

Chapter 7

Design development

Concepts

Through the design the main premise can be seen as the respect for the urban scale of the Hatfield Township, and the creation of vibrancy in the neighbourhood by enhancing pedestrianisation in the entire area.

The second most important aspect should be the creation of clear sight to the building as it is important as a beacon and design icon.

By doing that the creation of a new urban park and vibrant community square is the end result.

It may be argued that the creation of a secondary urban park to be maintained and kept vibrant flies in the face of the struggle to keep Springbok Park merely a block away alive, but the importance of the of this park and the meaning it has for the new ruling class in South Africa cannot be underestimated.

It follows also that position-wise in the urban frame of Hatfield this park (a corner site) as opposed to a hidden park such as Springbok Park stands a much better chance to be kept vibrant.

Being visible from three sides and having activities inter dispersed in and around it should make the experience of visiting the park an enjoyable one.

The above said can directly stave the decision to place most of the “ugly” of inner-city modal interchange underground, freeing up the sun to create a human-scaled and pleasant space for all city dwellers.

Important to remember that people using these parks would because of the heightened densification of Hatfield, be flat dwellers, using the space as an extension of their own cramped personal space.

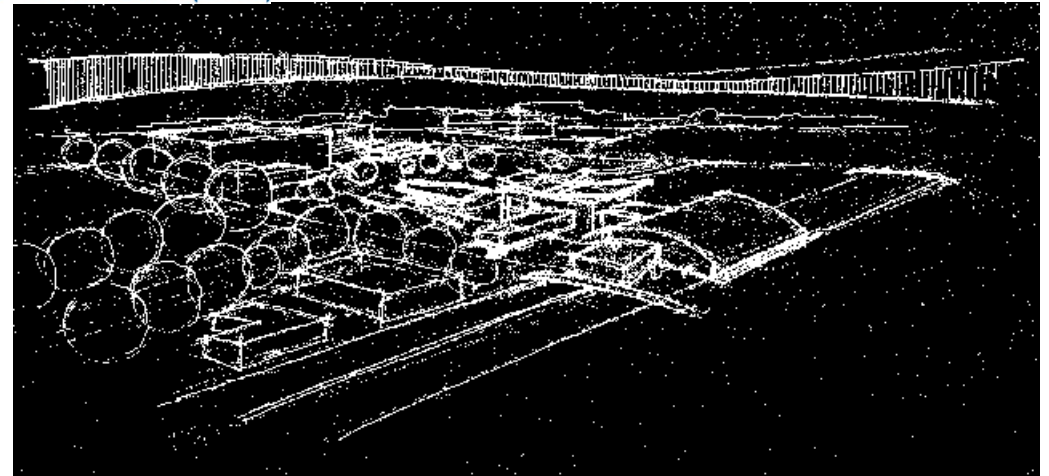


Figure 7.1a Proposed new Station Building in Early Sketch Phase Aerial View from the South West showing early design decisions

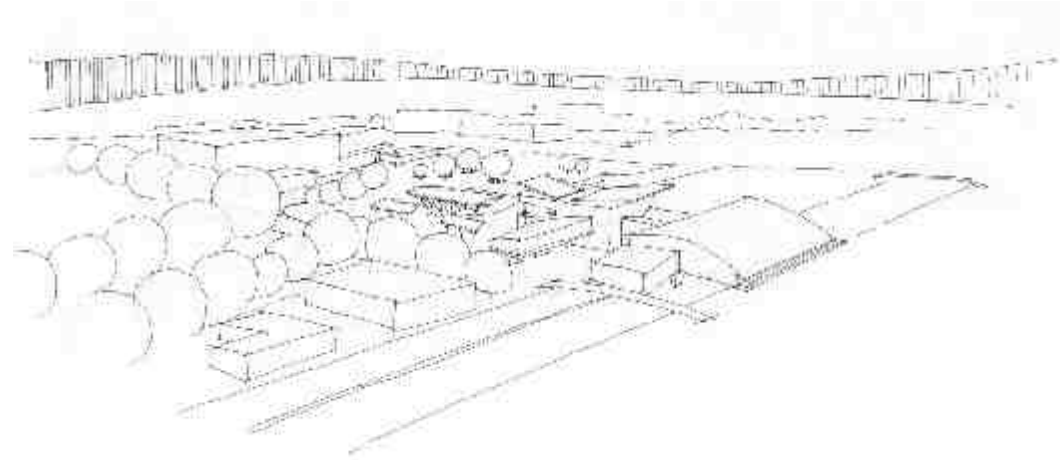
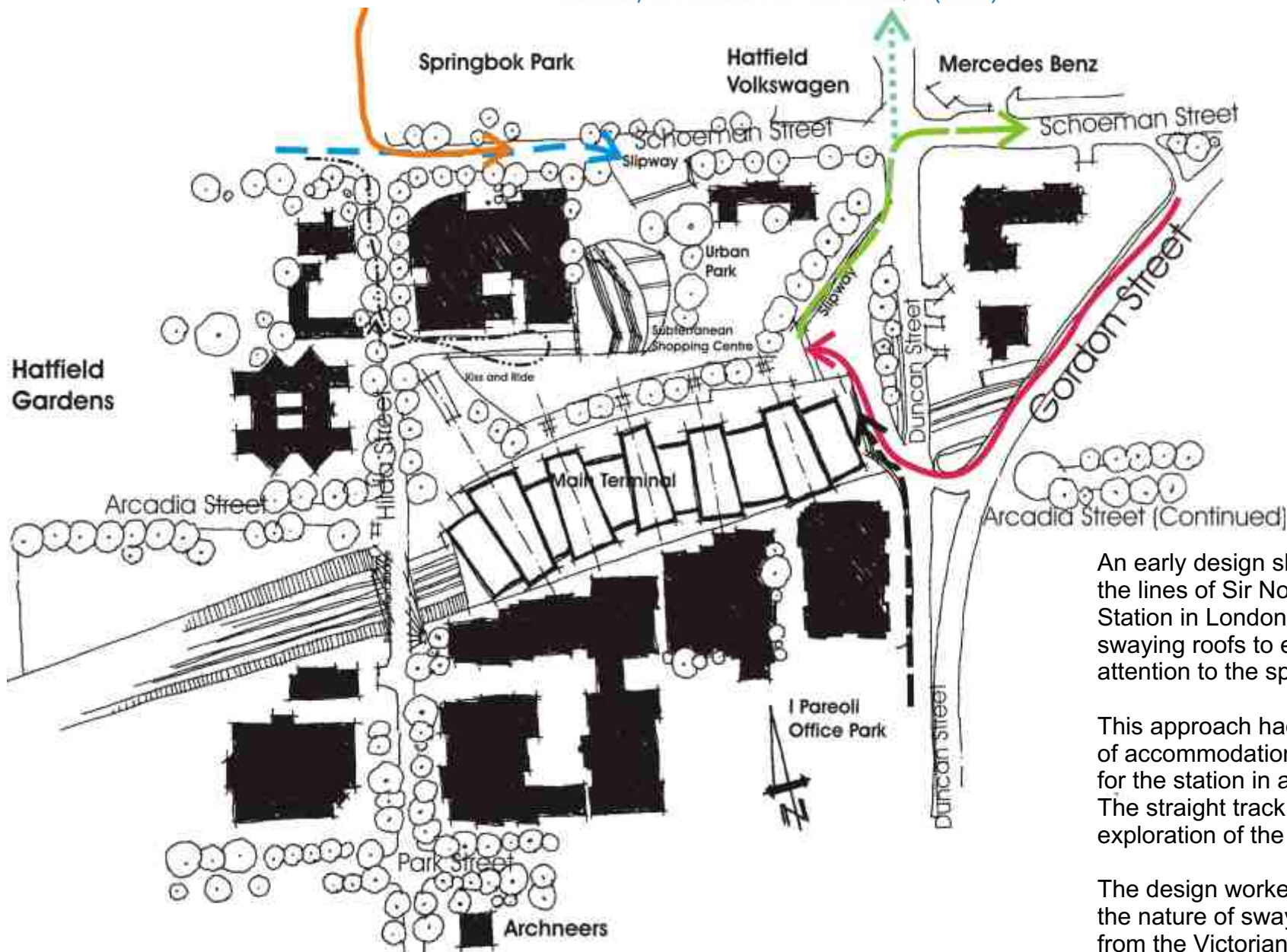


Figure 7.1 b Proposed new Station Building in Early Sketch Phase The same sketch inverted to show volumes more clear.



An early design sketch approached along the lines of Sir Norman Forster's Waterloo Station in London England, utilising swaying roofs to enclose and to draw attention to the spaced spanned.

This approach had however the problem of accommodation the needed services for the station in a non-logical sequence. The straight track also inhibited the full exploration of the design.

The design worked in London because of the nature of swaying tracks, a left over from the Victorian Era's narrow antique dated track system

Figure 7.2 Proposed new Station Building in Early Sketch Phase as seen on plan.

Early design sketches of the canopy system where the idea of water harvesting from rainwater were actively pursued.

This idea were however abandoned as the space possible under the roof could not accommodate the vast amount of clear space called for in a modern high speed rail system building.

