

BUS DESIGNS FOR DESIGNLINE

BACKGROUND:

Bus manufacturing company DesignLine has enjoyed huge growth in the last few years, both locally and overseas. Increasing demand from North America led to the opening of a new factory in North Carolina, and in 2009 will be moving to a larger factory closer to Christchurch.

Originating in Ashburton, DesignLine's innovative hybrid bus designs have been successful in Australasia for many years. The recent success here and in the United States has required several new bus designs in very tight time-frames and has resulted in more work than their design team could comfortably manage.

Ross Falconer, Engineering Manager at DesignLine's Ashburton Factory said "We simply didn't have the resources to cope with all these new designs being requested and keep up with the day to day work for expansion. Plus it was difficult and time consuming to find skilled people in the industry."

SOLUTION:

Their solution was to partner with Motovated Design & Analysis, who were able to provide skilled staff and advanced computer aided design tools to give DesignLine the immediate and on-going support they need.

Motovated's work started with using their CAD expertise to generate photorealistic rendered images of a DesignLine bus (figure 1). These images were then used in DesignLine's international sales and marketing efforts, leading to several enquiries from various city authorities across the United States. Typically, each city has their own requirements, and so bus sizes, number of passengers, axles, suspension, air-conditioning capacities, etc, all have to be modified for each customer.

Motovated were able to reverse engineer existing buses, using legacy 2D CAD data to generate complete 3D models of entire buses. These 3D models could then be more quickly adapted to create multiple configurations based on the customers' needs.

RESULT:

The synergy between Motovated's design and CAD skills, and DesignLine's expertise in bus development has produced outstanding results. A complete model of a bus structure and a full set of detailed production drawings can now be produced within 1 month following the release of a detailed specification.

In early 2008 DesignLine starting manufacturing buses in North Carolina and are now working with many new suppliers. This creates added communication challenges. The ability to quickly generate clear drawings and e-mail interactive 3D models around the world means that design issues can be speedily resolved, reducing development time. Motovated also installed a system which allows the latest drawings and models to be accessed from any location worldwide.

Ross said "Partnering with Motovated was definitely the right move. Their skill level is impressive, and they pump out quality work at a phenomenal rate. Finding such a service right on our doorstep has been invaluable in supporting our recent growth."



Figure 1: Fully rendered image of a DesignLine bus

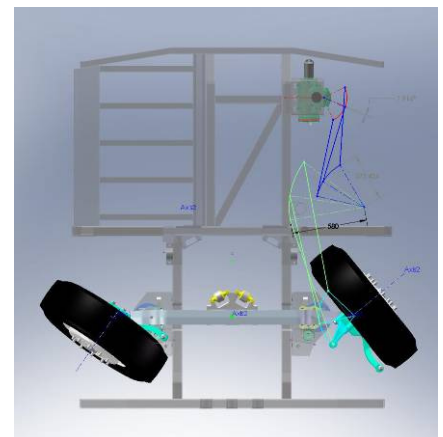


Figure 2: Steering system design

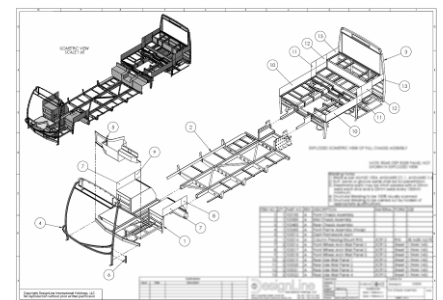


Figure 3: Chassis drawing

"Motovated's expertise meant that they were able to hit the ground running to quickly get our designs up to date, allowing us to meet our customers' tight deadlines."

Ross Falconer, Engineering Manager
DesignLine Ashburton

Taking the stress out of engineering your vision!