



Preliminary

In the process of formulating a successful design proposal, a journey through established norms or standards is required. Together with this set of standards are other factors that will influence and inform the design, all of which are crucial, in one way or another, to the process.

The design discourse is this exploration. Like the design of a high performance sports car, all aspects of the vehicle make it work: the aerodynamics, the engine and the breaking system, its how you change and improve on them that makes the car better.



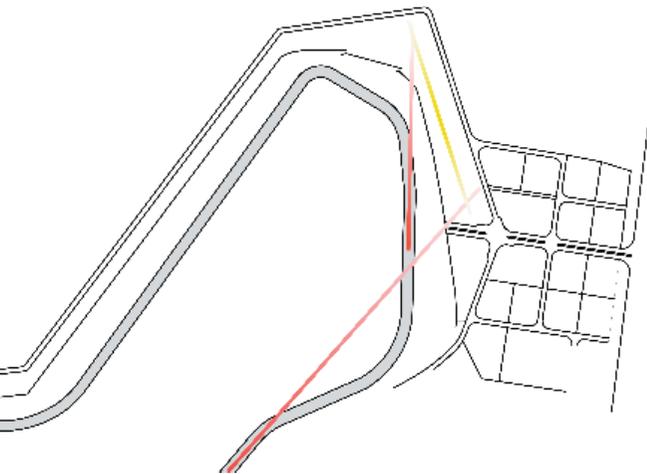


figure 4.02_creation of an axis

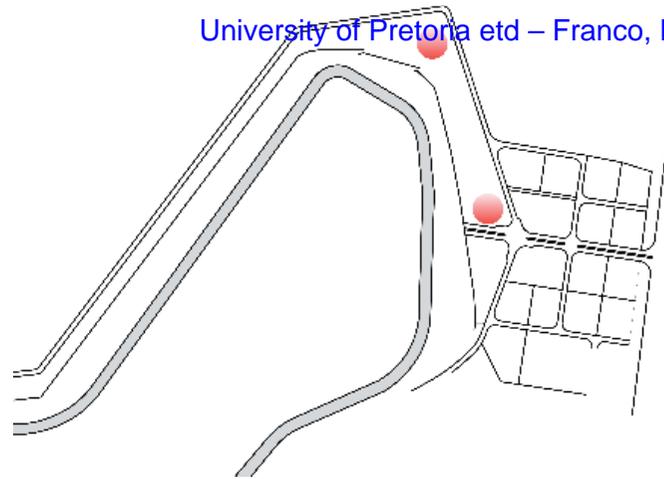


figure 4.03_nodes presented from the axis

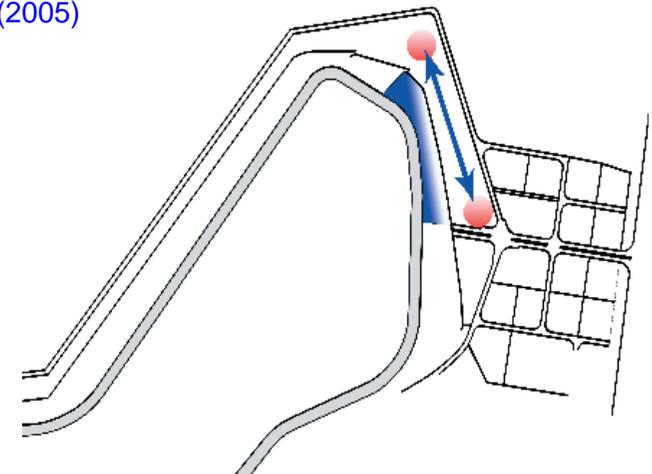


figure 4.04_establishing the link

Constructing A Concept

The idea of creating a facility, a series of buildings grouped or clustered together with an overall similarity of purpose, that will serve the multitudes of our growing nation in educating and developing the minds of the future possibilities, past and present included, in motor sport is captivating. The idea of the facility should represent the technological marvel that motor sport is and, just like watching the races, should stir the emotions of all concerned.

What will follow are the factors that are used to create the concept, from the standard set of design “rules” that are well published, to other factors taken into account through interviews and personal opinions of people whose passion is motor cars and motor sport.

Points of Departure

As already mentioned previously in this document, the sale of Kyalami Grand Prix Circuit came out of a need for re-establishing the circuit in the international arena. Together with this is the realization of the improvement of the facilities and infrastructure of the circuit and its surroundings and as such, a framework for development was put into place. This works ideally with the notion of motor sport development and promotion as part of this framework and will also draw other users to the area that might otherwise go elsewhere.

