

## Industrial design

# Steinhobel Design

Chairs, shopping carts, wheelbarrows and vuvuzelas: integrating fine art and high performance in everyday objects

### Product

NX

### Business challenges

Marry art with engineering  
Rethink form factors; engage the impossible  
Consistently deliver market-winning designs

### Keys to success

Employ state-of-the-art software, including integrated CAD/CAM/CAE  
Maximize use of synchronous technology  
Deliver compelling concepts that can be readily manufactured and tooled

### Results

Reinvention of products across industries, making them stronger, lighter, more comfortable and aesthetically unique  
Extreme designs, including Xes chair, Zazu Vuvuzela horn and Lasher wheelbarrow  
Immediately manufacturable/ toolable designs  
Competitive advantage to customers



## Using NX helps Steinhobel Design develop stunning, award-winning new products

### Changing the paradigm of design

"We thrive on achieving the nearly impossible," says Brian Steinhobel, owner of Steinhobel Design (pty) Limited, an industrial design consultancy based in South Africa. "We have a niche for solving problems, raising the bar and changing the paradigm of design.

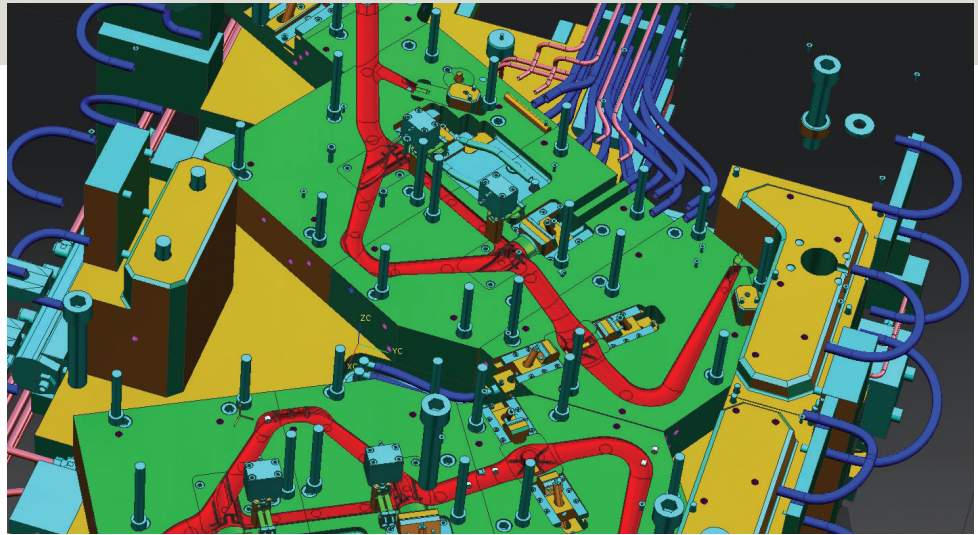
"We've reinvented shopping carts and we've reinvented exercise machines and that is the bottom line of what good

software allows you to do. We are business-driven, so we use NX. It is the only comprehensive software for the entire process of industrial design from beginning to end."

NX™ software, from product lifecycle management (PLM) specialist Siemens PLM Software, provides fully integrated computer-aided design, manufacturing and engineering (CAD/CAM/CAE), which Steinhobel Design uses extensively to help bring its ideas to life. "NX allows us to express ourselves artistically when we design products," says Martin Pursehouse, a designer at Steinhobel. "A lot of feeling

