

Design development

Chapter 6

"The physical environment that we construct is as much a social phenomenon as it is a physical one."

H. Proshansky

Introduction

In this chapter the concept development and its proposed solution is discussed by illustrating key elements and their development during the design process.

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Development depicted in this chapter have been reorganised in order to indicate the development of specific elements throughout the year. These elements explored have been identified through theoretical investigation as well as contextual, programmatic and environmental problems specific to the site and area of investigation.

Entopia

Throughout the design development, the question of how *entopia* can be achieved has been asked.

Since *entopia* revolves strongly around real world needs of building users and problems specific to place and setting, the design exploration started by focussing on applicable programmatic response, space creation and the development of volumetric form that is sensitive to needs within its environment and context.

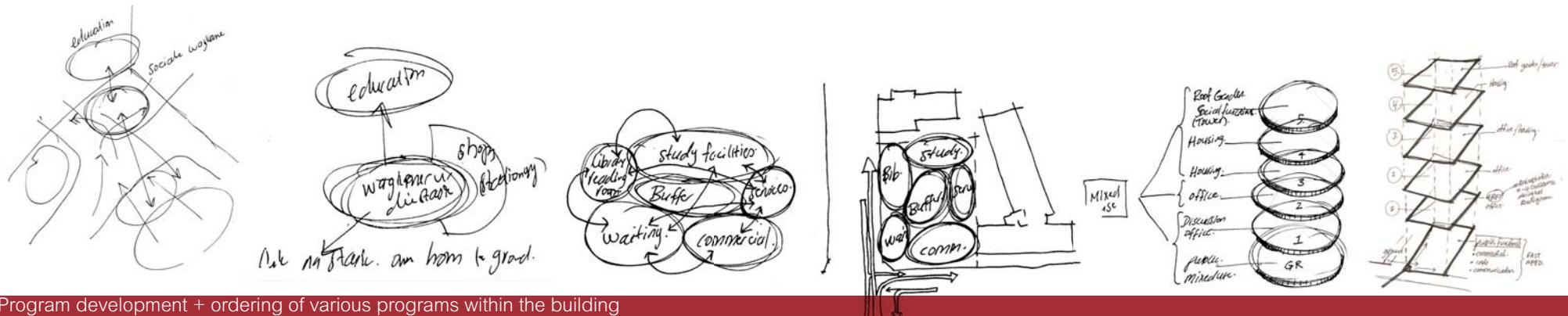
Programmatic Response

The program was derived from an analysis on current uses within the area. From this analysis it became clear that certain programs needed at a gateway to the city are neglected within the liminal space.

A need for sheltered waiting rooms has been noted as well as programs that will encourage use of the area while promoting way finding, communication and facilitate transition while still retaining people within the area in order to encourage social cohesion.

The need for educational facilities en route has been observed in order to improve low levels of work opportunities experienced by a large group of people moving through the area due to lack of basic education and skills.

The provided programs are all associated with different levels of waiting. Public users of the space are all people in transition with the amount of time spent on site being influenced by the level of contact needed with building functions.



Program development + ordering of various programs within the building

Fig. 6.1: Development of building program

Levels of contact have been facilitated during the design process through hierarchy and the placement of the various programs on site as well as through the provision of different edge conditions as is needed for the corresponding levels of contact.

Programs with a public nature have been placed on ground floor level with building use becoming progressively private towards the higher storeys with time duration spent on site increasing towards the centre and top of the building.

Programs involved with the first levels of contact and shorter time duration such as tourist information and takeaway

restaurants, are placed towards the perimeter of the site to facilitate fast use. Programs that entails longer involvement with building functions are located towards the centre of the site and on higher floors. These programs include the urban waiting rooms, sit down restaurant and ABET/SETA administration centre with offices, classrooms, reading room, job centre and roof gardens located higher within the structure.

Overnight facilities have been separated from other programs in order to facilitate privacy. These facilities are located on the southern side of the site to increase exposure of northern sun to rooms and allow views of Pretoria Station, Station Square and the Victoria Hotel.

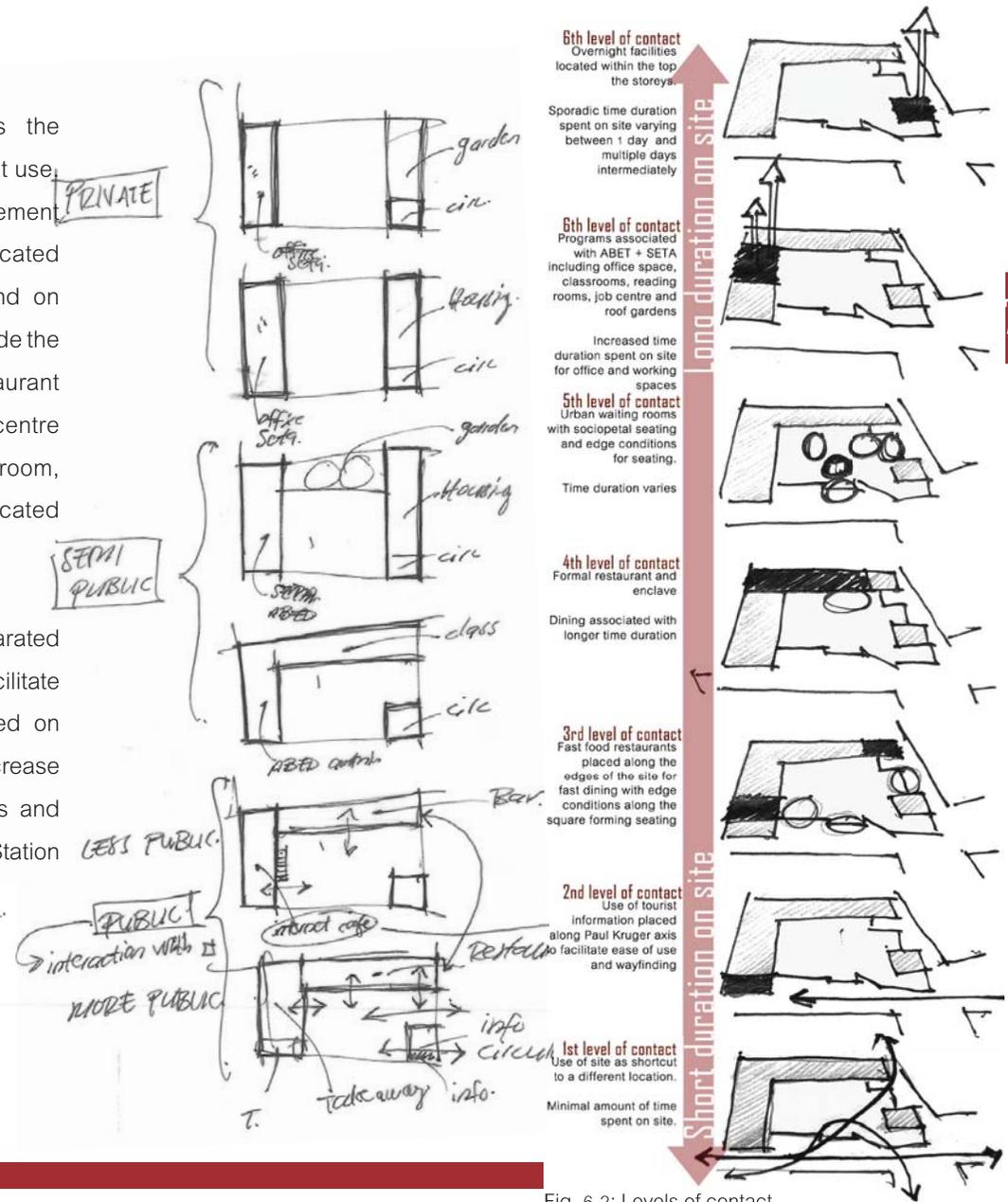
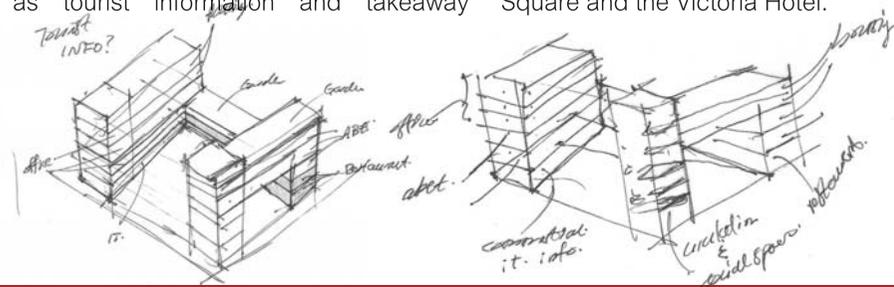


Fig. 6.2: Levels of contact

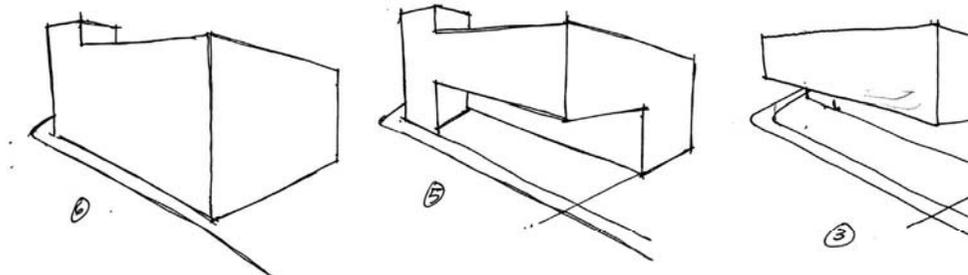
Volumetric Exploration

The aim behind the volumetric exploration was to generate a form that responds to context and its environment. Emphasis has been placed on the south western corner to relate to the Victoria Hotel tower and encourage gateway formation.

