Automotive Interior Design

Lecture delivered by:

Prof. C. Gopinath
Professor Department Of Design
MSRSAS-Bangalore
Introduction

• Automotive design is the profession involved in the development of the appearance and ergonomics of motor vehicles or more specifically road vehicles.

• This most commonly refers to automobiles but also includes motorcycles, trucks, buses, coaches and vans.
• The functional design and development of a modern motor vehicle is typically done by a large team from many different disciplines along with automotive engineers.

• Automotive design in this context is primarily concerned with developing the visual appearance or aesthetics of the vehicle, though it is also involved in the creation of the product concept.
• Automotive design is practiced by designers who usually have an art background and a degree in industrial design or transportation design.

• The task of the design team is usually split into three main aspects: exterior design, interior design, and color and trim design.
• Graphic design is also an aspect of automotive design and this is generally shared amongst the design team as the lead designer sees fit.

• Design focuses not only on the isolated outer shape of automobile parts, but concentrates on the combination of form and function, starting from the vehicle package.
• The aesthetic value will need to correspond to ergonomic functionality and utility features as well.

• In particular, vehicular electronic components and parts will give more challenges to automotive designers who are required to update on the latest information and knowledge associated with emerging vehicular gadgetry.
• These include dash top mobile devices like GPS navigation, satellite radio and HD radio, mobile TV, MP3 players, video playback and smart phone interfaces.

• Though not all the new vehicular gadgets are to be designated as factory standard items, some of them may be integral to determining the future course of any specific vehicular models.
• The stylist responsible for the design of the exterior of the vehicle develops the proportions, shape and surfaces of the vehicle. Exterior design is first done by a series of digital or manual drawings.

• Progressively more detailed drawings are executed and approved. Clay (industrial plasticine) and digital models are developed based on the design drawings.
• The data from these models are then used to create a full sized mock-up of the final design (body in white).

• With 3 and 5 axis CNC Milling Machines, the clay model is first designed in a computer program and then "carved" using the machine and large amounts of clay.
• Even in times of high-class 3d software and virtual models on power walls the clay model is still the most important tool to evaluate the design of a car and therefore used throughout the industry.

• The stylist responsible for the design of the vehicle interior develops the proportions, shape, placement, and surfaces for the instrument panel, seats, door trim panels, headliner, pillar trims, etc.
• Here the emphasis is on ergonomics and the comfort of the passengers. The procedure here is the same as with exterior design (sketch, digital model and clay model).

• Evaluating the human friendliness of vehicles is essential for designing new vehicles since large numbers of human-machine interactions occur frequently inside vehicles.
• The color and trim (or color and materials) designer is responsible for the research, design, and development of all interior and exterior colors and materials used on a vehicle.

• These include paints, plastics, fabric designs, leather, grains, carpet, headliner, wood trim, and so on.
• Color, contrast, texture, and pattern must be carefully combined to give the vehicle a unique interior environment experience.

• Designers work closely with the exterior and interior designers.
• Designers draw inspiration from other design disciplines such as industrial design, fashion, home furnishing, architecture and sometimes product design.

• Specific research is done into global trends to design for projects two to three model years in the future.
• Trend boards are created from this research in order to keep track of design influences as they relate to the automotive industry.

• The designer then uses this information to develop themes and concepts which are further refined and tested on the vehicle models.
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