

# ENABLING INTEGRATION

ARCADES AS A TOOL FOR INTEGRATION AND UNIVERSAL ACCESSIBILITY IN PRETORIA CENTRAL

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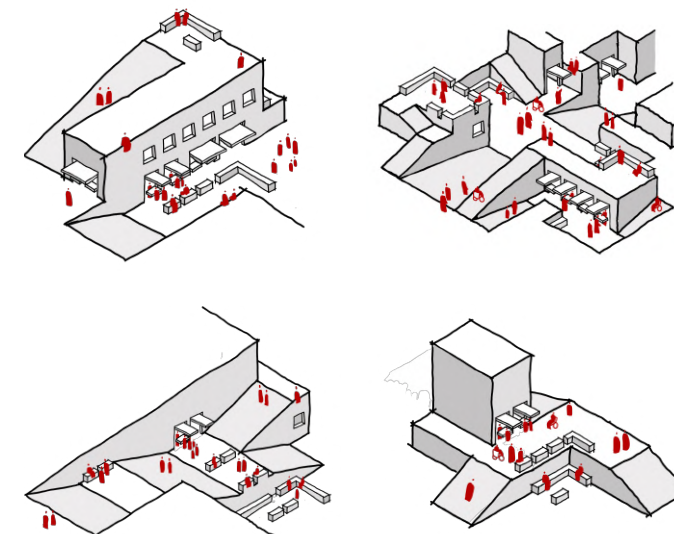
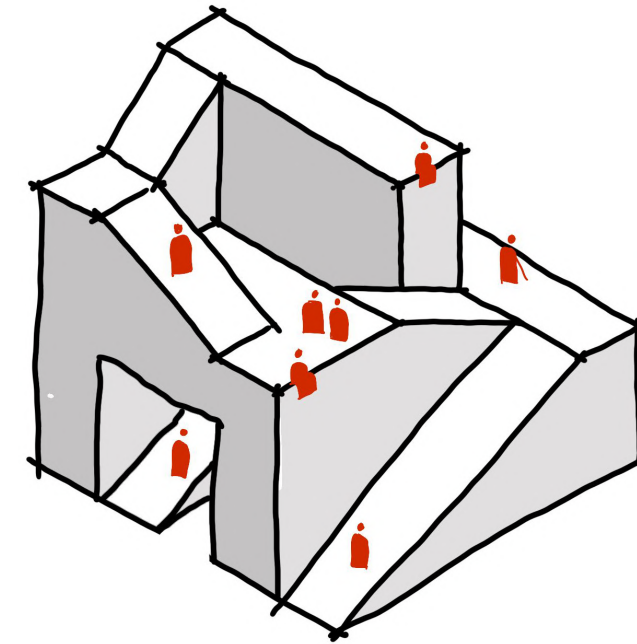
SUPERVISOR : ABRIE VERMEULEN

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MODULE : DESIGN PROJECT DISCOURSE (DPD) 810

**PROJECT LOCATION**  
237 Francis Baard Street, Pretoria Central,  
0002, South Africa

**PROJECT PROGRAMMES**  
Department of Persons with Disabilities  
National Council of & for Persons with  
Disabilities  
Employment Solutions & Skills training  
Universally Accessible Housing



*Fig. 1: Series of spatial vignettes. Exploring initial design intentions as a point of departure. (Author, 2023)*

## PROJECT

Individuals living with impairments (ILWI) represent one of the most marginalised demographics within societies. The inevitability that nearly everyone, at some point in their lives, will experience a temporary or prolonged period of impairment (WHO, 2022), should prompt us to take proactive steps towards designing buildings and cities that are not only equitable but also embraces and celebrates diverse skills and abilities.

To initiate progress toward a more inclusive society, the fundamental realisation is that "disability" is not a medical or functional condition requiring treatment. Rather, there are societal barriers that disable individuals from accessing opportunities and participating fully in society (Husén,1995). The responsibility falls on the community (and by extension - architects) to choose whether they disable or enable individuals and, by extension, foster or hinder the process of integration.

This project critically examines the prevalent practice of locating facilities for enabled individuals on the outskirts of communities, leading to their isolation from society. In these cases, the enabled community persists in isolation, while societal prejudices endure. At its heart. The project aims to address the prejudice and unfamiliarity that the public experiences towards the enabled community, as well as the isolation experienced by enabled individuals.

The project advocates for a more progressive approach, proposing the integration of such institutions within well-established civic centres to allow for an active public interface. The project introduces the concept of a "shared space," designed in conjunction with essential amenities and support programmes catering to the needs of the enabled community.

This shared space functions as a safe haven, allowing enabled individuals to cultivate a sense of identity and ownership in a city that may not be renowned for its accessibility. Additionally, by integrating into existing arcade networks, the shared space serves as a vibrant public thoroughfare and a welcoming point of entry and arrival for all city dwellers.

The shared space aims to function as an incubator for integration. Facilitating gradual interaction between the enabled community and the general public, ultimately dismantling societal barriers and dispelling stigmas associated with disability. Fostering a more inclusive, empathetic, and integrated society.

## ABSTRACT



Fig. 2: Polleys Arcade, with a woman in a wheelchair superimposed. (Author, 2023)

## PROJECT

## INTRODUCTION

Disability and frailty are intrinsic aspects of the human experience. Around 10 million South Africans (16% of the nation) grapple with significant impairments. This number is on the rise, owing in part to the aging of populations and an upsurge in the prevalence of noncommunicable disease (WHO, 2022).

Individuals living with impairments (ILWI) represent one of the most marginalised demographics within societies. Global research has consistently established a connection between “disability status” and enduring disparities in both socioeconomic and health outcomes (Heyman, 2014). Furthermore, ILWI may face instances of harsh prejudice and discrimination rooted in their so-called “disabilities” (Mahmoudi, 2015).

The fact that nearly everyone, at some point in their lives, will experience a temporary or prolonged period of impairment is well-founded (WHO, 2022). This inevitability should prompt us to take proactive steps towards building a future that is not only equitable but also embraces and celebrates diverse skills and abilities.

To initiate progress toward a more inclusive society that welcomes all abilities and mitigates isolation, the fundamental realisation is that “disabilities” should not be perceived as medical or functional conditions requiring rehabilitation or treatment. Rather, it is an uneducated, unfamiliar and prejudiced society that imposes “disabilities” on individuals, characterising differences as deficiencies in need of correction. Disability arises due to societal barriers, not as a result of a perceived functional or medical condition.

Therefore, it falls on society to either address or ignore the existing societal barriers. To choose whether they disable or enable individuals and, by extension, foster or hinder the process of integration.

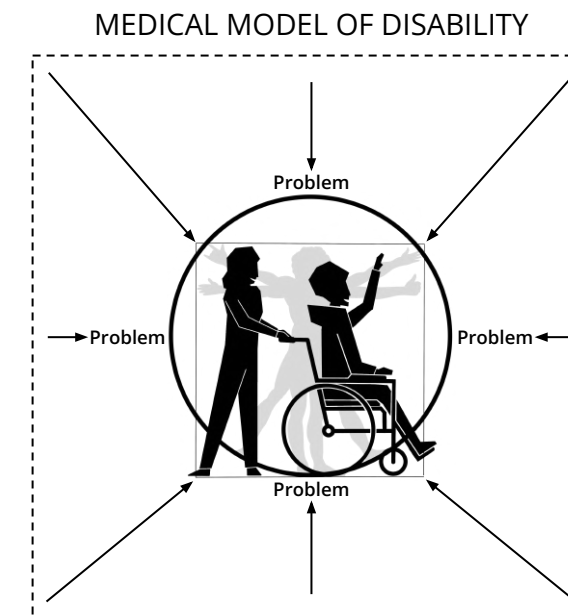


Fig. 3: Medical model of Disability (Author, 2023)

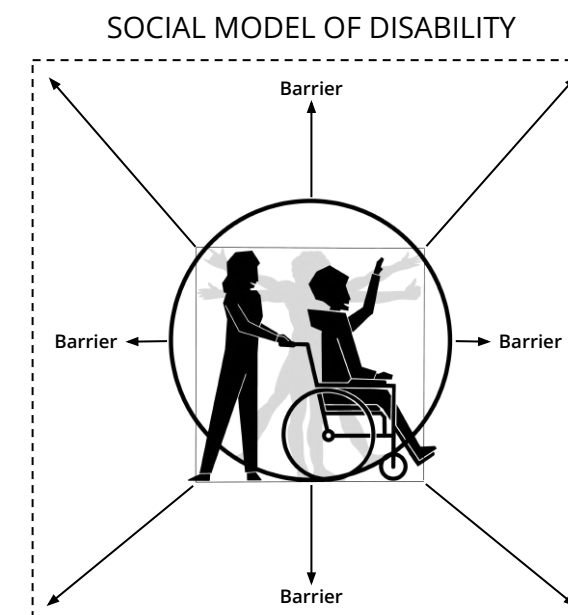


Fig. 4: Social Model of Disability (Author, 2023)

In March 2016, the Department of Social Development unveiled "The White Paper on the Rights of Persons with Disabilities (WPRPD)," illuminating the enduring impact of apartheid-era policies that incited segregation and isolation, particularly evident in town planning (WPRPD, 2016)(Turok, 1994). While these exclusionary tactics were aimed at segregation between racial groups, their impacts are evident in the isolation of institutions that cater to the needs of enabled individuals. Whether they be focused on employment opportunities, education or frail care.

The project acknowledges the current state of disability policy implementation in South Africa (WPRPD, 2016). It recognises that specialised institutions are essential for enabling participation in e.g. educational and employment opportunities. And while aspiring for a future where integrated institutions serve a broader population, the practicality of this vision remains a challenge. Nonetheless, society's collective well-being stands to gain significantly from the proactive inclusion of all individuals.

While the necessity for specialised institutions remains important, this project critiques the prevalent practice of situating these facilities on the outskirts of communities, subsequently isolating enabled individuals from larger communities. It advocates for a more progressive approach, suggesting the placement of such institutions within well-established civic centres to allow for an active public interface. This approach aims to examine how institutions catering to the specific needs of enabled individuals, can additionally promote public interaction, fostering the potential for gradual and sustainable integration.

Placing institutions for enabled users in publicly active areas does present the opportunity for increased public interaction, a step toward fostering community integration. However, it's important to recognize that the mere presence of these institutions will not automatically lead to organic community integration. The WPRPD highlights a range of barriers that continue to hinder the active integration of these individuals, which can be categorised into three primary dimensions: Institutional, Environmental, and Attitudinal.

