



Connection design analysis  
made easy with

**PowerConnect**

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# PowerConnect

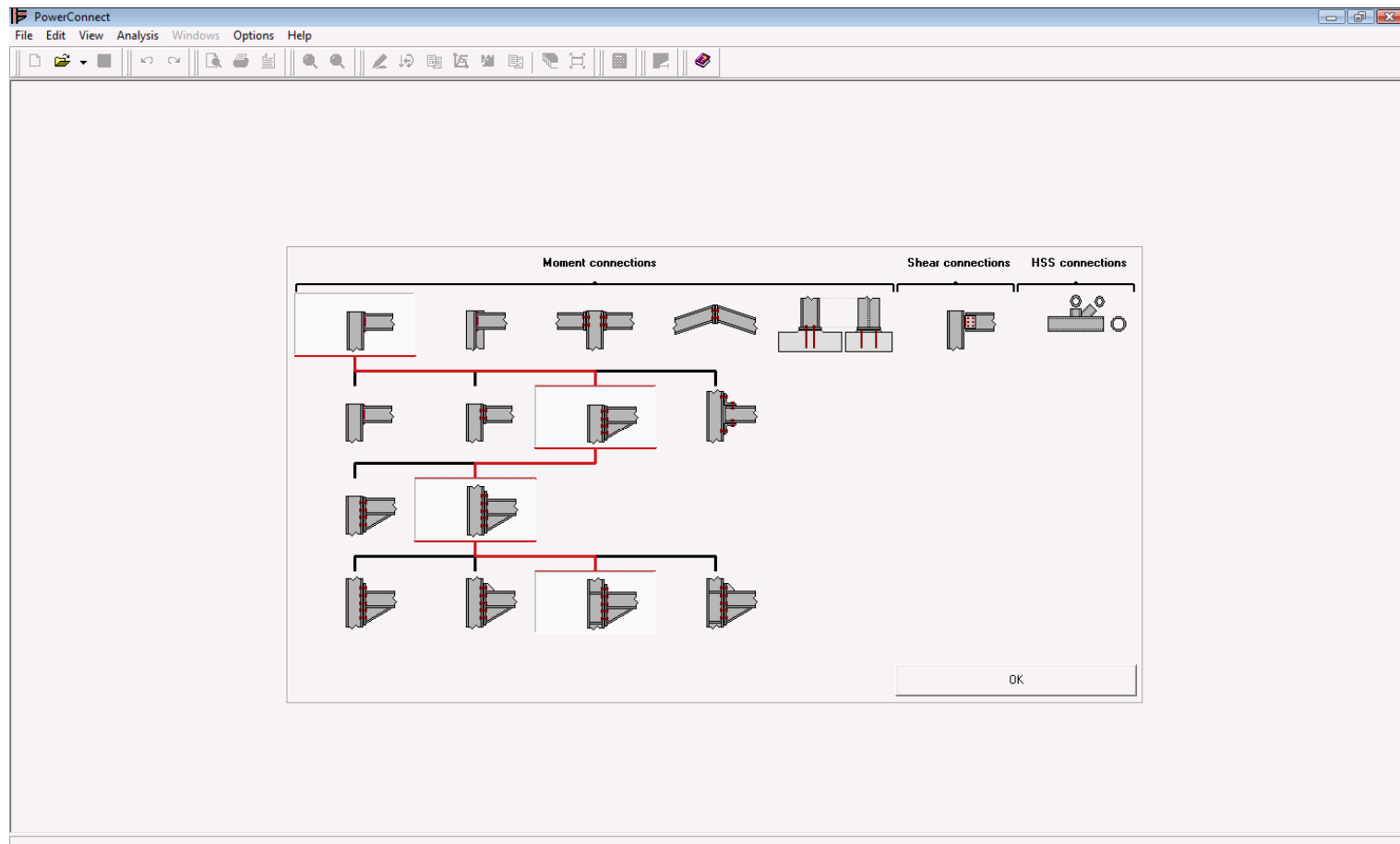
## Easy, intuitive model set-up

Model

Visual navigation through connection types

Analyze

Report





# PowerConnect

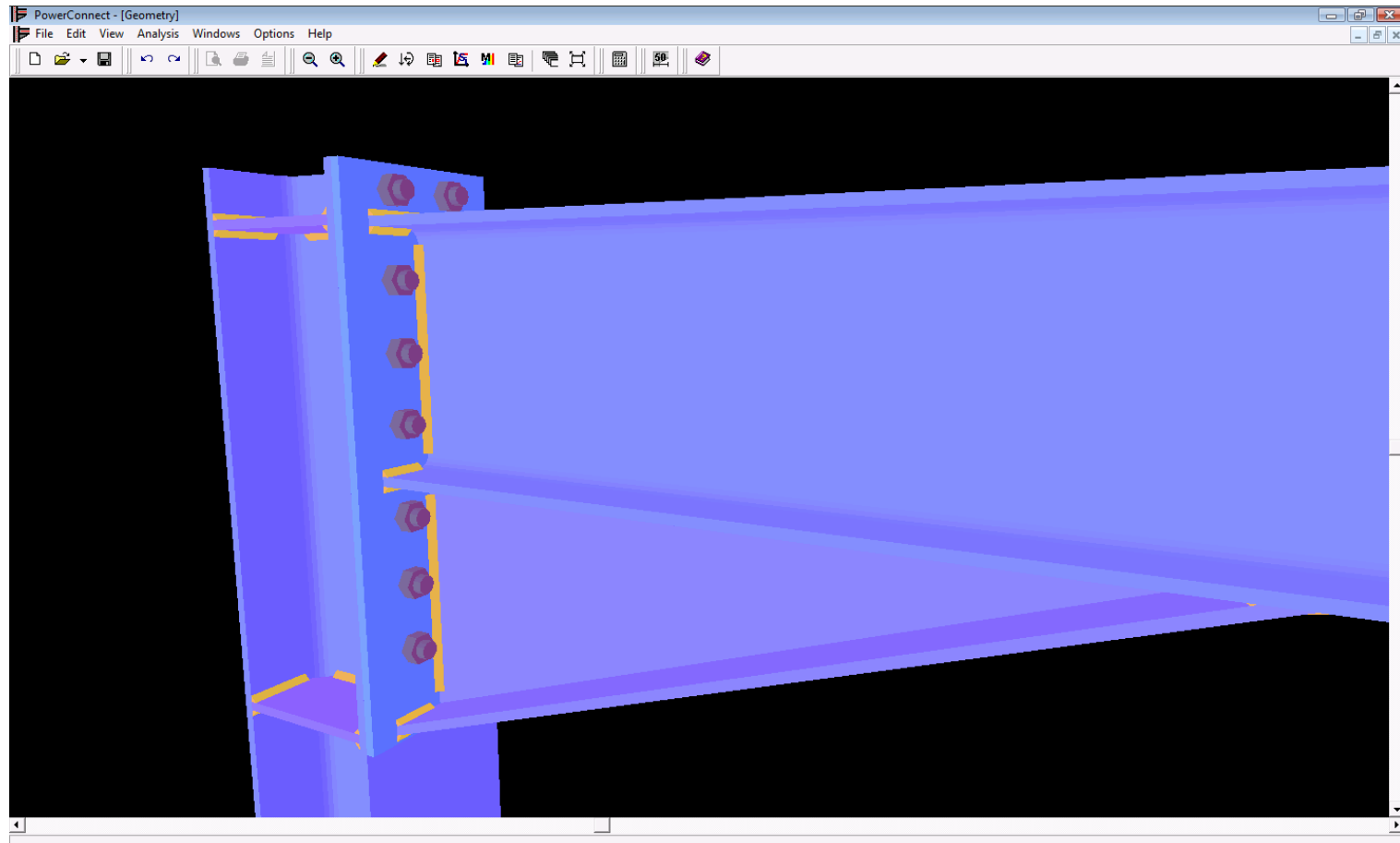
## Easy, intuitive model set-up

Model

Powered by OpenGL®

Analyze

Report





# PowerConnect

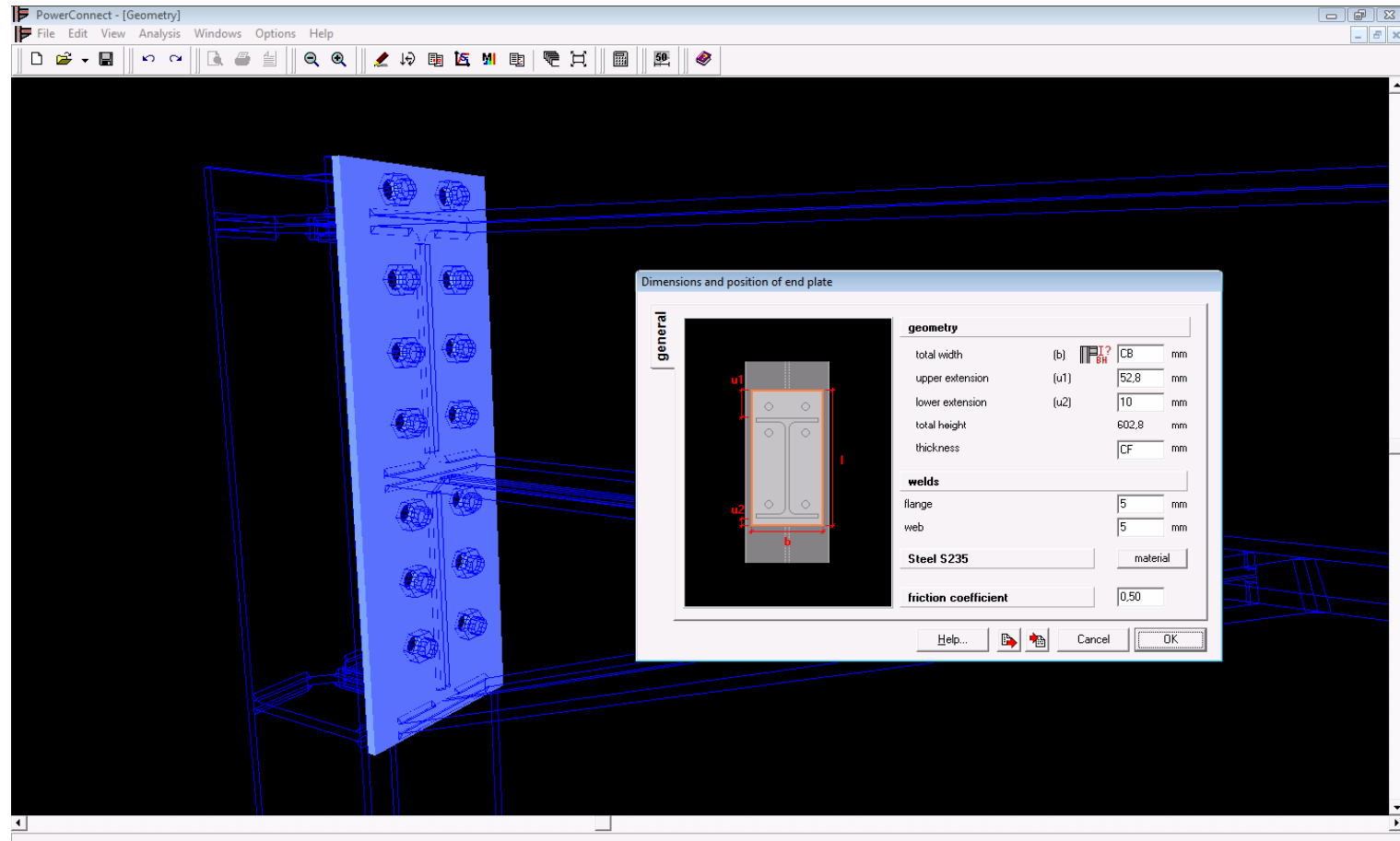
## Easy, intuitive model set-up

Model

Direct editing of connection elements

Analyze

Report





# PowerConnect

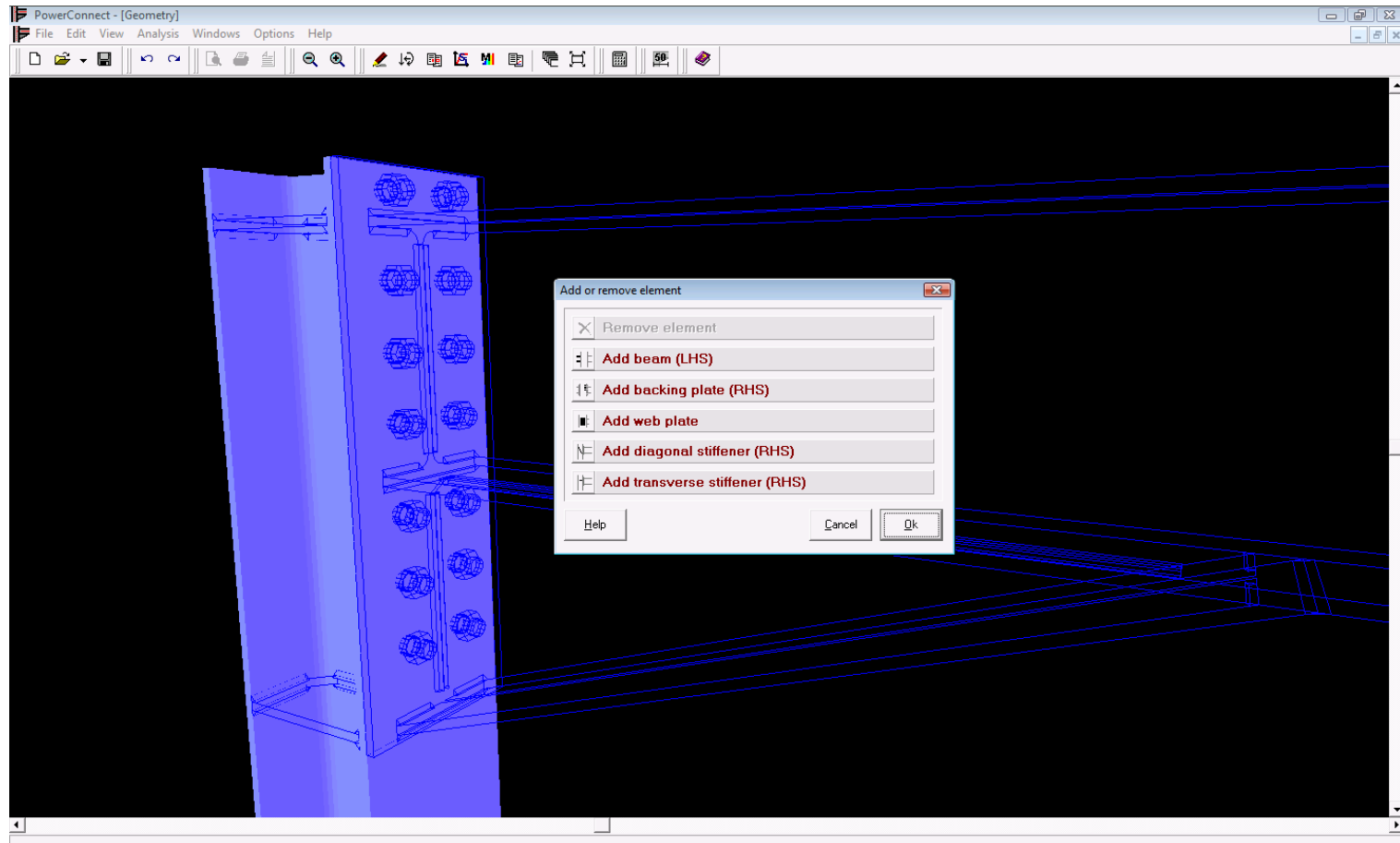
## Easy, intuitive model set-up

Model

## Easy addition of stiffening elements

Analyze

Report





# PowerConnect

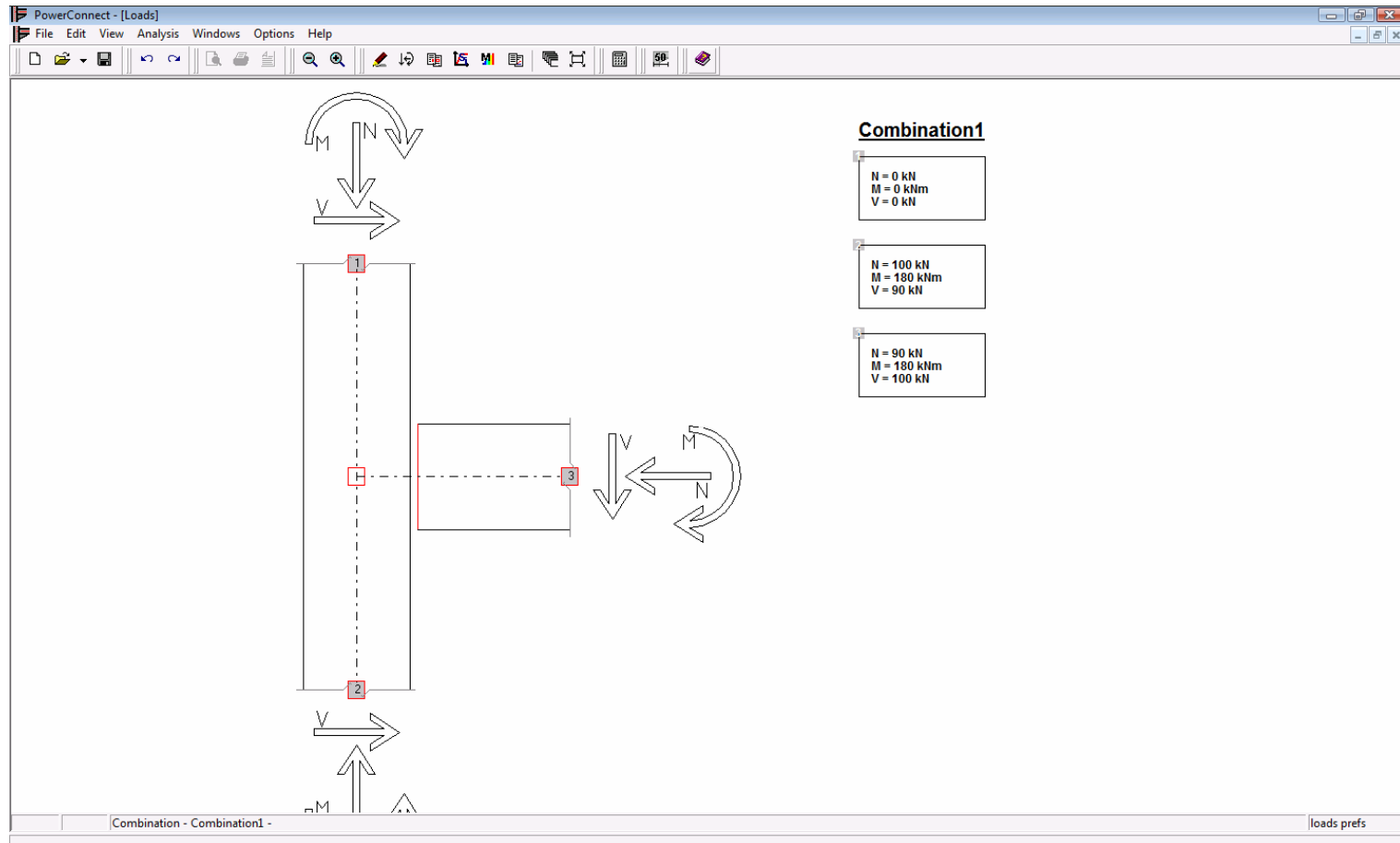
## Easy, intuitive model set-up

Model

# Straightforward load case definition

Analyze

Report



# PowerConnect

## Broad range of standard connection types

Model

### Moment connections

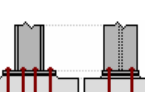
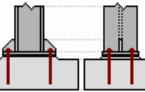
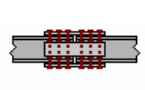
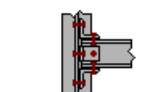
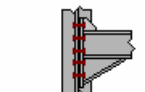
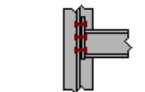
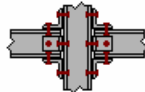
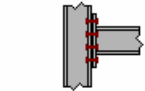
