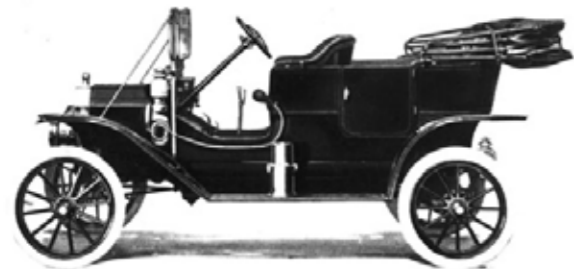


A Complete Line of Model T's to Choose From



5-Passenger Touring Car, Fully Equipped



3-Passenger Roadster, Fully Equipped



2-Passenger Open Runabout, Fully Equipped

Ford Car Models Supply Every Demand



UNIVERSITEIT VAN PRETORIA  
UNIVERSITY OF PRETORIA  
YUNIBESITHI YA PRETORIA



2-Passenger Coupé, Equipped with 3 Oil Lamps, Tubular Horn and Kit of Tools



2-Passenger Torpedo Runabout, Fully Equipped



6-Passenger Town Car, Equipped with 3 Oil Lamps, Tubular Horn and Kit of Tools

Fig 2.1: Ford Model-T Range, 1911:  
Curbside Classic 2011

02 theoretical discourse

## 2.1 Yesterday's Tomorrow

The lessons from the past must first be understood, in order to move forward. The city and the very idea of mobility have been transformed by the automobile. Before the car, squares and streets were almost exclusively populated by pedestrians, with little obstruction by horses or carriages. The street realm is described by Jan Jennings (1990) as the "locus of public life and the theatre for human ritual" – it was intended for people to stroll, wander around, converse, trade and socialise.

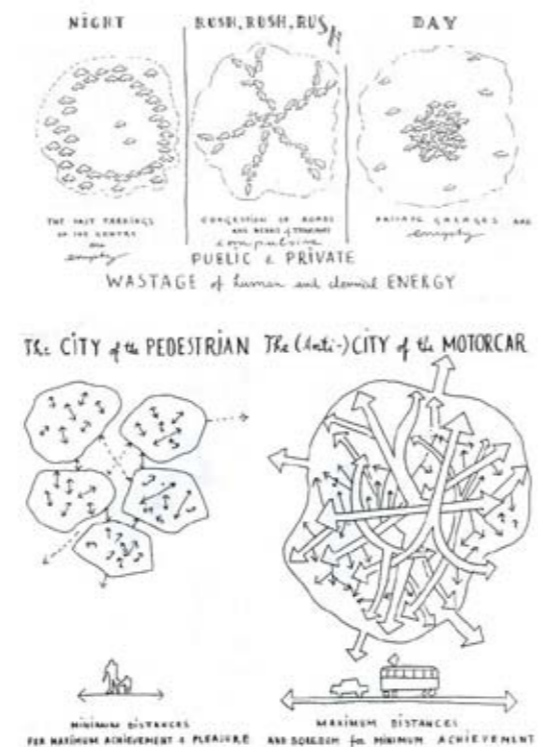
As the streets were infiltrated by the automobile, the available space reserved for the public decreased. A moving car requires sixty times more space than a person walking, and a parked one thirty times more than a person standing (Klose, 1965: 9). Together with the pollution, noise and threat of personal safety, the automobile resulted in the effective relegation of pedestrian life on the streets to a automotive dominated domain.

As use of the automobile increased, people demanded the freedom to be able to do all their daily travels by car. What the city offered in small proximities no longer mattered, instead, what mattered was adequate parking space and convenient connections to freeways (Klose, 1965:9).

Public transport around the world became second priority and prominent street networks between major cities started to develop on a massive scale. These drastic shifts could not have come without the visions of urban planners and architects. The radical proposals for future cities in the automotive age were mostly car-centric and totalitarian in approach. The result is a lesson in the challenges of designing cities today, some could be useful if implemented properly, and others that should be avoided.

