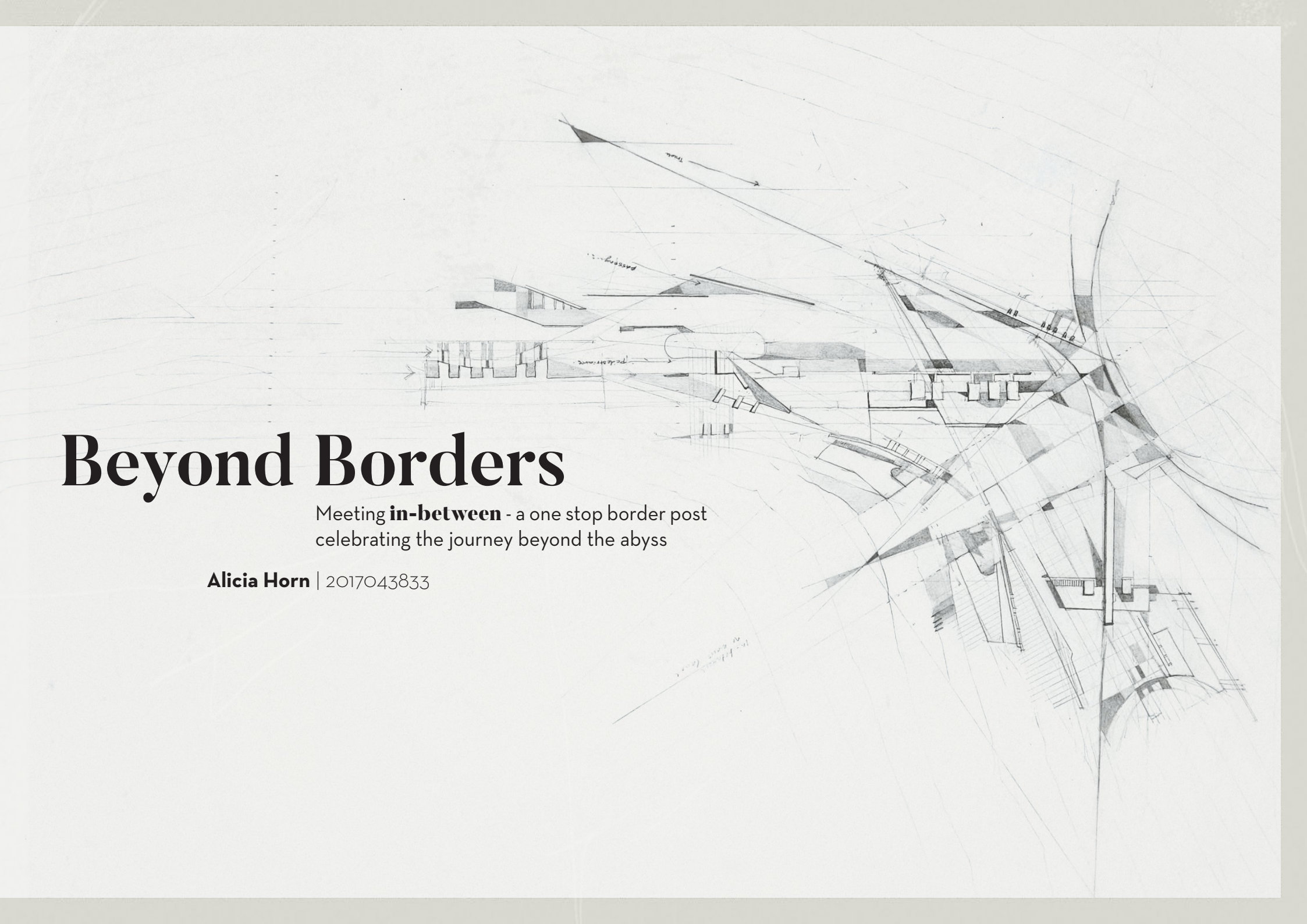
Beyond Borders

Meeting **in-between** - a one stop border post
celebrating the journey beyond the abyss

Alicia Horn | 2017043833



Declaration

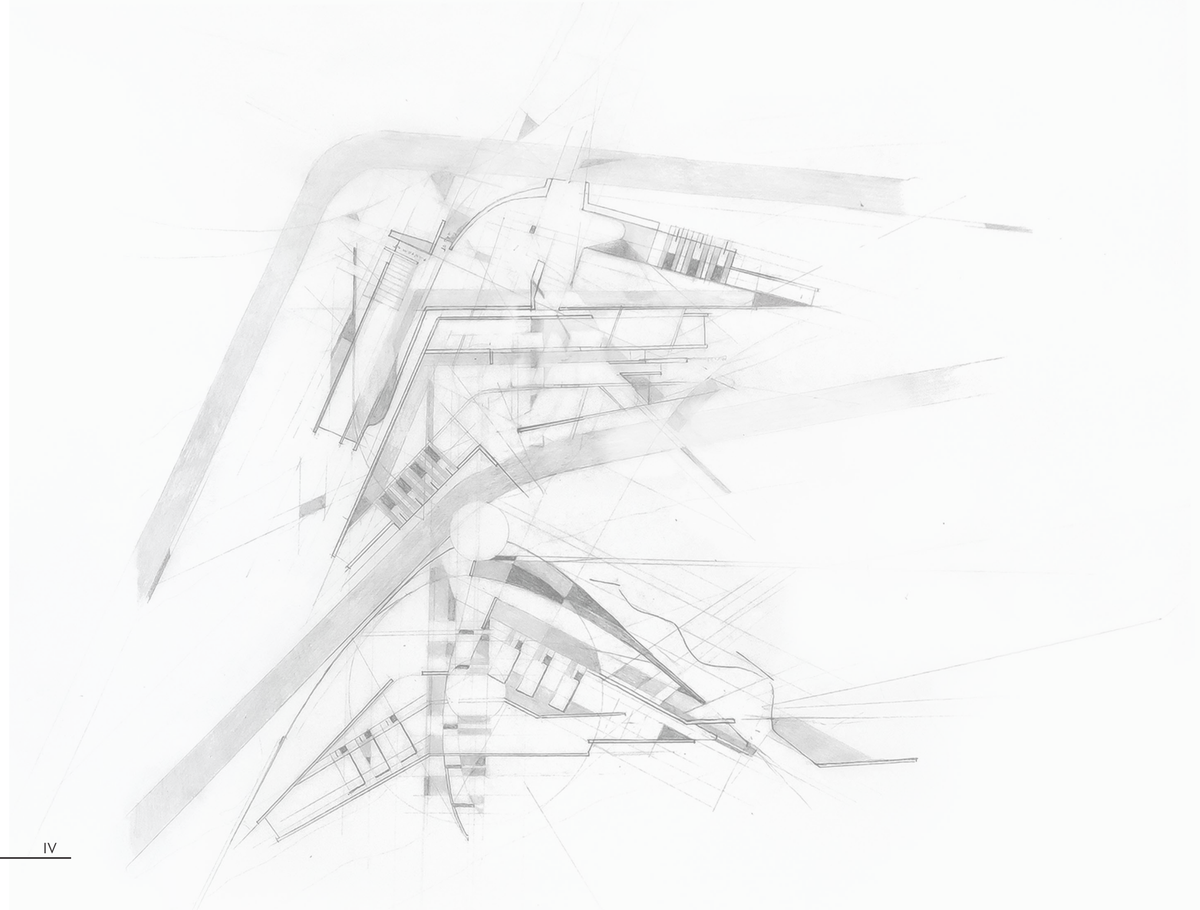
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This dissertation is submitted in partial fulfillment of the requirements for the degree M.Arch.(Prof). at the University of the Free State. The research in this document is my own work, unless stated otherwise.

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Abstract

A border post sets the stage for a fleeting experience, designed purely for processing, a non-transactional event. It is common to perceive border posts as transitory spaces, primarily designed to facilitate efficient processing, and devoid of any transactional value. It exists as a non-place by ignoring the connections between the two nations it separates. The Lebombo Border, situated between South Africa and Mozambique in the Lebombo Mountains, serves as the case study for investigating the complexities and consequences of border dynamics. The main question is how an appreciation of the journey narrative could transform a non-place as a temporary abode to a place concerned with identity and history, and how to infuse a border post with a sense of purpose beyond its conventional duties. Most studies fail to pinpoint the deficiencies in conventional border post designs. This architectural study explores the transformative potential of border posts as meaningful, culturally sensitive spaces that foster spatial justice by going beyond conventional borders to find an alternative reaction. The reaction is rooted in the integration of narrative, events, and ritual elements composed as a one-stop border post. Integrating these elements enables the creation of spaces that honour history, context, and cultural identity. The main objective is to reveal the hidden poetic sensibility and challenge the normative and liminal design of a border. The proposal celebrates the meeting place between South Africa and Mozambique laden within the non-place of architectural transition spaces.

TABLE OF CONTENT | Parts of the instrument

Preface

Abstract v

i. Nomads' melody 1
ii. Revealing the hidden 3
iii. Conceptual reaction 4
iv. Research question 5

Chapter 1 7
The journey to the abyss

Interpretation and conceptual understanding of the site and proposal

1. Introduction 9
1.1 Problem statement 10
1.2 Formulating the brief 11
1.3 Users of the site 12
1.4 Brief historic overview 13
1.5 Conclusion 14
1.6 Setting the tone 15

Chapter 2 16
A dried calabash

2. The Whispers of the Lebombo 17
2.1 Context and history of the Lebombo border 17
2.2 Regional Connectivity and Accessibility 19
2.3 Harmonizing with Nature's rhythm: Topography and elevation 21
2.4 Environmental considerations: Flora 23
2.5 Climate 25
2.6 The Proposed Site 27
2.7 The history and establishment of the Lebombo border 29
2.7.1 Historic significance 31
2.7.2 Burra charter analysis 32
2.8. Border Typologies 33
2.9. Rhythmic Movement: SiteDAte 37
2.10 Concept and notation: Creating form from movement 40
2.11 Tuning 45

Chapter 3 46
The Copper Wire

Section 1

3.1 Embracing the In-Between 47
3.2 The Non-place 49
3.3 Unveiling the Soul's Odyssey 51
3.3.1 Shared music 52
3.3.2 Musical traditions 53
3.3.3 The Xitende 54
3.3.4 Architectural denouement 55
3.4 Touchstone 57
3.5 Concepts 59
3.5.1 Dancing in-between 61
3.5.2 The Broken Xitende 63
3.5.3 Mending with Narratives 65
3.6 Design Approach 67
3.7 Connecting the string: Structural Touchstone 69

Section 2

3.8 Case studies
3.8.1 Constitutional Court 71
3.8.2 Freedom Park 75
3.9 Precedent studies
3.9.1 La Ronde: Hubmann Vass 77
3.9.2 Aigües de vilajuïga : Twobo + Luis Twose 79
3.10 New one stop border post Beitbridge 81
3.11 One Stop Border Post 82
3.12 The Queue
Politics of Queuing and the Architecture of the Queue 85
Queue and Exhibition about waiting in line 86
Composing a melody 87

Chapter 4 88

4. Program development 89
Procedure 91
4.1. Accommodation list 93
4.2. Design development 95
4.2.1. Development 01 : The Essence 95
4.2.2. Development 02 : The Narrative 99
4.2.3. Development 3: Threshold of Transformation 107
4.3. Final design Proposal 113 - 150
Conclusion 150

Chapter 5 151

5. Technical investigation
5.1. Precedent study 156
Kgalagadi Transfrontier Park
5.2. Pedestrian Circulation 157
5.2.1. The Journey in the structure 158
5.3. Structural Precedent study 159
Simpson-Lee House
5.4. More than a roof 160
5.5. Commuter Circulation 161
5.6. Systems for water management
5.6.1. Permeable Pavers 162
5.6.2. Rain Garden 163
5.6.3. Extensive Green Roof 165
5.7. Materials 166
5.8. Structural Composition 170

Conclusion 175
Reflection 176

Appendix A 177

Construction Documentation 177-186

Reference list 187-190

i. THE NOMAD'S MELODY

A Broken branch, de-barked, light and resonant

In a world where borders separated lands and divided cultures, there lived a nameless nomad with a heart filled with wanderlust and a soul intertwined with the rhythm of the Earth. Carrying his trusty **Xitende**, the nomad embarked on a journey that would weave his melody across the Lebombo mountains. With the rising sun painting the sky in hues of gold, the nomad's footsteps danced upon the rugged terrain. Each step whispered tales of ancient lands, forgotten rituals, and dreams yet to be fulfilled. The Xitende, cradled gently in his weathered hands, yearned to serenade the unseen corners of the world, where music had the power to transcend borders and ignite the spirits of those who listened.

The nomad's heart swelled with anticipation as he ascended the mighty Lebombo mountains. He had heard whispers of a hidden enclave, **a sanctuary** for souls thirsty for adventure and minds hungry for inspiration. A place where the air carried a symphony of **diverse voices** and where the spirit of exploration danced hand in hand with the melodies of other travellers.

The mountains reached towards the heavens as if inviting the nomad to uncover the secrets held within. With **each step, the nomad's rhythm merged with the cadence of nature**, forming a harmonious duet that echoed through the valleys - but there was something amiss. **His voice did not reverberate through the mountains as it did before.**



Figure 1: Nomads journey (Author, 2023).

The sanctuary he had envisioned transformed into an eerie landscape of change. The Lebombo drew its line in the sand, etching a sharp divide between nations and isolating the entrance to the realm of magic and wonder. What was once a gateway to the surreal had now become a forbidden path.

A wave of dystopia washed over the scene, the air thick with oppression and the heavy presence of surveillance. Walls rose high, and the enclave became a prison, while watchful eyes scrutinized every movement. The sanctuary of stories, once a place of potential connection and cultural fusion, had devolved into a dystopian 'meeting ground', a **border post**, a desolate space where dwellers are reduced to mere objects, herded like cattle into never-ending queues.

The rhythm of music, once vibrant and alive, now diminished to a mere whisper, drowned out by the clamour of machinery and bureaucracy's apathy. The spirit of exploration that was once fuelled by excitement was now smouldered, suppressed by the weight of the system.

ii. REVEALING THE HIDDEN | Before the in-between
Conceptual Reaction

Amidst shifting shadows, they roam,
trapped in a dance of uncertainty,
they wait, and wait to go home.



Figure 2: One of many (Author, 2023).

iii. CONCEPTUAL REACTION

My interest in the **liminal realm** stemmed from the fleeting feeling that becomes more apparent as one nears the **end of a journey**. A conscious endeavour led me to scrutinise the places where I linger most, striving to recall **pivotal moments of transition.** Analysing the metamorphosis from primary school to high school, high school to university, crossing provinces and noting the change of state from departure to destination. Each had a core moment that shaped my being. The **edge of transition** is a note-worthy moment that should be celebrated and acknowledged as it marks a **threshold of transformation.** In my contemplation, I was drawn to spaces that seemed to diminish the edge. Areas that should radiate with potential are overwhelmed by authoritative shadows. The first place that came to mind was the Lebombo border post. A place that should act as a beacon is muted to a mere administrative labyrinth for travellers and nomads to be transformed into objects, trapped in endless queues.

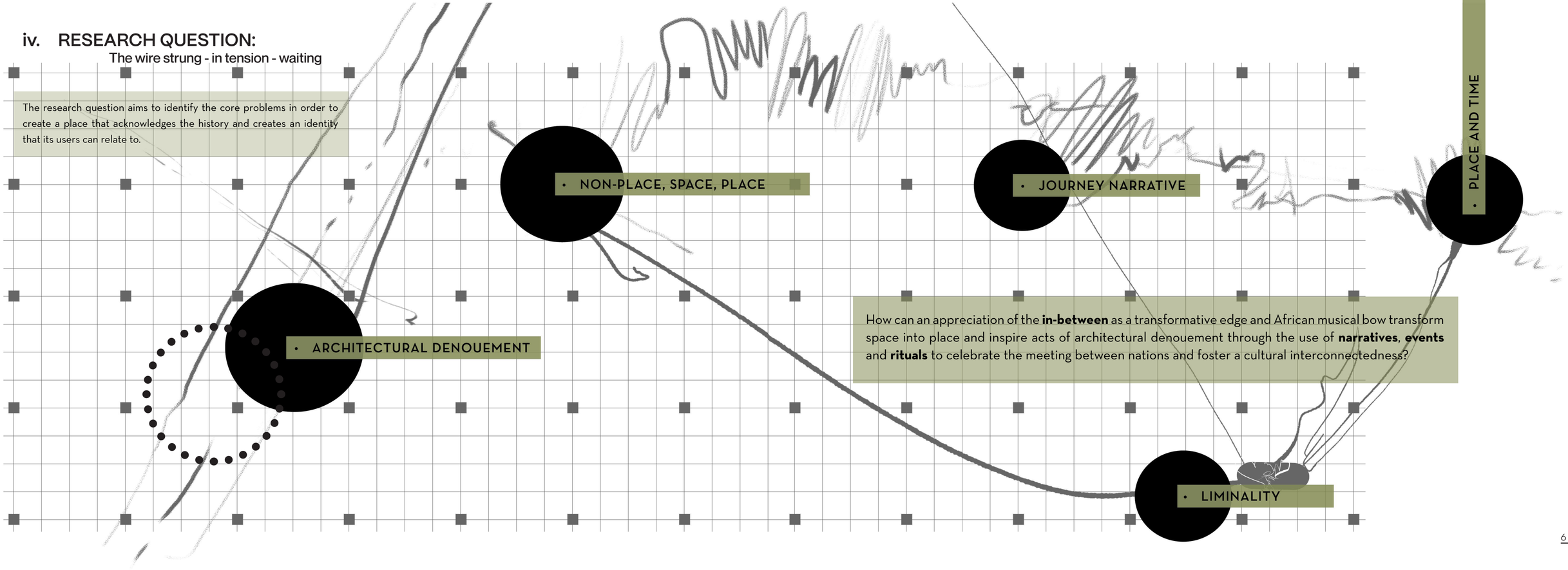
I ask myself how architecture can discard the metanarrative lingering over the site and overcome the dystopian order that rules the area. Could it act as an **instrument** that binds different cultures together and bridge the abyss of the **non-place?** Could architecture incorporate the ***rhythmic composition*** of the very movement of the site's users and allow the users to impose their histories on the canvas?

In this architecture assumes the task of the nameless nomad by sharing untold narratives with like-minded users, unravelling the essence of liminality, and embracing the **transformative potential of the in-between.** Can architecture become the tapestry that **celebrates** the meeting of nations?

iv. RESEARCH QUESTION:

The wire strung - in tension - waiting

The research question aims to identify the core problems in order to create a place that acknowledges the history and creates an identity that its users can relate to.



