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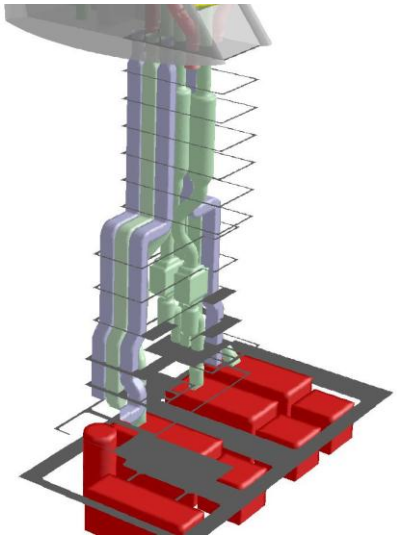
# Keeping the engine room of a cruise ship cool

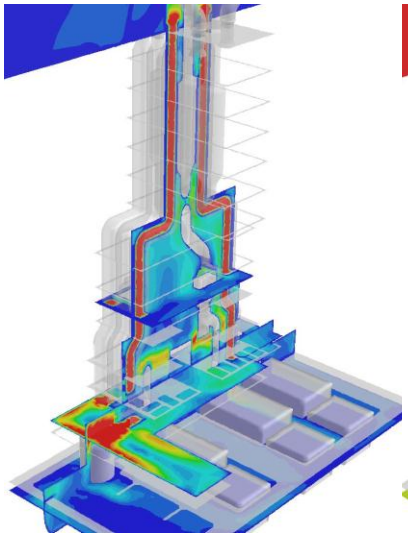
Since six generations Meyer Werft in Papenburg (Germany) is owned by the Meyer family. Especially in building luxury cruise liners Meyer Werft has gained worldwide reputation. Meyer Werft builds vessels in all size classes.

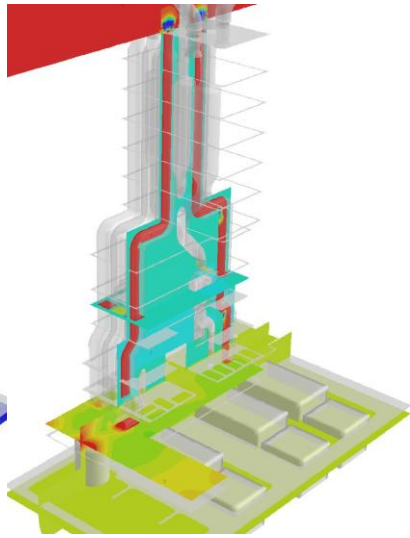
To guarantee maximum comfort and safety to the passengers of a cruise liner, not only the sections of the ship, which are visible to the passengers, but also the technical components and machinery must be designed on highest engineering level.

One of the most important section of the ship is the engine room. To remove the enormous amount of thermal energy generated by the engines, heaters, water treatment apparatus et cetera, many fans, pumps and huge air ducts are applied for ventilation purposes. This ventilation system must not just provide a sufficient cooling, but also has to generate a slight low pressure to prevent a release of smelly air from the engine room.



The design of the ventilation system becomes even more complex, not only due to the tasked mentioned above, but also due to the very limited space for technical components in a modern cruise liner. The maximization of space for payload has always the highest priority. For the latest cruise liner the performance of a new ventilation concept should be determined in a very early design stage. Therefore FlowMotion has been asked to simulate the working of the entire ventilation system for the engine room.





To do so, a 3D model of all fans, air ducts and machines, which release heat starting from the chimney to the engine room has been designed. With the help of the results of the flow-simulations, also called CFD (Computational Fluid Dynamics) calculations, the pressure, velocity and temperature distribution in the air ducts and all rooms could be analysed.

The simulations showed, that the ventilation system works as the engineers of Meyer Werft had planned and the comfort and safety for the passengers can be guaranteed.

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