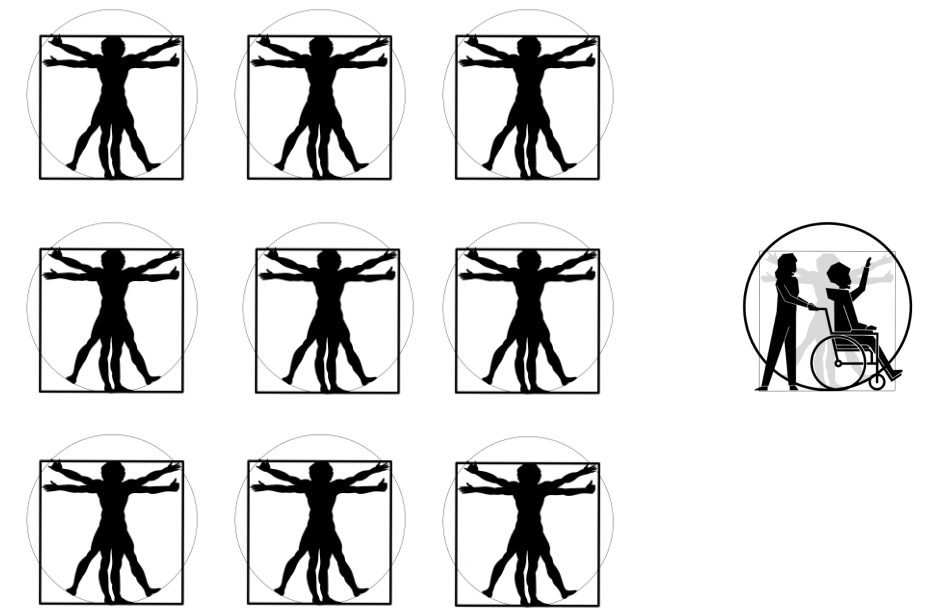


Fig. 5: Isolation of Enabled Community (Author, 2023)

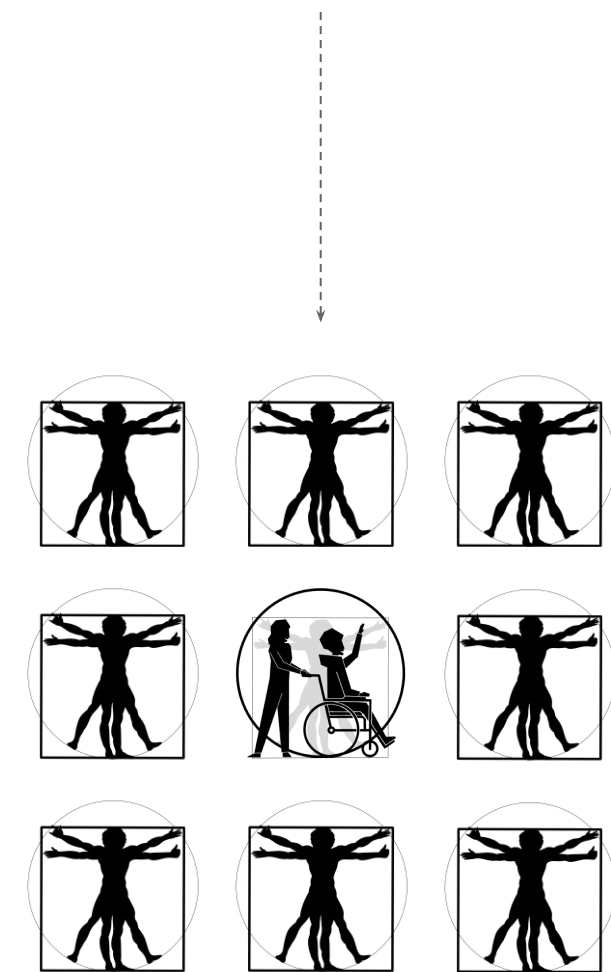


Fig. 6: Inclusion of Enabled Community (Author, 2023)



**P R O J E C T            A P P R O A C H            &            A I M**

The project materialises as a direct response to each of the three identified barriers. Each of these barriers will be systematically addressed through purposeful design interventions.

Successfully addressing the “Institutional Barrier” relies on introducing programs that not only meet the needs of the enabled community in and around Pretoria, but additionally offer the potential for a public interface.

Addressing the “Attitudinal Barrier” involves creating a shared space that is accessible and usable by the enabled community. The shared space functions as a safe haven where the enabled community can experience a sense of identity and ownership within the city. Simultaneously, this shared space should be inviting to all city dwellers, functioning as an incubator for integration, by encouraging interaction between the enabled community and the general public.

Next, prioritizing the safety of the shared space is of paramount importance. This emphasis on safety aims to cultivate an environment that is not only secure but also inviting, fostering a sense of comfort that encourages both the enabled community and the general public to engage and spend time. Considerable efforts will be directed toward promoting enhanced public access to and use of this inclusive environment. The intentional creation of moments within this space will allow for various degrees of interaction between the enabled community and the general public. Enabling seamless and gradual integration.

Finally, ensuring that the shared space is universally accessible is a key objective in addressing the “Environmental Barrier”. Ensuring a space that is usable and understandable by as many individuals as possible.

The project aims to create a dual-purpose space: a secure haven for enabled individuals with essential amenities and support, enhancing their quality of life, while also serving as a public thoroughfare. This dual function seeks to break down social barriers and foster a more inclusive, empathetic, and integrated community.

**3 BARRIERS TO INTEGRATION**

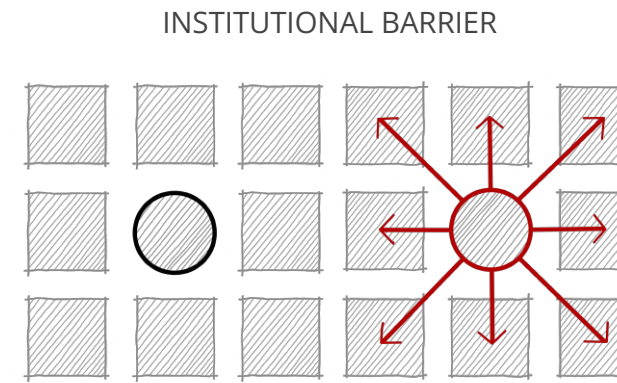


Fig. 7: The Institutional Barrier (Author, 2023)

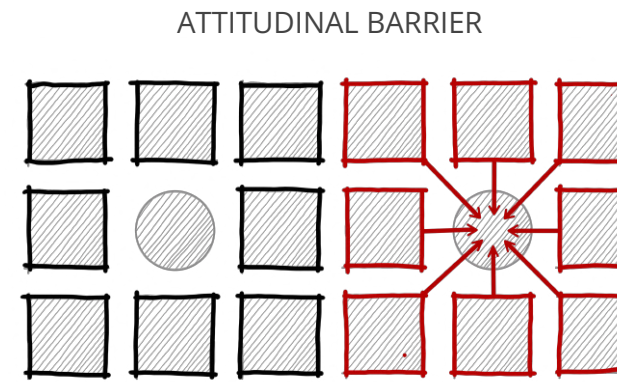


Fig. 8: The Attitudinal Barrier (Author, 2023)

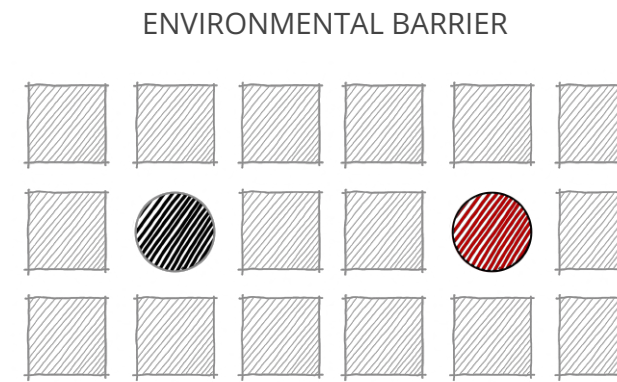
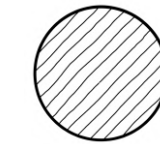


Fig. 9: The Environmental Barrier (Author, 2023)

**ADDRESSING THE BARRIERS**



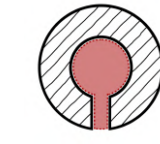
SITE SELECTION



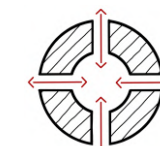
DEFINE PROGRAMMES



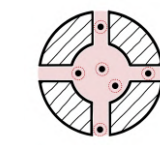
CREATE SHARED SPACE



SAFETY



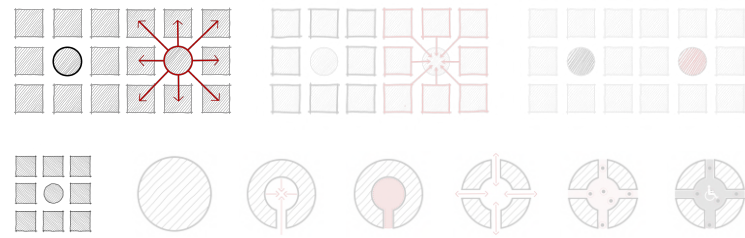
INCREASED PUBLIC ACCESS



MOMENTS OF INTERACTION



UNIVERSAL ACCESSIBILITY



## SITE

## SELECTION

Selecting the project site revolved around two primary considerations: establishing an active public interface and ensuring support and accessibility for the enabled community.

Pretoria Central offers substantial and ongoing public, commercial, and educational activities, making it an ideal location to facilitate interaction between the enabled community and the wider public.

In assessing the city's layout, formal and informal transportation routes and drop-off points were mapped, while presence of supportive education, healthcare, and governmental programs within the area were also identified. Aiding in both access to and programmatic support.



Fig. 10: Locating a viable region, mapping diagram (Author, 2023)



Fig. 11: Locating a viable city block, mapping diagram (Author, 2023)

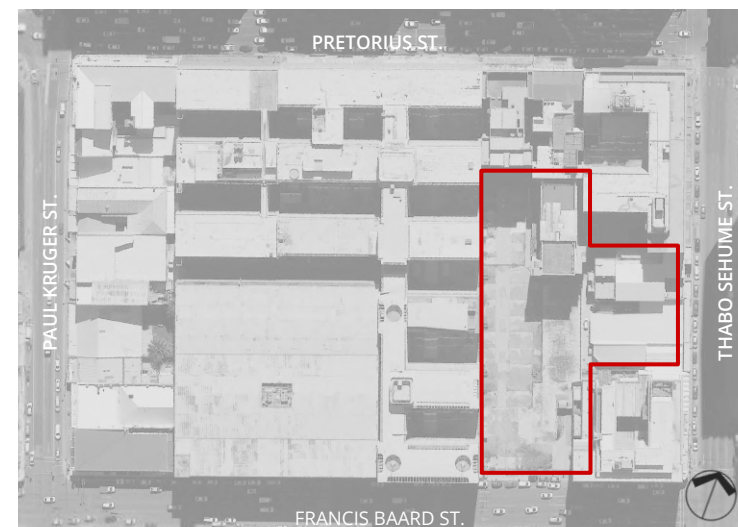
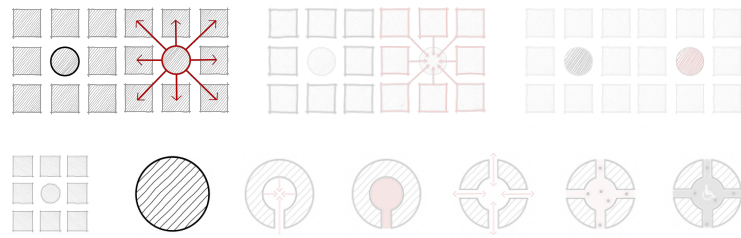


Fig. 12: Chosen City Block (Tshwane GIS, Author, 2023)



## PROGRAMME SELECTION

The project proposal's core focus is on the public interface within the shared space, though the following programs are integral for its validity:

1. Department of Persons with Disabilities: Responsible for policy making and implementation.
2. National Council of and for Persons with Disabilities: Concentrated on Disability Awareness, Various Training functions and Disability Healthcare and Support.
3. Employment Solutions: An established organisation creating employment opportunities for enabled individuals.
4. Universally Accessible Housing.

The project acknowledges the potential for fostering public interaction through Employment Solutions.

Specifically, the "Industrial Sewing and Hand-made Craft" function, as well as the "Culinary Hub", will find a place within the shared space. These programs not only function corporately in Employment Solutions through outsourced labour, but also presents an opportunity to cater to the needs of everyday city dwellers.

