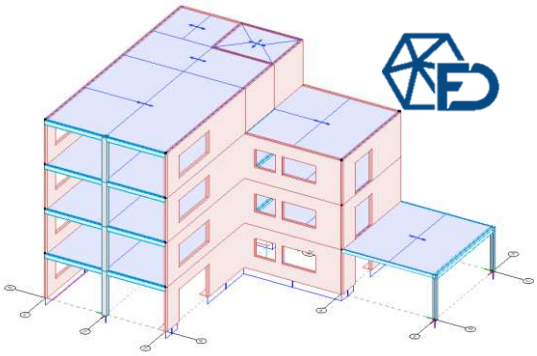
PREFAB Product description

Intended role

Consultant engineer

FEM-Design model for load take down.

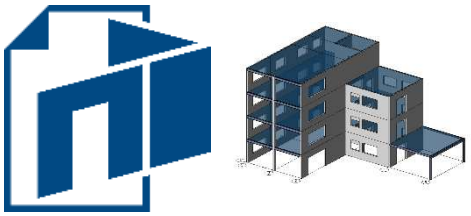
Responsible for delivering information about loads acting on components.



FEM-Design results

PREFAB

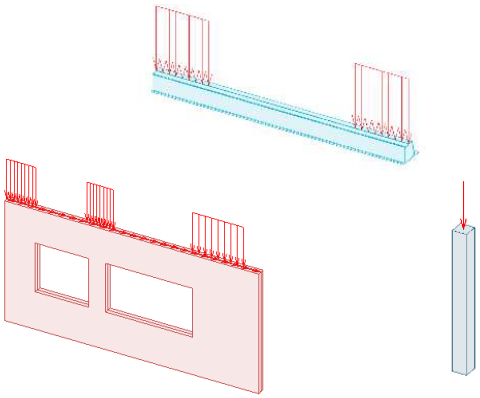
Reads FEM-Design results and processes them to provide component-level load outputs for the component designer.



Component loads

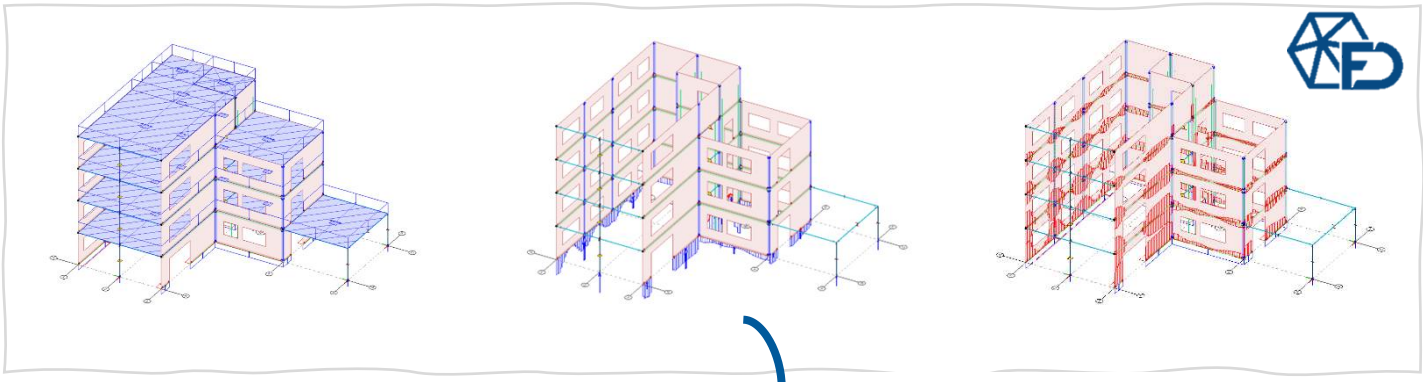
Component designer

Designs structural components to withstand the loads informed by the consultant engineer in charge.