- single- & double-sided beam to column flange
  - welded (with or without haunch)
  - bolted end plate (with or without haunch)

Analyze

- single-sided beam to column web
  - welded (w or w/o haunch)
  - bolted end plate (w or w/o haunch)

Report

- beam splices
- column bases



# PowerConnect

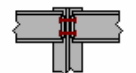
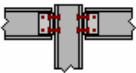
## Broad range of standard connection types

Model

### Shear connections

- single- & double-sided beam to column flange
- single- & double-sided beam to column web
- single- & double-sided beam to beam web

with



Analyze

Report

- flexible end plate
- bolted angle cleats
- fin plate



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Broad range of standard connection types

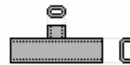
Model

Hollow structural section connections

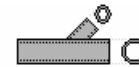
Analyze

Report

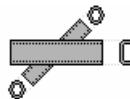
– T



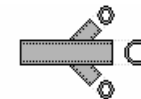
– Y/T



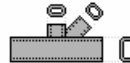
– X



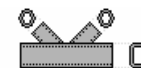
– DY



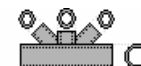
– N



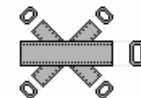
– K/N



– KT



– DK



– T/T



# PowerConnect

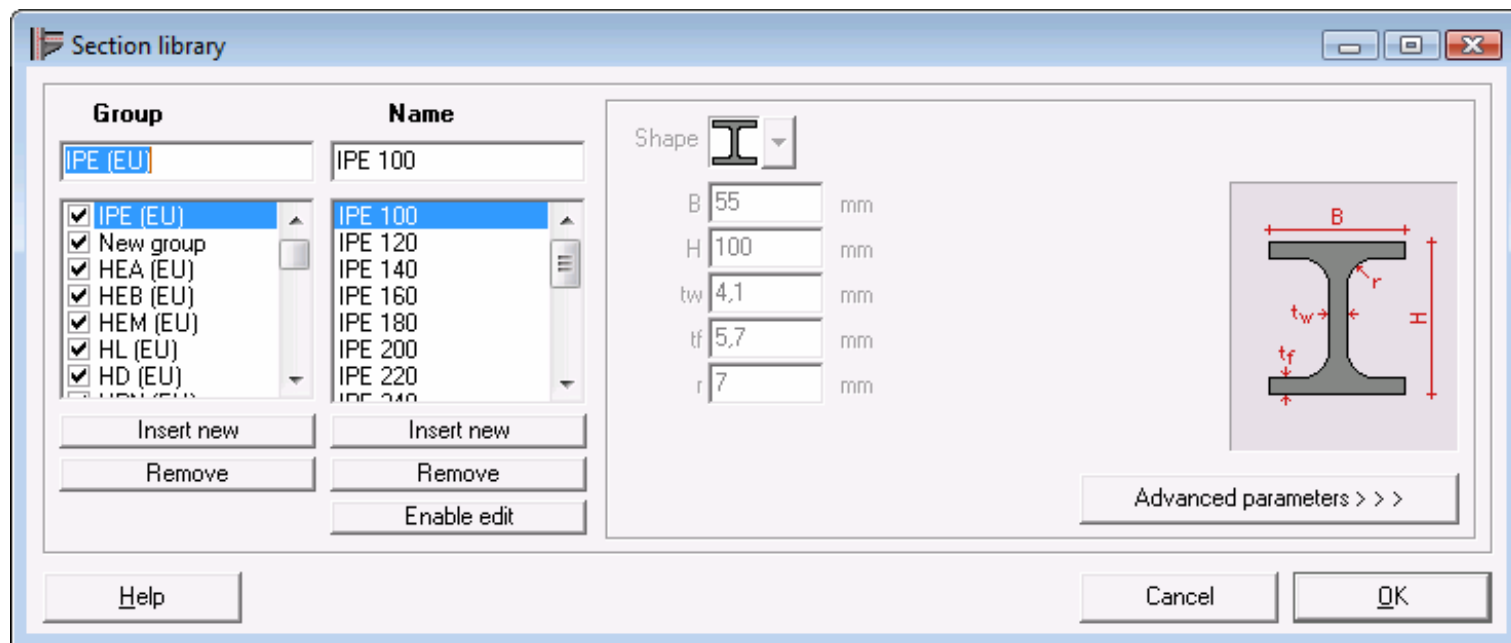