PRIVATE

PUBLIC

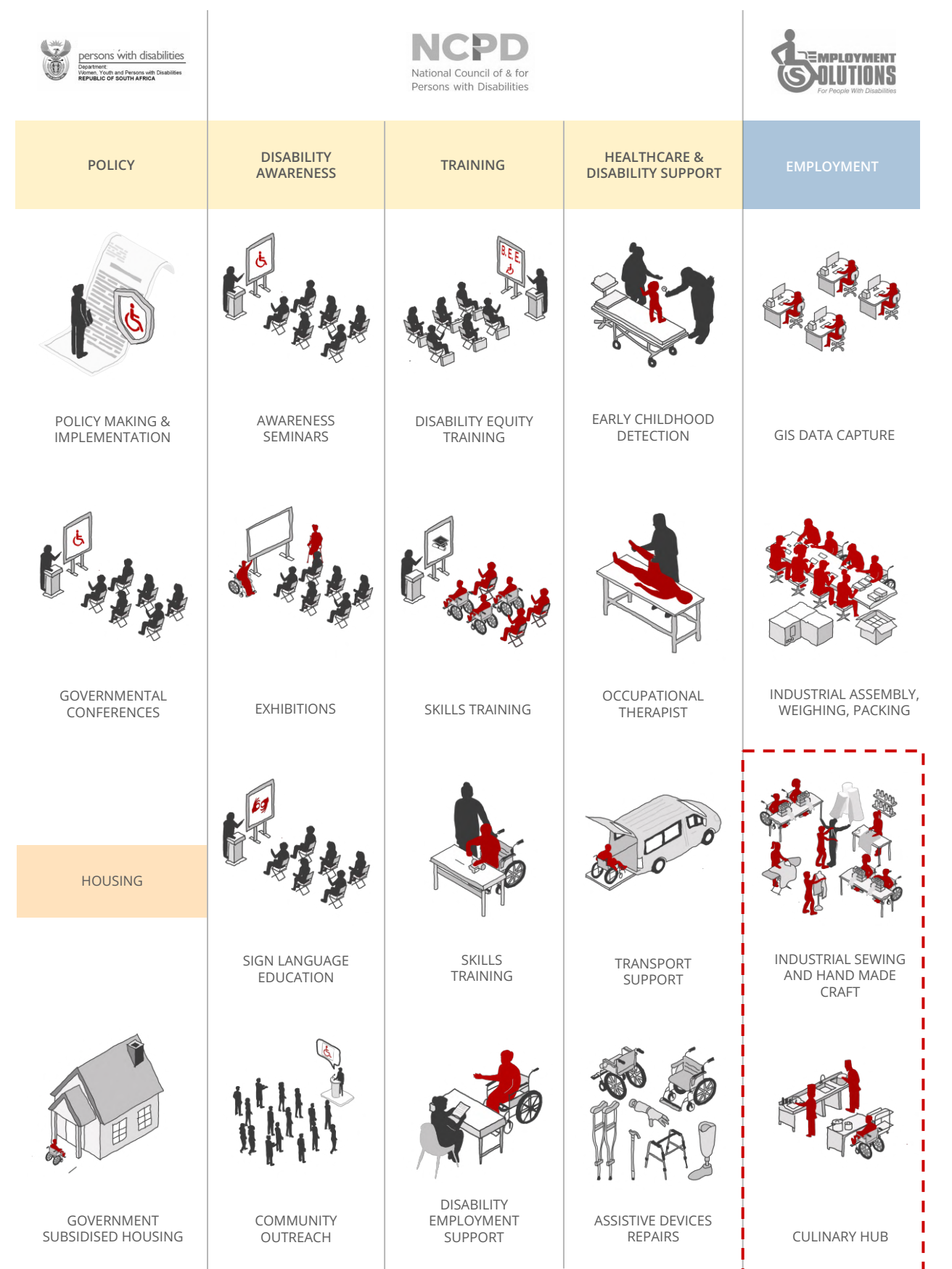
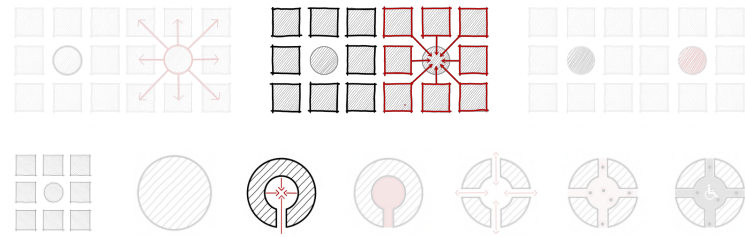


Fig. 13: Programme illustrations (Author, 2023)

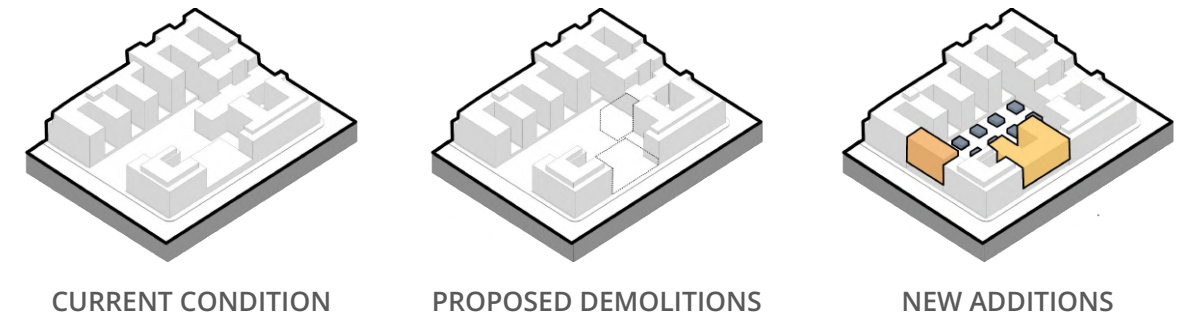




### CREATING A SHARED SPACE

To create a shared space, the project proposes removing two existing structures and installing two new boundary structures, expanding the space for commun. Universally accessible housing is planned for Francis Baard St., while on Thabo Sehume, a structure for the Department of Persons with Disabilities and the National Council of Disabilities is envisioned as dedicated facilities with private programs.

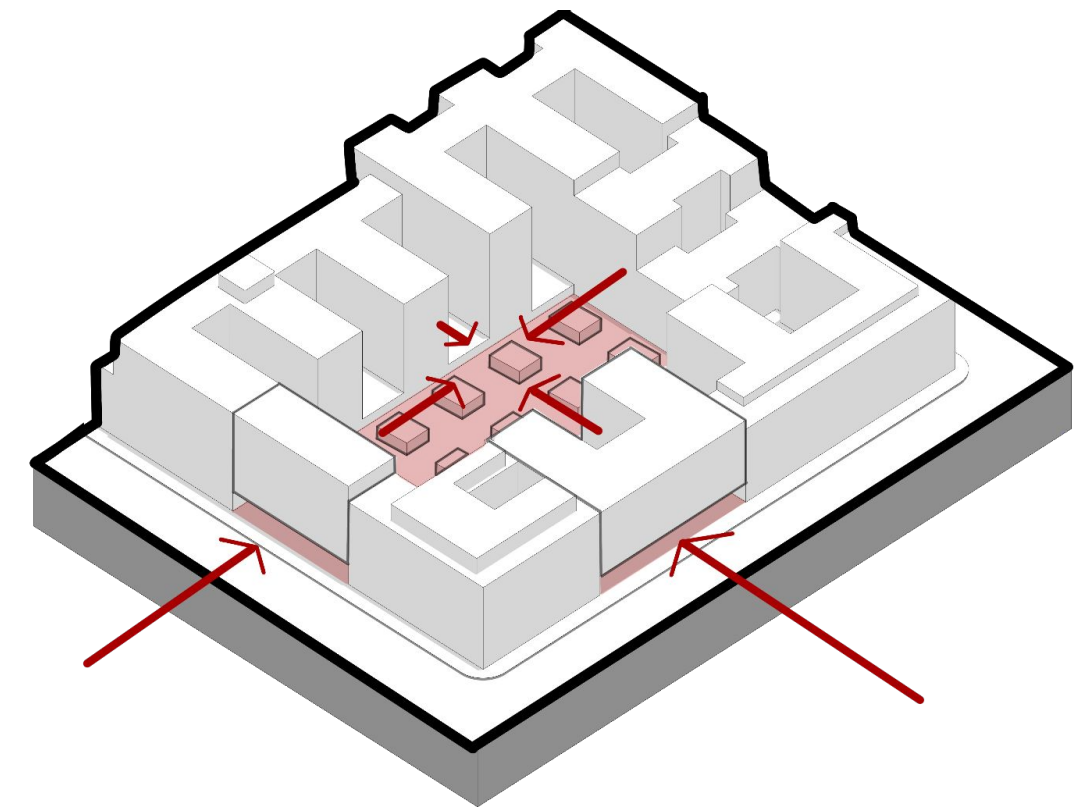
Within this shared space, identified Employment Solution programs will find their home. It caters to employees, residents, and existing staff as a lunch spot, fostering a sense of ownership, safety, and welcome. Simultaneously, it accommodates all city dwellers—serving as a thoroughway or a place to linger while strolling through the city.



CURRENT CONDITION

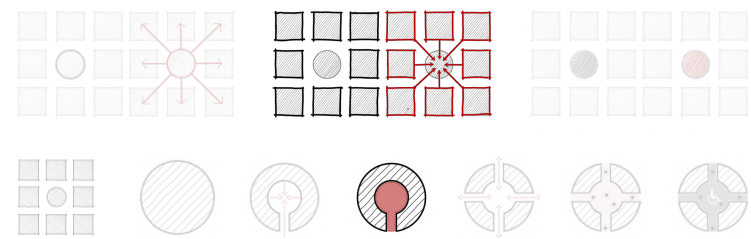
PROPOSED DEMOLITIONS

NEW ADDITIONS



SHARED SPACE

Fig. 14: Shared space illustrations (Author, 2023)



**CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN**

The project aims to address elevated crime rates in Pretoria Central by applying four key principles of Crime Prevention Through Environmental Design: territoriality, natural surveillance, access and escape routes, and maintenance (Safer Spaces, 2016).

By implementing these four principles, the project aims to create a well-designed and secure shared public space that discourages criminal activities and fosters a safer and more welcoming environment within the City.