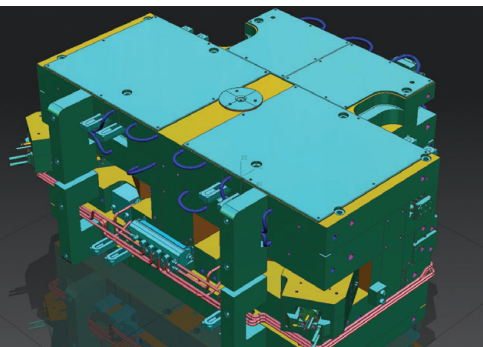
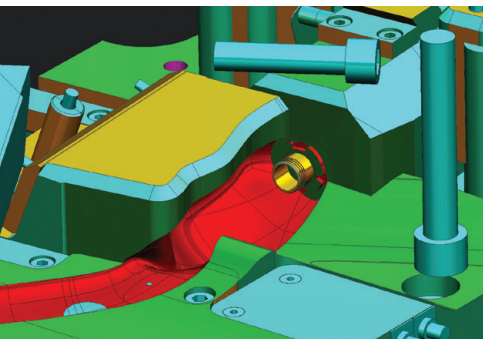
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that you get from the sketching – not just in a 2D environment, but in a 3D environment – is very powerful for quickly deriving a shape and in running surfaces on those curves to see a 3D model, and then using face analysis to make sure those surfaces are Class A."

#### **The power of synchronous technology**

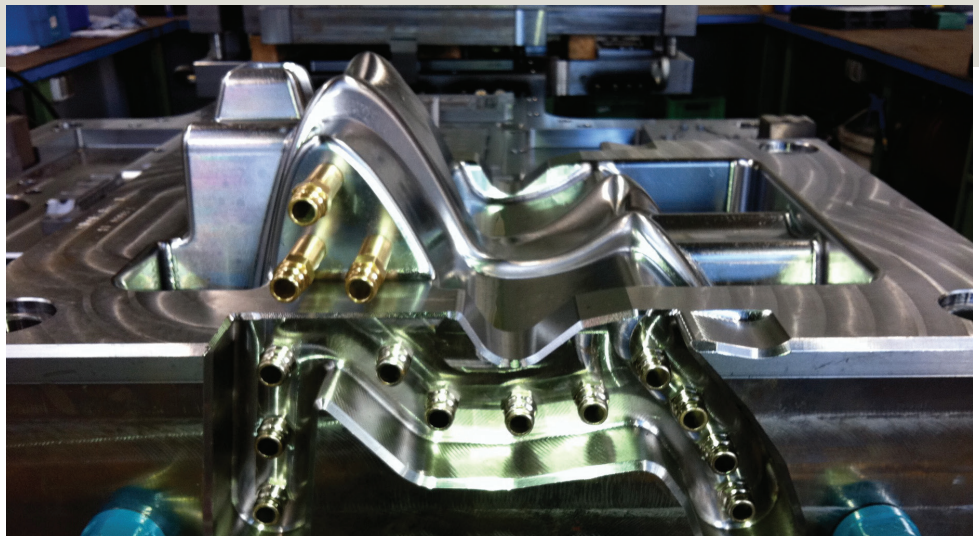
The designers at Steinhobel have been using CAD/CAM systems since the mid-1990s, but they don't miss having to deal with the baggage of design history. "The synchronous technology of NX opens up 3D modeling so much," says Pursehouse. "We were very structured in the old days, using software where you had to basically run a history on your part over and over again. With synchronous technology, NX allows you to do anything to the model. I've been using NX now for over 15 years, and it has instilled a lot of confidence in me and in my approach to design."

Steinhobel notes, "One of the great advantages of using NX is that it allows us to be so vivid, and move through iterations so quickly, which dispels arguments and subjects of debate. We don't even have to show our clients sketches anymore. We go straight to models. We show them what we call the 'first pull' and the pull gives you such confidence that often you hardly change it from the first pull."

#### **CAD tooling and manufacturing**

Good industrial design is about much more than visual appeal. Well-designed products need to be readily manufacturable and most especially "toolable." Practical tooling design is essential.

"CAD is really an interface that bridges design ideas with physical reality, and that's where we find NX becomes so easy-to-use," says Steinhobel. "Outputting the files into rapid prototypes and further



refining them on into machining, our objective is to get a product in your hand."

