

# Product System: INNO\_MPS

covers modul prop systems

Example of

## FFC-Task Processing

with

## Formwork Priority

(from Clearance)

**Given: Baywidths plus Loads plus Clearance-Layout**

Clearance: Top = Base  
 x = 2000 mm  
 y = 2000 mm

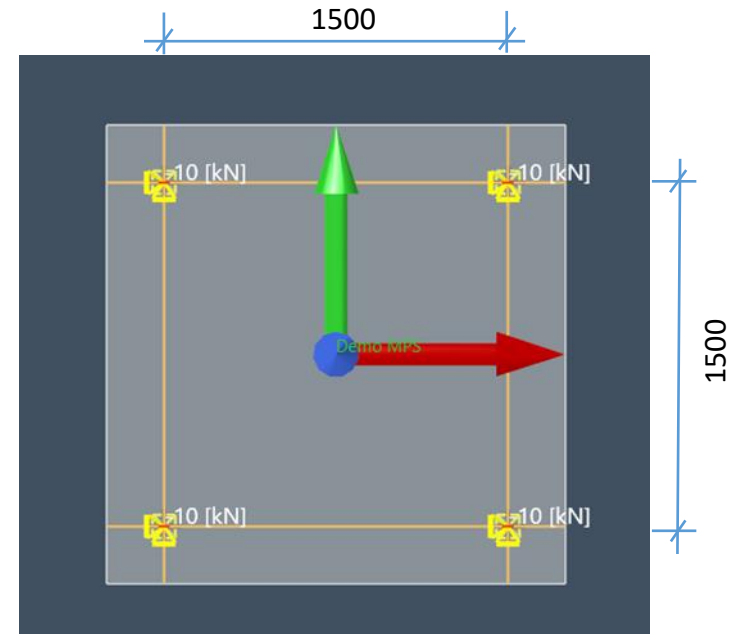
Baywidths: x = 1500 mm  
 y = 1500 mm

Height: 6000 mm

Legloads: -10kN

Bearing: Top Held x y  
 Base Restraints acc. to DIN 12811

(LDB: hinged at spindles)



# First: Choose your Product System

The screenshot shows a software interface with a ribbon menu at the top containing 'File', 'Project', 'BIM', 'Task Object', 'Clearance', 'Propping Plan', 'Falsework Configuration', 'Formwork Configuration', 'Falsework Structural Design', 'Issuing', and 'Tools'. The main window is titled 'Untitled [MasterData.ffcl] - FFC 2.1.9.1 \*DEVELOP\*'. On the left, there is a 'Properties' panel with a 'Project' section. A yellow warning box states: 'No shoring section defined. Please initially create a shoring section in global operation mode within Ribbon Tab "BIM" either by manual input or out of a traverse grid axis.' Below this is the 'Shoring Section' form with fields for 'Section Name', 'Description', and 'Origin' (X, Y, Z) in mm. The 'Origin' values are 0, 0, 0. There are also fields for 'x-Axis' (1, 0, 0) and 'y-Axis' (0, 1, 0). A red arrow points from the 'Insert' button in the 'Shoring Section' form to the 'Product System' dropdown in the bottom status bar, which is currently set to 'INNO\_MPS'. The status bar also includes 'Global', 'Local', 'Axis grid altitude: Default', 'Show Section Planes', 'Building Alignment Planes', 'Select All', and 'View'. A large grey dialog box in the center says 'Choose your product system'. The bottom status bar also contains a message log with the following text: '© 2019 b11 computersysteme GmbH & Co. KG', 'Message : Representation: Transparent', 'Message : Loaded master data: MasterData.ffcl (v1.0.9.9 - 19.02.2019 16:09:23)', 'Message : Active Product System: INNO\_MPS', and 'Message : Created new project.'

No shoring section defined.  
Please initially create a shoring section in global operation mode within Ribbon Tab "BIM" either by manual input or out of a traverse grid axis.

**Shoring Section**

Section Name: Demo MPS

Description:

Origin	X	Y	Z	mm
	0	0	0	

x-Axis: 1 0 0

y-Axis: 0 1 0

Select/Insert Insert

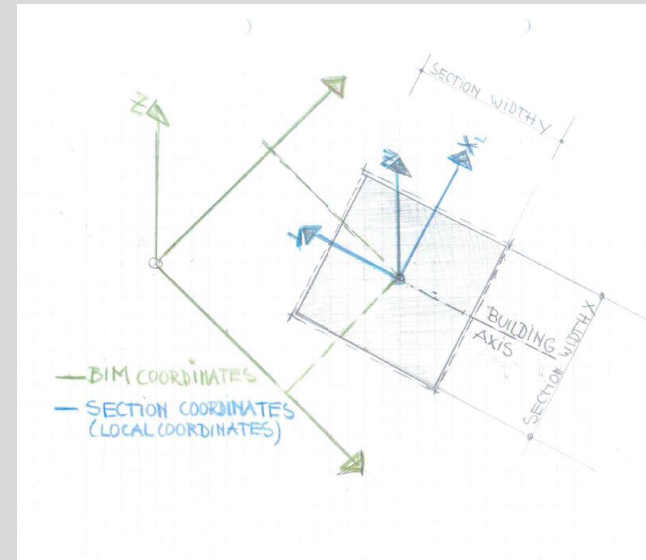
unless you change the data here:  
global = local

