Calling All Cars

Top 10 reasons to design your winning car with Autodesk® solutions.

Car design: TU Berlin
Image credit: Björn Stüllein, GlamourEffekt.de

Autodesk®

Autodesk is proud to be a sponsor of Shell Eco-marathon and Formula Student.

Car design: Hochschule Esslingen

If your team is not using Autodesk® software, you're probably working too hard.

Because in most Mechanical Engineering programs students only use the very basics of 3D CAD, they're really not going to see that much difference between Autodesk® solutions and other systems.

Autodesk® solutions may be easier to use, but how hard is it to create an Extrude feature or a Fillet?

Shell Eco-marathon or Formula Student car team members need more than this. You are essentially working in a production environment. You have moved beyond classroom knowledge into the realm of practical experience. You know that just because it looks perfect on the screen doesn't mean it will always work perfectly.

Here are the top 10 reasons to use Autodesk® solutions to design your car:

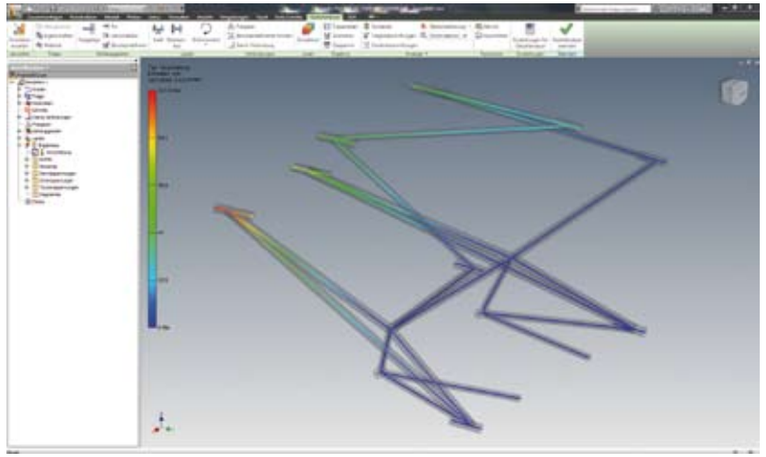


Image modeled in Autodesk® Inventor® Professional with Frame Generator and Frame Analysis.

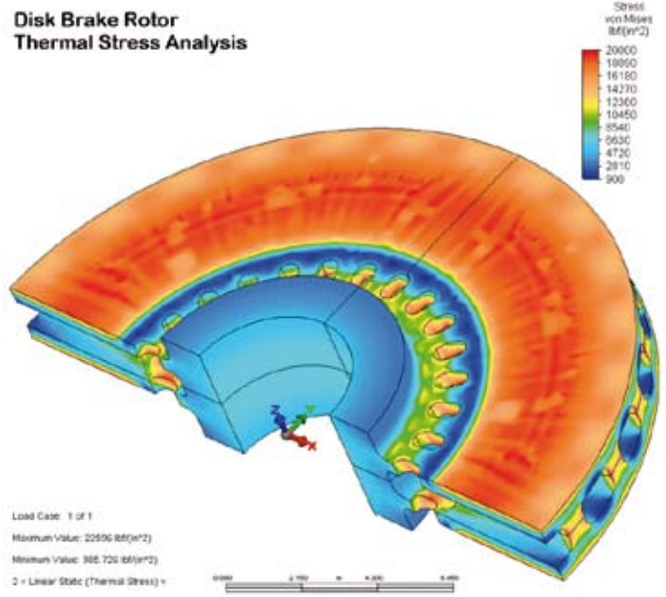
1. Efficient Modeling and Analysis

If you need to create frames, you are probably using an outdated beam element analysis program to construct a frame and then remodeling it in the CAD tool, all of which may require extruding concentric circles or squares.

With Autodesk® Inventor®, the ability to model a frame, analyze it, and make modifications quickly is only the beginning.
You can also analyze parts and components at many different levels.