How can an appreciation of the **in-between** as a transformative edge and African musical bow transform space into place and inspire acts of architectural denouement through the use of **narratives**, **events** and **rituals** to celebrate the meeting between nations and foster a cultural interconnectedness?

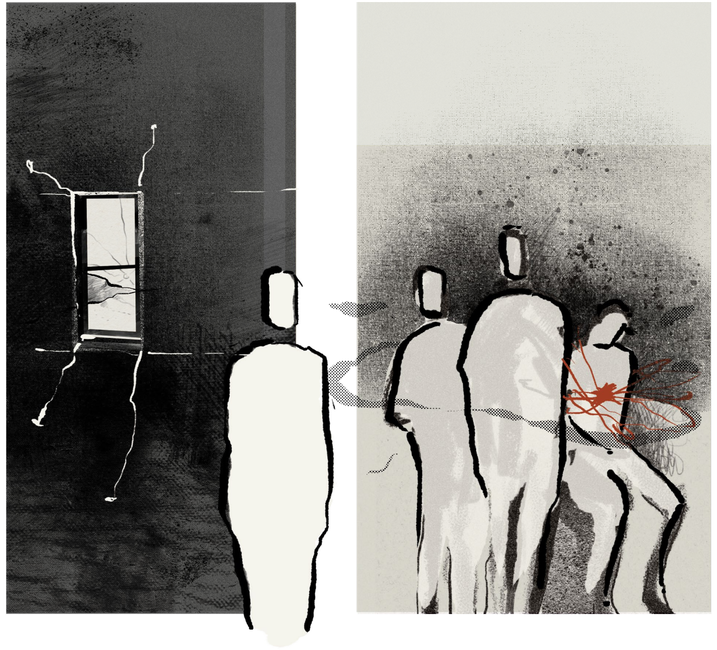
CHAPTER 01

The journey to the abyss

In the midst of the oppressive landscape, the nameless nomad stood, his heart heavy with the burden of witnessing the transformation of a once- sacred place into a soulless border post. As the nomad stood in a cold, sterile room, his trusty *Xitende* was forcefully taken away. He watched as the rhythmic melodies were replaced by the dissonant hum of a crowd shuffling by.

The nomad felt a deep sense of loss as he watched his cherished instrument being locked away in a cold, steel cabinet. It was more than just a musical tool; the *Xitende* held the essence of his being, carrying the stories of his people, the echoes of ancient lands, and the dreams of countless generations. Without it, he felt like a wanderer stripped of his compass, adrift in a sea of indifference.





Yet, the nomad was not one to be defeated by the stifling grasp of dystopia. The nomad began to connect with fellow travellers, sharing stories of their journeys, their cultures, and their dreams. He found kindred souls among those who passed through this place, all yearning for a deeper connection, a sense of belonging that transcends borders.

Figure 3: The in-between (Author, 2023).

1. INTRODUCTION

In this dissertation, various dynamics of the Lebombo Border Post will be explored along with its impacts on the communities it connects. A study of historical, social, and economic aspects of this border post revealed its existing complexities and consequences. Furthermore, the dissertation will examine the architectural implications of the Lebombo Border Post and explore opportunities for enhancing its functionality, spatial justice, and cultural considerations. The research aims to understand border posts as spaces that extend beyond mere administrative and security functions by exploring **Marc Augé's** theory on non-place and **Bernard Tschumi's** interest in creating even spaces that question programmatic places. Finally, the importance of ***music as a cross-cultural identifier*** will be investigated. In brief, the theories will be explored in-depth and paired with additional subthemes to anchor the redesigning of a border post and to question its normative, subsequently placeless design. The ultimate aim is to achieve spatial justice and foster community connections by transforming the current typology from a dystopian non-place into a meaningful, culturally sensitive space.

A key objective of this dissertation is to examine how **narrative**, **events** and **ritual** elements can be integrated into a border post design to create emotionally resonant and inclusive spaces while honouring the site's history, context, and cultural identity.

1.1. PROBLEM STATEMENT

African traditions have been suppressed, and the spirit of exploration has been stifled at the Lebombo border post. The imperative need for increased barriers and surveillance has reduced individuals to objects. Their identities were lost to an industry rifled with noise, and their music, ritual, and tales were diminished/relegated into irrelevant ideas. There is thus an urgent need to revive the Lebombo border post, infusing it with spatial justice, cultural sensitivity, and environmental resonance. By challenging the normative design, one can start to celebrate diverse narratives and restore the vibrant rhythms of African traditions, using architecture to blur borders and weave cultural interconnectedness.

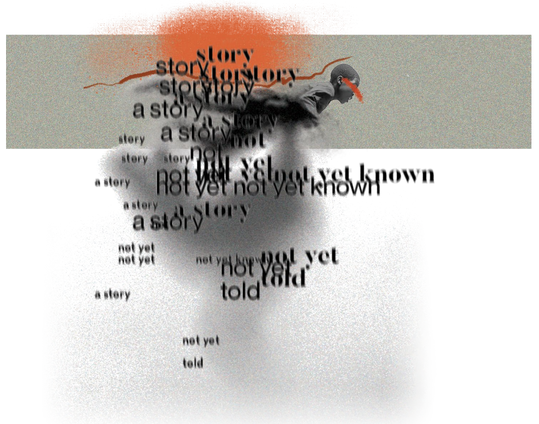


Figure 4: A story not yet told (Author, 2023).

1.2.FORMULATING THE BRIEF

CLIENT

The Lebombo Border Post is jointly managed and operated by the Department of Home Affairs, the South African Revenue Service (SARS) and the Mozambique Revenue Authority. These government agencies are responsible for customs and immigration control at the border post, facilitating trade and movement between South Africa and Mozambique.

As a joint effort to make the border post a more significant space, the Department of Arts and Culture of South Africa set out the task to transform the Lebombo Border to preserve, promote, and celebrate the country's diverse cultural heritage. The project's exploration of cultural interconnectedness, South African traditions, and the transformative power of rituals aligns with the department's mission of fostering a sense of cultural identity and unity in the nation.

The client is interested in research initiatives that promote cross-cultural understanding to celebrate the diverse cultural tapestry of South Africa and its union with Mozambique through an architectural design that celebrates the edge/border/perimeter between the two nations.

1.3. USERS

The user of the site constitutes an integral part of the narrative, the movement of bodies activates space in another dimension, they create events of gathering and togetherness. Without events, there is no space, and without the protagonist, there is no film (Tschumi, 2008: interview).

Therefore, by understanding the users, there could be cultural exploration and celebration that promote events to unfold and create architectural denouement.

COMMUTER

Commuters are familiar figures of restless stature and constant travel between South Africa and Mozambique, viewing the landscape from a travelling window, with only a moment of pause as they manoeuvre through a labyrinth of cars and queues. Their passage is marked by a fleeting exchange and communal understanding that they are soon to embark on another journey.



Figure 5: Blurred landscapes and commuters (Author, 2023).

PEDESTRIAN

Apart from the commuters, nomadic souls wander to find their destined land. Their steps create a melodic chant that echo their presence amid a gathering of many like-minded travellers. Their presence is momentary but transformative, as they disseminate fragments of their journey on the soil they tread on.



Figure 6: The nomad (Author, 2023).

TRUCK DRIVER

Lastly, a steadfast carrier of trade emerges into view. A machine that is known for its long journeys, a mass of trade and travel, a mass that bridges the abyss between nations. Its journeys are tedious and taxing but a necessary expedition to ensure the symbiosis of commerce and exchange. However, within this mass sits a single person, embarking on a lonely journey.



Figure 7: Lonely carrier (Author, 2023).

To comprehend the impact of users on the architectural narrative and events of the site fully, it is essential to examine the cultural context and history of these users. It is possible to uncover a deeper layer of meaning within the architecture and events of the border post by understanding the cultural nuances and historical trajectory of the people who traverse it.

The site's users are not mere individuals passing through; they bring with them a rich tapestry of Tsonga culture and history that inform their journeys and interactions. Every user adds layers of significance to the spaces they navigate by representing a chapter in its ongoing history. By exploring the cultural dynamics at play, one can create spaces that resonate with the collective memory of the Tsonga people who live in and around the region while also fostering a sense of unity and belonging among diverse groups of travellers.

1.4. BRIEF HISTORIC OVERVIEW

The Tsonga people are a diverse group encompassing the Shangaan, Thonga, Tonga, and other smaller ethnic groups that have a significant historical presence in the southern African region with a population of around 1.5 million in South Africa during the mid-1990s, and approximately 4.5 million individuals spread across southern Mozambique and Zimbabwe (Siyabona Africa, 2023:online). In the 18th Century, the first Tsonga speakers entered the former Transvaal as traders, journeying inland along rivers for trade purposes. They exchanged cloth and beads for valuable resources such as ivory, copper, and salt (Siyabona Africa, 2023:online).

The emergence of the Shangaan tribe occurred during the 19th Century when King Shaka of the Zulu nation sent Soshangane (Manukosi) to conquer the Tsonga people in southern Mozambique (Siyabona Africa, 2023:online). Rather than return to Shaka's rule, Soshangane found fertile land inhabited by peaceful communities and chose to make it his home (Siyabona Africa, 2023:online).



Figure 8: Engraving of Chief Mdungazwe, grandson of Soshangane (Muntó, 1895:online).

The Shangaan community formed through a blend of Nguni (including Swazi, Zulu, and Xhosa) and Tsonga speakers, with Soshangane establishing Nguni customs and Zulu as their language (Siyabona Africa, 2023:online). Soshangane's military system and Zulu fighting methods were imposed, and young men were assigned to the division as *mabulandlela* (those who open the road/ pioneers), leading to the establishment of the Nguni kingdom of Kwa Gaza, which covered parts of southeastern Zimbabwe and southern Mozambique, along with adjacent areas of South Africa (Siyabona Africa, 2023:online).

Amid these historical events, groups of Tsonga speakers moved southwards and westwards, encountering various challenges and victories. The death of Soshangane in 1856 resulted in chieftainship disputes among his sons. The shifting dynamics led to resettlements and changes in Tsonga life, with a section of the population residing in Gazankulu, a self-governing homeland that relied on gold and a limited manufacturing sector for its economy (Siyabona Africa, 2023:online). Unfortunately, the conflict compelled many of the population to move closer to urban areas and ultimately resided in informal settlements. Traditionally Tsonga families were surrounded by grazing fields for their cattle, a kraal and their own village composed of a few houses, where they lived harmoniously with the landscape (Siyabona Africa, 2023:online). Similarly, their rituals, traditions and music speak about the importance of the in-between, heaven and earth.

1.5. CONCLUSION

These historical accounts provide valuable insights into the Tsonga people's journey, interactions, and settlements within the region, all of which should influence the design and approach of the border post project. This transition allows one to shift from the architectural aspects of the site to the cultural and historical dimensions that shape the experiences of the commuters, pedestrians, and truck drivers who animate the space. By weaving together the architectural and cultural threads, one can create a holistic understanding of the border post that goes beyond its physicality to embrace the stories and identities of those who engage with the threshold. The culture of the Shangaan Tsonga will be explored in more depth and will become a vital device to anchor the denouement poetically.



Figure 9: Extract from a book, showing the conflict between the Shangaan and Portuguese (Ball:online).

SETTING THE TONE

Chapter 1 sets the scene for the research to unfold. It identifies the core as a more poetic place, a place that is enhanced by its travellers. Transforming the border post from a dystopian non-place into an emotionally resonant space that notes its history, understands the setting and includes cultural identity.

To conclude, chapter 1 sets the tone for a more comprehensive exploration to move beyond the border. Composing cultural and architectural threads together, to resonate with the stories of those who engage within the threshold.

The following section/chapter will explore the setting in more depth, analising the history of the border and the terrain that shapes it.

In the twilight realm of the liminal,
where borders blur, and time stands still,
lost souls wander, seeking a guiding light



Figure 10: The liminal passage from South Africa to Mozambique (Author, 2023).

2. THE WHISPERS OF THE LEBOMBO | Site analysis

2.1. The context and history of the Lebombo Border

Situated in the Lebombo Mountains, the Lebombo Border connects South Africa and Mozambique (Schalkwyk, 2008: online). The mountain forms a natural barrier dividing the two countries (figure 11), with the Lebombo border post on the one side and its Mozambican counterpart, the Ressano Garcia Border Post on the other. The border connects an important corridor for trade between the capital city of Mozambique to the rest of South Africa. The border is a vital gateway between South Africa and Mozambique and has played a crucial role throughout its history.

It is a site that had historically, and currently still facilitates trade and movement between the neighbouring nations, creating a hub of movement and interaction between different users. Street vendors create an interesting dynamic on the site, as they provide commuters and pedestrians with refreshments and locally crafted souvenirs; which may serve as a moment of cultural exchange. More importantly, they provide a convenient way for truck drivers to sustain themselves while waiting in queues to pass through customs.

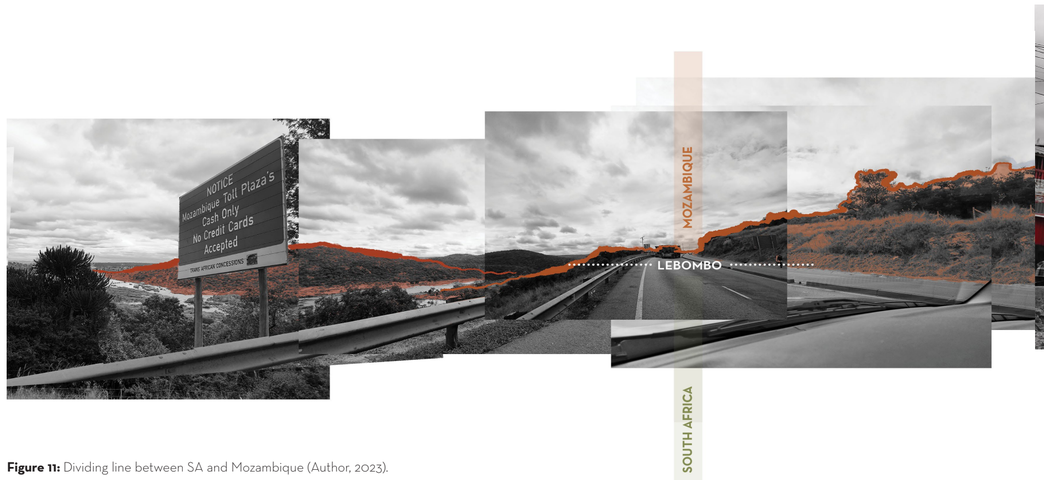


Figure 11: Dividing line between SA and Mozambique (Author, 2023).

The users and street vendors add a dynamic layer to the architectural narrative – a fusion of commerce and culture. The context of the discourse thus emerges as a compelling exploration of how the built environment and the in-between spaces can serve as a conduit for cultural interconnectedness.



Figure 12: Vendors intertwined with the users of the site (Author, 2023).

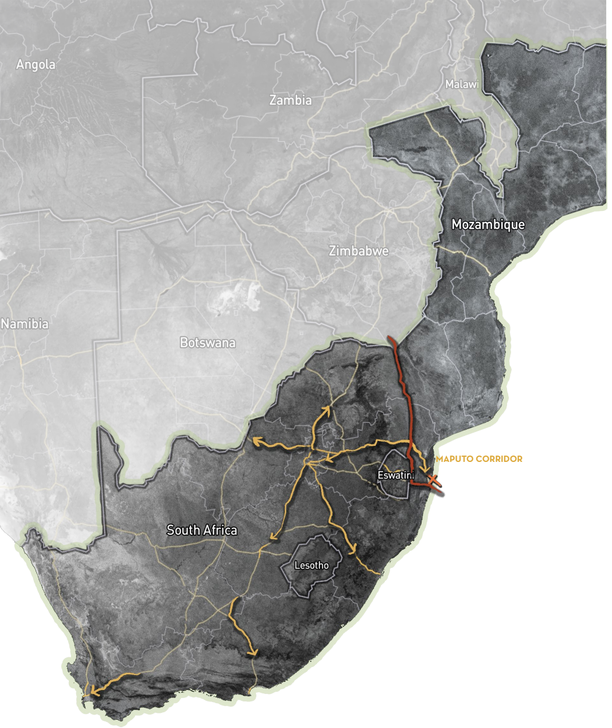


Figure 13: Maputo Corridor (Google earth, 2023: Adapted by author).

2.2. Regional Connectivity and Accessibility

To pinpoint the exact date that movement across the border began one would have to go back to the time of the San, one of the world's oldest human cultures, roamed the Lowveld as nomadic hunter-gatherers (Engelbrecht, 2023: online). Subsequently, the region became home to a plethora of diverse Bantu tribes and clans. Even Shaka's rule as Zulu king catalysed significant upheaval and tribal dispersion in the area, known as the Mfecane (Engelbrecht, 2023: online). As the tribes sought new settlements, some found refuge in Zimbabwe and Eswatini (Swaziland), while others, like the Gaza people under Shoshangane, settled in Mozambique and the Komatipoort region, which was a peaceful community of farmers (Engelbrecht, 2023: online). The Lebombo is thus historically interlaced with movement, connecting regions and cultures.

With Mbombela as the closest capital city to the Lebombo border post, the N4 became a crucial link for regional, provincial, and socio-economic development (Mpe, 2018:128). The stretch between Maputo and Mpumalanga is known as the Maputo Development Corridor (figure 13), which plays a vital role in attracting public as well as private investment to the province (Mpe, 2018:128). The development corridor is a junction of spatial development and transport infrastructure, as it connects Mbombela with Maputo (204km) and Pretoria with Mbombela (314km) (Mpe, 2018:129). The corridor is an economic lifeline and the backbone that supports South Africa as one of the leaders of export on the African continent.