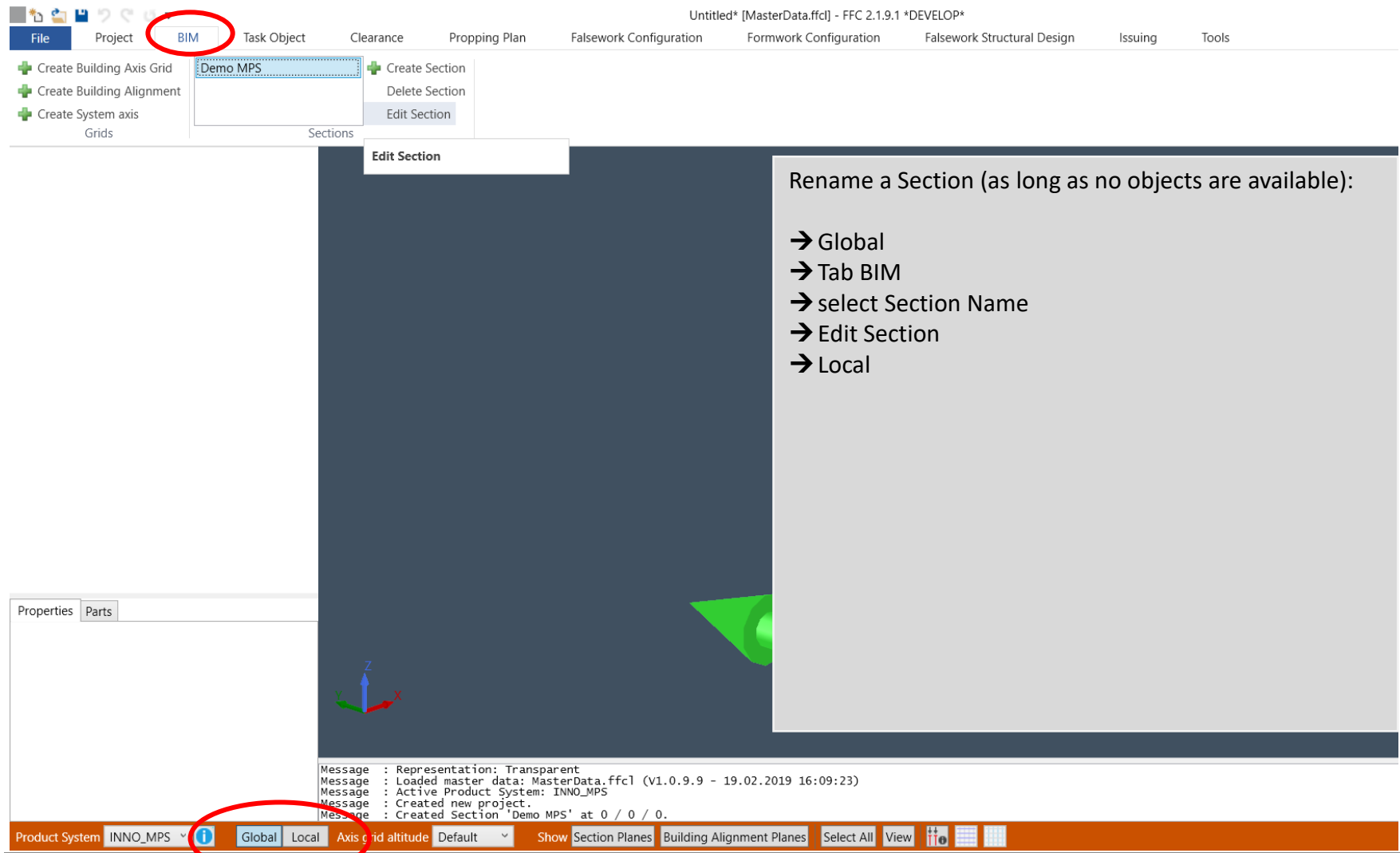
© 2019 b11 computersysteme GmbH & Co. KG  
 Message : Representation: Transparent  
 Message : Loaded master data: MasterData.ffcl (V1.0.9.9 - 19.02.2019 16  
 Message : Active Product System: INNO\_MPS  
 Message : Created new project.

**Hint:**

Best would be to establish a FFC-file when starting a „Project“.

A section is defined by its location, represented by the origin of its local coordinates and its area eg. width along x, width along y. The extend of a section area will be defined under Clearance respectively entering the Task Object if given.





# Clearance: "Generate Clearance"

Generate Clearances

Top clearance

Length (along x-Axis) 2000 mm

Width (along y-Axis) 2000 mm

Slope along x-Axis 0 %

Slope along y-Axis 0 %

Formwork build-up

Plywood thickness 0 mm

Filling thickness 0 mm

Miscellaneous thickness 0 mm

Total thickness 0 mm

Base clearance

Generate base clearance

Height 6000 mm

Base clearance overhang 0 mm

Slope along x-Axis 0 %

Slope along y-Axis 0 %

not required in this case

One may generate simply flat planes in the distance of a supporting height while editing the measures. More complex shapes must be imported or edited point for point!

Example : no Object, no Formwork Build-Up available

Height 6000 [mm]

Message : Loaded master data: MasterData.ffcl (v1.0.9.9 - 19.02.2019 16:09:23)

