500 _ DESIGN DEVELOPMENT

The design development

- the constraints and opportunities of the site
- the idea
- the design concept and development

The final design intervention

- exterior views
- interior views

Fig 5.1: Street elevation of Pretorius Street
(From Prinsloo Street to Van der Walt Street: see *Fig5.2*)

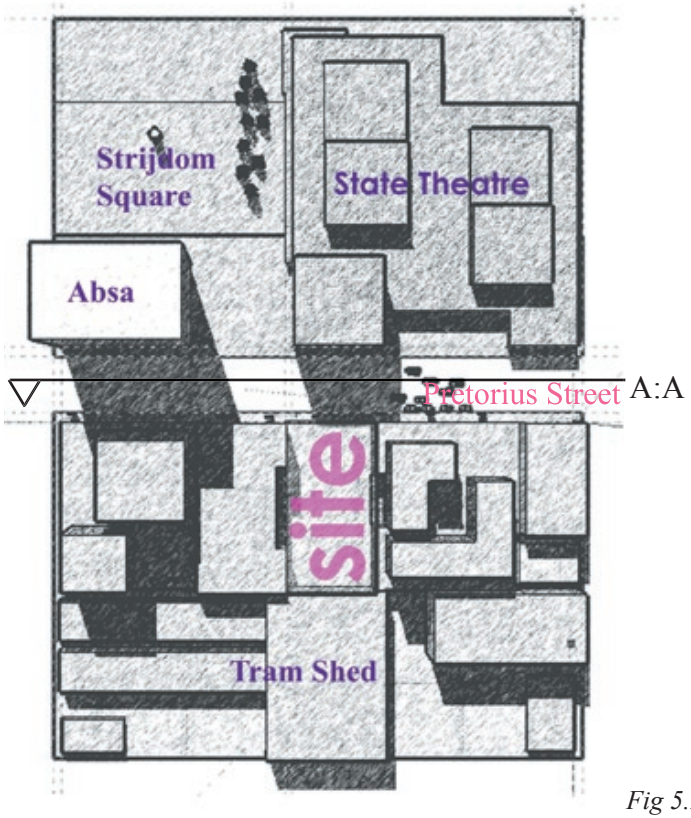


Fig 5.2: The chosen site

Constraints and opportunities of the site

The following issues were highlighted as constraints placed on the design for the chosen site:

1) Light penetration: the site is 69.27m in length (north-south) and 21m in width (east-west). The site's length runs perpendicular to Pretorius Street. The site is also surrounded by tall buildings on all sides (see Figs 5.1 and 5.2). In summer, the site receives sunlight from 9am until 4pm and in winter from 11am until 2pm. Due to the fact that the site receives so little sunlight, heating and ventilation pose a challenge.

2) Height: the proposed building will need to generate enough height so that it will not become 'lost' amongst the surrounding buildings. By generating height, the building could possibly capture more sunlight.

3) The footprint**:** The building will need to be carefully planned for the site so that the pedestrian walk-through can be accommodated through the site. Neither the building, nor the pedestrian walk-through should dominate the space. Both elements should be read in harmony with one another.

4) The site, as set out in the context analysis on the study area, is located in an important position within the proposed pedestrian spine. The building therefore becomes a focal point from Strijdom Square. The issue with this is that the site has a very narrow street elevation width (21m), and the building would need to be a bold statement so that it could be read as a focal point.

The idea for the site:

- Accommodate public/pedestrian movement through the site.
- Create a landmark/focal building for the area.
- Generate a relationship between the State Theatre Centre for Dance and the public pedestrian walk-through.
- Communicate and advertise the building as an institution of dance and performance through an appropriate design language.
- Expose the art of dance to the public domain.
- Form a well-defined and valuable open city space for public and private users.
- Re-establish the performing arts in the area.
- Produce quality spaces for use by dancers and staff of the State Theatre Dance Centre.

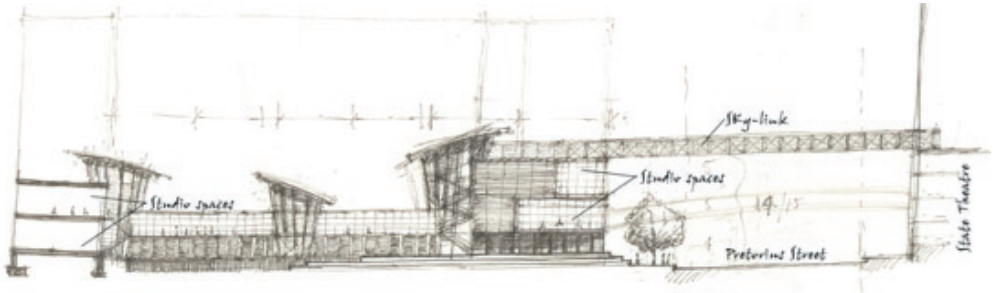


Fig 5.3: Conceptual exploration- section/elevation through site

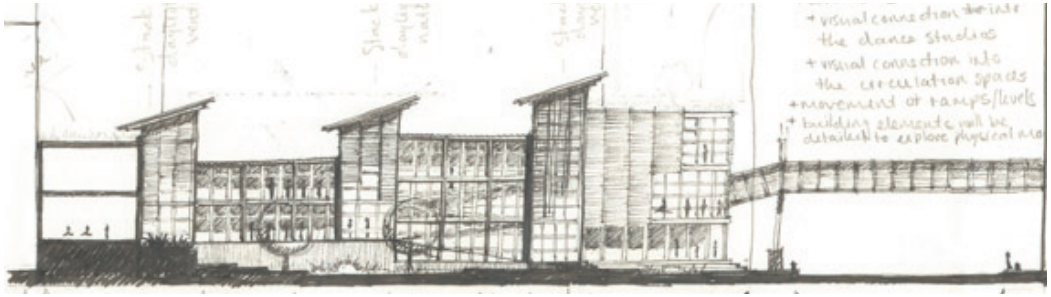


Fig 5.2: Conceptual exploration- section/elevation through site

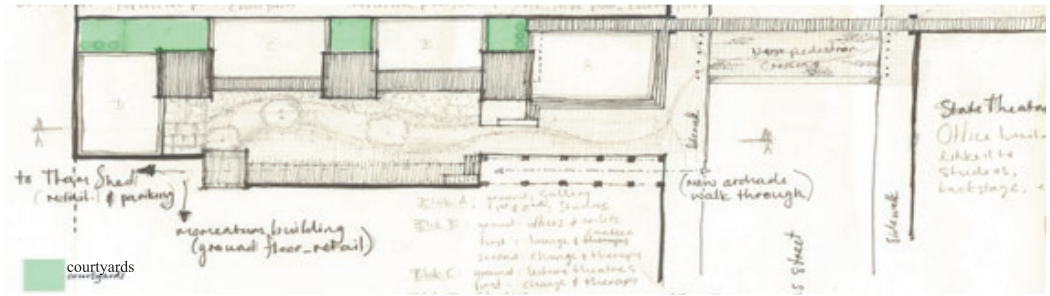


Fig 5.3: Initial footprint of dance centre with courtyard spaces indicated

The design concept and development

With the highlighted constraints, the design idea and objective in mind, the design started to grow. The following pages present the design development sketches for the State Theatre Centre for Dance.

The initial design concept sketches indicate the inclusion of a pedestrian sky-bridge that would link the State Theatre Centre for dance directly into the State Theatre. The sky-link would accommodate the movement of the users from the dance centre to the State Theatre and also into the proposed retail development along the western façade of the State Theatre (on Strijdom Square), thereby strengthening the spinal development through Strijdom Square. The sky-link was later eliminated as it would have a negative effect on street level by removing people from the street which is the truly public domain. The sky-link was initially also considered for its ability to connect the users of the dance centre to the State Theatre basement parking. With the site forming a crucial link in the pedestrian movement patterns of the area, it was decided that there would be no parking included on the site as it is very narrow, and the addition of a ramp for vehicles would impair the pedestrian movement onto the site. The site links directly into the Tram Shed which is a retail development adjacent to and south of the dance centre. The Tram Shed also contains a large multi-storey parking facility and it is therefore proposed that the users of the dance centre would make use of the available parking. State Theatre basement parking is another option.

The concept sketches also indicate the inclusion of a service/ delivery passage on the north-western side of the site. However, the proposal for the site requires that only the canteen/cafeteria will need to receive deliveries. For that reason, the delivery entrance and passage were removed as space on the site is limited. The canteen/cafeteria will have minimal deliveries and the main entrance of the building can service these needs.

The footprint of the building wraps around the western and southern edge of the site, leaving the eastern edge open for the pedestrian walk-through and open space. This open space also allows light to penetrate into the depth of the site. The first sketches for the proposal show three courtyard spaces within the building. These courtyards were also removed as the design developed. With three courtyards, the area that is taken up by

each becomes too small to allow adequate light penetration into the lower floors of the building. It was therefore decided that the entrance foyer/lobby would become a multi-volume space with a glass roof so that light and heat can enter through a larger area. It should be borne in mind that the site receives minimal sunlight, therefore the maximum amount of light needs to be harnessed. For the same reason, the services of the building, i.e. toilets, changerooms, kitchens etc. were concentrated in the south-western corner of the site (receives the least amount of light).