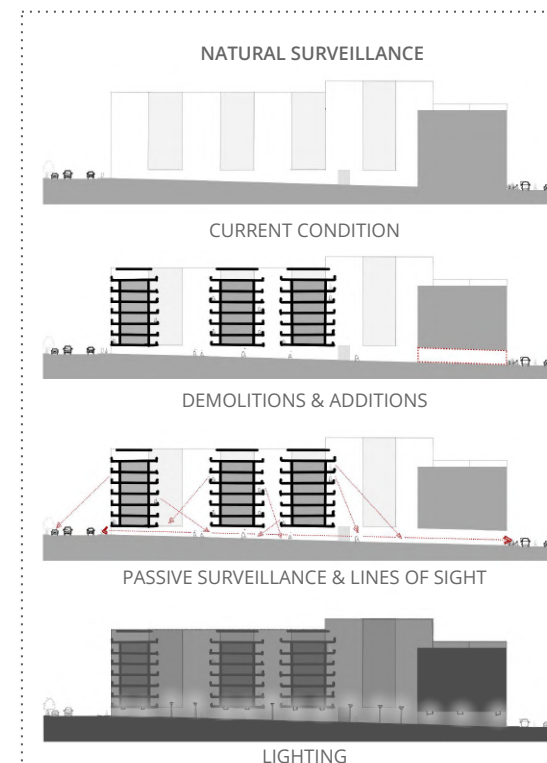
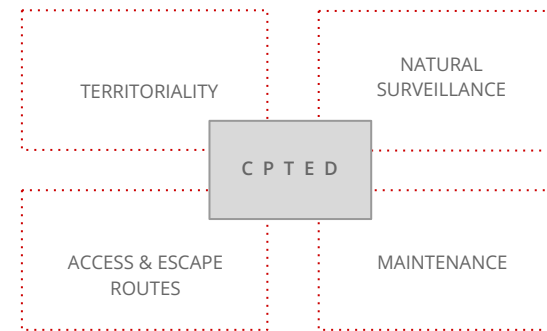


Fig. 15: Natural surveillance (Author, 2023)

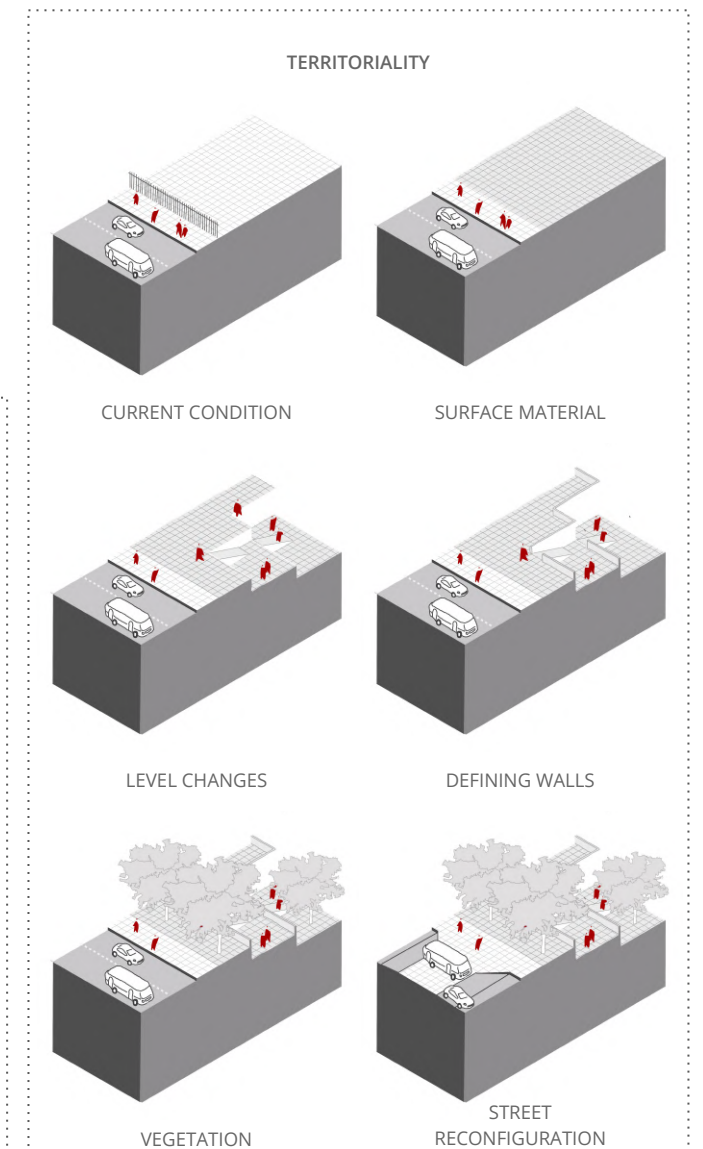


Fig. 16: Territoriality (Author, 2023)

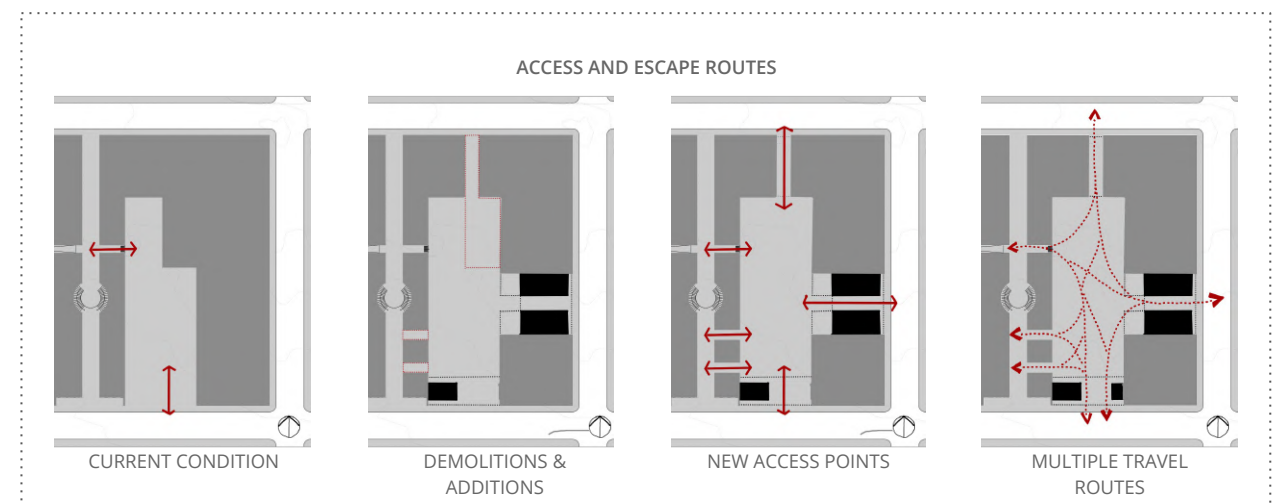
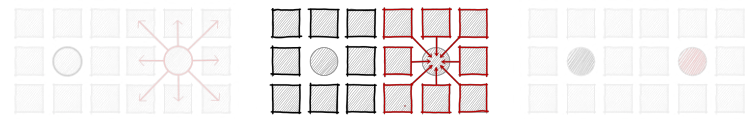


Fig. 17: Access and escape Routes (Author, 2023)



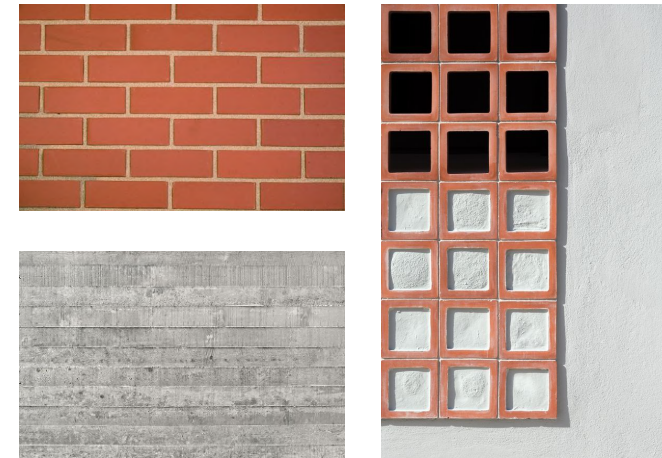
**M A T E R I A L**

**C H O I C E**

Choosing suitable materials is a critical step in the implementation of CPTED principles. In the broader context, maintenance emerges as a pivotal element, contributing significantly to the establishment of secure and inviting surroundings. Given that the shared space will be exposed to the elements, materials recognized for their durability and resilience are selected.

Beyond mere durability, the chosen materials should possess the versatility to be effectively finished by the existing Employment solutions before installation. This consideration plays a crucial role in fostering a profound sense of ownership within the community. This sense of ownership becomes particularly pronounced when the community is relocated to their new destination in Pretoria Central. By involving the community in the pre-installation finishing of materials, a tangible connection is established between the residents and the physical environment, reinforcing a shared responsibility for the upkeep and security of the communal space.

**RESILIENCE**



**REPRESENTATION**

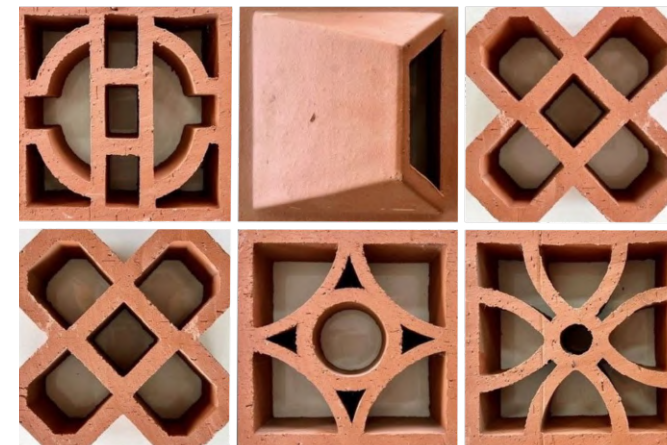
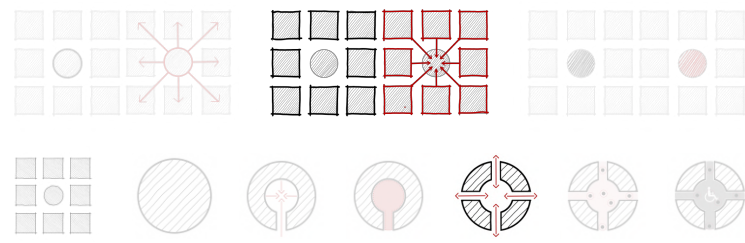


Fig. 18: Materials (Pinterest, 2023)





## ADOPTING THE ARCADE TYPOLGY

The city block containing the vacant site features a segment of the Network of Arcade Systems that Pretoria Central is known for..

The introduction of arcades into Pretoria's urban layout served a multifaceted purpose. Within the context of the city's elongated East-West blocks, arcades primarily operated as convenient shortcuts, effectively reducing travel distances for pedestrians. These arcades not only provided shelter from bustling streets and inclement weather but also substantially expanded ground-floor commercial space, all while fostering a vibrant atmosphere for communal gatherings (Allers and Breytenbach, 2015).

The project suggests adopting the arcade typology for the shared space and aligning with the inherent functionality and purpose of arcades. By integrating with the surrounding network, this enhances the site's potential as both a travel route and a destination for arrival or lingering. This strategy contributes to the augmentation of public interaction on the site.

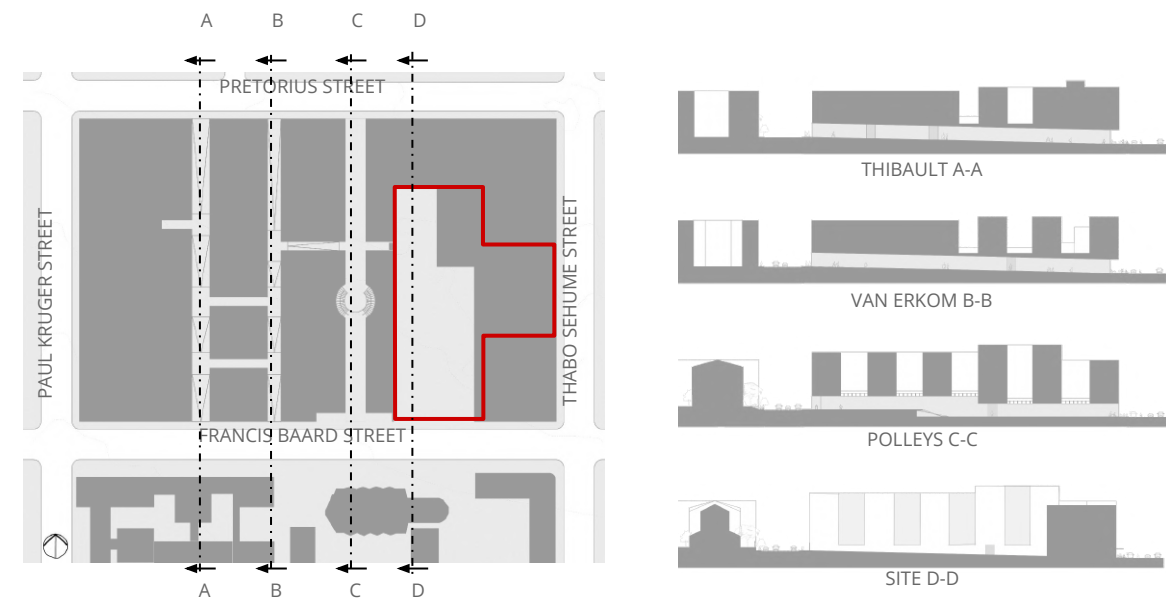


Fig. 19: Site and Sections (Author, 2023)