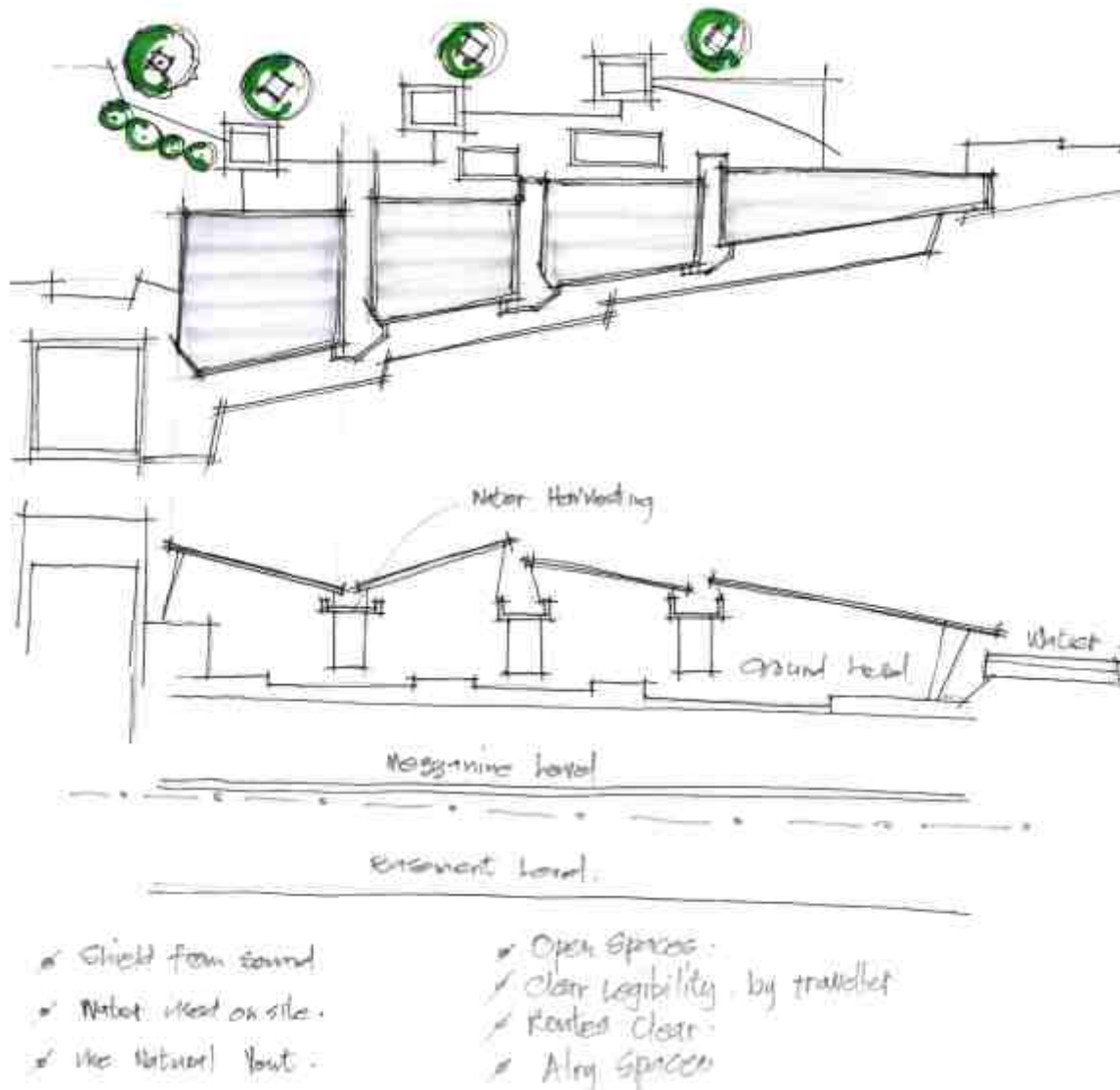


Figure 7.3 Early concept sketches of the possibility of harvesting rain water from roof surfaces. This entailed the use of mono pitch roof surfaces, which however couldn't be successfully utilised because of the enormous scale of the building intended.

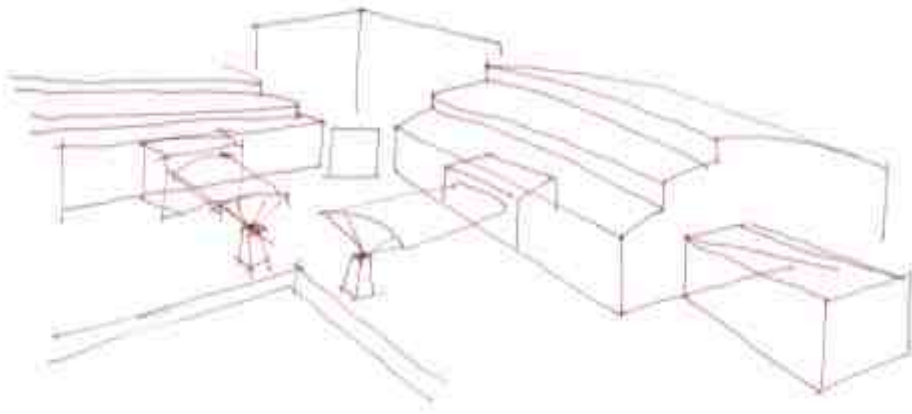


Figure 7.4 Early Design sketch

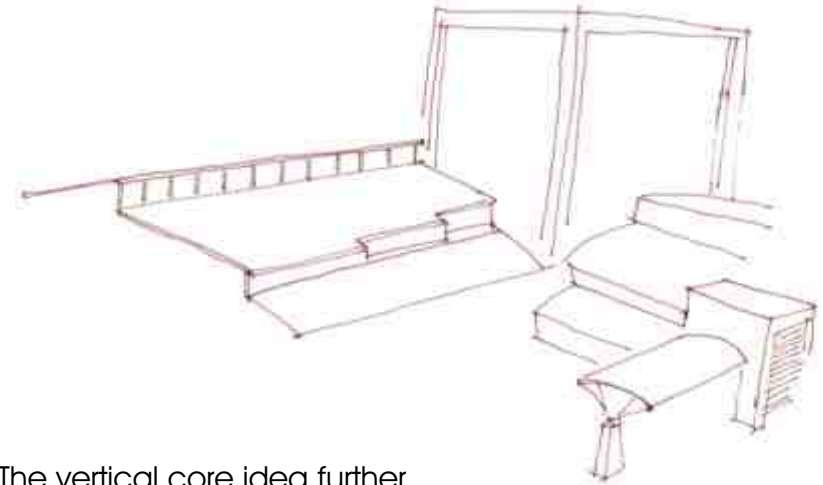


Fig 7.5 The vertical core idea further explored.

The idea of a vertical Office Core had been investigated early on in the design of the building. The reasons decided against the design of such a structure were mainly focussed on the restrictions placed on the amount of parking bays were possible on the site, the Gautrain demands 1500 bays exclusively for its operation.

The addition of any further bays would have entailed that the excavated depth of 22.0m would have had to be extensively increased to cater for the deficit - the problem would be in the sustainable design of reticulating the ground water seeping into the excavation.

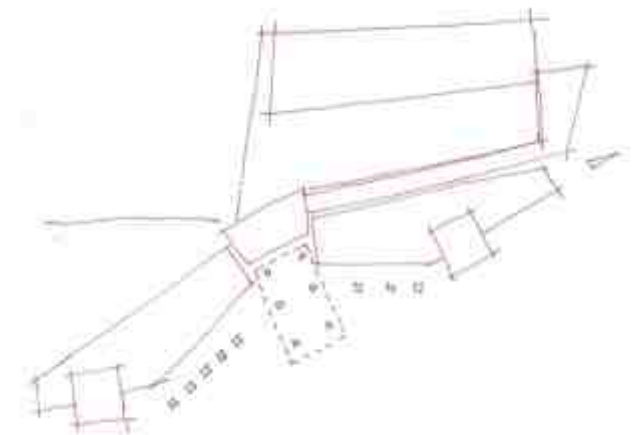


Fig 7.6 Early plan showing the massing of volumes around a central core

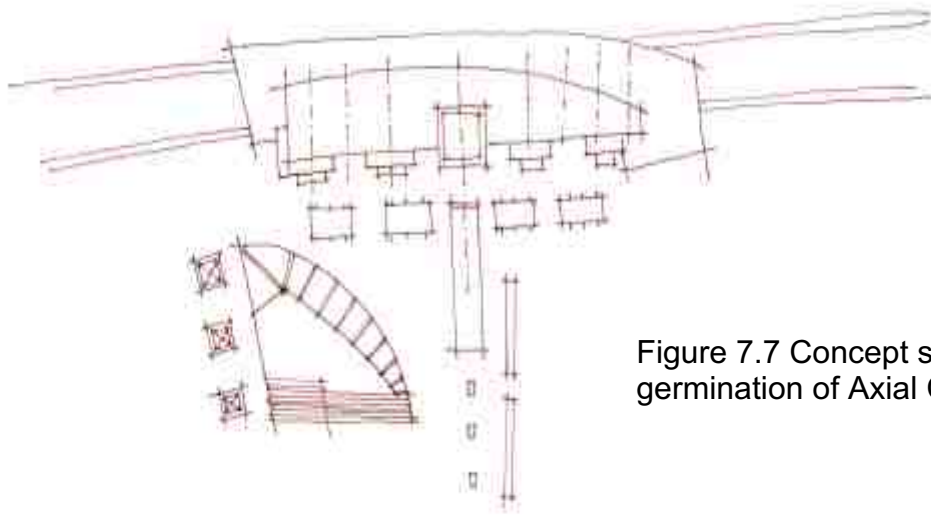


Figure 7.7 Concept sketch of building on plan showing the germination of Axial Concept in final design.