## Customizable libraries

Model

Steel section library with US, UK, Indian & European sections

Analyze

Report



# PowerConnect

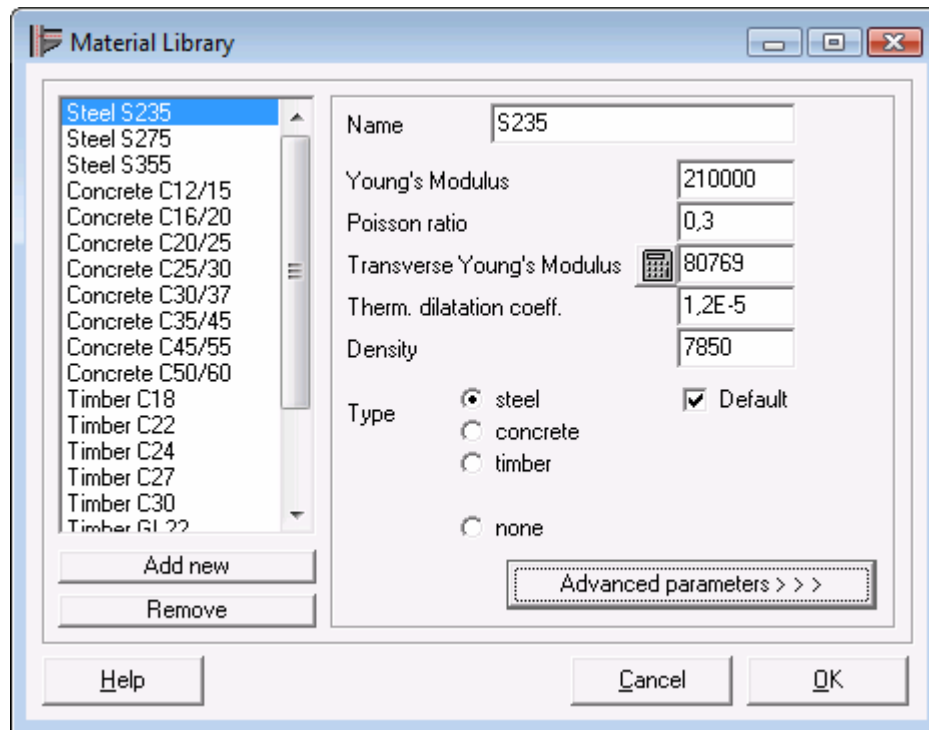
## Customizable libraries

Model

Material library with steel & concrete grades

Analyze

Report



The image shows a software window titled "Material Library". On the left, there is a list of materials: Steel S235, Steel S275, Steel S355, Concrete C12/15, Concrete C16/20, Concrete C20/25, Concrete C25/30, Concrete C30/37, Concrete C35/45, Concrete C45/55, Concrete C50/60, Timber C18, Timber C22, Timber C24, Timber C27, Timber C30, and Timber GL 22. The "Steel S235" item is selected. Below the list are "Add new" and "Remove" buttons. On the right, the properties for the selected material are displayed. The "Name" field contains "S235". The "Young's Modulus" is 210000, "Poisson ratio" is 0,3, "Transverse Young's Modulus" is 80769 (with a calculator icon), "Therm. dilatation coeff." is 1,2E-5, and "Density" is 7850. The "Type" section has radio buttons for "steel" (selected), "concrete", "timber", and "none". There is also a checked "Default" checkbox. At the bottom right of the properties area is a button labeled "Advanced parameters > > >". At the very bottom of the window are "Help", "Cancel", and "OK" buttons.