2. Robust Toolbox

Computational fluid dynamics, nonlinear materials, permanent deformation, mechanical event simulation, or even combinations in a multiphysics environment – you will need some or all of these tools. Autodesk® Simulation augments the Autodesk® Inventor® analysis tools to give you these advanced capabilities.



Software: Autodesk® Simulation.

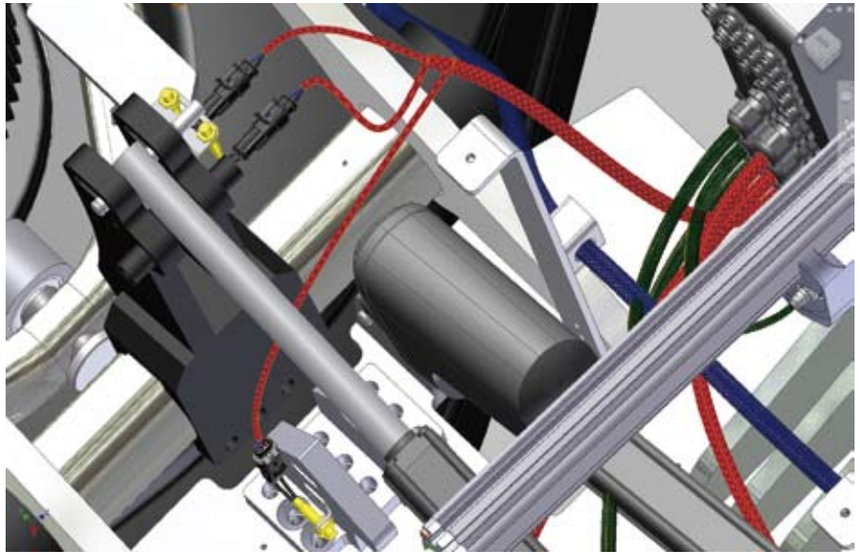


Image modeled in AutoCAD® Electrical with Autodesk® Inventor® Professional.

3. Mechanical and Electrical Interoperability

Things would be a lot simpler if teams only had to deal with mechanical issues, but that's not the case. Being able to integrate mechanical and electrical systems is crucial to success.

In fact, you may even have an electrical engineer on your team.

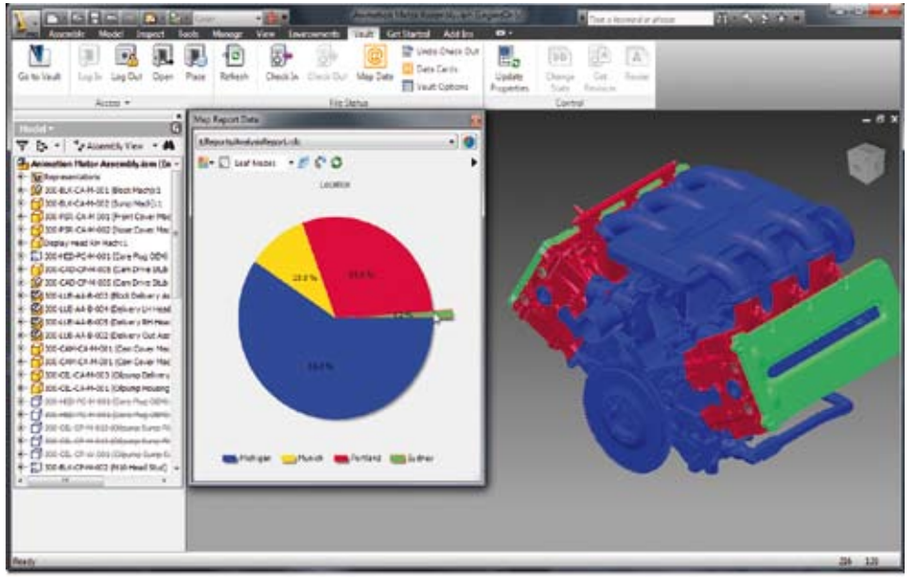
AutoCAD® Electrical software enables electrical engineers to work with schematics while you incorporate their work in your 3D models.