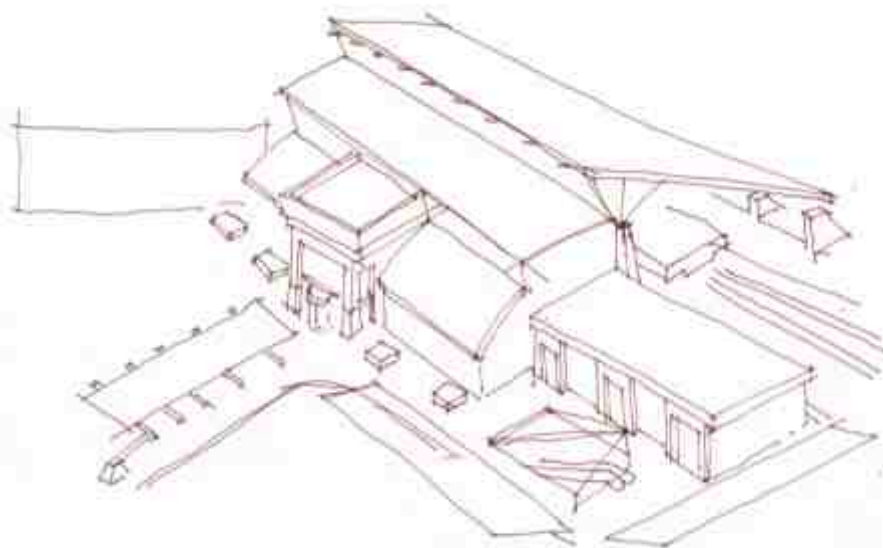


Figure 7.8 Massing of Station canopy in early design sketches showing the beginnings of the monumentality of scale called for in the ultimate design.

Early designs showing the evolution of the axis along the north south view line from the optimum space for the platforms in relation to the placement of the circulatory spaces. The need for an axis defining element was realized early on in the design process in order to focus attention to the rail canopy to the south

The placement of the roof massing were also explored in these sketches to emphasise the inviting aspect of a railway canopy.

For inspiration the tradition of rail architecture had served as a departure point with the use of massive steel sections as an design influence.

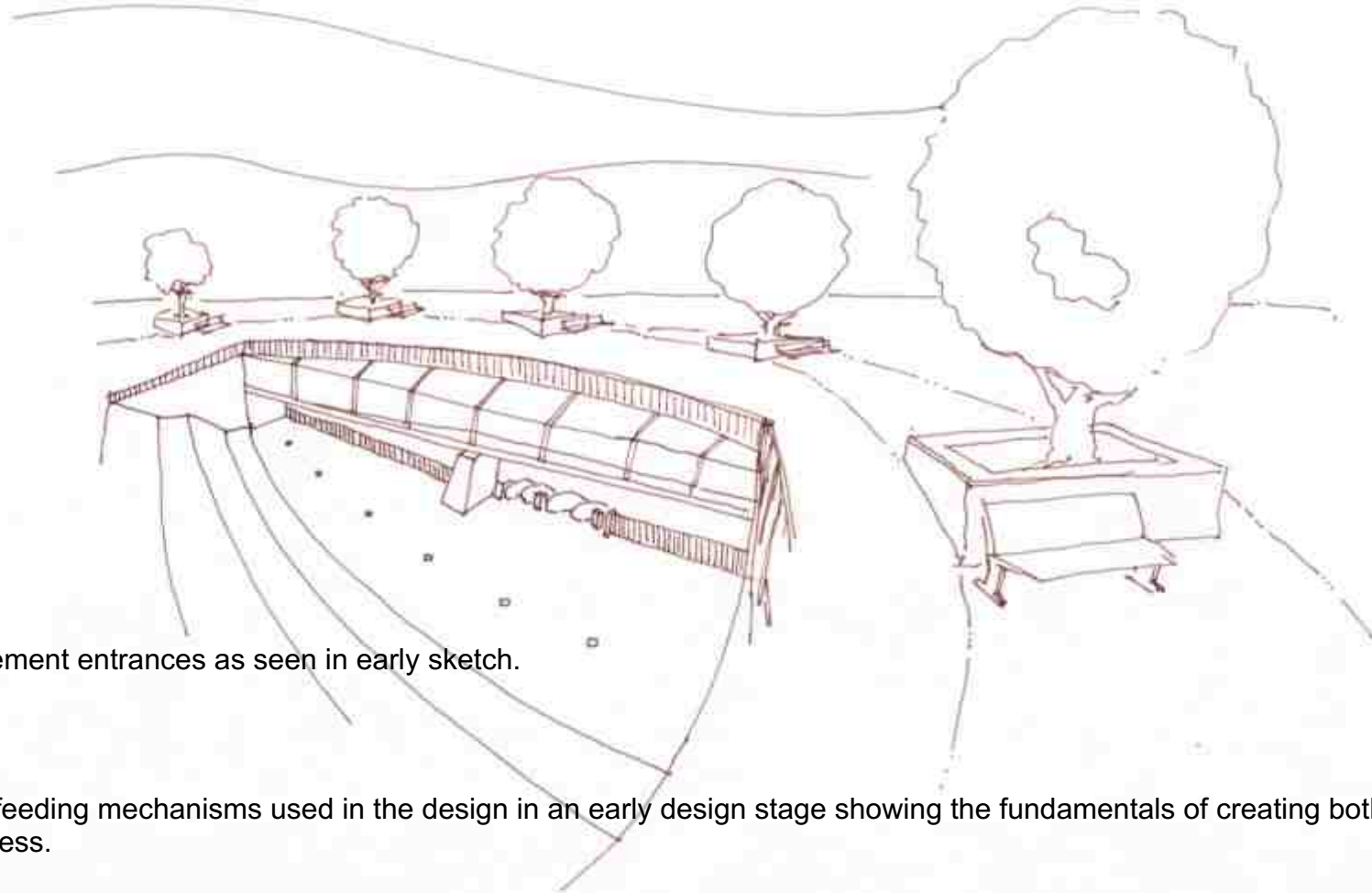


Figure 7.9 Basement entrances as seen in early sketch.

The basement feeding mechanisms used in the design in an early design stage showing the fundamentals of creating both shelter and also openness.

The urban park idea on top of the “super basement” slab creates an exciting concept in reclaiming the “lost” space of the basement roof to the urban dweller.

This element was used in the final design , but it changed shape and was mirrored around the axis defining canopy in order to emphasise the latter.

