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Design Approach:

The design of products is a reciprocal continuous development of idea and object. Designers are developing a balance between function, practicality and beauty through processes of solving problems and creating objects for use. As soon as the problem or challenge is identified, a solution is designed, whether it is an object or not. No defined process or recipe for design exists and this is the challenge in design. There is also no perfect solution or absolute in design and this gives rise to creative design and beauty in a certain sense, without a differentiated opinion about beauty and design no great designs can evolve.

A building dedicated to the development of product and industrial design in South Africa is just such a design challenge. This is not the pinnacle of industrial design school buildings, but is rather a discussion with the participator about what a design school could become through spatial design.

An approach used in the design of the building relates to the design of cars. Rather than merely concentrating on the external envelope of a car, designers and engineers are developing the interior and mechanics that are found within. In car design it is important to have a good understanding of the mechanics of cars before the design of the shell can be attempted.

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Herein lies a contradiction, without the understanding of exterior space, the designer may have difficulty in visualising the envelope and all the features composing it. In car design there is little room for error and this constraint allows the designer to explore new developments and

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solutions to save machining costs and create new aesthetics.

The final car viewed by the public is the product of a lengthy process initiated by either a designer or mechanical engineer, whether it is a design sketch or a new mechanical platform layout.

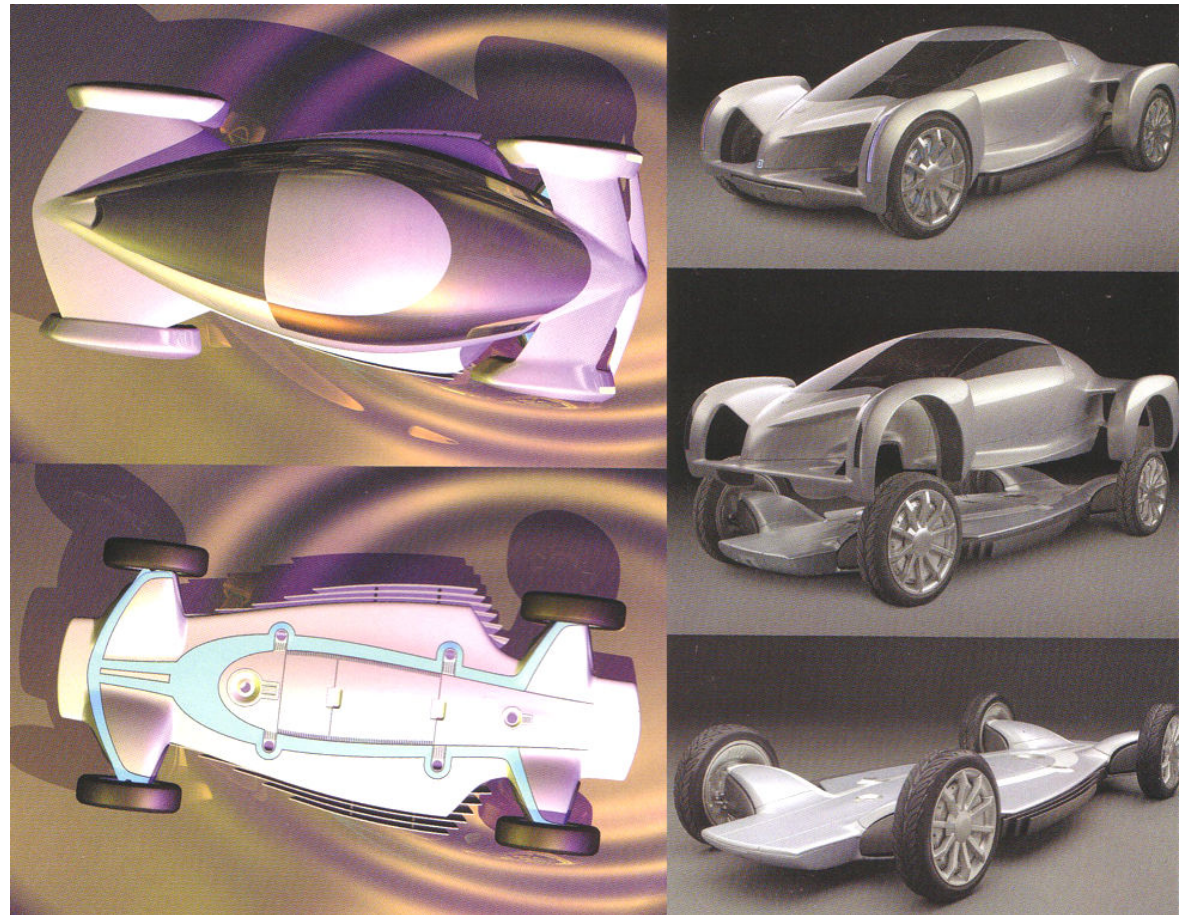


Fig 1. G.M. Autonomy concept 2002

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The previous illustrates (Figure 1) shows how a design is developed around the mechanical layout of a Hydrogen Fuel-Cell Platform:

The Autonomy from G.M. (General Motors) is a good example of how design can help to define the image of a new car for the future.

In another scenario, a designer may be required to design a car before a platform is developed, however, the designer must know that the design must be able to accommodate some form of power plant in order to work; if the designer does not respect this constraint, the design is merely sculptural and will remain as a paper design. The Alfa Romeo Kamal (Figure

design approach 2), launched at the 73rd Geneva International Motor Show in March 2003, is a practical illustration of how the designer applied knowledge of current the SUV (sports utility vehicle) platform to generate a new sculptural design for a popular market:

As explained, the design of a car can follow numerous approaches or processes. This enables designers to explore new trends and solutions at different stages and thus allows for innovative solutions and products.

Designing a school follows the same direction as car design in many instances. There is no obsolete design for such a building programme that allows the functions of the building to be the main driving force. Car design is a constant quest to find the perfect solution to match aesthetics and mechanics without great compromise to performance or function.



Fig 2. Alfa Romeo Kamal concept 2003

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Fig 3. Isuzu Zen concept 2001