Message : Active Product System: INNO\_MPS

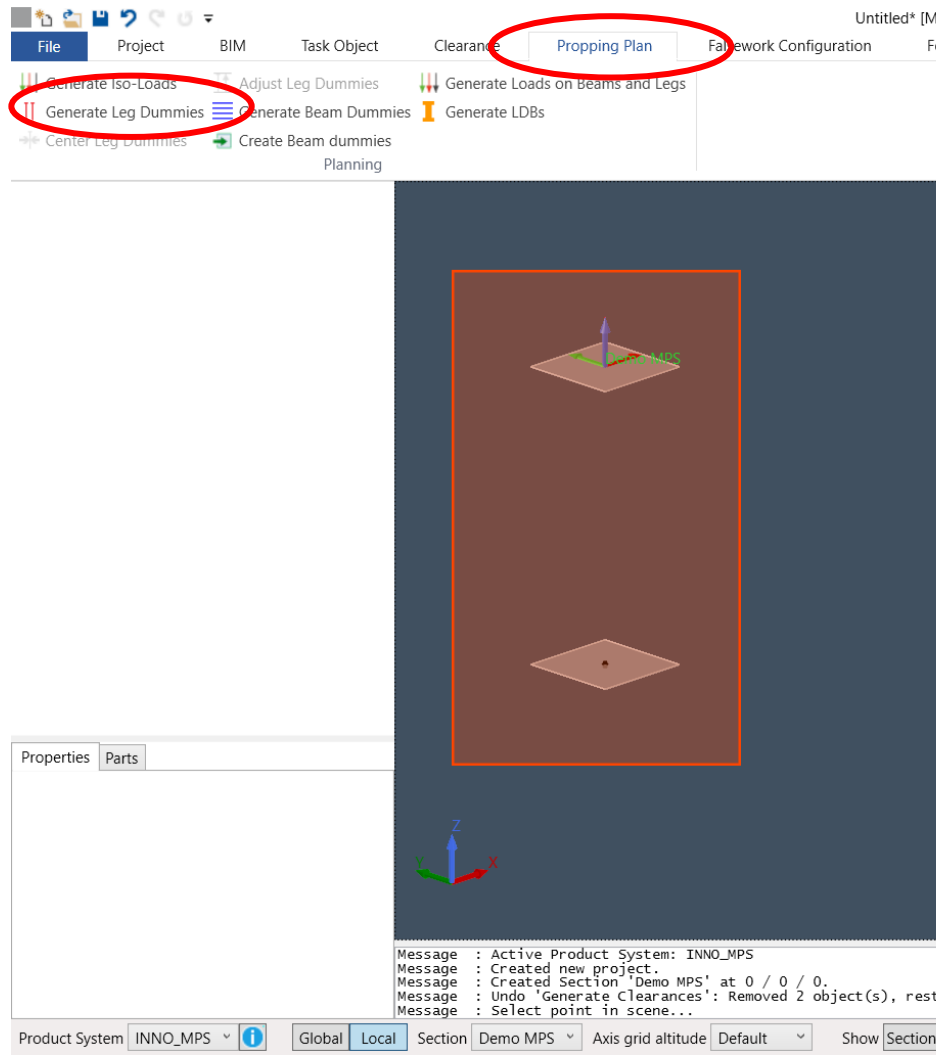
Message : Created new project.

Message : Created Section 'Demo MPS' at 0 / 0 / 0.

Message : Undo 'Generate Clearances': Removed 2 object(s), restored 0 object(s).

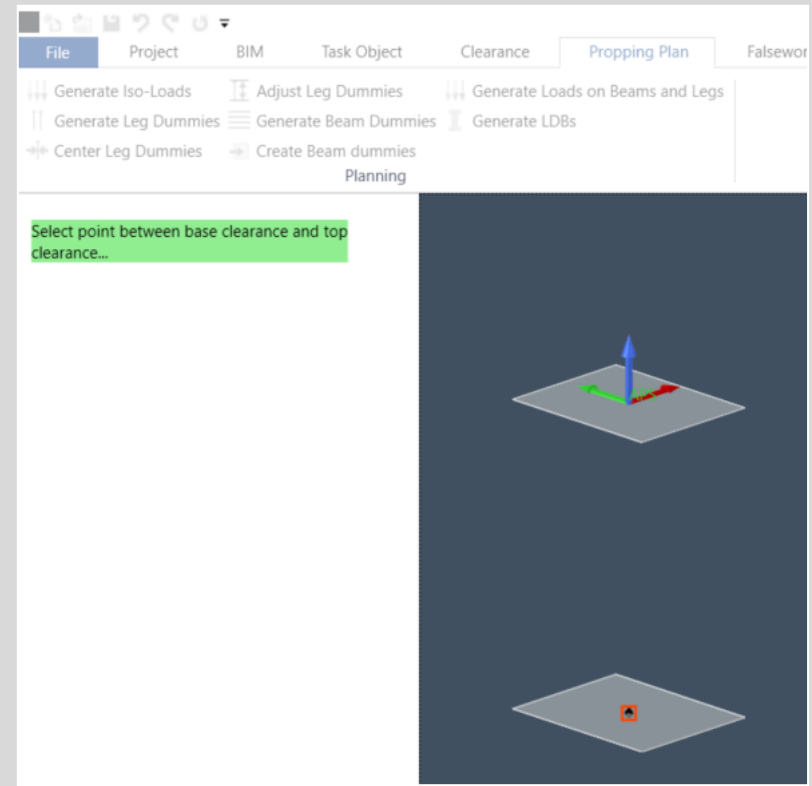
Product System INNO\_MPS Global Local Section Demo MPS Axis grid altitude Default Show Section Plane Building Alignment Planes Global Clearances Global BIM Objects Select All View

# Propping Plan: „Generate Leg Dummies“



*Proposal: open a window which includes top and base clearance. Propping will automatically centered in origin of local coordinates*

*Alternatively: Select breakthrough of coordinates at the foundation*



Initial Picture: Corresponding with chosen System  
Choose tower width and tower depth, if towers are desired, and go ahead with:

- **Simple mode:**  
Insert a desired number of dummy towers with a preset distance once in x-direction and once in y-direction (other distance possible than in x-direction)