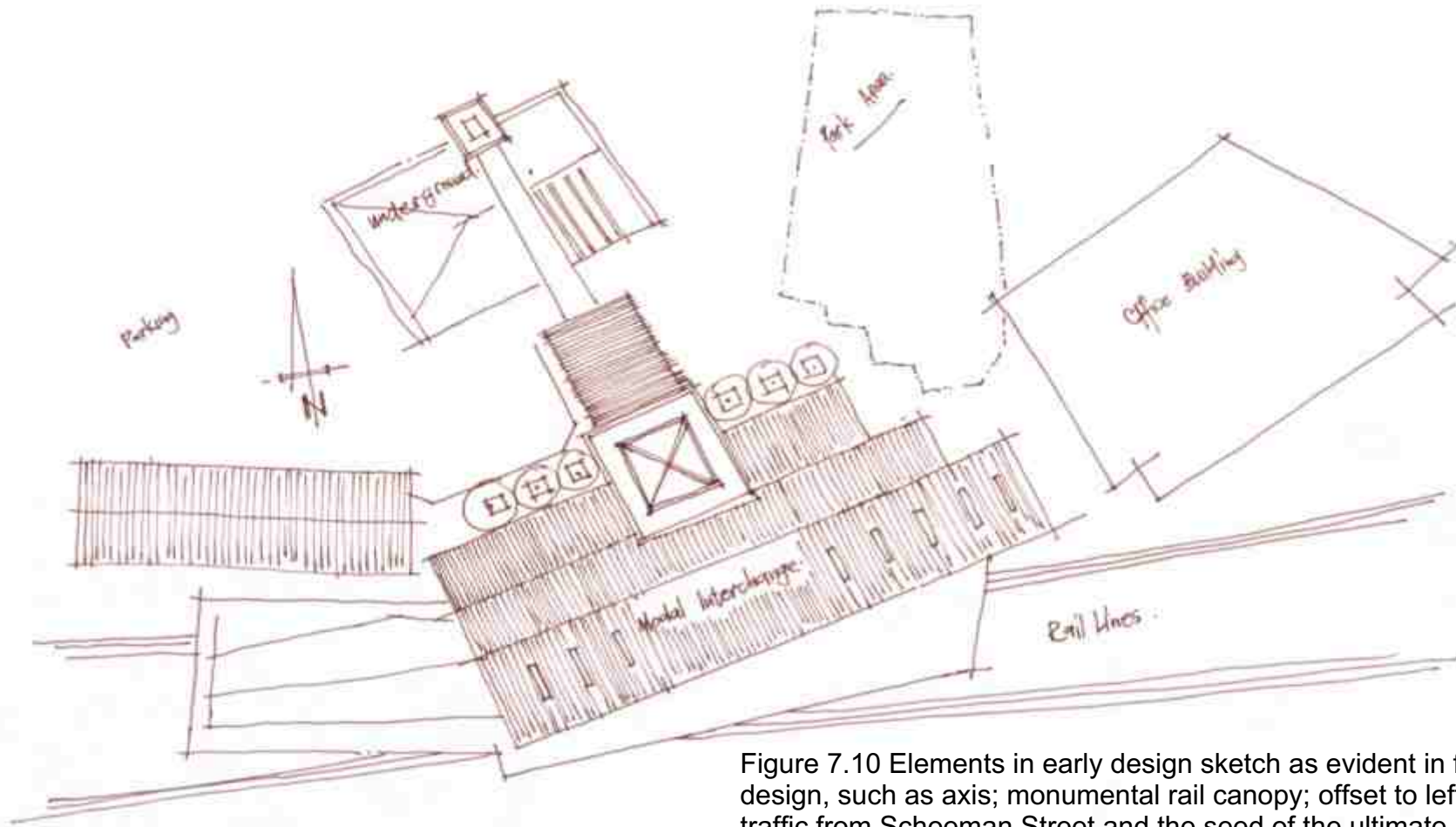


Figure 7.10 Elements in early design sketch as evident in final design, such as axis; monumental rail canopy; offset to left to invite traffic from Schoeman Street and the seed of the ultimate Public

Early sketch showing the massing of the building in relation to its site

Note the building north east to the station it was.

The line of thinking was to suggest such a building for hotel or residential use in order to densify the area.

This idea was discarded. On plan the building became overwhelming in its proportions due to the way it would have to be positioned. An additional problem was the inevitable noise experienced at stations and the discomfort it may have caused for residents basically living on the site.

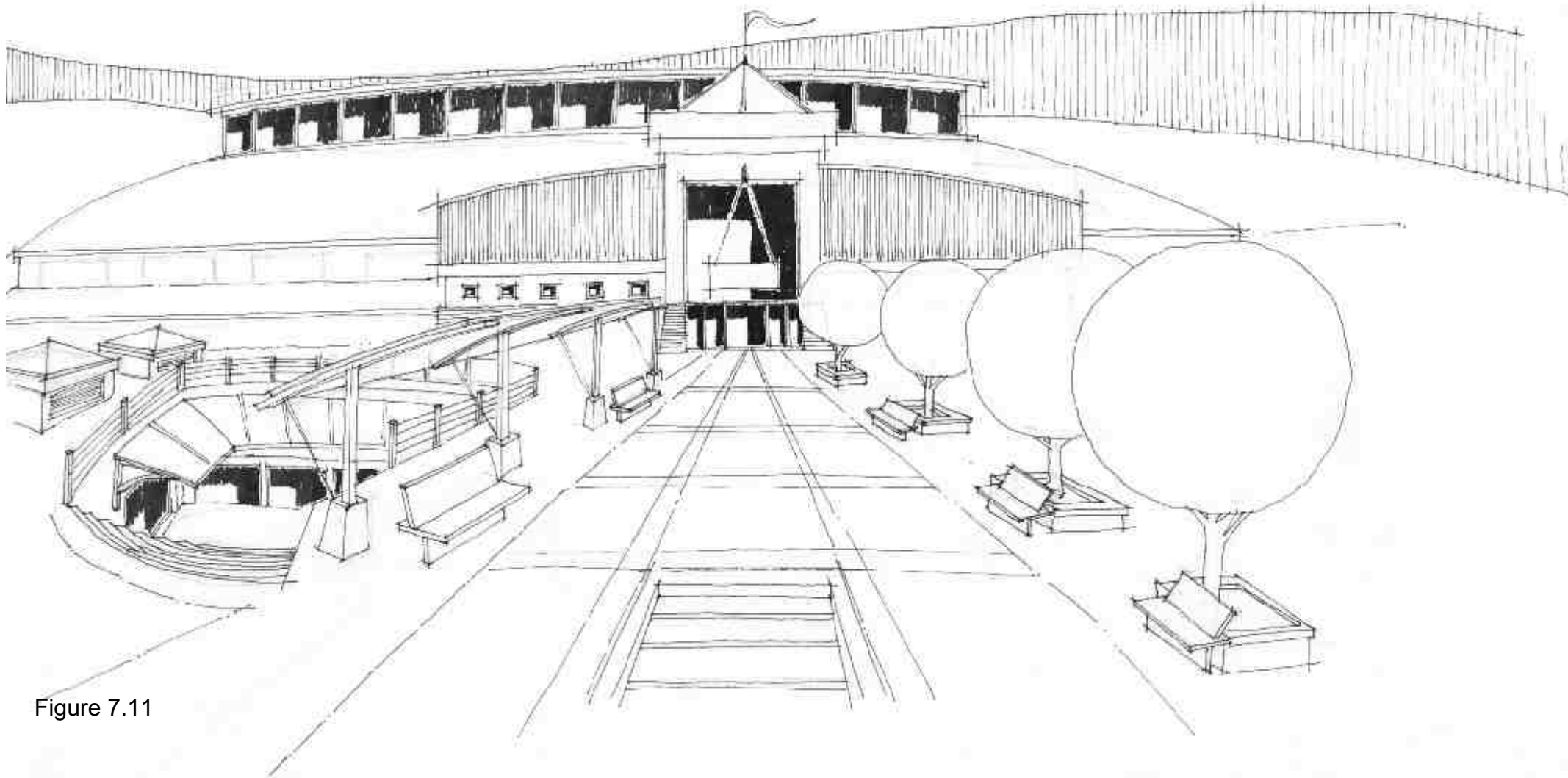


Figure 7.11

Early design sketch showing the axis created from North to South from Schoeman Street to the rail cutting where the Gautrain Station is situated. The important aspects retained can be seen as the Vertical Circulation Space and canopy language in the furniture.

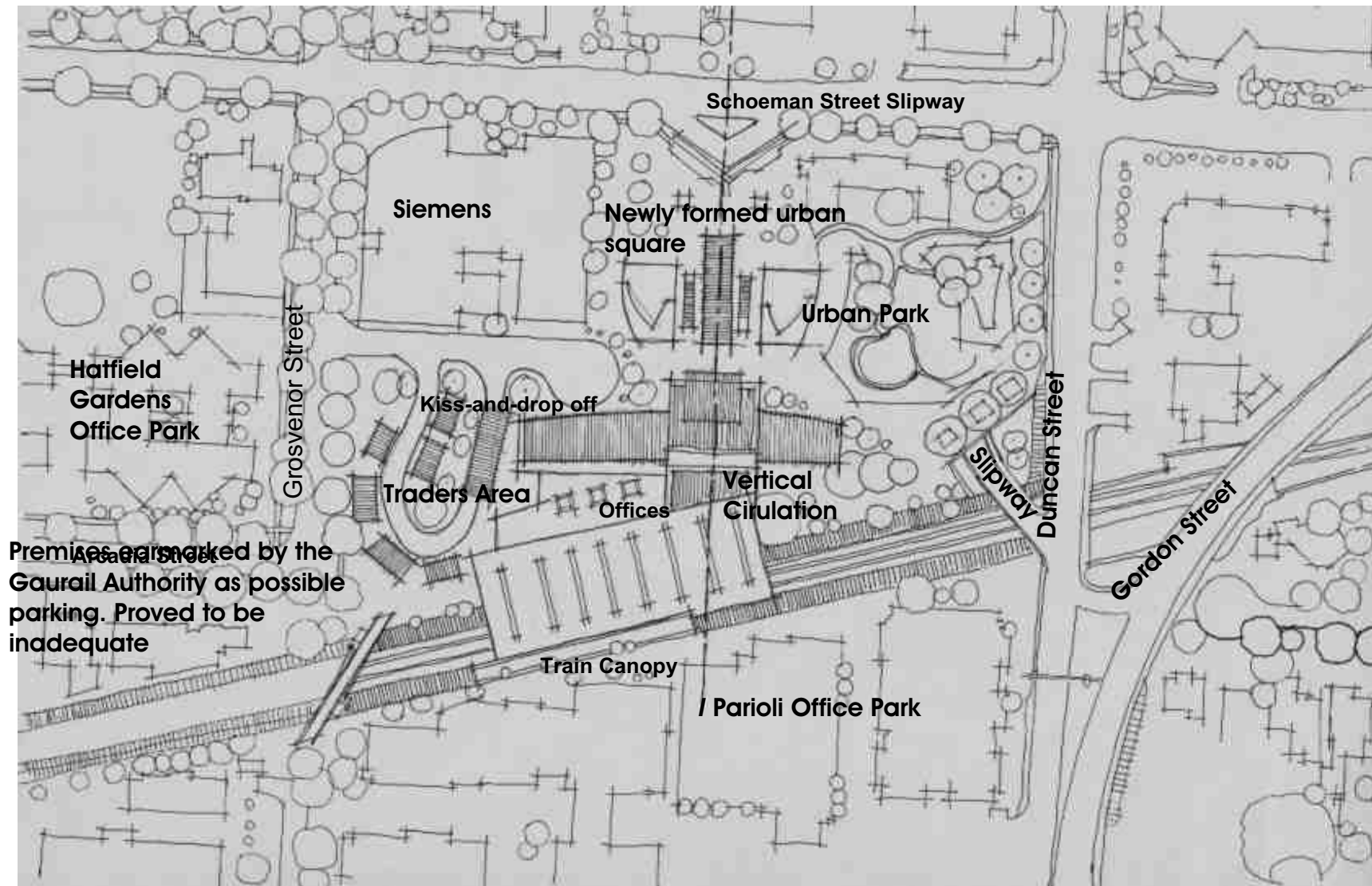


Figure 7.12 Early design of the Station with the open space created clearly shown. Kiss-and-drop-off areas was later moved to school lane that was also reinstated to improve circulation on and around the site, as well as to pedestrianize the public forum park.