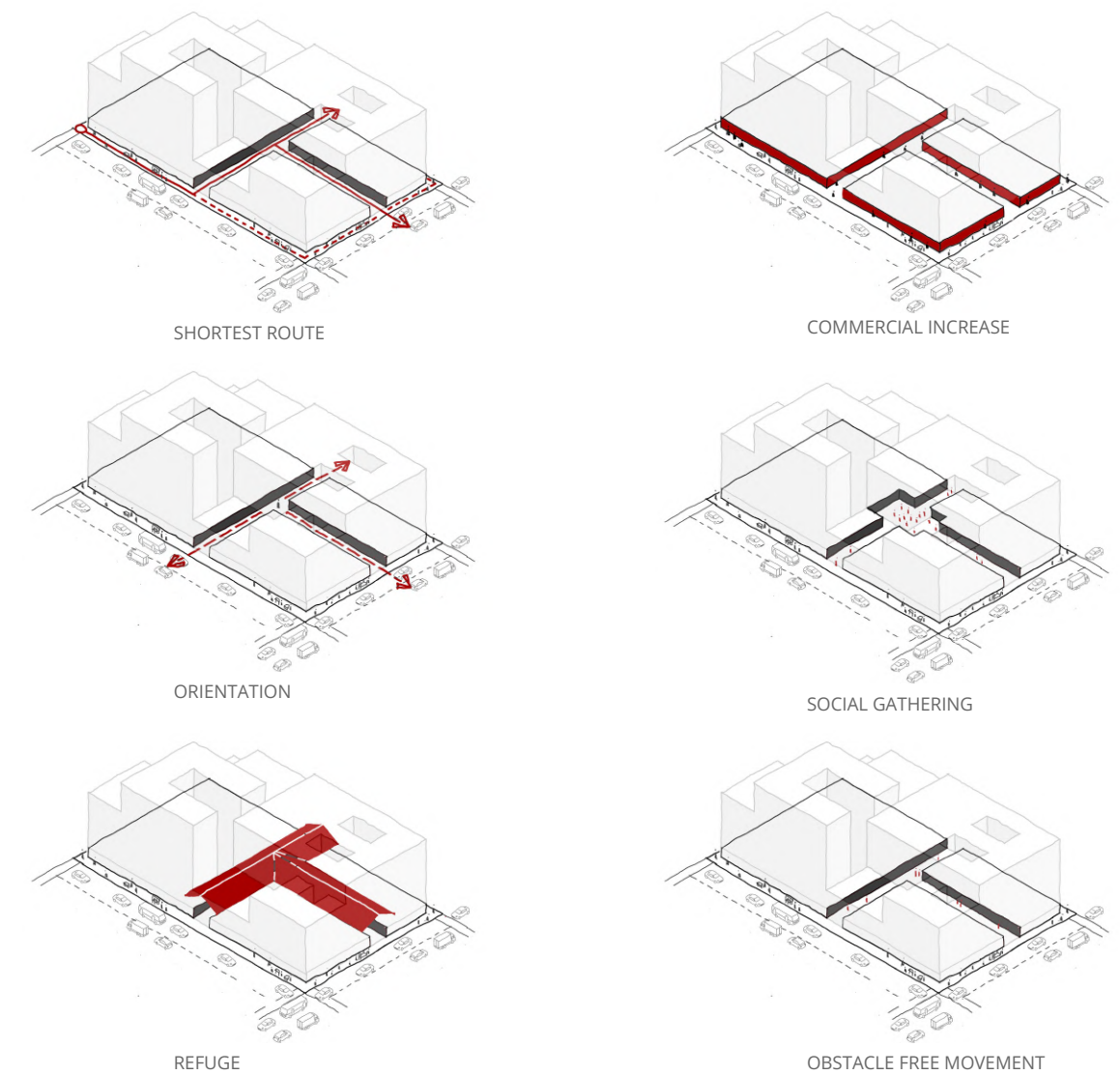
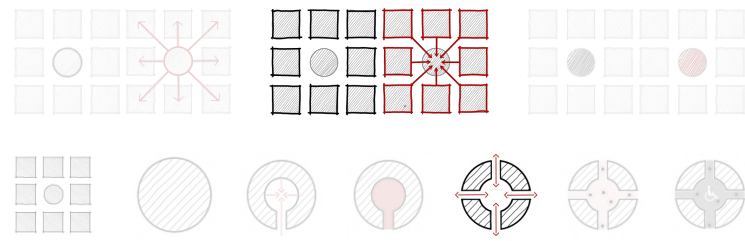


Fig. 20: Arcade Functions (Author, 2023)





## U R B A N                      R E S P O N S E

On an urban scale, the project proposes a N/S entrance corridor into the city. Connecting the site to the AreYeng Bus station on Nana Sita drive.

On an urban scale, the project proposes a N/S entrance corridor into the city. Connecting the site to the AreYeng Bus station on Nana Sita drive.

The site is located in an opportune position when considering the activity generators identified throughout Pretoria Central. By connecting to the surrounding arcade network, the site has the potential of acting as a shortcut route to and from these nodes of activity.

Special focus will be directed towards implementing accessible road crossings, fostering enhanced connectivity between the arcades in adjacent city blocks. This initiative is geared towards ultimately refining city accessibility and navigation. The primary objective of the entrance corridor is to further stimulate public activity within and through the site.

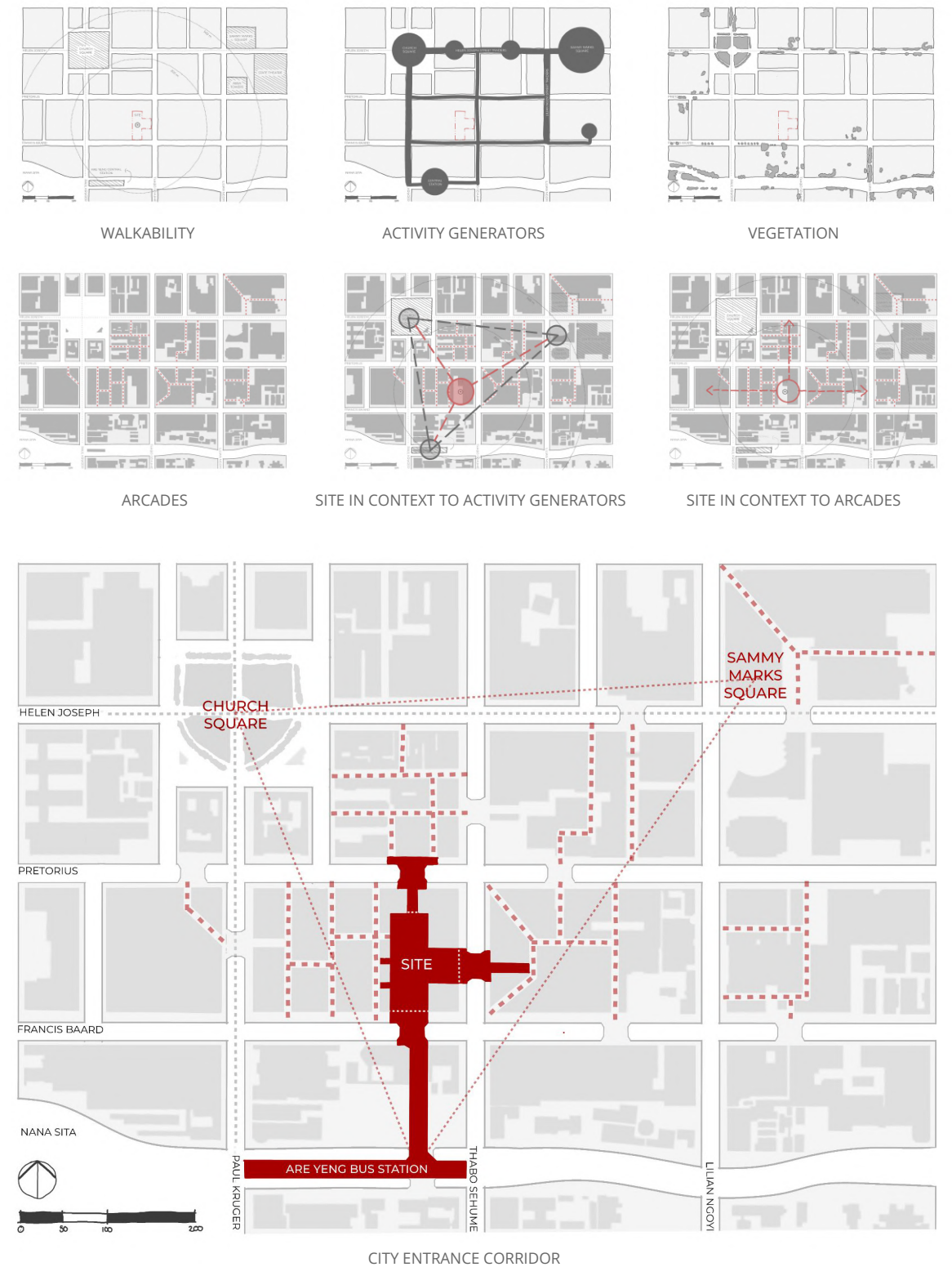
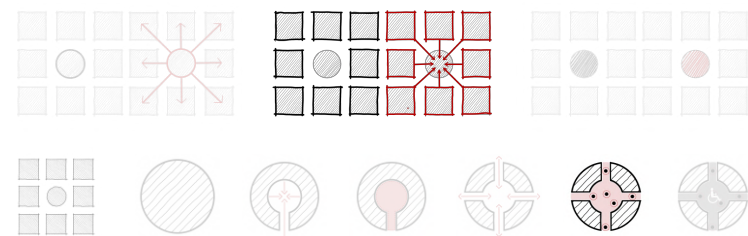


Fig. 21: Urban response sketches (Author, 2023)



GRADUAL INTERACTION

The genesis of the project proposal stemmed from the need to confront prejudice and preconceived notions surrounding individuals with impairments. To address this attitudinal barrier, the proposed strategy centres on facilitating gradual interaction, achieved through a design that accommodates varying degrees of public engagement.

The points of interactions are distributed along the route of the arcade, running through the shared space.