In his 1935 manifesto for the Radiant City, Le Corbusier envisioned the future

Fig 2.2: Léon Krier's critiques on modern planning, zoning, and car-centric development (Krier 2006)



reconciliation of automobiles and cities. The proposed consolidation of high densities into towers, which were spread out and connected with high speed roads and elevated off the ground level, had a strong pedestrian notion. In his opinion, people and automobiles should never meet (Le Corbusier, 1967:121). This created a continuous park for pedestrian movement; however, the large towers resulted in inhumane spaces with little social interaction. Even though the radical approach of the vision would have led to separation and isolation, the core message is very important – people should be confident and free to utilise the ground plane.

A striking characteristic of Harvey Wiley Corbett's (1913) vision of New York City is that all the different modes of transport had been provided for in the urban fabric. The potentially vibrant space features a prominent pedestrian presence; however, Corbett's only conclusion was the separation of all the dif-

Fig 2.3: (Top) Le Corbusier's "Voisin" plan for Paris, from his proposal for the Radiant City (1922-25) (Le Corbusier 1967)

Fig 2.4: (Bottom) The ground plane in Le Corbusier's vision (Le Corbusier 1967)

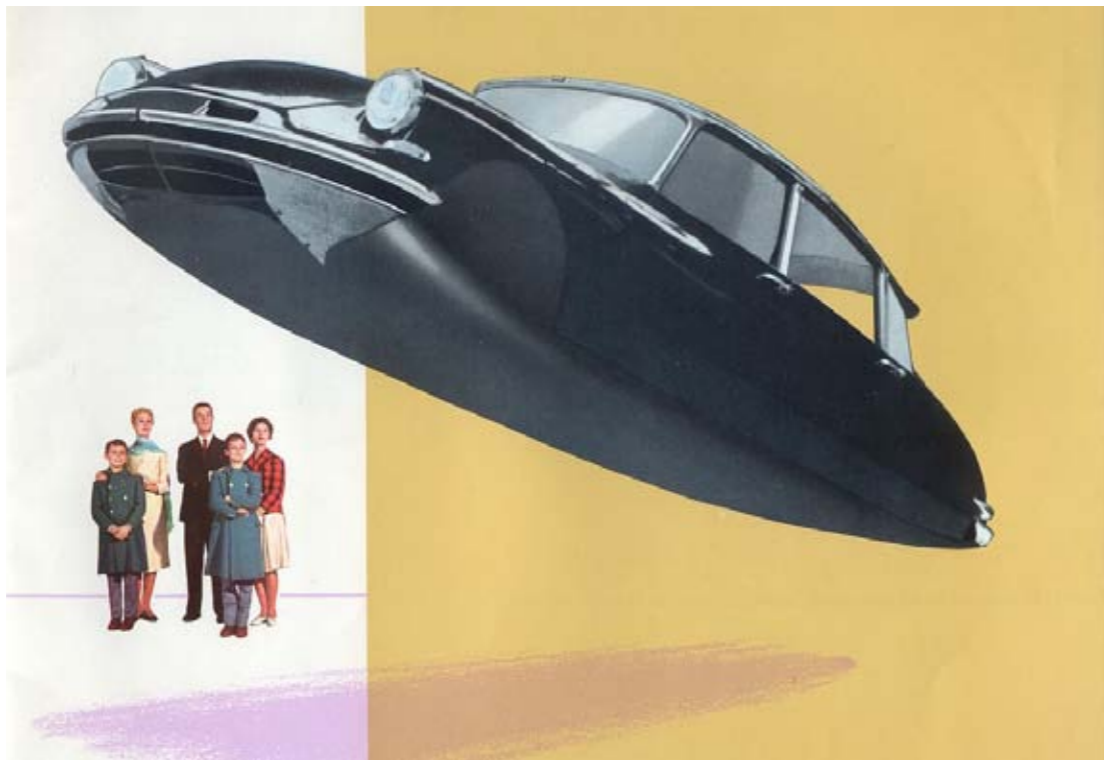
ferent modes of mobility. Each form is given an exclusive layer within the city and is not unlike the struggle of today's transportation systems. But like Le Corbusier, Corbett saw automobile traffic as something which needed to be channelled, contained and isolated.