*The route from station to town centre should be a processional corridor marked by public space and civic events. *(The Modern Station, Brian Edwards)*

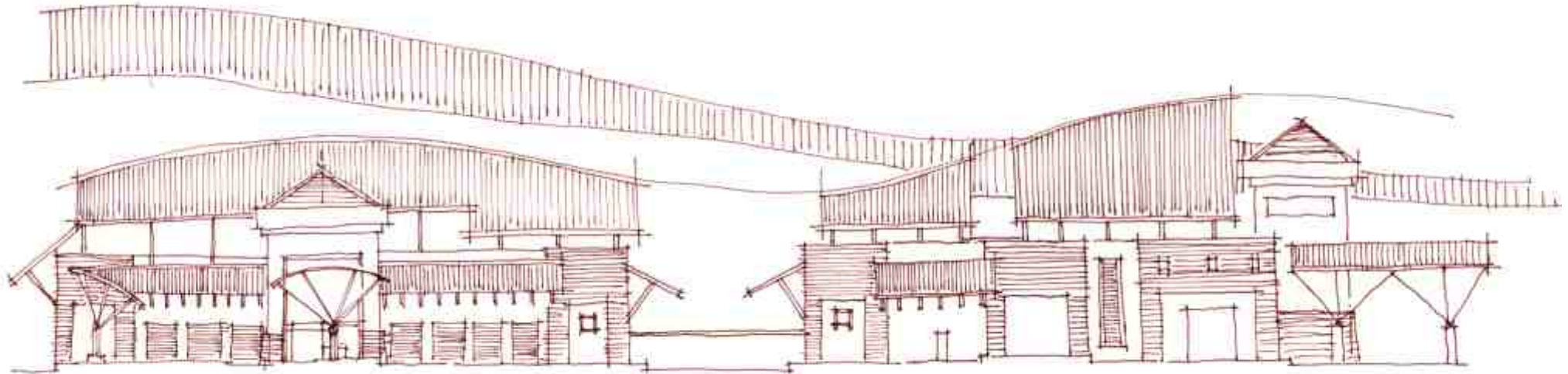


Figure 7.13 Early sketches with much of the design aspects evident in the final design evident. The use of inviting canopies are used extensively. Swaying roof lines are emphasised, this was however decided as the desired urban scale could not be successfully achieved with this type of roof.

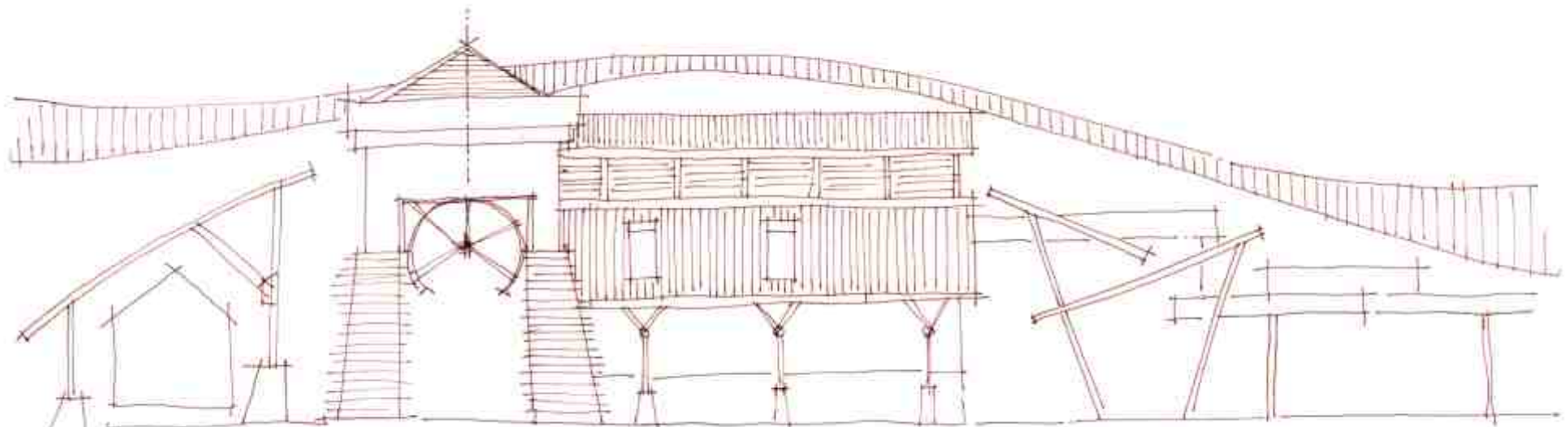


Figure 7.14 Proposed new Station Building in Early Sketch showing the design elements played with to create a sense of place to this important public forum building.

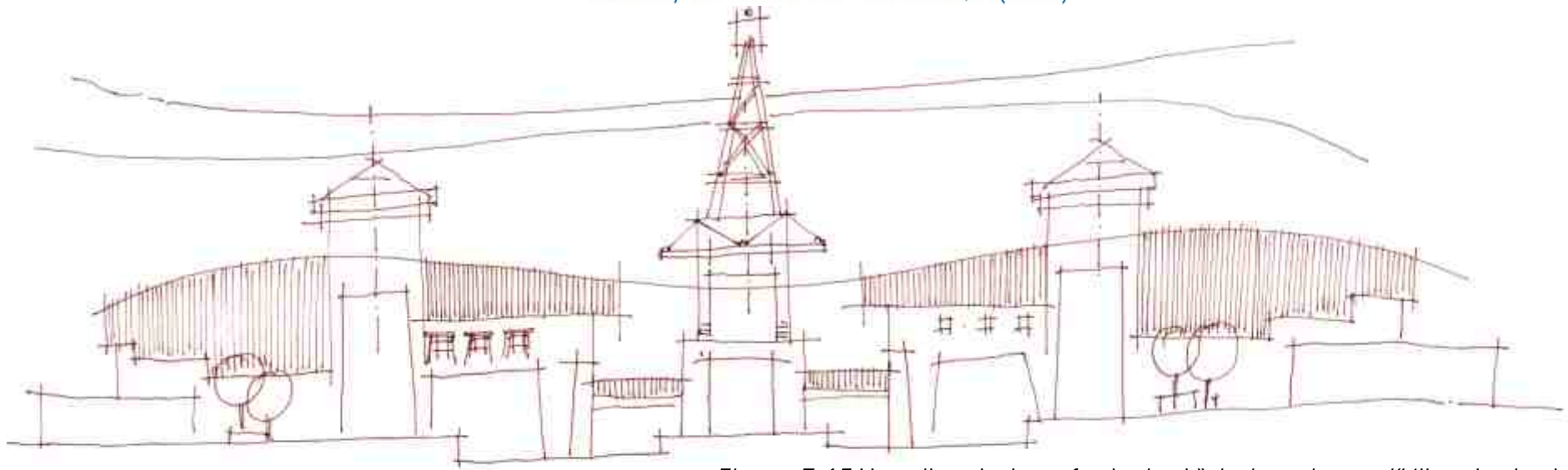


Figure 7.15 Here the design of a typical "design element" (the steel spire), to unify the urban square spaces desired for were attempted. The core idea of using railway detailing in for instance splice joints were one of the emotive ideas of the design of the Gautrain Station. The elimination of the swaying roof scapes made this idea obsolete however.