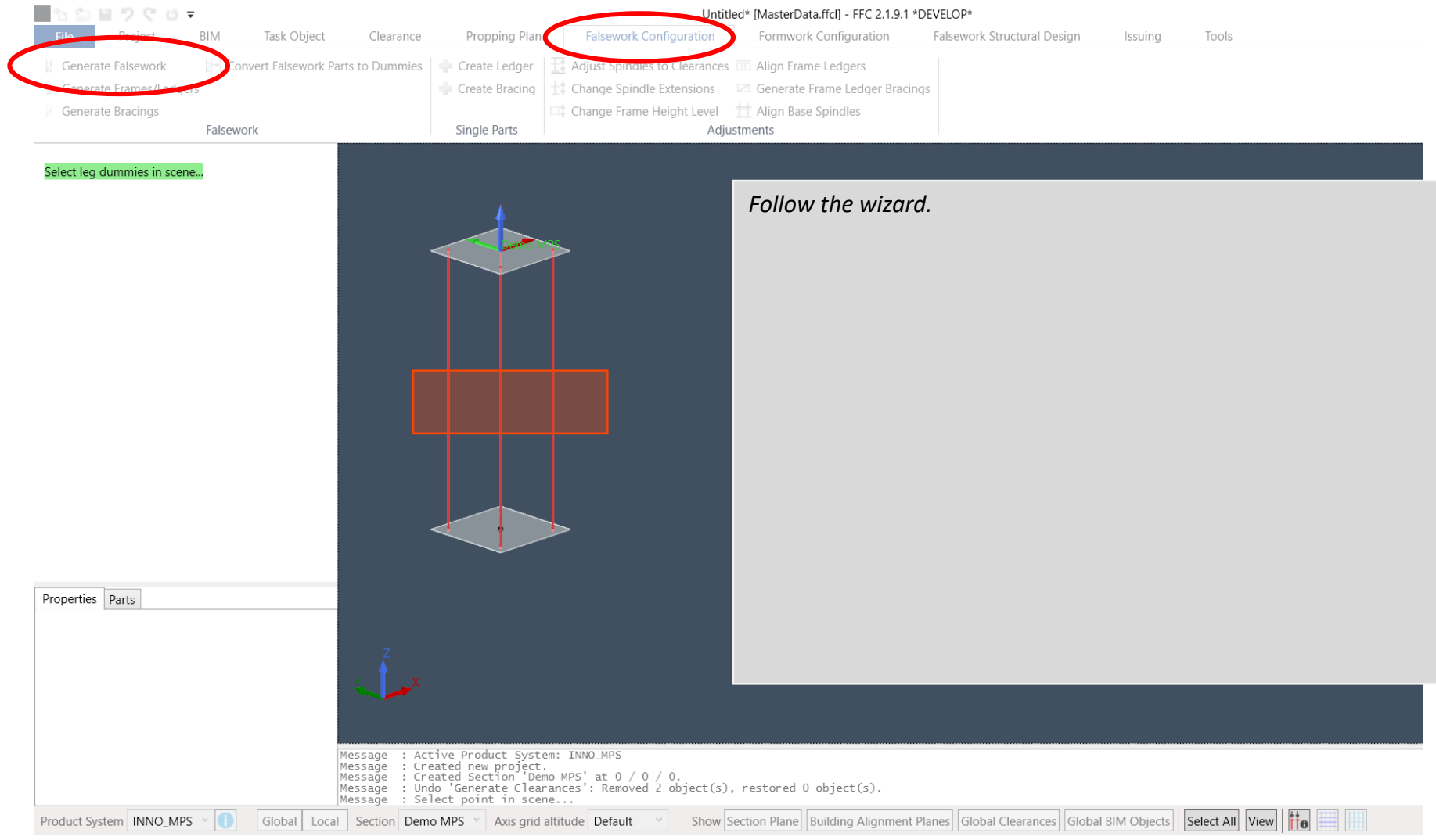
or

- **Advanced mode:**  
Insert a sequence of dummy towers with desired distances in x- and y-directions.

Product System: INNO\_MPS | Global Local | Section: Demo MPS | Axis grid altitude: Default | Show: Section Plane | Building Alignment Planes | Global Clearances | Global BIM Objects | Select All | View

