

# Chapter 6

# Design discourse

## Departure

The design of the proposed new Gautrain Station in Hatfield Pretoria can be likened to the design of a typical suburban intermodal hub where the different modes of transport converge and people move on foot from one point to the next.

This is a very simplistic view of this very complex building type. It was learned from the case studies that modern stations are more than just a mere departure and arrival depot.

Stations, not standing alone anymore, become part of the urban fabric, where it densify, diversify and revitalise the area that it serves, for instance Kowloon airway station, Hong Kong. (vide 5.7)

The proposed Gautrain Station, Hatfield must have at its core the important elements looked for in a station building, plus have the significance of the building of South Africa's first high speed rail link embodied in its design.

People all around the world are looking to our nation to see if the technological prowess exists to bring this feat to completion. The attention would also be clearly focussed on the spaces created around the building, which would make the building an icon to the new era of high-speed rail travel in Africa.

The design of the building must answer to responsible urban design approach explained in teachings of Dewar and Uytenbogaardt.

With all of the above said in mind, it was decided that the design would be seen from conception to be like a machine all be it one built to facilitate the efficient loading and unloading of passengers, but also the creation of viable commercial spaces in and around it to make the trading aspect surrounding travel a reality.

The local community needs to be drawn in at an early stage to ensure a sense of ownership, this feature also catered for in the medium and long run in the form of participation in vending and small and medium business facilities for these role players.

The built elements of the proposed Gautrain Station, Hatfield were the next subject under consideration.

### Materials

What is called for in the elements were a sense of solidity, monumentality and lastly also respect for what has come before in the use of elements such as exaggerated steel splice joints that harks back to the bygone steam train era and the pre fabricated structures shipped to this country from abroad.

The use of concrete in the main structural elements would give the desired effect of solidity and oversized elements called for in the monumental aspects of the design.

Panels in the design were rough cast and certain elements given a rough texture with bush hammers to convey the sense of the building being founded like the plinths of great architects from the Roman era such as Andrea Palladio.

The use of these materials and elements gives recognition to the cultural and historical uniqueness of "station". This creates a sense of place, making it a cognitive landmark to the users of this environment. (Dewar& Uytenbogaardt 1991:18)

## Roofscapes

The major influences on the roof design can be seen in the Ferry Terminal Building at Holyhead in Britain.

The shape of the roof scapes can directly be attributed to this building the reason being that the modularity of the design in the Ferry Terminal Building and the modularity in construction in the Gautrain Station building are both very important elements.

In order to make the construction as economically viable as possible, the construction of the main elements had to co-inside with accepted and well understood construction principals prevalent in the construction community.

A major design concept were the definite use of copper as a roofing material on the most prominent roof spaces.

The decision to do so has a dual function-the mimicking of prestige as seen in the great public forum buildings of Europe, and the advantage of the roofing material to be moulded into the complex shapes called for in the design.

An unexpected advantage occurred later in the design in that the water harvested from the copper roofs were then ideally suited to be reclaimed and used to irrigate the planted areas of the design, as one of the characteristics of this metal is its anti bacterial properties.

It would then make it feasible to use the water directly on the planted areas without having to treat it.

## Vertical circulatory area

A prominent vertical circulatory space houses stairs and elevators to reach the elevated office space above ground or the concourse below ground.



Figure 6.1 The Holyhead Ferry Terminal Building. The use of modular building methods inspired the curved roof shape in the design of the Gautrain Station. The ease of add-on in the building process would make it possible for the Station to be cost-effective. (World Architecture July/August 1996:126)



Figure 6.2. Holyhead Ferry Terminal Modular Roofing Construction. (World Architecture July/August 1996:126)

## Office space

The office space is situated on the wings of the main vertical circulatory space. The walls of the office space incorporates oversized glass windows in aluminium frames and -visors , the latter for passive temperature regulation.

An open office plan makes maximum use of natural light pouring in through the glass windows.

Nature is brought into the office space by means of planters boxes outside the southern windows as well as next to the work stations. Floor covering consists of carpets, divided lengthwise by a curved decorative tiled area.

## Connective space

The connective space between the vertical circulatory area and the canopy houses stairs as well as the entrance to the Gautrain Restaurant

## Canopy

The canopy is historically the element that signals the presence of a station.

In the design of the proposed station , this visual code of railway architecture will be incorporated.(Edwards1997:27)

The form of this canopy is echoed in the canopies over the trader stalls, the office spaces and the axis defining canopy.(perpendicularly aligned north to the vertical circulatory area)This was decided upon because:

*“Repetition, alignment and juxtaposition of identical elements and similar construction methods impose order on our buildings and our towns” (Von Meiss1997:31)*

The Rail Canopy is situated to the south of the site and is in its design reminiscent to those of Stratford Market Maintenance Depot and The Oslo International Airport.(figure6.3)

The building form on plan forms the visual link between the Schoeman Street vista and the canopy. The axis defining canopy , as well as the slight offset of the rail canopy to the east, re-direct the attention of the pedestrian to the axial space leading north from the vertical space. Thus the route to be taken is clearly legible.

