



Realistic rail model demonstrates Ogle's quality standards

Case Study

Ogle Models was recently involved in the materialisation of a scale model of a new Metro carriage concept. Working with the designers at ADPL and Siemens to meet a tight deadline, this impressive model was delivered on time with quality supplied as standard.

“Despite the challenging delivery schedule involved, this model was delivered on time and on budget! Both Siemens and ADPL were impressed and delighted with the model and we look forward to our next collaboration with Ogle”.

ogle
models+prototypes

www.oglemodels.com
info@oglemodels.com
+44 (0)1462 682 661

As a major manufacturer of rail vehicles, Siemens Rail Systems exhibited at MetroRail 2012, which took place in London at the end of March. MetroRail - a prestigious event - brings together directors of the world's major transport authorities, together with metro operators and leading government officials to discuss and source the latest developments within the sector. One of Siemens' impressive new concepts for Metro travel is the next generation of deep tube trains.

To help visually emphasise the leading-edge design, Siemens commissioned Atlantic Design Projects Ltd (ADPL) - a long standing and trusted partner - to collaborate on a project to develop an accurate, superior-quality, scale model for display at MetroRail. ADPL is an industrial design and engineering consultancy specialising in railway rolling stock and works with clients on a range of projects, whether the requirement is to design a completely new train or a single component. As a major manufacturer of rail vehicles, Siemens Rail Systems exhibited at MetroRail 2012, which took place in London at the end of March. MetroRail - a prestigious event - brings together directors of the world's major transport authorities, together with metro operators and leading government officials to discuss and source the latest developments within the sector.

One of Siemens' impressive new concepts for Metro travel is the next generation of deep tube trains. To help visually emphasise the leading-edge design, Siemens commissioned Atlantic Design Projects Ltd (ADPL) - a long standing and trusted partner - to collaborate on a project to develop an accurate, superior-quality, scale model for display at MetroRail. ADPL is an industrial design and engineering consultancy specialising in railway rolling stock and works with clients on a range of projects, whether the requirement is to design a completely new train or a single component.



For every project, the objective remains the same: to swiftly define the optimum design solution and ensure that it is faithfully delivered utilising the company's creativity to ensure the designs are attractive, comfortable, durable and cost-effective.

This latest project is specifically focused on providing a new iconic aesthetic that will supply a real identity to the rolling stock, according to Charles Greenway, Co-Director at ADPL. Working very closely with Siemens' engineers, ADPL developed the fullscale 3D engineering models of the new train in Pro-Engineer software and approached Ogle with a brief to produce a 1:20 physical scale model.

This would visually display precise details of the exterior and the interior of the carriages. The full brief was to include a model of the entire leading carriage (approx. 675mm long) and a short section of a second vehicle (approx. 175mm long), together with a gangway.

The finished model was to have illuminated headlamps; open doors on one side; and crystal clear window and door glazing. In addition, the interior view of the model was to provide an exact replica of passenger seating, grab rails, destination displays and draught-screens as well as a simplified ceiling with passenger lighting and door-step lighting that was to be battery powered. The model was then to be liveried for additional realistic appearance.

Charles Greenway commented, "We supplied all of our full-scale 3D CAD designs to the Ogle team, who then set about reducing the data to a 1:20 scale in a way that would allow all of the key features to be correctly represented."

Because the accuracy of the model was so fine, Ogle determined that the model would be constructed primarily using the Stereolithography (SLA) 3D printing process. Utilising photopolymer materials in resin format, the SLA process builds the parts layer by layer direct from the scaled down 3D CAD data that Ogle had manipulated.

The key advantages SLA brought to this project were precision accuracy with a superior surface finish of the model. Ogle's expertise with the SLA process ensure the team is able to achieve accuracy levels of ± 0.1 mm per 100 mm, which contributed significantly to the successful outcome of this model. Furthermore, as SLA is an additive process, it is easily able to handle the fine, complex details that this model demanded within the build.

According to Charles Greenway, "One of the most challenging issues for the production of this model was the interior and exterior lighting, which, critically, had to be accurately represented. This set quite a challenge for Ogle, but their expertise shone through because they quickly and successfully resolved this - even within the minimal space envelopes available."

He continued, "The working relationship we at ADPL have established with Ogle is excellent and I have to say that great communication was the key element to this. We experienced no major issues during the whole process, but when some direction was required because the scale of some detail elements became too small for realistic creation, they came to us straight away and, once again, it was quickly resolved without delay."

FOR MORE INFORMATION PLEASE CONTACT:

Ogle Models + Prototypes +44 (0)1462 682 661
or visit our website www.oglemodels.com