The initial sketches/diagrams (Figures 5.3 – 5.5) of the design show a very rigid arrangement of spaces. The thought was too free the space by celebrating the individual elements of the design. The solid mass of the building then offered an exercise which entailed the carving and sculpting of solids and voids within the structure.

As the building's primary function is to accommodate a centre for dance, the design required freedom for generous spaces. For this reason a height of approximately 6m floor-to-floor was afforded to the dance studios, while the rest of the building worked on a 4.5m floor-to-floor height. This allowed the studio spaces to be positioned either in line with the first floor, or on a split level with the second and third floors (see Figure 5.9 for diagrammatic representation).

Figure 5.10 shows how the design then developed further with the introduction of a reflective pool along the edge of the building forming a transition from the public space into the dance centre. The building, previously wrapping around the back of the site with an L-shaped footprint was at this stage broken into two separate and celebrated parts. Here, the definition of spaces is enhanced and spaces can truly start feeding off one another.

As the general form of the building is built up of squares and boxes, a continuous gentle curve was introduced in the interior of the building. This highlighted the idea of movement within the building and became a symbol of the freedom that can be found within the box. In some areas the curve became problematic and the idea needed further exploration. By exploring the ground floor as a generic model for the rest of the floors, the sketches (Figure 5.10 – 5.14) reveal the development of the curve, how in different areas it was removed, introduced or simply adjusted.

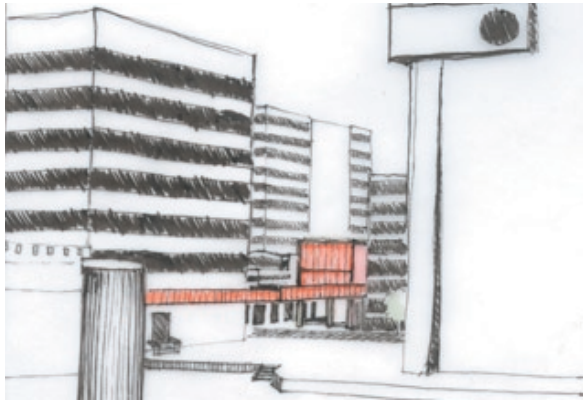


Fig 5.6: The Building as a landmark - view from Strijdom Square

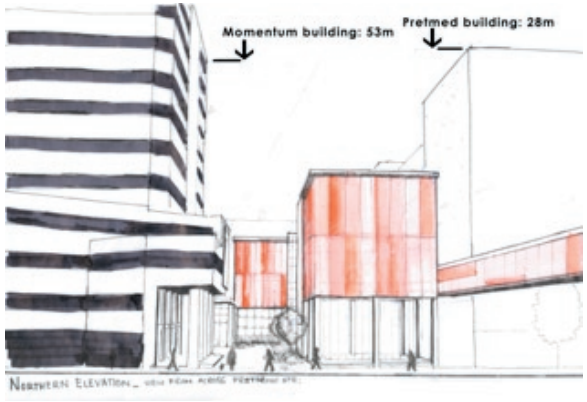


Fig 5.7: Pretorius Street elevation (northern facade)

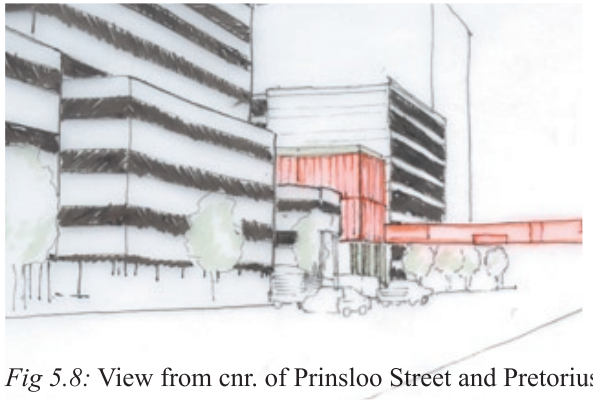


Fig 5.8: View from cnr. of Prinsloo Street and Pretorius Street

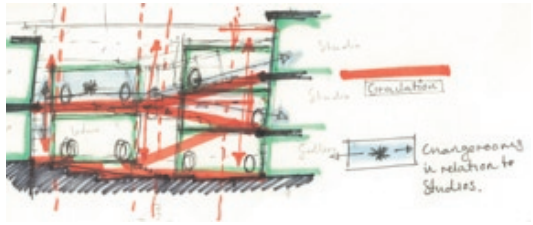


Fig 5.9: Circulation diagram

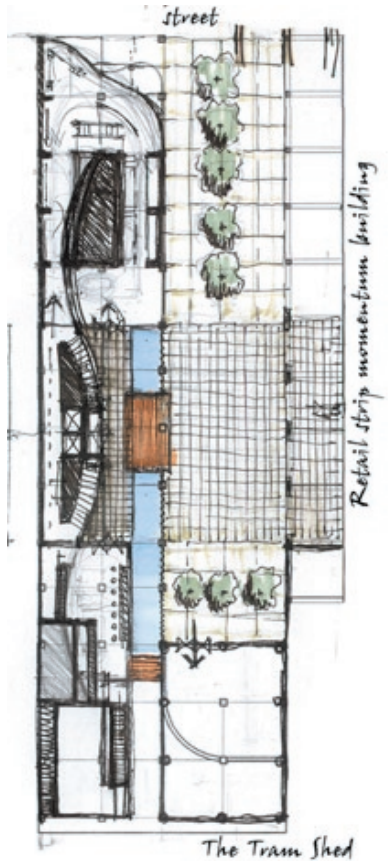


Fig 5.10: Introducing the curve

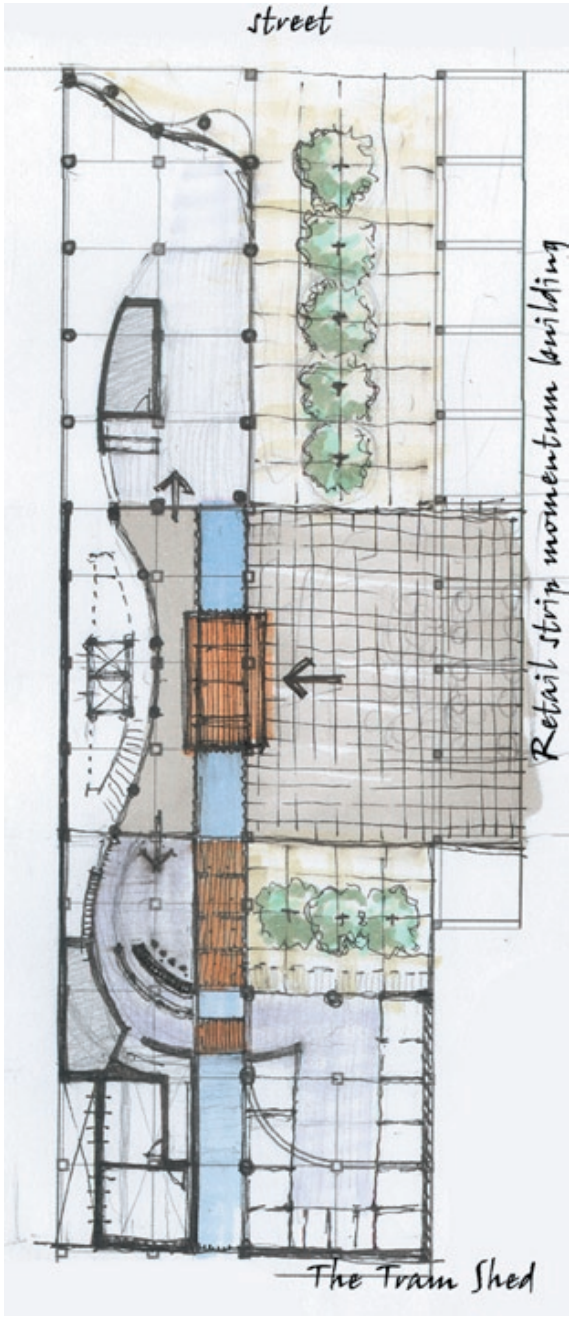


Fig 5.11: Developing the curve: the diagram shows how the introduction of the curve alows for circulation in the building to become about journeys toward destinations.