Fig 2.5: Harvey Wiley Corbett's City Section. 1913 (Arquinoias [sa])



Fig 2.6: The Citroën DS from a 1959 advertisement (Ukadapta 2010)



Today, the car is intrinsically tied to our culture and everyday activities, its sudden extinction unimaginable. The automobile has become a part of the urban fabric and the experience of a city, the same as buildings by architects and engineers.

Roland Barthes (1957) stated when he wrote about the Citroën DS: *Cars today are almost the exact equivalent of the great Gothic cathedrals: I mean the supreme creation of an era, conceived with passion by unknown artists, and consumed in image if not in usage by a whole population which appropriates them as a purely magical object.*

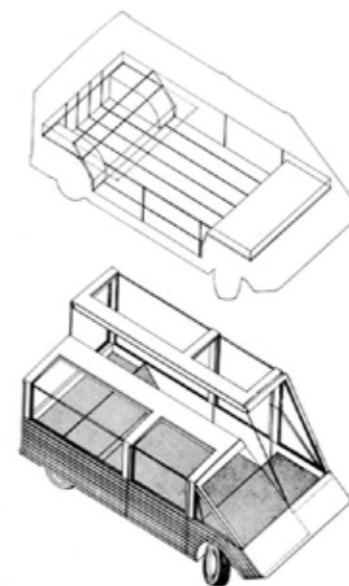


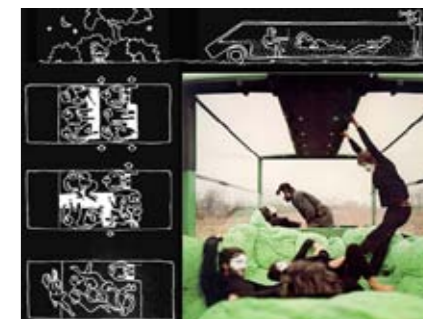
Fig 2.7: Concept drawings for the Kar-a-sutra, 1972 (Bellini 2010)

The automobile was designed to go anywhere at any time and to bring people together, promoting social interaction. It was a medium of transport to connect people with friends and family, activities and the world around them.

The Italian architect, Mario Bellini, explored the social potential of the automobile with the result of the world's first minivan - 'kar-a-sutra'. He wanted to design a space for people to interact, participate in activities and to play. According to Bellini, it was a mobile human space, intended for people and not automotive rituals (Margolius, 2000: 119).



Fig 2.8: Mario Bellini's design for the Kar-a-sutra, 1972 (Bellini 2010)



## 2.2 Architecture for Automobiles

The automobile age has not provided the city with enjoyable and pleasant spaces for citizens. As people were able to travel further by car, the distances between destinations grew further apart. The densities of cities spread out into suburban developments. Apart from creating barren spaces with no social character, suburban sprawl also created another plague – the ‘commercial’ landscape.



Fig 2.9: Robert Venturi and Denise Scott Brown (Venturi, Izenouer and Brown 1977)



Fig 2.10: A critique of the Las Vegas Strip by Robert Venturi (Venturi, Izenouer and Brown 1977)

social interaction and convergence. The drive-in movie theatre is an ideal example; it brought people together in one space and provided entertainment. Nevertheless, the idea of not experienc-

However, some of the early spaces designed for automobiles were based on



Fig 2.11: The world's first drive-in theatre, New Jersey, 1933 (Modern Mechanix [sa])

ing one's surroundings and the confinement to a vehicle subsequently spilled over into everyday life.

After the automobile became a daily commodity, the subject of car spaces infiltrated architecture in the form of parking garages. The necessity to ‘store’ or ‘house’ the car when not in use gave birth to a whole new building typology.

