

Presented By:  
Sakari Lahti

# The Missing Piece to Complete Digitized Hollowcore Workflow is Here

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Trimble / Tekla Structures / CAdEON

# Agenda

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- 01** Trimble Inc & Tekla
- 02** Our precast manufacturing customers
- 03** Hollowcore integration for structural analysis
- 04** Embodied Carbon Calculation
- 05** Augmented Reality for quality control





**Our technology-forward solutions deliver digital insights that solve physical world problems.**



# Trimble Snapshot



## Company



NASDAQ:  
**TRMB**



**\$3.27B**  
Revenue (2019 year end)



**39%+**  
Buildings & Infrastructure



## Innovation



**1,200+**  
Unique Patents



**360** Construction  
Workflow  
& Technology Patents



**\$400M+**  
Invested per year in R&D



## People



**11,000+** Employees  
in 35 Countries



**800+** Construction  
Professionals



**Millions** of Customers &  
Partners in **100+** countries



# Common platforms are leveraged across targeted industries

## Core industries served



Geospatial



Transportation



Agriculture



**Construction**

## Emerging industries



Rail



Forestry



Water and electric utilities



Field service management





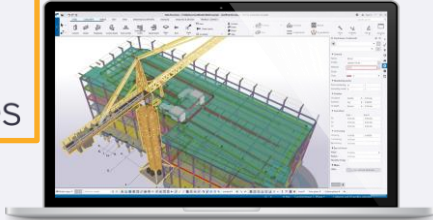
# Tekla Solutions

Truly Constructible

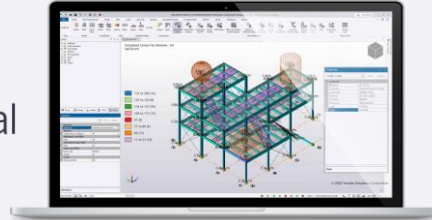
# Tekla products



Tekla®  
