



A Plug-in for
Rhino[®]



Orca3D

Hull Design and Fairing

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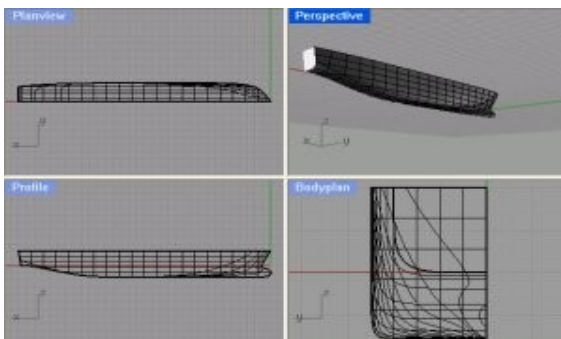
The design of a vessel in Orca3D begins with the hull model. Hull design is a unique combination of artistic expression and engineering analysis, combining to form a creative process to meet the aesthetic and performance requirements of the vessel.

The software that you use to transform the hull from an idea to a 3D computer model should enrich the creative process, with guidance provided by precise and detailed analyses. With Orca3D, you have complete freedom to create any type of hull, beginning with a concept and carrying through to final fairing, while ensuring that the hull meets your target hydrostatic properties.

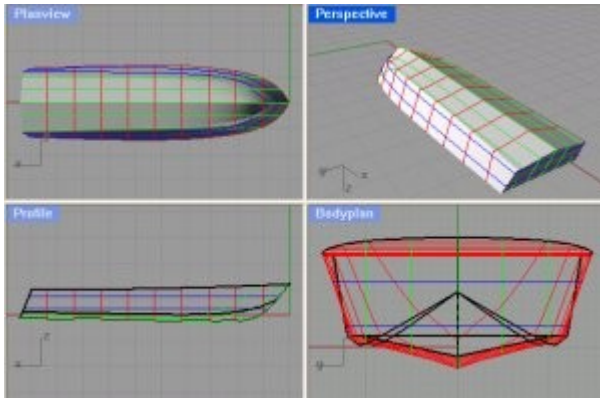
In Orca3D, the hull is created as a NURBS surface. While Rhino provides many important surface creation and editing tools, Orca3D adds capabilities that are specific to hull design, such as:

- Hull Assistants, for instantly creating hulls according to a range of input dimensional and shape parameters
- Easy definition of the sections to be displayed on your hull surface; stations, buttocks, waterlines, and other planar curves. The user may specify the color of these sections, together with the layers upon which they should be placed.
- Real-time update of the sections as the hull surface is modified
- Real-time update of the hydrostatics as the hull surface is modified
- Control over the shape of the forefoot of the hull, ensuring a curvature-continuous transition from the stem to the bottom
- Easy positioning of the surface's control vertices, either interactively, or via Orca3D's vertex control dialog

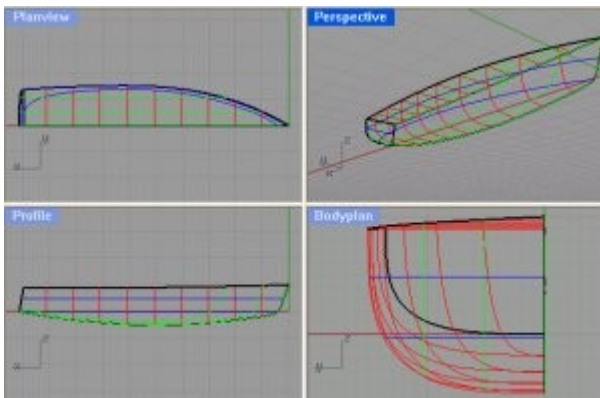
Any type of hull and hull feature may be modeled. Hulls may be created as a single surface, or when appropriate, multiple surfaces. Tools like blending, trimming, and filleting provide tremendous capability and flexibility.



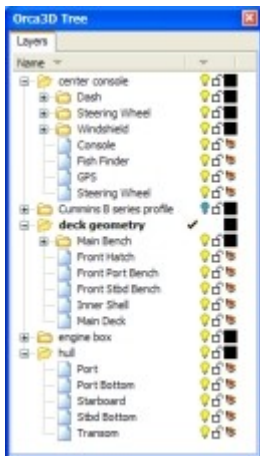
An example of a large commercial ship. This model consists of three surfaces; the hull, the deck, and the transom. Note the integrated bulbous bow, perfectly faired into the main hull, since it is all part of the same surface.



Chine hulls are easily modeled and analyzed, with as many chines, knuckles, or style lines as desired.



This sailboat model shows the importance of a smooth transition from the stem to the bottom; not just slope continuity, but also curvature continuity. Orca3D makes it simple to ensure this higher degree of fairness.



In addition to hull fairing tools, Orca3D provides a new tree control to help you to organize your model. It's another view into your layers, but with the addition of individual objects. This makes it easy to name objects, select them, change their properties, and drag them from one layer to another.

Another nice feature of the tree is the ability to quickly focus in on part of the model; simply right-click on a layer, sublayer, or object, and select "Set View Part." The rest of the model will then become hidden.