From the framework and position of the site, within the framework, certain key factors become apparent. Most notable of these are axis, linkage, hierarchy, nodes and views.

Two main axis are created from the circuit itself and a third axis is established between the two points created on these axis lines within the precinct of the site (fig. 4.02). They are as follows:

The axis created from the Vodacom straight to the lower portion of the site, the axis of the short straight, from Imperial sweep to Nashua corner, to the upper section of the site and then the axis linking these two points.

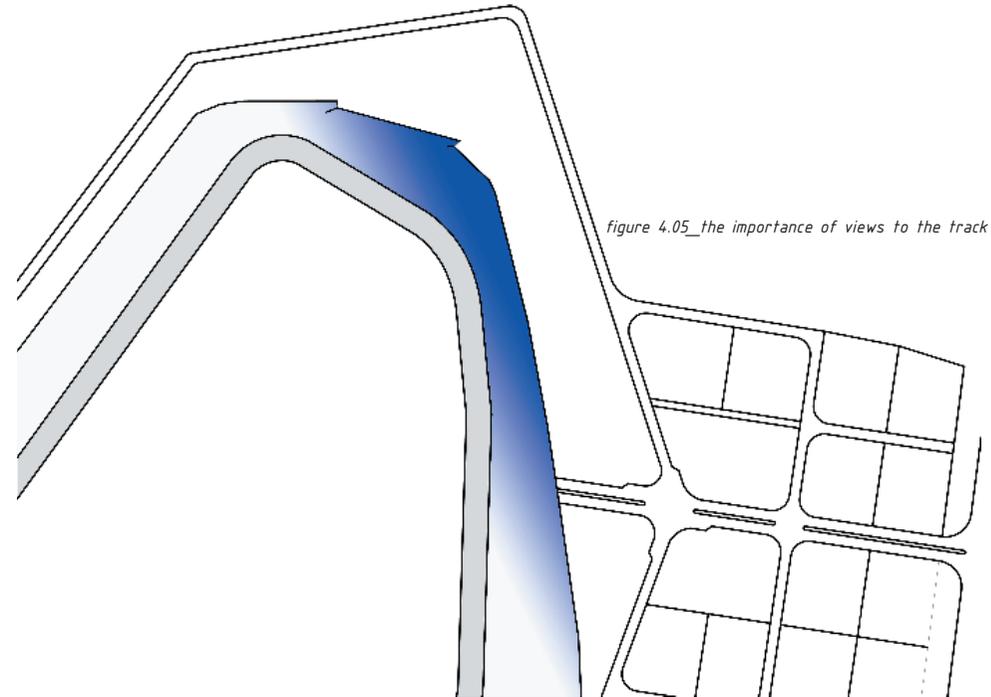


figure 4.05_the importance of views to the track

The latter axis that runs the length of the site is used as a linkage (fig. 4.04) between the lower portion of the site to the upper portion of the site. This leads to the creation of two major nodal points (fig. 4.03) on either end of the site which must respond adequately in terms of hierarchy and function as well.

The proximity of the site to the track itself lends the opportunity to expose the user to as much track view as possible (fig. 4.05) and the design should maximize the potential of this possibility, keeping in mind that the main façade of the facility is west facing.