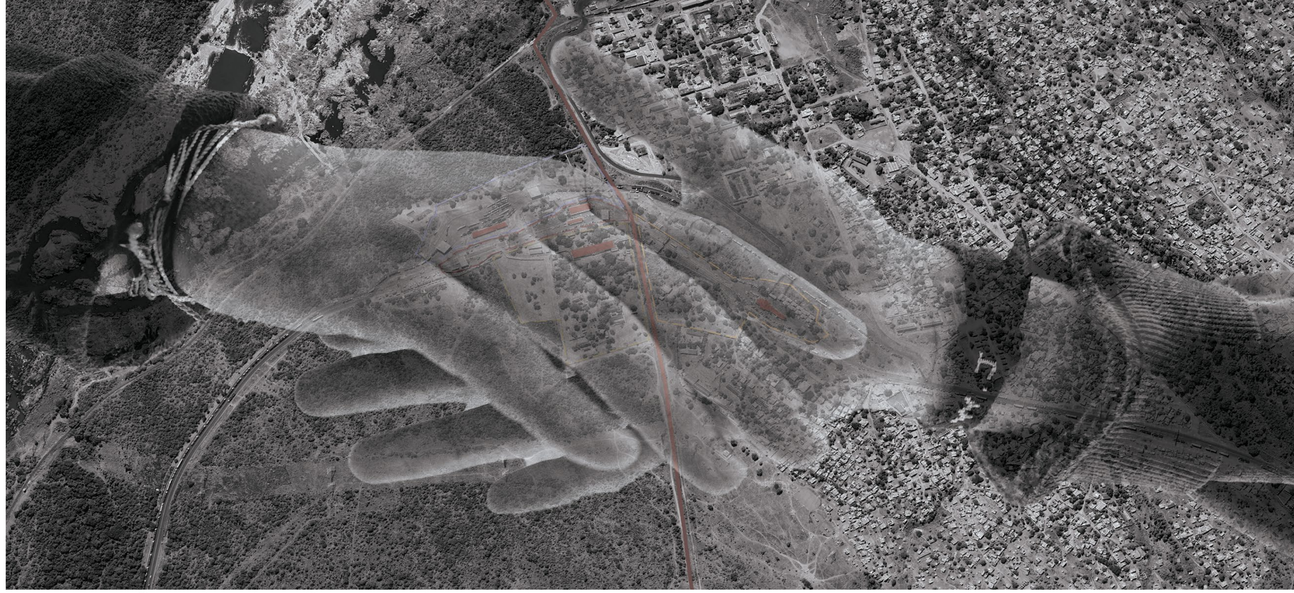


Figure 14: Meeting of nations (Google maps, 2023: Adapted by author).

The Maputo Corridor is an indispensable transportation link between Maputo and Gauteng. It supports local production, fuels tourism, and drives coal production (Mpe, 2018:130). The Maputo Corridor also acts as one of the major freight corridors and connects the most important rail networks throughout South Africa (Mpe, 2018:130).

Apart from being a convergence of roads, the Lebombo Border is a pivotal meeting point that links the greater transport axis of the Indian and Atlantic oceans together (MCLI, 2016:online).

In the context of the grander denouement, the Lebombo Border is a nexus of nations and a confluence of commerce. Here, the journey narrative takes on a whole new meaning, as the travellers do not simply cross a border; they traverse thresholds and move between and beyond edges. The journey narrative is thus not one with fixed boundaries but rather a corridor of possibilities. Overall, it is essential to note the regional connectivity to understand the importance of celebrating the meeting between South Africa and Mozambique and acknowledging the history of movement through the landscape (figure 14).

2.3. TOPOGRAPHY AND ELEVATION | Harmonizing with Nature's rhythm



Figure 15: Topography (Author, 2023).

The journey to the abyss must be understood in all its undulations. The study of the site's topography is the orchestrator of the character of the site. The site's natural contours, slopes, and elevation influence the composition to find the perfect resonance between structure and nature.

The Lebombo Mountains, also known as Lubombo or Ubombo, is an 800 km long mountain range that stretches from northern Kwazulu-Natal to the southern border of Zimbabwe and forms a significant part of the landscape that serves as a boundary between several regions, including the province of KwaZulu-Natal, Eswatini, Mozambique, and Mpumalanga (figure 15) and are composed of an arrangement of volcanic rock (Barker, 2021:online).

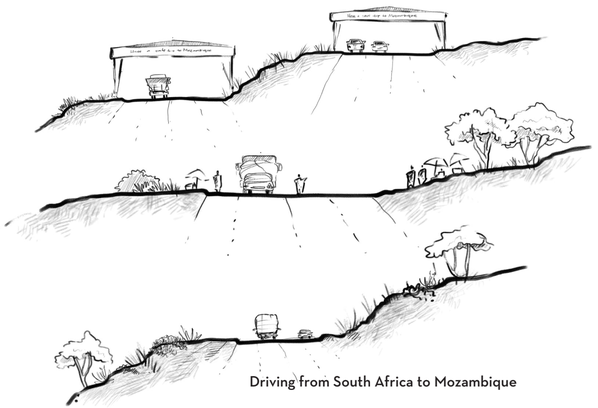


Figure 16: Fall from Southern side (Author, 2023).



Figure 17: Inkomati River from SA border (Author, 2023).

The Lebombo border post sits approximately 170 m above sea level, sloping towards the Inkomati River that flows through Mozambique into the Indian Ocean. The site thus has a rather large gradient that creates a panoramic view over the river and the community surrounding the site (figure 17).

The natural contours, slopes, and elevation changes of the Lebombo Mountains are crucial aspects to consider when studying the site's layout and potential construction (figure 16 and 18). The rugged terrain and varying elevations can significantly influence the design and planning of the border post. An understanding of these topographical features is essential to create a sustainable and resilient project that harmonises with the surrounding environment and landscapes. The slope allows one to play with different levels and carve into the site to create a sanctuary for nomads and travellers of all kinds.

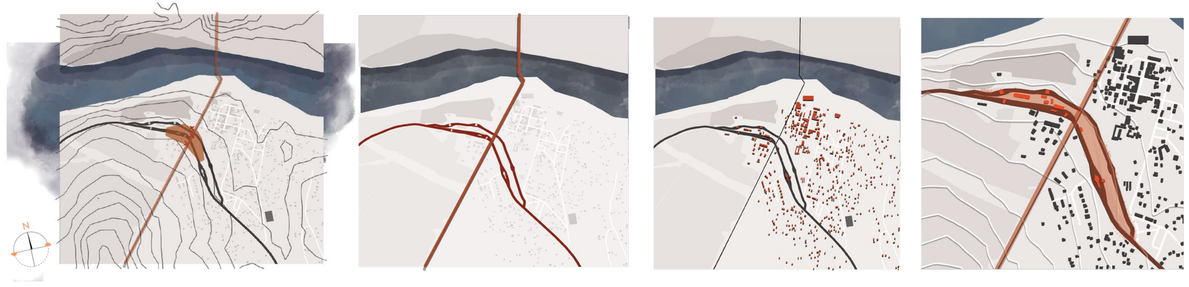


Figure 18: Diagram showing various aspects of the site (Author, 2023).

2.4. ENVIRONMENTAL CONSIDERATIONS : FLORA | Natures poem

Indigenous to the region and used by the surrounding community

The undulating mountains create a diverse landscape. To the West of the border there are grasslands with very fertile basaltic soils and to the East the rhyolite-based soil, which creates a landscape for a variety of fauna (Singita, 2014).

Cultural use

The indigenous plants of the Lowveld also present immense importance to the agricultural community of the Tsonga. They cultivate many indigenous vegetation specifically for their cultural and traditional significance, as well as for medicinal purposes, traditionally used by the Sangomas. Many of these plants also have construction value (Anthony,2007:502). The Lucky Bean tree, Knob Thorn, Venda Bushwillow, Turpentine grass, and Cyperus Papyrus are only a few of the indigenous plants used by the Tsonga and are most prominent around the site (figure 19).

The area in which the site is located is home to many indigenous flora. To admire the landscape, I propose incorporating an indigenous gallery of growing plants along the pedestrian route and around waiting areas, where one can start to appreciate the natural environment which unfolds an anthology of nature's poetry. One may then begin to notice how the landscape changes and simultaneously how it affects the building form. By incorporating unique botanical elements, the design can foster a deeper connection between man-made structures and the natural environment. One way of doing this is by treating the landscape as a canvas, similar to the way Leon Kluge works with natural elements.

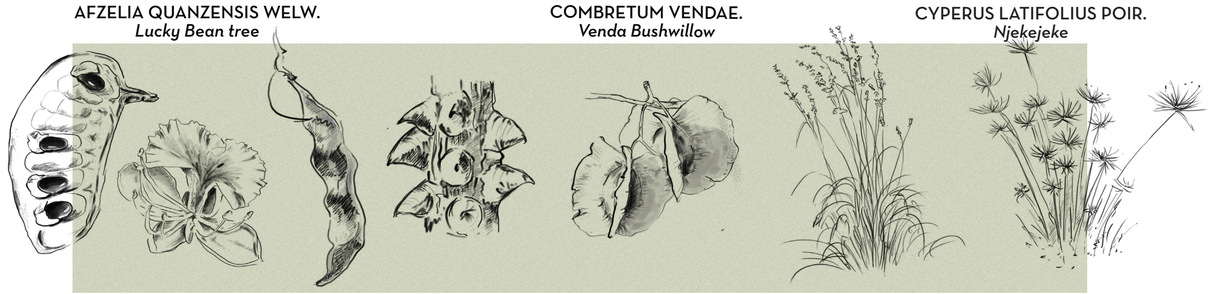


Figure 19: Indigenous flora (Author, 2023).

Leon Kluge - African Thunder

Leon Kluge is an internationally recognised landscape designer, artist, and botanist, born and raised amidst the lush embrace of the Lowveld's botanical gardens (SALI, 2019: online). Kluge orchestrates nature's symphony with symbols and the vibrant palette of indigenous art, weaving an enchanting saga of Africa's mythical terrain.

African Thunder is the title of an installation done by Kluge for the Singapore Garden Festival in 2018 (figure 20). His installation aimed to evoke emotions in visitors through a sensory experience, incorporating lights, sound, water, and plants to transport visitors to the heartbeat of the African wilderness (SALI, 2019: online). Each plant was carefully chosen, and in the absence of nature's bounty, the artist's hand was at play to simply construct what was missing.

Application to design

Kluge illustrates how one can play with the landscape and transform it into a storytelling device. The landscape should thus inform the traveller of its richness and add to the journey narrative. Locally crafted wire and steel elements can be incorporated into the landscaping design to connect the viewer with a unique experience that showcases local craftsmanship.



Figure 20: African thunder (Shing, 2018).



Figure 21: African beads (Shing, 2018).

2.5. ENVIRONMENTAL CONSIDERATIONS: CLIMATE

Climate Zone 3

By understanding the climatic conditions of the area, the indigenous flora can be used to harness the natural shade and cooling properties of these plants during the scorching summers, thus reducing the need for energy-intensive cooling systems, and similarly providing the same comfort during winter months. It is important to understand the climate zone in which one designs, to create a responsive design that minimises energy consumption (Muller,2013: 105).

Komatipoort is on the edge of climate zone 3 (figure 22), the 'hot interior', which is characterised by high daily temperature ranges, hot summers, and low rainfall.

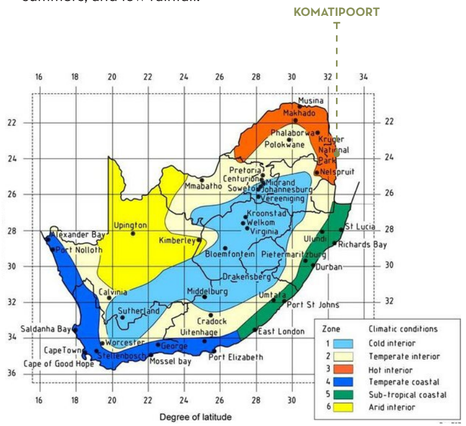


Figure 22: Climatic zone map (SANS 10400-XA: 2011).

Figure 23 shows the average monthly temperatures for Komatipoort's sub-tropical climate range from as high as 30 °C in summer months and a daily maximum of 25 °C in winter months (WeatherSpark, 2023:online). The minimum temperatures range between 18- 20 °C in summer months and 11-15 °C in winter months (WeatherSpark, 2023:online). Winter is usually dry with low humidity, whereas summers are hot and humid.

Therefore, the proposed structure should incorporate effective cooling strategies to maintain a comfortable indoor environment. It should also provide shading in exterior spaces where pedestrians would be exposed to direct sunlight.

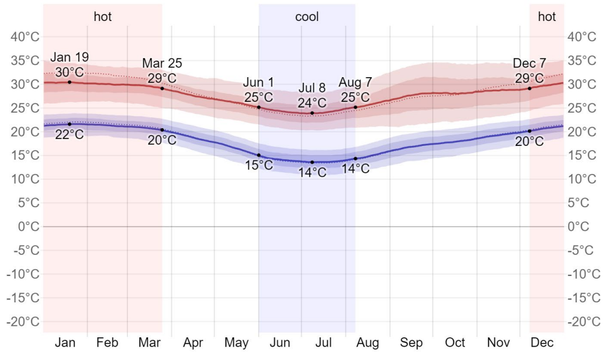


Figure 23: Monthly maximum and minimum temperatures (WeatherSpark, 2023: online).

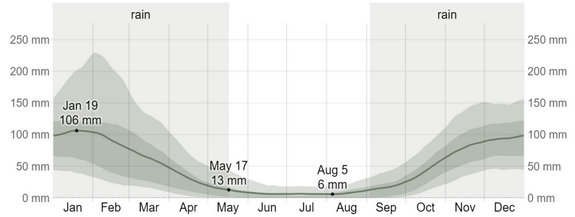


Figure 24: Average monthly rainfall in Komatipoort (WeatherSpark, 2023: online).

Komatipoort exhibits notable seasonal variations in its monthly rainfall patterns, this is important to note as it informs the potential implications, particularly concerning stormwater management.

From September to May, there is constant rainfall, with January being the wettest month and July the driest.

The data is critical to understand as a significant area of the site is paved areas, which would exacerbate stormwater runoff during rainy months. Thus, effective stormwater management strategies should be investigated to mitigate the adverse effects of the runoff on infrastructure and the environment.



Figure 25: Cloud formation during the site visit in January, which transformed into a light drizzle (Author, 2023).

2.6. THE PROPOSED SITE

The proposed site (figure 26) is within the same geographical footprint as the current border facilities. The design aims to question the approach of the current structure and propose an alternative approach that would recognise the site's historical importance while creating a built identity that would resonate with the users and the environment.

The site facilitates three different processing systems, catering to pedestrians, commuters, and freight trucks. It is imperative to note that the commuter and truck facilities have been the centre of a much larger debate, as processing can cause extensive delays, particularly during peak festive periods, which often culminate in extended wait times for users, devoid of adequate shelter from the Komati sun.

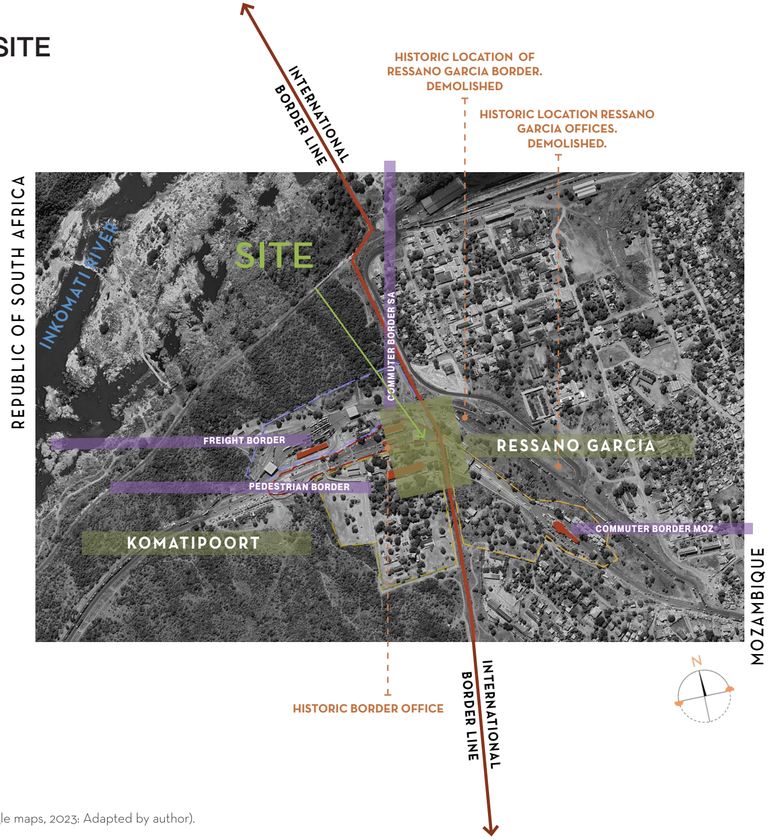


Figure 26: Ariel view of current border post (Google maps, 2023: Adapted by author).

Conversely, the pedestrian border processing system represents a relatively more effective model - a one-stop border post. This approach facilitates sharing common facilities while preserving the discrete nature of processing procedures. Nevertheless, it is essential to underscore that even this system is not immune to processing delays, which may ensue when the border is inadequately staffed.

The site's current design enables the non-place and emphasises the fleeting quality of transition spaces. The ritualistic nature of the transition is neglected in the design of the current buildings (figure 27).

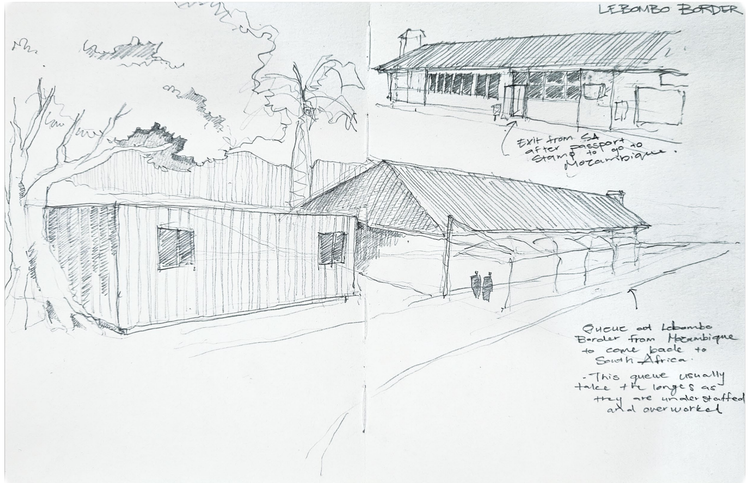


Figure 27: Sketch of the current commuter border facilities (Author, 2023).

2.7. HISTORY AND ESTABLISHMENT OF THE LEBOMBO BORDER | A storied past

When one starts to peel back the layers of the landscape, one would reveal a border post that cherishes a profound historical narrative.

Komatipoort was founded in 1887 when it was chosen as a junction for a railway line connecting Johannesburg to the Selati goldfields (Engelbrecht, 2023: online). During this time, the Komatipoort region developed their fertile farmland to larger scale enterprises, cultivating crops like sugar, bananas, and citrus (Engelbrecht, 2023: online). Despite periods of adversity, notably during Mozambique's civil war, which disrupted trade and cast Komatipoort into an unofficial frontline, the town has ascended in significance through increased South African-Mozambican trade and tourism post-1994 (Engelbrecht, 2023: online).

The border post holds a storied past, with some structures still standing to convey a message. Among these, the original Lebombo border post office fades into the background (figure 28). Mounted to the building is a plaque commemorating the De Kuiper expedition (figure 29), shedding light on the port's history (Schalkwyk, 2008: 9). This expedition embarked in 1725 to explore an inland route to the mythical land of Monomotapa, marking the first European entry into Mpumalanga (Schalkwyk, 2008: 9).



