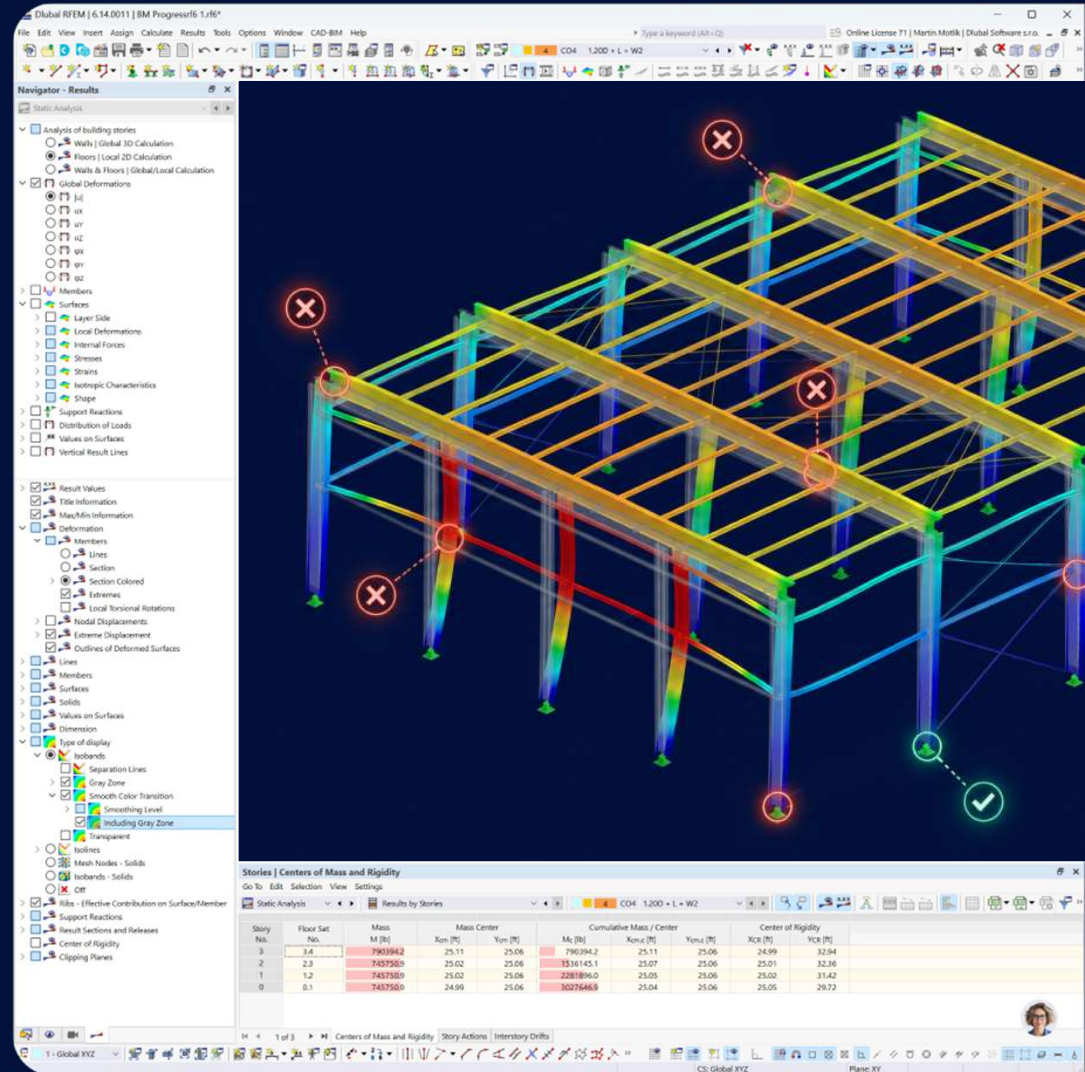


Webinar

Dlubal

Top 7 Structural Steel Design Mistakes Every Engineer Should Avoid

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Today with



Master of Eng. (Str.)
Rahul Telang

Organizer

Sale, Marketing & Customer Support
Dlubal Software INDIA



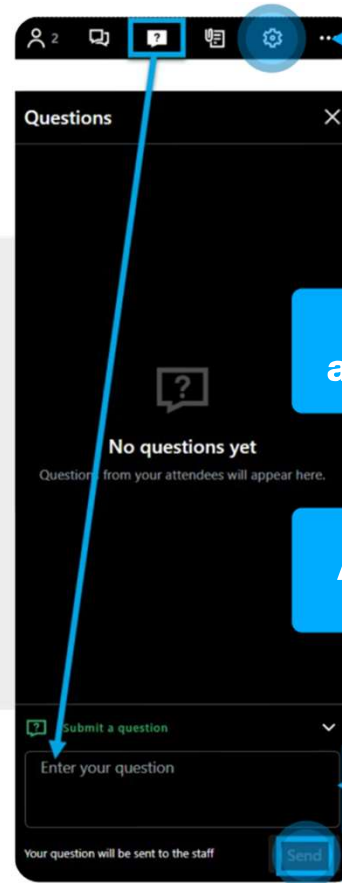
M.Sc
Niklas Wanke

Co-Organizer

Product Engineering & Customer Support
Dlubal Software GERMANY

Questions During the Presentation

1
**Webinar Control
Panel Desktop**



**Adjust
audio settings**

Ask question

2
**Follow-up
info@dlubal.com**

If you don't know us yet

Global Player in the field of structural analysis software active in more than 160 countries

160

Nearly 40 Years of experience in developing amazing software for engineers

40

Over 160.000 Followers on Social Media like LinkedIn, YouTube, Instagram, ...

160.000

