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**Fred Baas, Team Leader,
New Product Development RESQTEC**

Saving lives and salvaging aircraft

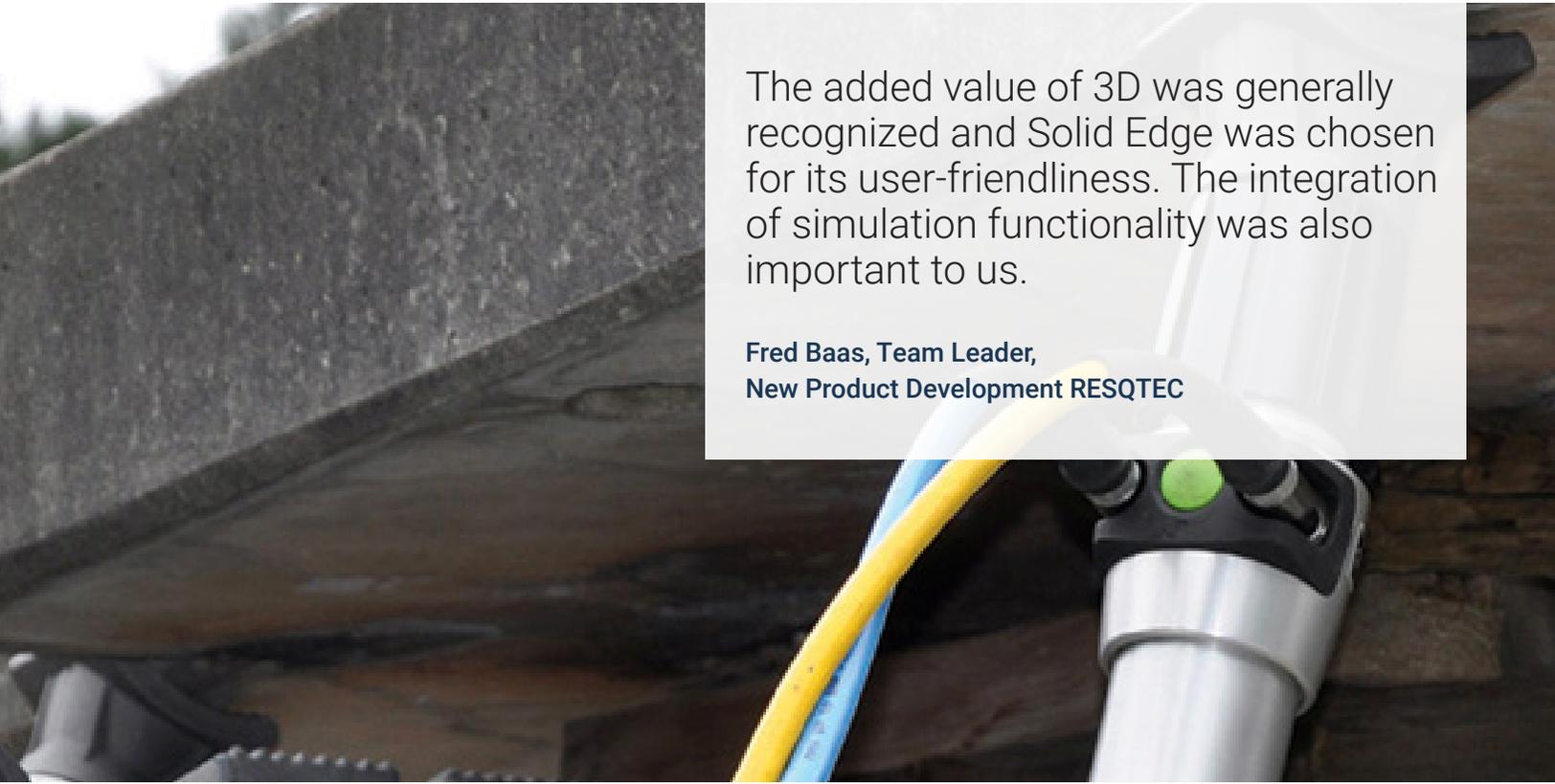
Since its founding four decades ago, RESQTEC Zumro has transformed itself from an importer of rescue equipment to a manufacturer that produces a full rescue and salvage portfolio. In the past, RESQTEC's customers would often ask for imported equipment to be modified, but the original suppliers weren't able to comply with these requests. So, RESQTEC began making its own modifications, and launched the resulting products under the "Zumro" brand.