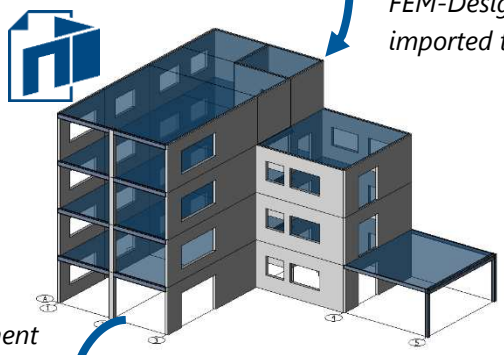


PREFAB Product description

Simplified function

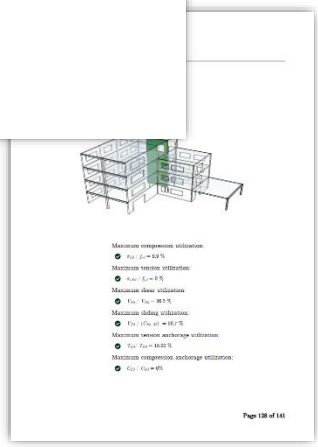


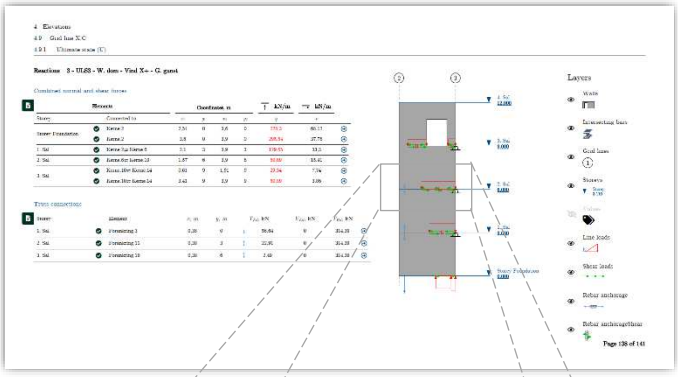
FEM-Design input and results imported to PREFAB

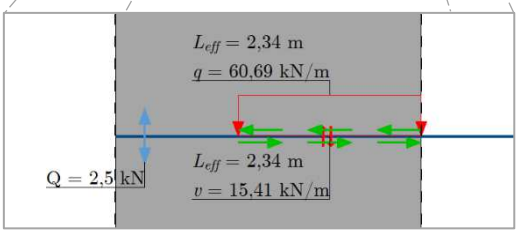


Loads documented on component level automatically with few clicks.

pdf







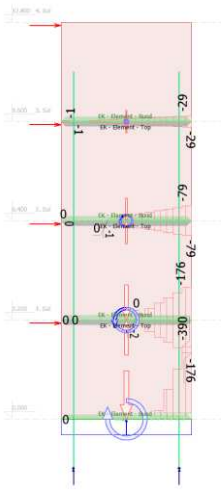
PREFAB Product description

Import/calculation options

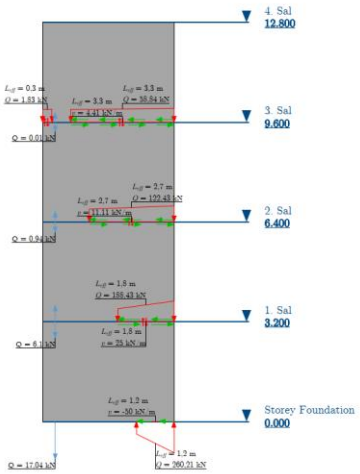
The following graphics from the PDF print illustrate the differences between the import calculation options available. Each of the two main options, Based on FEM-Design and New plastic redistribution, include two variations.

