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It began as a challenge to students at the Art Center College of Design, a perennial hotbed of transportation design that has produced many of the world's top automotive designers. The task? Take a BMW 1 Series 5–door SUV, a model not marketed in the states, and "reinvent" it by completely redesigning the exterior and interior, while maintaining the underlying structural characteristics.



Precision Board Plus blocks mounted to steel substructure prior to the start of machining

Art Center student Alex Alexiev was selected to lead the exterior design group for the project named Deep Orange, a collaborative effort with Clemson University's International Center for Automotive Research. The students from Clemson retrofitted an existing BMW with a state-of-the-art extended range 125 kW electric motor that can be fueled either by charging its stable of lithium polymer batteries from a 110v AC source, or by firing up the highly efficient, on-board 800 cc motorcycle engine.



Taking shape. Machining begins with the help of ADM Works in Santa Ana. Primed and ready for paint

After the design sketches were approved and a 1/5 scale clay model was sculpted to define hard-points, Alex and his colleagues focused their efforts on a full scale model that became the centerpiece of the Art Center's contribution to the collaboration. Blocks and sheets of Precision Board Plus, the substrate for the full scale model, were donated by Coastal Enterprises. Among the design group's primary goals was the desire to create a 3-door look on a 5-door vehicle. From initial sketch to finished model was a blistering 14 weeks! And the finished product! The vehicle on the left is the "mule" fitted with the Clemson power plant. The vehicle on the right is the Art Center's full scale redesign

... and yes that's Precision Board Plus under that shiny skin.

Check out Alex's blog for more images of the design and building process. For more on the hybrid power plant designed and installed by the Clemson students, see the article in the Clemson University Newsroom.





The Completed Full Size Model

Did You Know?

All Precision Board Plus densities possess excellent dimensional stability. The CTE for PBHT-20, the material used on the project above, is a very low 27x10-6 F, making Precision Board Plus an excellent choice as a tooling substrate when tight tolerances are required. For CTE specifications on other Precision Board Plus densities, see our product data sheets.

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