Property	Value
Name	S235
Young's Modulus	210000
Poisson ratio	0,3
Transverse Young's Modulus	80769
Therm. dilatation coeff.	1,2E-5
Density	7850

Type: ☒ steel ☐ concrete ☐ timber ☐ none

☒ Default

Advanced parameters > > >

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## Customizable libraries


Model

Bolts & anchor bolts library

Analyze

Report

**Bolts library**



Group	Name
M (Bolts)	12
A - I (Anchors)	14
A - L (Anchors)	16
	18
	20
	22
	24
	27
	30

☒ Add
 ☐ Insert

Name : 20

Diameter : 20 mm  
 Hole diameter : 22 mm  
 Head diameter : 34 mm  
 Head height : 14 mm  
 Nut diameter : 34 mm  
 Nut height : 14 mm  
 Construction diameter : 70 mm  
 Construction height : 50 mm

Class : 8.8

fu : 800 N/mm<sup>2</sup>    Atot : 314 mm<sup>2</sup>  
 fy : 640 N/mm<sup>2</sup>    Anet : 245 mm<sup>2</sup>

☐ Pretensioned

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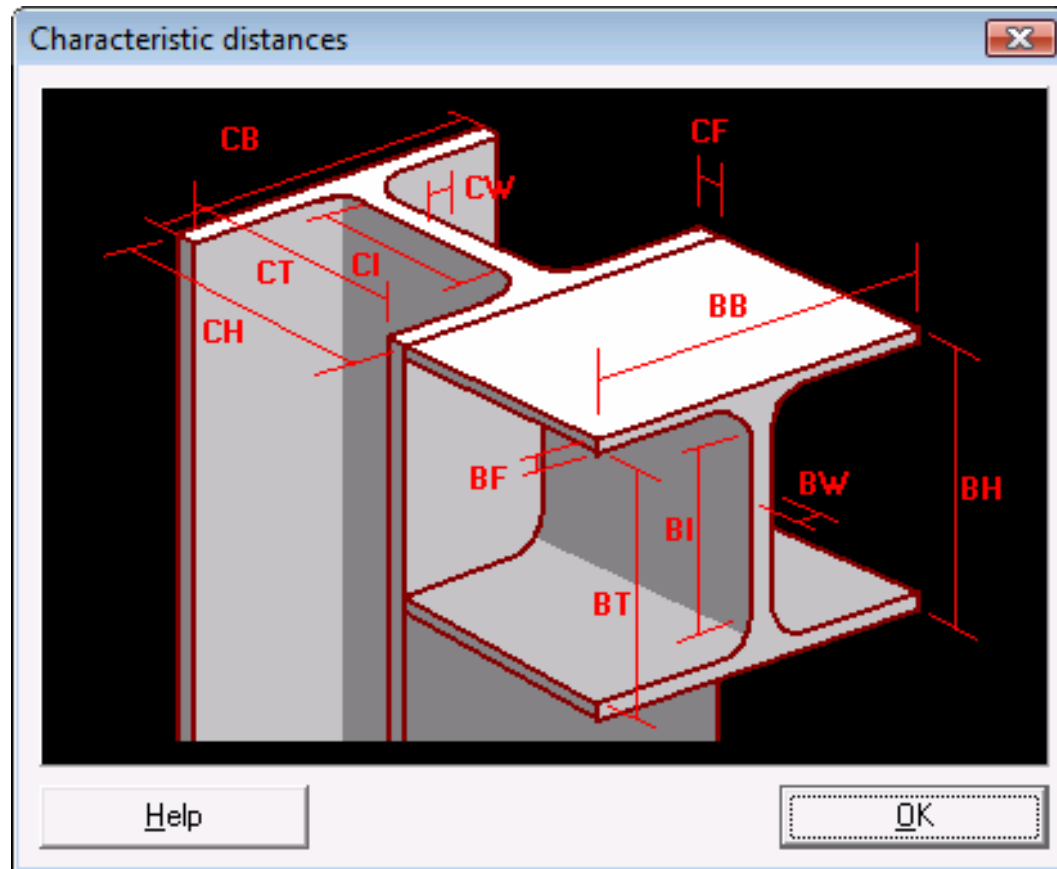
## Flexible modeling capabilities

