

www.corusautoengineering.com

Care has been taken to ensure that this information is accurate, but Corus UK Ltd does not accept responsibility for information which is found to be misleading.

Copyright 2002

Produced by
The Helios Agency

**Corus Automotive
Engineering**
Siskin Parkway East
Middlemarch Business Park
Coventry CV3 4ST
T +44 (0)24 7624 1200
F +44 (0)24 7624 1205
E automotive.engineering@corusgroup.com
www.corusautoengineering.com

Automotive Consultancy

Leaders in lightweight vehicle engineering



A unique combination

**A vehicle engineering consultancy
Supported by an international materials group**

Corus Automotive Engineering

Corus Automotive Engineering was established in 1996, to provide engineering solutions for the automotive customers of Corus. The purpose built engineering centre in Coventry, in the heart of the UK, houses a team of 40 recognised vehicle design, analysis, manufacturing and materials specialists, working in customer dedicated project offices.

This team has established an enviable record in lightweight vehicle engineering, having delivered innovative and successful vehicle concepts for programmes around the

world. Central to this success has been the strength in depth of Corus materials technology.

The focus and core competence of the team is vehicle concept engineering, which delivers cost-effective, feasible and lightweight solutions. A pragmatic engineering approach is supported by substantive materials and process expertise and the extensive resources of the Group's research and development centres in both the UK and the Netherlands.

This unique combination of vehicle engineering, allied to innovative materials and process know-how, truly sets Corus Automotive Engineering apart.

Corus

Corus is a leading international producer of metals and supplier of material solutions, committed to world class steel production and growth in downstream business areas. The Corus automotive portfolio accounts for nearly 20% of total turnover and includes high performance sheet, coated materials and laminates, tailor welded blanks, engineering steels, rolled sections and tube.

A committed solutions provider, Corus is an expert in materials technology, design and manufacture.



Partnership

Understanding customer needs
Working together to plan, design and deliver



A natural partner

Corus Automotive Engineering has a thorough understanding of automotive product development processes, programme timing and gateway approval, which accords a 'like minded' approach to customer programmes.

Customer expectations are met by tailoring vehicle engineering expertise to specific programme requirements, in an environment of customer confidentiality.

This commitment extends to a creative commercial approach to co-development activities.

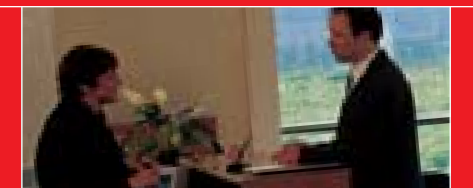
The team's experience encompasses a wide product spectrum and scale:

- From mainstream, high volume to "fast to market" niche products
- From high performance/luxury to low cost, entry level products

From concept to realisation

Corus Automotive Engineering's vehicle design, analysis and manufacturing specialists offer a depth of automotive experience rarely found within a single organisation today.

- Fully integrated complete vehicle engineering expertise, allied to innovative materials and process know-how
- Consistent standard of technical excellence through CAE-validated 'right-first-time' concepts, which minimise programme cost and achieve 'fast-to-market' timing
- Value engineering expertise; reducing material, tooling, manufacturing and assembly costs
- Materials science; ensuring efficient and effective material utilisation and deployment of innovative materials and processes with minimal risk



Technical excellence

Complete vehicle capability
CAE simulation-led vehicle engineering

Corus Automotive Engineering offers the following engineering services

Complete vehicle concept design

From pre-concept feasibility to CAD-intensive concept development.

Studio engineering

A creative approach to concept design feasibility.

Package and layout

Occupant package, powertrain, chassis systems and body structure. Product characterisation through vehicle systems integration.

Lightweight body structures and architecture

Convertibles, sedans, MPVs and vans. Body in White; unitary construction to space frames. Steel, light alloy, plastic, composite and hybrid material architectures.

Manufacturing technology application

Assessment of new technologies, and their potential programme benefits. Materials, pressings, laser welded blanks, roll forms, hydroforms and extrusions.

Suspension systems

Concept design, mass optimisation and vehicle integration.

Crash simulation

Proven simulations; concept and detail. Correlation with crash tests; achieving mass-efficient crash performance through a thorough understanding of structural and material behaviour.

CAE modelling and simulation

Structural optimisation for stiffness, strength, fatigue and modal performance, using industry standard CAE simulation tools.

Torsion and modal testing

In-house full-body, static torsion rig and LMS modal test facility.

Software packages

CAD: CATIA, I-deas, Unigraphics, Alias WaveFront

Crash Simulation: LS-DYNA, Radioss, PAM-CRASH

CAE Simulation: MSC.Nastran, ABAQUS, OptiStruct

Forming Simulation: PAM-STAMP, AutoForm



Value-driven solutions

Niche to volume products
Engineering for material, process and scale

Corus Automotive Engineering also offers comprehensive engineering support services

Multi-materials technology

Specialist, in-depth knowledge of steel, aluminium, plastic and composites, ensuring optimum material selection for cost, performance and process.

Business case and value analysis

In-house developed cost models from system-level estimation to vehicle programme viability. Value-driven design and manufacturing methodology.

Manufacturing feasibility

Providing solutions for component manufacture.

Assembly process and joining technologies

Providing solutions for system assembly and assembly sequence, including spot and Laser welding, structural adhesives and fasteners.

Formability analysis

Binder and draw die development, complete product geometry feasibility and forming process simulation.

Torsion and modal testing

In-house full-body, static torsion rig and LMS modal test facility.

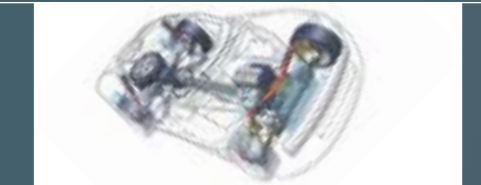
Knowledge Based Engineering

Dramatically cutting development lead times by condensing engineering expertise with computer automation. Corus Automotive Engineering's in house KBE capability includes a proven, rapid feasibility tool to assess customer tubular hydroform design proposals.

'UltraLight' technologies

Expertise in deployment of the most appropriate 'UltraLight' technologies in customer programmes.

- HSS and UHSS stampings
- Tailor welded blanks
- Tubular hydroforms
- Laser welding
- Forging



Commitment to quality

- Registered with LRQA to ISO9001; rigorous quality methods and proven project management practices; assured customer confidentiality
- Registered with IIP; fully committed to staff training and development



INVESTOR IN PEOPLE



Discover how you can commission Corus Automotive Engineering's expertise for your future product programme

Contact

Richard Jones
Engineering Director
T +44 (0)24 7624 1200
F +44 (0)24 7624 1205
E automotive.engineering@corusgroup.com