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The main aim in car design is to encapsulate a mode of transport in a shell that appeals to the intended market. Some designs are products that relate directly to transport and movement where as others are objects of sheer delight or pleasure. Cars not aimed at mass production are sometimes designed to fulfil other functions in the interest of developing vehicular transportation into more interesting dynamic spaces that can travel from place to place. An example of this kind of design approach is the Isuzu Zen designed by Isuzu's European Design Studio in 2001 (Figure 3), launched as concept at the Tokyo Motor Show in November 2001. The Zen is an inspired spatial experience that goes beyond automotive transportation. Zen is designed to be experienced as an architectural space in a dynamic surrounding. In any space, the Zen can be adapted to experience the exterior space and can be adapted internally to create a dialogue with the external space wherein it is parked. This car is not designed for the mass market, but rather as an illustration of how car design is influenced by nature and spaces that surround the car. A highway or even a rural road is a space wherein a car is actively part, this is the driving force for car designs such as the Zen and others that are designed as unusual cars or vehicles.

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In designing a school for professional industrial design, an approach following car design is appropriate. The school has a specific function and requires certain key elements, these are designed for and the development relates to these in respect of spatial design and analysis.

Firstly, the building is resolved in detail and many of these technical details explore simple yet effective solutions indigenous to a South African context. In the refinement of the building envelope, details become more human in scale and relate to the human participator in the built environment. Specifically designed articulation creates human comfortable space and allows the participator the opportunity to experience the building as a complete product, mirroring the purpose for the building.

The building is adaptable in terms of spatial design and allows the use of spaces to become adapted to specific needs. Because of the flexibility in design education (different types of courses offered) offered at this institution, the building relates to this identity through spaces that can be arranged to accommodate specific training programmes.

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Fig 4. Renault Talisman 2001

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A relatively rigid structural system communicates identically to car design where a car requires an automotive platform to operate. The building has a designed structural system that enables spaces to adapt without the need to modify the structure to accommodate such spatial requirements. The envelope of the building becomes a muscular skin that relates to the interior spaces, these interior spaces are in constant dialogue with the exterior and vice-versa. In having this structured skeleton for a design school, the envelope may evolve as time moves on. This idea follows the car design notion of upgrading and improving: new envelope skins can replace the present design system. Renault developed successful engine layouts in the 1970's that are still used in the new generation cars today. This relevant practice relates to the static structural system incorporated in the school. With a structural system clearly calculated and optimised the building offers flexibility for future façade and envelope design.