Figure 28: The original Lebombo border post office lost in the grander scheme (Author, 2023).

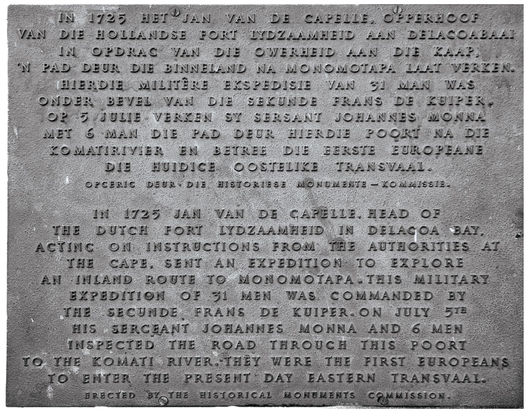


Figure 29: Plaque commemorating the De Kuiper expedition, mounted against old Lebombo border post offices (Author, 2023).

In this period a obelisk was erected to situate the landmark between South Africa and Mozambique (figure 30). A formal port of entry was established by the Transvaal Colonial Government in 1906, with the Portuguese authorities mirroring this effort at Ressano Garcia a year later (Engelbrecht, 2023: online). The present border control facilities took shape during the 1970s and 1980s. Further improvements were made over the years with additional office buildings, staff residences, and restroom facilities (Schalkwyk, 2008: 10).

When conceiving and erecting a new border post, the rich historical tapestry is imperative. The design should integrate elements that honour the region's past while nurturing positive cross-border interactions, encouraging tourism, and facilitating trade - embodying the spirit of Komatipoort and its historical significance.



Figure 30: The obelisk, erected in the late 1880s, demarcating the border between Mozambique and South African Republic (Anos, 1880:online)

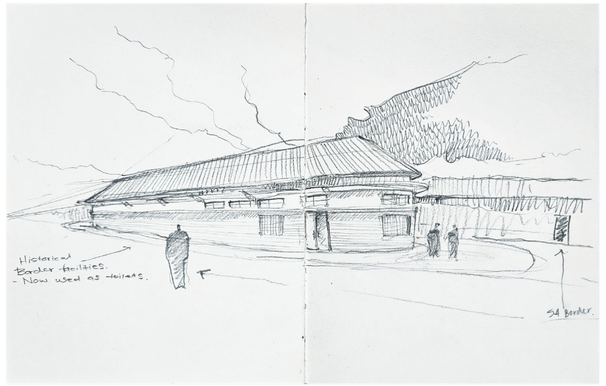


Figure 31: The historic building now used as toilet facilities (Author, 2023)

2.6.1. Historic significance

The proposed site needs to consider various factors, notably the historical aspects associated with the site. The original border post office (figure 32) is a prominent structure and should be acknowledged as such, it is a vital building adjacent to the commuter border facilities. The significance stems from it surpassing the 60-year threshold, classifying it as a historic building under the National Heritage Resources Act.

Act 25 of 1999, the National Heritage Resources Act construes a framework that protects buildings older than 60 years, establishing them as part of the national estate (Snymans, 2017:online). The act aims to ensure the effective management of national estate and motivate collective responsibility for South Africa's shared heritage (Snymans, 2017:online). Considering the act, it is essential to analyse the factors that make the building important, significantly if it could be affected by new construction.

In this context, the Burra Charter analysis is used to ensure that proper alterations are made when working with heritage buildings and that they are in line with national and international standards. The Burra Charter defines seven principles that incorporate various aspects, including historical research, assessment of cultural significance, and the importance of engaging with local communities (Australia ICOMOS,2013: 1). The Burra Charter's seven points are used as a tool for analysis to identify the unique aspects of the historic border offices.



Figure 32: Original border facilities now used as toilets (Author, 2023).

2.6.2. Burra Charter Analysis

1. Understand the place:
The building overall does not bear any ties with the original program, it now serves as public toilets with two small offices on both ends of the building. The roof stands out as the most significant aspect of the building, as it is the only building on the site with a slate-tiled roof. Other relevant elements are the plaque commemorating the De Kuiper expedition and the brick facade. At first glance, the façade seems quite ordinary, but upon closer investigation, the brick bond creates a vibrant exterior by combining English bond with brick header course (figure 33).

2. Assess cultural significance:
The building currently has no cultural significance and identifies the importance of recognising its history; otherwise, the user overlooks it.

3. Identify all factors and issues:
Regarding its relevance to history, the building should be acknowledged as the first structure travellers could recognise coming from South Africa towards Mozambique. Currently, the building disappears as it is bombarded with signage and the surrounding structures. The proposal aims to mitigate this effect by placing it at the forefront of commuter facilities. The building would become a beacon, honouring its history and celebrating its potential.

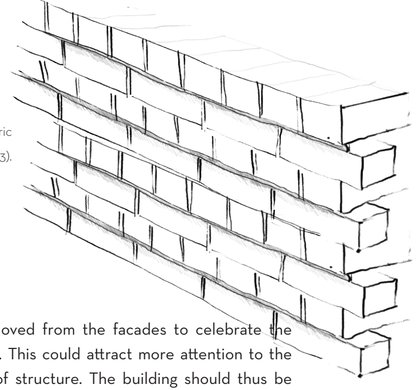


Figure 33: Brick facade of historic building (Author, 2023).

4. Develop Policy:
The signage should be removed from the facades to celebrate the original office's construction. This could attract more attention to the exciting brick bond and roof structure. The building should thus be preserved to hold its unique shape and construction.

5. Prepare a management plan:
The Department of Home Affairs will manage and operate the building, ensuring regular upkeep and maintenance. By creating a sense of ownership, the building could establish a hierarchy of old and new.

6. Implement the management:
The implementation will be subject to the local authority to ensure that conservation tasks are carried out as scheduled.

7. Monitor the results and review the plan:
Regular monitoring and review are crucial to ensure that the building stays relevant in the grandeur scheme of the site.

In conclusion, by recognizing and preserving the historical significance there is potential to honour the past while looking to the future of a more inclusive story filled border post design

2.7. BORDER TYPOLOGY

A significant reason for the demise of the historic border is because of the emphasis on processing, which neglects to recognise external factors that might influence the users of the site.

The current normative border typology reflects a linear system, designed primarily for security and administrative processes, characterised by its organisation into distinct zones to manage various user groups - a traditional two stop border post. It facilitates/blocks the movement of wanted/unwanted goods or persons using control facilities and monitoring devices (Khumalo, 2014:8). There are several types of functional structures at the border posts, including office buildings, customs and immigration facilities and support services. However, the building lacks basic public facilities such as rest areas and connection spaces that may cause further estrangement in its users.

To address this issue and restore the cultural significance of the historic border post offices and other facilities, it is imperative to analyse their heritage value and reevaluate the flow structure through the border itself.

The following diagrams illustrate the current flow of the Lebombo border post, and the facilities used to accommodate the typology.

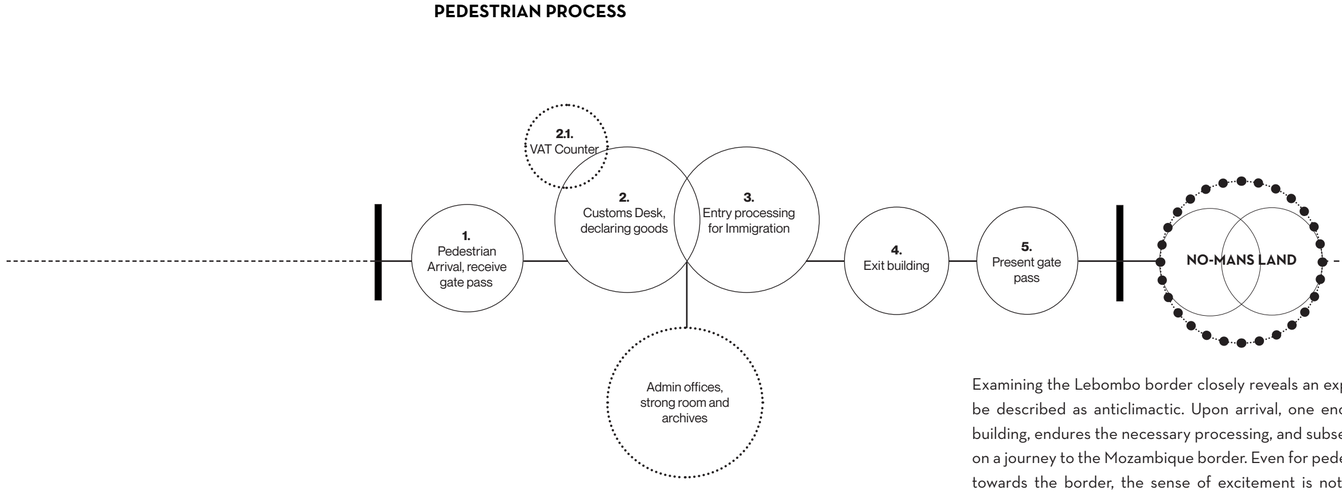


Figure 34: Pedestrian flow diagram (Author, 2023).

Examining the Lebombo border closely reveals an experience that can be described as anticlimactic. Upon arrival, one encounters a weary building, endures the necessary processing, and subsequently embarks on a journey to the Mozambique border. Even for pedestrians venturing towards the border, the sense of excitement is notably absent. The border remains largely unrecognised and certainly uncelebrated. As one crosses this threshold, it becomes apparent that the potential for transformation and deeper significance often go unacknowledged, turning the entire experience into a mere liminal passage.

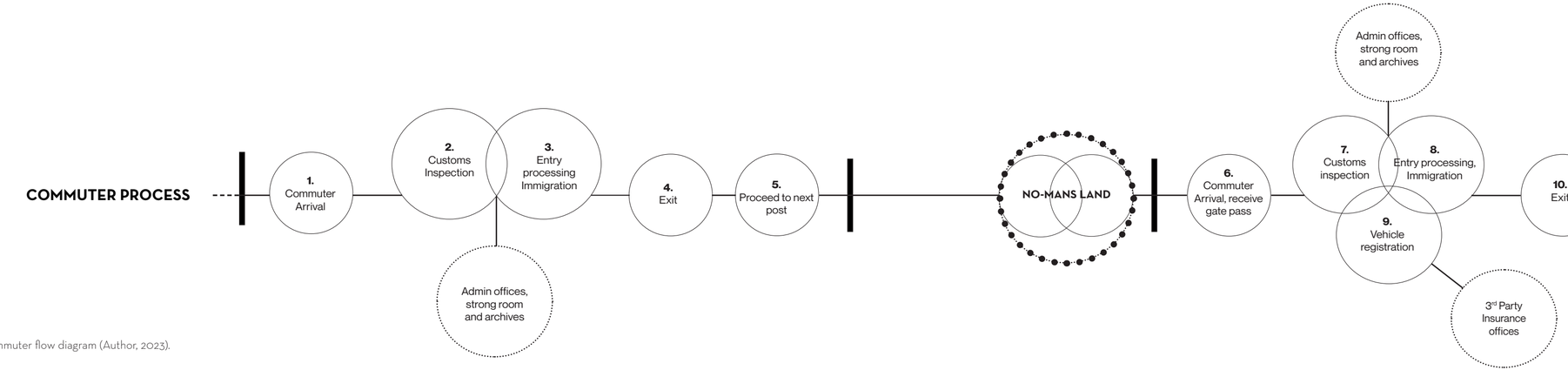


Figure 35: Commuter flow diagram (Author, 2023).

Overall, the current system emphasises a rigid organisation of facilities that negates the architectural potential inherent to the site. The no-man's land is no special feature of the design, but rather functions as a buffer space during peak seasons. The stiff structure of border post typologies disregards the potential celebration of the grand narrative and possible discourse between users. The users of the site (pedestrians, commuters and truck drivers) should be used as a potential device to inform the design.

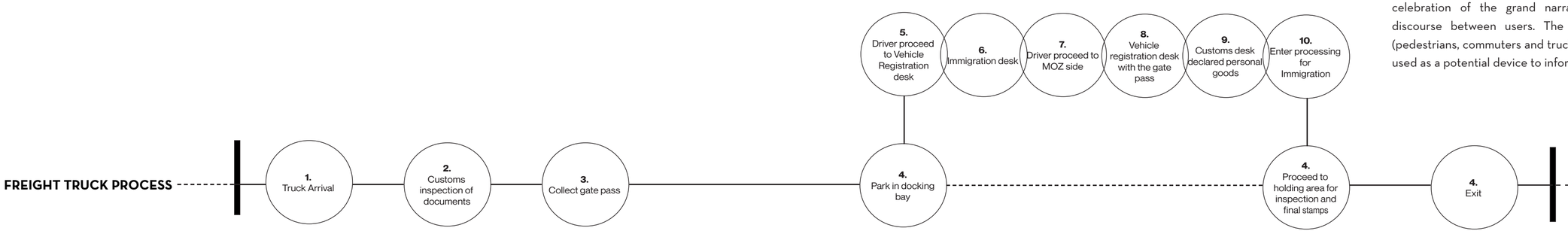


Figure 36: Freight truck flow diagram (Author, 2023).

2.8. RHYTHMIC MOVEMENT | siteDAte

Measuring the unseen resonance of the edge of transition

The Lebombo is a site of unknown tension, a space filled with signs and queuing traffic, designed purely for its functional intent, reducing the individual to merely a number and their belongings to insignificant trinkets. Such a border sets itself onto the natural landscape, flattening its slopes and bordering up its views, resulting in a lack of consideration for the poetic and emotional potential of the site, preventing its truth to be revealed and denying travellers the opportunity to dwell poetically.

Measuring movement

A device was created to reveal the unseen poetic essence of the site. The device serves as an alternative way of conducting a site analysis, exploring the site's hidden poetics by revealing the elated way dwellers live and react to the undefined undulations of the site. This device, filled with loose hanging pens that scratch on paper, imitates human movement (figure 37). The scratches on the paper become the marks of the site, revealing its underlying truths in a language only the artist can understand. In the hands of the skilled user, the device is an architectural instrument, unlocking the ecstatic way dwellers live and react to the objects surrounding them. It is an extension of the dweller, casting his movement amid the site as an understanding of the architectural imagination.

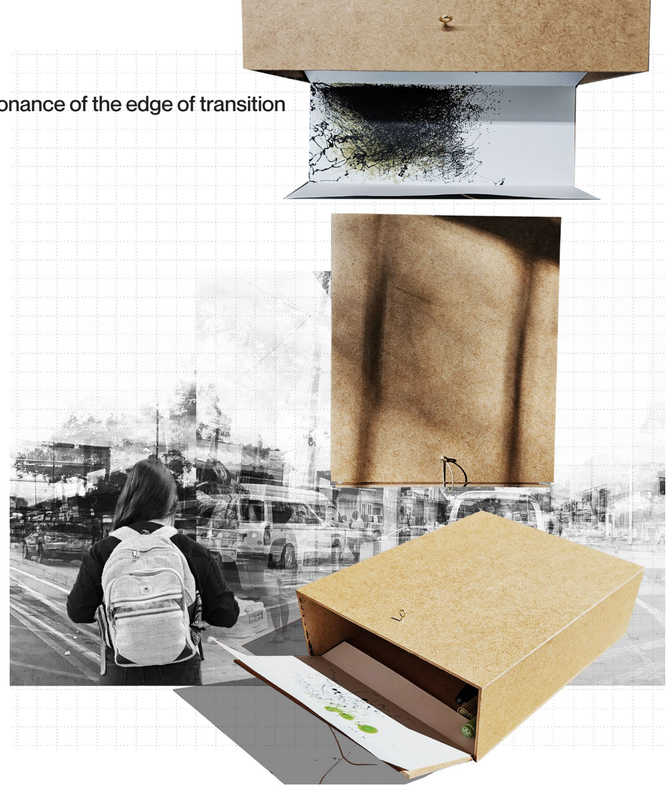


Figure 37: Blurred landscapes and commuters (Author, 2023).

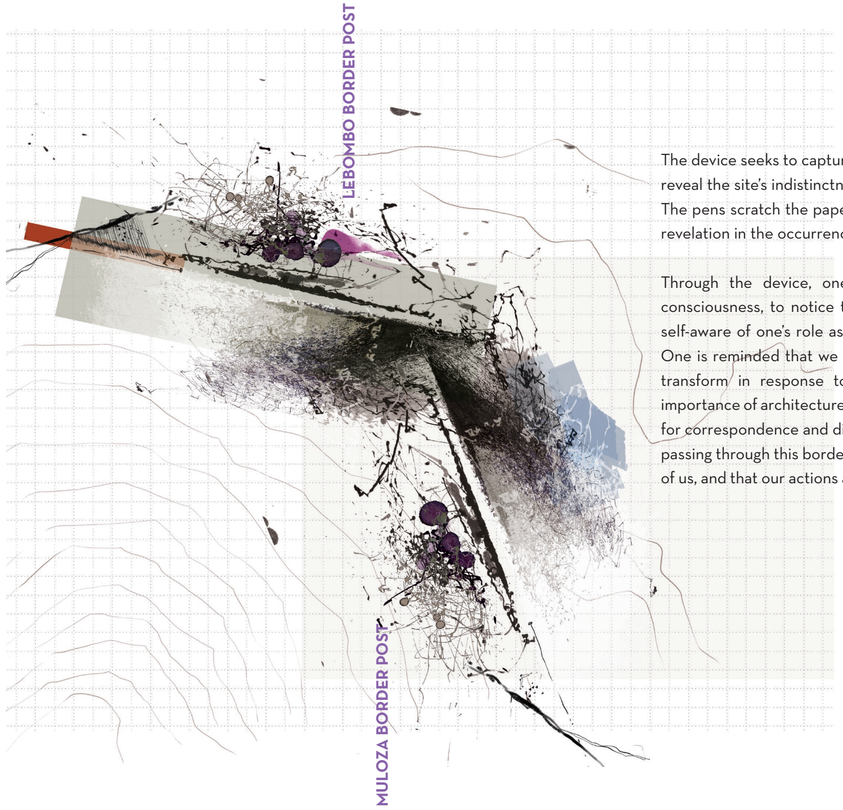
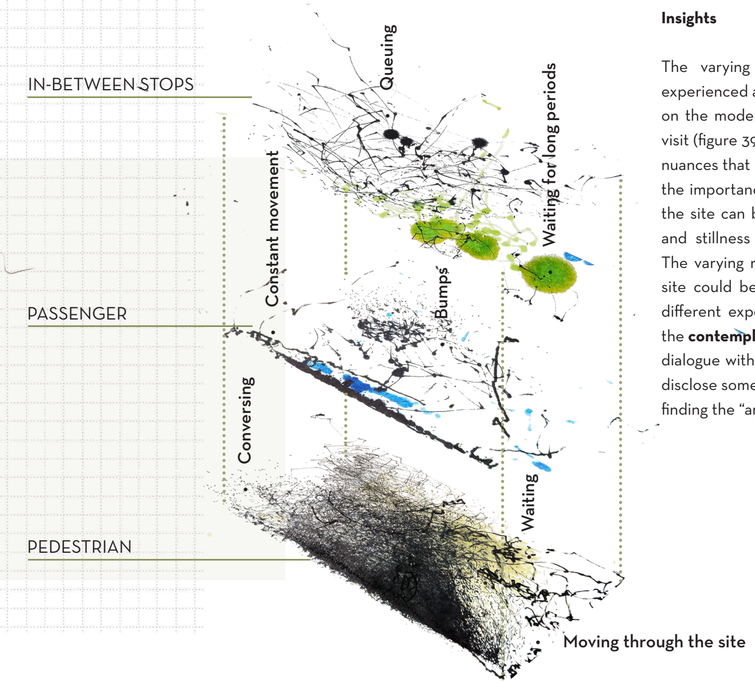


Figure 38: Interpretation of the site (Author, 2023).

