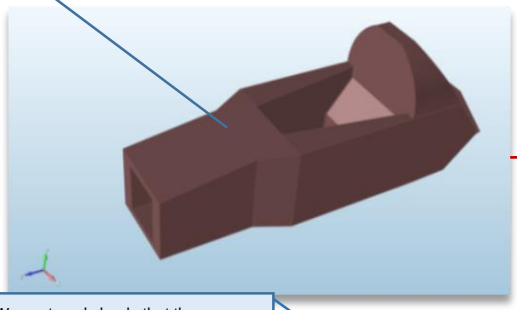
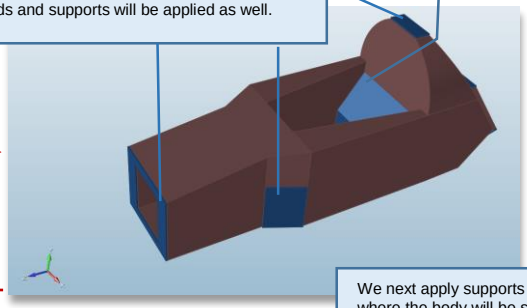
Altair | University

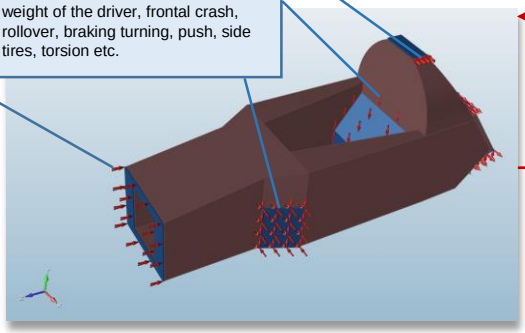
Start with the design space, the maximum possible space we can give for the chassis, so that solidThinking Inspire has the maximum freedom to work with



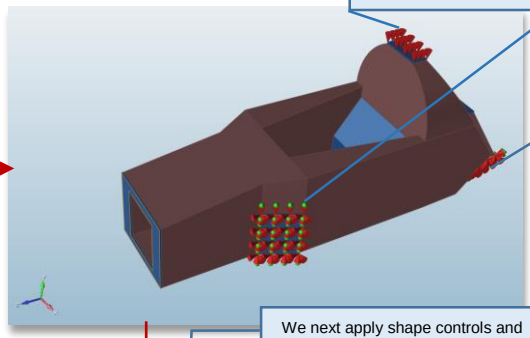
Then create non design spaces, areas that we cannot modify, these are the points where loads and supports will be applied as well.



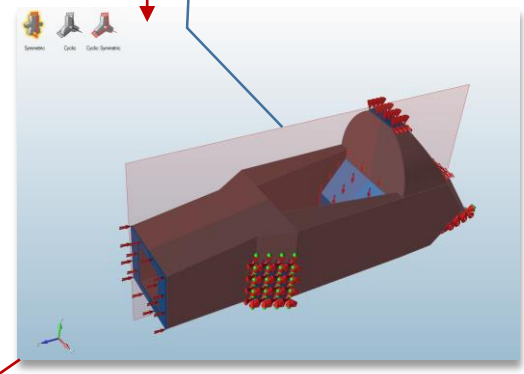
We next apply loads that the chassis will have to endure, the weight of the driver, frontal crash, rollover, braking turning, push, side tires, torsion etc.



We next apply supports and constraints where the body will be supported / fixed.

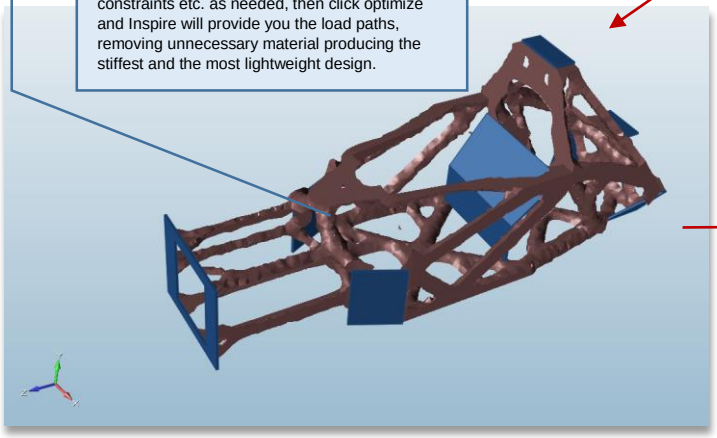


We next apply shape controls and manufacturing constraints, here we see the symmetry constraint applied so that the body will be symmetric along the YZ plane.



The workflow of arriving at the best design for your formula race car using soldThinking Inspire in minutes.

Input the mass or volume you want removed, specify if you want to maximize stiffness as the objective, provide member size, frequency constraints etc. as needed, then click optimize and Inspire will provide you the load paths, removing unnecessary material producing the stiffest and the most lightweight design.



Click Analyze to validate the design concept using FEA and verify if this new design will endure the loads.