FABRICATION and ASSEMBLY

DELMIA Optimized the Layout and Production at Vestas Wind Systems, Denmark

DELMIA's Process Engineer and QUEST helped Vestas to structure their data and to evaluate various proposed optimization suggestions prior to a factory reorganization.

Kaj Fohns, Production Engineer at Vestas, explained: *"Understandably, we wanted to be certain that output would be optimized before we commissioned significant investment in a major reorganization of our factory. This also gave us the opportunity to evaluate DELMIA technology for use in the future. We discovered that although we thought we knew our business, things aren't always what you assume them to be! We believe we have discovered a tool which will help us test ideas and choose the best ones."*

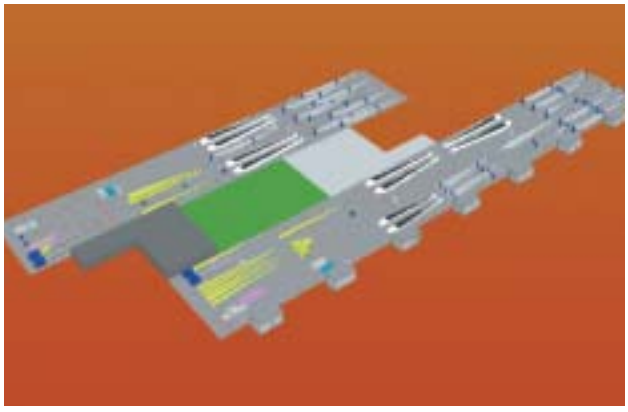
Vestas Wind Systems manufactures wind turbines for both land and offshore wind farms. Its rotor blades measure up to 80m in diameter. The Vestas blade factory in Nakskov, Denmark is attempting to keep pace with the enormous growth of the wind turbine market.

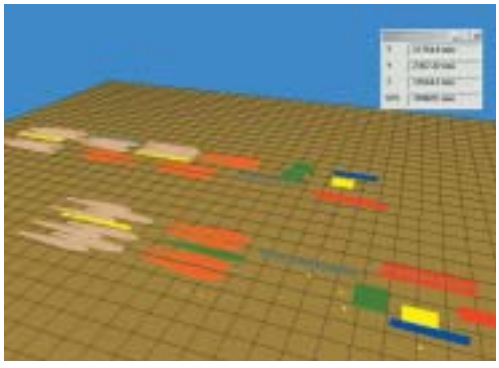
Therefore the company was considering rearranging its plant in order to increase the production capacity. Following an intensive, six-month consultation period with a team from DELMIA Sweden, this process is now nearly complete.

A team collected and structured the production data using Process Engineer while building a simulation model of potential new layouts in QUEST. The first model built was a replica of the factory floor as it then stood. After this was verified, the entire plant was virtually modeled in QUEST and a new concept layout developed. The evaluation of the new flow was built on the same base data as the first model.

Running the same simulation scenarios with the same number of resources as were marshaled at the outset, the new concept was found to give a higher output. Even with fewer workers and fewer resources, the model managed to produce more blades than the original layout. Furthermore, the DELMIA analysis gave an unexpected result concerning the use of cranes. Portal cranes inside the factory were initially considered to be a bottleneck in the internal factory logistic. However, the advanced simulation proved this was not the case.

Daniel Carlson, an Applications Engineer at DELMIA Sweden and Project Manager of the Vestas Project, commented: *"Much of our work in the beginning centered around the two parallel factories producing the same products. Vestas were surprised by the results that were achieved when the parallel factories where pushed together to form one big letter U. The new factory requires fewer staff and its equipment is better utilized."*
"In order to optimize every element of the factory's workflow, we methodically developed 60 or 70 simulations. The reasoning behind this was to avoid the cumulative effect of one change on another. We needed to isolate each one and understand how it might make a difference. Finally, we summarized our analyses, which I believe not only optimized the Vestas reorganization, but gave the management a better understanding of the way their production works."





Vestas Facts
Vestas is the world leader in wind technology and a driving force in the development of the wind power industry. Vestas's core business comprises the development, manufacture, sale, marketing and maintenance of wind power systems that use wind energy to generate electricity. Vestas began wind turbine manufacturing in 1979, and has played a major role in the dynamic wind power industry ever since.

Information about VESTAS at www.vestas.dk

Visuals: Courtesy of Vestas Wind Systems A/S