The device seeks to capture the site's spirit of place, its shared truth, to reveal the site's indistinctness of the abyss that lies beyond the border. The pens scratch the paper in a moment of alethic truth, a moment of revelation in the occurrence of the event.

Through the device, one is invited to linger in the moment of consciousness, to notice the heaviness of one's existence, and to be self-aware of one's role as a catalyst in the container of liminal space. One is reminded that we exist in a state of osmosis and continuously transform in response to our surroundings. It reminds us of the importance of architecture to reveal the truth of a place, of the potential for correspondence and discovery. It reminds us that we are not simply passing through this border post but that we are part of it, that it is part of us, and that our actions and reactions have the power to transform it.



Insights

The varying results suggest that the site can be experienced and understood in multiple ways depending on the mode of transportation and the purpose of the visit (figure 39). The device reveals the hidden layers and nuances that may not be immediately visible. It highlights the importance of considering different modes in which the site can be experienced and the role of movement and stillness in shaping one's understanding of place. The varying results also raise questions about how the site could be designed to accommodate and enhance different experiences, from the **active and bustling** to the **contemplative and reflective.** It allows one to start a dialogue with the site, uncover its hidden mysteries and disclose something new and profound about it, inevitably finding the "art of place".

Figure 39: Revealing the hidden (Author, 2023).

2.9. CONCEPT AND NOTATION | Creating form from movement

Exploring Bernard Tschumi's conceptual frameworks and transgressive notation systems

Bernard Tschumi, a Swiss-French architect, has significantly impacted the field of architecture through his writings on concept and notation. According to Tschumi, architecture entails more than just physical form; it is about the experiences and activities that unfold within it. The movement of people is an integral part of Architectural form-giving. He addresses this concern in the chapter "Space and Events" in his book "Architecture and Disjunction" by stating that one cannot attempt to contribute to architectural discourse if there is no space for event, or architecture without the program (Tschumi, 1996:139).

In "Architecture and Disjunction," he explores the relationship between space and events. He asserts that architecture must be derived from ideas and concepts before taking shape, exploring the complex interactions between spaces and their use, rather than following traditional notions (Tschumi, 1996:146). His ideas challenge and encourage one to rethink architecture's potential.

A border post that goes beyond conventional notions of function and division can be designed with Bernard Tschumi's concept and notation. Using Tschumi's ideas of space, event, and movement, the border post can serve its purpose while also becoming a vibrant hub of activity.

The following drawings followed the process of Moon Joo Lee's project Slaughterhouse Event (figure 40) which stems from the work of Bernard Tschumi's Parc de la Villette by developing a method of gestural drawings and notations to create new events spaces by tracing ritual, movement, and the interaction of the users on the site (Lee, 2010:online). Subsequently, the same method was followed to creatively engage with the site of the border post that is solely concerned with program.

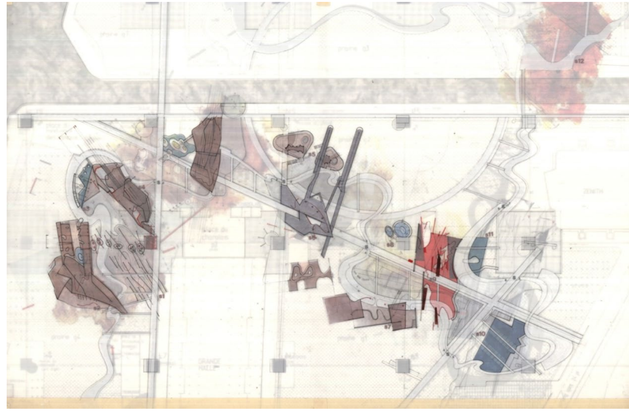


Figure 40: Moon Joo Lee's plan for his project Slaughterhouse Event, the plan reveals a layered process to transform movement into form (Lee, 2010:online)

GESTURAL DRAWING

The following method was used to aid the analysis of the site to understand the user movement better. By translating the user's movement into patterns imposed onto the site (figure 41) one can start to reveal the spatial effects informed by the mode of conduct.

The pedestrian and the commuter are the two types of users that could be easily translated into forms. The spatial quality of users is aimed at broadening the possibilities of the programmatic structure of formal elaborations.

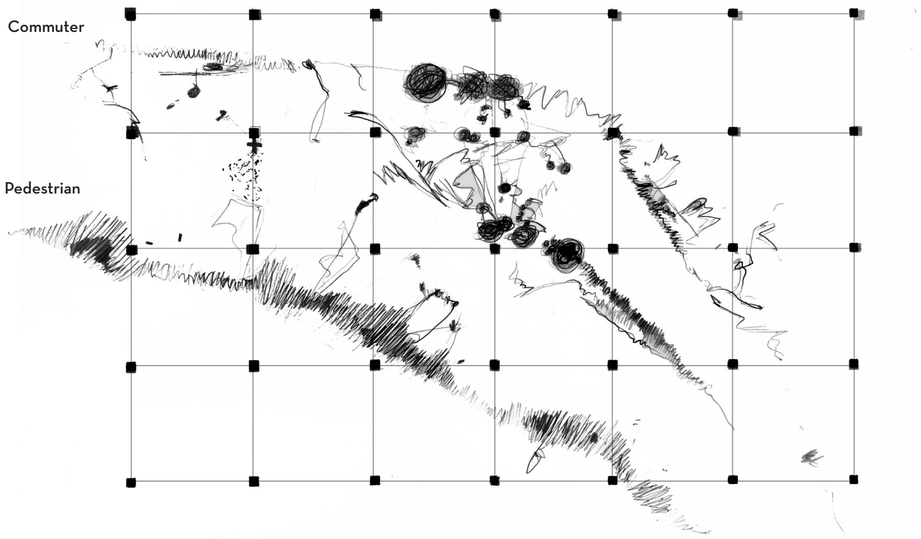


Figure 41: Gestural drawing from user movements (Author, 2023).

NOTATED DRAWING

The notation method was used to incorporate the event in architecture. The notation method was then used to explore users of the site, creating drawings to investigate the spatial effects informed by the mode of occupation. Studying the characteristics of users as a subject of drawing produced sets of marks which have more gestural qualities and require another level of interpretation to be formalised as architectural interventions.

The notation starts to build up the spatial qualities of each user's characteristics and unique voices. By developing the notation drawing, one starts to suggest a series of fields which display fluctuating architectural qualities, such as pause and movement spaces (figure 42). It also creates opportunities for narratives and rituals to be integrated more playfully.

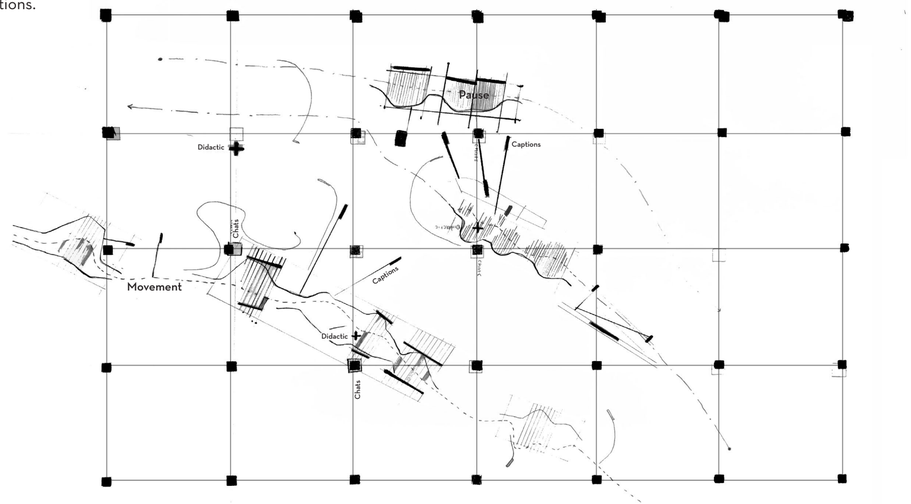


Figure 42: Notated drawing - Form from movement (Author, 2023).

GESTURAL FORMALIZATION

By interpreting the notated drawings, one can more easily recognise the movement needed in a border's design. The forms become more dynamic in shape and allude to the human connection the site longs for (figure 43).

By looking at the site with more care, one can begin to formulate a narrative that would connect the dweller with his immediate environment, aiming to foster and grow the architectural denouement.

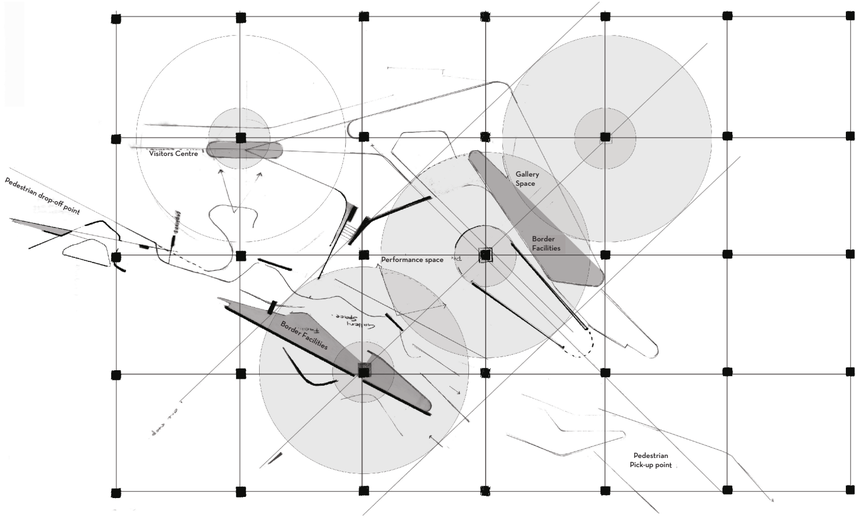


Figure 43: Gestural Formalization (Author, 2023).

As such, the call for a redesign is necessary to embrace the transformative power of human movement and connection in the design. The proposal suggests an alternative approach to the linear structure imposed on the user's movement by emphasising the beginning, middle and end that make up the narrative.

Figure 44 illustrates how one can start questioning the normative approach by blurring the threshold to create space for exhibitions within the processing of pedestrians, commuters, and truck drivers.

By incorporating free movement, a space becomes frequented, which subsequently acknowledges the event of transformation through thresholds. In conclusion, a border post should not only focus on efficacy but also embrace the site's potential as a place where people can connect and transform more meaningfully. To many, a border post is simply a node of transition, a forgetful moment; however, to some dwellers, it could be a pivotal point that marks the beginning of a new life.

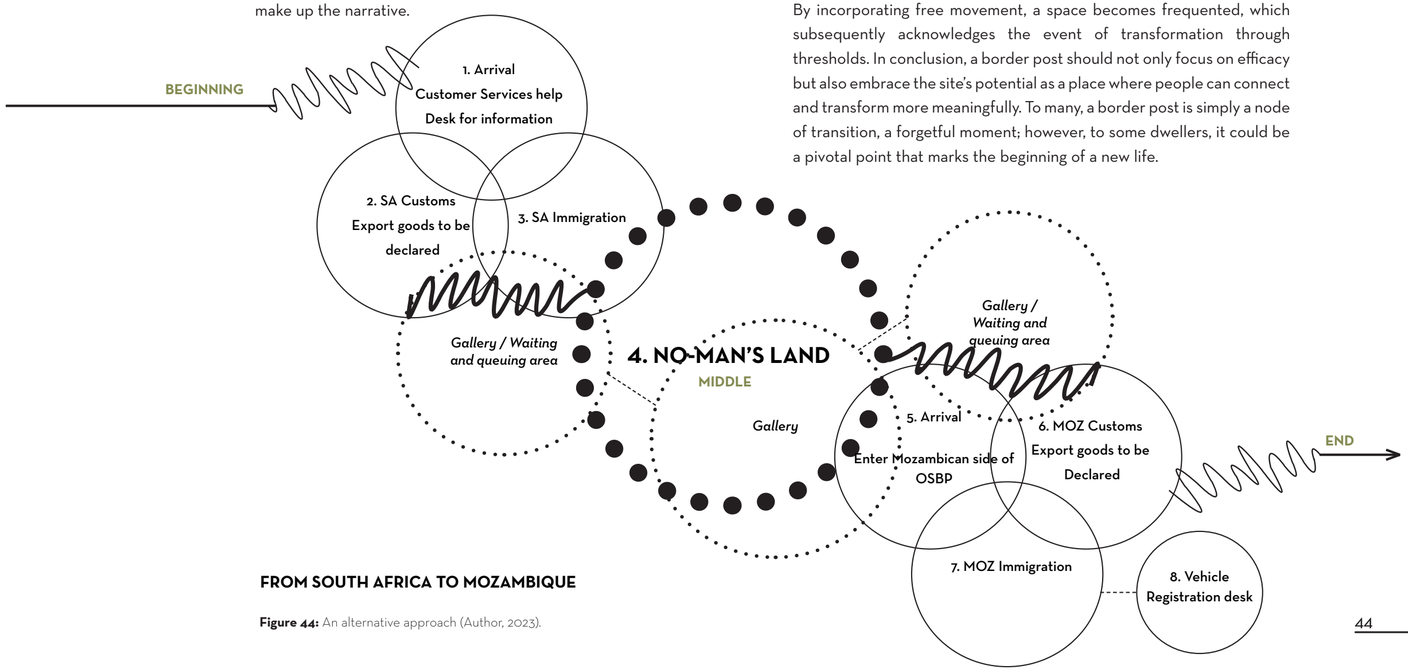


Figure 44: An alternative approach (Author, 2023).

TUNING

To digest the problem at hand fully and to achieve a successful denouement, the author has to manipulate the tone of the novel through specific scenes, detailing the character's internal thoughts and reactions following a set of rituals in order to transition between scenes. Similarly, Tschumi suggests that architects can manipulate the structure of the story through the organisation of the program (Tschumi, 1996:146). This composition of structured and free movement allows place to poetically dwell.

The prefigured quality of the site situates the initial reaction before relative history was known. Movement overpowers the site and informs the brief of the design, but as the character evolves, so does his understanding of the setting. The site, function and structure was investigated to reveal the poetic sensibility laden within the site, this was used as a tool to better understand the complexities of the site's spatial qualities.

The following chapter will further explore the conceptual reaction to the history and culture of the community surrounding the border, as well as interpreting the many meanings a border can convey.



In the realm of liminal embrace,
they unearth the essence of their being,
in the silence of limbo, they find meaning.

3.1. EMBRACING THE IN–BETWEEN:

Redefining normative borders and boundaries in design

In the article "Edges and the In-Between", philosopher Edward S. Casey provides insight into the significance of edges, boundaries, and borders, but more importantly, the in-between in these spaces. It is thus essential to respect and understand the edge of the canvas to pass its threshold. Once one goes beyond the edge, new possibilities emerge, each with a particular spatial and temporal form like no other (Casey, 2008:1). Edges are not just stringent barriers, but a frame that open possibilities for the emerging image. It is a dynamic and provisional structure that makes other things possible as it supports the creative process within defined limits (Casey, 2008:1).

A border post in this context rejects the edge; it delimits regions as an ever-growing line that imposes itself across the landscape, dividing the canvas in half. The border, in this sense, is a fixed linear object imposed by authority, whereas, Casey explains that a boundary is a porous edge (figure 45) that allows interaction (Casey, 2008:6). With interaction, an event takes place. Casey notes that the edges are not mere dividing lines, but rather places of transformation (Casey, 2008:6).

This transformation happens in the in-between. The "in" of "in-between" refers to a more profound sense of interiority and intimacy with the place, it is about inhabiting and dwelling within a place (Casey, 2008:4). Similarly, the word "with" of "within" refers to the prevailing fact that one is always surrounded by objects or with others, emphasising the importance of intimacy (Casey, 2008:4). The in-between poses the opportunity to connect and converse with a deeper sense of intimacy between the self and the other. This interaction is an essential part of design circulation between spaces, the corridors and stairs that connect various areas can easily become some of the most exciting moments of the journey as those moments of transition can lead to serendipitous interactions.

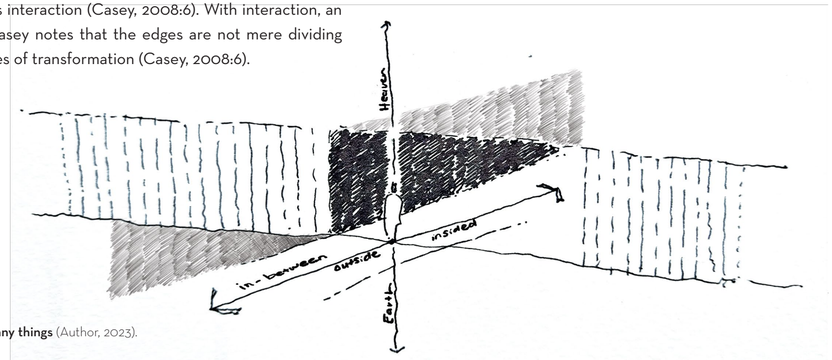


Figure 45: In-between many things (Author, 2023).

The edge becomes an integral part of the design of a border post, as it connects two distinct territories. The border of the canvas should be questioned as the edge, and in-between embraces the convergence of cultures, a threshold of possibilities where narratives can intersect, and new connections made. Embracing the transformative potential of in-between spaces, the design can create a border post that goes beyond physical divisions to become a harmonious intersection of cultures, fostering dialogue, understanding, and interconnectedness. Rather than rigid, imposing structures, the design can embrace fluidity, openness, and permeability. This approach allows for a more inclusive and welcoming space where the movement of people and narratives flows seamlessly. One is always in-between edges following any activity (Casey, 2008:6), there is thus always space for transformation. The in-between is a continual evolution of re-representation that sets forth a matrix of seeing the same thing in different seasons (Casey, 2008:8).