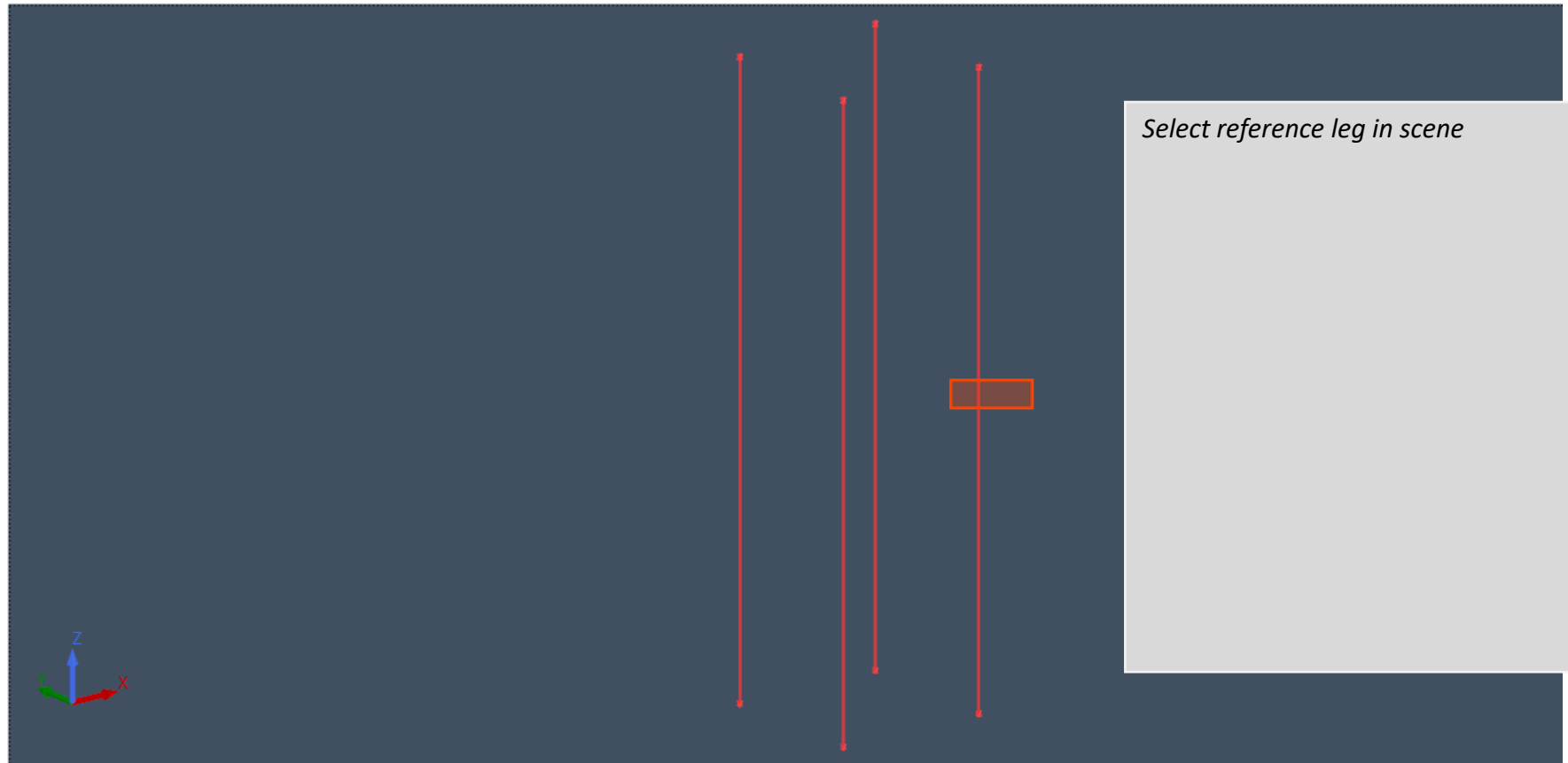


# Falsework Configuration: „Generate Falsework“



MULTIPLE PURPOSE SYSTEM Configuration

Select Reference Leg in Scene



Cancel < Back Next >

# Falsework Configuration via wizard: „Generate Falsework“

**MULTIPLE PURPOSE SYSTEM Configuration**
✕

**Configuration**

Type0

Head component  
JRH600 (45 mm - 600 mm)

Top Legs  
 SEP 250

Legs  
 SG500 (1)  
 SG750 (1)  
 SG1000 (1)  
 SG1500 (1)

Base Legs  
 SES 250

Base component  
JRB600 (45 mm - 600 mm)

Altitude of  
Leg Joint | Disk Level

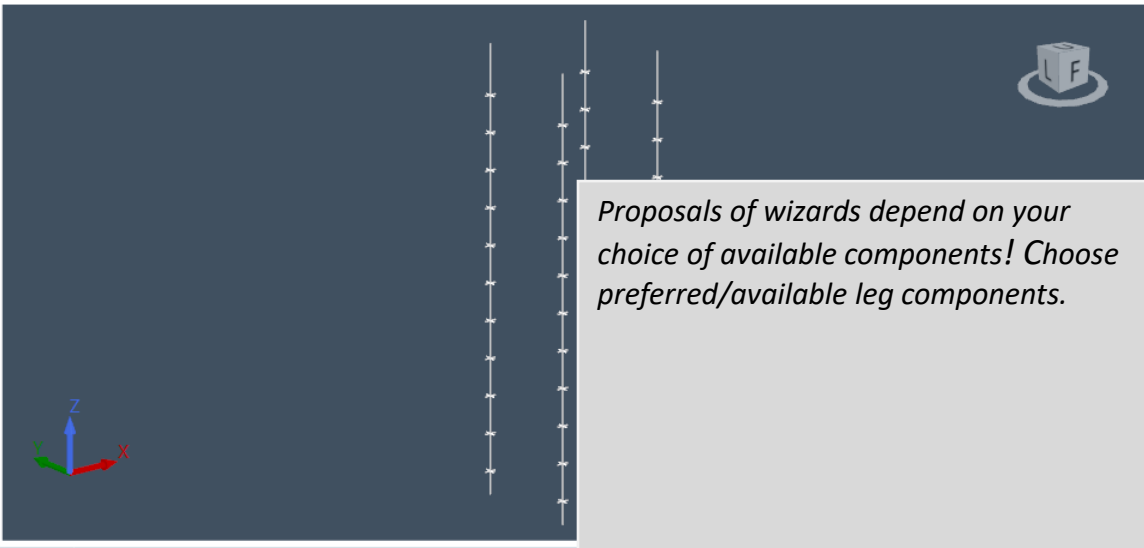
Relative | Absolute

Leg Joint  
445 | 5680  
445 mm

Extension Lengths  
 Head: 225 | 600  
600 mm  
 Base: 225 | 600  
225 mm

Resulting Extension Lengths  
Base: 225 - 225 mm

Preview



*Proposals of wizards depend on your choice of available components! Choose preferred/available leg components.*

Possible Combinations

Combination	Extn. Len.	#Frms	Std. Hgt.
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 2x SG1500, 1x SG2000, JRH600 (45 mm - 600 mm)	325	5	5675
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 3x SG1500, JRH600 (45 mm - 600 mm)	825	5	5175
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 1x SG1000, 2x SG2000, JRH600 (45 mm - 600 mm)	325	5	5675
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 1x SG1000, 1x SG1500, 1x SG2000, JRH600 (45 mm - 600 mm)	825	5	5175
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 2x SG1000, 2x SG1500, JRH600 (45 mm - 600 mm)	325	6	5675
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 3x SG1000, 1x SG2000, JRH600 (45 mm - 600 mm)	325	6	5675
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 3x SG1000, 1x SG1500, JRH600 (45 mm - 600 mm)	825	6	5175
JRB600 (45 mm - 600 mm), 1x SEP 250, 1x SES 250, 5x SG1000, JRH600 (45 mm - 600 mm)	325	7	5675

Cancel
< Back
Next >
Finish

MULTIPLE PURPOSE SYSTEM Configuration

### Ledger Configuration

Configuration: Type0

Ledger Distance [mm]: 1500

Preview

A wizard controlled proposal will be established. You may finish it at your choice after finalizing the wizard.

