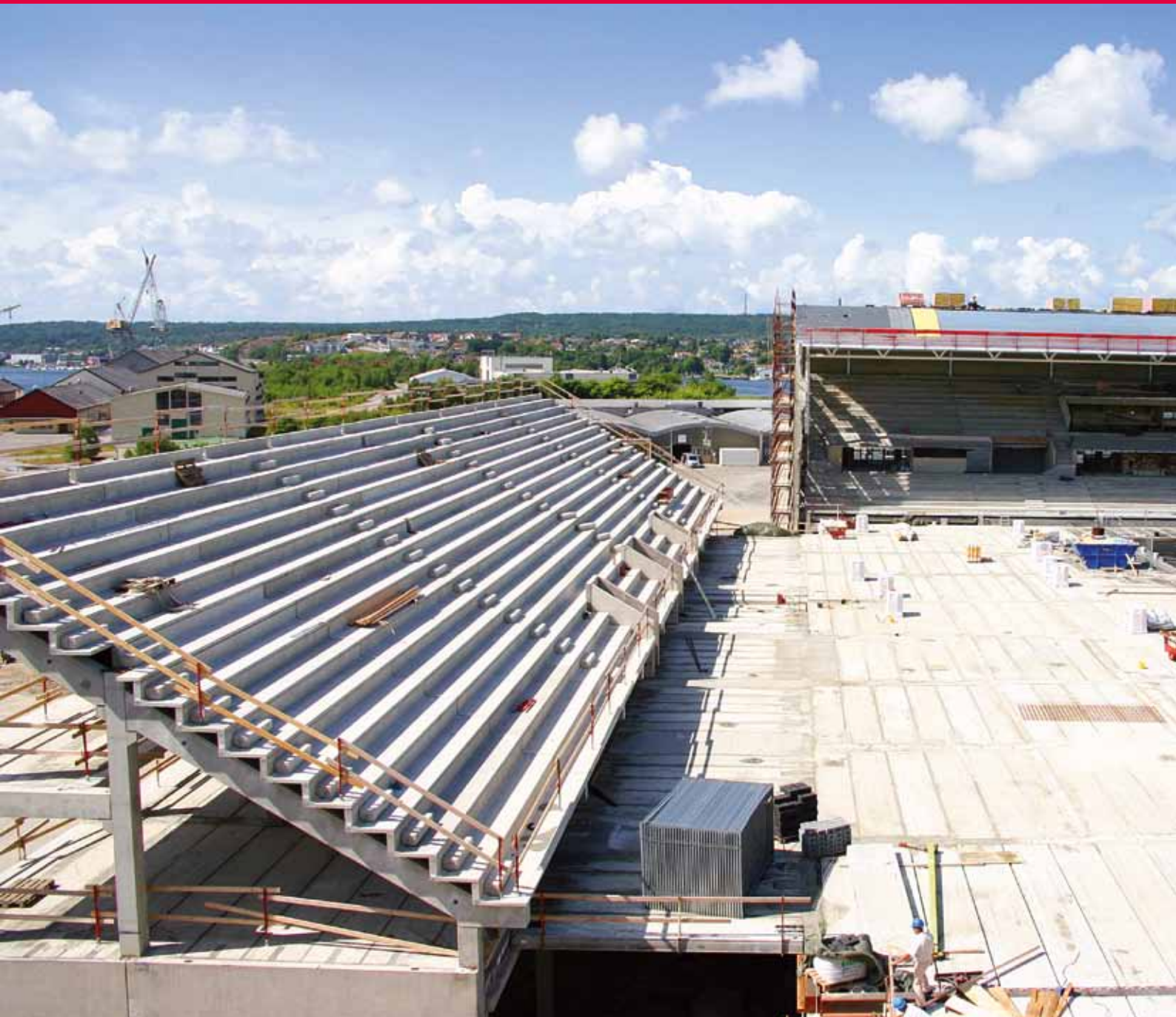
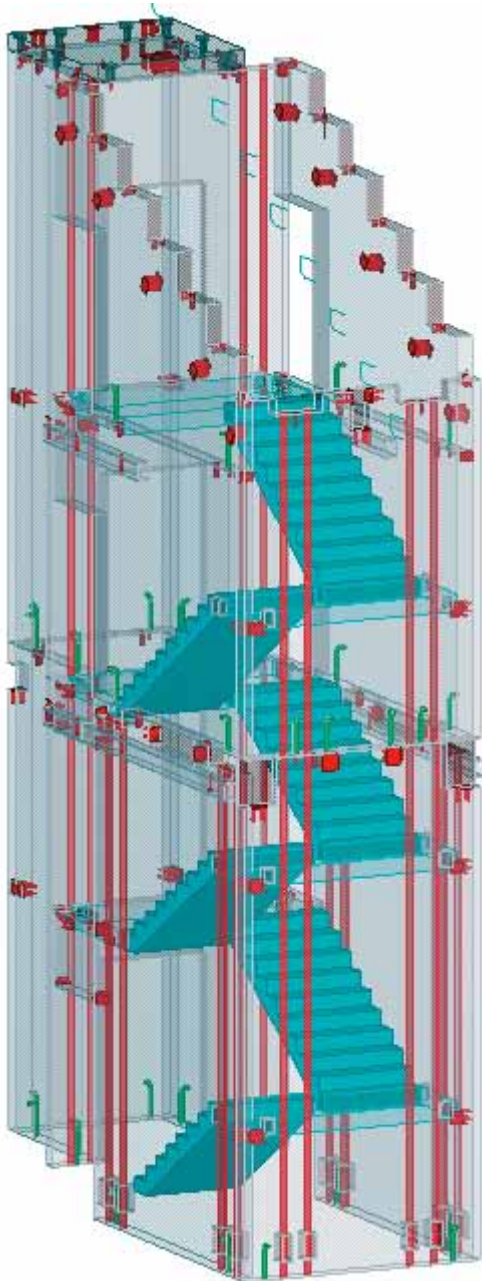