To conclude, Casey reveals the unique opportunity and codependent relationship between edges and the in-between. The interplay is not a static boundary but a continuous process of becoming. Boundaries are porous, and the creative potential is limitless and should thus not be discarded. Nevertheless, the in-between has a liminal reputation which one can associate with its relationship to the non-place – the 'betwixt and between' situation (Bird, 2016:112), lingering over transit nodes such as the border post.

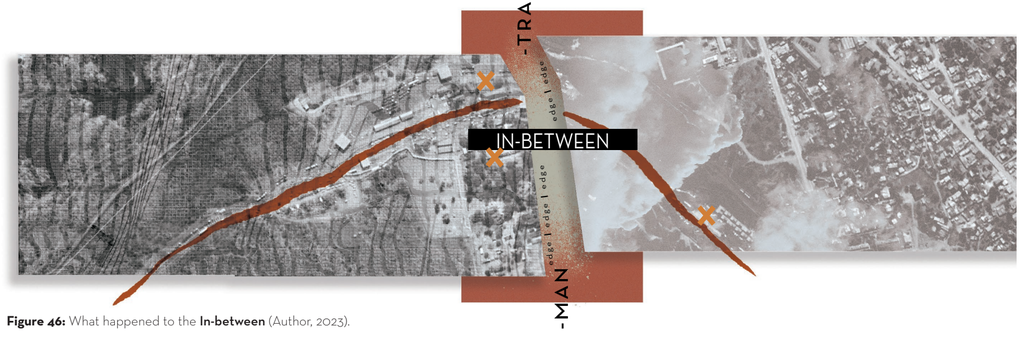


Figure 46: What happened to the **In-between** (Author, 2023).

3.2. The Non-place

Marc Augé is a French anthropologist who coined the term “non-place” to define spaces without relational, historical, or identity in his book “Non-Places: Introduction to an Anthropology of Supermodernity” (Auge, 1995:77). In more detail, the theory of non-place refers to the mundane, generic, and anonymous spaces of transit that we encounter in our daily lives: these include airports, bus stations, highways, and border posts. Non-places are often dismissed as soulless and functional, lacking any sense of history, culture, or identity (Auge, 1995:77). But what if one could turn a non-place into a place, a space of refuge and movement, a site with identity. For this to happen, one must understand the difference between place and non-place, place, and space (Auge, 1995:79).

Augé refers to Michel de Certeau’s distinction between place and space. Space, being a ‘frequented place’, is achieved only by the pedestrian (figure 47), and it is the pedestrian who creates and transforms space into place (Auge, 1995:79). Another way space becomes place is through narrative, which ceaselessly’ transforms places into spaces and spaces into places (Auge, 1995:80). Narrative has the ability to shift one’s perception continually, this can be done by playing with different architectural elements, such as juxtaposing light, considering specific materials or emphasising thresholds. A border would cease to exist if there were no threshold to cross. The overarching theme associated with crossing a threshold is rites of passage and the liminal dimension associated with the crossing. The ritual marking can be linked to many cultural passages that follow a geographical and spatial progression (Bird, 2016:122).

The transition at a border should thus mark a vital changeover. Otherwise, one might become a refugee stuck between the ‘betwixt and between’ (Bird, 2016:113).

Essentially, the transformative potential of a border post could be the answer by eliminating the non-place. A user-centric approach should be applied, taking into account external and emotional factors, to create a place of gathering that would be frequented by the users. This transformation is not merely about reshaping the current structure, it is about reshaping the perception of a border post. When a border post becomes a place and not just a space of transition it ceases to be a non-place.

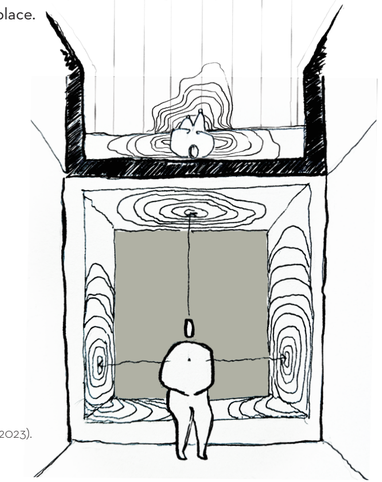


Figure 47: Frequented place (Author, 2023).

At the heart of transformation lies a community with a rich history entangled with many different cultures that have crossed through and inhabited the area. Today, the main communities surrounding the border are the Tsonga (Shangaan-Tsonga), Swazi and the small farming community in Komatipoort (Rowe, 2013:11). While these communities play an integral role in shaping the atmosphere of the border region, their presence and cultural heritage are not represented in the current design of the border post. This is effectively what generates the non-place and the evanescent quality of the current border.

Applying a regionalist approach to the border typology one can unveil a tapestry of cultural interconnectedness and shared traditions. This approach recognises that architecture should be firmly anchored in the local conditions, encompassing the cultural and material histories of the site (Patteeuw, 2019:online). It is not merely about using readily available local materials but delving deeper into the essence of the place. A Critical Regionalist approach promotes a response rooted in the region’s identity. This essence is intricately tied to the conditions that led to the formation of a sense of ‘feeling at home’ (Eggener, 2002;228). But where is home to the nomad?

The history revealed a diverse group that travelled, fought and concord in-between the threshold of the Lebombo. The border post, therefore, has a unique opportunity to connect not only one culture but many cultures. The building should convey the essence of the region and a wider connection with anyone who might cross its edge. This approach could anchor the feeling of at-homeness for many travellers and ultimately start to fragment the authoritive structure. When one starts to look more closely at the problem, namely the placeless, consumption-driven organisation of modernity, the regional forms such as place, culture and tradition can become a medium of resistance (Eggener, 2002;229). By placing more emphasis on the ritual of transition, a dweller can become a part of a larger community of travellers (figure 48). Here, the cultural heritage of the Tsonga can bring a familiar essence to the space while illustrating their connection to other cultures.

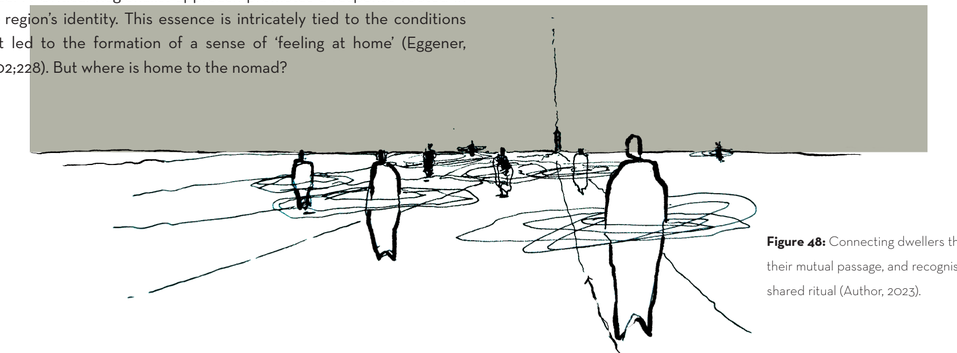


Figure 48: Connecting dwellers through their mutual passage, and recognising the shared ritual (Author, 2023).

3.3. UNVEILING THE SOUL'S ODYSSEY:
Rituals and rites of passage

By understanding the transformative power of rituals and traditions within the context of border posts, one can start to unveil the enchanting tapestry that binds communities together (figure 49), fostering a deeper appreciation for the interconnectedness of human experiences across diverse regions.

The next section analyses the significance of rituals, identity, and the musical traditions of the Tsonga to unveil the odyssey of belonging in a place of movement.



Figure 49: The tapestry that binds communities, reveal a deeper interconnectedness, instruments, song and dance are elements shared across borders and used to connect (Author, 2023).

3.3.1. SHARED MUSIC
The musical narrator

Due to the international border, the Tsonga is divided into two large groups, a segmented clan with a musical structure abstracted by its influences from different cultures such as the Venda and Pedi, and the Swazi (Snow,1972:109). These influences led to many noteworthy characteristics in their musical structure, important divisions are made between changing seasons, ritual purposes, and non-ritual purposes (Snow,1972:113).

A notable value of the musical composition involves an agreement with Tsonga speech-tone principles. However, the composer or player can decide to breach and adapt the speech-tones to materialise a situation in a poetic form (Snow,1972:116). Music is a central part of Tsonga culture as it shows a constant balance between social life and power, it marks an individual's position in his community and reflects his higher purpose, the breach in the speech tones reveals the musician **in-between** the real and the magical. The musician becomes a poet and storyteller who adapts and transforms the narrative to suit the setting. Because of the Tsonga migration, there was social and musical diffusion with many bordering communities (figure 50). The Tsonga instrument is unique to the poet, but recognised and shared by many, his story can thus be translated as meaningful to many different cultures. This diffusion represents the exact reason why boundaries are porous elements, if the edge was solid there would be no intimacy between different cultures.

One could naturally relate this to built form, to relate the story of a region to many different users or to allocate specific places to have different ritual functions.

If an architect positions himself in the place of the musical poet (Mbongi), by having the knowledge of the tradition and speech-tones then, he/she can start to extract the essence to transform the narrative. The building can then become the narrator of a musical program for diverse communities that pass through its threshold.

The exploration of borders as places of transformation and cultural convergence sets the stage for an unexpected expedition into the realm of African rituals and traditions. To traverse the borders of South Africa and Mozambique, one would find a richly infused cultural heritage.

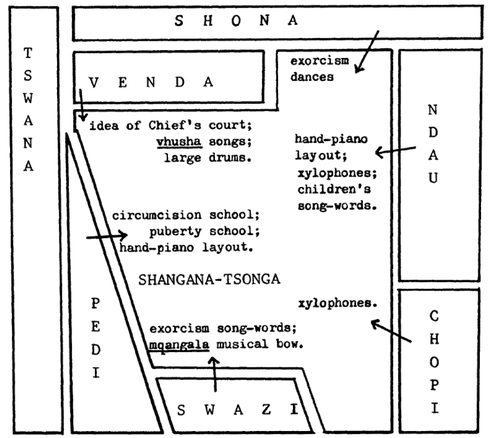


Figure 50: Tsonga social and musical diffusion (Johnston, 1974:online).

2.3.2. MUSICAL TRADITIONS
The African Musical Bow

The Tsonga heritage includes a diverse range of musical traditions paired with seasonal instruments, one of these instruments is played throughout the year by the *Xilombe* (wandering minstrel) (IAM, 2023:online). The *Xitende* is a Tsonga-braced bow with a calabash resonator, used in different ways depending on the season, songs or oral history depicted (Johnston, 1985: 283). It has a deep and loud tone that resonates within the calabash and is moved on and off the chest of the composer (IAM, 2023:online).

The musical bow is an instrument shared by many African cultures, varying in size, shape, form, and function. The bow can be braced by a wire connected to the calabash resonator like a *Xitende* or *UMakhweyne* (figure 51) used by the Swazi people, or it can also be an open string or mouth bow (figure 53). The *Ugubhu* is a Zulu unbraced bow (open string bow), and was used during the time of King Shaka (IAM, 2023:online). Like the *Ugubhu*, the *uHadi* (figure 52) is used by the Xhosa but played in a different manner and constructed with different materials (IAM, 2023:online). There are many musical bows all over the world, this interesting element represents the intimate relationship between different cultures and illustrates how closely connected we all are.

The instrument should thus be celebrated as a cross-cultural identifier, connecting many different ethnic groups who obtain and use it. It is an element of inspiration, a tectonic device that travels with the musician, weightless on his back but filled with tension, waiting for his next event. The magical real is hidden in this stationary moment; just before the strum of the cord, a multiplicity of possibilities is revealed, once more accenting the "in" of in-between", the intimacy of being with other.



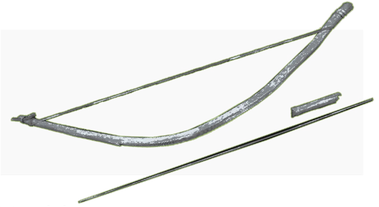
Braced musical bow

Figure 51: *uMakhweyne* (Author, 2023)



Open string bow

Figure 52: *uHadi* (Author, 2023)



Mouth bow

Figure 53: *Umqangala* (Author, 2023)

3.3.3. THE XITENDE
Melodic Fusion

The diffusion that takes place between cultures, holds a special connection to the Lebombo border post. The *Xitende* proposes a number of architectural elements that can be applied to redesign the Lebombo border post (figure54). Using the *Xitende* as an architectural device can generate a deeper connection between the user of the place.

Firstly, the precise use of light in architecture can establish a connection between the musical instrument and the architectural space. Natural light can generate emotion when passing through a well-conceived space. This simultaneously questions how light is used in different programmatic experiences. Too often waiting spaces are filled with bright fluorescent lights, detaching the user from their environment. Upon a long-awaited departure, they are disorientated and forced to rapidly adjust to the natural light. One could directly translate the form of the *Xitende* into an element that could disperse light into a waiting or queuing space.

In addition, the architectural space may benefit from the concept that a musical instrument must be well-designed, well-tuned, and executed for music to have an emotional effect. Similarly, a space should be well-conceived, well-developed, and well-built for the building to appear as more than a processing space.

As a final addition, the tensioned wire and loop that bind the calabash to the stave can be interpreted as the tension between different elements, while the calabash itself can inspire natural lighting and ventilation.

To conclude, the *Xitende* hold within it the potential for many inventions, from architectural form to social engagement. It might stimulate conversations that could create a lasting impression or kindle a new interest for cultural awareness. On the whole, the musical instrument can connect the narrative between many travellers.

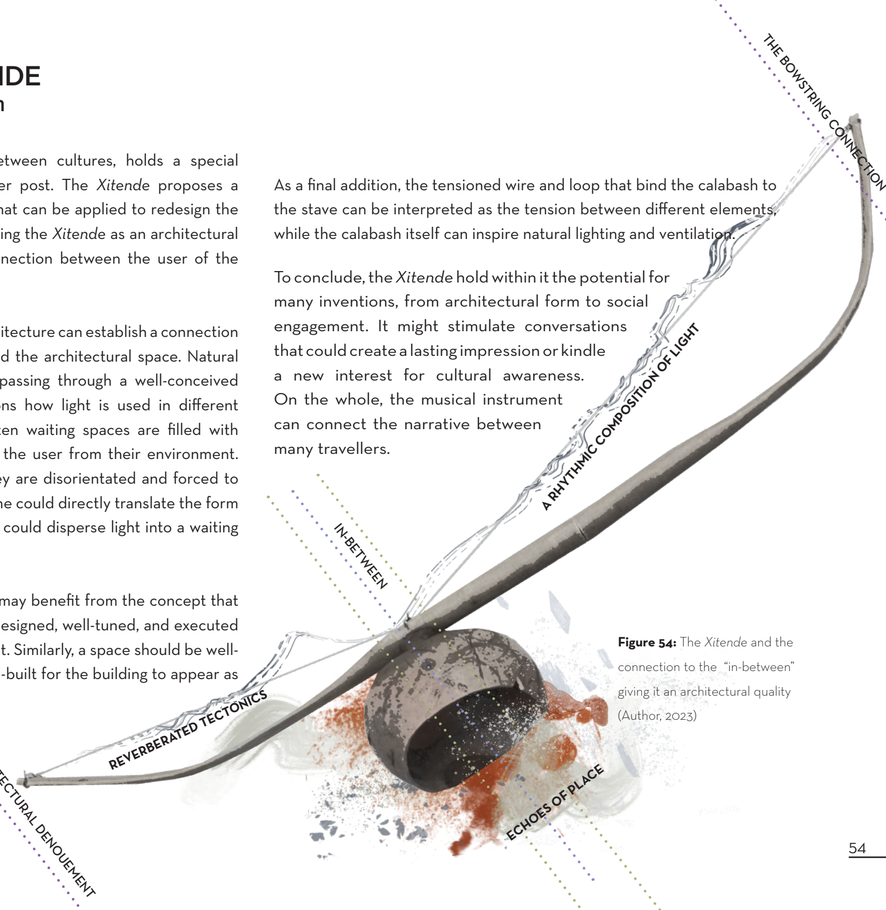


Figure 54: The *Xitende* and the connection to the "in-between" giving it an architectural quality (Author, 2023)

2.3.4. ARCHITECTURAL DENOUEMENT
The Journey Narrative

The architectural narrative is essential to the way in which one understands place, in much the same way as storytelling, architecture weaves captivating narratives through the arrangement of spaces, materials, social interactions, and cultural elements. The three parts of a story or a structure for that matter – the beginning, middle, and end can determine the user experience. As part of the architecture, the denouement (end) can be seen as "un-knotting," allowing the architect to tie up the narrative threads neatly or to leave them artfully undone (Ripley, 2023).

To understand the intriguing relationship between architecture and narrative, one must explore how meaning takes shape within buildings, and how it communicates understanding with those who encounter it, could a border post be more memorable if a narrative was prevalent? The arrangement of spaces is thus essential to the way architecture is perceived, to ensure dynamic social interactions and cultural exchange (Psarra, 2009:2). A narrative emerges through deliberately structuring space to evoke specific emotional and cognitive responses. This sequential journey is a form of storytelling through space; a narrative conveyed through the orchestration of architectural elements (Psarra, 2009:2). These elements can be informed by the landscape, community or the initial reaction of the site. The architecture can then become a guide for the journey (figure 55).

Bernard Tschumi recognised this fusion of conceptual and perceptual aspects within architecture (Psarra, 2009:3). He described it as a dance between architecture as a mental construct, a realm of concepts, typologies, and morphologies, and architecture as an empirical event, an experience perceived through our senses as we navigate space (Psarra, 2009:3). Tschumi's insights illuminate how architecture is not just about static forms but also about the dynamic sequences of spaces and events that unfold within them. This convergence of architecture and narrative challenges the traditional boundaries of a border post, blurring the lines between fiction and reality, linear and dynamic spaces and public and private. It invites contemplation of dual identities and fiction, allowing a viewer to actively participate in the ritual process of transition. In this fusion of concepts and experiences, a building becomes a living narrative, inviting the dweller to explore and be present in space and time.

Similarly, the Xitende's notes bear significant importance. The performer emphasises these notes based on the context and social institutions, adding a ritualistic function, and elevating the players through the instrument (Johnston, 1985: 283). Just as the Tsonga musicians are enhanced by their instruments, the architectural space can be enriched by careful composition.

