- Custom sections
- Evaluate column capacity for entered bars
- Generation of bending schedules

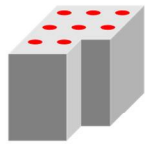
## Detailed Description

Design and detail concrete columns with any general shape. Enter the column outline and any openings, as well as the position and size of each longitudinal reinforcement bar.

**General Column** designs columns that do not necessarily fall inside the scope of the codes' simplified design method requirements. The module therefore reverts to basic principles, e.g., strain compatibility and equilibrium, to analyse columns.

During the design, you have the option of evaluating the column capacity for the reinforcement bars as entered, or to calculate the minimum bar size required to resist the design loads. You can generate a reinforcement bending schedule that you can edit and print with **Padds**.





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## Theory used in this module

- The section properties are calculated, and the column slenderness evaluated.
- For a slender column, the additional slenderness moment is calculated and applied about the weak axis. The output gives the X and Y axis components.
- The design moment and axis are determined by taking the vector sum of the applied and additional moments.
- An iterative solution is obtained using strain compatibility and equilibrium as criteria.

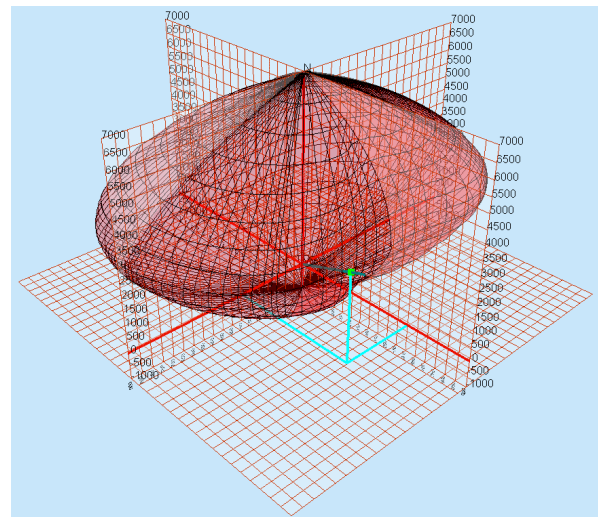
MEMBER	NO OF	BARS PER MEMB	DIA	LENGTH	TOTAL NUM. BARS	MARK	S.C	BENDING					
								A	B	C	D	E <sub>i</sub>	
	1	12	Y16	7550	12	A	41	720	190			48	

SECTION										ELEVATION		
8	10	12	16	20	25	32	40	TOT	Date	Rev	By	
									145			
									145			
									145			

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Revision: \_\_\_\_\_  
Schedule No: \_\_\_\_\_  
Checked: \_\_\_\_\_

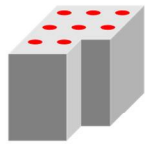


## Workflow

Columns and their applied loading and properties can either be defined in the module or imported from Sumo.

## Key Features

- Generation of bending schedules
- Custom Sections with general column design
- Evaluate column capacity for entered bars



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## Supported Design Codes

### Concrete Design Codes

- ACI 318 - 1999
- ACI 318 - 2005
- ACI 318 - 2011
- ACI 318 - 2014
- ACI 318 - 2019
- AS 3600 - 2001
- AS 3600 - 2009
- AS3600 - 2018
- BS 8110 - 1985
- BS 8110 - 1997
- CP 65 - 1999
- CSA A23.3-04 - 2010
- CSA A23.3: 2019
- Eurocode 2 - 2004
- HK Concrete - 2004
- HK Concrete - 2013
- IS:456 - 2000
- NZ 3101 - 2006
- SABS 0100 - 2000
- SP 63.13330.2018