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Selwood Pumps Ltd

https://www.selwood.co.uk/

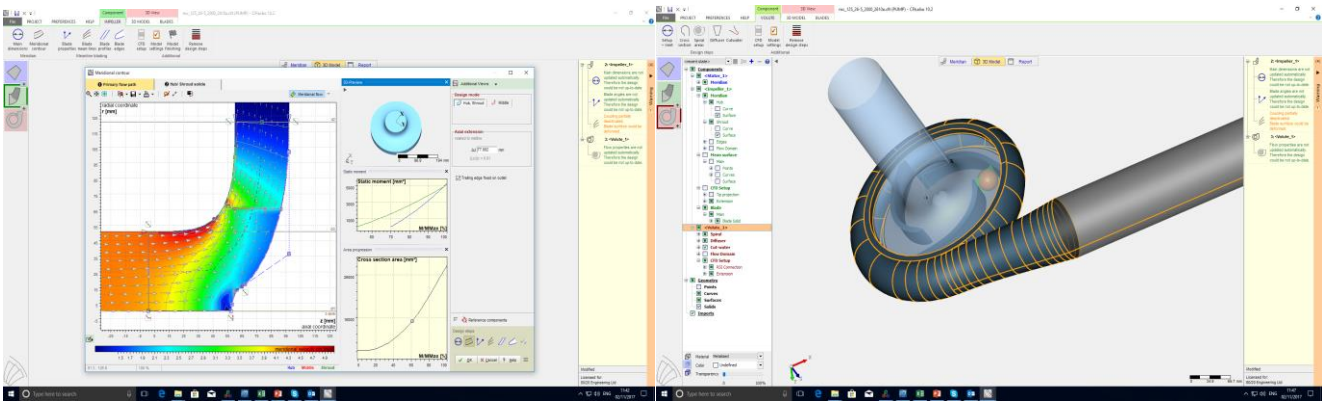
Product Excellence, Passionate about Service, Proud to deliver - Leaders in Pump Manufacture.

International Pump Sales: Selwood manufactured pumps set the benchmark in the water, environmental and construction industries.

With a team of leading UK specialists and strategic partners across the world, Selwood have unrivalled expertise and an unparalleled commitment to quality. It is this combination which has ensured their position as leaders in the development and manufacture of outstanding pumps.

Selwood Pumps - Case Study Work

Selwood Pumps asked 80/20 Engineering to help design a new centrifugal pump using the CFturbo and Simerics-MP software packages. The main aim of this work was to produce a new design of impeller and volute which would operate at a 'Best Efficiency Point' of flow throughput at a specified pressure head of water...



3D model created using CFturbo based on specified performance objectives

A secondary aim was to allow Selwood Pumps to assess the usefulness of the CFturbo and Simerics-MP software packages.

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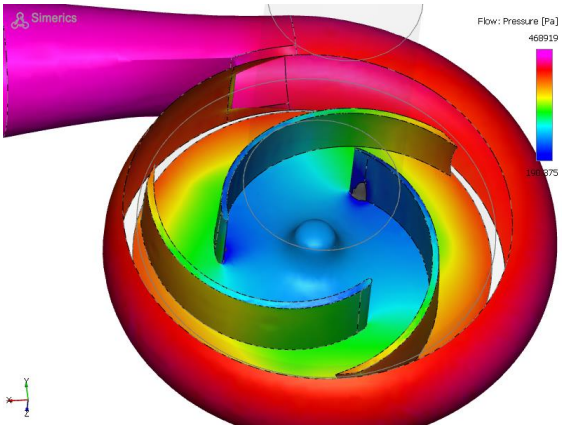
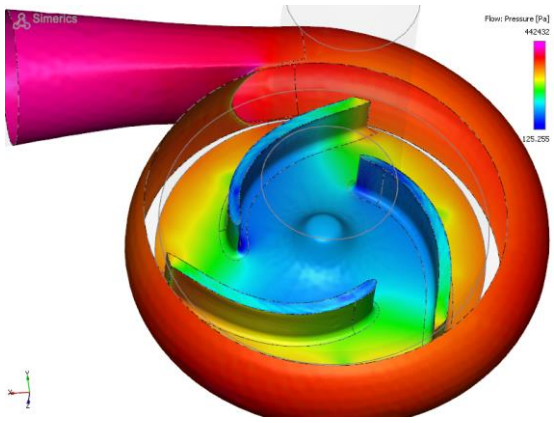
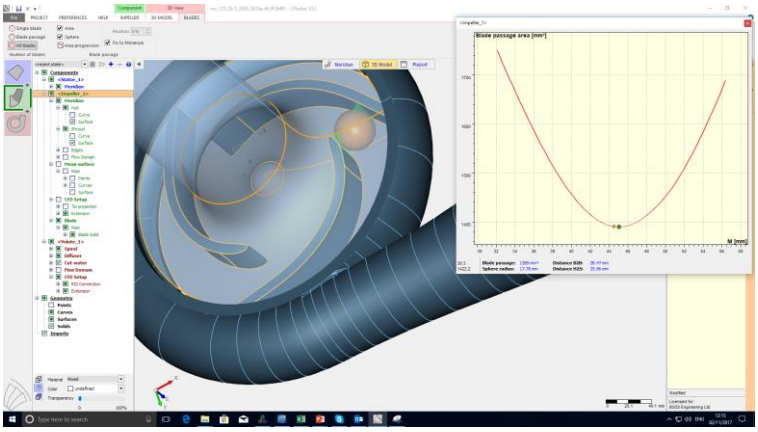




CFD results (Pressure patterns) - Initial Design Concept *Example design iteration virtually tested - Simerics-MP*

Based on the CFD results predicted by Simerics-MP, over twenty-five geometrical modifications were made to the initial design concept each one being 'virtually' tested all within a few weeks of elapsed time. This enabled the performance goals to be achieved whilst keeping the desired clearance between the impeller blades and avoid detrimental effects such as cavitation occurring.



CFD techniques helped the design engineer to understand why the pump has certain behavioural characteristics in that the fluid flow paths were easily visualized and recirculation or restrictions better understood. In addition, the hydraulic forces acting in the radial and axial directions were extracted for the mechanical bearings selection. Further simulations were also run to establish the Net Positive Suction Head (NPSH) performance characteristic so as to meet the design specification.

Using CFD simulation for flow performance prediction can dramatically reduce the number of physical prototypes and amount of test work required. This will then reduce product development lead times, the cost to the client and enhance the quality of the product delivered.

8020 Engineering *is a specialist Fluid Flow Simulation and Thermal Analysis Consultancy Company. We have a long track record of helping companies implement 'Design Friendly' or 'UpFront CFD' user environments that we believe will play an ever-increasing role within the product development process. However, often the client project demands are such that there is an urgent need for a design to be improved or a problem resolved. In these situations, we have a team of experienced simulation engineers to call upon.*

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