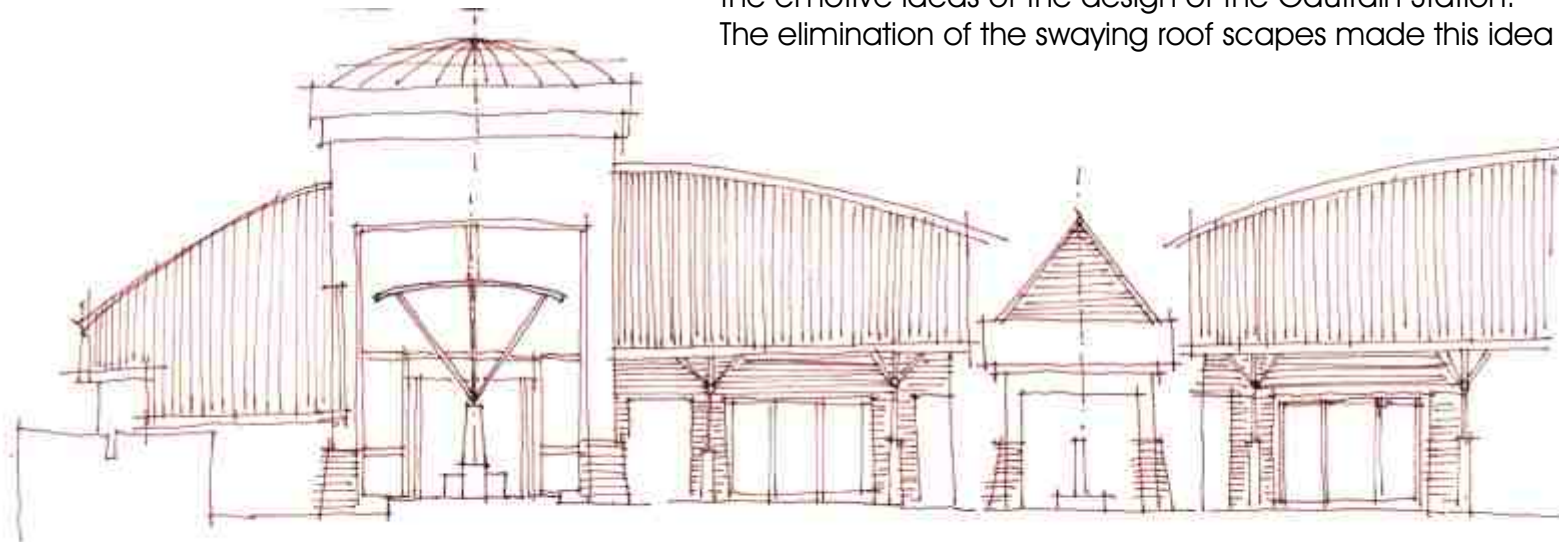


Figure 7.16 Along the same lines as the above abandoned design element, was the design of a glass domed copula. The vertical space created to accommodate the vast circulation space it spans made the use of glass to span over that great a distance untenable.

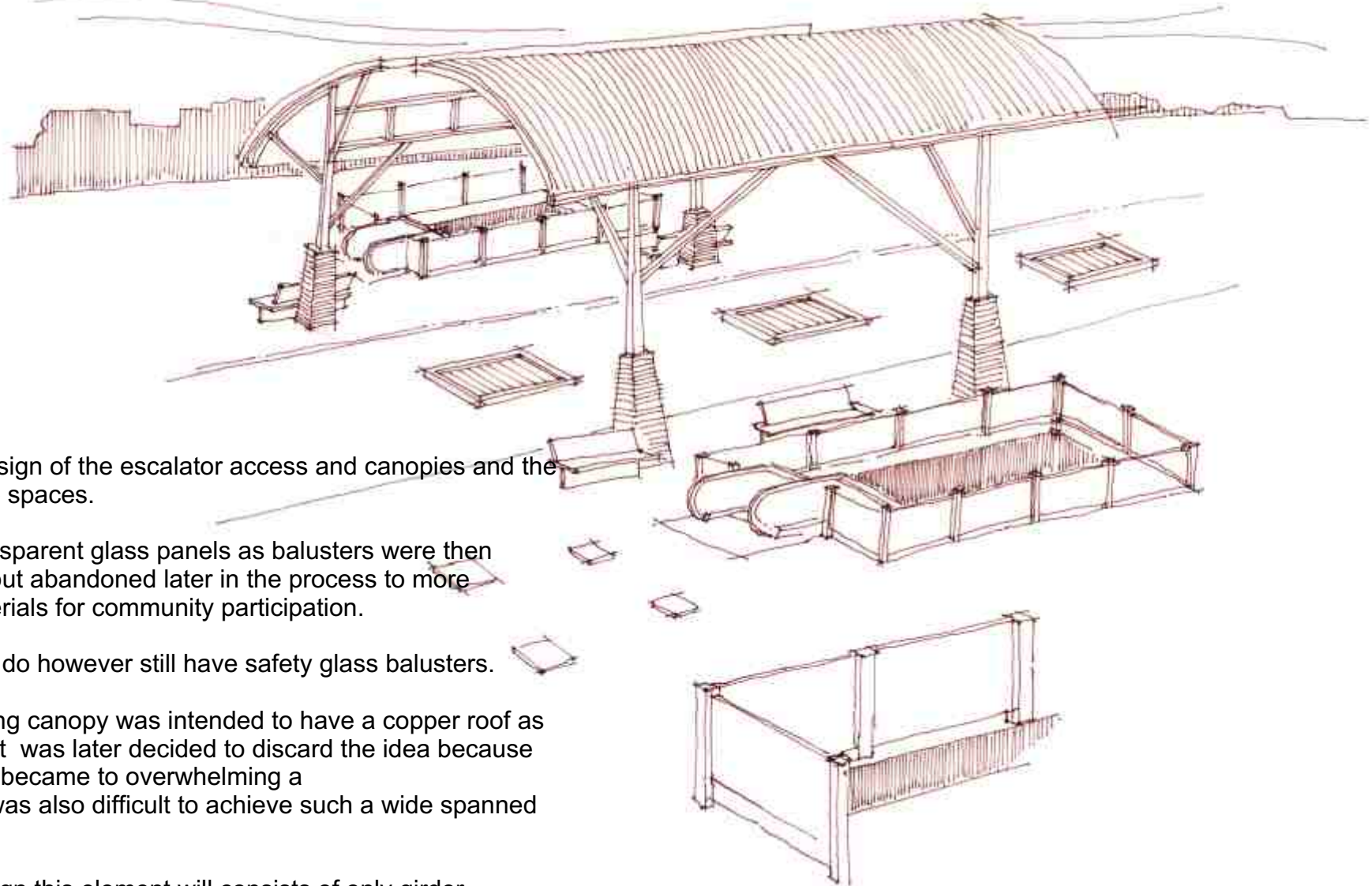


Figure 7.17 Design of the escalator access and canopies and the definition of the spaces.

The use of transparent glass panels as balusters were then contemplated but abandoned later in the process to more traditional materials for community participation.

The escalators do however still have safety glass balusters.

The axis defining canopy was intended to have a copper roof as in the sketch . It was later decided to discard the idea because this element to became to overwhelming a
Technically it was also difficult to achieve such a wide spanned element.

In the final design this element will consists of only girder trusses, suggesting space and axis, thus still fulfilling its function

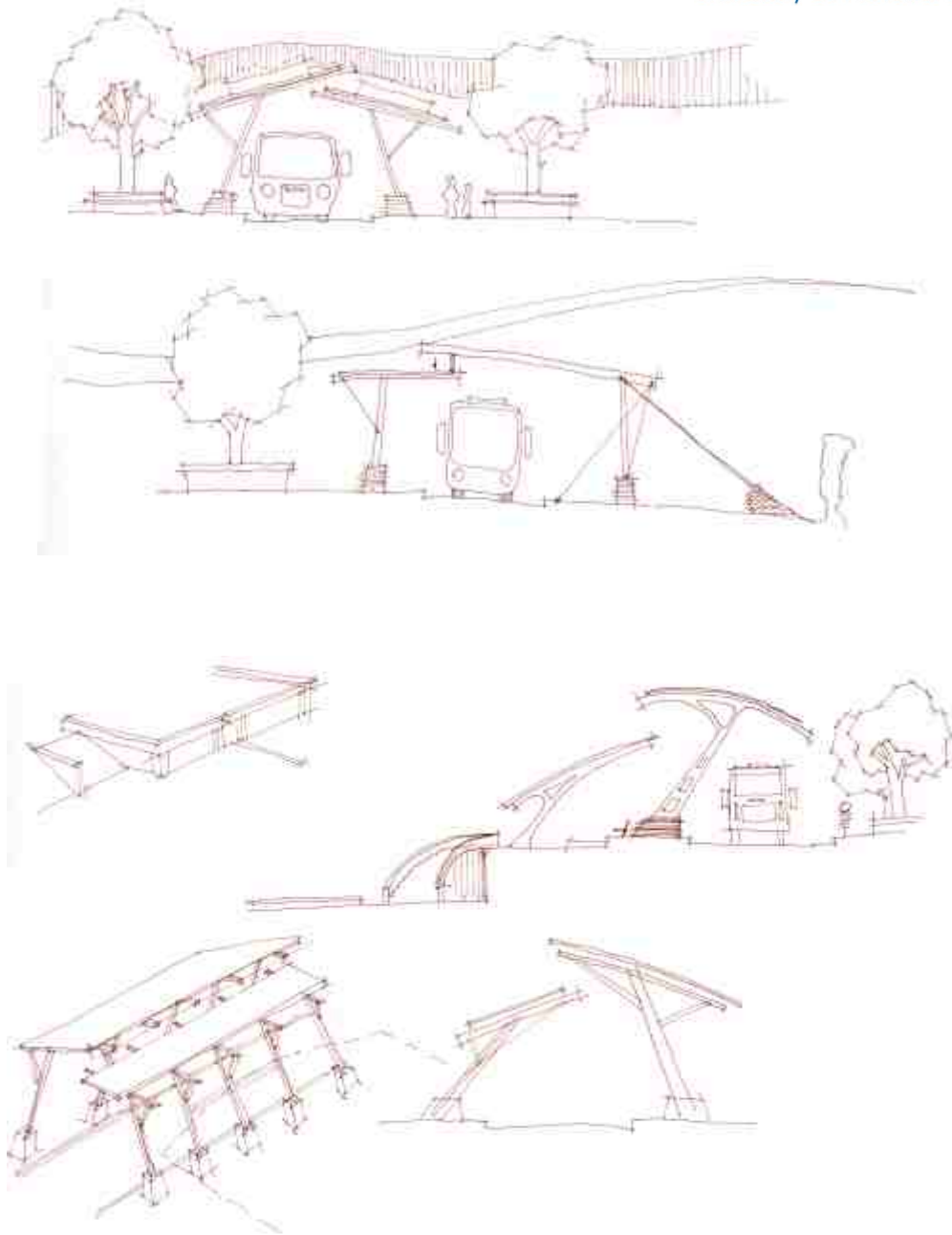


Figure 7.18 Early design sketches of Kiss-and-drop pavilions suggested flat roofs .