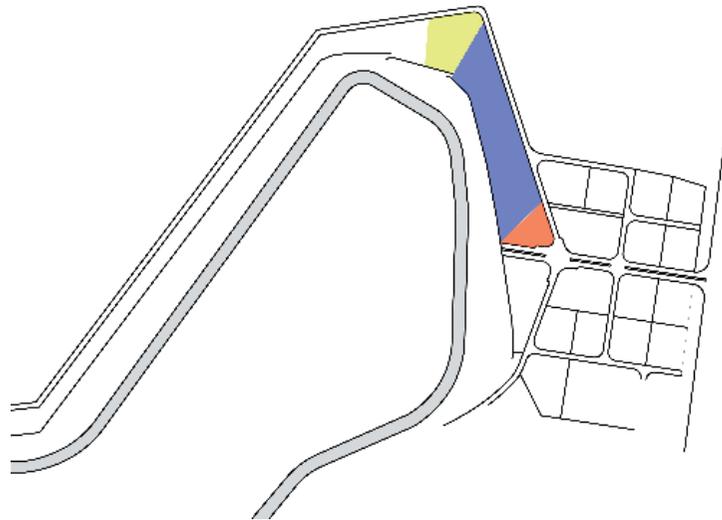


figure 4.06_establishing the three precincts

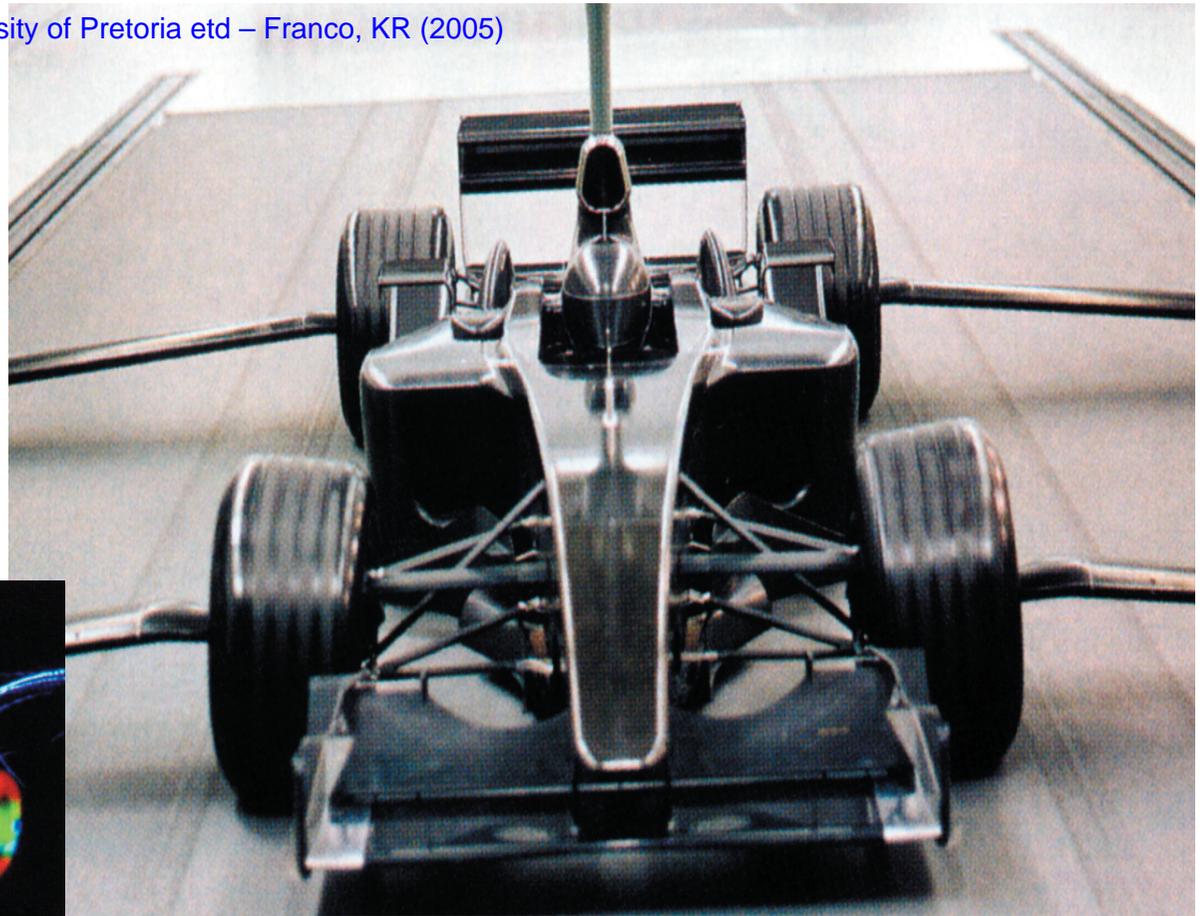


figure 4.08_wind tunnel technology_scale 1:2 model

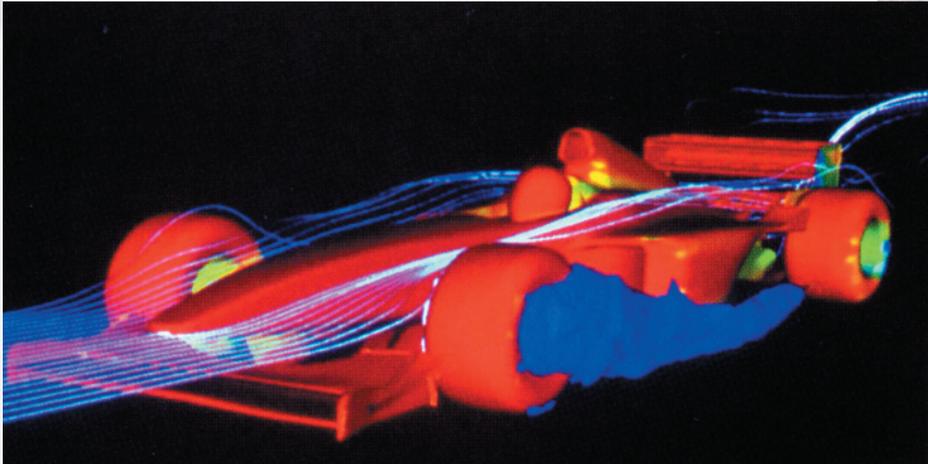


figure 4.07_wind tunnel technology

Extension of the idea

From the features mentioned above, it can be concluded that the site can be divided into three main areas or precincts (fig. 4.06). Precinct one forms the lower section of site, precinct two the middle section and precinct three the upper section. These precincts will be connected mainly by a path of movement along the created axis between precinct one and precinct three. Movement forms a crucial aspect of the design and can be useful in stirring emotion. Groak (1922:83) refers to this as Kinaesthetics. Character within the complex must be established and should by no means be static. This can be achieved by responding directly to the tract, respecting the slope and creating spaces, specifically within precinct two. A change in levels also helps to add diversity.

Motor cars in general and sports cars more specifically, are technological marvels that are continually being redefined in terms of technology and aesthetic. The nature of this dissertation is so closely related to this technology and aesthetic that the presentation of this facility should represent this. The architecture should be sleek, but not overwhelming and should express the continually driven passion of motor sport and the motor sport enthusiastic.