Structures



Tekla®  
Structural  
Designer



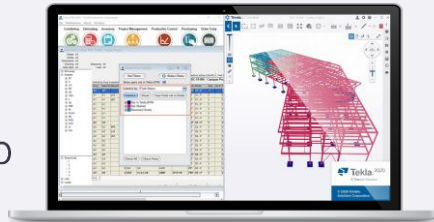
Tekla®  
Tedds



Tekla®  
Model Sharing



Tekla®  
PowerFab



Trimble®  
Connect



# 02

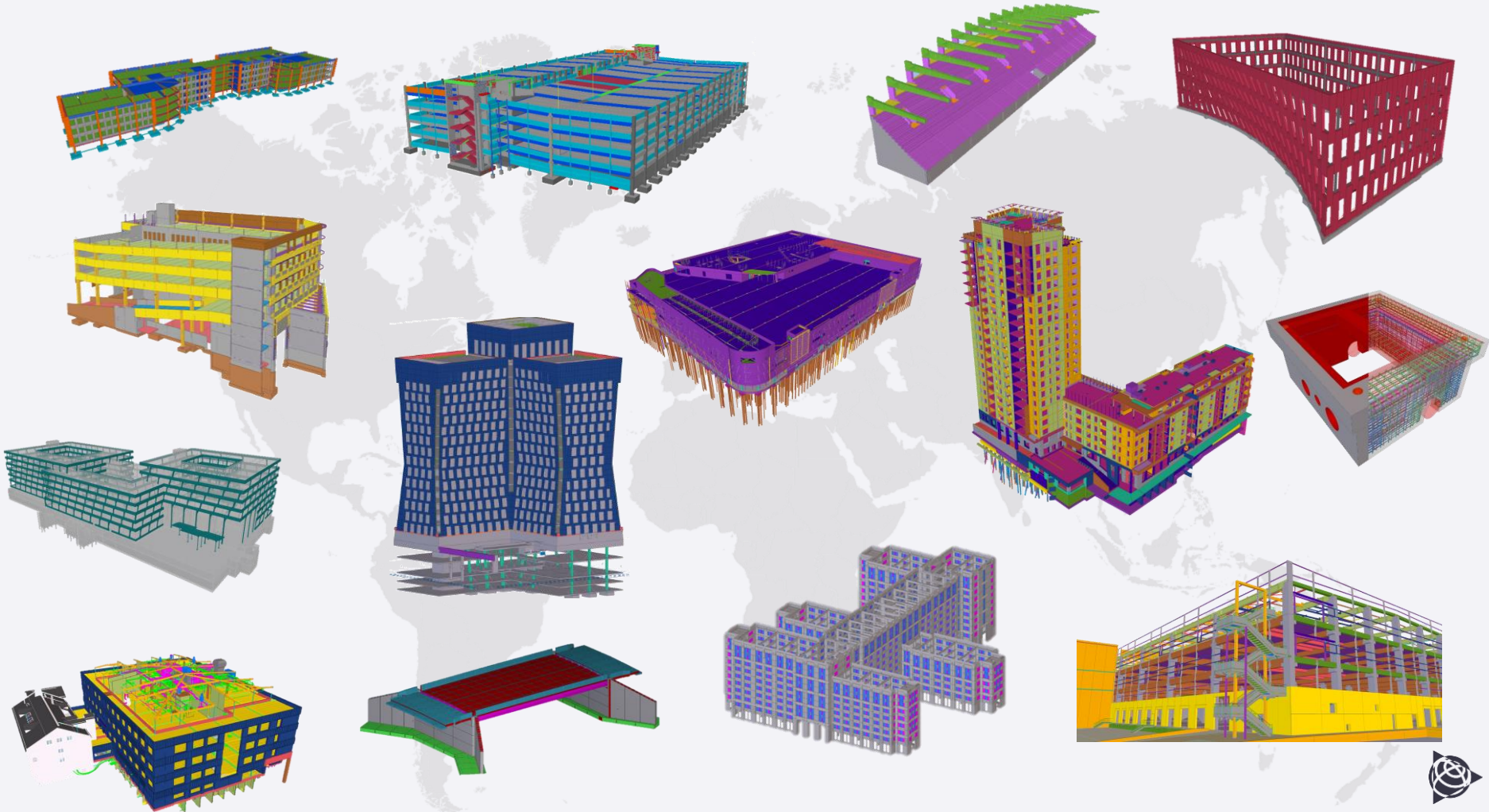
## Our customers

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Precast manufacturers











03

# Hollowcore Integration for Structural Analysis

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# Which one are you?

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## Tekla Customer

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Your hollowcore calculation is currently disconnected from your Tekla model information. It may lead to errors and inefficiencies.



## New Customer

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You are stuck to legacy solution as it has integrated hollowcore calculation. Finally now you get complete solution in BIM.





**Tekla**<sup>®</sup>  
Structures



**CAD**EON

- ▶ The most advanced structural BIM software
- ▶ Purpose-built tools for hollowcore modeling and detailing
- ▶ Load modeling and distribution

- ▶ Industry proven hollowcore and solid slab calculation software
- ▶ Customizable for precast manufacturers and Eurocode based calculation
- ▶ Results automatically available in BIM

## Added information

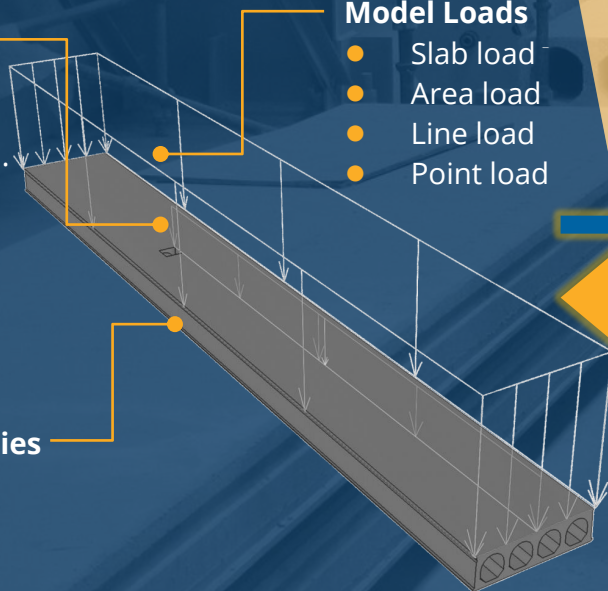
- Strand pattern\*
- Support lengths
- Fire resistance req.
- Topping