The design of the canopy as a floating roof over the platform area gives the design an airy feel as the curved trusses spanning the space creates a vast open area.

The addition of rooflights serves the dual purpose of aeration of the track spaces in the event of a fire and of the ingress of natural light into the public interchange spaces underneath.



Figure 6.3 The design of the canopy in the Gautrain Station, Hatfield will be similar to the canopy at Stratford Market Maintenance Depot. Note the use of rooflights. (World Architecture April1996;110)

## Split level

The split level nature of the design where the sub-terrainian part of the building houses the working areas of the design can be seen in the successful use of a split level from platform to concourse level in the Santiago Chile station. (vide 5.3)

This aspect was incorporated into the design of the proposed Station. At the proposed station this design ensures that nobody can get onto the platform without a ticket from the concourse.

This in itself makes the building legible: if you don't have a ticket yet, you are not on the platform!

## Super basement

The machine-like nature of the building's essence can here be discerned in that the direct route for pedestrians to and from their most important inter-city transport mode (the motorcar) has been kept unhindered. It is possible for the modern day traveller to directly from his vehicle step onto the platform for rapid transit to his ultimate destination, or the mull around in the building area to easy access to the park spaces above or the shopping spaces in the basement area. The possibility also exists to have easy access to the shopping district to the south of the site in Hatfield where the existing Hatfield Mall and Student District is situated.

One of the major decisions early on in the design proved to be a very contentious issue, and that is the definite realisation that the relationship between the motor vehicle and the change of transport mode from motorcar to High Speed Rail would be the prime design factor in the building's design.

The secondary design of the change of passenger from pedestrian mode to long-distance bus travel service or even to taxi or medium bus service would be of a smaller importance.

The person for which the building would ultimately function and would have to cater for in order to survive would be the Upper Middle Class business traveller or white collar office worker. This fact is clearly stated in the briefing documents received from the relevant authorities. The social responsibility element in the design of community involvement and catering for previously disadvantaged communities would the designers envisage the spin-off.

It is for this reason that the building in its original conception of being a machine had to take into account that the demographic of the traveller that would use the service would only do so when it becomes either impossible for them to do so because of inhibiting cost of the ease of the service forcing him to make use of the rail system.

Modern day South African business travellers find their automobiles as extensions of their own personalities; it would thus have to be extremely easier to take the train for them to abandon this status symbol.

For precisely this reason the connection between parking his/her car to stepping onto the train would need to be as seamlessly as possible. That would then follow that from street surface to parking bay to eventual seat on the train would have to be a clearly defined and easily executed route. The facilitation of this aspect came in the design of the Super Basement, where from the main feeding routes were mapped out clearly, with slipways into and out of the building.

An important shortcoming to the proposed design of the Gautrain Station as assessed by the Authorities if the situation of the proposed parking for the station on the wedge shaped piece of land to the east of the new building.

On the first level of the super basement, a supermarket and smaller retail areas are also housed.

This piece of land were hastily acquired by the rail Authority to serve the 1500 parking bays needed for the station long-term parking needs.

The implication of the widened rail cutting to the north to accommodate the Gautrain Rail Tracks have however been neglected. This piece of land will be cut in half and would become useless to accommodate the vast amount of parking bays envisaged over three basement levels.

It was for precisely this reason that it was decided that the building should contain the required amount of parking on-site in the form of a "Super Basement", such as can be seen in the Melrose Arch Development in Johannesburg.

The site to the west would not go to waste, as it would be used to house the Informal Traders that would be housed in this area.

## Public forum

The creation of a public forum in certain areas were a central design concept, the inclusion of public expression in the form of art work and sculpture gives from overseas experience the stark public spaces back to the masses to enjoy and to make their own.

Monolithic concrete elements have been created in the park-like spaces to give graffiti artists the space for expression, whilst the use of more settled artists in the interior public spaces have been catered for.

On the platform areas there will be baked enamel panels depicting scenes from southern African life by numerous artists.

The panels serve the dual purpose of also being vandal resistant the spaces would be well maintained, and any graffiti in these spaces would be expeditiously removed and the offenders dealt with.

Even floor covering have been included in the design with the public artist in mind. Floor covering material in certain public convergent spaces has been designed to be mosaic panels depicting different scenes in our culturally diverse community.

The panels serve the dual purpose of also being vandal resistant the spaces would be well maintained, and any graffiti in these spaces would be expeditiously removed and the offenders dealt with.

To brighten up the basement walls, extensive use will be made of public art with each basement level comprising a different theme. This will also assist in the legibility of the building.

An element designed for in the building is the use of African sunlight, and the utilisation of indigenous fauna as humanising elements in the built form.

The garden spaces around the building extent to underneath the built form creating a seamless entity from inside and outside space.

## Park

This aspect of the building can be clearly seen in the elevated offices situated on the wings of the main vertical circulatory space situated as the centre point of the building.

Landscaping in the proposed design of the new Gautrain Station building has been one of the cardinal departure points in the design of the building.