Model

Parametric definition of connection elements

Analyze

Report





# PowerConnect

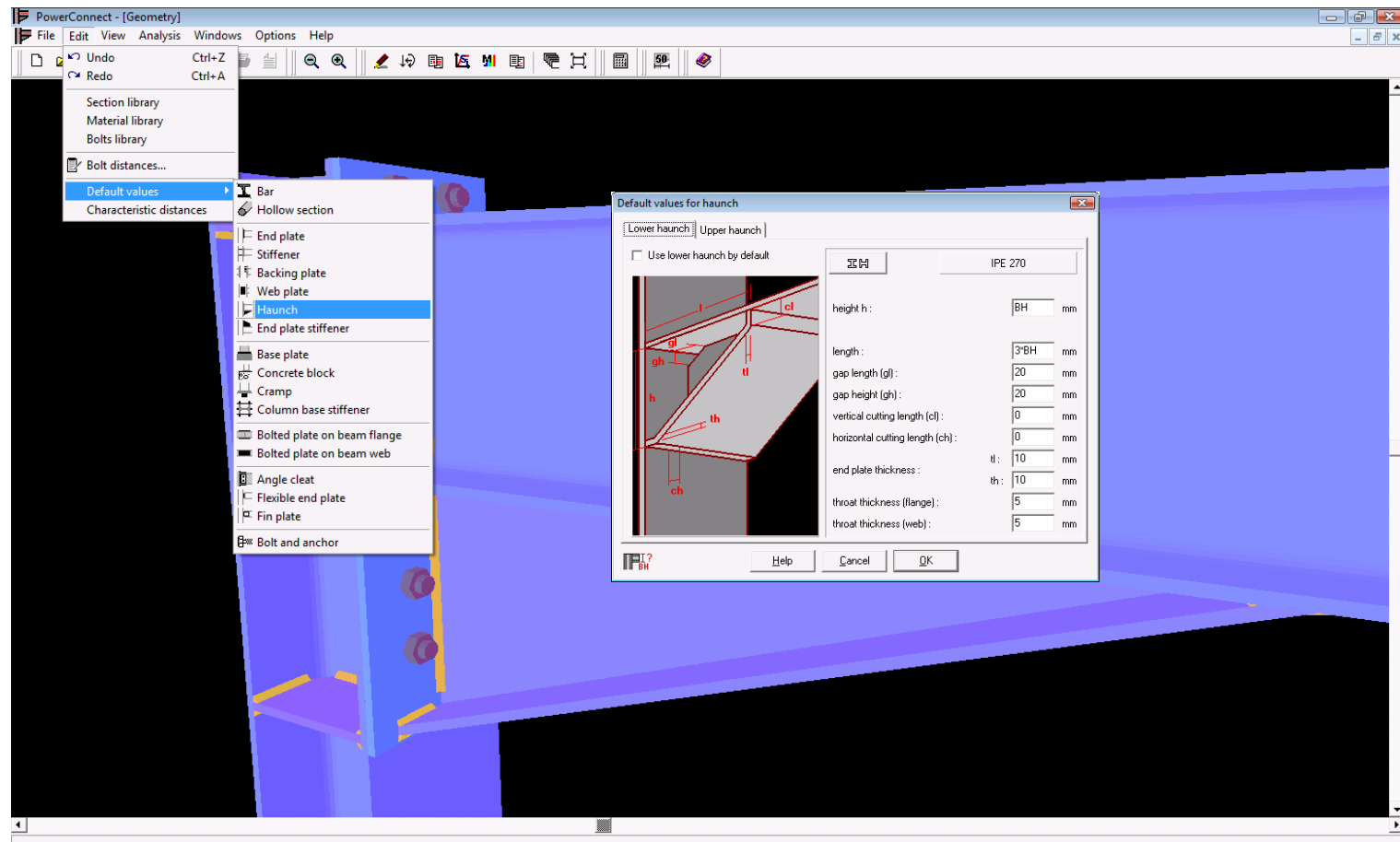
## Flexible modeling capabilities

Model

User-defined defaults for connection elements

Analyze

Report



# PowerConnect

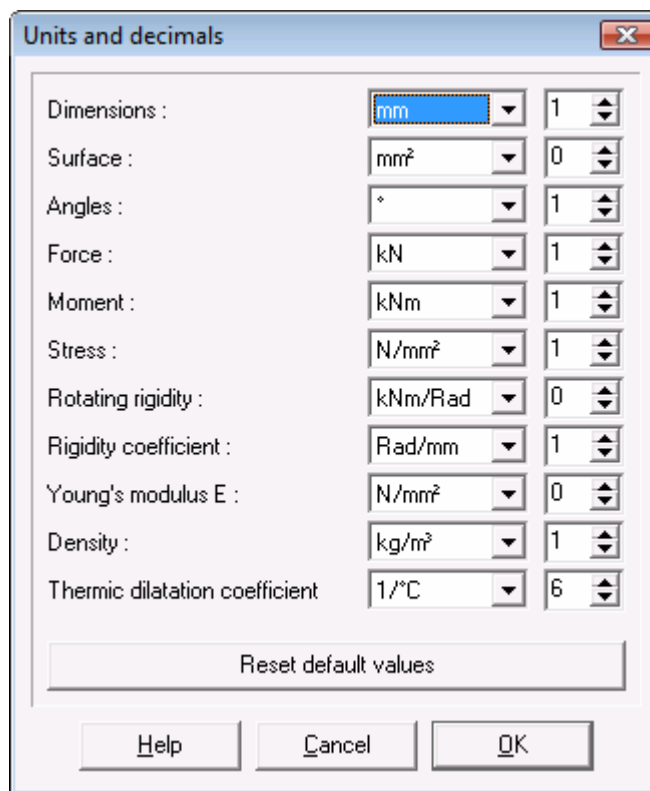
## Flexible modeling capabilities

Model

User-controlled units for modeling & reporting

Analyze

Report



The dialog box titled "Units and decimals" allows users to configure units and decimal places for various engineering parameters. It includes a "Reset default values" button and standard "Help", "Cancel", and "OK" buttons at the bottom.

Parameter	Unit	Decimals
Dimensions :	mm	1
Surface :	mm <sup>2</sup>	0
Angles :	°	1
Force :	kN	1
Moment :	kNm	1
Stress :	N/mm <sup>2</sup>	1
Rotating rigidity :	kNm/Rad	0
Rigidity coefficient :	Rad/mm	1
Young's modulus E :	N/mm <sup>2</sup>	0
Density :	kg/m <sup>3</sup>	1
Thermic dilatation coefficient	1/°C	6

Reset default values

Help Cancel OK

# PowerConnect

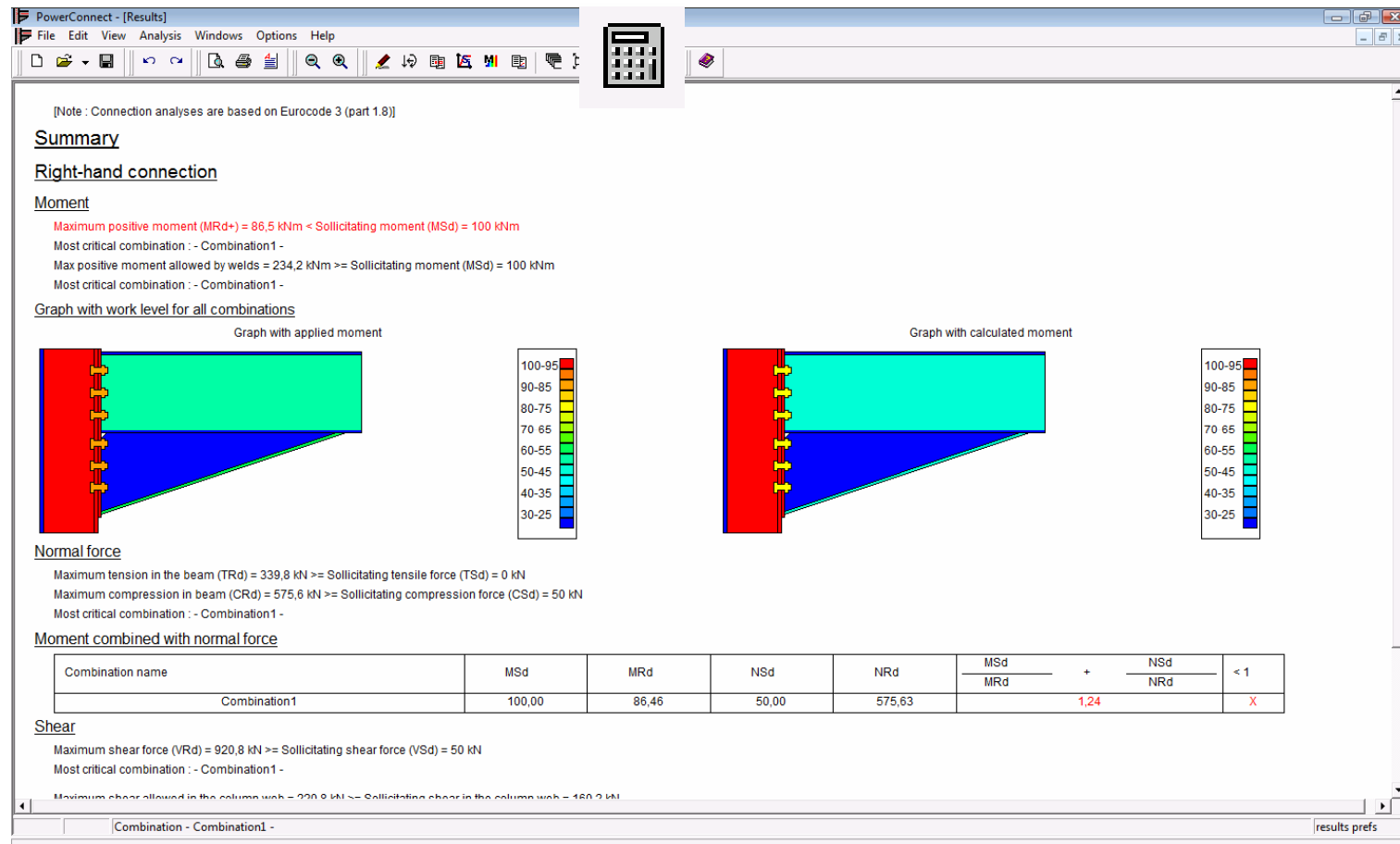
## Extremely fast design analysis

Model

Direct feedback to user on connection design  
(YES or NO)