Numbers Data Facts

13.000

About 13.000 statistfied Customers and 130.000 Users

350

More than 330 team members work for your solutions

70.000

Among the TOP 70.000 most visited websites in the world

Office in Pune - India

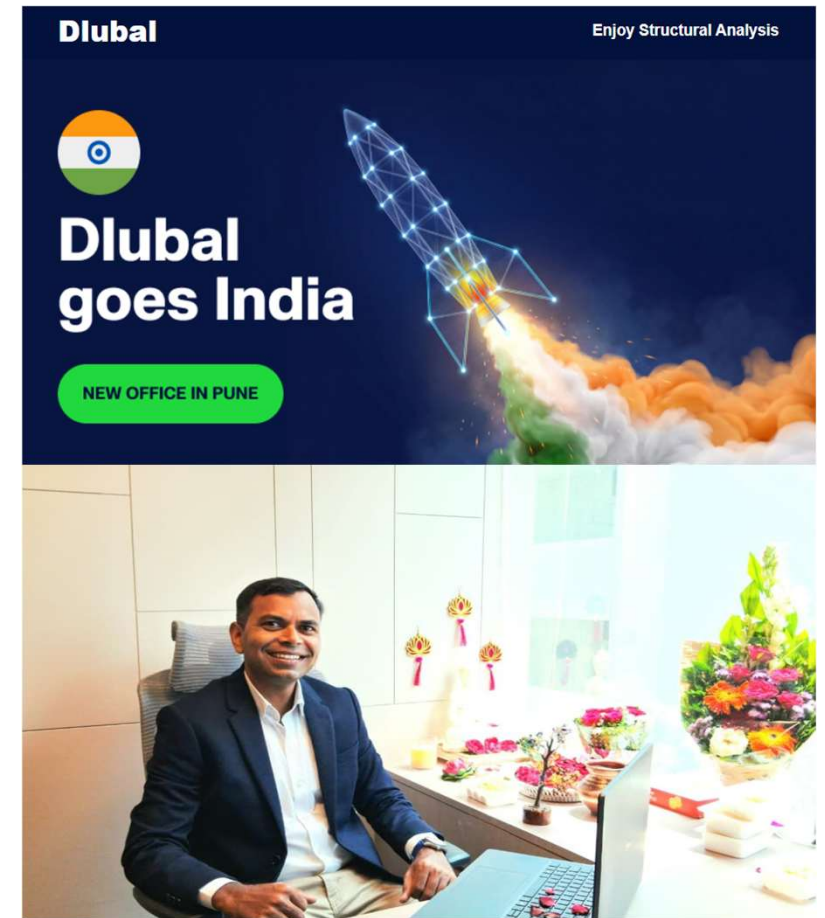
With our new location, you can expect

- **Local contact and direct support** - India will be available to support you with technical questions and project-related challenges.
- **Closer connection to the engineering community**- Aim to actively engage with engineers, universities, and partners to support knowledge exchange and innovation.
- **Workshops and training programs** - Offer regular training sessions and workshops tailored to the needs of engineers in India
- **Access to powerful structural analysis tools**- With solutions like RFEM 6, we support you in designing safe, efficient, and optimized structures