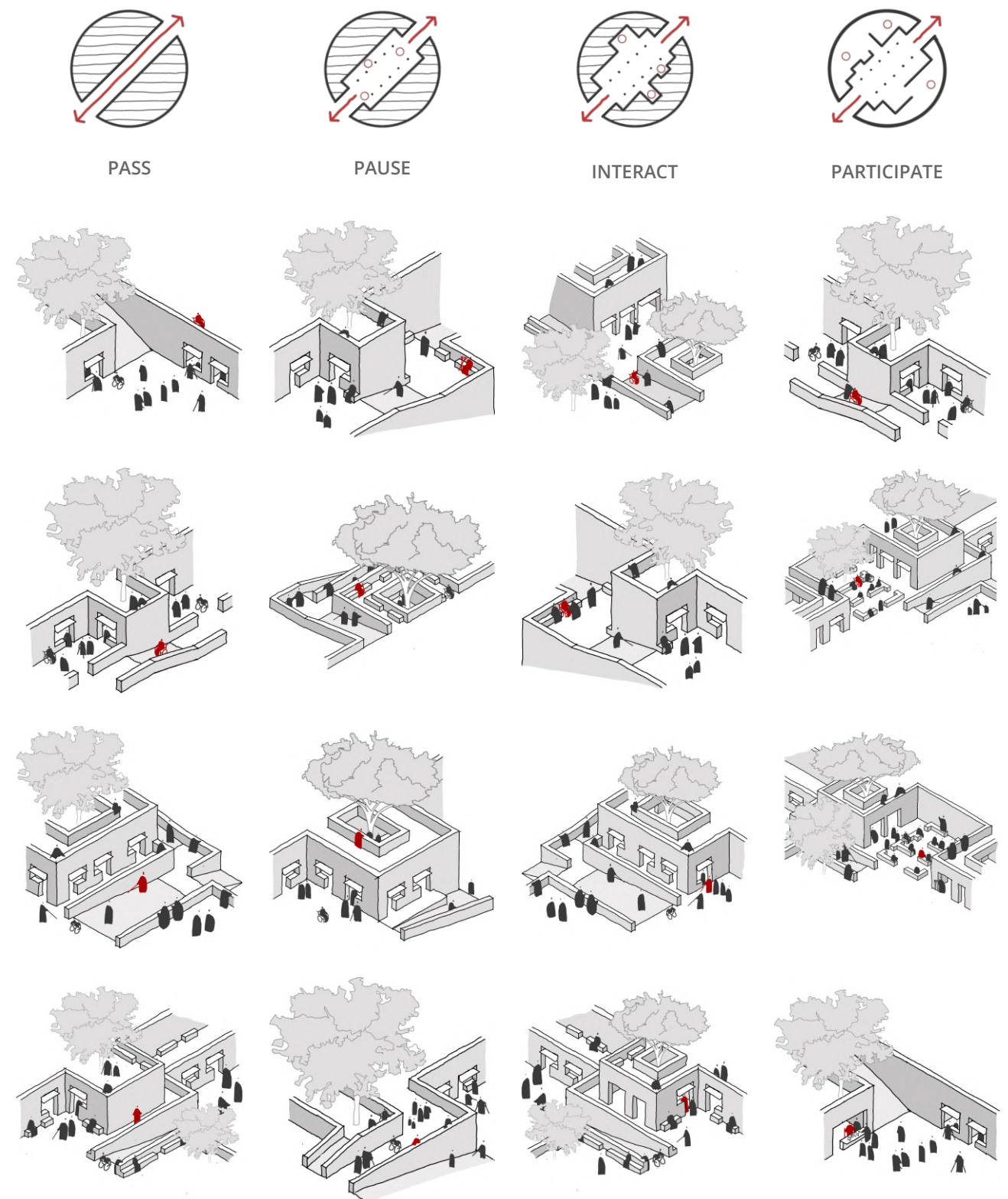
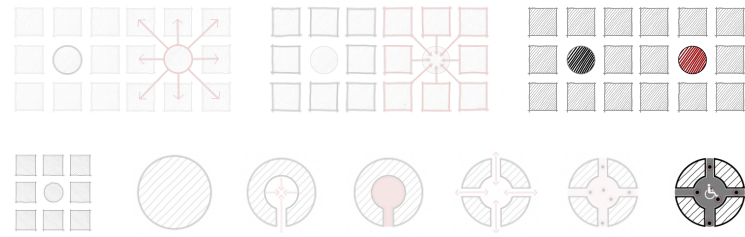


Fig. 22: Series of spatial Vignettes, exploring degrees of interaction. (Author, 2023)





## UNIVERSAL DESIGN

In the realm of the built environment, terms like accessibility, inclusive design, and universal design are crucial in shaping user-friendly spaces.

Accessibility is often seen as a binary attribute, with spaces being either accessible or not, as defined by regulations like Sans Part S. However, mere accessibility doesn't ensure user-friendliness for all.

Inclusive design tailors spaces for specific user groups but may inadvertently isolate others.

Universal design, the focus of this project, aims to make environments accessible, understandable, and usable by the widest range of individuals, promoting integration without the need for extensive adaptation. The project adheres to the 7 principles of Universal design, recognizing the spectrum of disabilities and advocating for a more inclusive and accessible built environment.

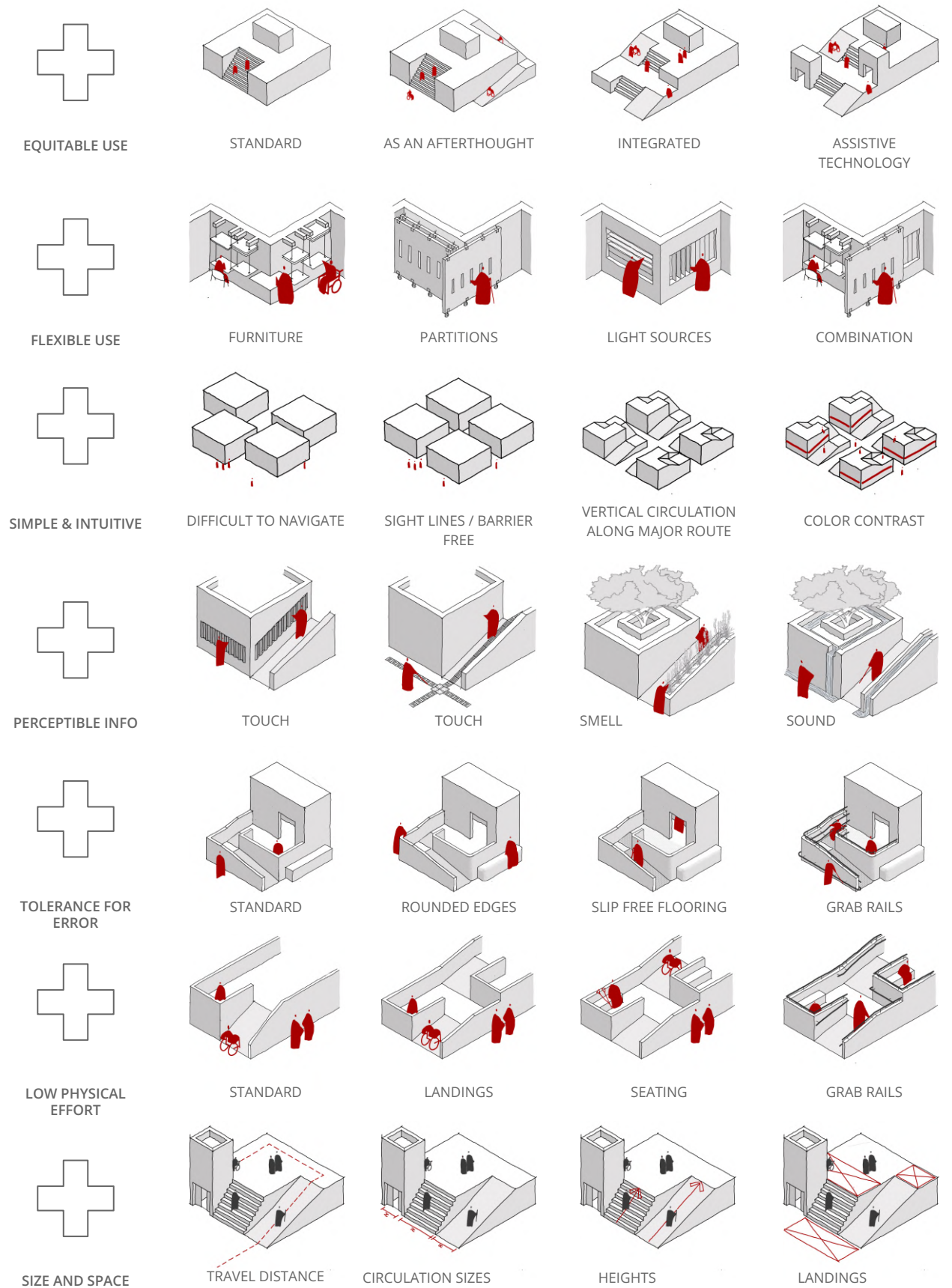
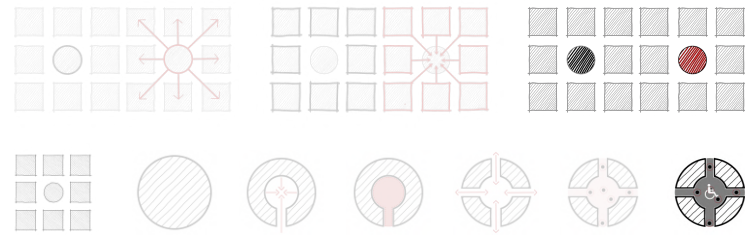


Fig. 23: Vignettes, exploring the potential of the 7 Principles of Universal design in project context. (Author, 2023)





## DESIGN PERFORMANCE

To establish a universally accessible arcade, a Universal Accessibility Guideline for Arcades has been developed. This guideline aims to ensure inclusivity by extracting pertinent principles from existing best practice universal design guidelines. This extraction process compiles the relevant information into a comprehensive checklist for assessing and promoting universal accessibility in arcade design.

The checklist encompasses various aspects, addressing both horizontal and vertical circulation requirements within the arcade. It also covers key elements such as ramp and stair design to guarantee easy navigation for all patrons. Furthermore, the guideline extends its scope to the external environment and the design of furniture within the arcade, all with the overarching goal of creating a universally accessible space for all users.

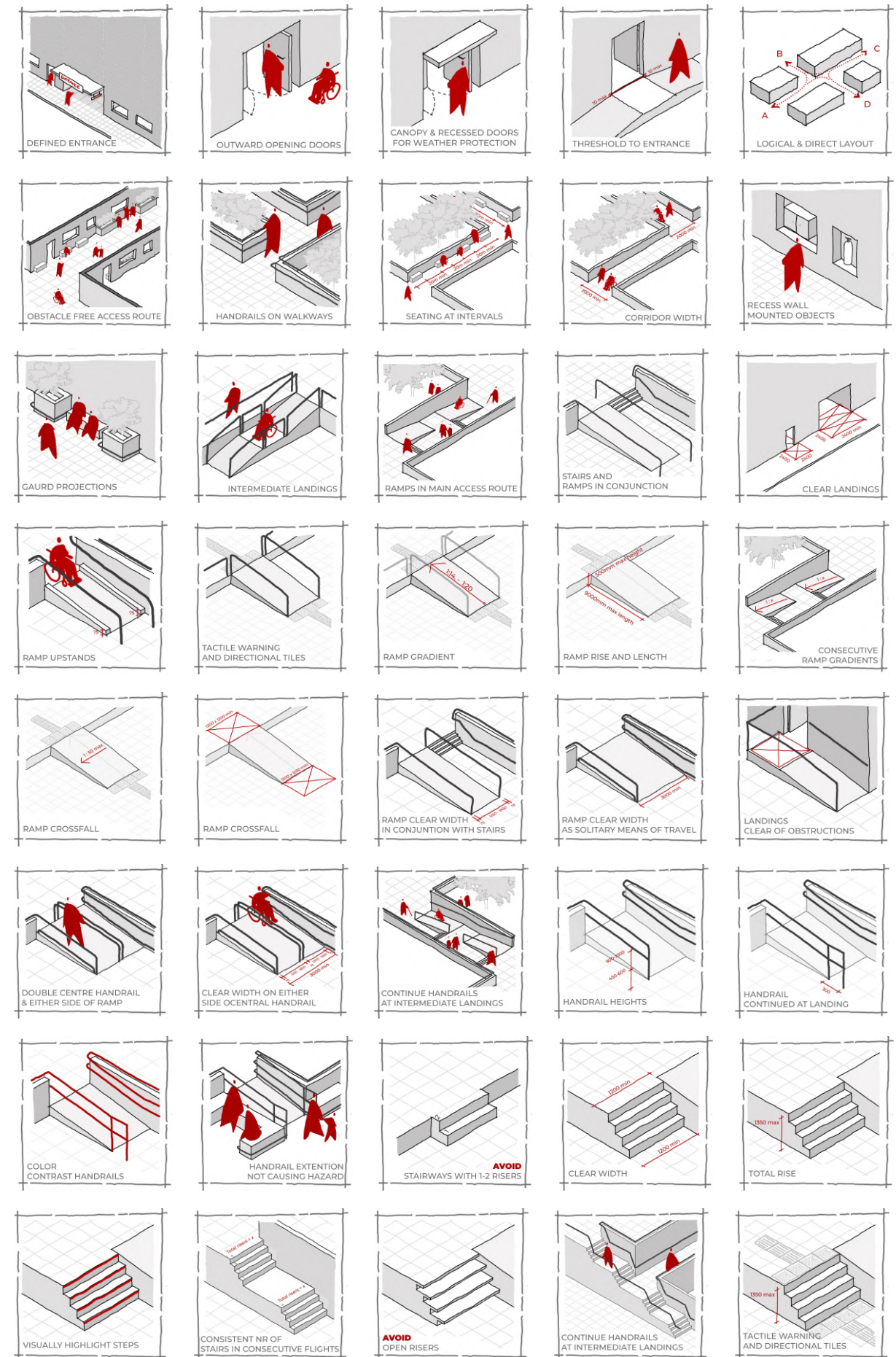


Fig. 24: Universal Design Checklist Sketches. (Author, 2023)