## Model Loads

- Slab load
- Area load
- Line load
- Point load

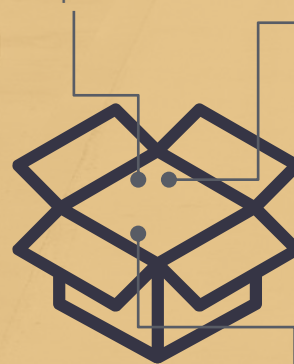
## Object properties

- Profile
- Material
- Length
- Width
- Holes



## Optimal strands

- Find the most optimal\*

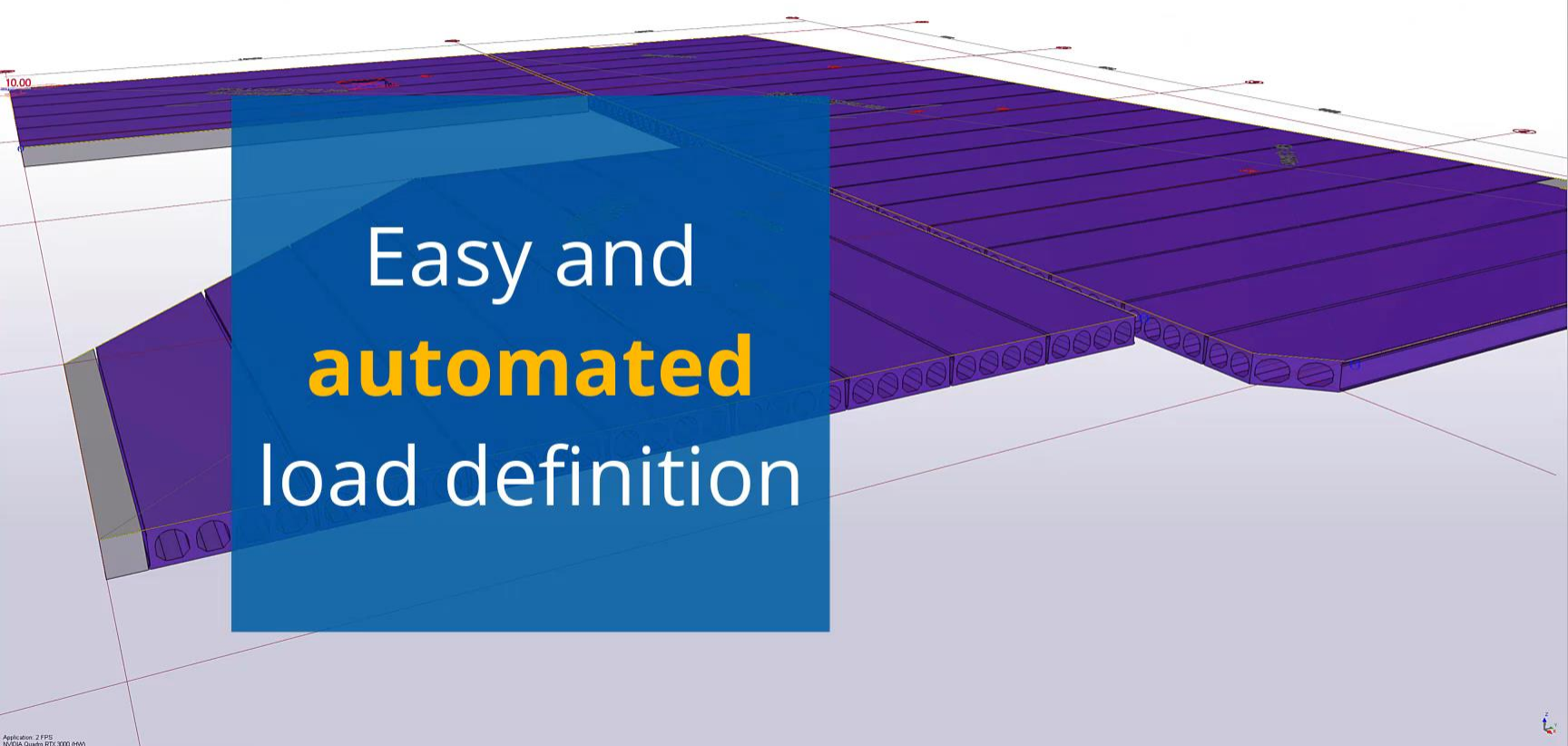


## Factory standards

- Casting conditions
- Storage conditions

## Calculation results

- Ultimate limit state
- Serviceability limit state
- Fire resistance
- Deflections