An enthusiasts opinion

Getting a non-architect and car enthusiast's opinion on the creation of a visitor's centre and museum for South African Motor Sport has been an incredibly valuable source of inspiration for a design of this nature. It allows the passion and emotion created by cars to flow and present the designer with a completely different point of view towards the user's perspective.

Graeme Hurst is an enthusiast of all things to do with cars - classic and vintage cars specifically. He was born in South Africa and completed his degree in Urban Design, but his passion has always been motor cars. With his English heritage, he moved to England and began exploring his passion in greater depths, discarding his university education. He now works as a Journalist for Classic Car in England.

In an interview with Graeme, certain points were raised about the establishment of a facility of this nature and from his perspective. There are a number of key factors that should be created to make this a successful facility from the user's point of view. They are:

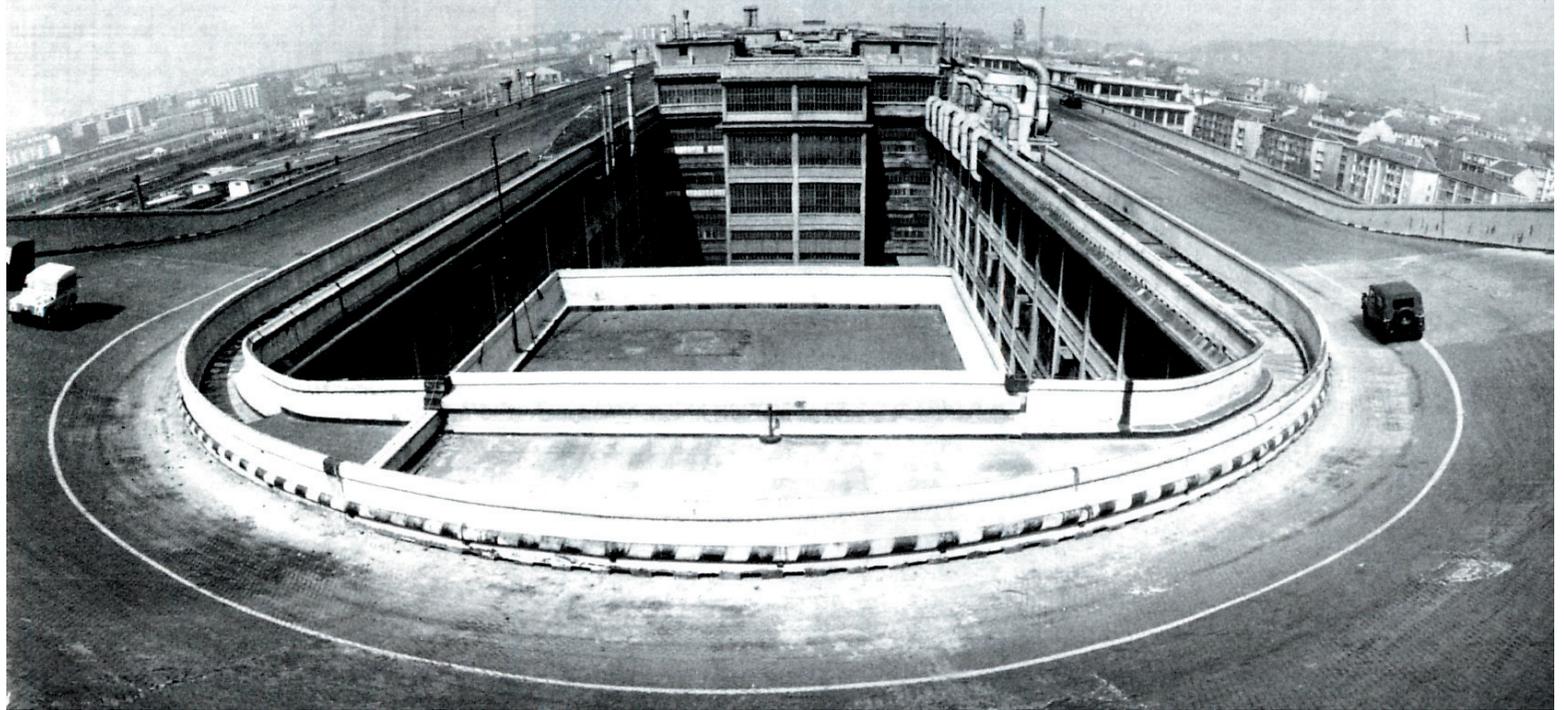
- _ The facility should appeal as a venue people should want to come and visit.
- _ The museum should be accessible and multi-functional
- _ Signage needs to be included, where necessary, to let people know what's happening
- _ Use of small spaces to create atmosphere and to catch attention
- _ To try and get the public involved and to attract the attention of the people on the street.