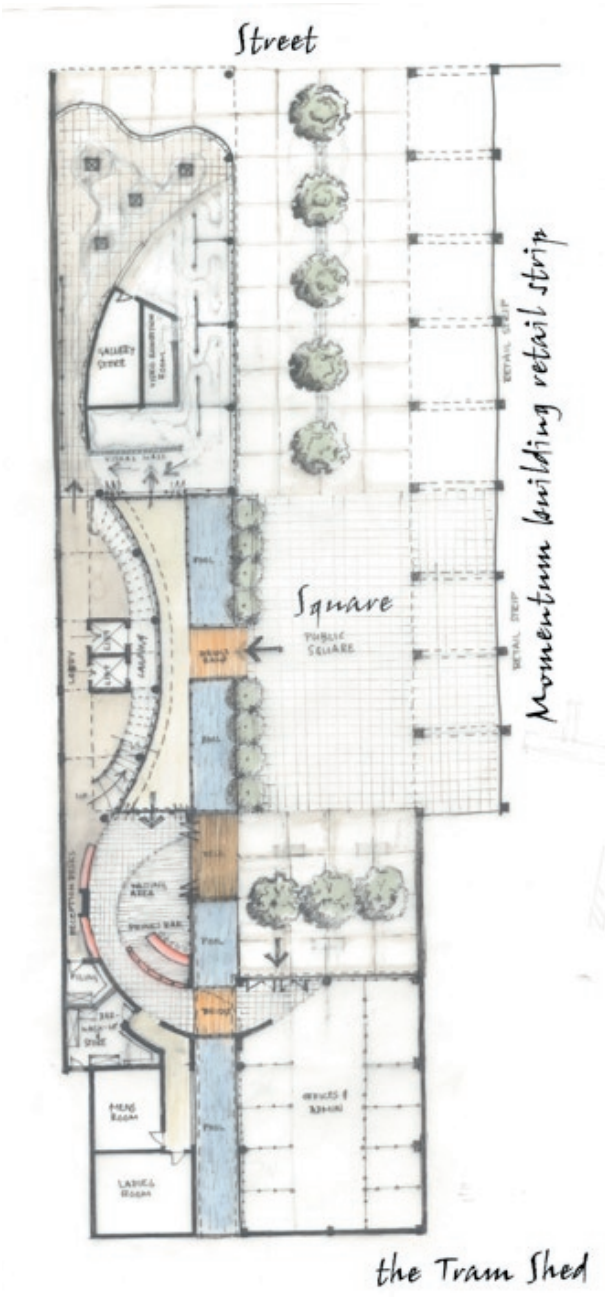


Fig 5.12: Here, the curve generates an elegant flow through the building although there are other areas within this layout that prove to be problematic, for instance, the negative space that the stairway lobby forms on the entry platform as one would cross the reflective pool from the public square.

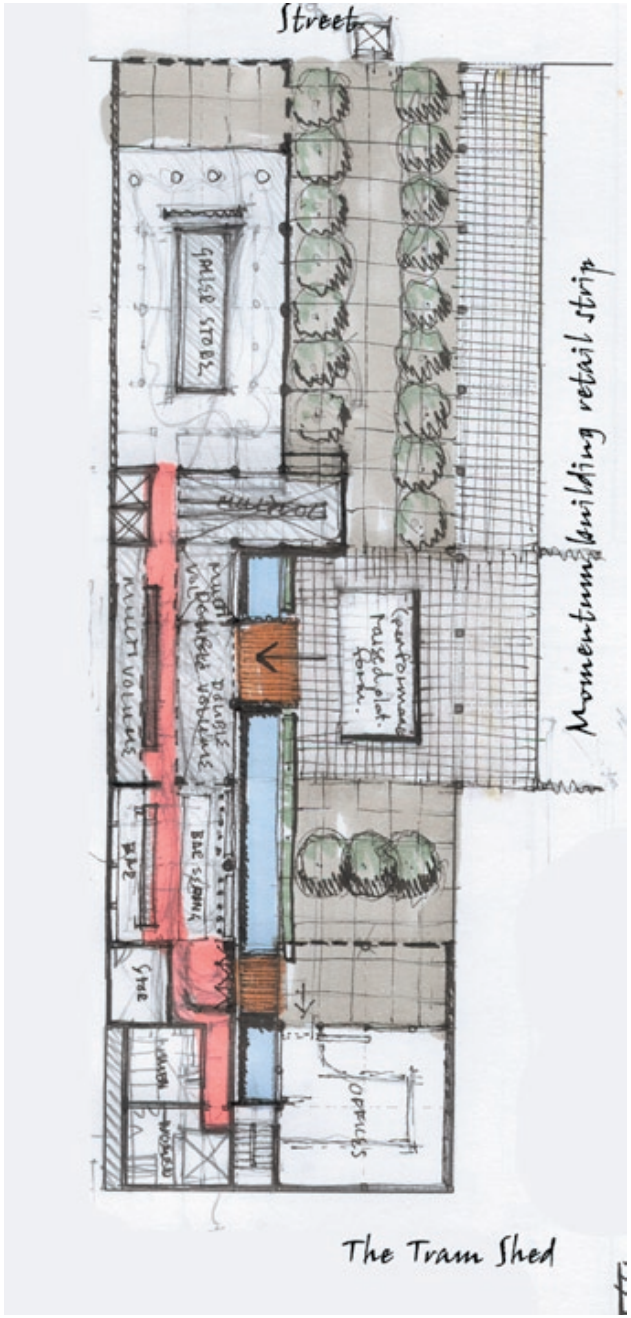


Fig 5.13: Re-thinking the use of the curve:
The development of the curve highlighted the possibility of generating journeys of movement toward destinations within the building. With the issues of the negative spaces that have been created through the use of the curve in mind, the layout was reconsidered. By softening and, in some places, removing the curve and incorporating straight, geometric lines in the design, the aim was to maintain the notion of the journey, but eliminate the negative spaces created by the curve.

Fig 5.14: The figure shows the adjusted curve. Here, spaces follow in a logical order spreading out from the directly accessed reception area. The reception area becomes the point of orientation within the layout. The journey generated in the building is still present, but the negative spaces have not all been eliminated.

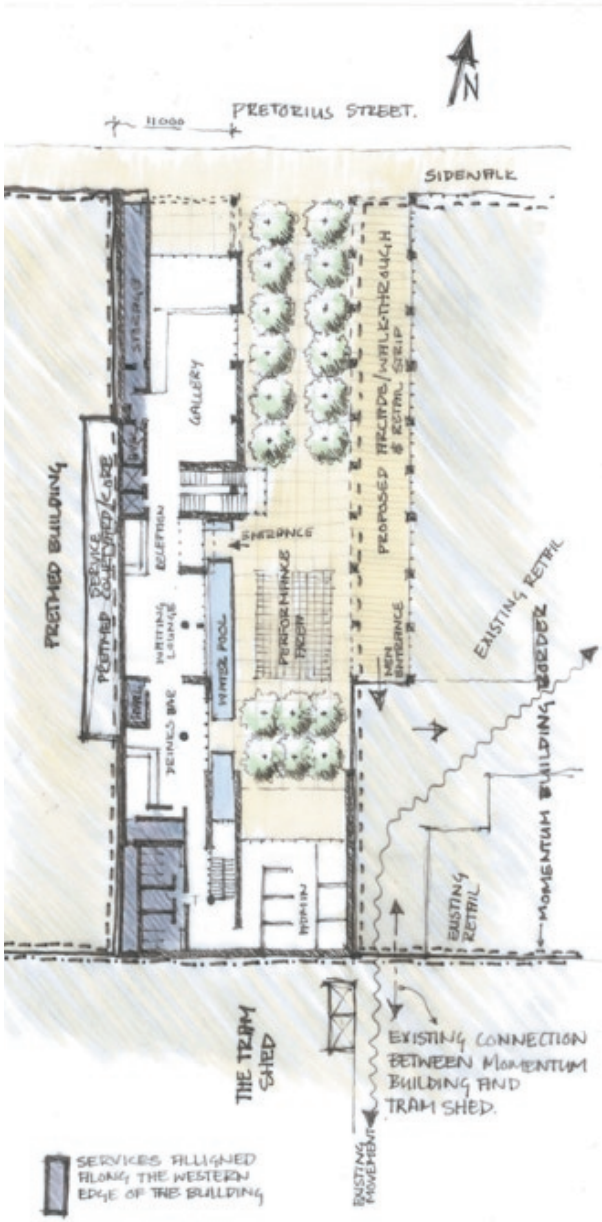


Fig 5.15: The ground-floor plan shown here indicates the positioning of services along the western edge of the site with the pupblic/pedestrian space on the eastern edge, bordering the proposed Momentum building retail-strip.

Ground floor layout

The ground-floor layout served as a generic model for the rest of the floors of the building. Whilst designing the ground floor of the building, the upper floors were considered in terms of the positioning of services like changerooms, toilets and kitchens. These services were concentrated in the south-western corner of the site, with this being the 'deepest' area of the site, with additional services like the HVAC and electrical ducts and storage being located along the western edge of the building. The western edge of the site thus became the hard edge of the building, bordering the Pretmed building. The eastern elevation of the Pretmed building forms a hard edge to the chosen site. This edge contains a service core/courtyard but no windows bordering the site for the proposed State Theatre Dance Centre.

When considering the investigation and analysis of the study area (chapter 300), it was concluded that the western edge of the chosen site would be the most appropriate for the development of the State Theatre Dance Centre. By positioning the building along the western edge of the site, allowance has been made for the proposed retail strip along the western edge of the Momentum building as well as access into the Tram Shed retail and parking arcade.