It was decided to use the general language of canopy to be employed in the project. Repetition of elements create order. The curved canopy language also suggests movement. The ultimate reason for the existence of 'station'

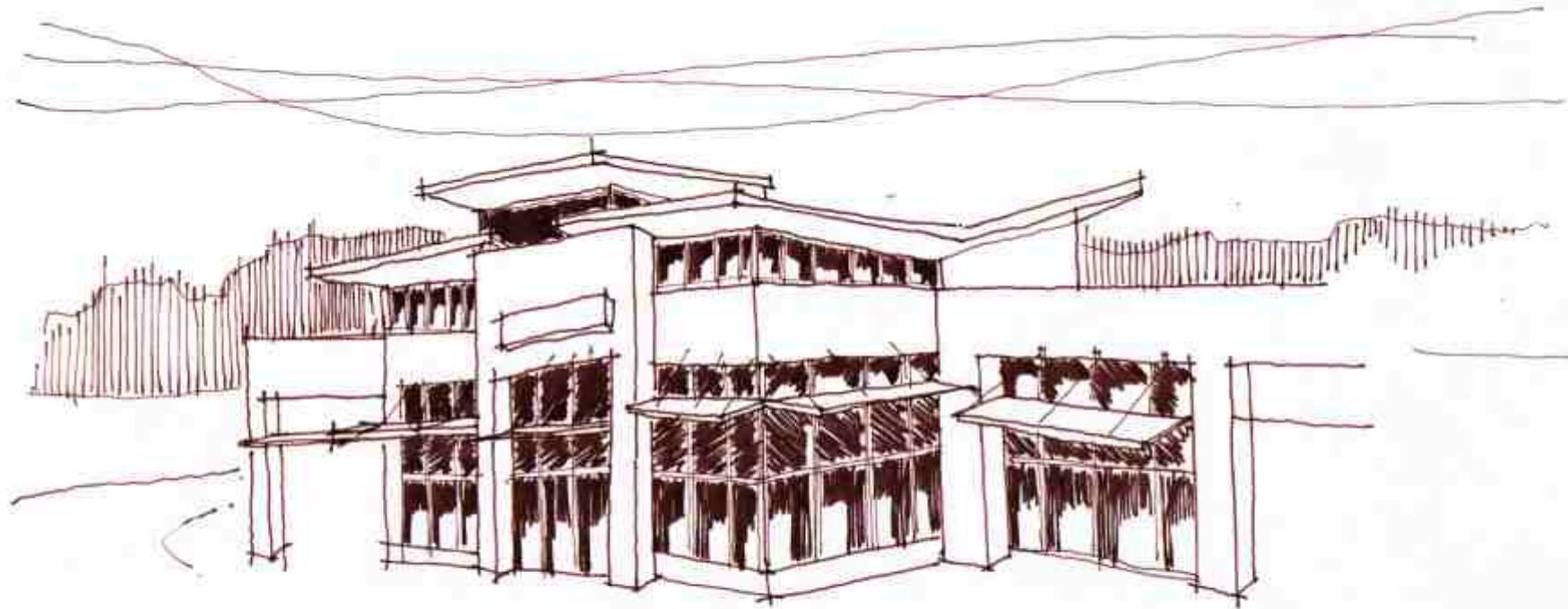


Figure 7.19 Early design influences can be seen in this example of the BMW Motor Dealership on the corner of Genl. Louis Botha and Lynnwood Drive.

Here the use of solar shields have been retained in the ultimate design of the Gautrain Station Office Areas.



Figure 7.20 Birds eye view of first concept model.

The majority of elements were used in the final concept model.

Major differences from this stage onwards is the roof element of the vertical circulatory are.

It was concluded that a pointed element would complement the rounded curves of the rest of the roofscape



Figure 7.21 A aerial view over the suggested urban park of the concept model showing the eastern office wing



Figure 7.22 Aerial view of canopy



Figure 7.23 West elevation showing the initial supermarket element between the vertical circulation area on the left and the rail canopy on the right.

The idea of a supermarket situated there was discarded and a similar entrance element as situated alongside the axis defining canopy was installed in its place.

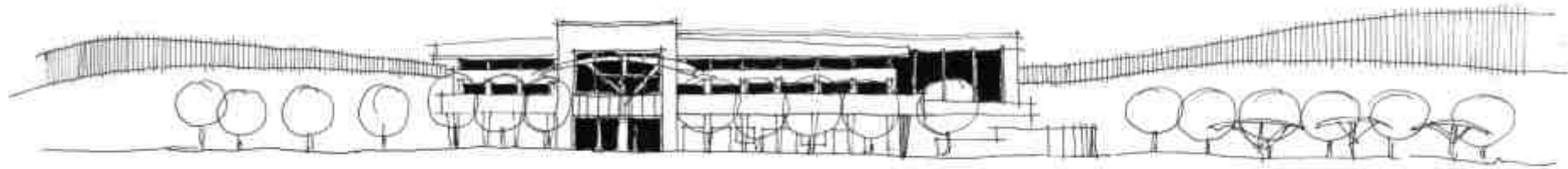


Figure 7.24 Design sketch of the North Elevation showing the vertical Circulation element and strong inviting canopy in front creating an axis to the innards of the building where the “machinery” of human transitory movement takes place.

The urban park is encouraged to ‘bleed’ into and underneath the building as the Office areas are elevated on floating plinths. There is no definite division between outside and inside in most spaces along the periphery.

Extensive use is made of tree avenues to direct and soothe, this serves also to bring the human aspect back into the design.

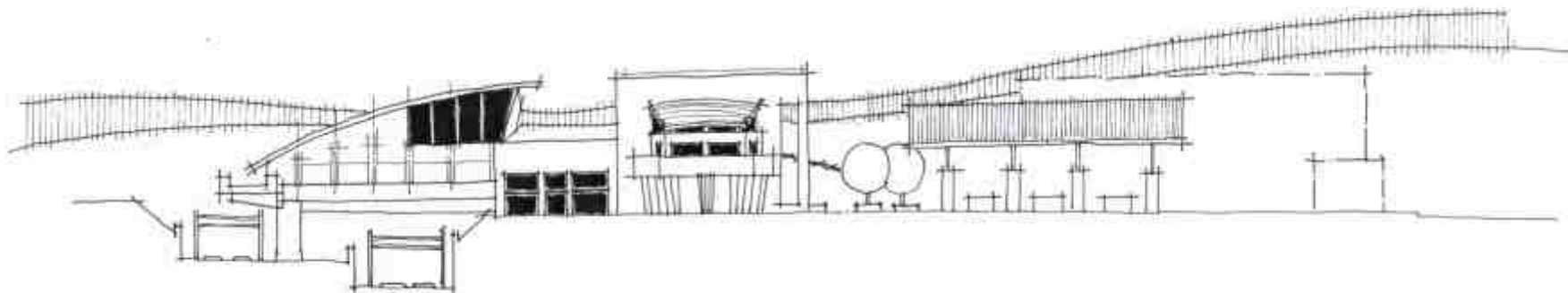


Figure 7.25 Proposed East elevation showing the reality of the deeper Gautrain Rail Cutting influencing the design, only realised later in the design. It places the “super basement” deeper and makes the design in section more complicated with regards the planning for high ground water