## 1 S T

## I T E R A T I O N

As a first design iteration, the shared space followed a grid layout inspired by neighboring structures, featuring a primary N/S arcade. The proposal suggested consolidating the entirety of Employment Solutions on the ground floor, incorporating ramps for level changes, connecting to rooftops, and introducing green roofs for environmental benefits.

However, upon reflection, the project lacks consideration for the specific functions of Employment Solutions which could be publicly accessible. The established shared space feels congested and unwelcoming, missing opportunities for enhanced interaction along the direct route. Secluded nooks contribute to dim and concealed spaces amid towering structures. Despite the introduction of ramps, their implementation lacks adherence to universal design principles, functioning more as decorative features than practical, inclusive elements. This oversight diminishes their potential contribution to overall accessibility and space usability.

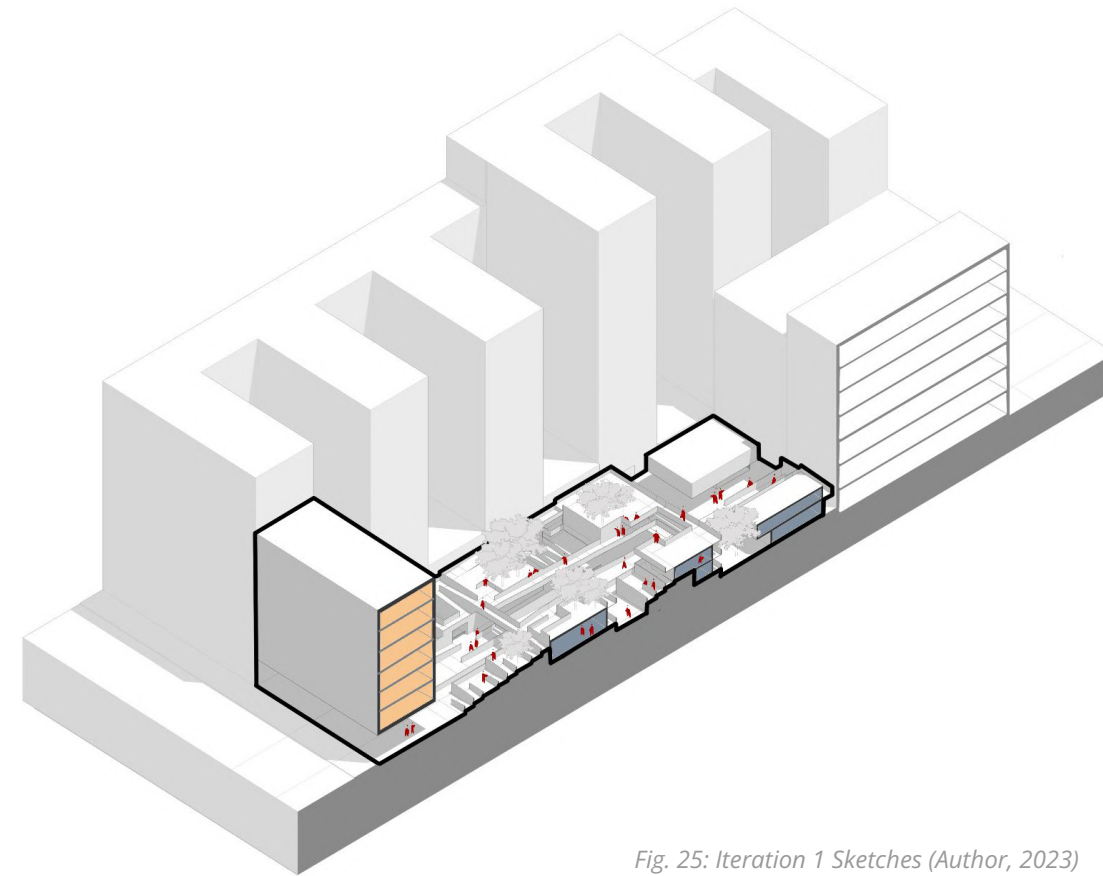
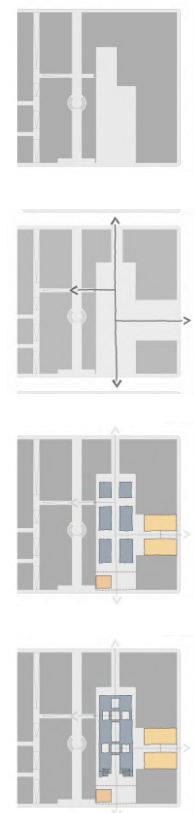


Fig. 25: Iteration 1 Sketches (Author, 2023)



## 2 N D

## I T E R A T I O N

The second iteration closely follows the grid layout of the initial design but makes notable adjustments. Employment Solutions structures heights are significantly reduced, and some functions are proposed to share space with the new department building on Thabo Sehume Street. All structures within the shared space now adhere to height limits aligned with the entrance of Francis Baard Street, though this introduces various challenges, pertaining to usability, lighting etc.

Reflection on project intentions reveals a more thoughtful consideration of which employment solution programs should occupy the shared space. The shared space takes on a more open and welcoming feel, resembling a public green space. Material choices contribute to a safer and more inviting atmosphere. Increased opportunities for interaction along the travel route are notable. However, this iteration falls short in adhering to the primary function of an arcade as a shortcut, hindering the potential for increased public activity. Nevertheless, there's a more evident consideration of universal design guidelines.

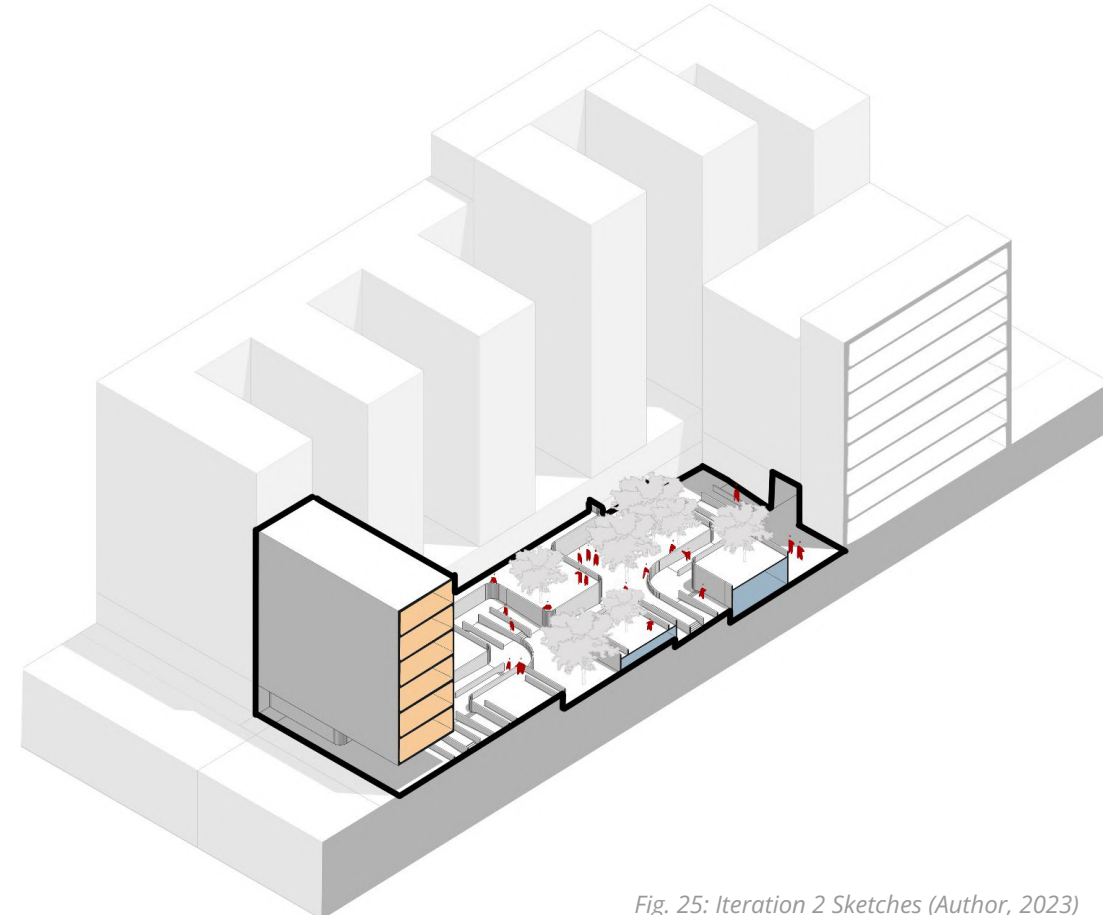
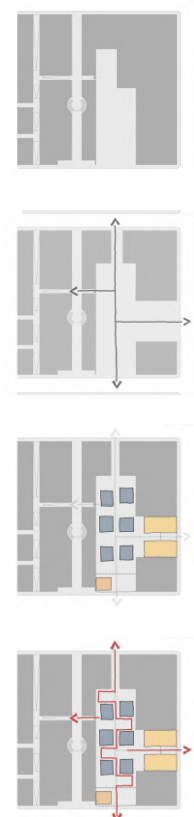
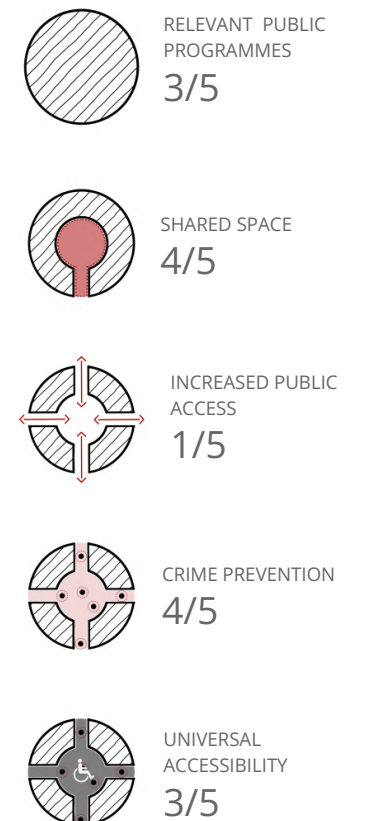


Fig. 25: Iteration 2 Sketches (Author, 2023)



Departing from the grid layout of the initial two iterations, the third iteration harnesses the inherent efficiency of arcades as shortcuts. This is achieved by introducing additional openings along the shared space boundaries, creating access points and establishing direct connections.