Renault chief designer, Patrick le Quément, designed the Talisman (Figure 4) launched as a concept car at the September 2001 Frankfurt Motor Show. Talisman is a concept that emphasises the importance of uncluttered interior space and minimalist design. The large gull-wing door eliminates the obstruction of an open door at the side of the car and makes the need for a centre pillar

redundant. By simply designing doors that operate in this manner, the interior is freed and the threshold between inside and outside is unobstructed. Furthermore, the interior features an unorthodox seat design following a theme of slick lines running through the cars interior panel work.

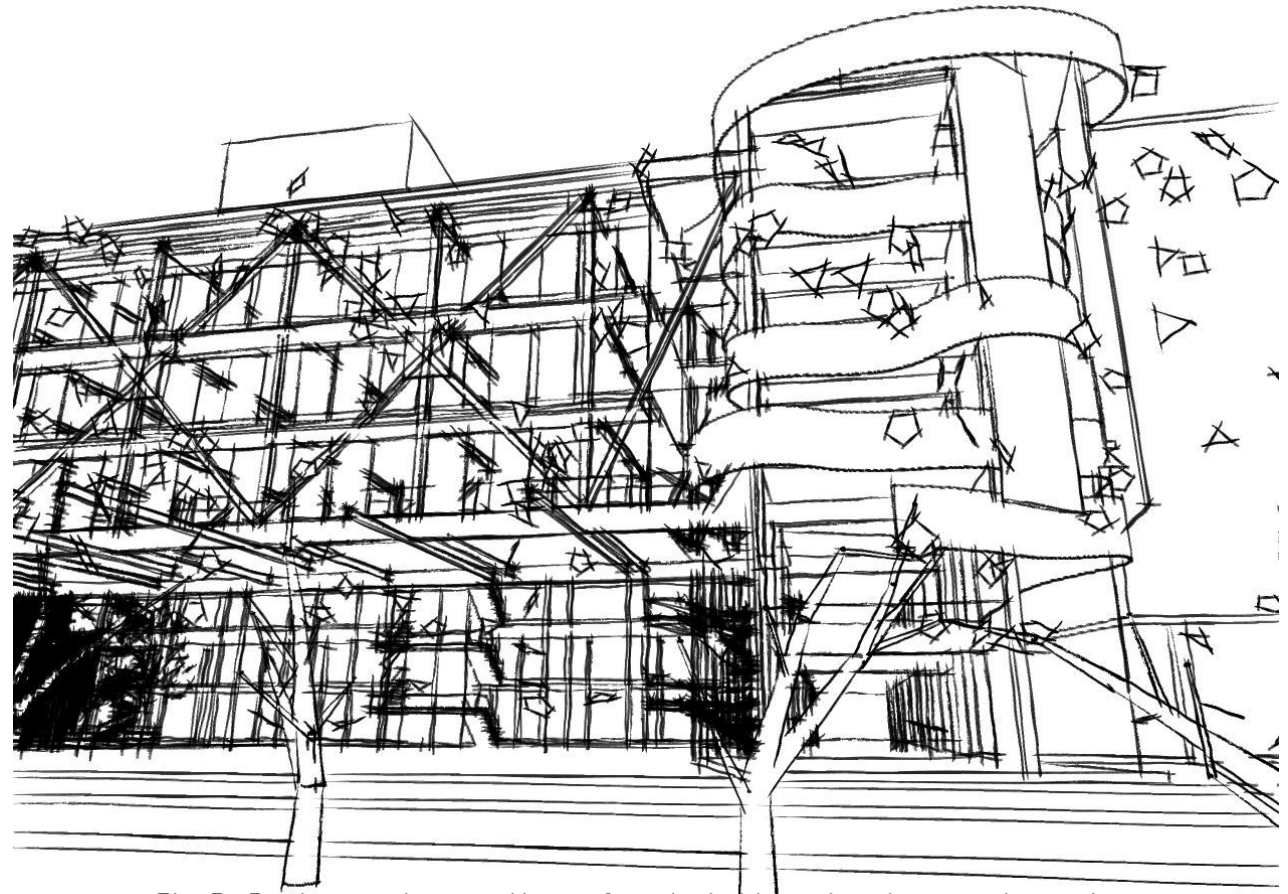


Fig 5. Design centre northern façade bridge structure and envelope

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The interior emphasises simplistic design with the use of composite materials and advanced polymers in the design of furniture and the instrumentation. This car covers up the intricate working of the car as a complicated machine of mechanical engineering and exposes the simple detailing of the interior and exterior finishes. There is no cluttered centre panel and driving instrumentation, the instruments are simplified and designed to give the driver all information required for driving.