figure 4.09_traffic congestion



figure 4.10_Fiat Lingotto Plant in Turin



Design Rationale

Symbolism and the car

The motor vehicle is without doubt a crucial bane of existence in today's society. *Crucial* because in a country like South Africa, where there is an inadequate public transport system and the mindset of the population is one of disregard for the environmental effects of the car, getting to and from must be accomplished by the use of a car, most often by a single person. *Bane* because, despite the necessity of the car, the sky rocketing petrol prices, an inadequate road network and the lack of patience amongst most drivers on the road today, the car is a liability. It only sucks up money and creates dangers for the user, the pedestrian and the environment. It cannot be debated that the motor vehicle is unsustainable, even with the growing trend amongst car manufacturers in exploring alternative methods of energy consumption for use in the engine of a car.

Designing for the car and allowing it to influence design has been in existence since the introduction of the motor vehicle over a century ago, but it only truly came into effect with the mass production of cars during the second quarter of the twentieth century.

Jonathan Glancey writes in his article "Architecture and the Car" (Architectural Review, June 2005) that the evolution of architecture ran parallel to the evolution of the car and greatly influenced each other. It started with architects like Le Corbusier who had a fascination with the technologies and forms of the aircraft and the automobile. While Le Corbusier was exploring his passion through patrons like Gabriel Voison, one architect was revolutionising architecture and the automobile industry, Albert Kahn, and he did this by forming a relationship with Henry Ford.

While Le Corbusier and his European contemporaries were talking about an architecture of mass production with an influence from the aircraft, the automobile and industrial design, Kahn was building it (Architectural Review.2005:6). This evolution led to the outstanding 805m x 400m factory for the production of B-24 bombers in Willow Run, Michigan.

It should be mentioned though that one of the finest examples of the relationship between architecture and the car is the Fiat Lingotto plant in Turin, designed by engineer Giacomo Matte-Trucco and recently remodelled by Renzo Piano into a civic, commercial and arts centre.