Garages, or car parks, quickly became an important addition to the urban structure. The ever-growing influx of automobiles into the city was now accommodated for by garages. But, this only solved the problem of car domi-

nated cities to a certain degree.

Architecture, in many cases, has been reduced to an emotionless concrete box, an empty asphalt lot or oversized signage – all designed to be recognizable to the travelling motorist.

American architect, Robert Law Weed (1948), designed a parking garage in Miami, which had no façade at all. It consisted of no windows, walls or any decorative details – the parking garage as a building typology was born and has remained until today (Henley, 2007: 12).



Fig 2.12: Robert Law Weed's parking garage in Miami, 1948 (Christie's 2011)

Robert Law Weed's design stood disjointed within its context; only one function was provided by the building – the store of automobiles.

The quest for solving functional issues above other concerns has resulted in architecture that is impersonal and inhospitable. Even so, in recent years, architects have started to address these hybrid structures (combination of parking garages with other programs) in positive ways.



Fig 2.13: Herzog & de Meuron's parking garage in Miami, 2010 (Lincoln 2011)



Fig 2.14: Modern Car garage design (All Doing 2010)

Louis Kahn completed a number of studies (1947-1962) on traffic and different ways to incorporate the car into the city. One of his proposals was for a hub/node where automobiles could be parked, which leaves the city core dominated by pedestrians (Henley, 2007: 12).

The proposed hub has the potential to accommodate many automobiles entering the city on a daily basis. Subsequently, Kahn realized that these spaces of convergence can become hubs of public and social activity at the same



Fig 2.15: Louis Kahn's drawing for a vehicle hub in Philadelphia (Henley 2007)

time. He created a much more vibrant space by incorporating housing, commerce and office space into the project. Unfortunately, his schemes were never realized.

An example of architecture accepting the automobile into the city and looking for ways to achieve co-existence is the Marina City Complex, Chicago, by Bertrand Goldberg. The project was a reaction against urban sprawling in Chicago, with many people moving to the developing suburbs. Goldberg addressed the negative effects of urban sprawl in the city which led to neglected urban spaces by a population of commuters.

The project, housed within five buildings, consisting of offices, shops, a theatre, a marina, housing and a multi-storey parking garage, drew people back to the urban centre. According to Simon Henley (2007) this "...reversed the American ideal of space, making the idea of proximity central to building a community."



Fig 2.16: Bertrand Goldberg's Marina City in Chicago. 1964 (Architect Gallery 2010)

## 2.3 Car Versus Building

The consideration of the relationship between architecture and automobiles has been an ongoing process since the start of automotive production. The inextricable role automobiles played in architectural history, through cultural, social and artistic interweaving during the past century, has led to architecture's contention with this most ubiquitous of machines.

At the time of *Vers une Architecture*'s publication in 1923, there was already a growing inequality between automobiles and architecture. The system featured in automobiles drove the car, provided climatic comfort for the driver and shelter against the elements. Such an object can be referred to as 'a machine to live in'.

Architecture at the same time was rather primitive, with systems that had progressed very little from the turn of the century. Even a large building for a well-known company in 1900 might have only

had two systems: heat and light provided by fireplaces, and storm water piping to convey water from the building to the site (Kieran and Timberlake, 2004: 126). Architecture, as a machine to live in, was only a distant dream.

However, architecture has developed over the past century to finally become such a machine, with as much as fifty percent of the cost embedded in systems, not structure, wall or roof (Kieran and Timberlake, 2004: 126).

The automotive industry has determined that when expanding the supply chain into sub-tiers, improvement on quality and reduced costs can be obtained. Instead of having different parts arrive at the final stage of assembly, the tiers are gradually built up by a collection of parts before being supplied to the manufacturer. Subsequently, the different parts of a building and the manner in which it is put together followed the same path.

Fig 2.17: 1931 Ford Coupé  
(James Morrison 1931)



VS.