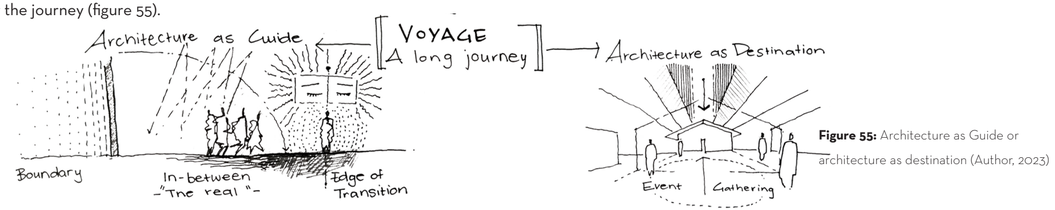


Figure 55: Architecture as Guide or architecture as destination (Author, 2023)

Drawing inspiration from Tsonga musical traditions, architecture can learn to measure and organise architectural devices, observing music as architecture. By incorporating a familiar device from different cultures and regions, a border post can create a musical program that reflects the unique sounds of the communities passing through. Music becomes a powerful tool for cultural diplomacy, fostering cross-cultural understanding and communication. The influences of neighbouring communities such as the Venda and Pedi, and the Swazi contribute to the richness of melody and rhythm, enhancing music as a cross-cultural identifier (Johnston, 1985:247). The architecture can then explore narrative through an abstracted cultural connection and embodied experience.

Unfortunately, the border post experience is overshadowed by the negative quality of non-place, where signs and directions dominate the journey. To overcome this, a dynamic exchange must be established between the viewer and the setting, enabling an awareness of the dualities of place and time – a successful denouement. The threshold of the border post can be transformed from a mere liminal space to a celebrated transition, where the no-man's land becomes a refuge intertwined with the setting's identity and history. This transformation grants lost characters in the narrative journey a sense of connection and belonging, if this does not happen: ***"The traveller's space may, thus be, the archetype of non-place*** **(Auge, 1995:86).**

In conclusion, by incorporating Tsonga musical traditions and embracing music as architecture, a border post can become a space that transcends its utilitarian function. Through music, cultural diplomacy can thrive, and the journey through the border post can be transformed into a memorable and meaningful experience. The dynamic interplay between the viewer and the setting enables a shift from perceiving the border post as a non-place to appreciating it as a place of significance, rich in identity and connected to its surroundings.

- The **narrative** becomes the embodiment of the musician, emphasised by the structure to convey a place of gathering.
- The **event** becomes the musical notes that enhance the voice, this is the climax of the narrative, the in-between of South Africa and Mozambique.
- The **ritual** is the structural elements that tightens the string of the *Xitende*, in other words, musical exhibition spaces that compare and connect to foster a sense of unity in the larger scheme.

2.4. TOUCHSTONE |
Strung between melodies

With the theoretical anchor situated the design of a border post can be grounded in its setting and enhanced by the explorations. The touchstone adds greater weight to the design, grounding its preliminary form-giving and conceptual development.

The touchstone explores the essence of the site, specifically the poetic aspects hidden from the commuter unaware of the community surrounding the site. Extracted from the site is the musical bow—a symbol of cultural interconnectedness and unsung travel narratives. The essence of the *Xitende* is unearthed in a form that could be recognised by many cultures, through it shared form (figure 56).

The form alludes to the Lebombo mountains' undulations and the musician's body in motion. It seeks to reinforce the cultural connection between the nomad and the setting, strengthening the traveller's space in the here and now as a composition of curated spaces. The touchstone acts as the copper wire spun between the poles of South Africa and Mozambique, as the poet's voice, the guiding beacon that seeks to eliminate the negative aspects of the non-place.

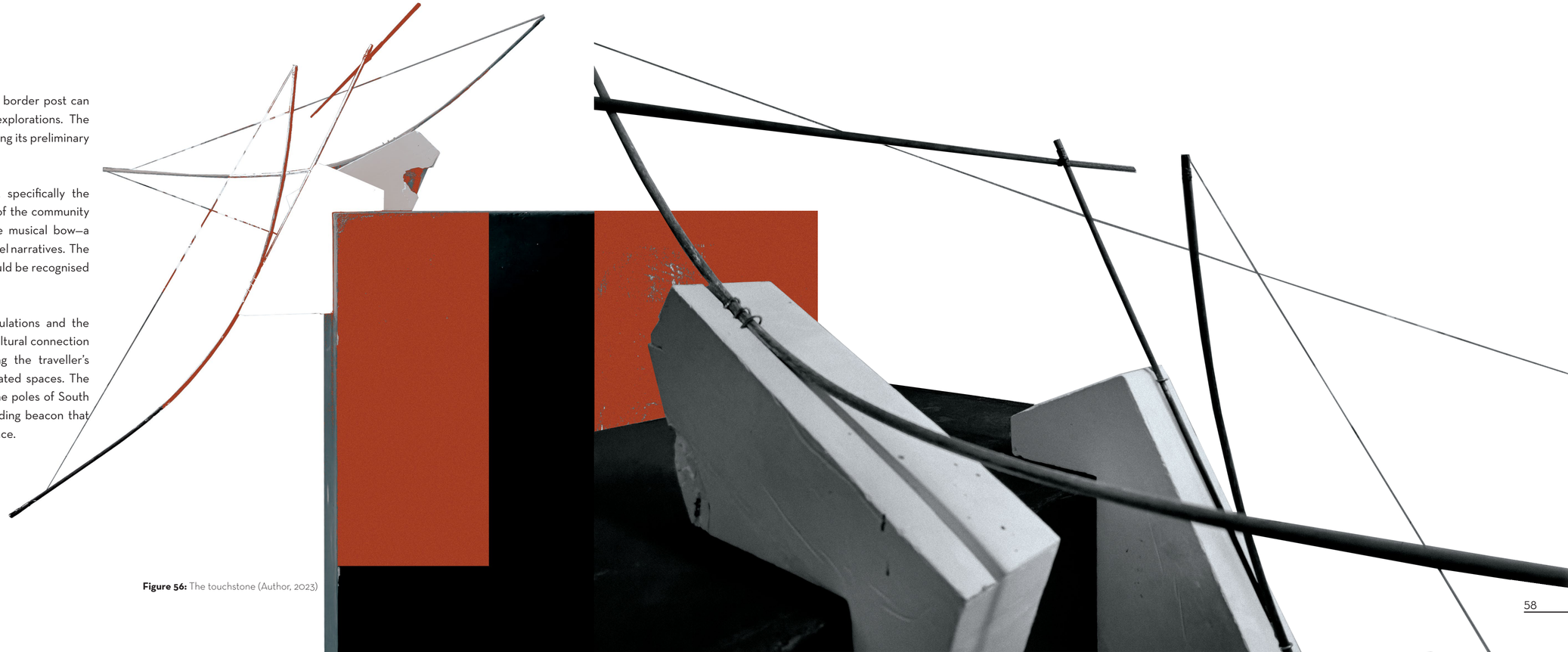


Figure 56: The touchstone (Author, 2023)

3.5. COMPOSING CONCEPTS |
Delineating the narrative

Intertwined with the very essence of a border post lies the potential for a transformative design. The Lebombo border post presents a unique opportunity to reveal the hidden identity of the in-between space. I propose a design that transcends boundaries, welcoming travelers while paying homage to the past and inspiring the future. By reimagining the architecture of borders, one can shape experiences and perceptions in a profound way.

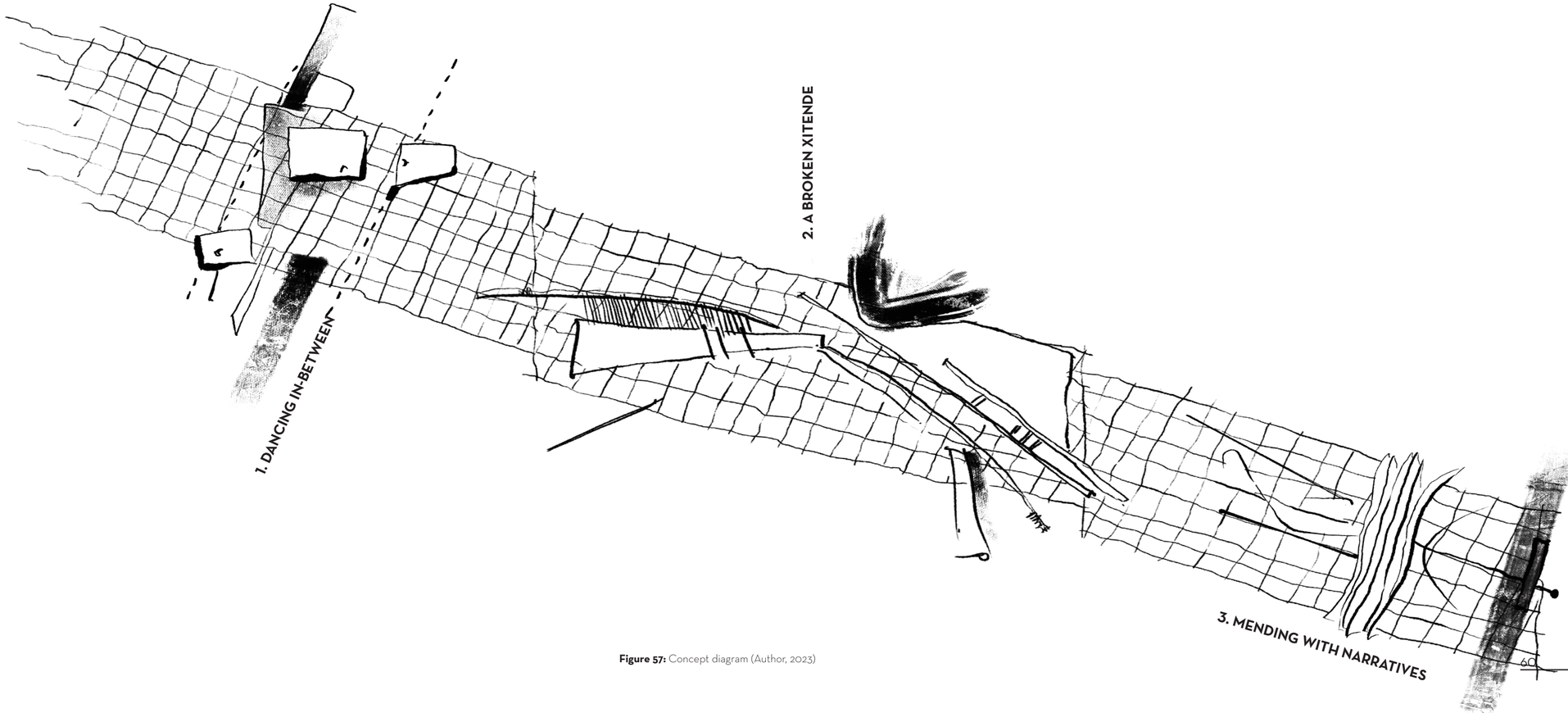


Figure 57: Concept diagram (Author, 2023)

3.5.1. DANCING IN-BETWEEN

The first concept, "Dancing in-between," draws inspiration from Mark Augé's theory of the non-place. It envisions a musical composition that encapsulates the essence of the no man's land, a space that dances between safety and vulnerability. Creating a musical composition within the non-place of a border post questions the balance between safety and vulnerability, pause and movement, transforming the non-place into a destination. Michel de Certeau emphasises the significance of appreciating the self in the temporal experience of space (Auge, 1995:84). One should appreciate the transition instead of neglecting to perceive it as a meaningful place (Auge, 1995:85).

This concept transforms the no man's land into a refuge, inviting travellers to explore the edges of the in-between, and transcend beyond the canvas. By building within the boundaries of the no man's land, one can create a place that belongs to both sides, strengthening the intimacy between the user and the place.

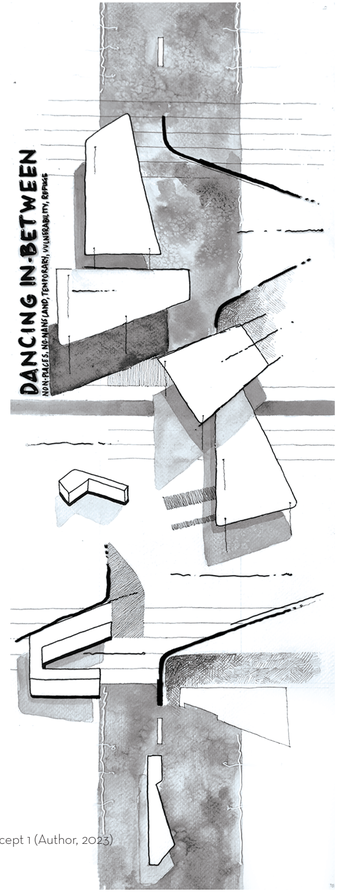


Figure 58: Sketch of concept 1 (Author, 2023)

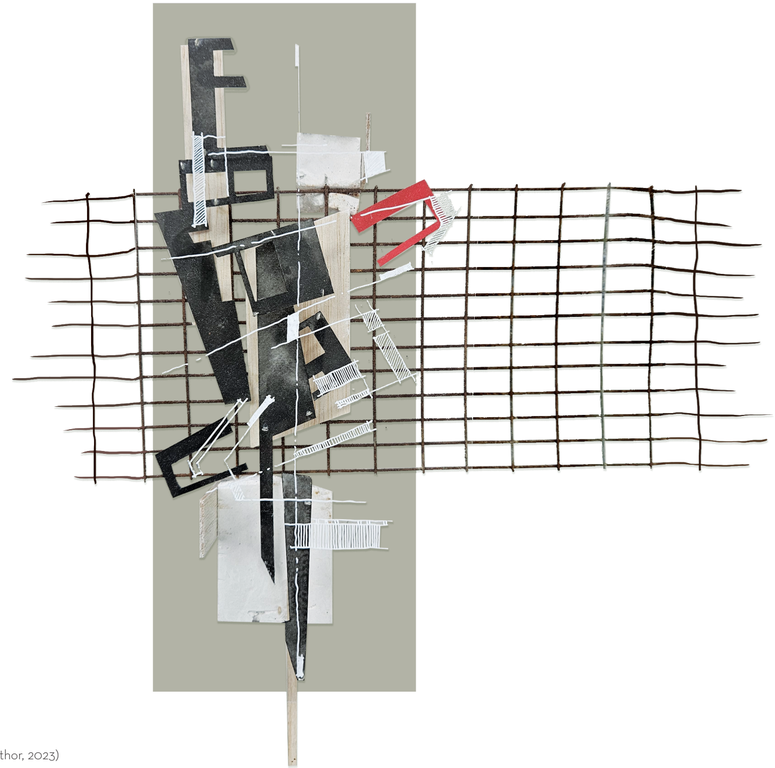


Figure 59: Model of concept 1 (Author, 2023)

3.5.2. THE BROKEN XITENDE |

The second concept, "The Broken *Xitende*," symbolises the fragility and fluidity of borders. By acknowledging the brokenness of borders, one invites travellers to cross with curiosity and respect, fostering unity amidst diversity. The broken *Xitende* signifies the departure from the conventional, rigid perception of border posts as fixed and impermeable.

The concept serves as a symbol of unity, to bridge the gap between public and private, resonating in different tones. The border can serve as a cross-cultural identifier, celebrating the richness of multiple cultures and establishing connections that transcend geographical boundaries and autorotative structures, going beyond borders.

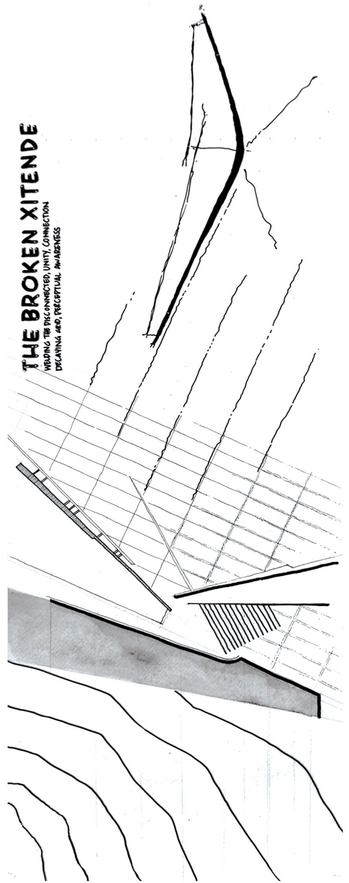


Figure 60: Sketch of concept 2 (Author, 2023)

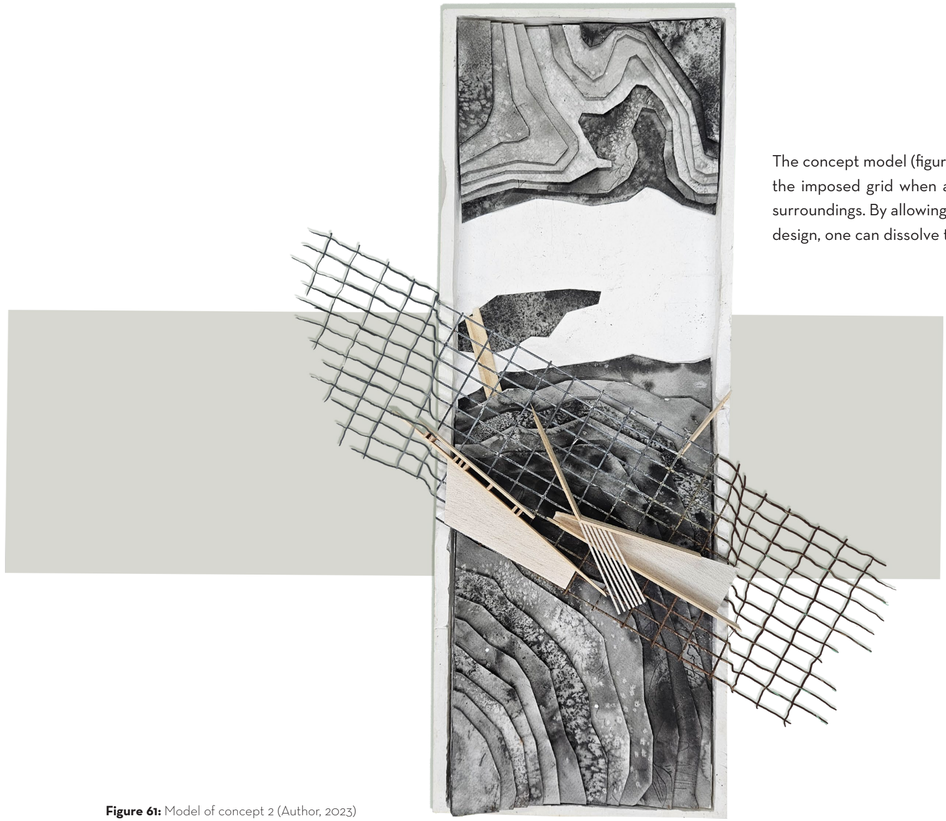


Figure 61: Model of concept 2 (Author, 2023)

The concept model (figure 61) illustrates the decay of the imposed grid when a connection is made to its surroundings. By allowing the culture to influence the design, one can dissolve the dystopian setting.