Based on FEM-Design

FEM-Design model

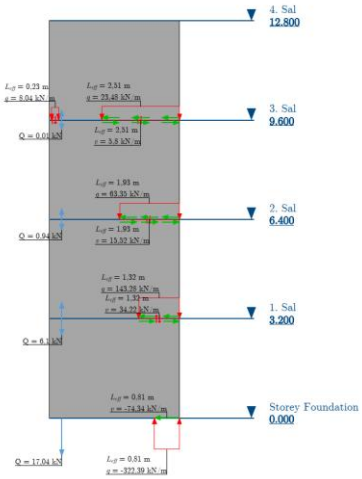


Elastic



OR

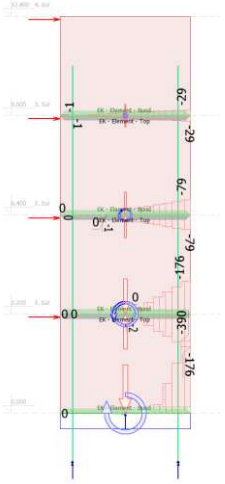
Plastic



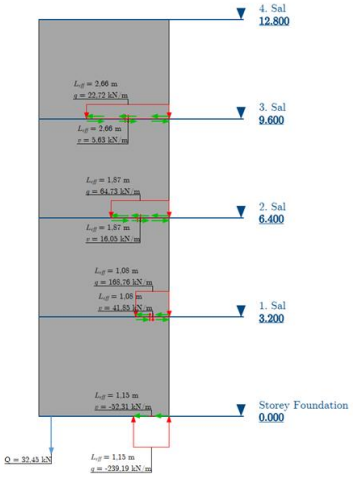
Based on FEM-Design method: load combination results are presented with either linearly varying intensity (elastic) or a plastic compression zone, maintaining the same resultant force.

New plastic redistribution

FEM-Design model

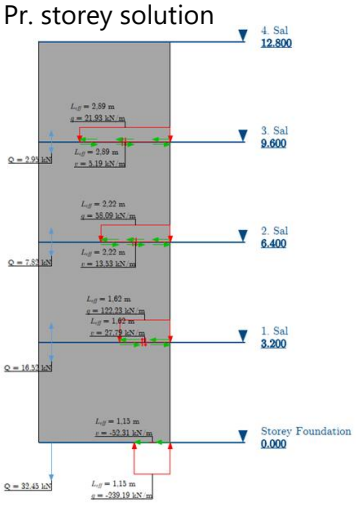


Full model solution



OR

Pr. storey solution



New plastic redistribution: It's a lower-bound plastic approach that ensures equilibrium. Load combination results are imported, but forces are redistributed based on the capacity of the elements' boundary conditions. The most optimal solution (minimizing utilization) is determined either for the entire model or one storey at a time.

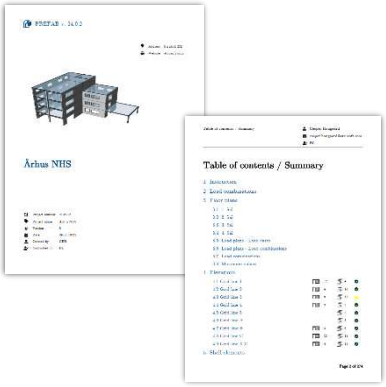
PREFAB Product description

Export option – PDF

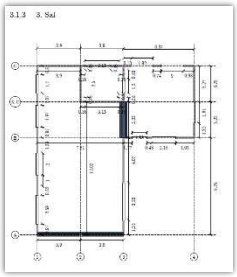
The original and primary function of PREFAB is to generate a PDF containing loads and reactions to document the load take-down process**.** This document serves as the foundation for component design. While other export options are available, the PDF remains the primary source of illustrative information.

The PDF is interactive, featuring togglable layers and tooltips for enhanced usability.

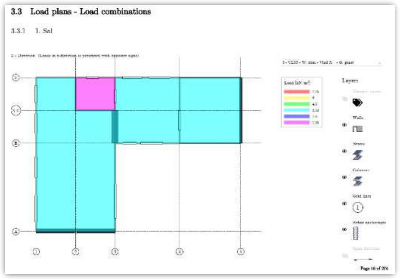
Although the main content of the PDF can be adjusted, it typically includes (in addition to the front page and table of contents) the following elements:



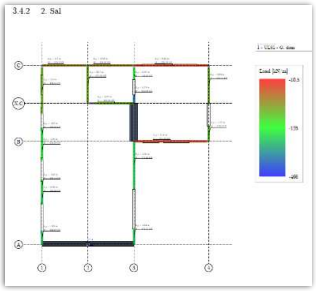
Floor plans



Structural plan

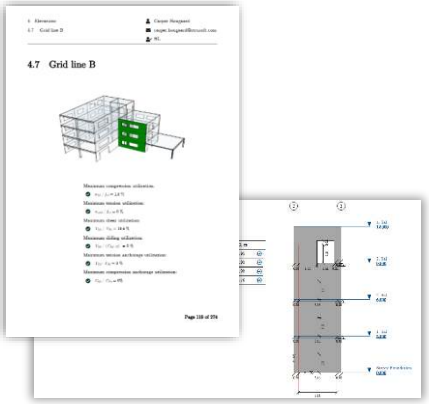


Load plans (load cases & combinations)



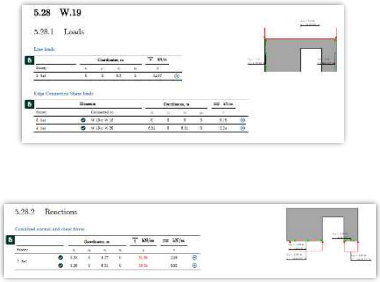
Results on plans

Elevations



Axis - 3D view / Structural elevation

Axis - Loads & Reactions



Element - Loads & Reactions

Beams & Columns

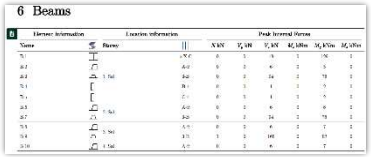
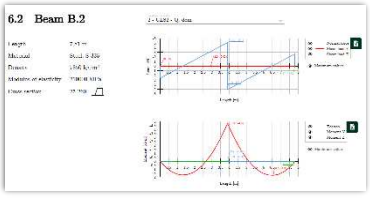
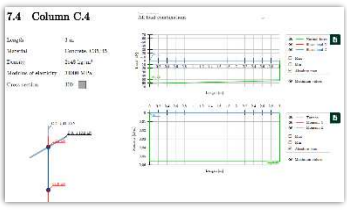


Table summary



Beam internal forces



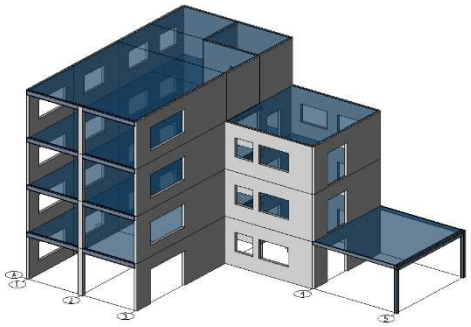
Column axial loads & internal forces

PREFAB Product description

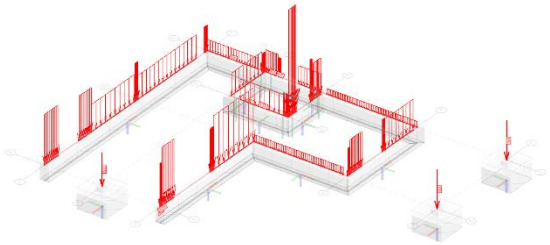
Export option – FEM-Design

As the primary tool to treat data and do the component design, the Export to FEM-Design option gives two primary options. The exported file is a .struxml file, which is the schematic file format for FEM-Design models. It's automatically opened in FEM-Design. It's an essential part of a semi-automatic workflow.

The exported models include all necessary load cases and load combinations.