📍 Office location

Dlubal Software India Pvt. Ltd.
KODESK Co-working,
201, 2nd Floor, 45 Baner Street, Above Atithi Restaurant,
Opposite to D-Mart, Baner-Mahalunge Road, Baner,
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Top 7 Structural Steel Design Mistakes Every Engineer Should Avoid

Customers in India

SUZLON

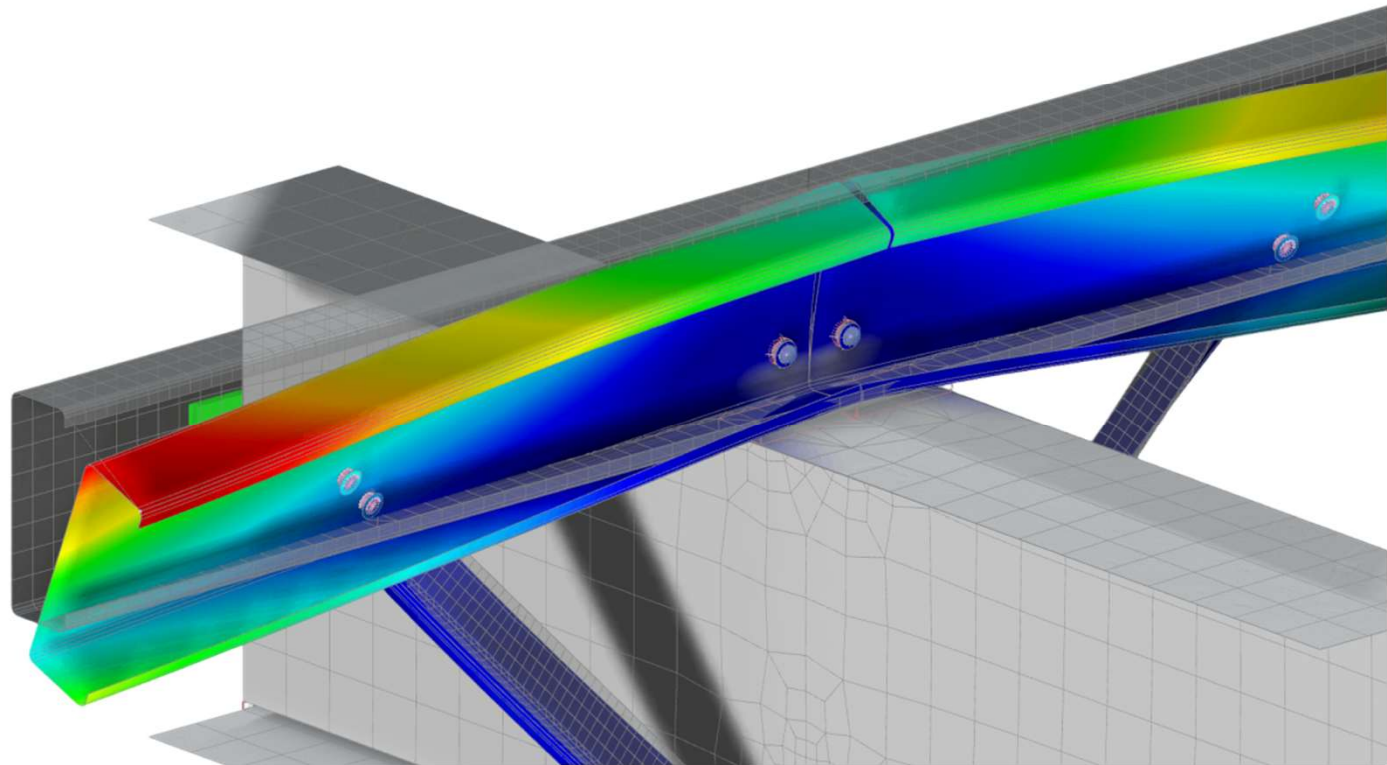


LOESCHE INDIA



Content

- 1 Common reasons why steel structures fail in analysis/design
- 2 Difference between "Software Error" and "Engineering Error"
- 3 Why verification is more important than simply obtaining pass/fail results
- 4 Software DEMO



Manual, Disconnected Design Workflow (Analysis ≠ Design)

- Exporting forces to Excel or manual calculation sheets is prone to transcription errors.
- No design-analysis feedback loop when sections fail

HOW RFEM 6 HELPS

Fully integrated analysis + design + optimization in one model — a single source of truth.