Easy and  
**automated**  
load definition

Applications & compon...  
Show hidden items  
hollowore load manager  
Search results 1 Sort by a-z  
HollowCoreLoadManager

Show hidden items



# 03

## Utilize calculation results

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Calculation results are stored to model objects for visualization, drawings and reporting



# Key benefits

Maximized efficiency  
Reduced errors

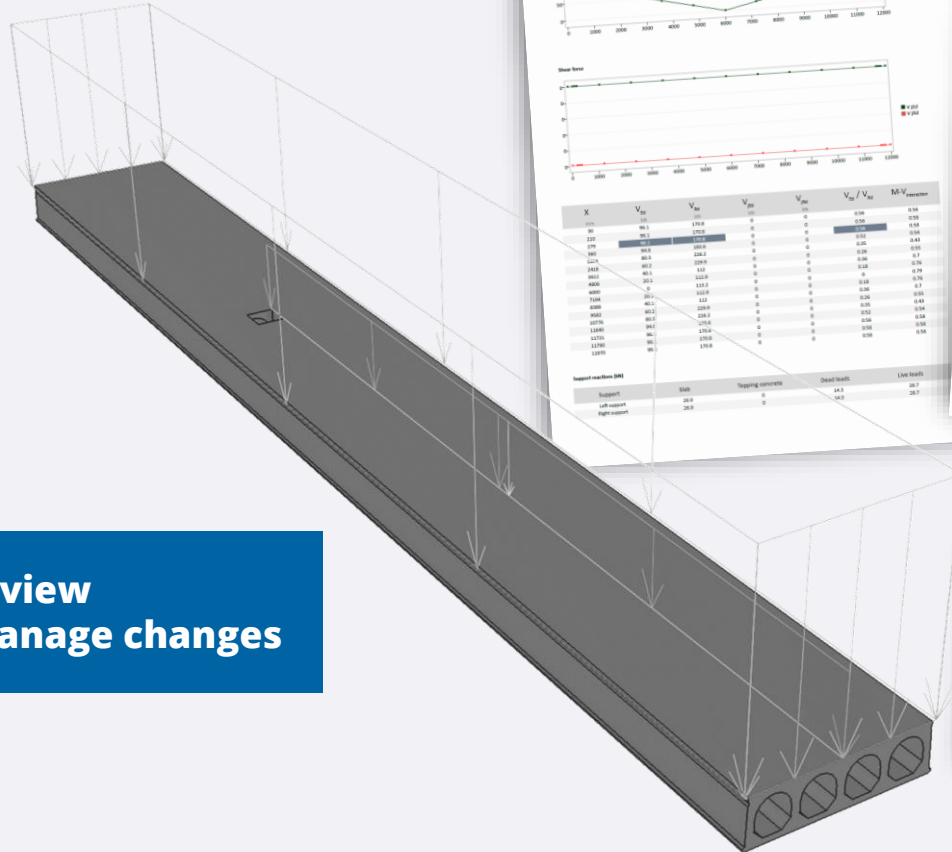
The screenshot displays the Tekla Structures software interface. The main window shows a 3D model of a steel structure with various data tables and analysis results. The interface includes a menu bar, a toolbar, and a main workspace. The data tables provide detailed information about the structure's components and their properties.