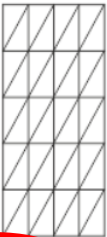
Cancel < Back Next > Finish

MULTIPLE PURPOSE SYSTEM Configuration

### Insert Reference Bracing in Scene

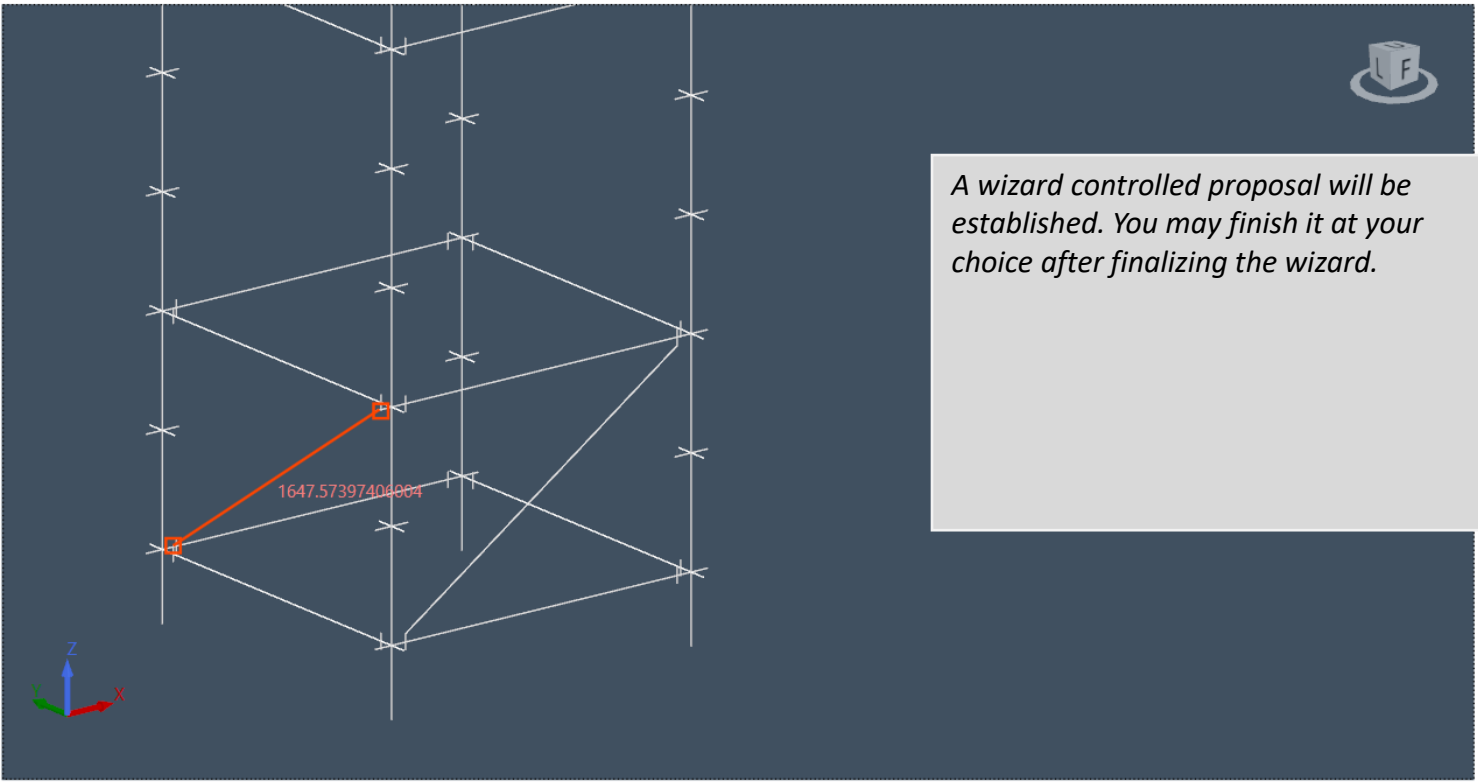
Inserted Reference Bracings  
BL1500/1000 Type0  
Remove Remove all

Reference Bracing  
Type Article  
BracL  
Configuration Type0



Insert

Scene



A wizard controlled proposal will be established. You may finish it at your choice after finalizing the wizard.