LIVE DEMO

- Bidirectional interface between Tekla Structures and RFEM 6



Incorrect Load Modeling

MISTAKE #2

Many engineers correctly calculate loads but apply them incorrectly.

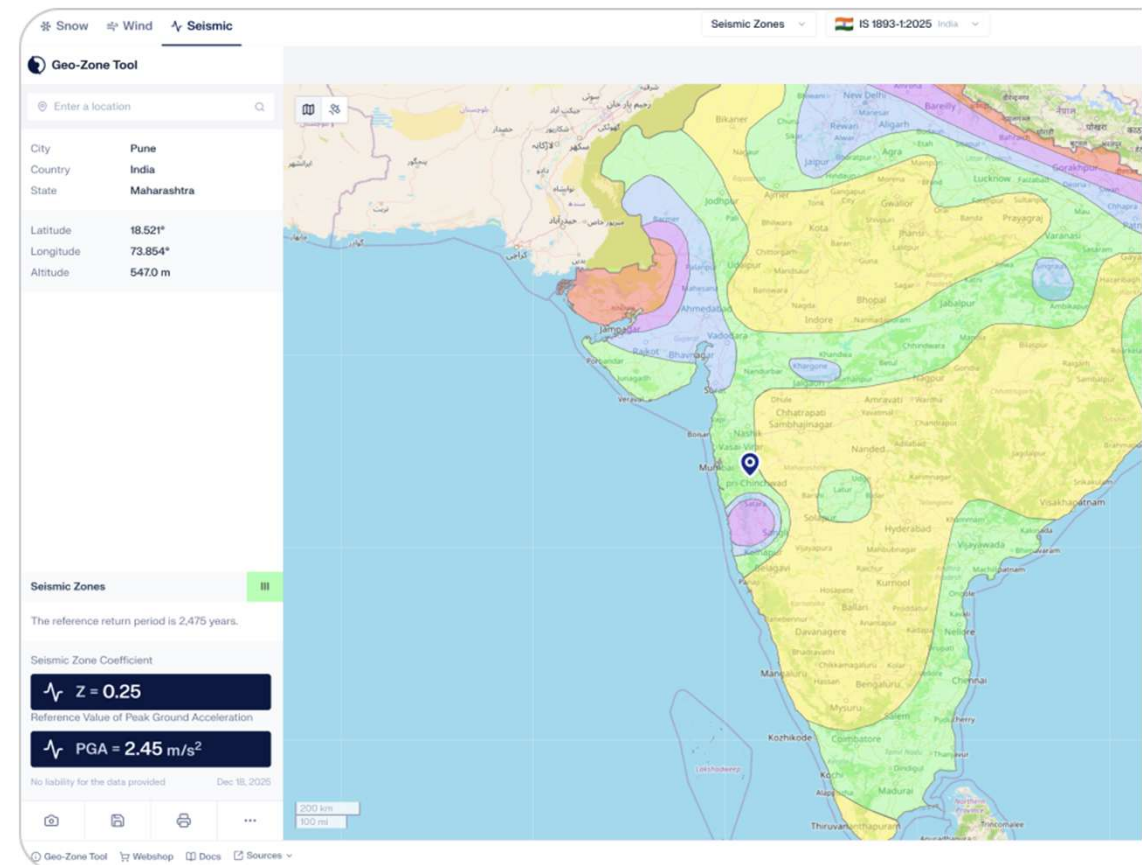
- Wind load direction
- Roof suction
- Crane loads
- Load eccentricity
- Member self-weight
- Live load reduction
- Equipment loads

KEY TAKEAWAY

Wrong loads = Wrong design.