COLOR	PROFILE	STRAND PATTERN	SLABS	TOTAL LENGTH	WIDTH	LENGTH	SUPPORT START	SUPPORT END	FIRE RESISTANCE	TOPPING	UTILIZATION	DEFLECTION UNLOADED	DEFLECTION FINAL ALLOWED	CALCULATION	USE MODIFIED VALUES
★	P13320K1001 4		9	67710.47	1200.00	9140.00	60	60	60	0	0.8111	-5.9 mm	8 mm (36.3 mm)	Passed	No
★	P13320K1001 6		22	192692.92	1200.00	9140.00	60	60	60	0	0.7974	-5.9 mm	7.8 mm (36.3 mm)	Passed	No
★	P13320K1001 8		4	40000.00	1200.00	9524.62	60	60	60	0	0.8596	-5.3 mm	-13.1 mm (37.9 mm)	Passed	No
					1200.00	9363.08	60	60	60	0	0.8458	-5.6 mm	10.7 mm (37.2 mm)	Passed	No
					1200.00	9201.54	60	60	60	0	0.8018	-5.9 mm	8.3 mm (36.6 mm)	Passed	No
					1200.00	8878.46	60	60	60	0	0.7384	-6.2 mm	4.8 mm (23.3 mm)	Passed	No
					1200.00	8716.92	60	60	60	0	0.7115	-6.4 mm	3.1 mm (14.6 mm)	Passed	No
					1200.00	8555.38	60	60	60	0	0.6849	-6.5 mm	1.8 mm (8.4 mm)	Passed	No
					1200.00	7586.15	60	60	60	0	0.7296	-6.6 mm	-2.8 mm (30.1 mm)	Passed	No
					1200.00	7424.62	60	60	60	0	0.7085	-6.5 mm	-3.4 mm (29.5 mm)	Passed	No

The 3D model shows a complex steel structure with various components and their properties. The analysis results are displayed in a table, showing utilization, deflections, and calculation settings. The interface also includes a toolbar with various tools and a menu bar with options like FILE, EDIT, DRAWINGS & REPORTS, MANAGE, ANALYSIS & DESIGN, and HELP.