The work of Peter Walker a famed landscape Architect has been used as a precedent to attempt the reconciliation of the two disparate worlds of technology and nature.

Because of his attempts to do the same in unrelated projects elsewhere in the world, most notably in the design of public parks and inner city squares where the often neglected left-over space between buildings were rejuvenated, the decision was made to use some of his ideas in the community forum park.

## Justification of the park.

This park, a very contentious aspect of the design because of the proximity of Springbok Park to the North East of the site, a park that because of its position between two busy, high speed travel mobility spines, have been neglected over the years to become a unsustainable area in the Hatfield area.

The direct comparison of the two park areas cannot however be made Springbok Park has become a financial burden to the City of Tshwane (Pretoria), to such an extent that the Dros Resaurant franchise have been enlisted to serve as guardians of the Park in order to maintain it.

The same fate would however be impossible for the proposed new Public Forum Park situated on the Gautrain Station site, the reasons being:

This Park is situated on the corner of two very prominent roads intersecting at the visual hub of the site. This important visual hub had been expressly cleared of previous architect's detritus in order to enhance the visible impact of the proposed new Gautrain Station situated deeper into the site to the south.

The argument had been to clear the existing Barloworld Motor Dealership currently on the corner of Duncan and Schoeman Streets,



Figure 6.4 The argument had been to clear the existing Barloworld Motor Dealership currently on the corner of Duncan and Schoeman Streets, in order to visual permeability of the park and building.

The Public Forum Park serves the secondary purpose of further provision of rentable trade space for vendors along the re-instated School Lane.

The pedestrianization of the park can thus be achieved, attaining the goal of placing the park and urban space back into the human scale realm so lacking in urban spaces.

At this point it should be clearly stated that after extensive scrutiny of the site and comparable examples in South Africa, the main reason was pinpointed why station buildings in our country are not utilised to its full potential.

Travellers all over when asked will tell you the same thing the places becomes too dark, people feel claustrophobic in the spaces and the result is few people habitate the spaces in the long run.

Station buildings on the rural areas on the other hand experience the opposite. Traders congest the platforms, people mull around and the whole space becomes what can only be likened to a Shouk (Arabian Traders market).

The linking factor between the two can then clearly be identified natural light.

People in Africa live close to nature, unlike people in Europe that are used to not seeing the sun for months on end. It follows then that in order for Africans to prosper they need to keep in close contact with nature and the light it provides. The design of the Proposed new Gautrain Station in Hatfield then becomes a very fine example of the opposing two factions.

Accepted thinking has it that the site should be packed tightly with functions, each intended to support the next.

## Connectivity and Circulation

The connectivity of the site to the rest of Hatfield would be of cardinal importance.

The site had been divorced from the remaining urban fabric of Hatfield ever since the construction of the rail cutting to the south of the site. This cutting created the anomaly of what is currently the old Arcadia Primary School Site where the proposed new Gautrain Station would be situated.

I Parioli Office Park to the south of the site across the rail cutting was originally the school's sport field. After the rail cutting the continued existence of the school on the site became impossible leading to the school's relocation in the early 1990's.

It now becomes crucial to the success of the Station that a vehicular and pedestrian link to the south of Hatfield is re-established.

The construction of a bridge over the rail cutting in Grosvenor Street becomes part of the design solution. The design of the bridge compliments the canopy structure over the rails and uses elements used in bridges built by Santiago Callatrava. The main support column protrudes like a obelisk into the sky further enhancing the creation of "Place" and signifying the importance of the traders space created on the eastern edge of the site. It furthermore emphasises the space by drawing attention to the link created to the shopping areas and public areas to the south of the new building..

Access to the site is primarily designed for motor vehicles.

Two major points of entry to the super basement is in the form of two slipways from Schoeman Street and Ducan Road respectively.

Both these slipways lead to the first basement level where the main modal interchange facilities of the building are housed.

A consequence of this is the higher floor to ceiling ratio to give access to buses and heavy vehicle traffic.

The modal interchange on this level caters for long distance buses and delivery trucks.

The co-habitation between different modes has been a grave concern where the design calls for close proximity of all concerned. Yet the need for pedestrian safety were paramount.

This was achieved by giving precedence to pedestrians in this area. In the basement the escalator core is a dominant visual element.

The circulation in the basement is situated around the elevator core. It is closed off by a glazed wall and automatic double doors, creating an airtight seal that between the noxious gases of the basement and the pedestrian realm leading to the above surface.

The vertical pedestrian circulation towards Grosvenor Street is catered for between the western office wing and the rail canopy and. This was achieved by creating an entrance from ground level to the top basement level.

Two entrances, similar to the one explained above, are situated north of the building alongside the axis defining canopy.

These elements, unlike the escalator well previously described only leads to the upper basement level while the escalator reaches all the levels of the basement.

Kiss-and-drop areas are accommodated in the reinstated School Lane, leading past the vertical circulation element above ground.

## Scale

In order to make a building that is human scaled and respectful to the built environment around the site, it was decided to not built past two storeys.



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