LIVE DEMO

- GEO-Zone Tool
- GEO-Zone connection with RFEM 6
- Automatic generation of wind loads with load wizards
- Combination Wizard — automatic generation of load combinations



Ignoring Second-Order (P-Delta) Effects

A very common mistake in industrial buildings.

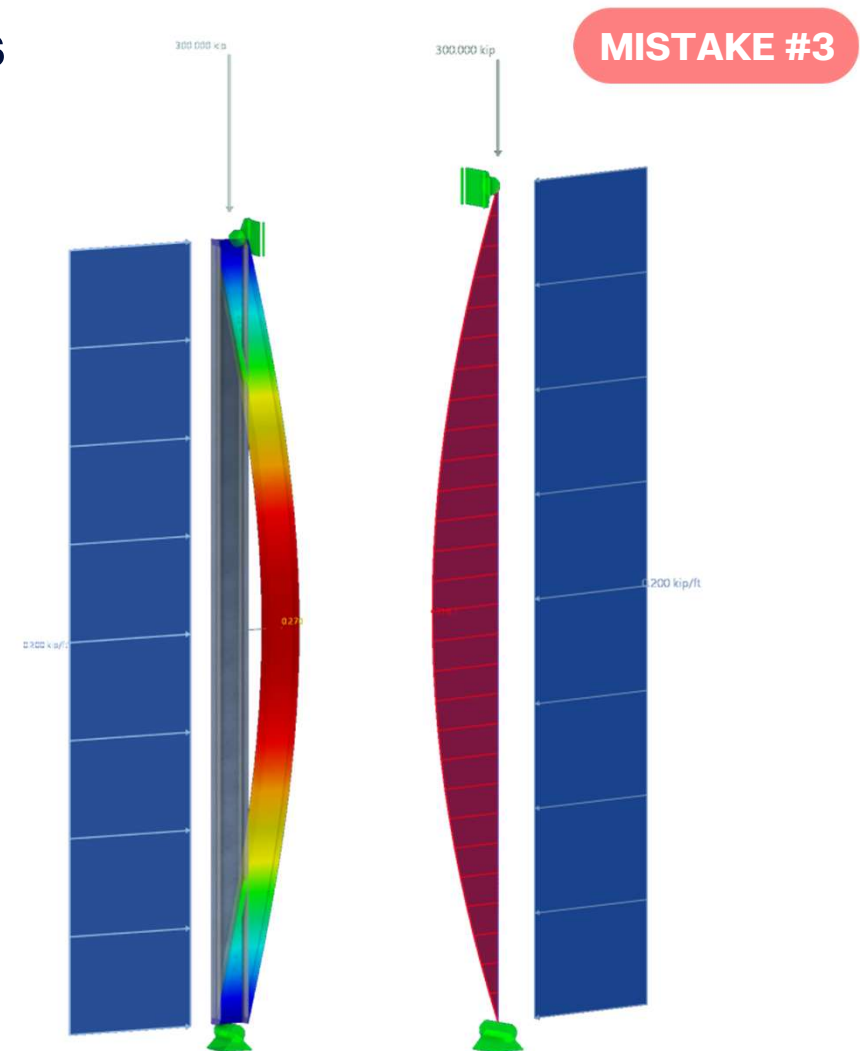
- Slender frames
- Tall structures
- Portal frames
- Large displacement

WHY IT MATTERS

Second-order effects can significantly amplify displacements and forces in slender or tall structures if ignored.

LIVE DEMO

- Influence of second-order (P-Delta) effects
- Imperfections



Ignoring Global Stability & Buckling

MISTAKE #4

Many engineers only check member utilization.