Analyze

Report







# PowerConnect

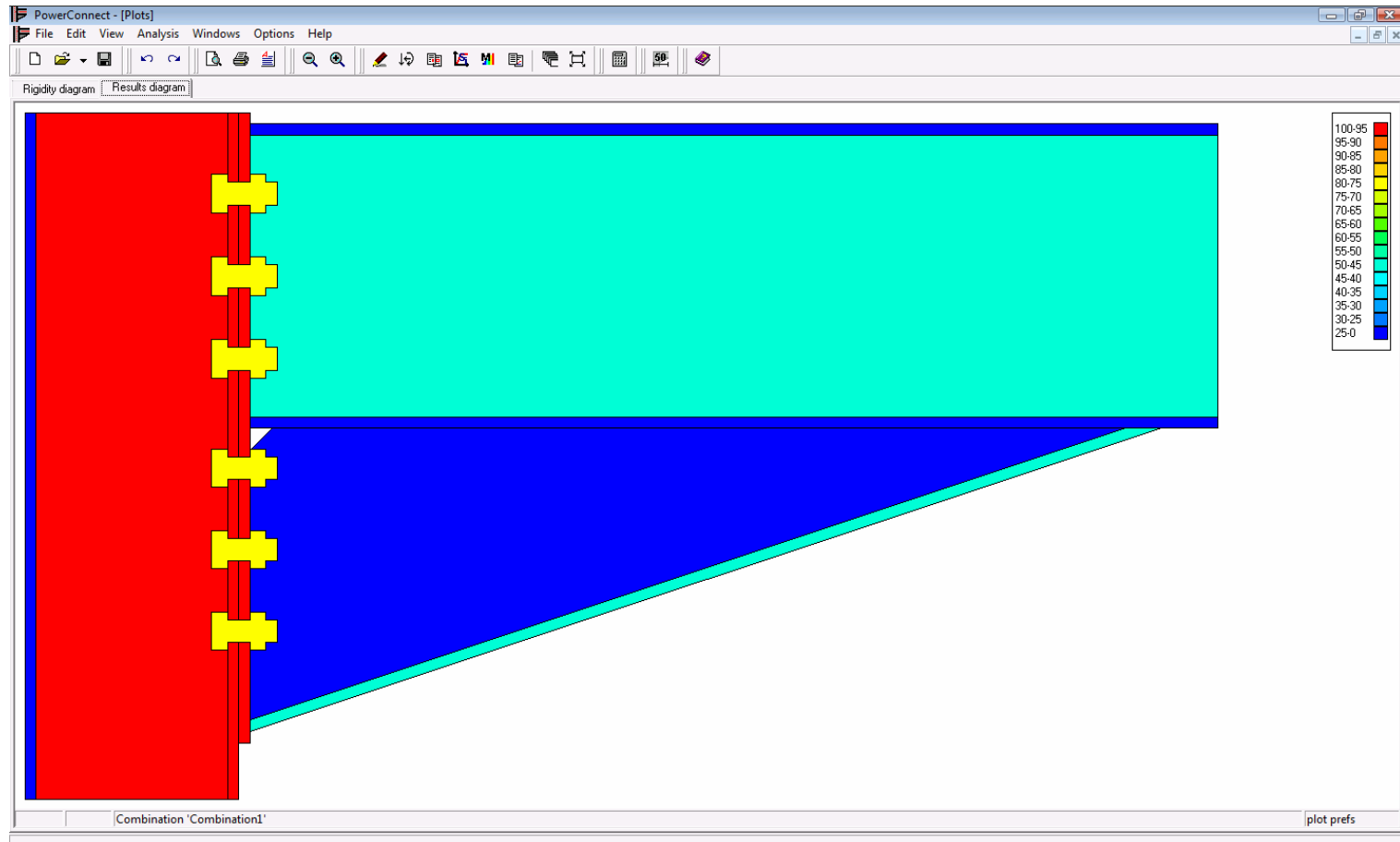
## Extremely fast design analysis

Model

# Identification of critical connection elements

Analyze

Report



# PowerConnect

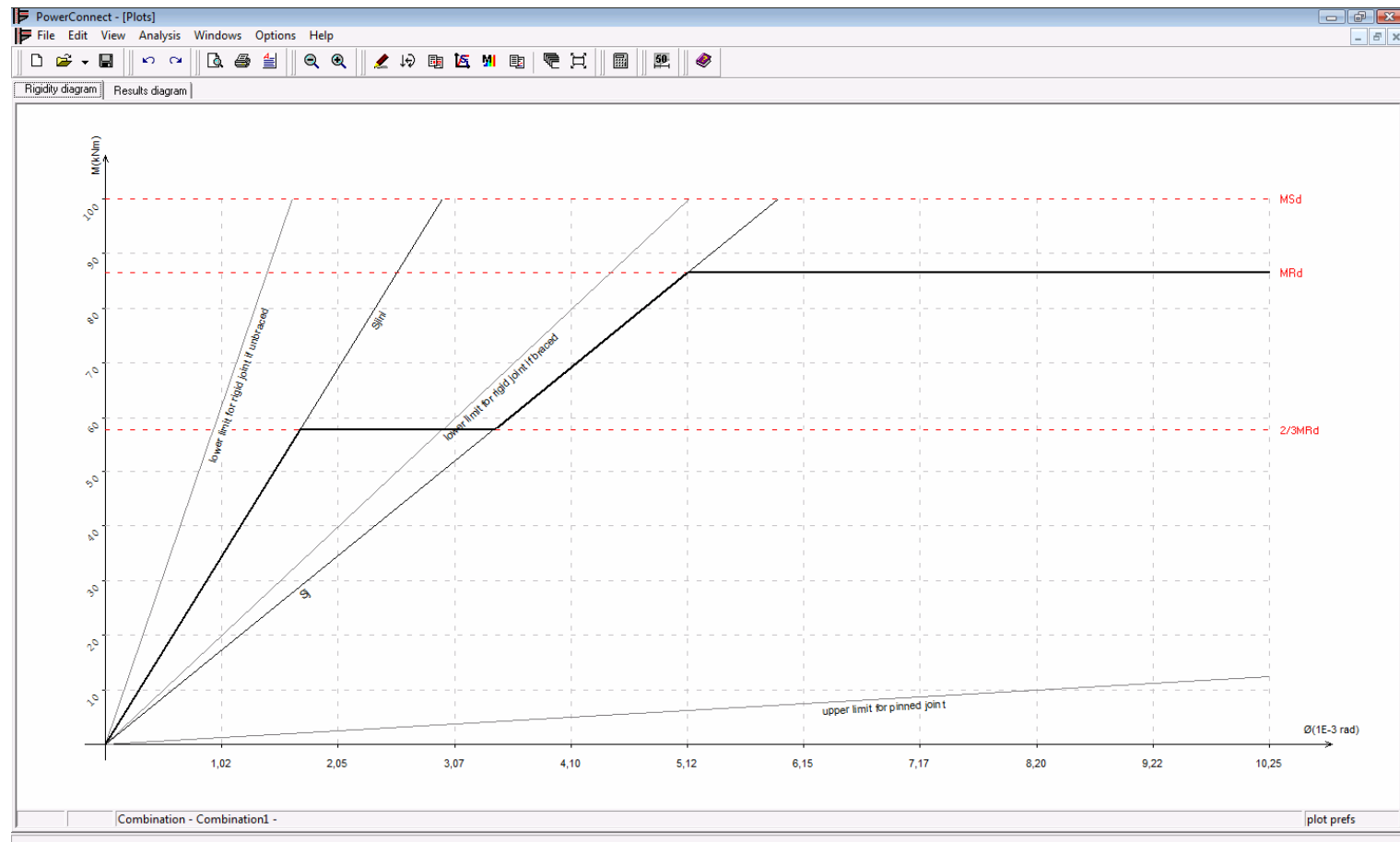
## Extremely fast design analysis

Model

## Evaluation bilinear connection stiffness diagram

Analyze

Report



# PowerConnect

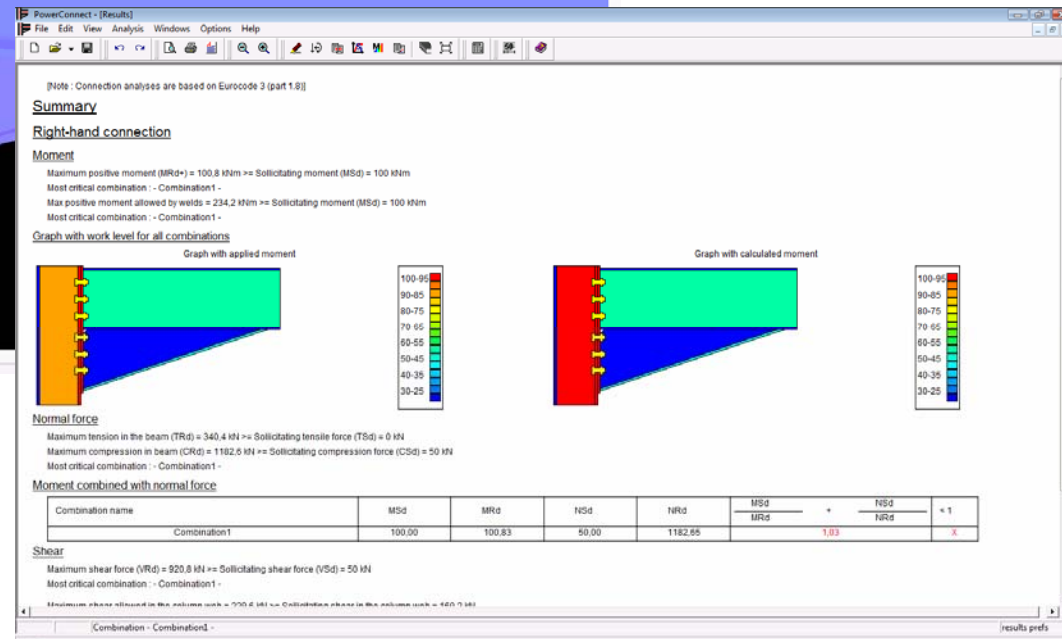
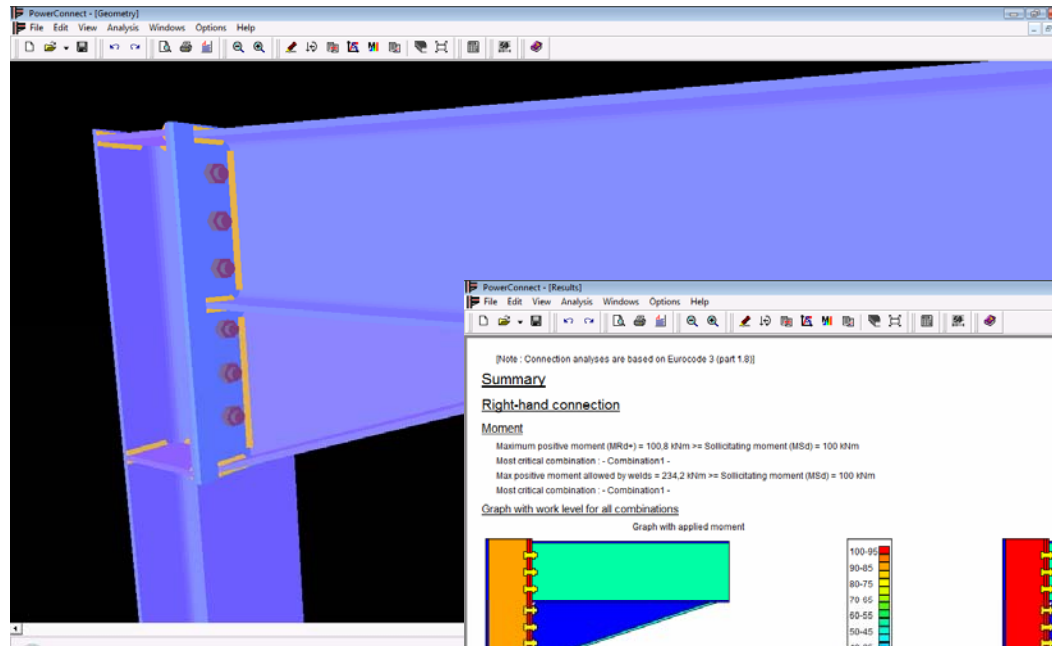
## Extremely fast design analysis