The evolution of car design and architecture can best be summarised through an extract from Glancey's article:

"...there was an undoubtedly close connection between early Modern Movement architecture and the car. If the London Georgian terrace of the eighteenth century for example, has been designed, unwittingly, as a kind of mirror image of the well-groomed contemporary pedestrian, and the elongated white stucco Regency terraces of John Nash around Regent's Park designed to reflect the stately, if faster, movement of horse-drawn traffic, determinedly horizontal white Modern Movement architecture surely reflected the speed of the passing car"

Jonathan Glancey (Architectural Review.June 2005:7)

With this statement now in mind, could it possibly be said then that the inclusion of high tech architecture with all the marvels of glass and steel represent the evolution of the technology of the sports' car?



figure 4.11_Aerial view of Kyalami on race day

Symbolism and the track

Kyalami Grand Prix Circuit is known as the home of South African circuit racing and has been in existence since the 1960's. There is a very strong emotional bond to the track and its surrounds and has witnessed many international stars, the fastest cars ever to be produced in the world and some of the best racing ever to take place world wide. With a history so steeped in emotion it is only fitting that this symbolism of adrenalin and energy be upheld and be reflected in the design proposal.

Future Expansion

By definition, Master Planning is a "scheme of arrangement illustrating the ordered development of building(s) over time" (Billings.1993:2). This definition allows for a varied interpretation in terms of each design process and what effects master planning may have on the final design proposal. According to Billings (Mater Planning for Architecture.1993:10) there are a set of constituent parts in a master plan that need to be understood, each with its own hierarchy.

For all intents and purposes, only the two major elements will be presented for the purpose of this discourse as they are the most important. Two elements are used in the initial process of master planning. First is the forms and shapes representing buildings or functions and second is lines or bands that show movement. These two elements work together to create a character and quality with most important being that of "changeability" (Billings.1993:11). Changeability is the relationship between the forms and movement patterns and how they allow the other to be changed or altered. The crux of the ability for a plan to change in an ordered manner must be evident, with the result that the future expansion (or alteration) is logical.

The movement pattern (fig. 4.12), through examples in history, is usually the dominating feature through the development of a concept to the final design proposal and the recurrence of the same basic generic shape, allows for the extension of the master planning ideal (Billings.1993:40).

The concept of master planning does not only include the rationale of designing for extension or alteration, but could also allow for a "design for change in use" situation (Billings.1993:125).

Master Planning is a crucial design tool that will allow for building sustainability in the future and, where possible, will be implemented in the design process.

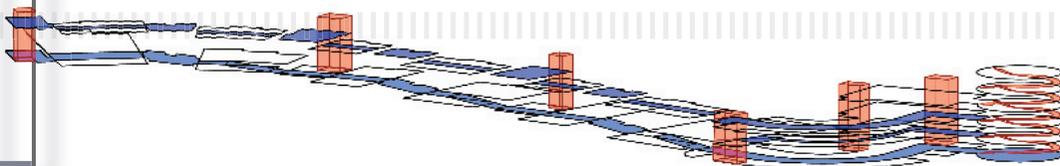


figure 4.12_Vertical and horizontal movement throughout the facility



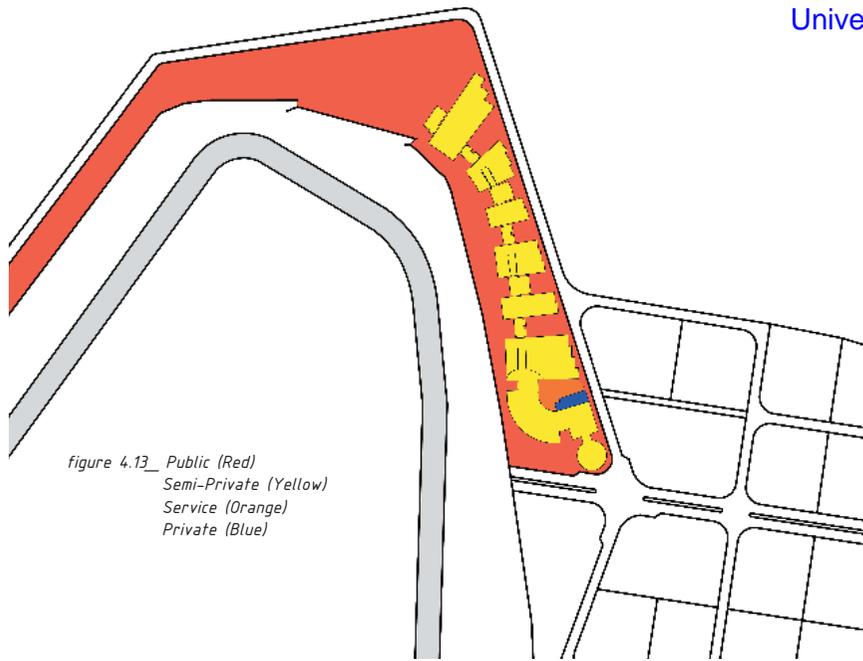


figure 4.13_ Public (Red)
Semi-Private (Yellow)
Service (Orange)
Private (Blue)