Cancel < Back Next > Finish

MULTIPLE PURPOSE SYSTEM Configuration

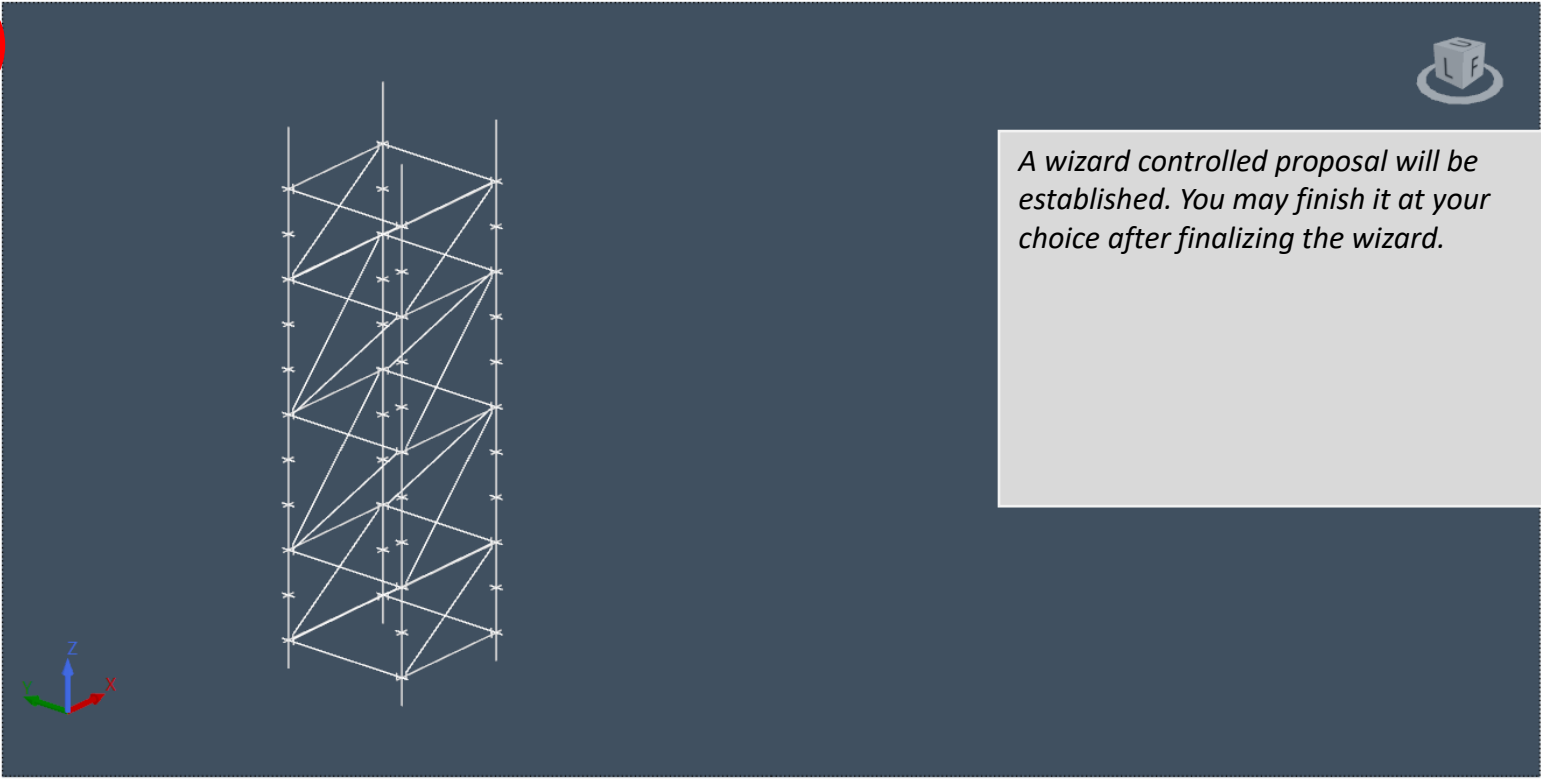
### Generate Bracings

Configuration

BL1500/1000 Type0

BL1500/1000 Type0

Preview



A wizard controlled proposal will be established. You may finish it at your choice after finalizing the wizard.

Cancel < Back Next > Finish

Untitled\* [MasterData.ffcd] - FFC 2.1.9.1 \*DEVELOP\*

File Project BIM Task Object Clearance Propping Plan **Falsework Configuration** Formwork Configuration Falsework Structural Design Issuing Tools

Generate Falsework Convert Falsework Parts to Dummies Create Ledger Adjust Spindles to Clearances Align Frame Ledgers  
Generate Frames/Ledgers Create Bracing Change Spindle Extensions Generate Frame Ledger Bracings  
Generate Bracings Change Frame Height Level Align Base Spindles

Falsework Single Parts Adjustments

Change Spindle E... X  
Possible level change  
0 375  
375 mm  
Ok Cancel

See tools for finishing the configuration from wizard!  
Example: Change Spindle Extensions

Properties Parts  
Common  
Selected Objects 64  
General  
FFC type ARTICLE  
Product system INNO\_MPS  
Type Reference  
Section Demo MPS

Message : Created new project.  
Message : Created Section 'Demo MPS' at 0 / 0 / 0.  
Message : Undo 'Generate Clearances': Removed 2 object(s), restored 0 object(s).  
Message : Select point in scene...  
Message : 64 parts created out of 4 dummy/dummies (0 dummy/dummies could not be converted) for product system INNO\_MPS.

Product System INNO\_MPS Global Local Section Demo MPS Axis grid altitude Default Show Section Plane Building Alignment Planes Global Clearances Global BIM Objects Select All View

The screenshot displays the InnoScaff software interface. The top menu bar includes 'File', 'Project', 'BIM', 'Task Object', 'Clearance', 'Propping Plan', 'Falsework Configuration', 'Formwork Configuration', 'Falsework Structural Design', 'Issuing', and 'Tools'. The 'Falsework Structural Design' menu is highlighted with a red circle. Below it, the 'Generate LDBs' option is also highlighted with a red circle. The main workspace shows a 3D model of a falsework structure with a grid of beams and supports. A dialog box titled 'Generate LDBs' is open, showing the following settings:

- E: 10000 kN/cm<sup>2</sup>
- I.: 1000 cm<sup>4</sup>
- A: 100 cm<sup>2</sup>
- G: 0 kN/cm<sup>2</sup>
- Hinge at the beginning:
- Hinge at the end:
- Hinge at the spindles:
- Variable:

Buttons for 'Ok' and 'Cancel' are visible at the bottom of the dialog. A text box on the right side of the workspace contains the text: "LDBs represent beam dummies structurally!". The bottom status bar shows the product system as 'INNO\_MPS' and the section as 'Demo MPS'. A message log at the bottom of the workspace displays the following text:

```
Message : Created new project.  
Message : Created Section 'Demo MPS' at 0 / 0 / 0.  
Message : Undo 'Generate Clearances': Removed 2 object(s), restored 0 object(s).  
Message : Select point in scene...  
Message : 64 parts created out of 4 dummy/dummies (0 dummy/dummies could not be converted) for product system INNO_MPS.
```



Preparatoy work:  
To meet the legs with loads, the easiest way is to display only the spindles on which loads are applied (Right-click on picture).