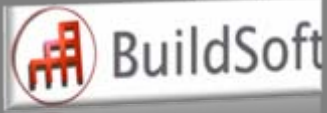
Model

## Optimisation of connection design

Analyze

Report





# PowerConnect

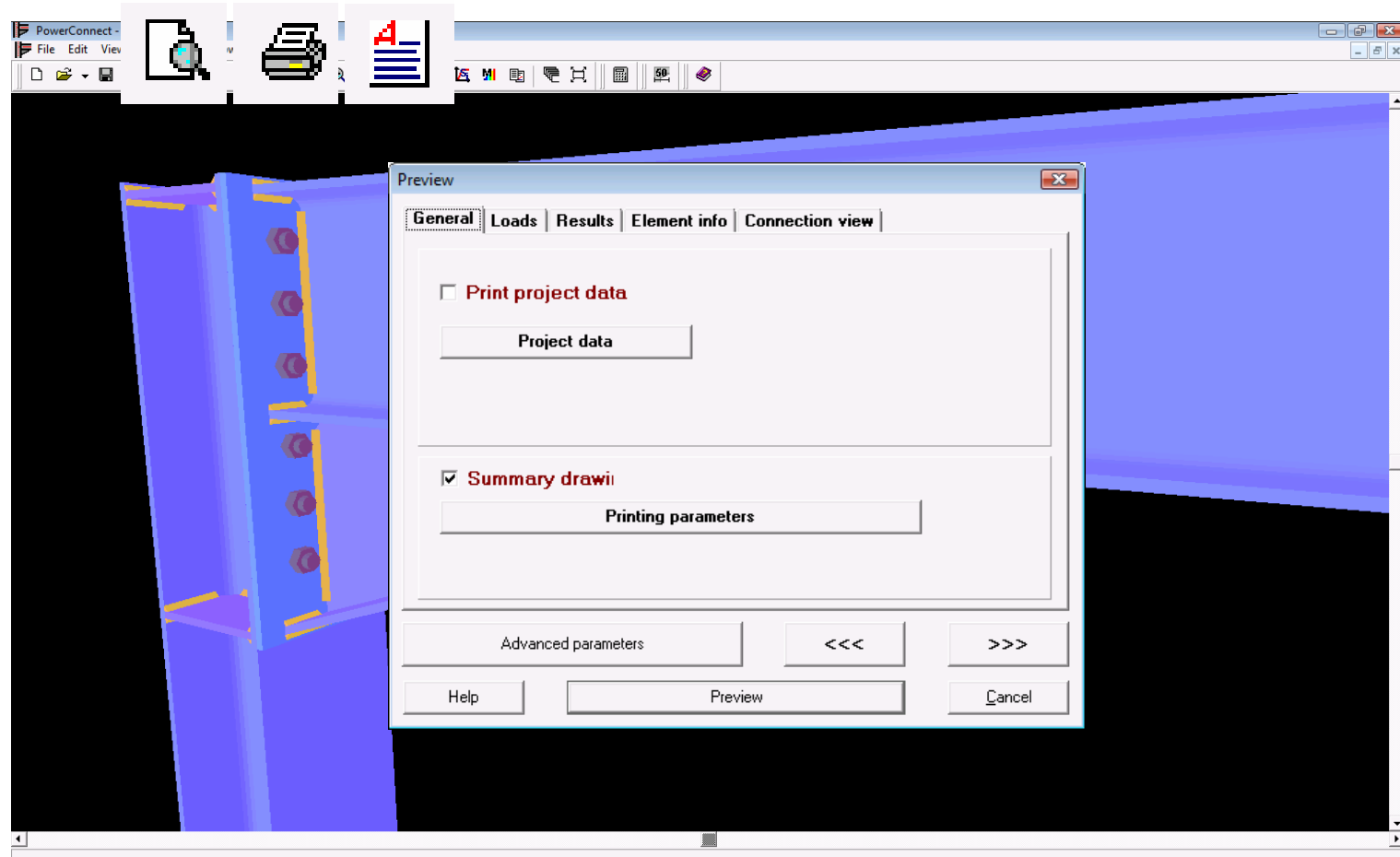
## Flexible, to-the-point reporting manager

Model

Report manager with preview & RTF function

Analyze

Report



# PowerConnect

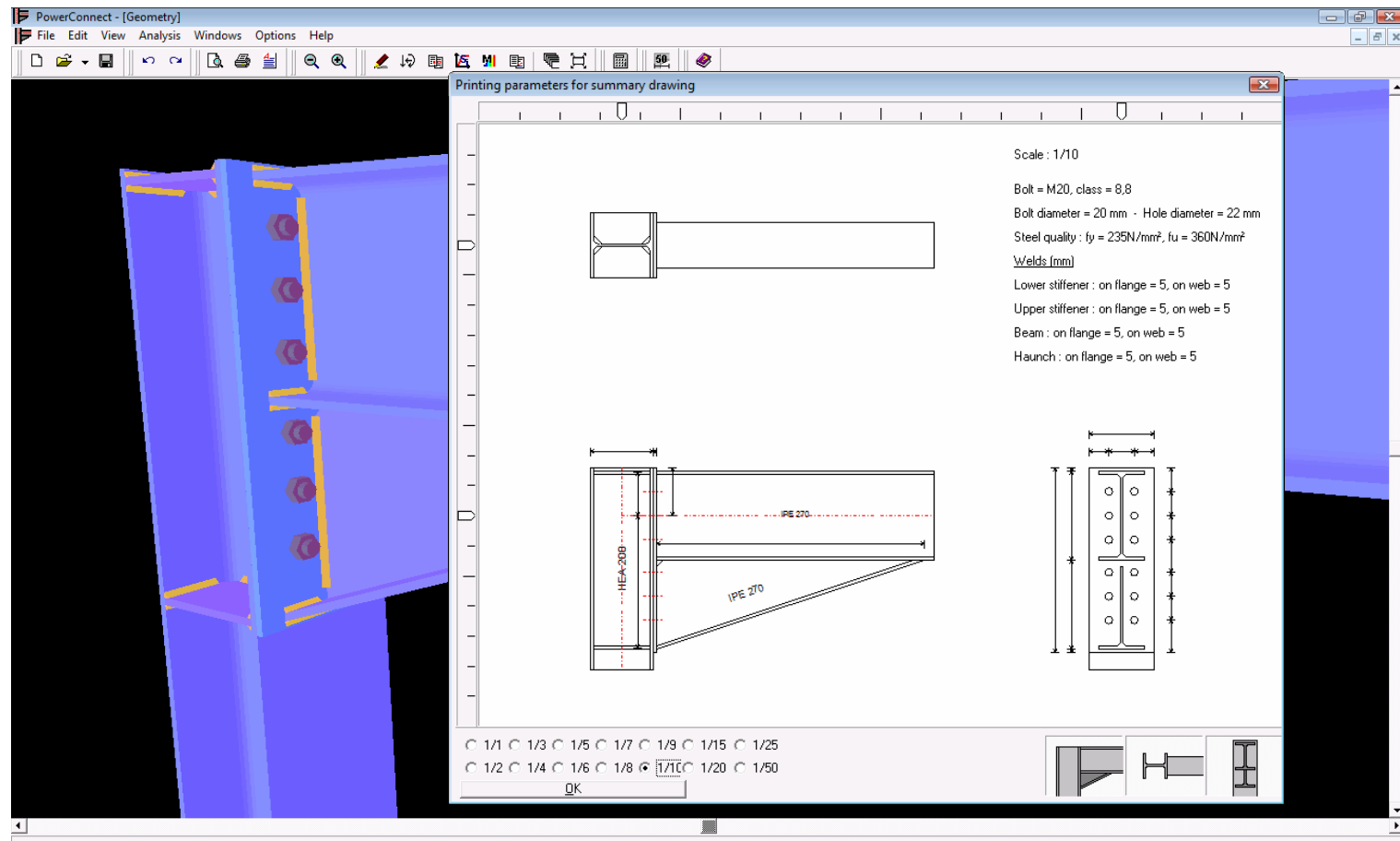
## Flexible, to-the-point reporting manager