The layout shown in Figure 5.15 indicates how these ideas were applied. This layout became the point of departure for the application of the structural and material exploration of the design.

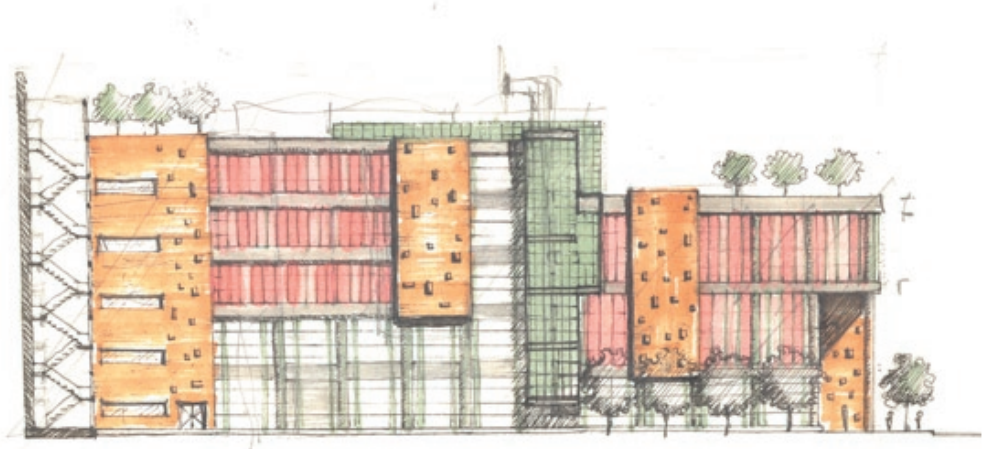
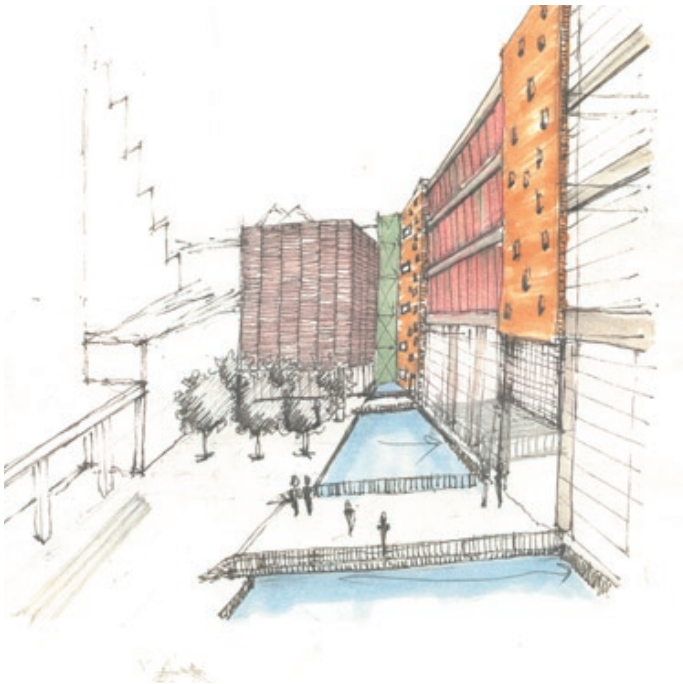


Fig 5.16: First exploration and composition of materials on the eastern elevation

Fig 5.17: The most southern portion of the building - the 'box'- contrasting with the rest of the buiilding through choice of material.



Exploration of materials

Figures 5.16 and 5.17 shown on the right are the initial sketches used to explore possibilities for the choice of materials to be used for the building. Figure 5.17 shows the view of the 'box', the most southern portion of the building which is to contrast with the rest of the building in colour and materials. By doing this, the separated nature of this area of the building is expressed and explored for design possibilities.

Fig 5.18: Perspective view of the building with initial choice of materials.

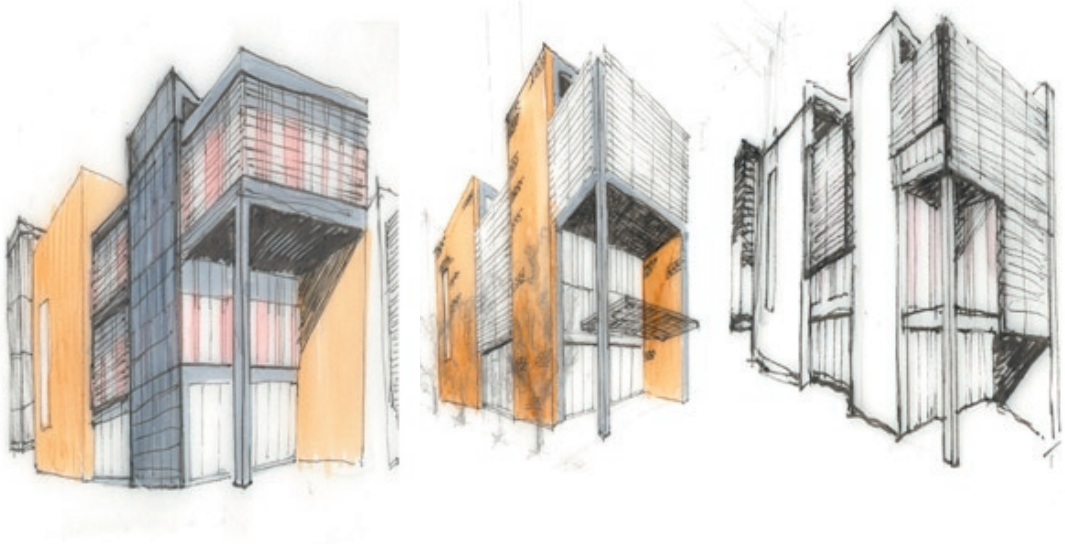


Fig 5.19: Exploring the choice of materials for the north-eastern corner of the building.

Material exploration

Figure 5.18 shows a perspective of the State Theatre Dance Centre. At this stage of the design process the materials considered were exposed brick walls and randomly placed iodized glass (pink), amongst others. The design for the 'box' included the same materials, however, it was to be clad with a copper louvre system. The copper would weather in time and turn to a shade of green.

A shadow study of the building was subsequently done. This indicated that parts of the eastern façade, which consists of large expanses of glass, would need to be shaded in some way. Figure 5.19 depicts the exploration of the north-eastern corner of the building which is most affected by sun penetration.

Figures 5.20 to 5.24 on the next page show the shadow study done on the building.

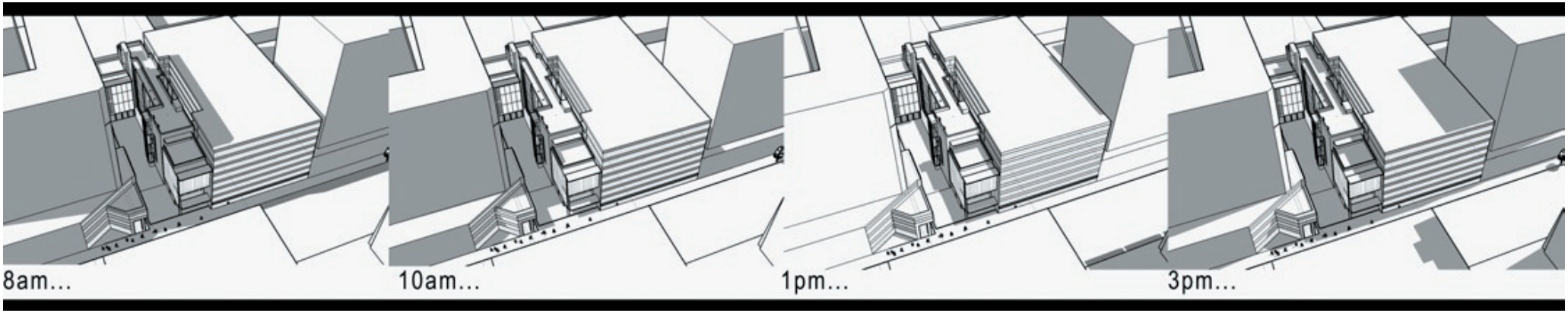


Fig 5.20: The shadow study for 31 December.

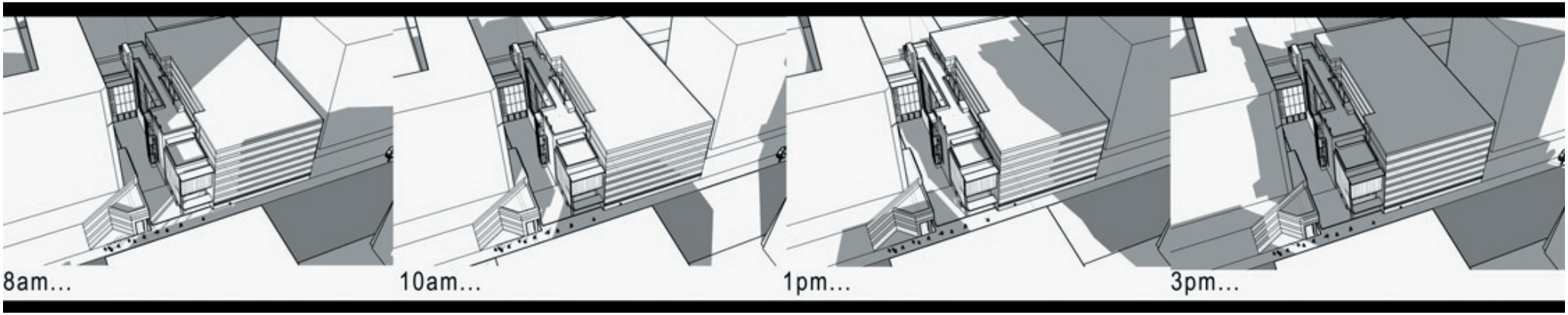


Fig 5.21: The shadow study for 30 June.