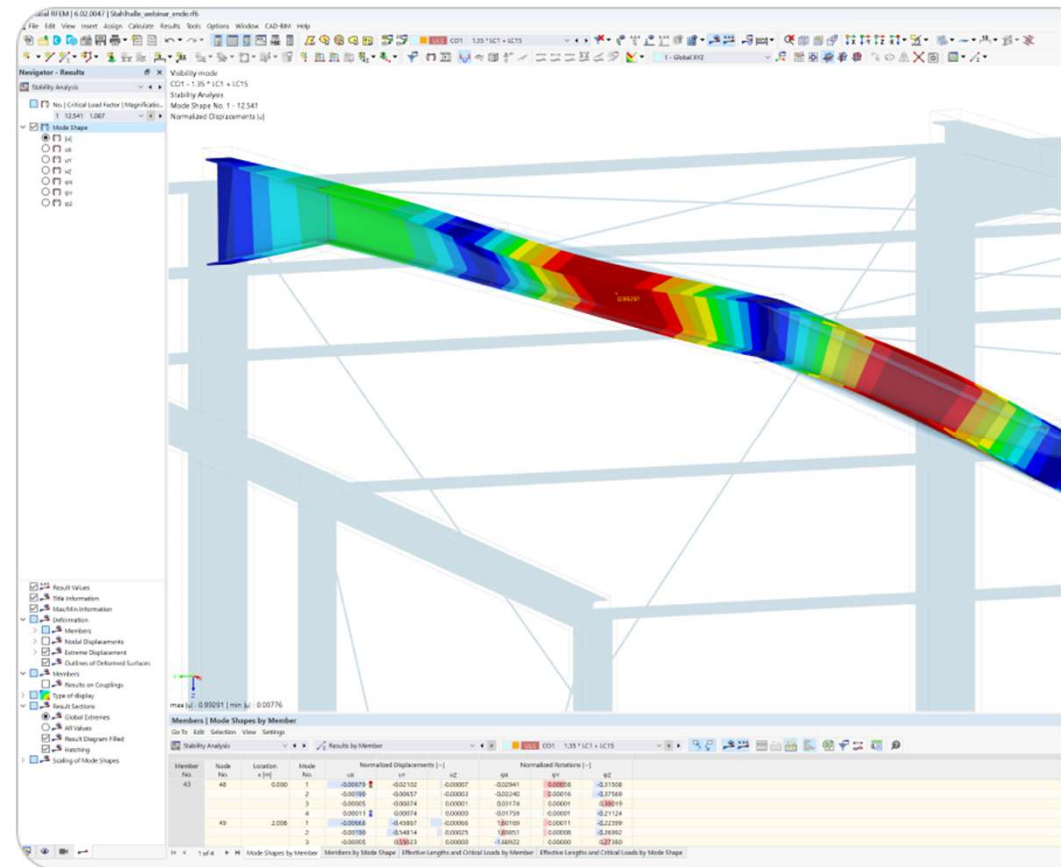
- Global buckling
- Frame instability
- Lateral torsional buckling
- Effective length assumptions
- Eigenvalue buckling

WHY IT MATTERS

Passing individual member checks does not guarantee overall structural stability.

LIVE DEMO

- Structural Stability Analysis
- Definition of effective lengths
- Stability design checks
- Evaluate stability results
- Comparison of utilization with vs. without stability effects



Neglecting Connection Stiffness

MISTAKE #5

Designing members without verifying that connections can actually transfer the applied forces is a common blind spot.