Fig 2.18: 1931 Construction of The Empire State Building (Acid Cow 2010)



sub-assemblies

modules

completed product



Fig 2.19: Supply chain with sub-tiers  
(Kieran and Timberlake 2004) Illustrated by Author 2011

## 2.4 Waste Equals Food

This approach aims to inform the environmental sustainability of the research project, looking at how a cyclical process of treating waste as food for the future, can be implemented.

Braungart and McDonough (2009) use nature as a metaphor to illustrate how a world of eco-efficiency can be designed:

*In order for one pit to fall on the ground, take root and grow, a cherry tree creates thousands of blossoms and fruit for birds, animals and humans. No one will complain about the ground underneath a cherry tree littered with pink blossoms and cherries – The tree creates copious blossoms and fruit without depleting its environment. Once on the ground, the materials break down and decompose into nutrients that are a source for microorganisms, insects, plants, animals and soil. Even though the cherry tree produces more of its products than it needs for its own success in an eco-system, this abundance has evolved to*

*serve a wide range of purposes. In fact, the tree's fecundity nourishes just about everything around it.*

What is eco-efficiency? In essence, the term means, to do more with less, a principle which comes from the early days of industrialization. Henry Ford implemented an early form of eco-efficiency when he used the crates in which Model-A trucks were shipped in as the vehicle's floorboards when it reached its destination [Braungart and McDonough, 2009: 51].

The design of artificial ecosystems has the ability to consume surrounding buildings, neighbourhoods and cities as a whole, to enrich the environment. Industrial areas should be designed to be effective, safe and intelligent and have a positive contribution to the community. In this way, industry does not need to be fenced off from other human activity. According to Braungart and McDonough (2009), this can turn the idea of zoning

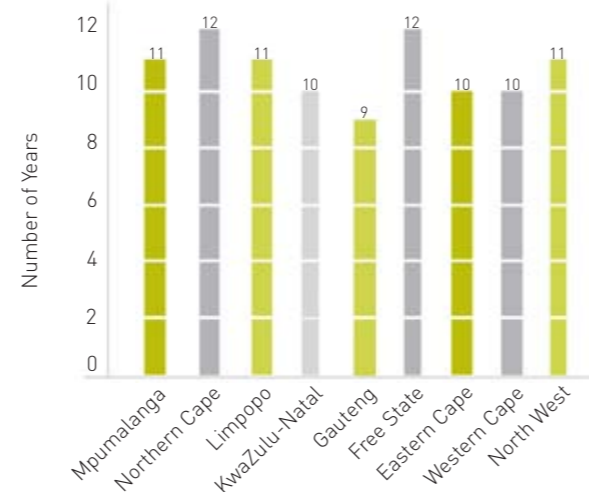


Fig 2.20: Average life-span of vehicles per Province (Statistics South Africa 2010) Illustrated by Author 2011