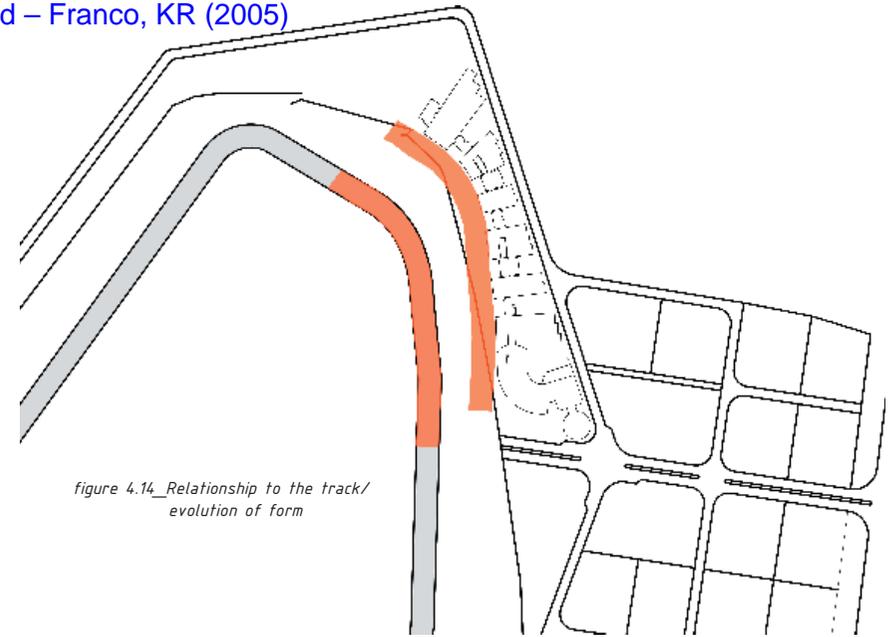


figure 4.14_Relationship to the track/
evolution of form

Relationships

“...an essential quality of cities has rested in the coherence of groups of buildings, spaces and infrastructure.”

Steven Groak (The Idea of Building. Thought and Action in the Design and Production of Buildings.1992:39)

The qualities of our cities rely on the relationships between the constituent elements that make up its parts, and as Groak puts it, the elements are groups of buildings, spaces and infrastructure. To a lesser degree, but by no means less in importance, the quality of a building or a group of buildings needs to rely on these same relationships to achieve a higher quality.

The relationships between the building, the spaces inside and outside and the infrastructure (services) (fig. 4.15 & 4.16) should be designed to create an essential quality that will contribute to the users emotional and physical well-being.

Clear definition of served and servant spaces, public and private spaces and production and relaxation spaces (fig. 4.13) must be made so as to create an environment that will be of the highest quality for all involved, with careful attention to the relationship between the elements.

The relationship to the circuit (fig. 4.14) itself is also one of extreme importance. The facility needs to respond to the track in all manners possible and should represent the ideals of the circuit, the racing and the passion that it represents. The relationship that Kyalami Grand Prix Circuit has had with its supporters over the decades has stood the test of time, largely due to the fact that it is South Africa's only international standard circuit, but it is without question that in the hearts and minds of many motorsport fans, Kyalami holds something very dear.