# Key benefits

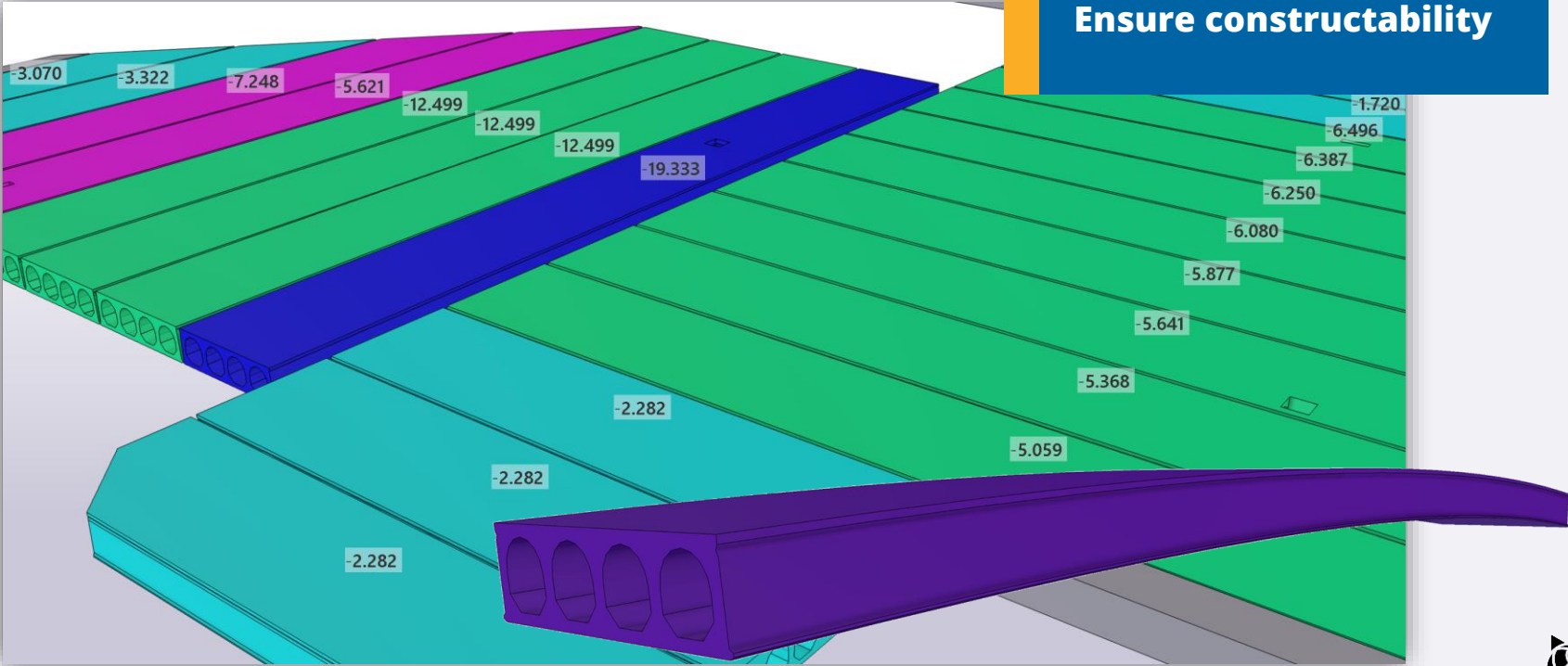


Easy to review  
Easy to manage changes




# Key benefits






Ensure constructability



# Key benefits

**Designed for Optimization**



COLOR	PROFILE	STRAND PATTERN	SLABS	TOTAL LENGTH:
	P32(320X1200)	10	2	22000.00
	P32(320X1200)	12	14	168000.00
	P32(320X1200)	4	20	126334.70
	P32(320X1200)	6	12	107142.84
	P32(320X1200)	8	4	40000.00

**Less materials  
Less costs  
Less embodied carbon**



# Developed with and for customers

*“Will be efficient way to calculate hollowcores  
and looks really good and promising!”*

*-Svein Segtnan, Contiga*





# Try Now!

- Extension are available in Tekla Warehouse for all active Tekla Structures Customers
- [warehouse.tekla.com](https://warehouse.tekla.com)
  - Hollowcore integration for Structural Analysis
  - Hollowcore Load Manager
  - CADeON SA (30 days free trial!)
- Contact for more information:
  - [Sakari.lahti@trimble.com](mailto:Sakari.lahti@trimble.com)
  - [juha.kinnunen@cadeon.fi](mailto:juha.kinnunen@cadeon.fi)





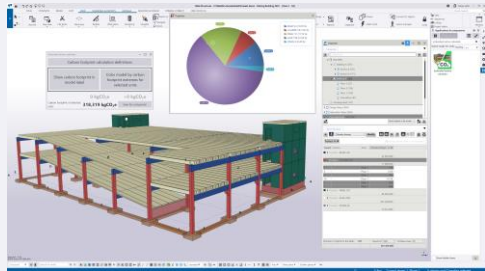
04

## Embodied Carbon calculations



# Embodied carbon calculator

Assess the environmental implications of your design live within Tekla Structures



This screenshot displays the Tekla Structures software interface. The main window shows a 3D model of a building with a green roof. A dialog box titled "Carbon footprint calculation definitions" is open, showing options for "Show carbon footprint in model label" and "Color model by carbon footprint extremes for selected units". The dialog also displays the carbon footprint of selected units as  $0 \text{ kgCO}_2\text{e}$  and a "Save for comparison" button. The software interface includes a top menu bar, a toolbar, and a right-hand panel with various tool options.





05

## Augmented Reality for quality control

# New Trimble Connect AR

Revolutionize your QA/QC workflows by viewing your digital models at 1:1 scale on shop floor and in context.

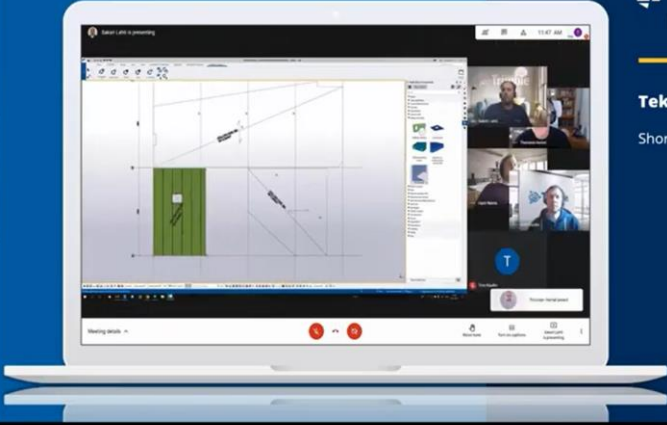


## Webinar 4 – Friday 12th March 2021

Presentations from Prensoland, Trimble and Comblift.


# Reminder!

# Watch last years IPHA webinar



**Tekla Model Sharing**

**Tekla Model Sharing**  
Short introduction



# Thank You

For Questions  
or Feedback  
please contact:  
[sakari@lahti.com](mailto:sakari@lahti.com)

Or ask now via [GoToWebinar](#)