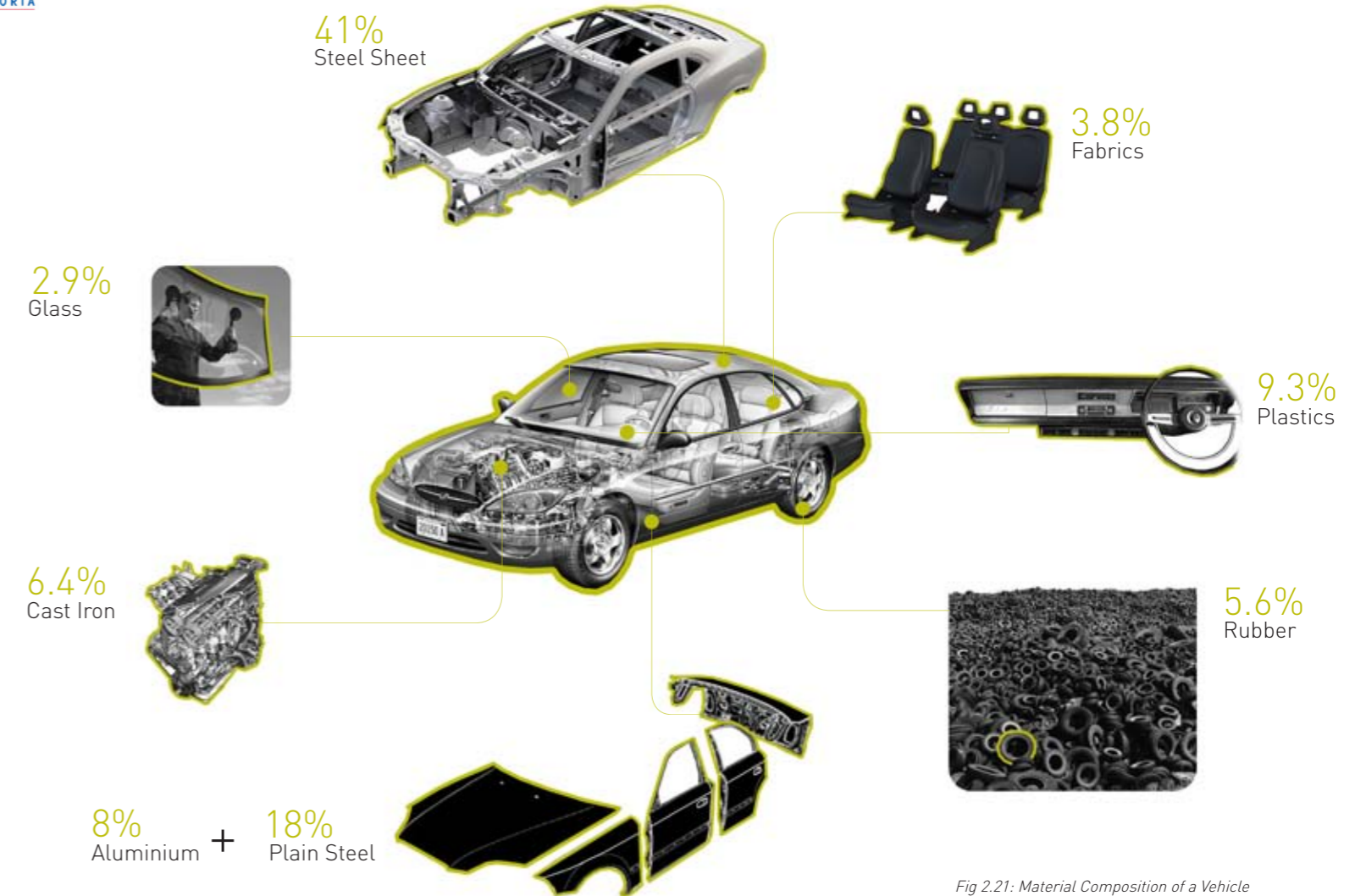


Fig 2.21: Material Composition of a Vehicle (Statistics South Africa 2010) Illustrated by Author 2011



Fig 2.22: Resource Sites in the Pretoria West Precinct  
Photo Collage by Author 2011

in cities on its head, enabling residential and commercial sites to co-exist alongside factories with mutual benefit. The fundamental theme of the Cradle-to-Cradle approach is seeing any type of waste as food. The idea tries to mimic nature, which operates according to a system of metabolisms and nutrients – and which contains no such thing as waste.

The waste humans produce can be divided into two groups: namely biological mass and technical/industrial mass. Biological nutrients are utilized by the biosphere, where the technical nutrients are useful to the 'technosphere', which forms part of industrial processes (Braungart and McDonough, 2009: 92, 93).

To ensure a cyclical process that is efficient, products must be designed as products of service. What this concept means is that a consumer is seen as a patron of service/customer, who will

not be paying for a product that is constructed by complex materials which can't be used after the product's current life.

When the customer is done with the product or wants to upgrade to a better model, the manufacturer replaces it by obtaining the old product, breaking it down and using the materials as food for future products. Through this, manufacturers retain ownership and responsibility for the materials they use.