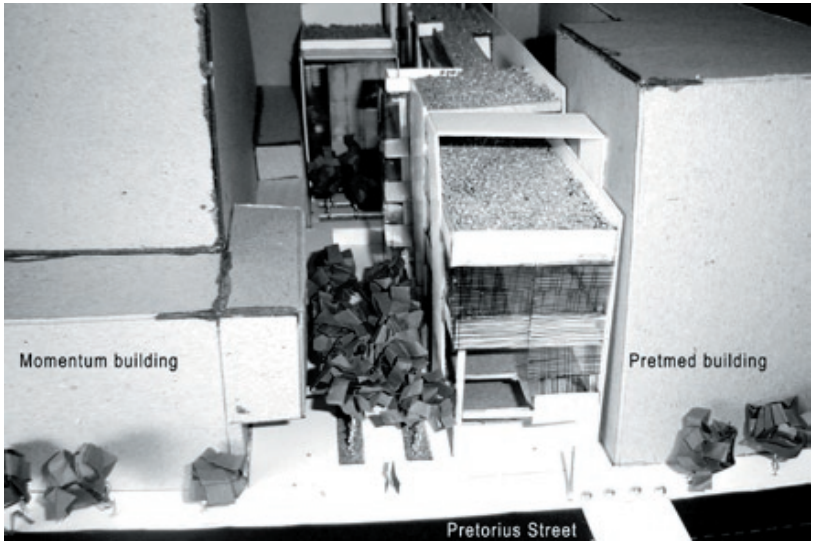


Fig 5.22(top) and 5.23(left): The sketch model of the State Theatre Dance Centre showing the height in relation to the Pretmed building.

Fig 5.24: The response to the issues highlighted by the sketch model.

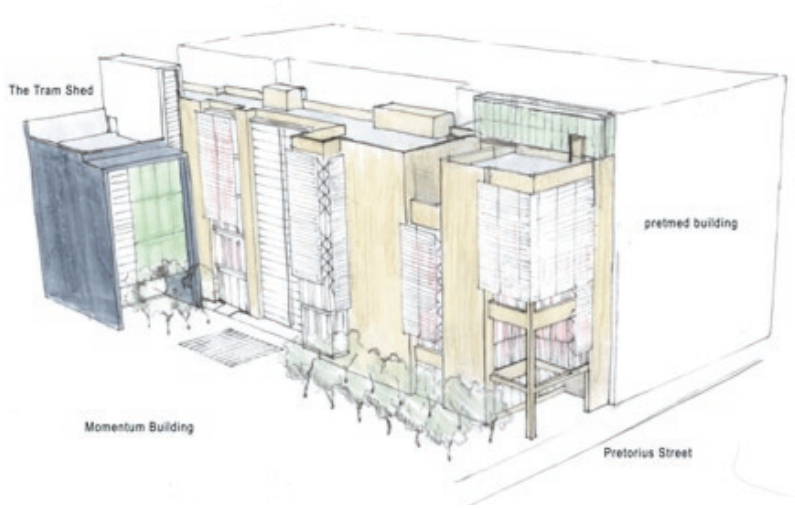


Fig 5.25: The covered roof terrace and layering of the facade.

Developing the response

Figures 5.22 and 5.23 are images of a sketch-model of the site and building. Here, the spaces created within the site can be read. The model also revealed a couple of problem aspects of the design.

1. Heights of the buildings: The northern façade of the proposed State Theatre Dance Centre does not match the height of the neighbouring Pretmed building. Here more height needed to be generated for continuity of the street edge.
2. The treatment of the northern façade of the building, along Pretorius Street, did not respond to the neighbouring Pretmed building's fenestration.

Figure 5.24 shows the design developing in response to these issues. The height of the buildings was then matched by adding another usable space to the northern tip of the building as well as a staircase along the western edgethat would allow access to a roof terrace above this new space. This terrace was later also covered which is shown in Figure 5.25.

The transition between the two fenestration typologies was dealt with by creating a neutral area on the western-most edge of the northern façade. This neutral area simply consists of a blank wall containing no fenestration.

The sketch shown in Figure 5.25 became what the author aimed to achieve in the design. Here the proportions are complementary and the façade has a sense of depth and layering.

The final design intervention : exterior views

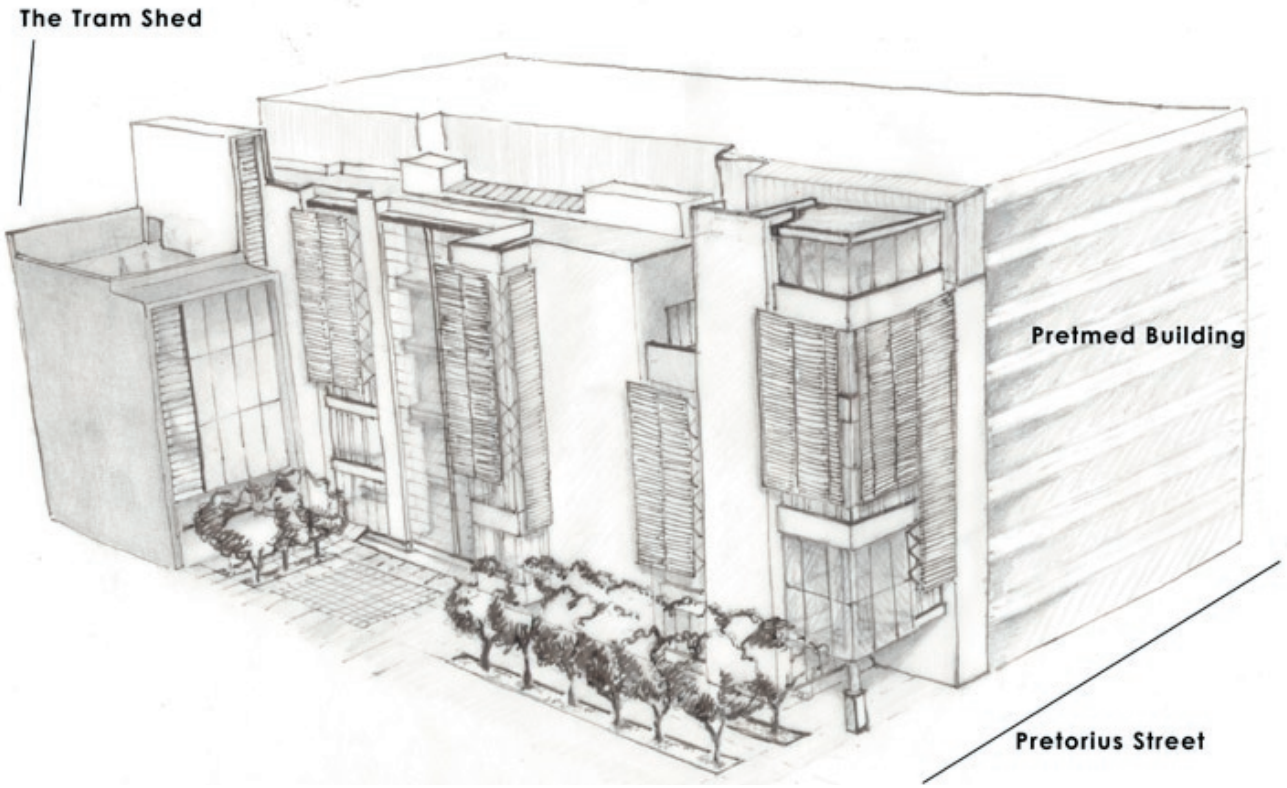


Fig 5.26: Birds-eye-view, north east _ the final design of the STDC in perspective.

The final design intervention _ STDC exterior views

Decisions regarding the final design intervention were reached through the exploration and development of design possibilities. The constraints and opportunities of the site set strict boundaries for the development of the STDC and these were explored and tested through a reiterative process of design and analysis. Figures 5.26 to 5.29 show the finalized product, proposed for the State Theatre Dance Centre. The building developed into an elegant, sophisticated and modern structure, and it is anticipated that the STDC can communicate and express itself as a symbol of 21st century South African architecture.

Fig 5.27: Section through the STDC depicting levels and activities.