Rescue equipment is mainly used by fire departments around the world for stabilizing, levering, raising and opening damaged automobiles or damaged buildings to enable rescuers to extract people from the wreckage. Salvage equipment is generally used to prepare older aircraft for transportation.

The main differences between these two markets are size and urgency. The rescue market focuses on saving lives. Time is of the essence and rescue professionals must be able to exert controlled force to extract victims without incurring additional risk. In salvaging aircraft, the main concern is that no damage is done.

“Rescue and salvage equipment must be capable of providing solutions for every situation that may arise,” says Fred Baas, team leader, new product development at RESQTEC. “That means RESQTEC must offer a fully integrated portfolio. Because space in rescue vehicles is limited, our products must be as efficient as possible, built around fully compatible and modular systems. Furthermore, our products must be easy to locate and use.”

As a result, RESQTEC pays a great deal of attention to design. Since 2003, the company has had a close collaborative relationship with the Van Berlo design studio to harmonize and modernize product design. This relationship is still integral to virtually every new RESQTEC product, and the collaboration has resulted in several design awards.



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Increasingly demanding rescue applications

RESQTEC equipment must be sufficiently strong to deal with ever-greater demands. “Cars, for example, have to live up to increasingly high safety standards,” says Baas. “Developing more powerful devices has become a kind of ‘arms race.’ The growing number of armored vehicles also poses a significant challenge, because our equipment must also be able to work without fail even when we’re dealing with heavily reinforced vehicles.”

RESQTEC is also focused on providing a safe environment for rescue workers. One example is a special pneumatic strut that stabilizes objects being lifted. “Quality demands are high,” says Baas. “We need to avoid surprises in the advanced design stages. By making the best possible use of material properties during the development phase, we can be sure the products will not only perform, but also remain operational for years.”



New products are specified according to market requirements, so ample resources are dedicated to market research. These new product specifications are discussed in great detail. Careful analysis uncovers the potential need for additions to the portfolio. At the earliest stage of a project, Van Berlo is already actively involved in planning and development. As soon as the starting points have been laid out in a project definition, the first concepts are developed. Realistic representation is important to gauge functionality and the application of the house style.

Added value of 3D

Since 2002, RESQTEC has been using Solid Edge® software, a comprehensive hybrid 2D/3D computer-aided design (CAD) system, for product development. Solid Edge is from product lifecycle management (PLM) specialist Siemens PLM Software and it replaces RESQTEC's 2D-based CAD system. "This substitution was an almost self-evident step in the development of our company," says Baas. "The added value of 3D was generally recognized and Solid Edge was chosen for its user-friendliness. The integration of simulation functionality was also important to us."

The company uses Solid Edge in the development of all concepts, which are evaluated on the basis of functionality and design. Following design approval, physical prototypes are created to develop each detail. "This is a hands-on process, which can't be performed using a computer," says Baas. "Working with a prototype in real-life situations allows us to take deployability to the high levels required." In a process which focuses on prototypes and design adjustments, all concept details are further developed. Van Berlo also takes part in this phase, using Solid Edge visualization capabilities to help communicate.

Baas notes, "Solid Edge provides us with ample functionality for our design requirements. The quality of our designs is high, thanks in part to the integrated simulation functionality. Simulation is used intensively for all critical portions of the design in which strength is essential. It is vital that these simulations can be carried out in-house. Fully understanding our own products is so important to us that we have built up the know-how we need to carry out the necessary calculations ourselves. Integration of CAD and simulation allows us to realize ongoing improvements/innovation in an iterative process."

RESQTEC employs the services of Siemens Digital Industries Software's partner/ reseller Enginia for training. Great care is taken to make Solid Edge users fully aware of all the available functions. "Thanks to this training, we can use the functionality efficiently," says Baas.

As soon as a design is agreed upon, industrialization begins and a "zero-series" is built in the production environment. RESQTEC fully outsources serial production to selected partners. This places extra demands on the quality of documentation. As soon as the industrialization phase has been completed, blueprints and assembly manuals are drawn up, along with a bill of materials (BOM).

"Solid Edge has become an indispensable tool in the entire development process," says Baas. "For us, it fulfills the most important role in product development. Plus, its role in helping us communicate with our suppliers can't be underestimated. The software offers more options than we could possibly use and does so in an extremely user-friendly way. This allows us to stay focused on our main task of developing high-grade rescue and salvage equipment."