Building scale has been changed from the current single storey development on site to a six storey building in order to complete the skyline and relate better to buildings within its context.

The volumetric evolved from a single mass to a courtyard typology, thereby creating

a public square and extending the urban floor. Volumetric form encourages retention of people on site instead of flow thereby promoting use and accidental meeting. The courtyard is open to the west and completely accessible along the Paul Kruger axis to reduce crowding. The volumetric responds to the Victoria Hotel by being open to the west and embracing the hotel instead of bordering the street edge. The southern wing of the massing model is lifted off the sidewalk thereby relating to station square, promoting views to Pretoria Station and extending public space to the newly created square.

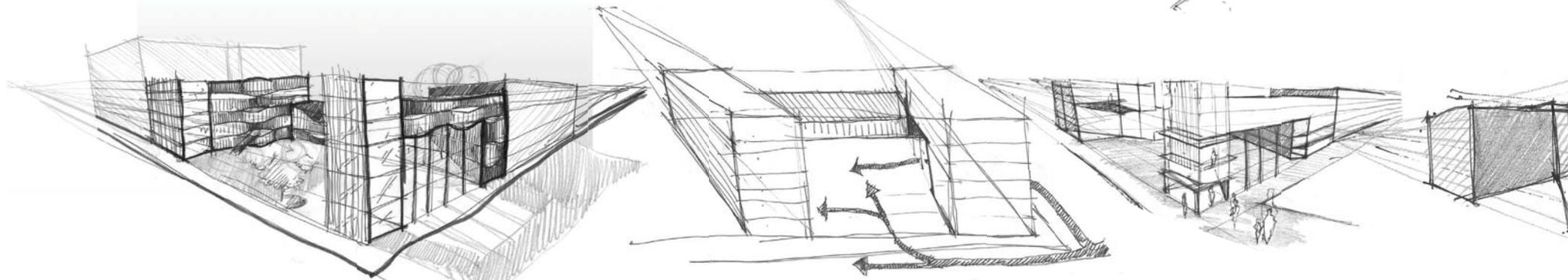


Basic volumetric as single mass and sidewalk interaction



Volumetric completing the street edge with set back public corner

Volumetric open

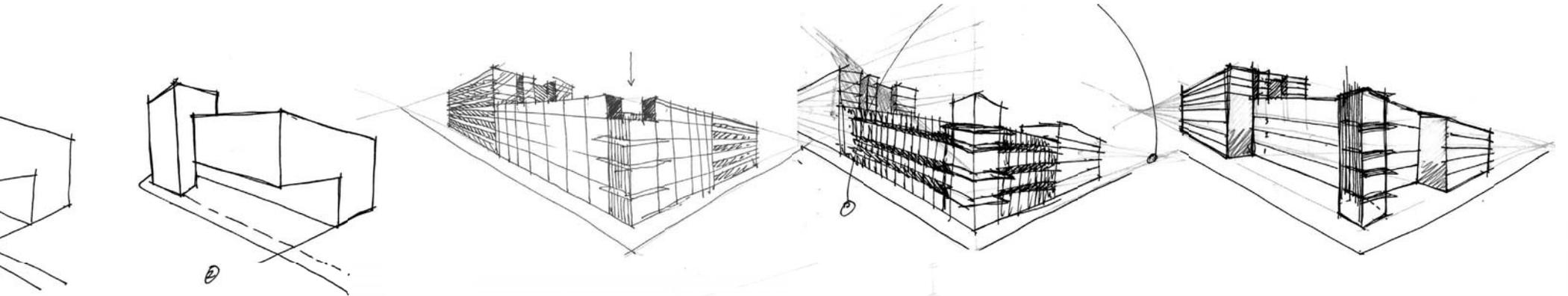


Pedestrian flow on to site with corner as hinderance

Accentuating the corner

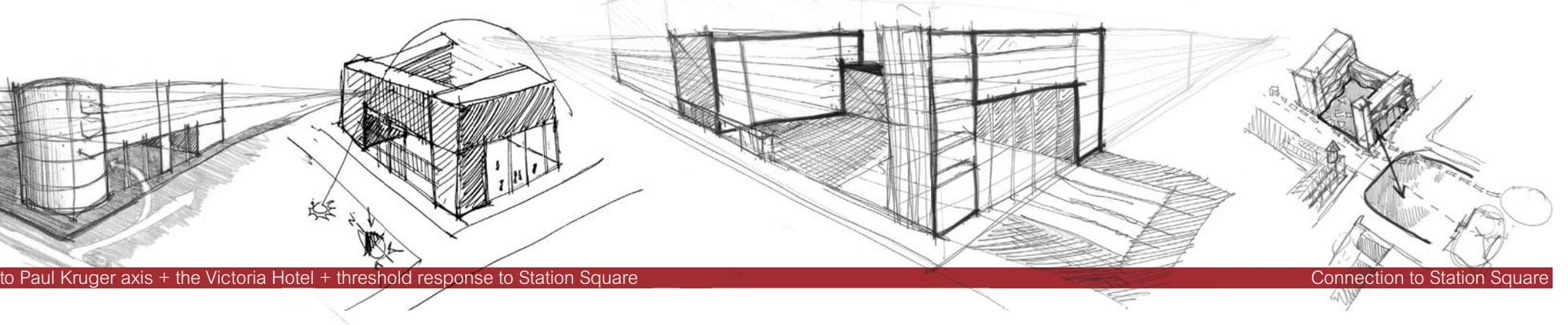
Corner set back

Fig. 6.3: Volumetric exploration



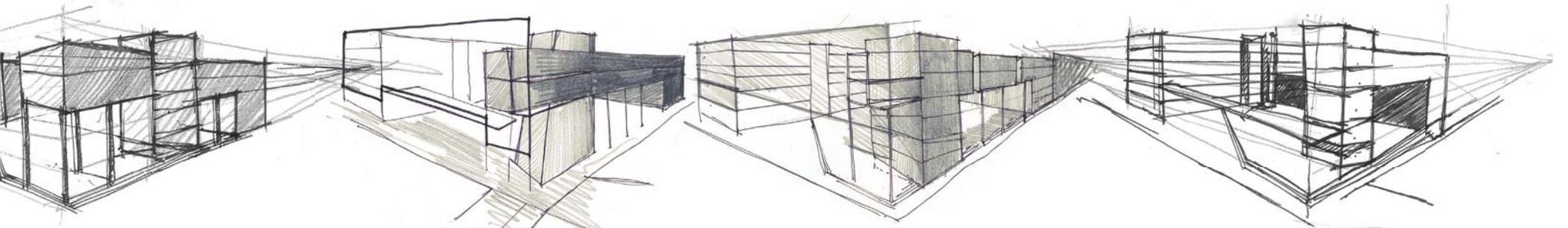
Accentuating the corner

Setting back the facade to extend sidewalk and create relief space



to Paul Kruger axis + the Victoria Hotel + threshold response to Station Square

Connection to Station Square



to promote flow on to site

Corner set back to promote flow on to site with level change at public square and threshold along western and southern edge