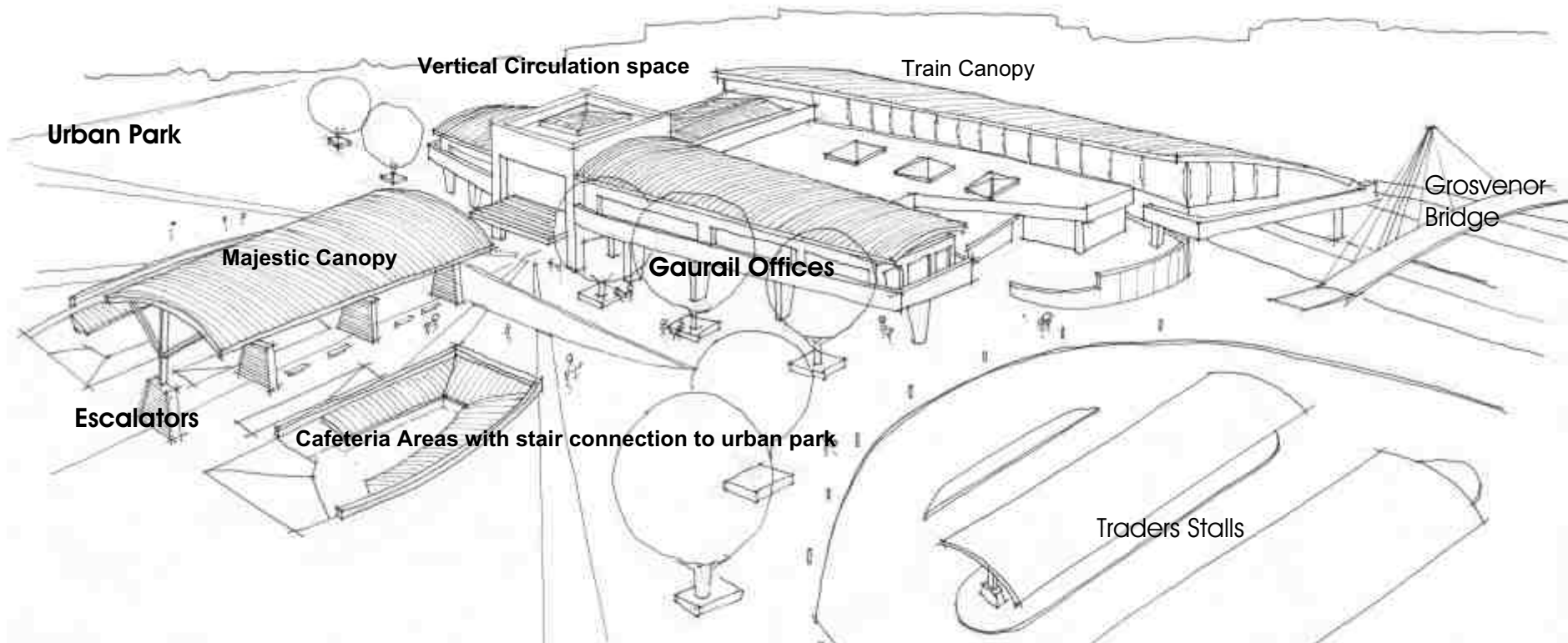


Figure 7.26 Aerial view of the building from the North East.

Important aspects: the Traders Stalls also incorporating the medium and small taxi interchange, the long distance bus services are accommodated underneath in the first basement level to co-incide with the direct route created from the Gautrain Platform to the new urban park.

The urban park is then directly accessed by means of a escalator system, with cafeterias situated on both edges of the symmetrical space.

The Tourist Information Centre situated in the Old School Building will direct international and domestic travellers. The supermarket that was later designed to be contained in the supe basement can be seen between the western office wing and the rail canopy the decision to remove the supermarket followed the decision to reinstate Grosvenor Street by means of a bridge.

Circulation would thus be optimal

The Final Result



Birds eye view of Final concept model in the context of its surroundings

Trader stalls to the left of the building with bridge over Grosvenor street to the south of the trader stalls.

Railway Canopy over railway cutting to the south.

The Public Forum Park to the North of the building, bleeding to the West where the re-constituted School Lane reconnects to Duncan Street.

The area directly to the South of the Old School buildings shows the Peter Walker inspired earth berms and gravel pathways lending a calming sense to the urban landscape.

To the right bottom edge of the site the new Slipway into the “Super Basement” can be seen with the result of the enlarged Rail cutting to the left of the Slipway Entrance.

In between the Office wings adjacent to the rectangular “Vertical Circulation Element” is the third basement entrance for pedestrians, making the site responsive to the pedestrian demands from Hatfield business district across the Rail cutting to the south. Access to the site from the Hatfield Business District is via a new vehicular and separate pedestrian Bridge over Grosvenor Street.

Figure 7.27 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design).



Figure 7.28 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design). Aerial view from the South, seeing the Rail Canopy with its dual



Figure 7.29 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design).
Seen from the East looking South, showing the Negative area main



Figure 7.30 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design). Photo shows the extent of the proposed excavation and the building's response to the area created. Also seen is the Slipway into the "Super Basement" and the implication it would have on the urban park created to the north of the cutting.

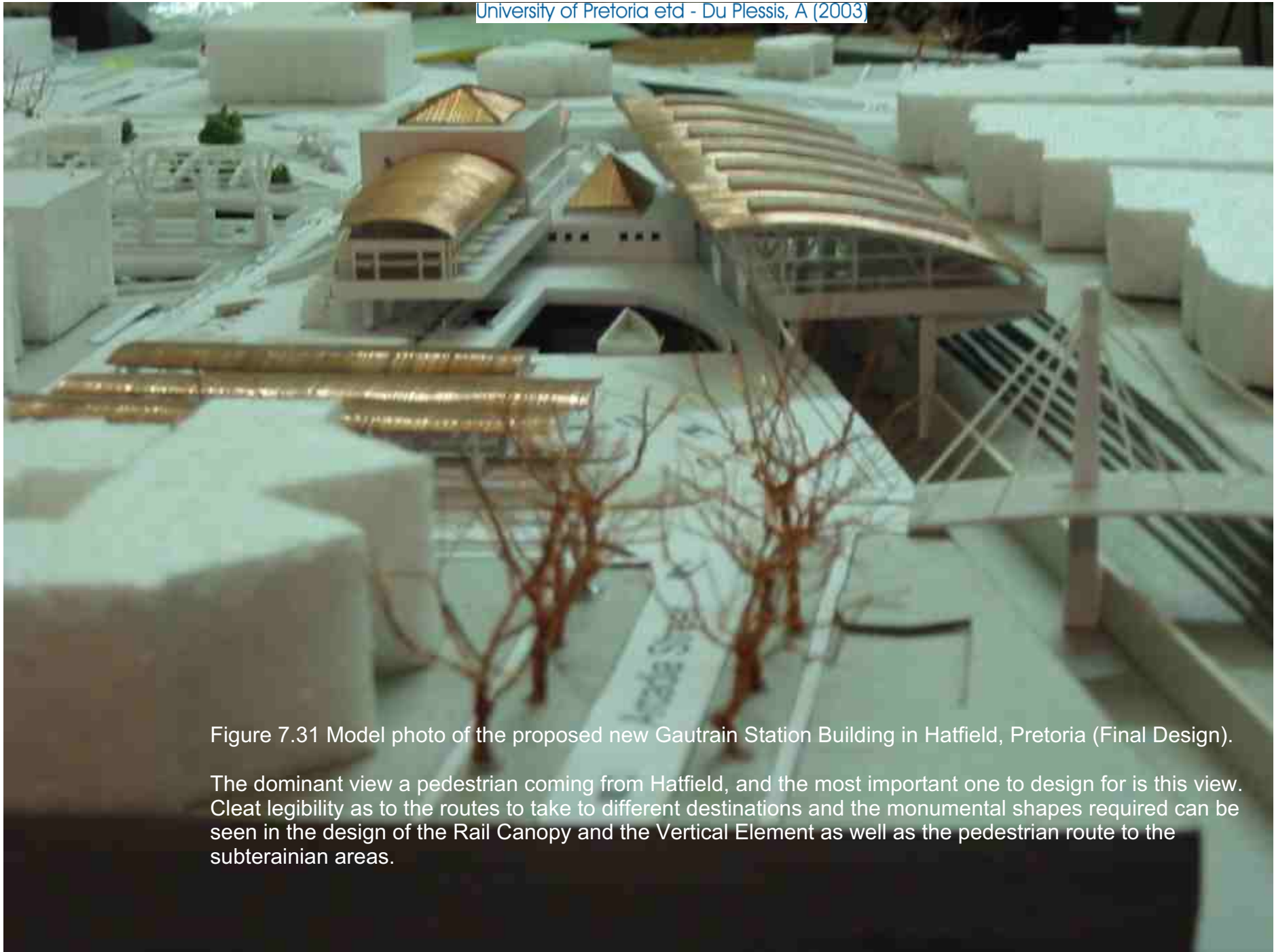


Figure 7.31 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design).

The dominant view a pedestrian coming from Hatfield, and the most important one to design for is this view. Clear legibility as to the routes to take to different destinations and the monumental shapes required can be seen in the design of the Rail Canopy and the Vertical Element as well as the pedestrian route to the subterranean areas.



Figure 7.32 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design).

A more aerial view of the main pedestrian approach to the site. The axis to Duncan Street can be clearly seen as the re-constituted School Lane emphasises this aspect, essential in the Kiss-and-drop off function crucial to the building design.



Figure 7.33 Model photo of the proposed new Gautrain Station Building in Hatfield, Pretoria (Final Design).

The Building as seen from the conflagrations of Schoeman, Duncan Streets and School Lane. The importance of the Urban Forum Park can now be clearly seen in the clear sight lines needed to aid the building legibility, crucial in this type of building.

The position of the site on a corner makes the future of this building very bright indeed.

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Chapter 8 : Technical Detail