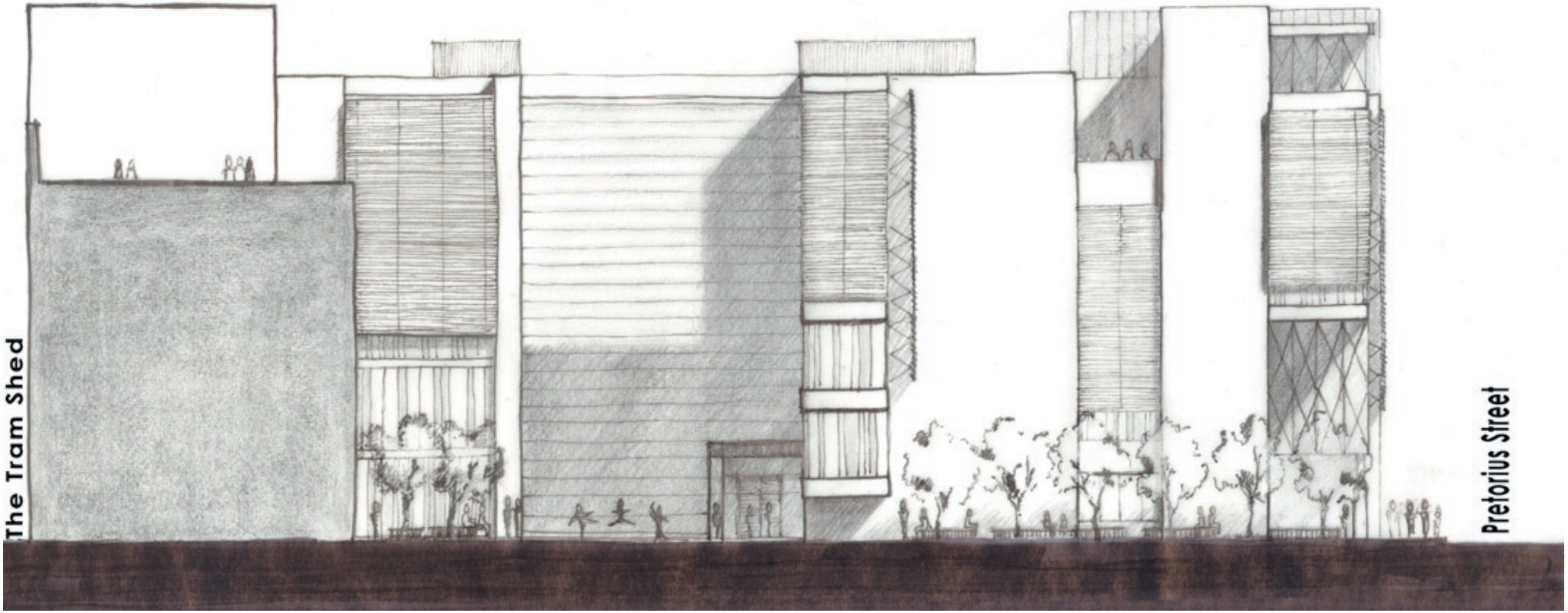


Fig 5.28: Eastern elevation of the STDC.

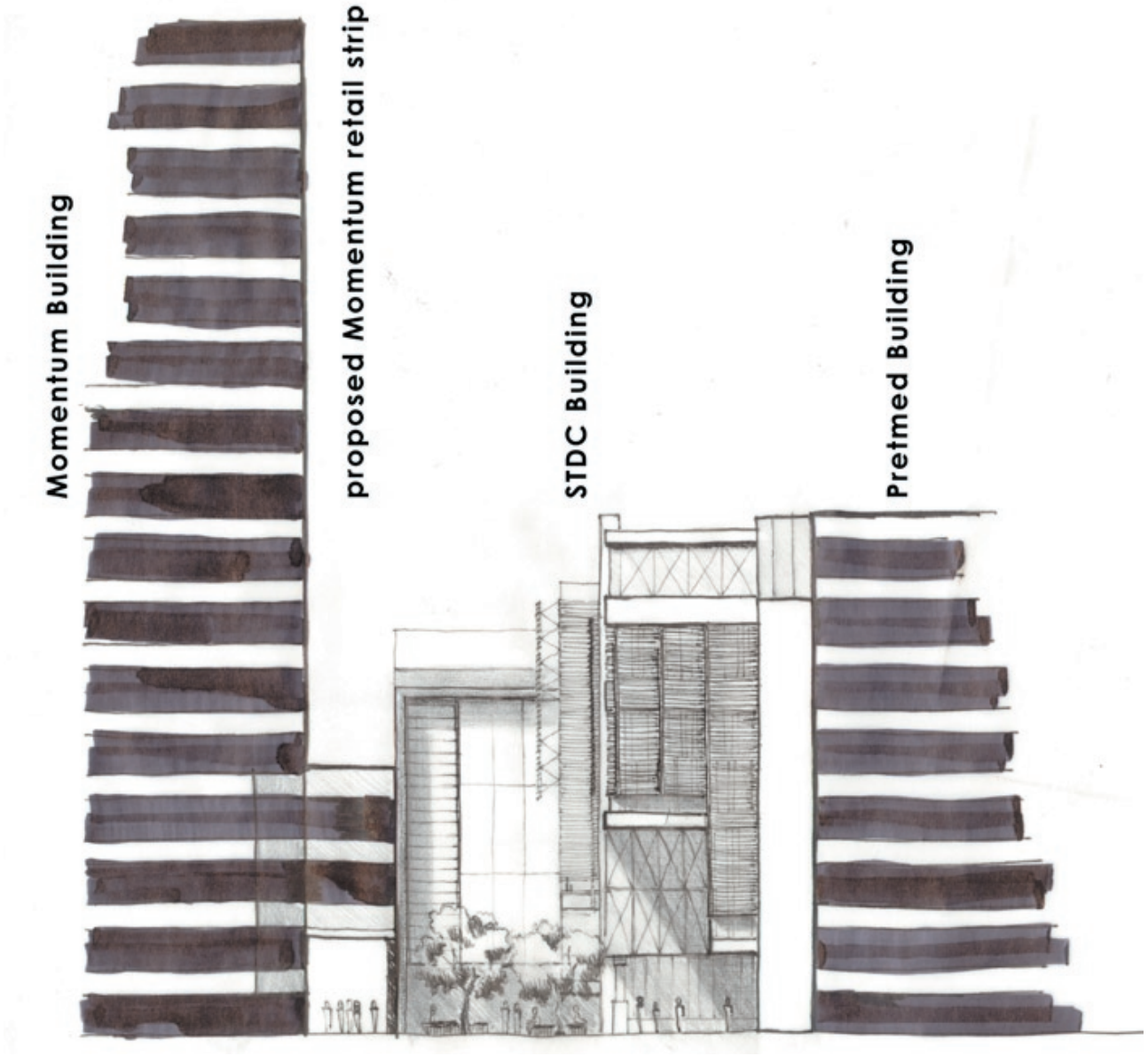


Fig 5.29: The STDC northern elevation.