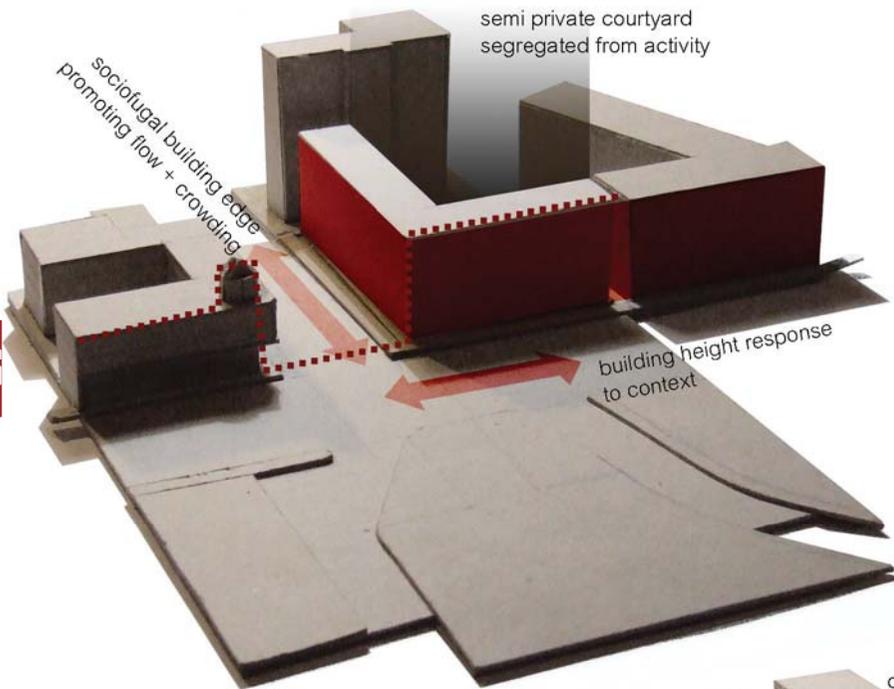


Fig. 6.4: Model #1

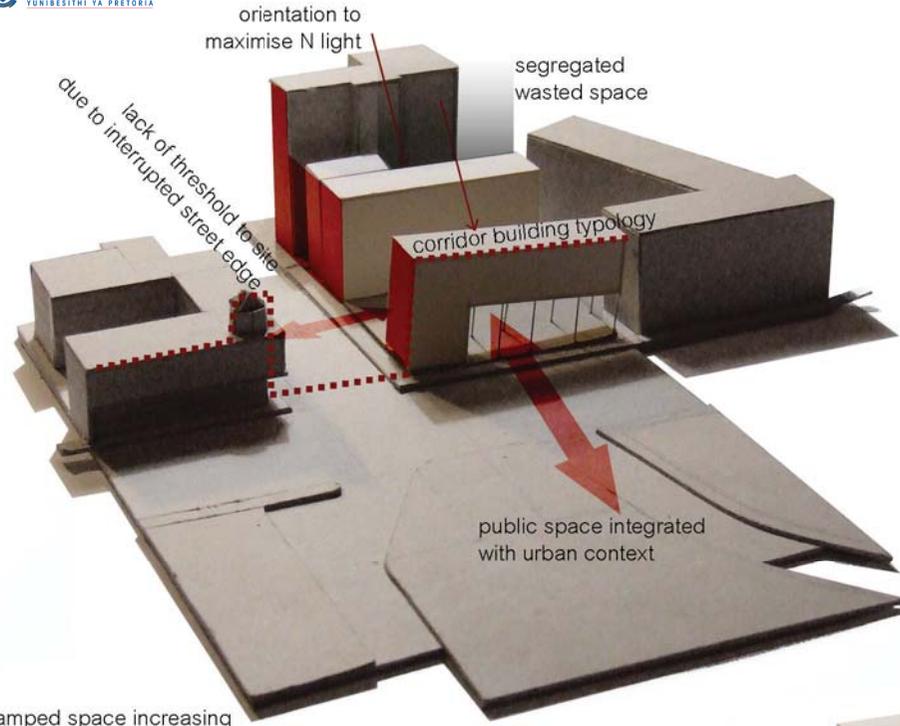


Fig. 6.5: Model #2

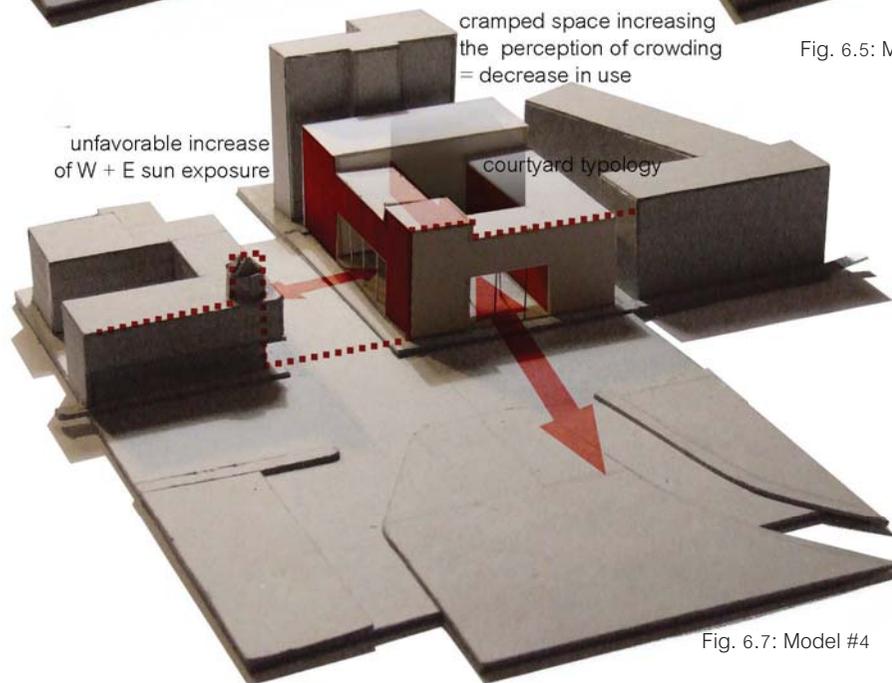
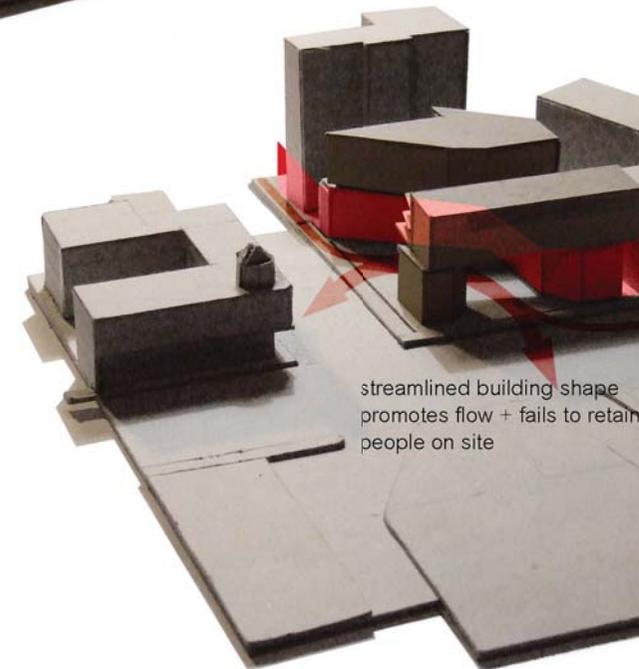