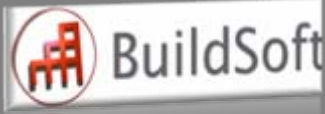
Model

## All-in-one summary drawing of connection

Analyze

Report





# PowerConnect

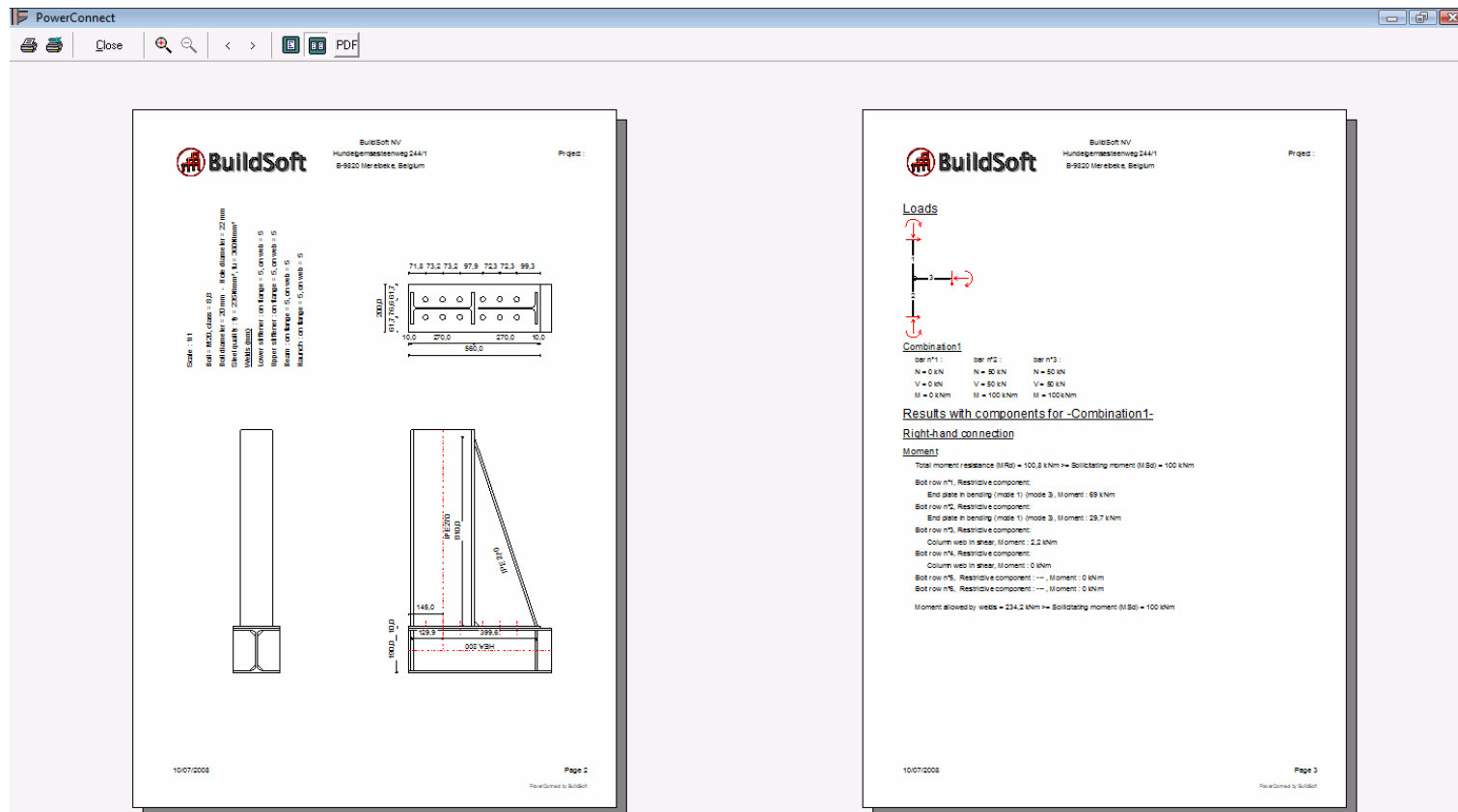
## Flexible, to-the-point reporting manager

Model

## Customizable report lay-out with logo

Analyze

Report



# PowerConnect

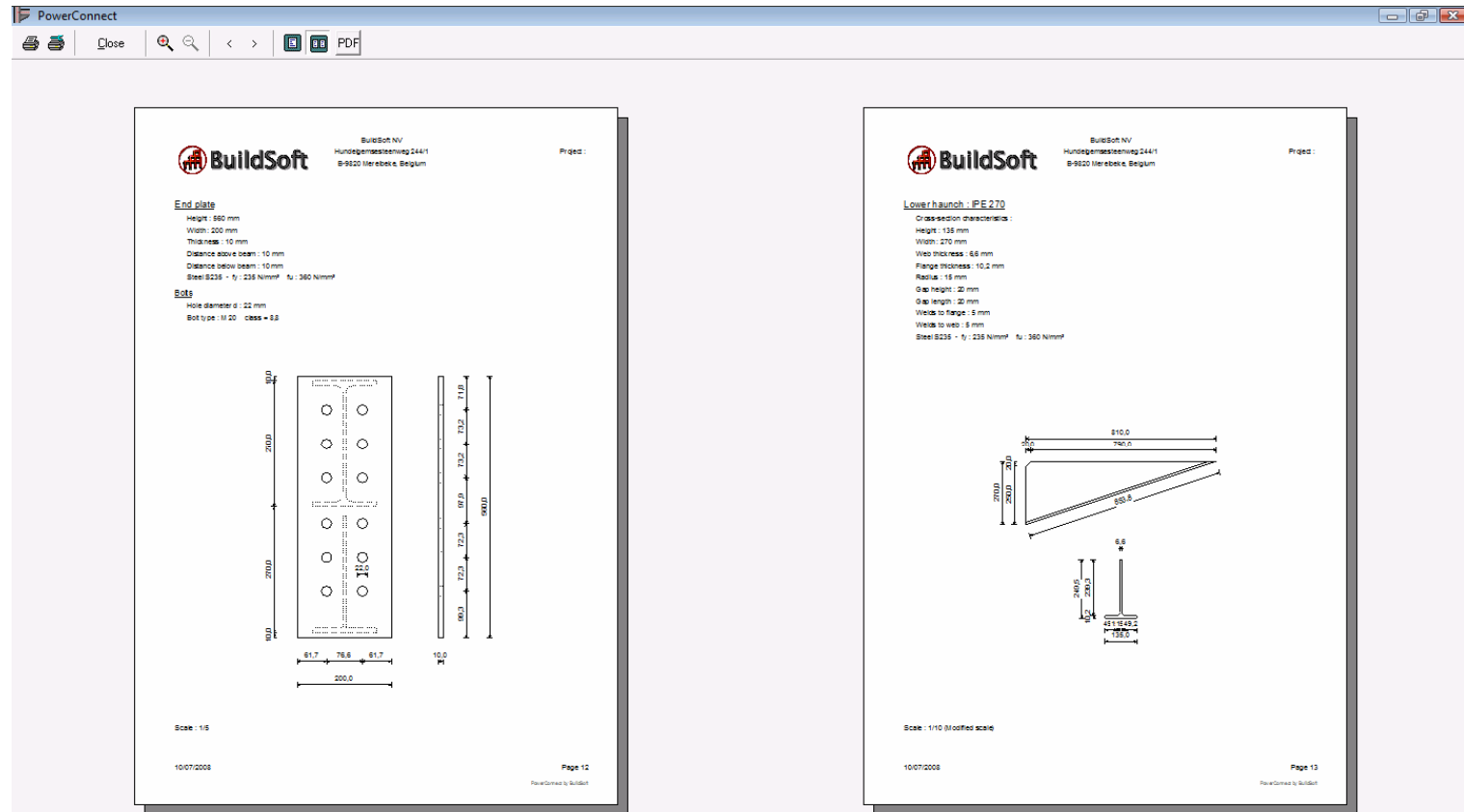
## Flexible, to-the-point reporting manager

# Model

## Detail drawings of connection elements

# Analyze

# Report



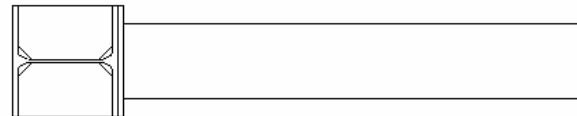
# PowerConnect

## Flexible, to-the-point reporting manager

Model

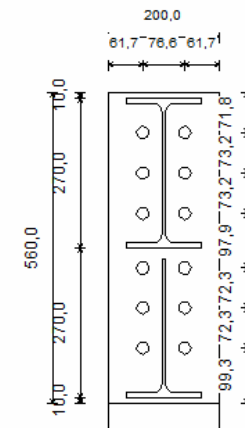
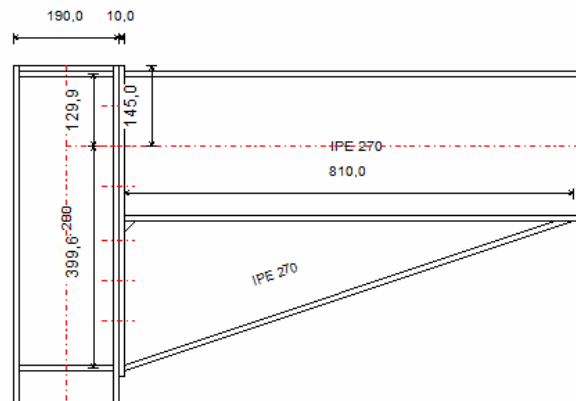
### Export of global & element drawings to CAD through DXF

Analyze



Bolt = M20, class = 8,8  
 Bolt diameter = 20 mm - Hole diameter = 22 mm  
 Steel quality :  $f_y = 235\text{N/mm}^2$ ,  $f_u = 360\text{N/mm}^2$   
Welds (mm)  
 Lower stiffener : on flange = 5, on web = 5  
 Upper stiffener : on flange = 5, on web = 5  
 Beam : on flange = 5, on web = 5  
 Haunch : on flange = 5, on web = 5

Report







A structural engineer's  
best choice !

**PowerConnect**

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