The screenshot displays the InnoScaff software interface. The top menu bar includes 'File', 'Project', 'BIM', 'Task Object', 'Clearance', 'Propping Plan', 'Falsework Configuration', 'Formwork Configuration', 'Falsework Structural Design' (circled in red), 'Issuing', and 'Tools'. The 'Falsework Structural Design' tab is active, showing a toolbar with 'Generate LDBs', 'Generate Loads on Beams and Legs', 'Create Bearing', 'Add Group', 'Remove Group', 'Show Group', and 'Calculation Groups'. The 'Generate Loads on Beams and Legs' dropdown menu is open, with 'Create Concentrated Load' (circled in red) selected. Below the menu, the 'Concentrated Load' configuration panel is visible. It includes input fields for 'Load on local Axis' (0, 0, -10 kN, circled in red), 'Load on LDB' (checkbox), 'Variable Load' (checkbox), and 'Load cause' (WOC (Q2.1c | Supported construction or wind wit)). There are 'Multiple Mode' and 'Single Mode' buttons, and a 'Select points in scene by rectangle ...' section with 'Select/Insert' and 'Insert' buttons (circled in red). The main 3D view shows a falsework structure with four vertical posts. A red rectangle highlights the top of the posts, and a white rectangle highlights the posts themselves. A 'Execution' label is present in the top right of the 3D view. The bottom status bar shows 'Product System INNO\_MPS', 'Global Local', 'Section Demo MPS', 'Axis grid altitude Default', and various tool icons. A message log at the bottom displays system messages.

File Project BIM Task Object Clearance Propping Plan Falsework Configuration Formwork Configuration **Falsework Structural Design** Issuing Tools

Generate LDBs Generate Loads on Beams and Legs **Create Bearing** Add Group  
 Create LDB Create Concentrated Load Remove Group  
 Create Coupling Beams/Coupling Create Distributed Load Show Group  
 Supports Calculation Groups

**Bearing**  
 target  
 Leg  
 Top Held  
 Top Held x/y  
 Advanced configuration  
 Multiple Mode Single Mode  
 Select/Insert Insert

Properties Parts

Error : No points found.  
 Message : Rectangle select points in scene.  
 Error : No points found.  
 Message : Rectangle select points in scene.  
 Message : Undo 'Bearing': Removed 4 object(s), restored 0 object(s).

Product System INNO\_MPS Global Local Section Demo MPS Axis grid altitude Default Show Section Plane Building Alignment Planes Global Clearances Global BIM Objects Select All View

All bearings required are available as templates.  
 (Template = default settings of the program)

- Top held x/y = held laterally

File Project BIM Task Object Clearance Propping Plan Falsework Configuration Formwork Configuration Falsework Structural Design Issuing Tools

Generate LDBs Generate Loads on Beams and Legs **Create Bearing** Add Group  
 Create LDB Create Concentrated Load Remove Group  
 Create Coupling Beams/Coupling Create Distributed Load Loads Show Group  
 Supports Calculation Groups

**Bearing**

Target  
 Leg

Template  
 Base 12811 x y

Advanced configuration

Multiple Mode Single Mode

Select points in scene by rectangle ...

Select/Insert Insert

Properties Parts

Error : No points found.  
 Message : Rectangle select points in scene.  
 Message : Undo 'Bearing': Removed 4 object(s), restored 0 object(s).  
 Message : Rectangle select points in scene.  
 Message : Rectangle select points in scene.

Product System INNO\_MPS Global Local Section Demo MPS Axis grid altitude Default Show Section Plane Building Alignment Planes Global Clearances Global BIM Objects Select All View

*All bearings required are available as templates.  
 (Template = default settings of the program)*

*Base 12811 x y means:*

- Vertically fixed
- Laterally sliding: steel/concrete
- Bending restraint according to DIN EN 12812

File Project BIM Task Object Clearance Propping Plan Falsework Configuration Formwork Configuration **Falsework Structural Design** Issuing Tools

Generate LDBs Generate Loads on Beams and Legs Create Bearing Add Group  
Create LDB Create Concentrated Load Remove Group  
Create Coupling Beams/Coupling Create Distributed Load Show Group  
Loads Calculation Groups

**Bearing**

Target  
Leg

Template  
Base 12811 x y

Advanced configuration

Multiple Mode Single Mode

Select/Insert Insert

View "Demo MPS" Display Filter Collision Detection

Hide all but spindles Show Hidden Selection (63)

Properties Parts

# Falsework Structural Design: „ Add Calculation Group“

The screenshot displays the software interface for Falsework Structural Design. The top menu bar includes options like File, Project, BIM, Task Object, Clearance, Propping Plan, Falsework Configuration, Formwork Configuration, and Issuing. The 'Falsework Configuration' menu is open, showing options such as 'Add Group', 'Remove Group', and 'Show Group'. The 'Add Group' option is circled in red. A red circle also highlights the 'Falsework Structural Design' tab in the top right corner. A green box on the left contains the text: 'Select start and end point for calculation group in scene...'. The main 3D view shows a falsework structure with a central vertical column and horizontal beams. A red circle highlights a vertical section of the structure. A green arrow points upwards from a blue point labeled 'Demo 10PS', and a red arrow points to the right. The structure is supported by four yellow square supports, each labeled '10 [kN]'. A vertical dimension line indicates a height of 2000. The bottom left corner shows a 'Properties' panel for a 'Point' with coordinates: Position rnd. -750 / -1000 / 0 and Position -750;-1000;0.