Fig. 6.7: Model #4



unfavorable increase of W + E sun exposure

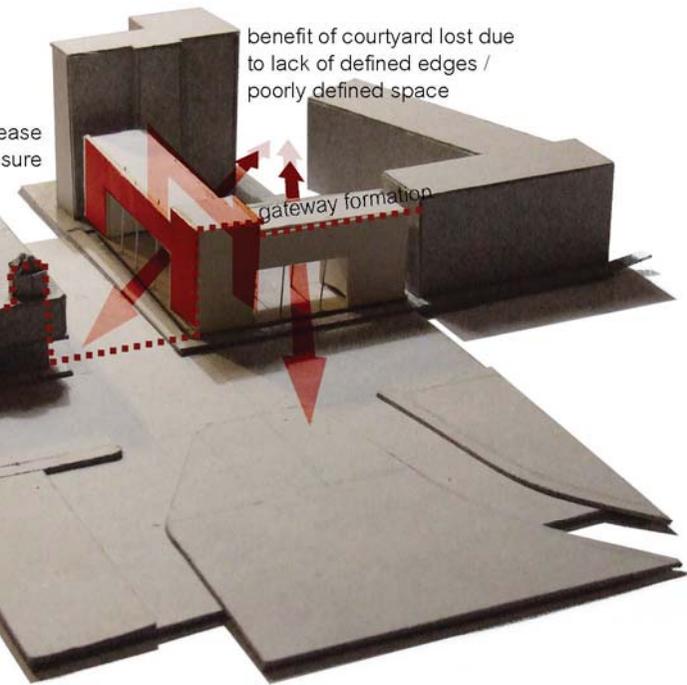


Fig. 6.6: Model #3



Fig. 6.8: Model #5

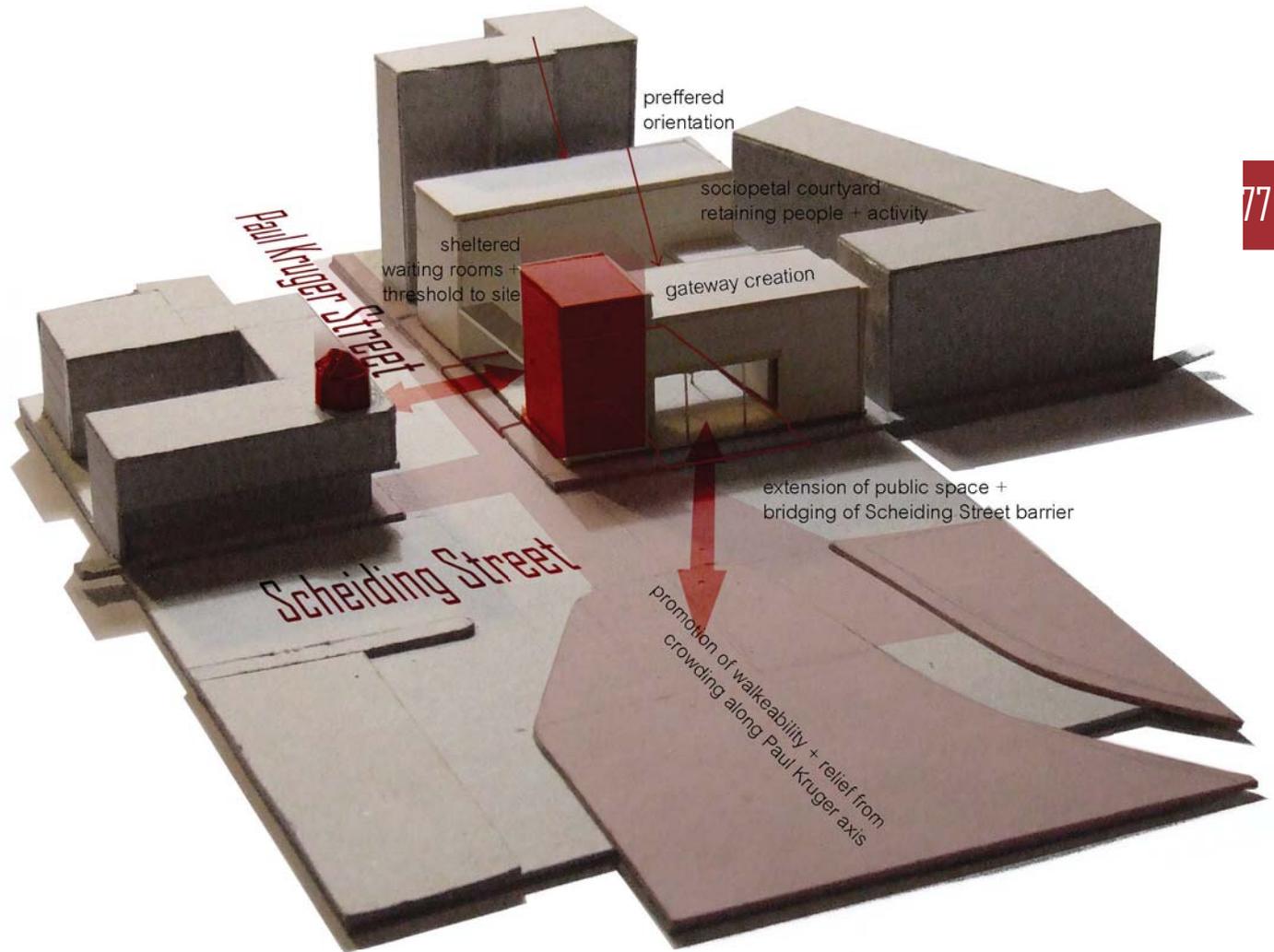


Fig. 6.9: Model #6

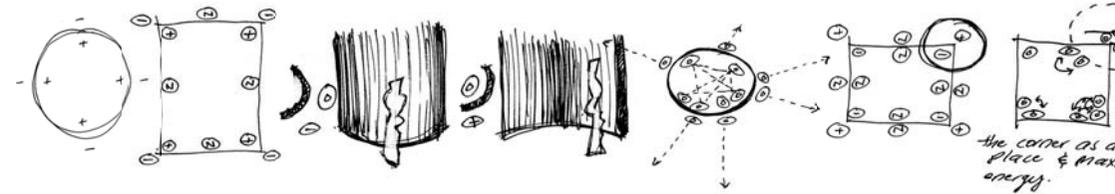
Theoretical Elements

During the theoretical investigation a set of social design principles has been identified. These principles have been explored and developed through a series of diagrams and conceptual drawings in order to refine the proposed volumetric and establish a social narrative that will encourage social interaction and accidental meeting.

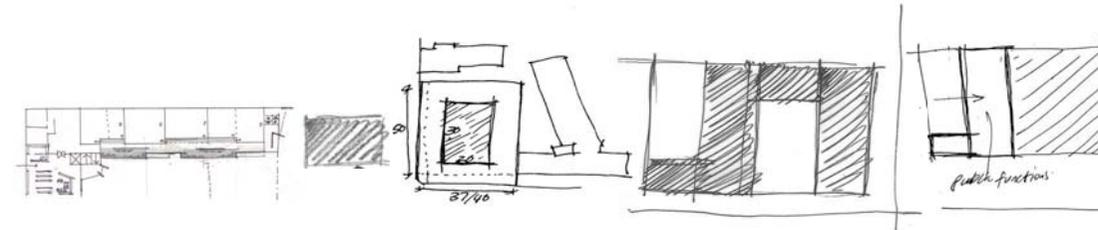
A courtyard typology has been developed with the building enclosing a public square as research indicated the benefit of courtyard typologies on the development

of social bonds. The structure is open to the street edge as to increase accessibility to the public square and promotes ease of use while the inclusion of a variety of programs generates a multi use environment thereby increasing chances at interaction between different people.

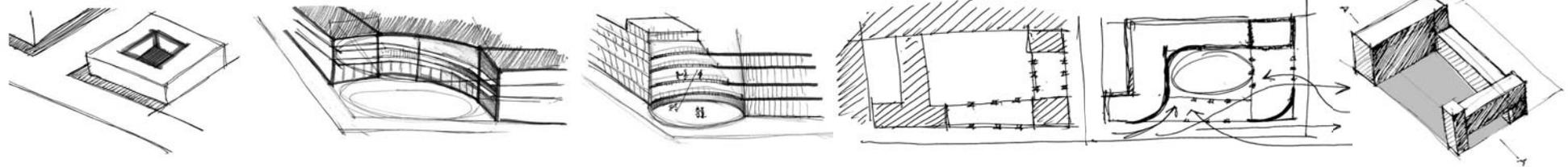
The square is divided into smaller spaces (urban waiting rooms) which prevent the central space from appearing empty and increase edge conditions which is preferred for habitation. Views and visual connection to activity around the



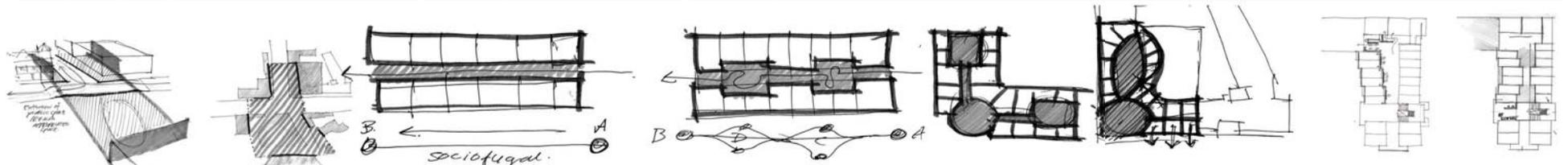
Sociopetal + sociofugal exploration



Sociopetal spill out space Evolution of building typology

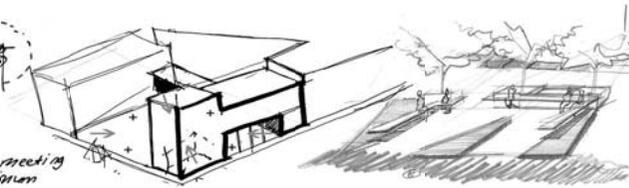


Courtyard typology Offset corner acting as courtyard Atrium acting as courtyard Courtyard typology open to street edges

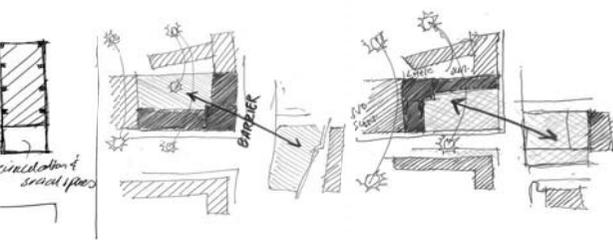


Urban floor forming courtyard with other buildings Sociofugal corridor Sociopetal corridor Corridor approach in southern wing

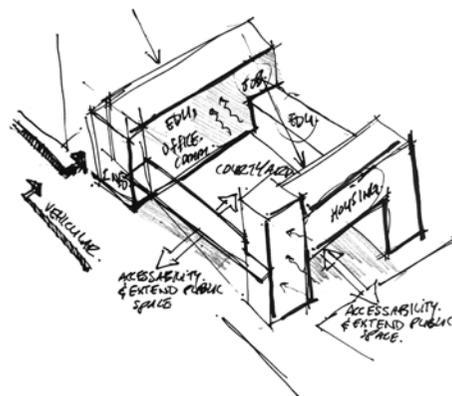
Fig. 6.10: Development of theoretical elements



Sociopetal volumetric Sociopetal seating



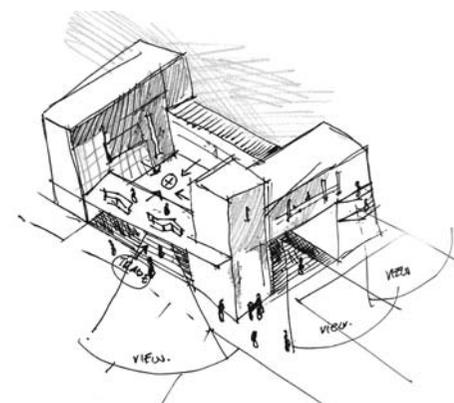
Building open to street creating a courtyard



Accessibility, vehicular access + mixed use

square has been promoted to reduce the perception of abandoned public space.

Sociopetal space has been created through volumetric form which enfolds the newly created square. Sociopetal space is created in the building as well, through setbacks in the facade and the extension of walkways to create spaces throughout the design where meeting and group formation are likely to occur. Seating within these spaces and as well as within the public square



Views, and sociopetal courtyard

are placed in sociopetal arrangement to facilitate and promote interaction.

The extension of the sidewalk and addition of the pedestrian walkway together with the creation of a humanised streetscape and increased natural elements promotes walkability and fosters pedestrianism while relieving crowding along the Paul Kruger axis and reduces the speed of cars within the area.

Vehicular access to the building which includes refuse removal, parking and deliveries are removed from the side of the road and placed within the basement thereby hiding it from public view. This reduces the number of cars on the street edge and promotes pedestrian use of the area.

Provision of sheltered space for vendors increase street side activity and contributes to the creation of a lively community strengthened by the mixed use environment.

Space that is readable and easily understood by pedestrians through hierarchy and the placement of programs according to levels of contact needed with building functions, promotes psychological comfort and ease of use. Architectural language fits within the context and reduce stimulus overload which may lead to uncomfortable space and psychological distress.

Long corridors have been avoided throughout the design. Where corridors could not be avoided they are broadened at predetermined points in order to offer relief from crowding and serve as accidental meeting space.