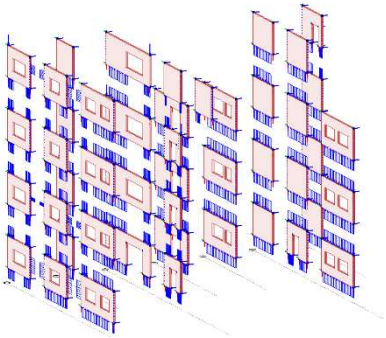


Reactions



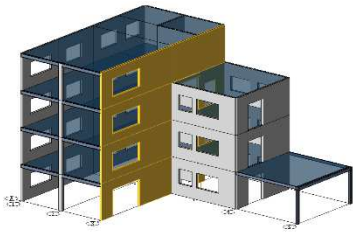
Ideal for foundation design. Loads match the PDF.
Note: Foundation objects added manually.

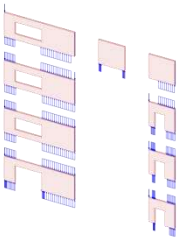
Loads on wall edges



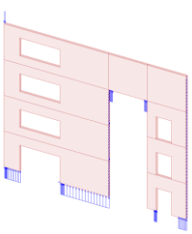
Ideal for wall design. Each element is statically independent as default. Loads match the PDF.

Variations

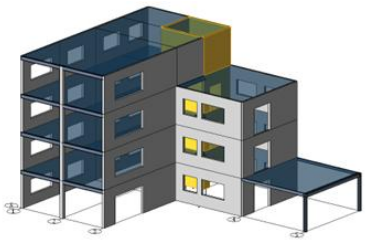


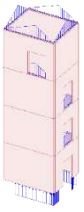


Element selection
The default for component design. Statically independent.



Elevation selection
Great for detailed analysis of a selection of elevations. The walls are connected



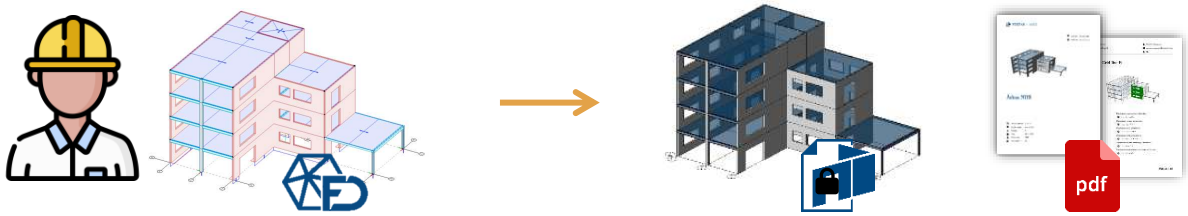


Custom selection
Great for detailed analysis of a section of the structure post regular load take down.
Note: Only through the 3D viewer

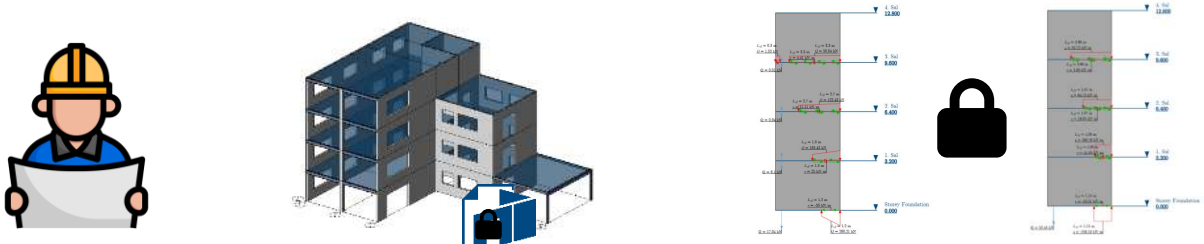
PREFAB Product description

Export option – Locked PREFAB

As PREFAB has many options for export, and features directly within the program's viewer, in many work-flow cases the sender is advised to create a locked PREFAB file, which the receiver can then open in their PREFAB Viewer.



The sender creates a locked PREFAB file as an export option in PREFAB, and most likely a PDF to document the load take down on their end.



Note: The Input/Calculation type is locked.

The receiver of the Locked PREFAB file keeps all the same export options. Both export / print options via the dedicated tabs, or via the viewer in PREFAB which gives many advantages like overview, filtering, search for specific component ID and more.