4. Extensive Parts Catalog

You shouldn't have to spend time modeling parts. Standard components – whether they are belts, bolts, or bearings – are built to standards. The Autodesk® Inventor® Design Accelerator tools enable you to select standard components from a catalog of hundreds of thousands of parts based on engineering calculations.

Once the calculation has been made, Autodesk® Inventor® places the physical model in the design.

Image modeled in Autodesk® Inventor® Professional with Design Assistant.



Software: Autodesk® Vault Collaboration.

5. Simple Data Management

When you are working within a limited budget, you can only afford to have a part machined once. Autodesk® Inventor® makes version control issues a thing of the past.

The Autodesk® Vault data management environment is easy to set up and work with, and it's most likely the same environment your future employers will be using.

6. Photo-Real Visualizations

We all know about the importance of fund raising.
With Autodesk® Showcase® software, you can generate promotional materials to approach potential sponsors long before the car is built, including giving presentations to potential sponsors with company logos already on the car.

Just save what's live on your screen, apply sponsor decals, and show them how the project will look with their contribution.

Software: Autodesk® Showcase. – Car design: TU Berlin.

7. Tools the Professionals Use

If you want to maximize your score in the design competition, use the same tool that auto manufacturers use to create their body work.

Autodesk® Alias® Automotive software is one of the premier industrial design tools in the market, and you can put it to work for you.

Combining conceptual sketching tools with one of the most powerful surface definition and editing tools in the industry has made Autodesk® Alias® Automotive one of the most popular products for industrial design.

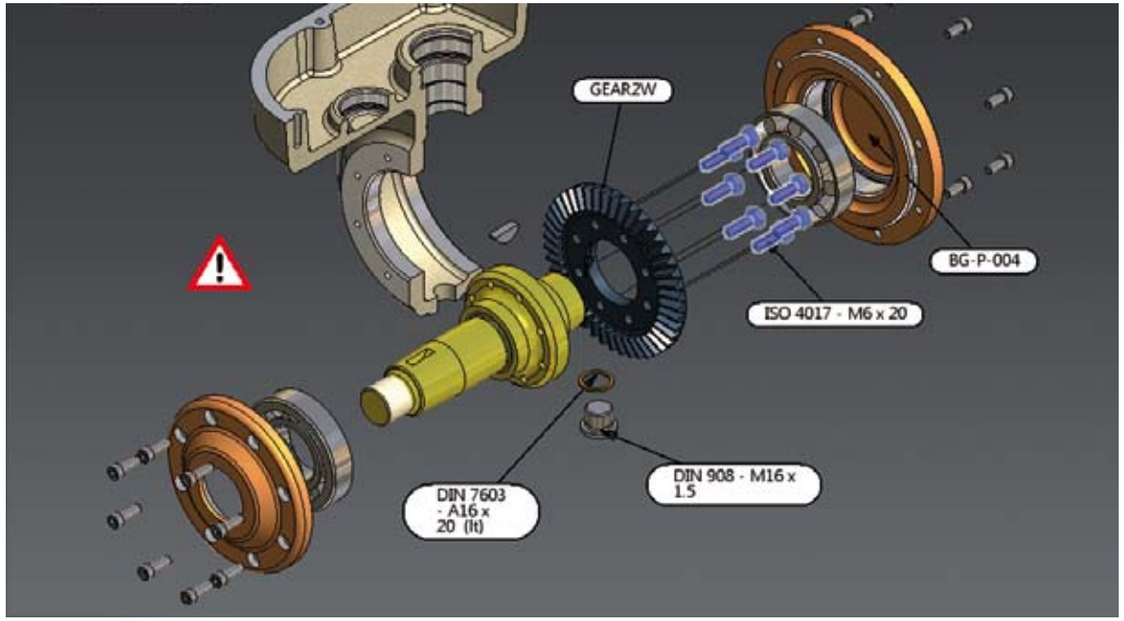
Car design: TU Berlin

Image credit: Björn Stüllein, GlamourEffekt.de

2010 Shell Eco-marathon Urban Concept Car; photo courtesy of Shell Eco-marathon, Americas.
Car body designed by Sean Coleman