High levels of natural light is allowed to penetrate the building in order to prevent interpersonal distances from increasing and acts together with increased ceiling heights to prevent the perception of crowding.

Parti Diagram

The parti diagram has been developed by combining the main design objectives and elements taken into consideration during the design process and refining the theoretical stance with regards to the project. The parti diagram communicates the combination of ideas as three main aspects. These aspects are:

- Extension of public space and the urban floor
- Gateway creation
- How architecture can act as a communication activator

These three aspects serve to illustrate concept and design intent by highlighting important considerations specific to the project and its locality in combination to its sub problems and elements taken into account during the design process.



Fig. 6.11: Square connection to Pretoria Station, Station Square + Victoria Hotel

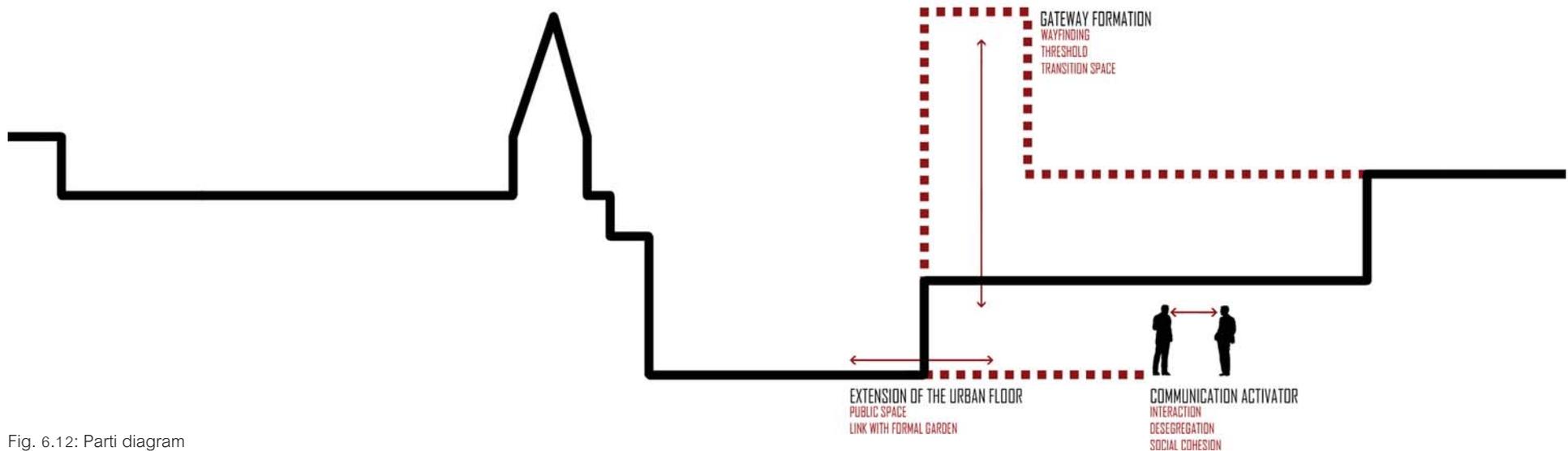


Fig. 6.12: Parti diagram



Fig. 6.13: Square Connection to Victoria Hotel + Paul Kruger Street



Fig. 6.14: South western perspective



Fig. 6.15: North western perspective

Extension of Public Space

Public space and the urban floor are extended in multiple ways throughout the design.

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The new public square bridges Scheiding Street and connects to Station Square through the provision of a pedestrian walkway. The walkway is 150mm high, a contrasting material to the street and edged with mountable curbs thereby slowing traffic and promoting pedestrian use within the area. The square consists

of two levels which creates urban rooms relating to program and hierarchy while defining threshold and indicating movement into a new space.

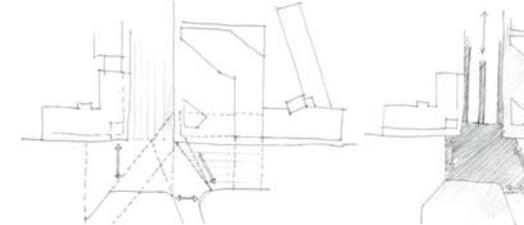
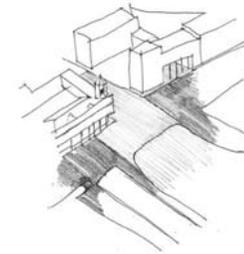
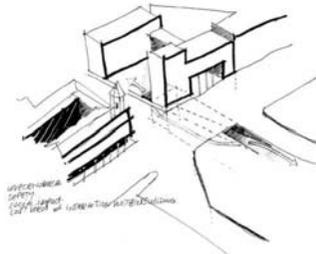
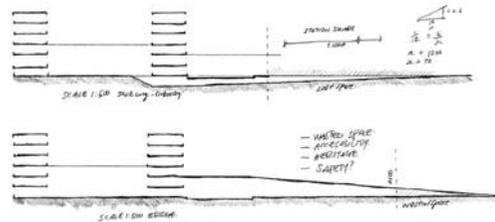
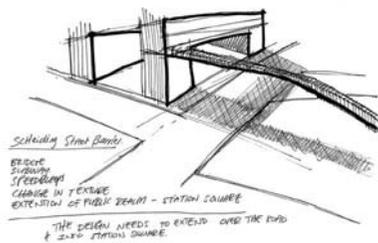
The corner of the site, which serves as main entry to the building and square is celebrated. Built structure is offset from the corner and connects to the walkway with a ramp that bridges level change onto the square. Overhangs and level change indicates entrance to the space

while having it open for pedestrian use and preventing the genius loci of Station Square to spill onto the site.

The building extends public space through the manipulation of volumetric form. The southern wing is lifted off the sidewalk thereby establishing a visual and physical link to Station Square by allowing the urban floor to move unhindered underneath the structure and onto the new square. The structure is open along the

Paul Kruger axis with the square set back to allow extension of the sidewalk on site thereby relieving crowding and providing a sheltered urban room for informal trade and social meeting.

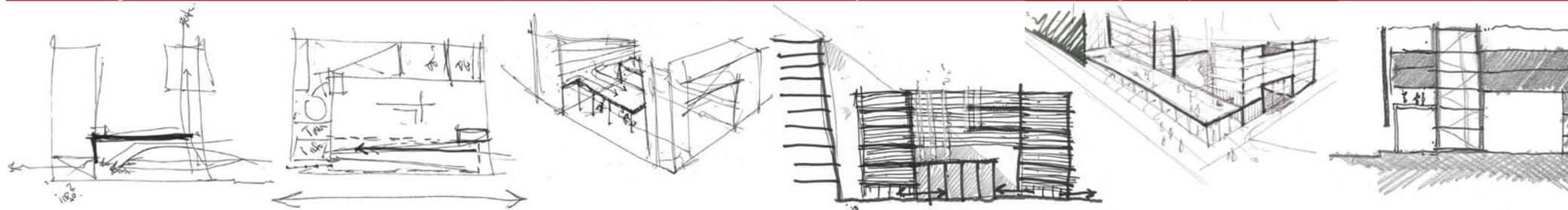
Public and meeting space is scattered throughout the building and extends toward the square by providing semi public roof gardens on three different levels.



Link with bridge

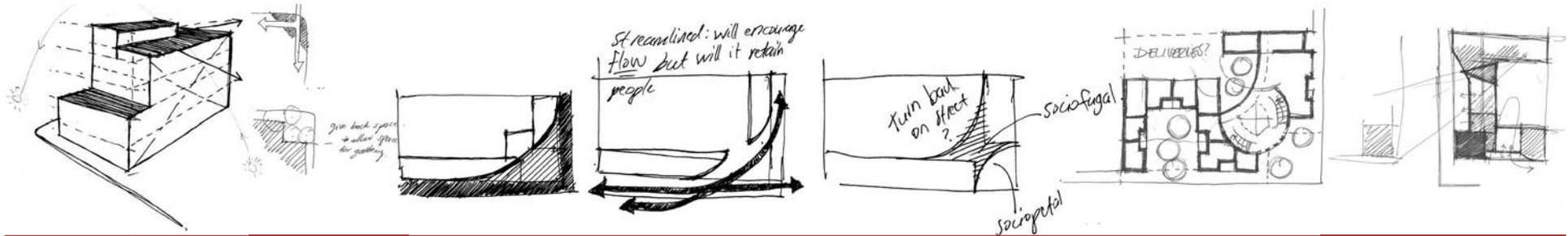
Link with subway

Link with walkway development



Western roof garden and extended sidewalk development

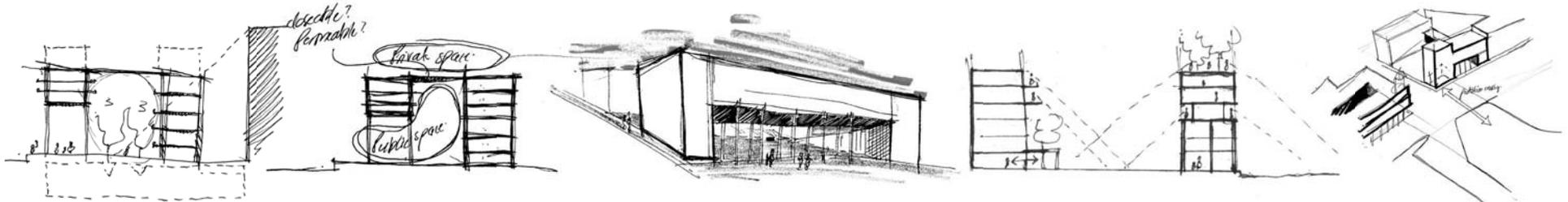
Fig. 6.16: Extension of public space development



