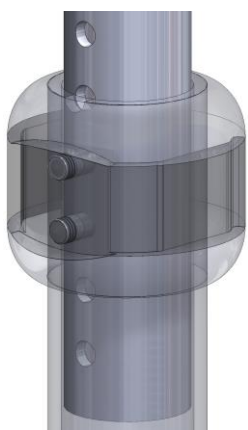
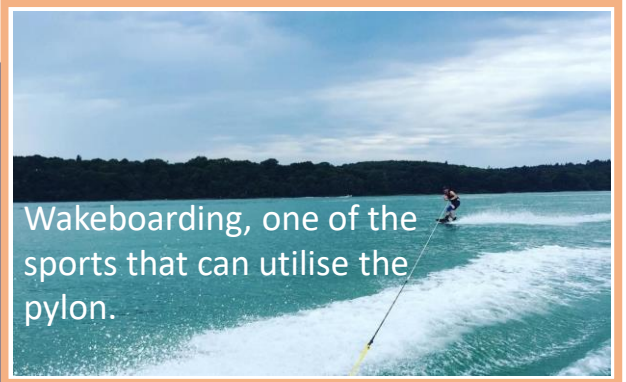


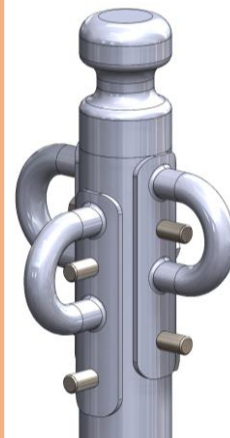
Design and Development of an Innovative and Removable Variable Height Water Sports Pylon.

Background:

A watersports pylon is a method of towing a participant behind a vessel as they partake in certain sports such as wakeboarding or water-skiing. Research has identified a hole in the watersports equipment market for a watersports pylon that is both removable and variable.



Locking Pin mechanism to fix the pylon at the desired height depending on the requirements.



D-rings secured to the top of the pylon connect to support stays to transfer the pulling forces generated in towing, into the hull of the vessel.

Results:

The image central to this post is a rendering of the final pylon design. To achieve this The following milestones were met:

- Design chosen using an analytical hierarchy matrix
- Designed to function in up to force 6 winds, for users of all abilities, without risk of failure.
- Made from **316LN Stainless steel** (main body)
- Optimised to a factor of safety of 3
- Height can be varied by 42.5cm, suitable for wakeboarding, waterskiing etc.
- Pylon can be disassembled into 3 separate parts for easy stowage.

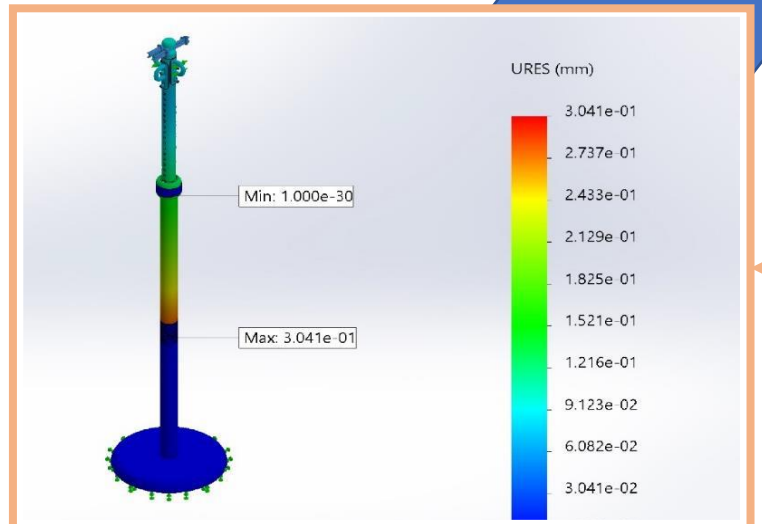
Progression:

The pylon has been designed right up to the point of prototyping, and it was the intention of the project to do so. However due to COVID restrictions this was unable to be completed. To continue this project, the pylon shall be assembled and then tested in operation to truly determine the successfulness of the design.

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Specialist Considerations:

When in operation, the pylon needs to be able to withstand the forces applied and the environment it operates in. Specialist calculations and FEA simulations were completed to prevent failure.



Screw fit connection between the middle and bottom section of pylon.