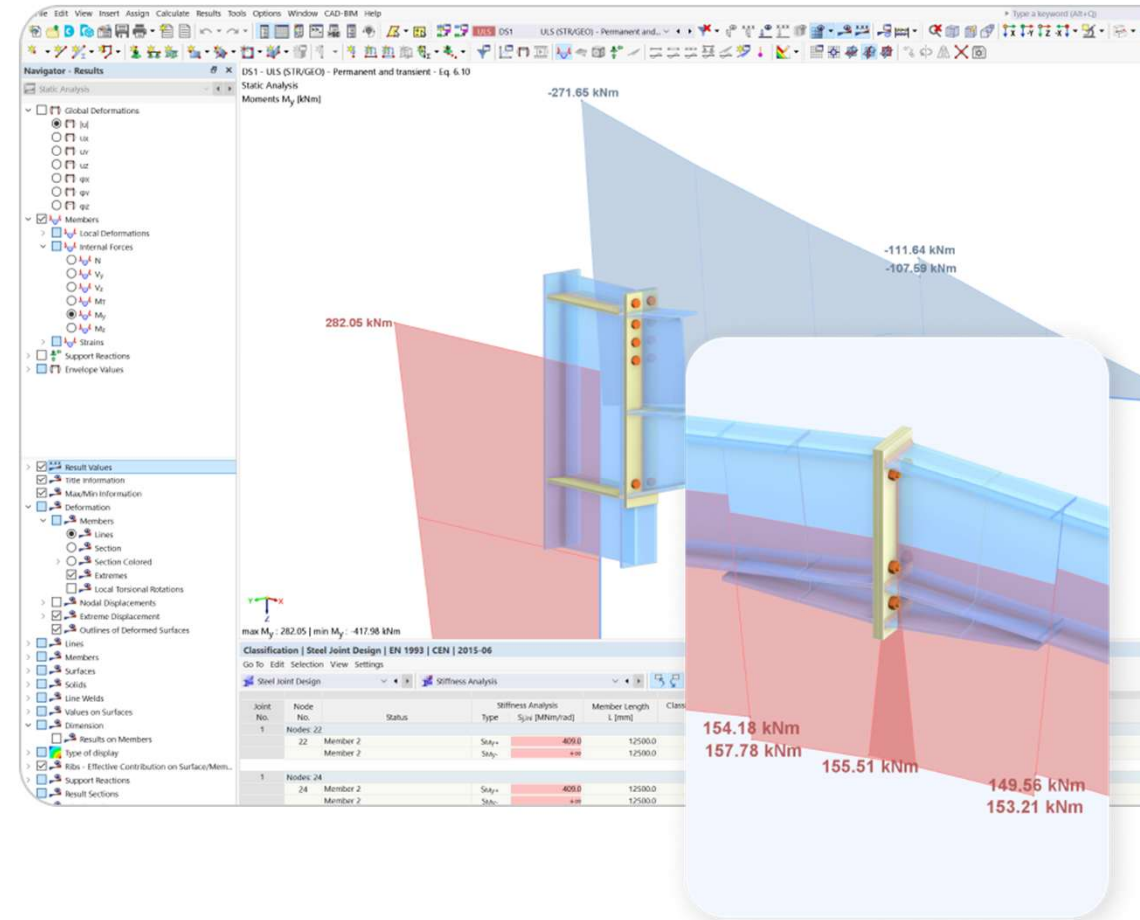
Assuming connections are “automatically fine” without joint-level checks

HOW RFEM 6 HELPS

RFEM 6 Steel Joints module — bolted/welded connection design integrated directly with member design.

LIVE DEMO

- Show the library of steel joint templates in Dlubal Center
- Compare two frames with and without considering joint stiffness



Blindly Trusting Software Results

MISTAKE #6

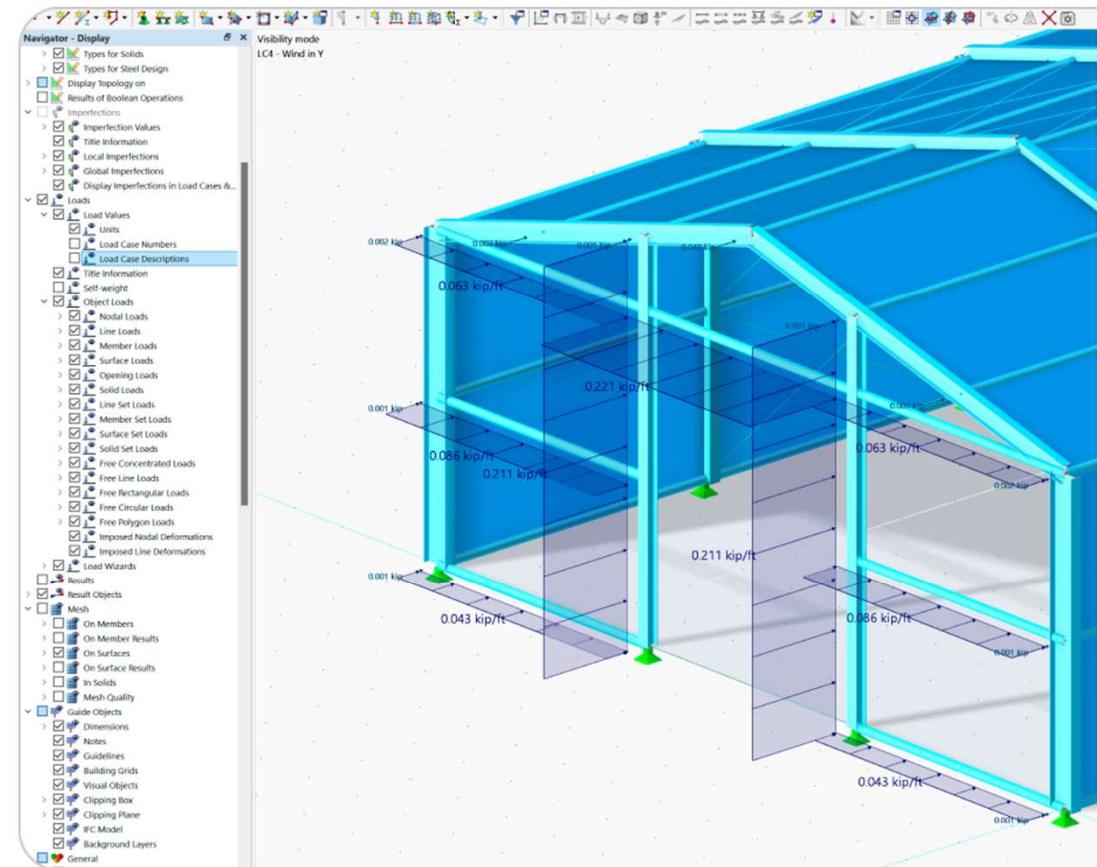
This is the most important lesson — always verify.