Initial approach

Corner treatment

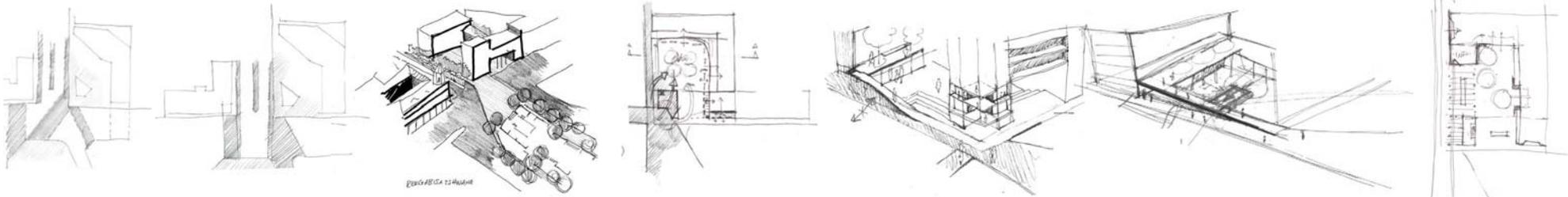
Extension of Paul Kruger sidewalk



Structure lifted off Scheiding Street to allow urban floor to extend

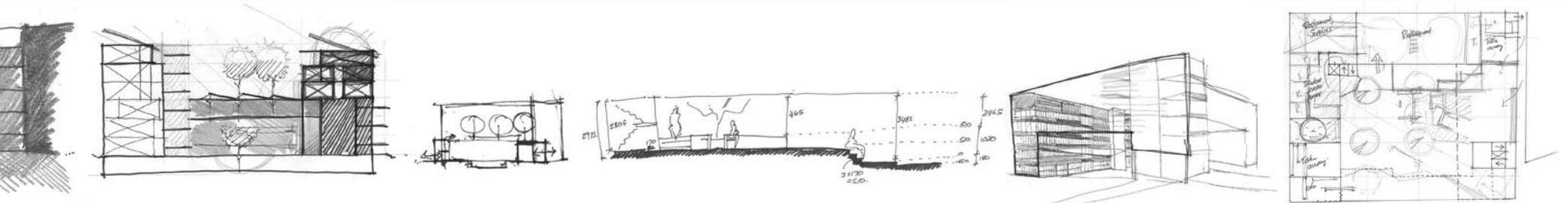
Views + addition of roof gardens

Link to Station Square



Addition of public space with ramp access

Addition of semi public western roof garden



Semi public eastern roof garden

Public square level change

Volumetric response to extended space

Extended space on ground floor

Gateway Formation

Gateway formation occurs firstly through an increase in building scale to complete the skyline and allow the site to relate to context.

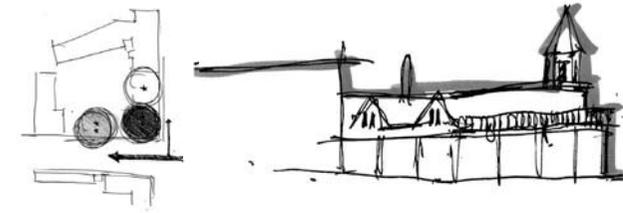
84

The circulation tower on the south western corner is taller than the rest of the built structure and in constant dialogue with the tower on top of the Victoria Hotel. The tower structure on both sides of Paul Kruger Street promotes uniformity and symbolises gateway formation.

Apart from volumetric response, gateway formation is enhanced through architectural language that relates strongly to the Victoria Hotel which forms the existing half of the city portal.

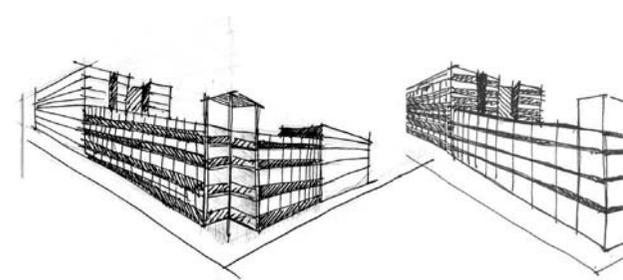
The building responds to the Victoria hotel by lifting the structure off the ground thereby creating shade and resting space as well as framing the sidewalk with columns. The existing hotel achieves this through a continuous balcony over the sidewalk with a similar approach to column use.

The screen, which shades the western facade of the building, responds to the Victoria hotel in texture and materiality by reinterpreting patterns found on the Victoria hotel. The screen wraps around the building, becoming balustrades and northern horizontal shading devices respectively. At predetermined intervals the screen steps away from the building and cantilevers over the sidewalk thereby facilitating way finding and indicating the presence of the gateway when moving along Paul Kruger Street.

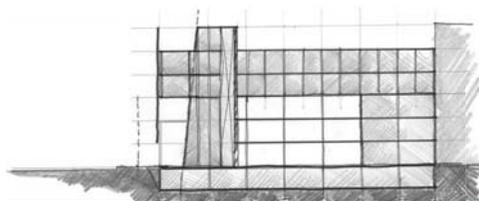


Corner importance

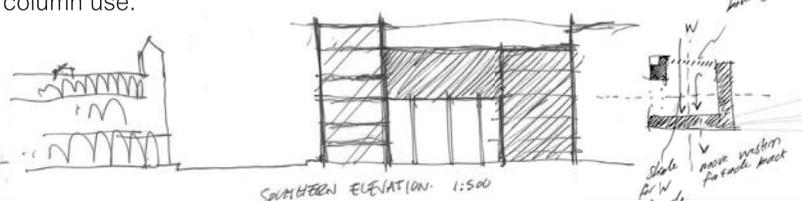
Change in Scale



Treatment of tower



Offset circulation tower and placement of screen

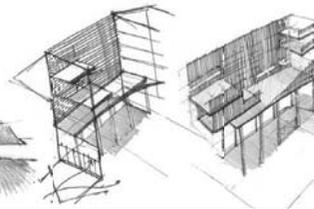


Tower in dialogue with hotel

Screen as shading device



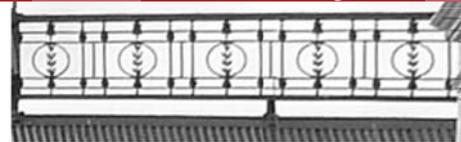
Response to Victoria Hotel



Development of screen



Pattern on Victoria Hotel facade



Screen development from victorian pattern

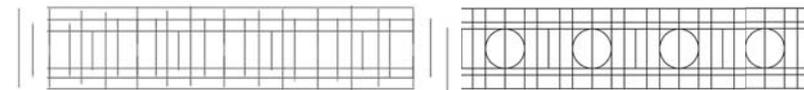
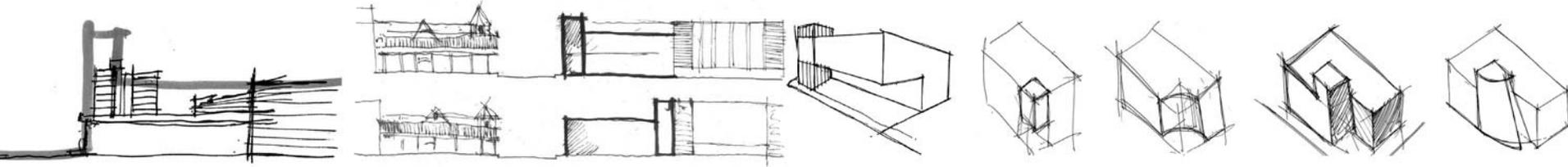


Fig. 6.17: Gateway formation development



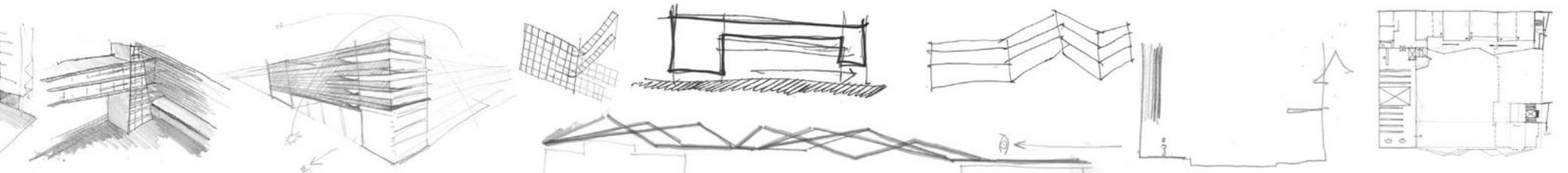
Tower placement

Volumetric approach to corner

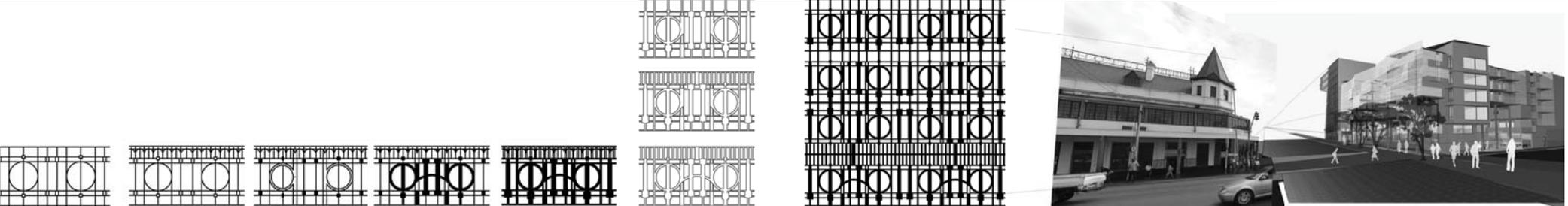


Initial approach to Victoria Hotel with structure above sidewalk

Exploration with tower translated literally



Screen stepped away from building (*plan libre*) and experience of gateway when moving along the Paul Kruger axis



Screen gateway creation and response to context

Communication Activator

Since *entopia* relates strongly to social design within the context of Pretoria, it has been explored how architecture can act as communication activator through built form and spatial creation.