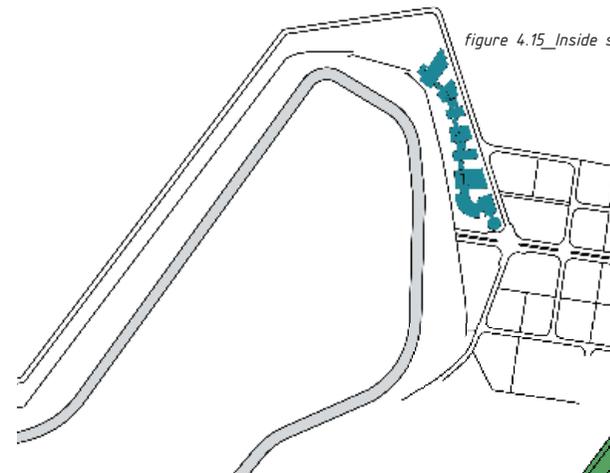


figure 4.15_Inside spaces

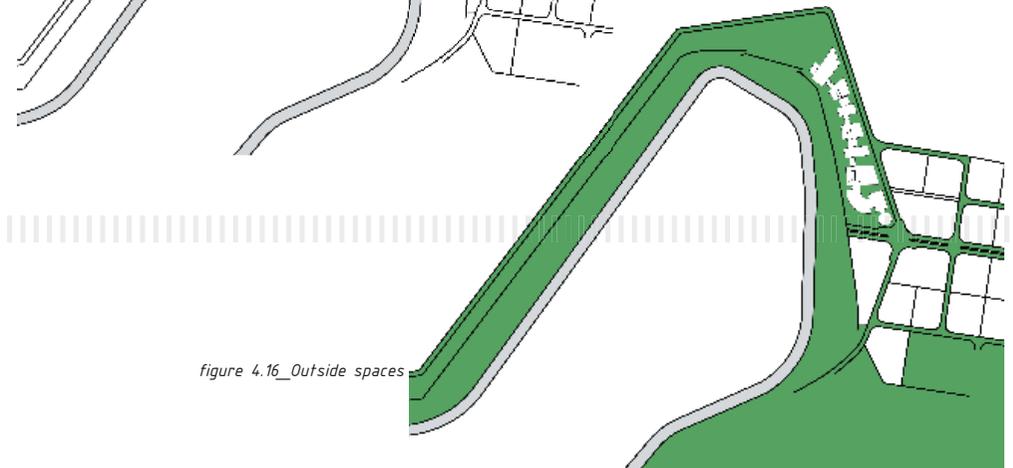


figure 4.16_Outside spaces



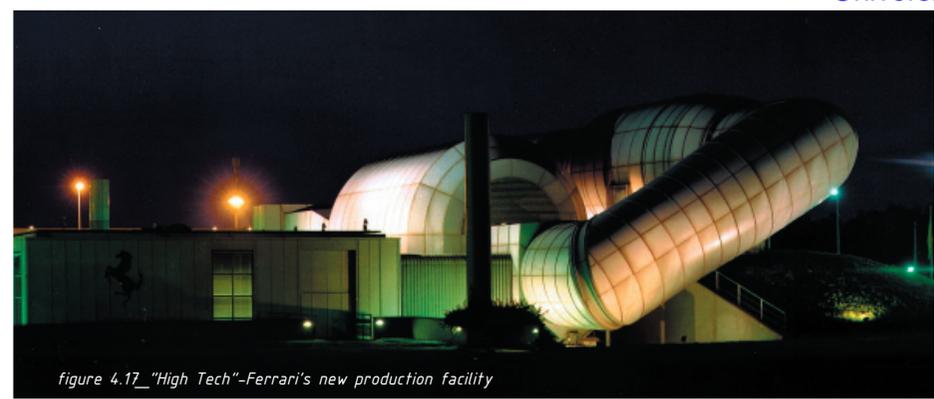


figure 4.17_ "High Tech"-Ferrari's new production facility



figure 4.18_Williams F1

Creating and communicating an identity

"The creation of an architecture which incorporates new technologies, entails breaking away from the platonic idea of a static world, expressed by perfect finite objects to which nothing can be added or taken away, a concept which has dominated architecture since its beginning. Instead of Schelling's description of architecture as frozen music, we are looking at an architecture more like some modern music, jazz or poetry where improvisation plays a part, an indeterminate architecture containing both permanence and transformation."

[Richard Rogers (*Extract from Architecture-a Modern View*, 1990:46 in *Eco Tech- Sustainable Architecture and High Technology*) 1997, 7]

The statement that Rogers makes in describing architecture can be broadened to not only include the composition of modern music or contemporary poetry, but also to include the design, construction and running of a race car. It too involves improvisation, permanence and transformation and it is with this idea of speed and technology that the architecture of circuit racing should represent itself, where the only adornments should serve a specific function (like the aerodynamic wings on a Formula One car) and the structure itself is the creation of sculpture.

The high tech style could be used as a starting point for creation of racing architecture (in a sense being the architecture that surrounds the race track and all that is involved in racing, like the design and manufacture facilities). The materials used and the atmosphere created represent all that is racing cars.

According to Davies (*High Tech Architecture*. 1988:6) the "High Tech architect sees architecture as a branch of industrial technology" and this could symbolise the design and production of racing cars all over the world where technology is a crucial point of putting a race car together. Davies goes on to say that the typical High Tech Building represents and symbolises technology by not only using it in the most cost effective way, but pushing it to its fullest potential and creating an image of the future (Davies. 1988:6).

The balance must now be found between contemporary High Tech and old school shed categorised by steel frames over large spans under which mass production takes place.