A TRIMBLE COMPANY



TEKLA SOFTWARE IN PRACTICE  
**KYNNINGSRUD  
PREFAB A.S. SKV**





# THE FUTURE FOR PRECAST CONCRETE MANUFACTURING

> Tekla Corporation is a leading international software company whose innovative software solutions have made customers' core businesses more effective for over 40 years. Commitment towards long-term product development has made Tekla the market-leader, offering the building industry Tekla Structures software, which encompasses specialized configurations for structural engineers, steel detailers and fabricators, and precast concrete detailers and manufacturers.





"Create and manage complete 3D building models regardless of material or structural complexity"

## ALL IN ONE MODEL

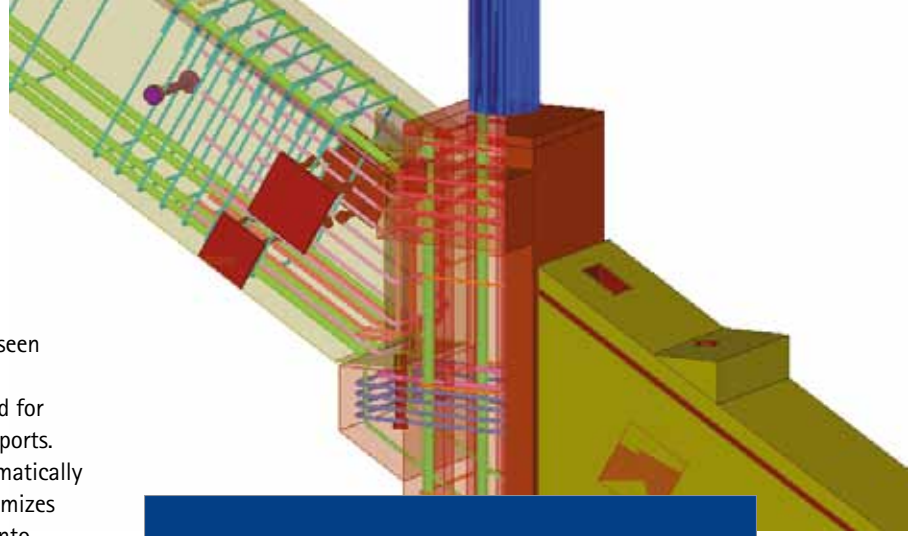
> Tekla is determined to increase the competitiveness of the precast concrete sector. Tekla Structures software is the first real parametric 3D building information modelling (BIM) solution for precast concrete detailers and manufacturers. It is a unique modeling and detailing solution that integrates the entire structural workflow from sales and conceptual design to manufacture and erection. Innovative tools provide you with the ability to design and create an intelligent building model of any size, material or complexity with ease and precision. The 3D model contains all the information required for different phases of a project.

## KYNNINGSRUD PREFAB

> Norway boasts some of the most advanced users of Tekla Structures. Kynningsrud Prefab is one such customer. This division of the Kynningsrud Group is an independent total supplier to the building trade with concrete elements and steel structures. Prefab has been an area of competence within the parent company for over 30 years, employing roughly 150. Revenue is approximately 200 million NOK. Facilities are located in both Norway and Sweden, and the unit operates in sales, construction and project management.

Kynningsrud Prefab has been using Tekla Structures since 2000, and currently holds 6 Tekla Structures licenses (4 precast / 2 steel). Alen Zukanovic works as a structural engineer for Kynningsrud Prefab, and is one of 8 Tekla Structures users. He is committed to implementing 3D modeling into the standard work practice.

"Since we contract in concrete and steel structures, Tekla Structures allows easy coordination between both materials. I particularly find real-time visualization significant. We collaborate with others in the supply chain and the platform supports this process. The Tekla Structures multi-material and multi-user properties are applicable to our everyday work process."



## OUTSTANDING PERFORMANCE AND PRODUCTIVITY

> The advantages of 3D product modeling are largely seen during the design phase. Tekla Structures is a common platform that enables the same 3D model to be utilized for producing analysis and design results, drawings and reports. When changes do occur, the built-in intelligence automatically stores the modified information. Tekla Structures minimizes overlapping work phases and errors, which translates into shorter project lead times, significant cost savings and better building quality.