"From a product viability approach, NX allows us to make sure before we send it to tooling that it's toolable," says Pursehouse. "We can check all of the draft angles and make sure there are no undercuts, and if there are undercuts we put in enough space to run slides. I find that a lot of the toolmakers are quite happy with the files that they get from NX and if they need a change, we can quite easily do it on the NX side and just resend them the files. It gives us a few less gray hairs than we used to get in the old days when we sent off design drawings to a toolmaker. With NX, we know we are sending a good-quality product to the toolmaker and that it's going to be toolable."

Steinhobel adds, "It is almost like investing in an insurance policy to have decent CAD like NX because, without it, you are open to a lot of potential disasters in the very expensive phase of tooling."

### Solving design challenges

Steinhobel Design is well-known internationally, having solved numerous design challenges for clients in a broad variety of industries, often incorporating different materials and technologies.

For example, the company designed more than 100 kitchen and bathroom water taps for Cobra Watertech. "We had the original design from Cobra, and we basically took their shapes and worked around them so that we kept the volumes and the whole working mechanism exactly the same as may be required in the manufacturing process," says Pursehouse. "NX allowed us to do some really fancy shapes on those taps."

For the Lasher company, Steinhobel Design rethought the wheelbarrow, making it easier to use. "There were critics who used to say that CAD or computers would take the art out of design and it's done just the opposite," says Steinhobel. "With the capabilities that we have with the NX package, we can achieve the extreme forms that would be absolutely unthinkable in previous years."

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Martin Pursehouse  
Designer  
Steinhobel Design



# “We are business-driven, so we use NX.”

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“The handgrip on the Lasher wheelbarrow chassis is a perfect example of how NX can actually achieve these shapes that we want to achieve to help with safety and comfort issues, while bearing in mind that the wheelbarrow for some people is their daily tool for most of their working lives. So if we can make the wheelbarrow lighter, stronger, more comfortable through the design process, that’s fantastic.”

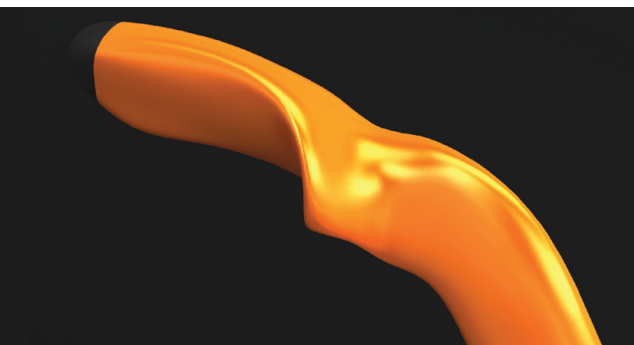
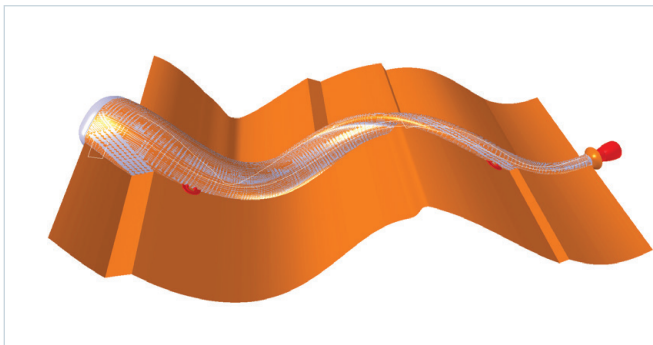
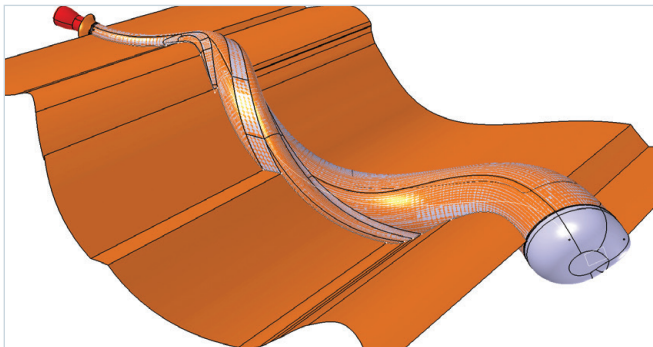
And then there is the ZaZu Vuvuzela horn, which reshaped a traditional noise maker to evoke African wildlife. “With a major football match that was held in South Africa a few years ago, we were involved in a number of products, one of them being the Zazu Vuvuzela,” says Steinhobel. “This had a very short lead time. With NX, we executed the parting lines for the tool and completed development of the whole product in a ridiculously short period of time.”