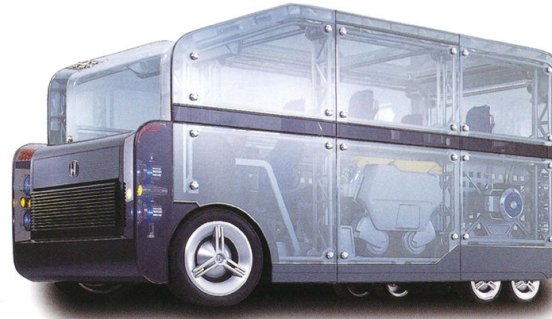
In the Talisman, the beauty lies in the fact that all components of the car whether inside or out are resolved in a manner that meets the goal of simplifying car design without the cluttered or complicated finishing details that are sometimes found on car designs.

This illustration of design refinement needs to be illustrated to understand that the design centre building does recognise this design approach and reacts to it directly in its refinement. The building reacts in that none of the structural systems are hidden inside slick shells or envelopes. Structurally the design centre is exposed and defined to illuminate the making of such a structure and allow participators the opportunity to understand the building on an elementary level. This makes the use of a replaceable envelope for the building more feasible because the skin

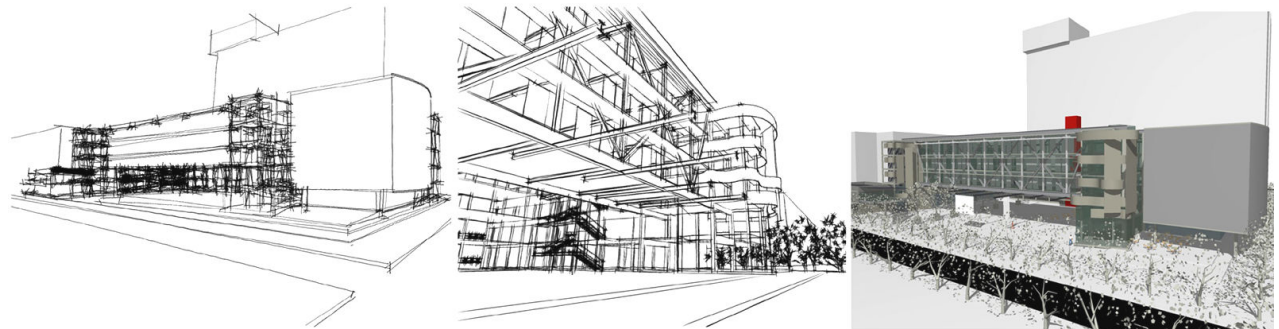
of the building adds to the appearance and articulation of the facades and spaces. Figure 5 illustrates the possible façade design used in one proposal on the right showing how a screen system can wrap around the western circulation wing. This design theory is visual in sketch design how car design influences architecture.

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Car design is a very competitive, specialist form of product design and gives reason to understanding the process of design that can underpin the formulation for designing a centre. This is the reason for choosing to compare car design, as an industrial art to building design; designing a car is



Honda Unibox design and interior exposing structure and materials



Sketches for design centre exposing structure, form and materials

Figure 6. Comparison of the building design to the Honda Unibox

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complicated and mathematical with large constraints and physical boundaries, yet designers make it look simple and very elegant. Car design goes deeper than this and through this chapter; the art of car design has been illustrated with different approaches and aspects.

When the design of the building moves into formality, the theory of design as understood through current car design trends is applied, the design becomes a symbol of architecture that has its roots in the design of a product or car.

Much like car design philosophy, the building takes on many issues and is dealt with similarly to the way that car designers and other design professionals deal with their products. This investigation creates a platform for design and allows the functional aspect of the design school to explore many ways of solving building design problems. The resolution in designing the centre is illustrated in Figure 6 where the design centre is compared to the compact Honda Unibox; the Unibox is refined in detail and exposes these and its materials as part of the design.