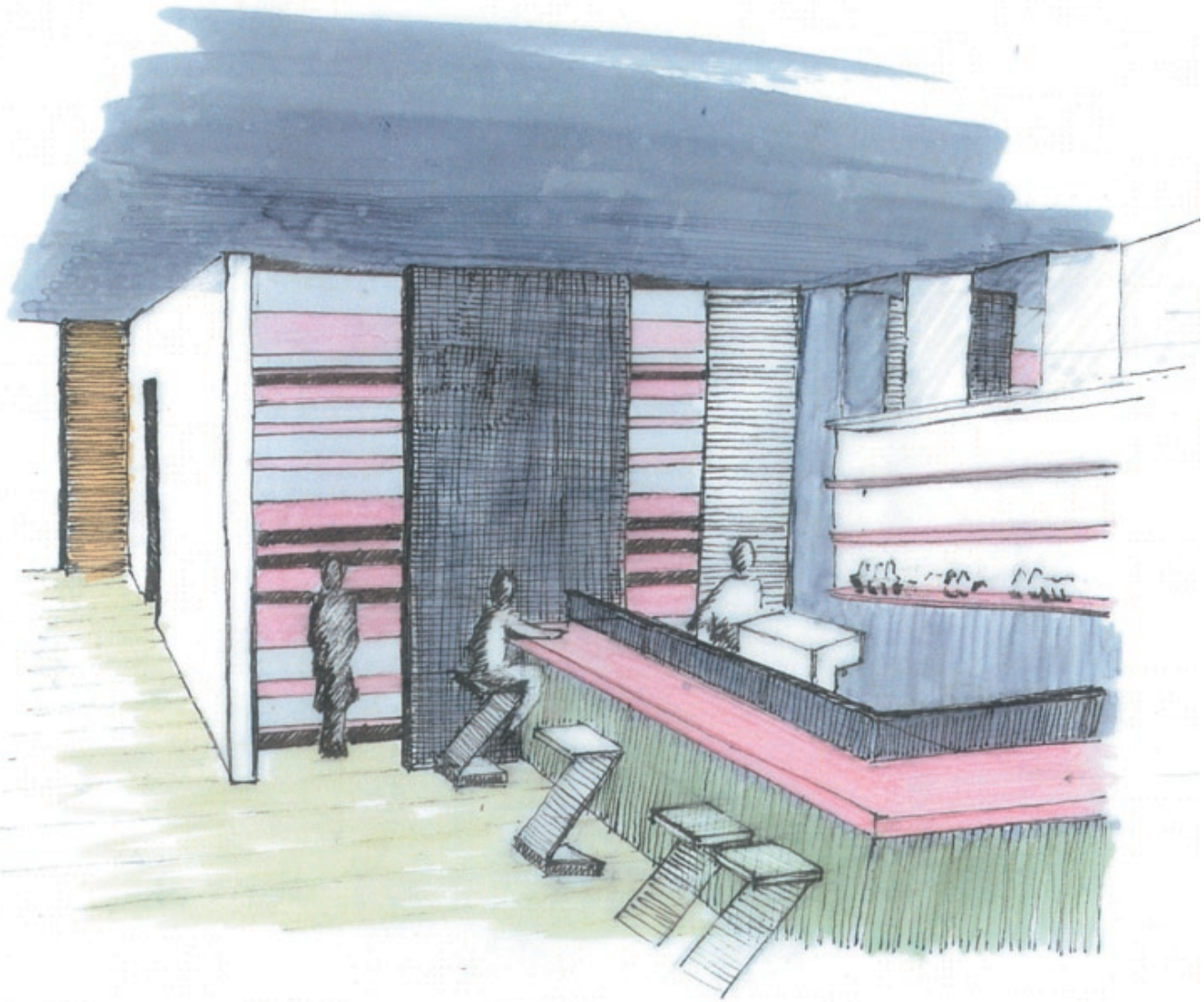


Fig 5.30: The drinks bar on ground floor - accessible to the public.

The final design intervention _ STDC interior views

For continuity in the design, the interior of the building was also explored. The interior of the STDC will house the life of the project which is in essence dance. The spaces feeding the dance studios are considered to be just as vital and therefore different areas within the building were conceptualized. The interior images shown in Figures 5.30 to 5.39 depict the colourful and vivacious interior spaces. The spaces were designed to express freedom and an element of fun, which is so central to dance as an art form. After all, dance is commonly an expression of one's joy rather than melancholy.

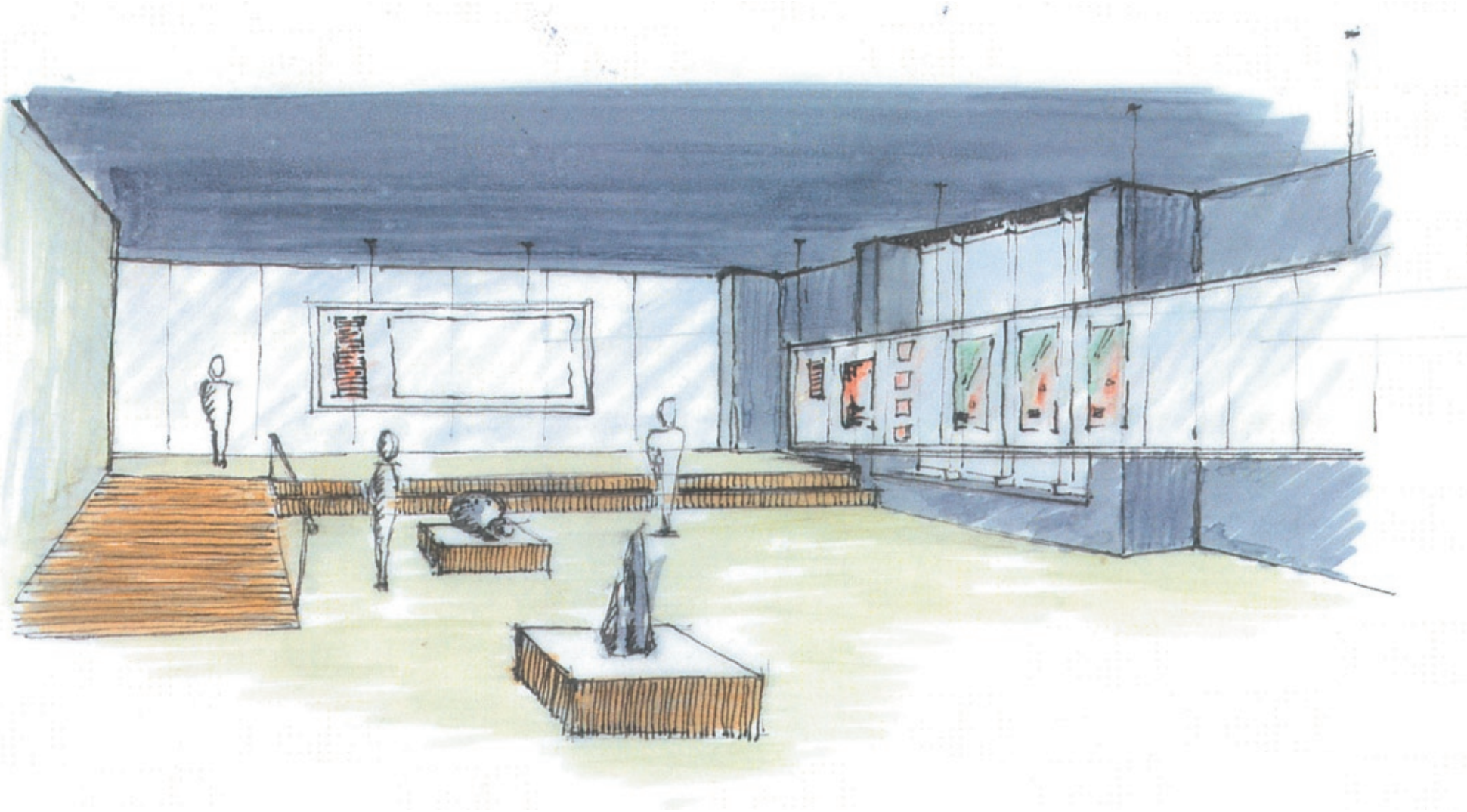


Fig 5.31: The ground floor gallery forming part of the public interface.

Fig 5.32: The reception and waiting area consisting of varying spatial volumes.

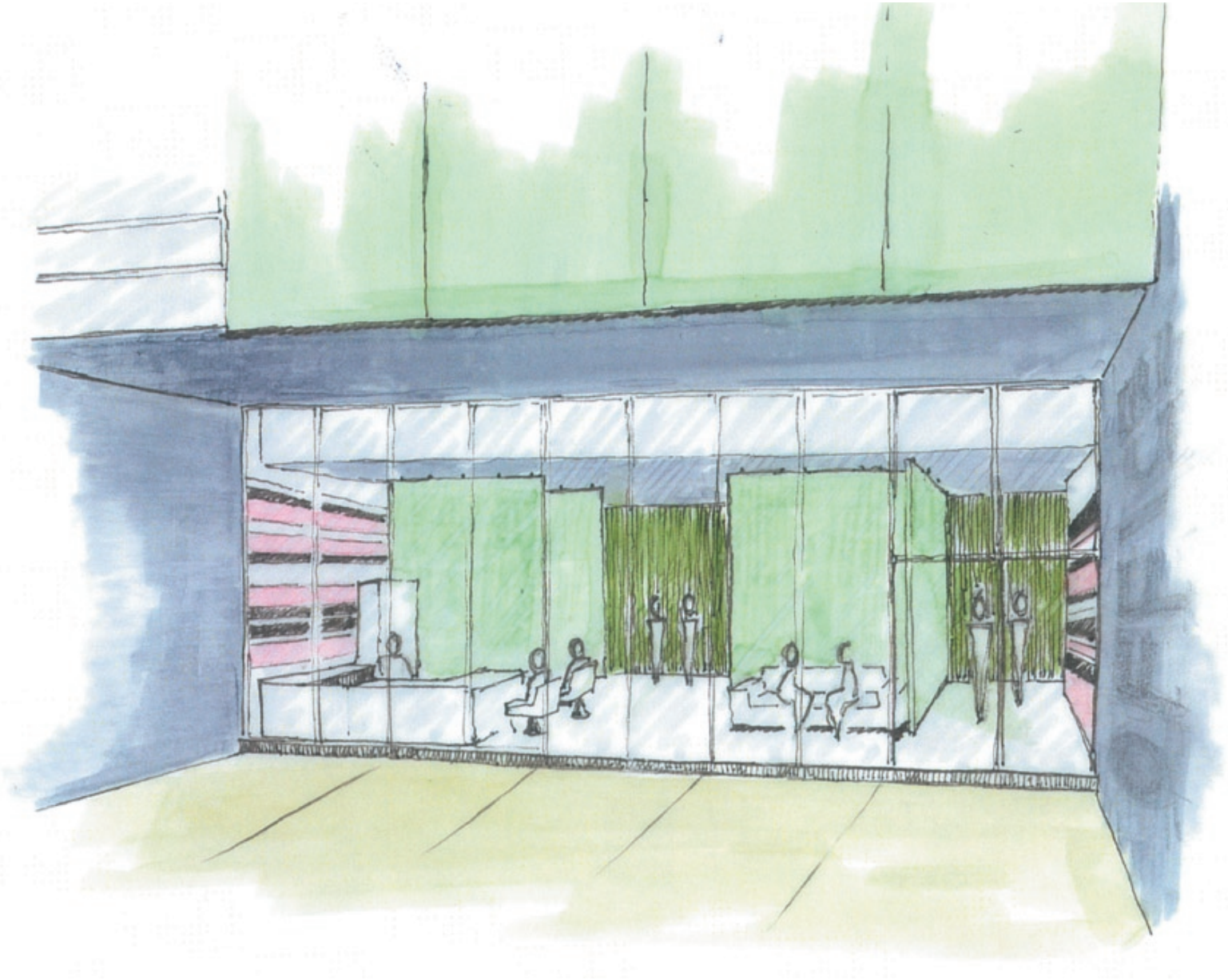


Fig 5.33: The administration and consultation office with seperate entrance.