The design responds to its role as communication activator firstly through programmatic response. Choice of program and a mixed use environment will encourage diversity and allow high levels of activity and possible interaction on site throughout the day until late at night.

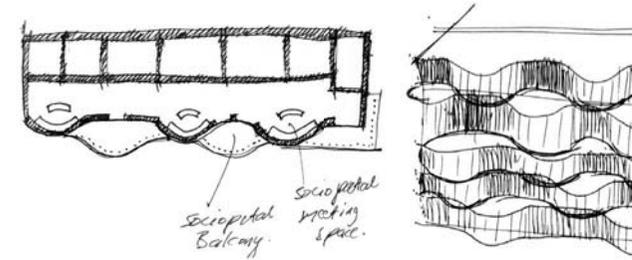
The project additionally acts as communication activator through built form as well as the creation of sociopetal public

space and urban waiting rooms. Social waiting and spaces where accidental meeting can occur are incorporated throughout the design through placement thereof in the square, building and along circulation routes.

The square has been designed to retain people instead of promoting pedestrian flow and consists of two levels with the second level being an adequate height for seating. This allows level changes to the square to serve the additional function of social meeting space. Seating is incorporated into planters with additional seating in sociopetal arrangement around

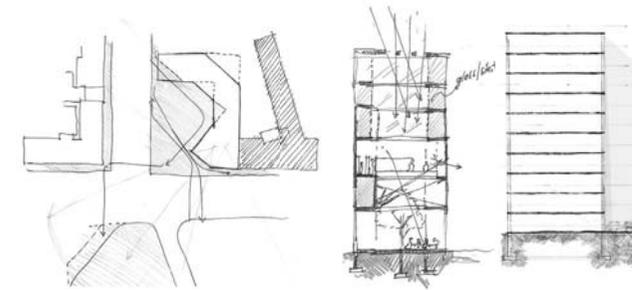
it within both sheltered and unsheltered urban waiting rooms while still offering views of Pretoria station and the sidewalk. Due to these considerations, urban waiting rooms may be used for and encourage gathering and group formation while giving users of the space choice of shelter, sun or shade.

Social space is placed throughout the building. These spaces are incorporated within landings, office discussion space, balconies, roof gardens as well as spill out space to classrooms thereby allowing any of these spaces to act as communication activator.



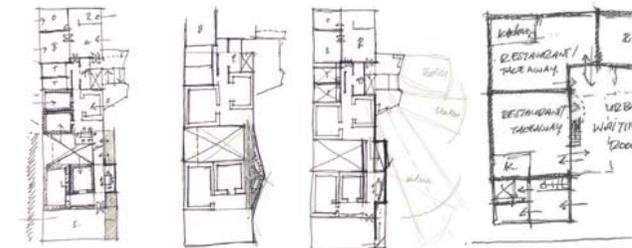
Initial response

Sociopetal balconies



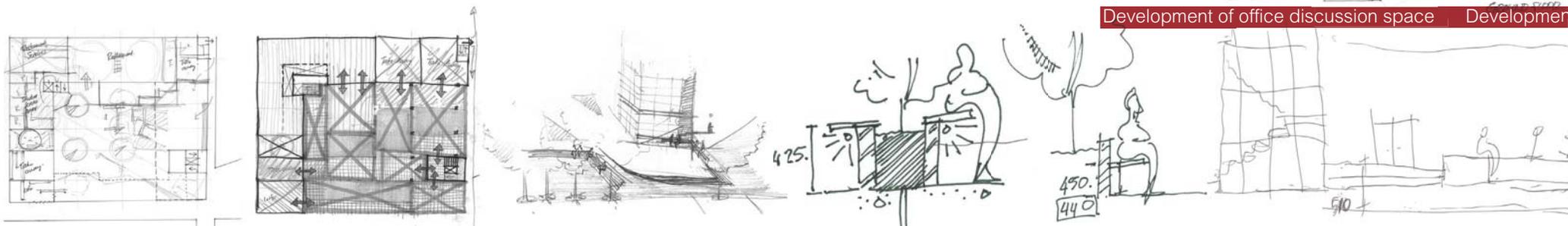
Interaction through atrium

Urban waiting



Development of office discussion space

Development



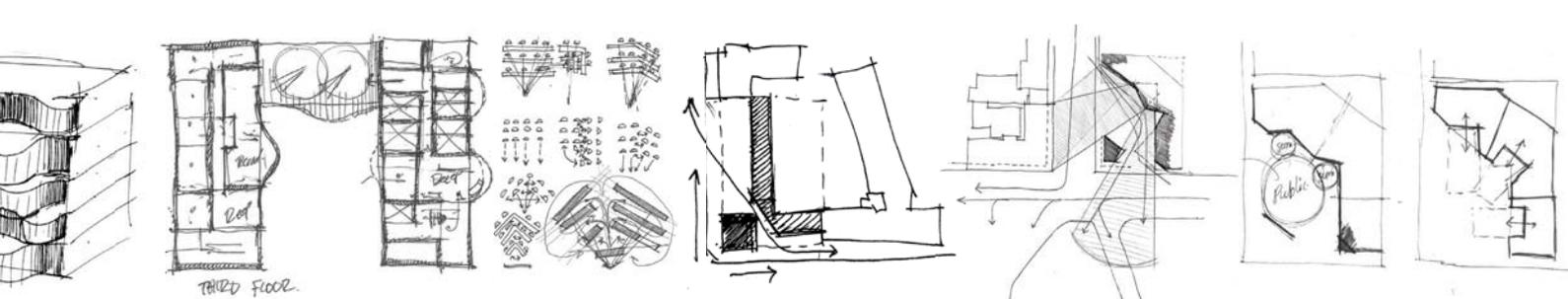
Urban waiting rooms

Seating at level change

Seating incorporated with planter

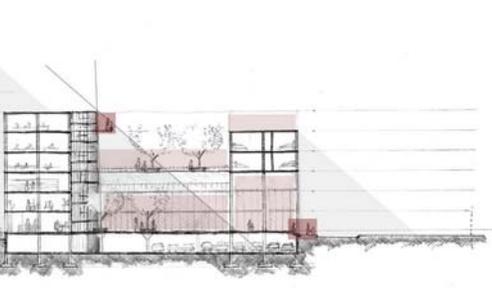
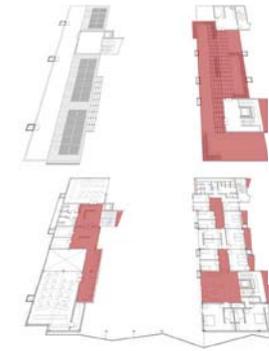
Seating at level change

Fig. 6.18: Communication activator development

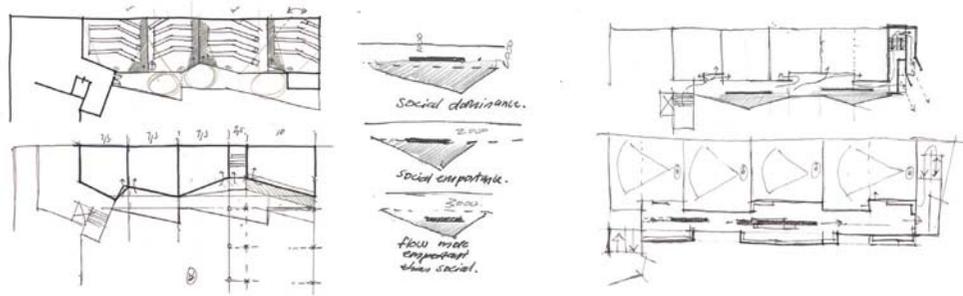


Seating orientation promoting interaction

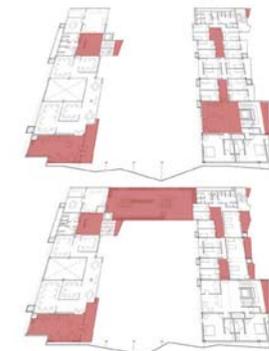
Building form promoting flow



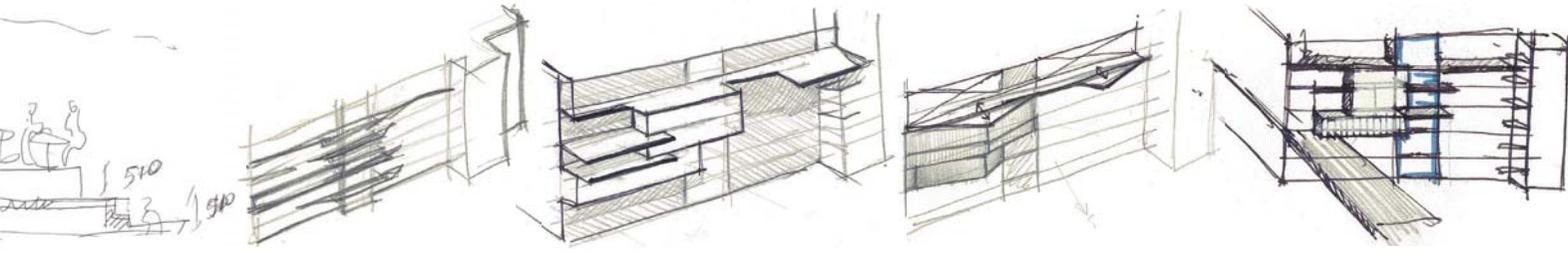
ing rooms and social nodes



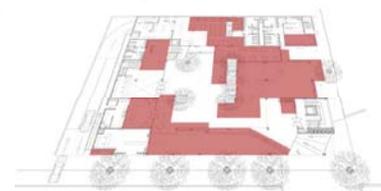
Development of social spill out spaces for ABET classrooms