## Design is an intellectual process

Art galleries across Europe have displayed Steinhobel Design’s radical new Xes chair, made from carbon fiber. “This is an example of NX at its best,” says Steinhobel. “I would say with one CAD pull and one little prototype, we achieved the extreme result of having the perfect product in our eyes, and it’s really cool to be squeezing the maximum potential out of the product. It is very important that we are able to improve on a design once it is there; we got to maximum potential (on the Xes) in a matter of days rather than weeks and months.”

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## Solutions/Services

NX  
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## Customer's primary business

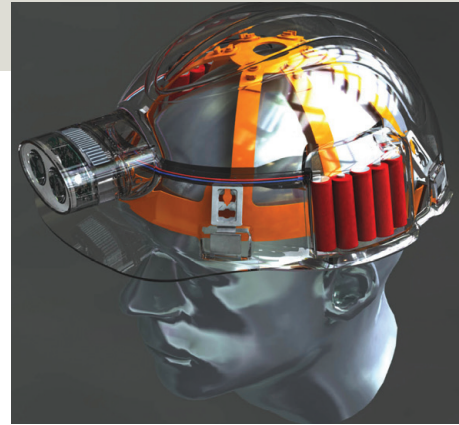
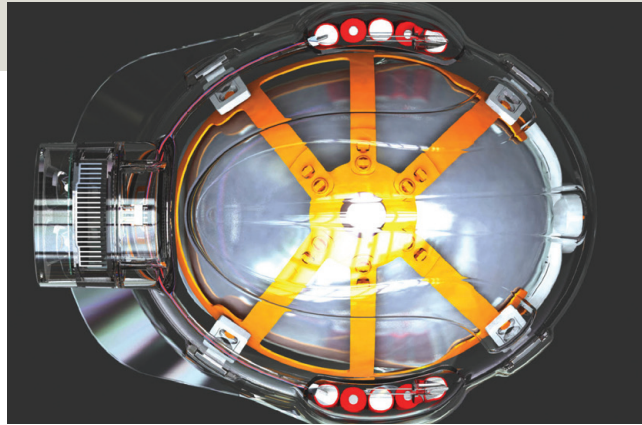
Steinhobel Design is an industrial design and product development consultancy, serving diverse industries including electronics, packaging, appliances/white goods, mining, medical, furniture, pharmaceutical, automotive, sports equipment, information technology products and many others.  
[www.steinhobel.co.za](http://www.steinhobel.co.za)

## Customer location

Johannesburg  
South Africa

## Partner

ESTEIQ  
[www.esteiq.co.za](http://www.esteiq.co.za)



"Design is actually an intellectual process initially," explains Steinhobel. "You have to think about something and visualize it, just like racecar drivers visualize the track before they do a lap. They have a very capable vehicle for getting around in that visualization. We have the vehicle of NX, where we can jump into the car, complete the race and win every time.

Steinhobel concludes, "The ongoing refinements and improvements that you get coming out of NX on a yearly basis resurface the crest of that technology, and we capitalize on it by incorporating new functionality into our latest designs. Therefore we have a magnificent progressive approach to the design, and we actually give a competitive advantage to all our clients on a consistent basis."

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