Fig 5.34: The bridge on the first floor connecting the southern and northern part of the STDC.

Fig 5.35: Looking toward the classroom on the third floor - curved walls express movement around corners.

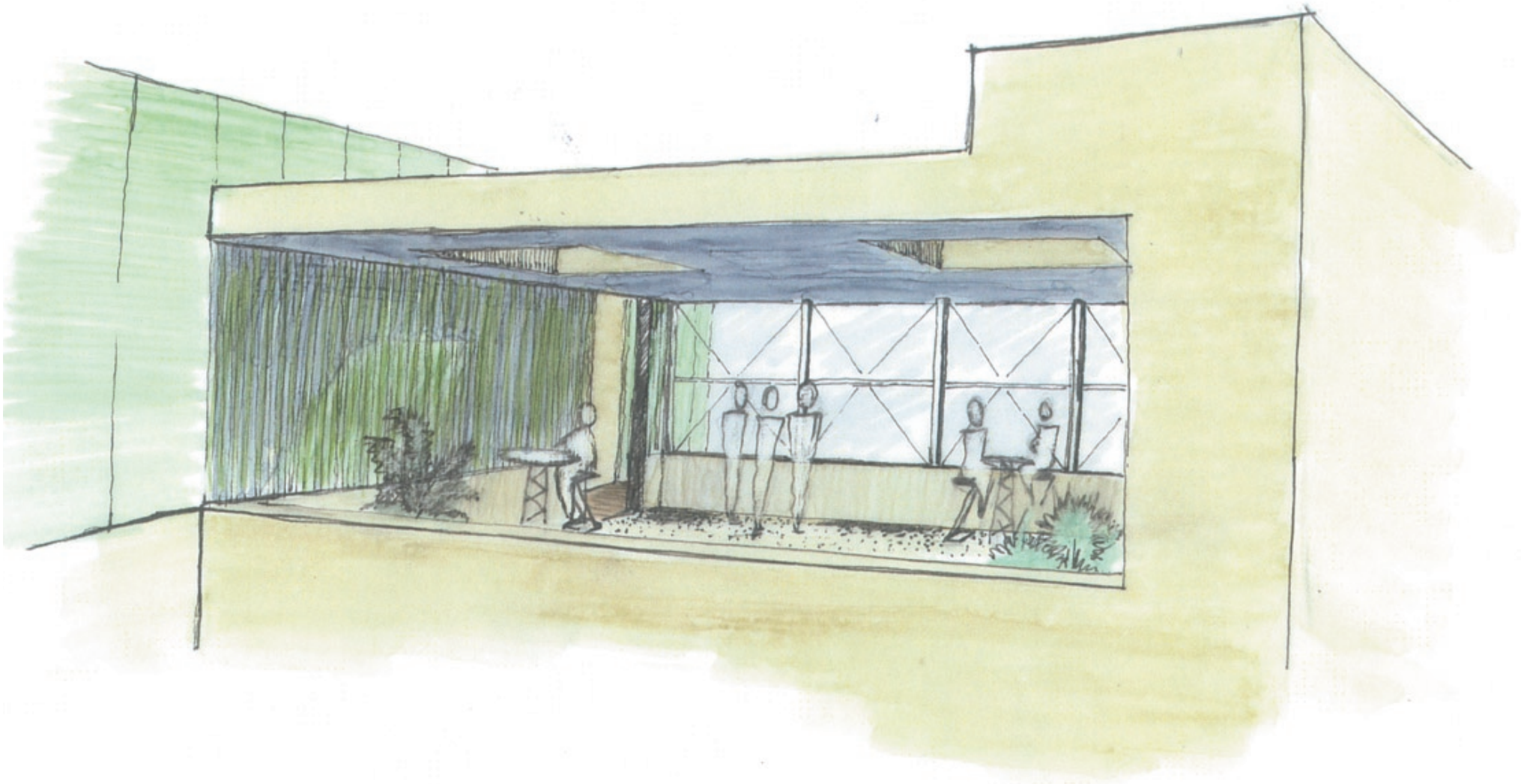


Fig 5.36: The roof terrace at the northern most point of the building.

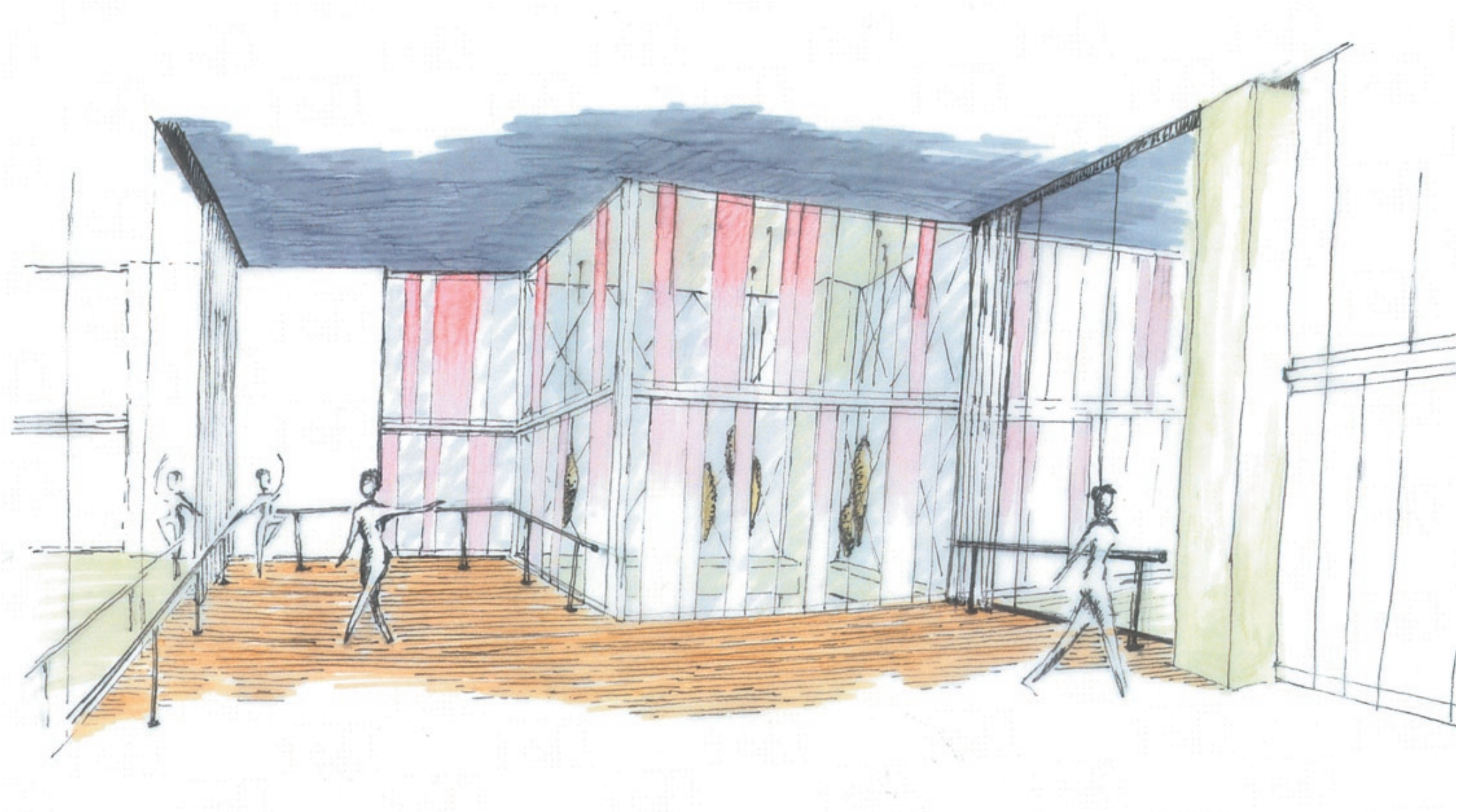


Fig 5.37: Studio 1 - the heart and lifeblood of the STDC.

Fig 5.38: Large mural of dancing figures against multi-storey wall _ view from public space