Tekla Structures is also intuitive software that includes an open API (Application Programming Interface) and facilitates interoperability to enable a wide range of applications to integrate functionality and/or communicate with the 3D model. The integrated workflow benefits all project parties for enhanced productivity and efficiency.

Zukanovic comments, "The typical errors made with 2D such as dimensioning and correct naming are basically eliminated. Of course, actual gains depend on the project, with bigger projects bringing in the most benefits. On average, we currently see a 30% increase in productivity. As our users become more proficient with Tekla Structures, our output will definitely increase – which will allow us more time for other projects!"

Zukanovic's colleague, Sverre Steen, is in construction and development and foresees the most advantages in the near future. "It is important to get the model up and running early. Our goal is to increase efficiency. If we integrate the plan protection of elements such as access, numbering and lists, we are able to provide advance preparation so the final erection stage stays true to schedule."

"Some 6000 prefabricated elements weighing just over 18,200 tonnes have been used to build the 13.000-seat football stadium."

## FREDRIKSTAD STADION

> The largest delivery and installation to date for Kynningsrud Prefab is Fredrikstad Stadion. This contract generated 50 million NOK in billing to the company. Some 6000 prefabricated elements weighing just over 18,200 tonnes have been used to build the 13.000-seat football stadium. Delivery of the elements was on schedule, as will be opening day in March 2007.

"The stadium project was relatively detailed and complex," states Zukanovic. "We needed to erect new elements between existing ones. The 3D model was our main reference point, enabling us total control over the entire project. Kynningsrud Prefab could not have successfully accomplished this delivery without Tekla Structures."







“Tekla Structures enabled the smooth transfer of information between Kynningsrud Prefab and SKV.”

Steel construction delivery on the Fredrikstad Stadion roof structure was contracted to A.S. SKV, a steel detailer and producer that delivers steel structures and buildings throughout Norway. The company has been located in Fredrikstad for over 30 years and has an annual turnover of 55 million NOK. Manager John Agnar Nyquist notes, “SKV has been modeling in 3D since 1998. We currently hold 4 Tekla Structures licenses and are looking to increase that number thanks to expanded business dealings.”

“For the stadium roof project, we used 400 tonnes of steel. Much of the roof is hollow and circular in design. Tekla Structures allowed us to print a drawing and ‘glue’ the connection joints into a profile so that each pre-cut member fit together perfectly. The quality control of the finished product was much higher than with 2D detailing. Tekla Structures is superior 3D software.”

## PROJECT MANAGEMENT COMPETENCY

➤ Tekla Structures manages more than just the structural process; the information management interface supports project management matters as well. Integrated capabilities enable efficient throughput and fluent collaboration with other parties involved.

Zukanovic adds, “Tekla Structures enabled the smooth transfer of information between Kynningsrud Prefab and SKV. The multi-user feature was extremely relevant in the exchange of models to ensure that the structures corresponded to each other.”

Nyquist agrees, “The ability to check that elements were compatible was crucial. SKV would send one section to Kynningsrud Prefab, and they would place that onto their structure for immediate feedback of adjustments. We were able to reduce potential clashes and design-related errors, producing a complete structural solution.”

And although Steen is not a daily Tekla Structures user, he is able to navigate through the model and finds the software invaluable. “Communication is integral to the success of any project. I can present data during meetings to emphasize particular details or highlight specific problems. My colleagues using Tekla Structures every day realize the most benefits. All information is collected and any changes are reflected in the output, eliminating duplication and mistakes.”





## OUR AMBITION IS TO MULTIPLY YOUR POTENTIAL TO THINK AND ACHIEVE BIG

> With an ambition to multiply its customers' potential to think and achieve big, Tekla provides a BIM (Building Information Modeling) software environment that can be shared by contractors, structural engineers and detailers and fabricators of all materials.

Tekla software is made for creating, combining and distributing highly detailed, constructable 3D models. Information-rich models lead the way for production control and more collaborative and integrated project management and delivery. This translates into increased productivity and elimination of waste, thus making construction and buildings more sustainable.

> Tekla Corporation drives the evolution of digital information models and provides competitive advantage to the construction industry. Tekla software is used worldwide to model all types of structures.

## TEKLA AND TRIMBLE

> Tekla was established in 1966, and today it has customers in 100 countries, offices in 15 countries, and a global partner network. Since 2011, Tekla has been a part of the Trimble Group.

Trimble group's solutions tightly link office-based process and information with the field crew. Trimble Design-Build-Operate platform responds to the needs of owners and the AEC industry by increasing productivity and reducing rework.

[tekla.com](http://tekla.com)



## TEKLA BIMSIGHT

> Tekla BIMSight is a free professional tool for construction project collaboration. Anyone can combine models, check for clashes, markup and share information using the same easy-to-use 3D environment. With Tekla BIMSight project participants can identify and solve issues already in the design phase.