8. Data Transfer with Other Design Applications

With Autodesk Inventor you can import and export data from and to all of the other major design applications, enabling you to keep working efficiently even with data that you created in your previous design tools.



Software: Autodesk® Inventor® Publisher.

9. Easy Documentation Sharing

Use Autodesk® Inventor® Publisher software to create compelling 2D and interactive 3D documentation, as well as highly visual technical documentation.

And to stay connected no matter where team members may be, you can give your engineers access to documentation and drawings on the iPhone®, iPad™, or iPod touch® with the Autodesk® Inventor® Publisher Mobile Viewer.

10. Take Your Design with You

To meet your deadline, chances are you need to be working in more than one place.

Whether you are working on an iPad™, iPhone®, or iPod touch®, with Autodesk® mobile solutions, your design studio is wherever you are.

Students from Politecnico di Torino at work on the track.

Get started on designing your next winning car.

Download free* software from the Education Community, and learn with the same tools used by professionals worldwide.
autodesk.com/edcommunity

More Information

Contact us at cardesign.emea@autodesk.com to learn more about how we can support you and your team.

autodesk.com/formulastudent
autodesk.com/shell-eco

Car design: Technical University Wroclaw

Rennstall Esslingen (Germany):

"Nobody of our team knew Autodesk Alias Automotive in September, and mid of December the full digital body shell was done."

"With Autodesk Showcase we could complete all print media with the decals on the car before the real car was produced – first time ever for our team."

– Felix Rathsack, Project Leader

Technical University Wroclaw (Poland):

"Collaboration, training and support from Autodesk was always very straight forward and flexible."

– Michal Modzelewski, Team Leader

University of Strathclyde Motorsport (UK):

"The ease of use and unrivalled capability of Autodesk products make it the ideal software suite for Formula Student. At University of Strathclyde Motorsport we are excited to make use of the new software and training support provided by Autodesk."

– Andrew Wood, USM Team Manager

Hannover Horsepower Team (Germany):

"With the Autodesk easy all-in-one solution we have everything we need to create a digital model of our FS car."

– Benjamin Knebusch, Team Captain

Politecnico di Torino (Italy):

"Autodesk technology allowed us to work quickly and easily inside our labs, at home and on the track."

– Alessandro Ferraris, Team Leader, Team H_2politO

Winner of the Shell Eco-marathon Europe 2010
Autodesk Design Award – Prototype

Burg Giebichenstein Hochschule fuer Kunst und Design Halle (Germany):

Eco vehicle designed with Autodesk Alias Studio.

Winner of the Shell Eco-marathon Europe 2010
Autodesk Design Award – Urban Concept

National University of Singapore (Singapore):

"The Autodesk Innovative Car Design Challenge was a great opportunity for me and my team to turn our classroom knowledge into practical experience. We were able to see our design concepts become reality by incorporating Autodesk software – from brainstorm and digital prototyping, to testing and bringing the design to life."

– Tan Bor Yow, NUS Team Leader

KTH Racing (Sweden):

"Formula Student is not only about gaining practical experience of vehicle dynamics and design, it's also about planning, logistics, administration, and economics. And a big part of our economics is getting sponsorships, which is where Autodesk Showcase comes into play. Being able to create accurate renderings and images of the car as soon as the design has been done in Autodesk Inventor is priceless, since we can then virtually display the car on our homepage, at trade fairs, and of course to our potential sponsors."

– Peter Ahlström, Project Manager

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