ALWAYS VERIFY:

- ✓ Reaction = Applied Loads
- ✓ Deflection
- ✓ Deformed Shape
- ✓ Utilization
- ✓ Load Path
- ✓ Buckling Mode
- ✓ Connection Behaviour

LIVE DEMO

- Presentation of methods for verification of input and results:
 - Design check details
 - Result diagrams for members
 - Buckling mode for stability design check
 - Submodel for steel joints
 - Extras: Plausibility Check, Model Check
 - Website: Verification Examples & Manual



Manual Creation of Documentation

Manual report creation is time-consuming — use the printout report instead.

- Many quality-of-life features
- Presets
- Multi-Print
- Auto updates / synchronization
- All information in one document with a few clicks
- A verifiable structural analysis as the final document

WHY IT MATTERS

One click generates a complete, verifiable structural analysis report.

LIVE DEMO

- Automatic generation of a complete printout report
- Adding graphics to printout report



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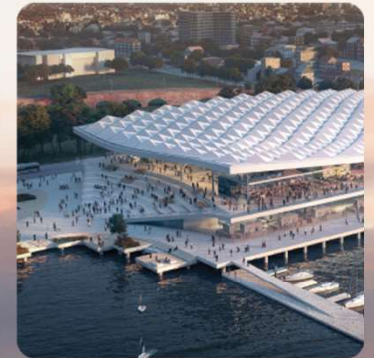
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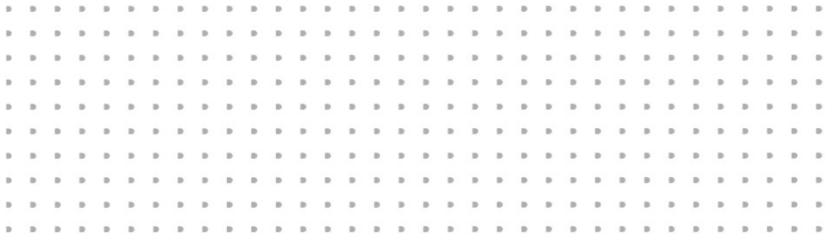
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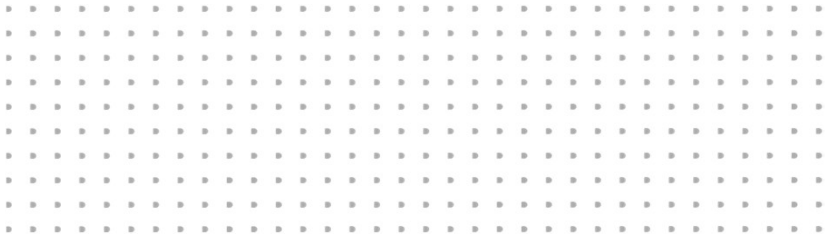
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Back up Slide



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