The final iteration places meticulous emphasis on adhering to universal design guidelines, elevating accessibility to the forefront. Integration of the identified functions of Employment Solutions, acting as an extension of the Wachthuis ground floor harbors the potential to revive Polleys Arcade. Along the primary travel route, carefully designed pockets of seating, ranging from open to secluded, and the introduction of covered pathways for alternative travel options enhance the overall functionality.

Reflecting on the project's intentions unveils considerations for locating specific Employment Solutions programs within the shared space. This strategic placement recognizes the public interface potential of functions such as "Industrial Sewing and Hand-made Craft" and the "Culinary Hub."

The shared space, beyond facilitating direct travel routes, incorporates specifically designed zones for varying degrees of interaction between the enabled community and the public. Retaining the openness observed in iteration 2, safety is bolstered by the provision of multiple travel routes. While material considerations remain consistent, the active involvement of the enabled community in manufacturing building materials contributes to a heightened sense of ownership.

Aligned closely with arcade functions, the shared space significantly enhances the potential for public access and on-site activity. The final iteration steadfastly adheres to universal design principles, ensuring equitable use by as many individuals as possible.

In conclusion, the iterative process has undergone a transformative journey, turning the shared space into a dynamic and inclusive environment. The final iteration not only rectifies previous shortcomings but also places paramount importance on accessibility, safety, and community engagement. This aligns with the overarching goal of fostering a more integrated and empathetic community.

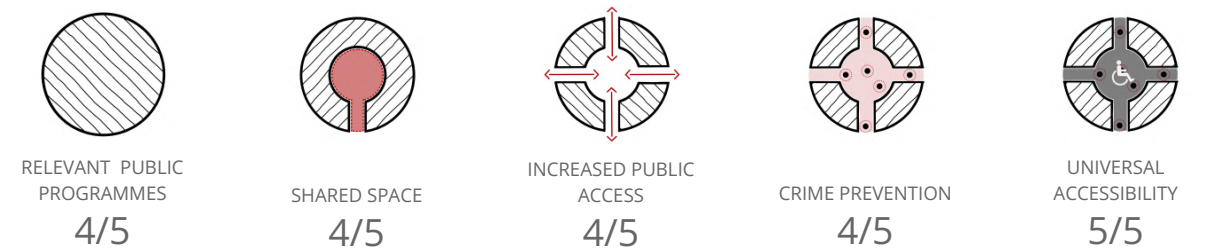
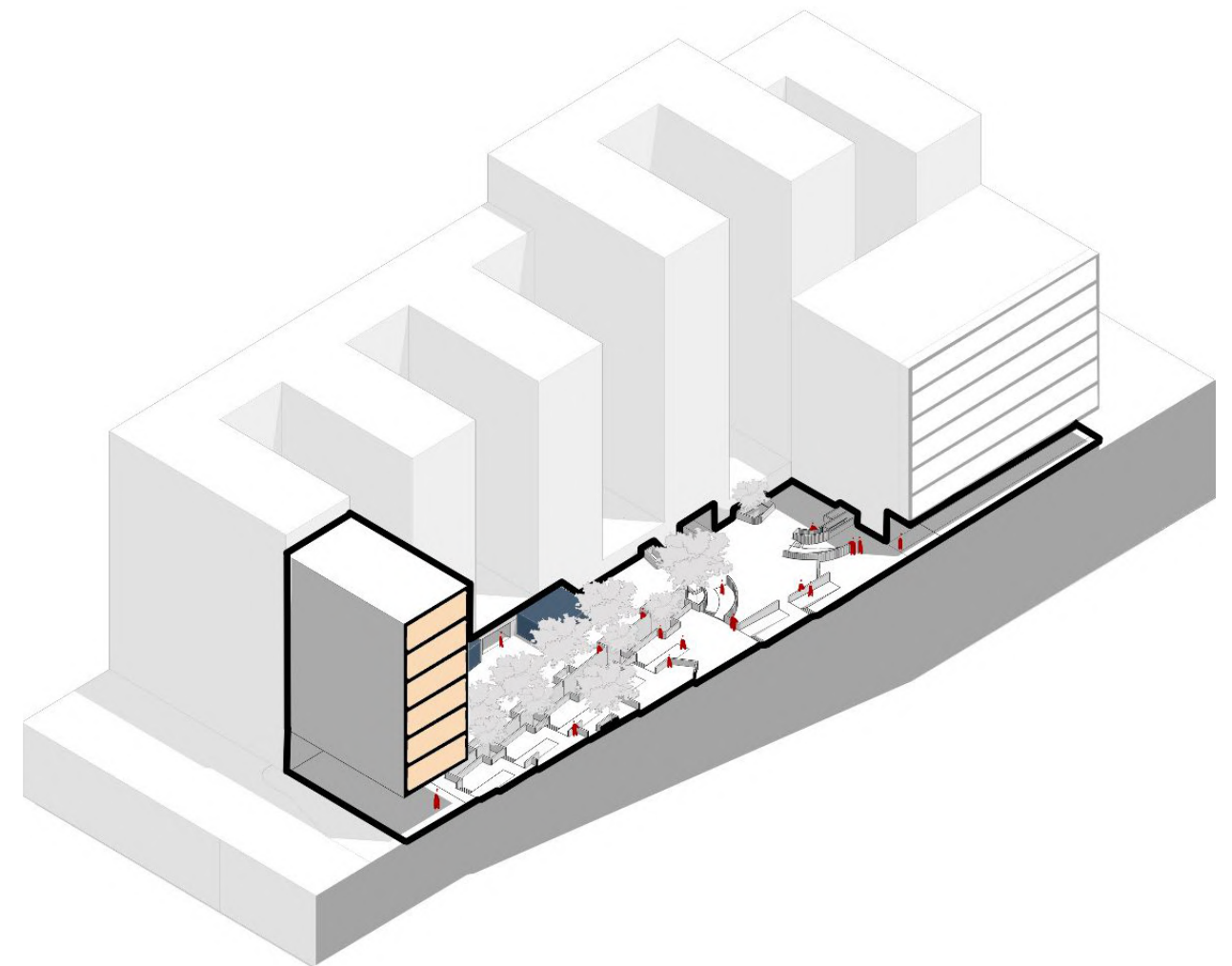
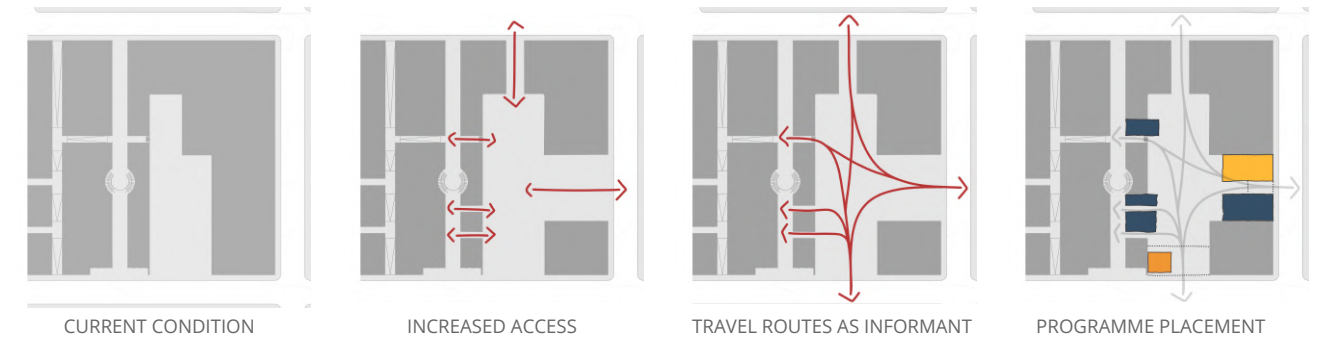


Fig. 26: Iteration 3 sketches (Author, 2023)



## M I N I

## P R O J E C T

## R E F L E C T I O N

In summary: The presented sculpture signifies current city challenges, contrasting with the designer's stance favoring contextual responses and architecture's role in enhancing user experience. Tshwane CBD's future mandates architecturally integrating with the urban fabric, prioritizing public accessibility, as evident in the showcased principles. The Tshwane CBD faces challenges from rapid urbanization, requiring thoughtful integration of new structures into densely populated areas, emphasizing public interface for urban integration. The Tshwane Region 3 Spatial Development Framework aims to foster a pedestrian-friendly city, offering architects an opportunity to align with this objective. Urban integration demands designs harmonizing with the local environment, prioritizing Universal Accessibility for inclusivity.

The lasting influence of the initial mini project on the overarching major project is noteworthy, particularly in shaping perspectives and approaches. The mini project's exploration of accessibility emerged as a focal point, leaving a lasting imprint on the subsequent phases. The emphasis on accessibility during the mini project likely instigated a heightened awareness and consideration of this aspect throughout the larger undertaking. This sustained focus may have prompted a more thorough integration of accessibility principles into the major project's objectives and design considerations.

Moreover, it's intriguing to observe the ripple effect of the sculpture's form on various facets of the project. The sculpture, serving as a tangible manifestation of design principles, not only impacted its intended realm but also influenced the presentation graphics. This influence suggests a dynamic relationship between the physical form and the visual representation of the project, potentially shaping how it is communicated to stakeholders and the public.

Additionally, the impact of the sculpture on the final design is a testament to the interconnected nature of the creative process. The form of the sculpture, serving as a tangible embodiment of design intentions, likely contributed to shaping the ultimate architectural outcome. This interplay underscores the dynamic and iterative nature of design, where physical expressions can inform and guide the evolution of the visual and functional aspects of a project.



*Fig. 27: Photo of mini Project (Author, 2023)*

## C O N C L U S I O N

In conclusion, the project endeavors to confront societal prejudices and misconceptions surrounding individuals with impairments by proposing a transformative design strategy. With approximately 10 million South Africans grappling with significant impairments, representing 16% of the nation, the project responds to the rising prevalence of impairments due to aging populations and noncommunicable diseases.

The overarching aim is to create a universally accessible shared space within Pretoria Central, challenging the notion that disabilities are inherent medical conditions rather than products of societal barriers. Addressing institutional, environmental, and attitudinal barriers, the project advocates for the integration of specialized facilities within well-established civic centers, fostering an active public interface.

The proposal acknowledges the necessity of specialised institutions while critiquing their peripheral placement, advocating for a more progressive approach to encourage public interaction. It emphasizes the importance of safety, public access, and universal accessibility within the shared space.

By adopting the arcade typology and connecting to the existing network in Pretoria Central, the project seeks to enhance city accessibility and navigation while fostering public activity. The entrance corridor into the city serves as a catalyst for increased public engagement, challenging prevailing attitudes toward individuals with impairments.

The project aligns with the principles of Universal Design, aiming to create a universally accessible arcade through a comprehensive guideline. The guideline addresses various aspects of design, ensuring easy navigation for all users and promoting inclusivity in the built environment.

In essence, the project represents a proactive step toward a future that celebrates diverse abilities, challenges societal norms, and fosters a more inclusive, empathetic, and integrated community. Through purposeful design interventions, it strives to create a shared space that not only enhances the quality of life for enabled individuals but also serves as a catalyst for gradual and sustainable integration within the broader community of Pretoria Central.

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