nt of public square and urban waiting rooms

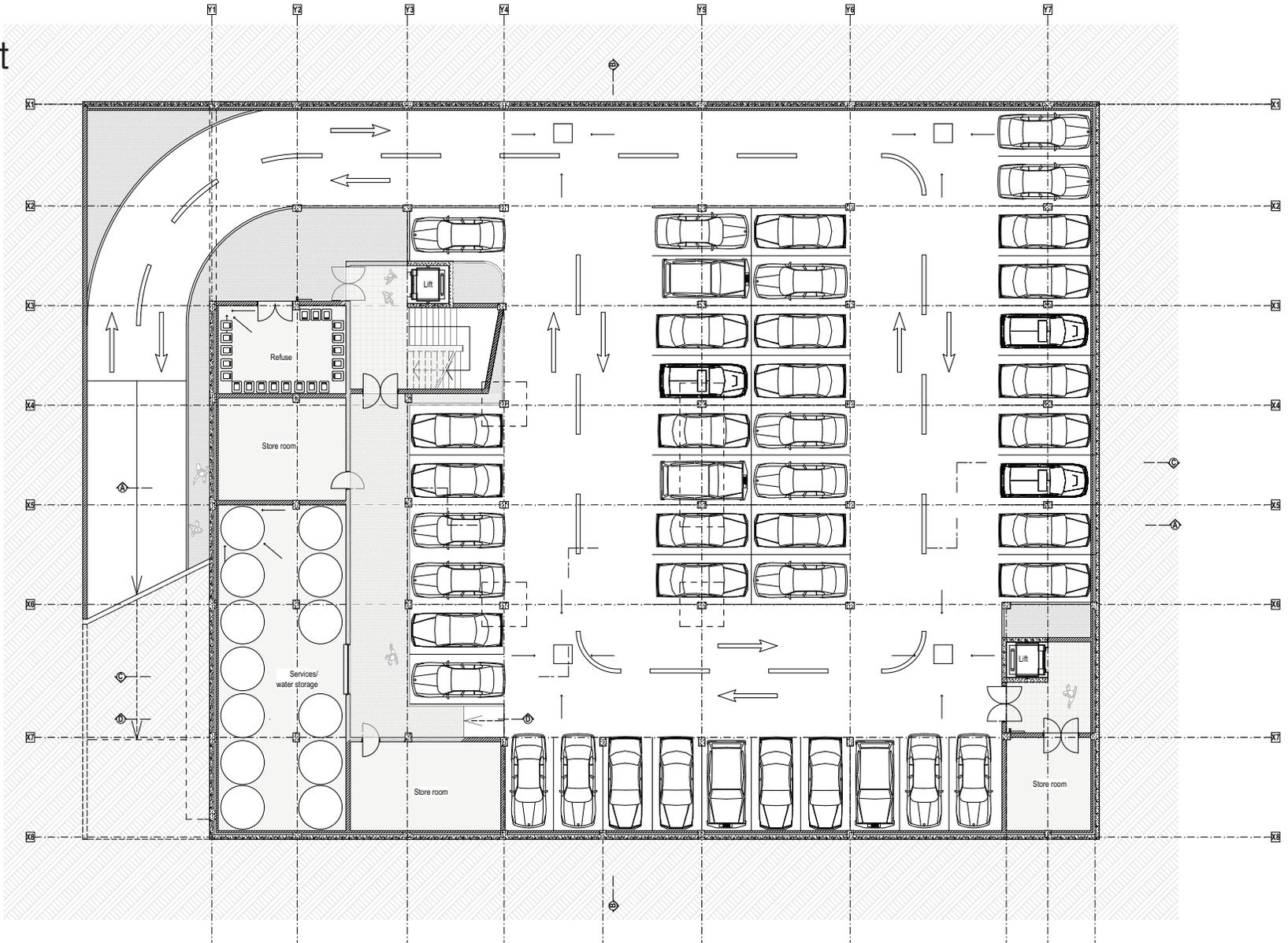
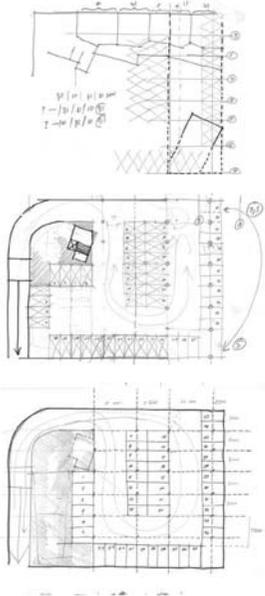


Facade development indicating social space



Social space within the building

Plan Development



Development
Basement plan (Scale as shown)



Fig. 6.19: Basement plan and development

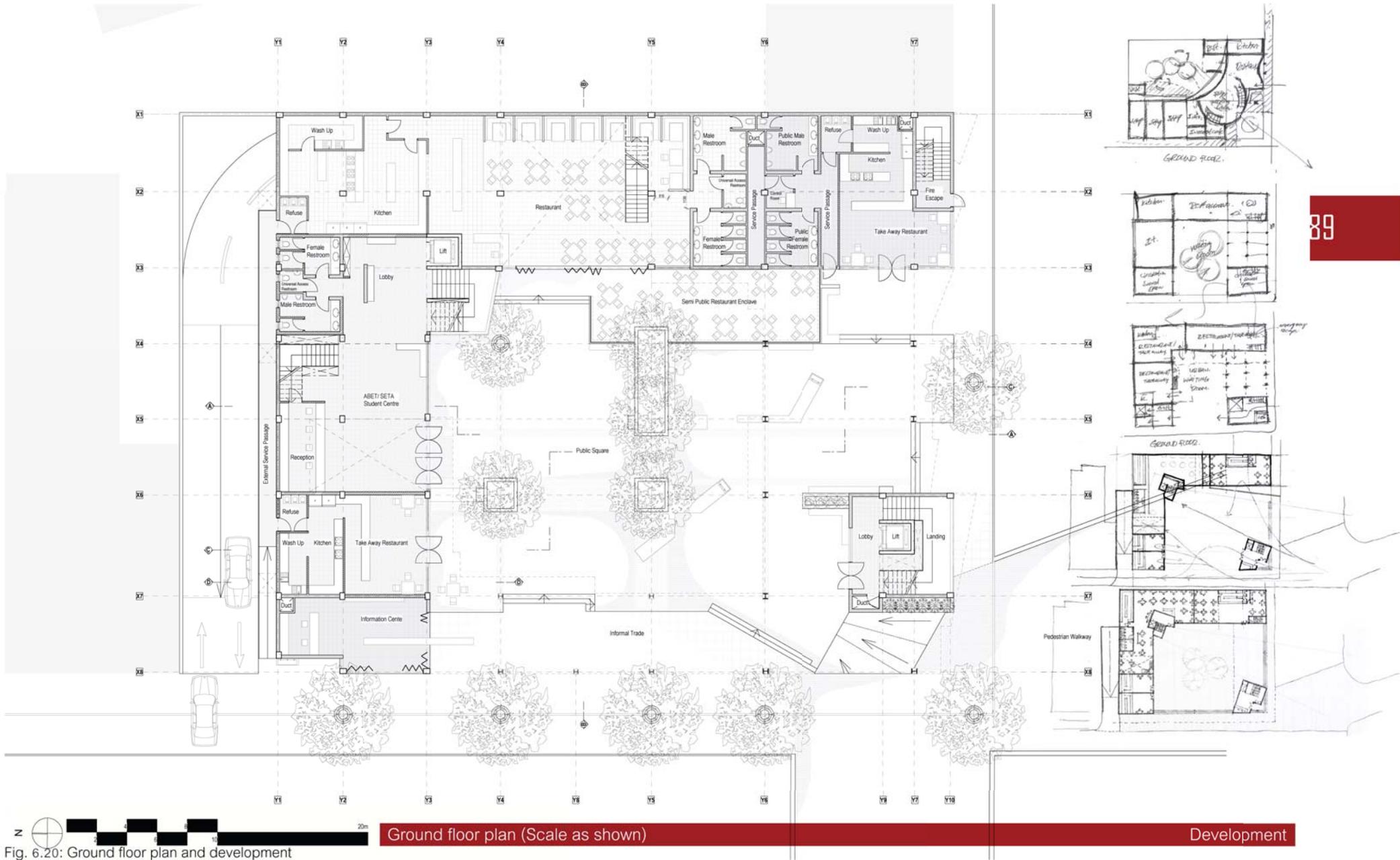


Fig. 6.20: Ground floor plan and development