3.5.3. MENDING WITH NARRATIVES |

The third and final concept, “Mending with Narratives,” introduces a temporal structure that guides travellers through different stages of their journey. From departure to the voyage itself and the eventual return, the design tells stories, connecting the past with the present and fostering a sense of continuity and community. The border post becomes the narrator of the physical barriers, a chapter in a larger narrative, illuminating the interconnectedness of spaces, time, and memory.

By composing the non-place as frequented-space, acknowledge the brokenness of borders, and mend with narratives one can design a border post that is not just a checkpoint, but a gateway to new experiences and relationships.

Through these concepts, the Lebombo border post can transcend its mere functional purpose. It becomes a space that celebrates the intermingling of cultures, invites exploration, and fosters a sense of unity. By integrating music, storytelling, and a deep understanding of the human experience, one has the power to shape a border post that not only facilitates movement but also enhances the lives of those who traverse it.

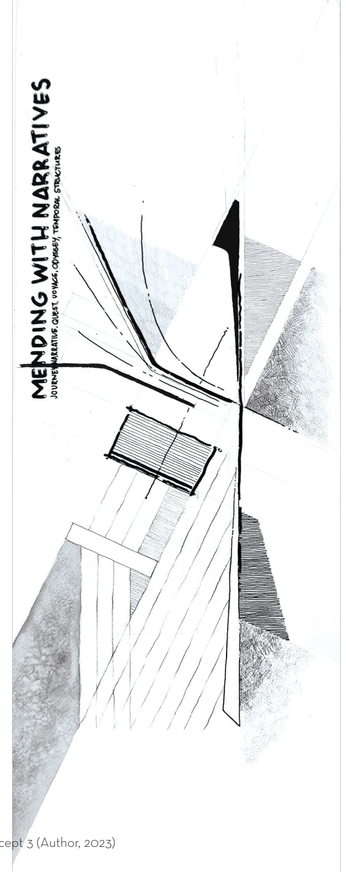


Figure 62: Sketch of concept 3 (Author, 2023)



Figure 63: Model of concept 3 (Author, 2023)

3.6. DESIGN APPROACH | Connecting the copper wire

The evanescent quality of travel becomes apparent upon reflection. The critical moment of transition is often forgotten, and transformed into a mere liminal experience as a result of an uncertain transition. Architecture plays a pivotal role in shaping these experiences and should thus mediate the outcome.

The built form can shape the perception of dwellers by understanding the way in which they move, interact, and react (figure 64).

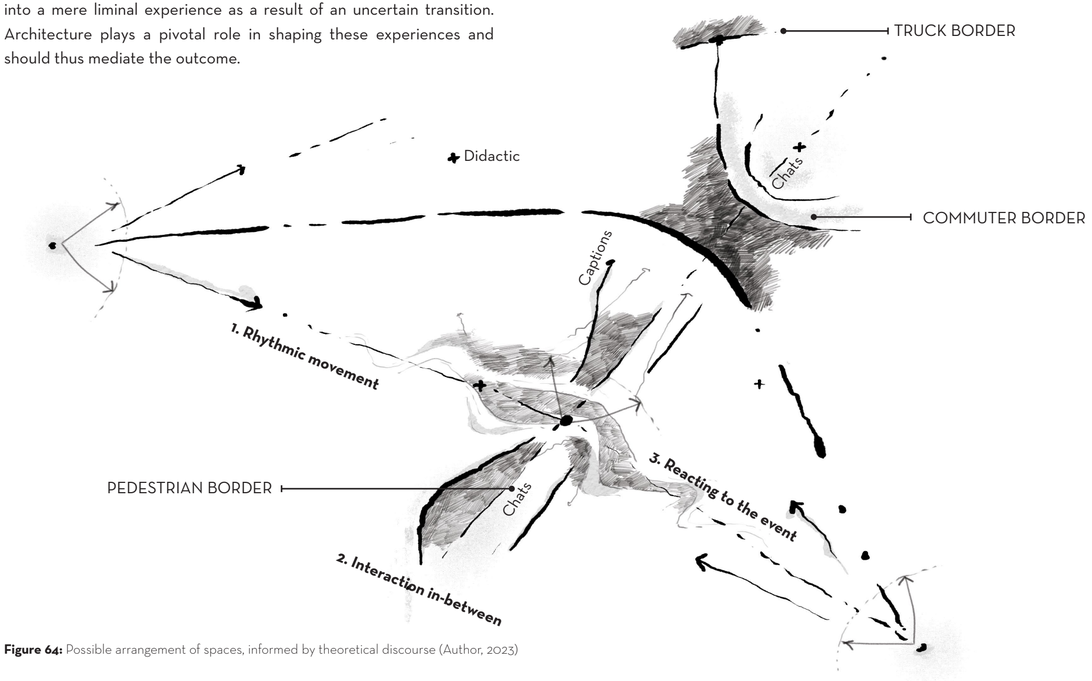
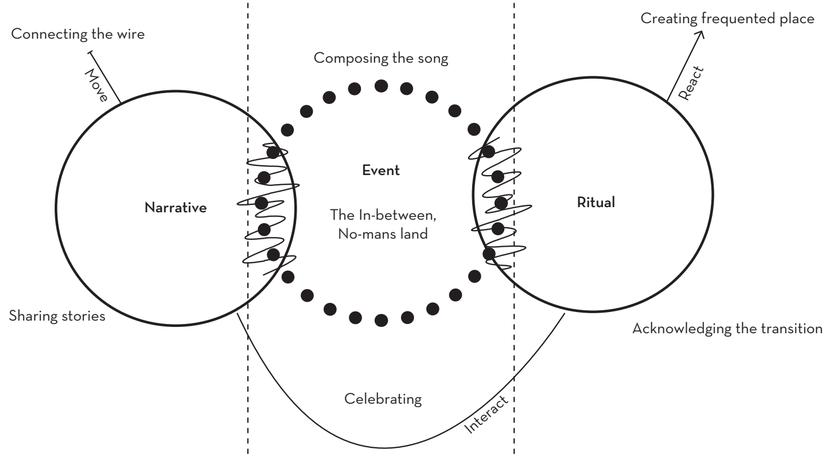


Figure 64: Possible arrangement of spaces, informed by theoretical discourse (Author, 2023)

THEORETICAL UNDERPINNING AND APPLICATION TO DESIGN
The amalgamation of theory

Figure 65 illustrates a strategy that would articulate the importance of the user. This approach reflects on the non-place created by the bureaucratic system and emphasises that movement can inform the way in which space becomes a frequented place.

When movement is distinguished from the program a dynamic place can be created. Transforming regulated space into shared place, thus removing the connotation of non-place.



1. Creating spaces that encourage conversation, in the form of exhibitions.

2. Turning space into place by appreciating the threshold.

3. Composing a dynamic layout that would reveal the dualities of place and time.

Figure 65: Diagram illustrating theoretical strategy (Author, 2023)

3.7. CONNECTING THE STRING |
A structural touchstone

The Structural Touchstone (figure 66) delves into the idea of creating a more dynamic place and fostering stories through the medium of architecture. The structure serves as a platform to integrate various modes of user interaction while simultaneously embodying the place's narrative. It facilitates an understanding by creating an interplay between cultural similarities (a braced/unbraced bow). The assembly and connection of the various elements further explore the concept of architecture as a composition of notes, which relates to the musical essence of the project.

The stereotomic elements provide stability to the design in the specific setting. The walls can be arranged in contrasting configurations (figure 67) to formulate and emphasise a mode that is specific to the user, whether it is a pedestrian, commuter, or truck driver (figure 68). The form creates a comparable experience between users while revealing different tales while staying true to the architectural denouement.

The timber structure acts as another poetic device that latches onto the walls, becoming an artifice that carries the narrative (Xitende/ musical bow) throughout the architectural formulation. The timber is also used as structural elements and possible floor coverings, adding a musical element to attempt to alleviate, the stress and strictness of a border post. The structure embodies the musician and reveals a rhythmic space within its confines.



Figure 66: Structural touchstone, configuration 1 (Author, 2023)

The material choices and detailing will essentially allow different experiences to unfold, to create spaces that mitigate or enhance the current feeling, whether it is anxiety or relief. The construction touchstone, therefore, translates the notes of the Xitend into possible structural forms, each note with its own unique frequency.

To conclude:

The transformation of a border post from a non-place to a more meaningful shared space involves many elements to go beyond the boundaries, nonetheless, by using the elements at hand one creates a sanctuary, a beacon for nomads to call home. The journey narrative can then be explored in many ways depending on the path and the intersections along the way.

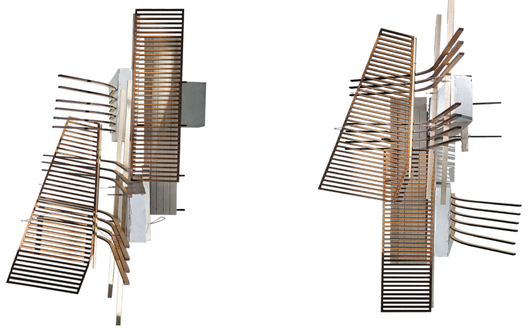


Figure 67: Top view of structural touchstone, layering of roof scape, configuration 2 & 3 (Author, 2023)

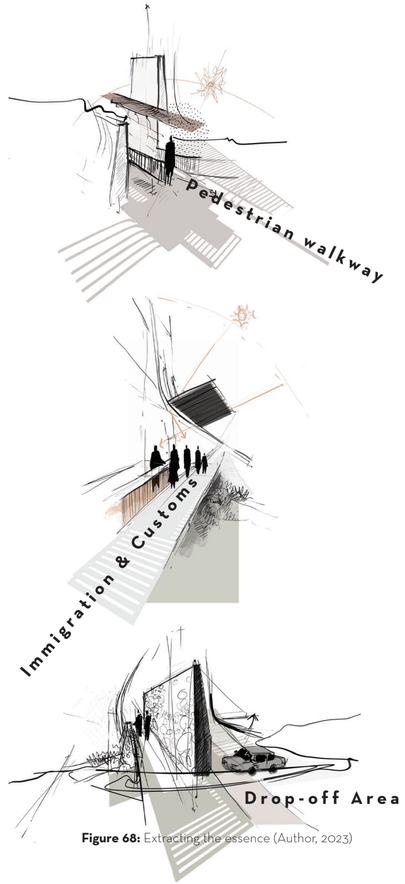


Figure 68: Extracting the essence (Author, 2023)

3.8. CASE STUDIES

The following section explores two case studies of buildings in South Africa that question key aspects of the theoretical investigations, specifically questioning normative programs by exploring a more porous approach to public and private spaces. This section will also investigate, precedents that could bring richness to the design, throug material use and play with light.

3.8.1. CONSTITUTIONAL COURT

Location: Johannesburg, South Africa
Client: Johannesburg Development Agency
Architects: Urban Solutions and OMM Design Workshop
Completed: 2003

The Constitutional Court is a place that redefines the relationship between the public and the bureaucratic system. The architecture becomes transparent to the viewer, transforming into a symbol of democracy; a place that once told a story of confinement, now celebrates freedom (Nobel, 2009:116).

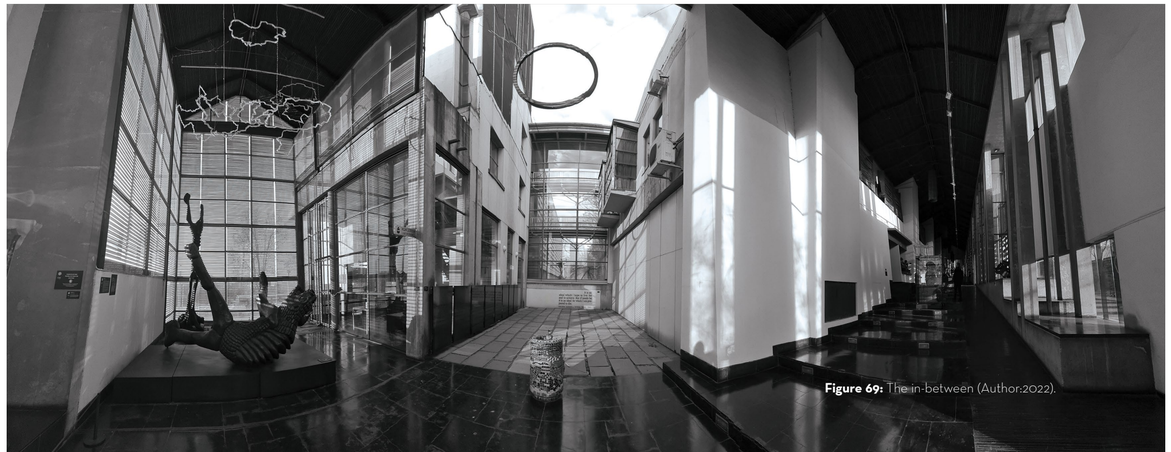


Figure 69: The in-between (Author:2022).

Circulation and accessibility

The configuration of the design creates a clear distinction between public and private space, eliminating ambiguous spaces. It is embedded within the surrounding context, creating clear accessibility to the public (Nobel, 2009:116). Circulation is emphasized which articulates the democratic imagination of the design (Nobel, 2009:116).

The building's design also aims to counter the threat of crime, as not to imprison the dweller by walls, but rather to form a connection rooted in care by bringing the architectural axis and public axis to a communal point (figure 70). With care, the user of the site takes the responsibility to observe and be alert to any injustice.

Circulation creates a dialogue between public and private, a narrative that is diverse and a sort of hybrid that best resembles South Africa (Nobel, 2009:116).

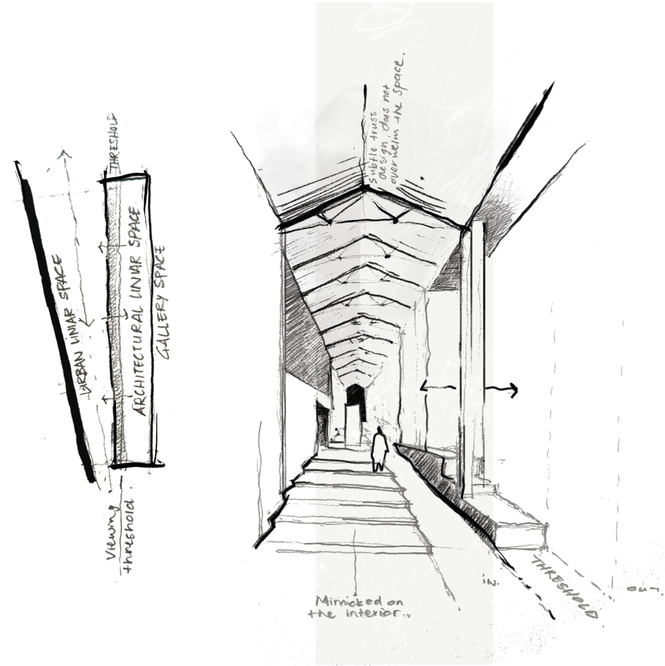


Figure 70: Circulation and architectural linear space (Author:2023).

User behaviour

The building also addresses the theme of spatial injustice, by designing a court that is open to the public, the oppressive facades are fragmented and designed to be more inclusive (figure 71). The architects question the interaction of people with the court, through gallery spaces and African Steps that invite the dweller to spend time in and around the court, removing the liminal experience of waiting. The design between public and private is blurred and welcomes the dweller to explore the court's interior as it eliminates the tension of a very private and formal space.

Details

The African Steps are arranged in a zigzag pattern (figure 71), which creates a sense of movement and dynamism, while also emphasizing the importance of individual journeys and allowing the pedestrians to experience the artworks along the way. Seating areas are also created all over the terrain to encourage visitors to pause and reflect.



Figure 71: A dynamic journey (Author:2023).

Roof

The roof structure of the court also functions as an extension of questioning. Instead of looking up at a ceiling a light tectonic truss accentuates the double-volume space (figure 72), it aligns with the court's ethos to be open and transparent. This element is not immediately notable as it blends with the dappled sunlight created by the exterior façade. The space is thus experienced as inviting without obstructing the viewer or creating a sense of heaviness. The roof is carefully considered along with other structural systems to reinforce the principles of the design.

The Constitutional Court not only questions a court's normative program, which could often have a more formal and intimidating atmosphere, but it recognises the importance of celebrating the "in-between". By noticing the value of the moments between proceedings and acknowledging that these spaces have unique identities and functions. A passageway becomes a gallery space that effectively removes the uncertainty of a liminal state and allows a viewer just to be - in between. The architects in that regard transform space into place.

The case studies became an important factor for the design approach of a border. If the constitutional court could represent democracy in such a clear way, so can a border post. Similarly, to "Justice under a Tree", the underlying theme of the border is to act as the *Mbongi* (Tsonga praise poet); a place to share and safeguard stories across the edge.

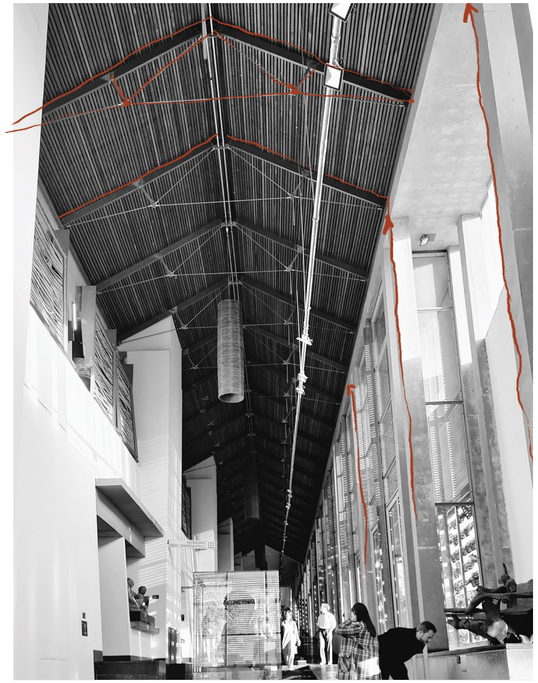


Figure 72: The roof and the in-between (Author:2023).

3.8.2. FREEDOM PARK

Location: Pretoria, South Africa
Client: The Freedom Park Trust
Architects: Park Mashabane Rose associates, GAPP architects, Urban designers and MMA architects
Completed: 2007

Freedom Park is a large complex inspired by African architecture, and presents a synthesis of cultural sensibility and abstract narrative expression consisting of three phases, namely a Garden of Remembrance, Place of Remembrance and a Pan-African Museum (Younge, 2009:98).

Site planning and landscape detailing

Upon visiting the park, I was overwhelmed with excitement to explore the complex, first through the museum up to the memorial park. The building becomes the narrator of the journey, subtly leading one up the hill where you are met with a park filled with elements reflecting the park's themes of remembrance, reconciliation, and cultural heritage (Younge, 2009:98).

The landscaping is also designed to create a sense of movement and progression (figure 73), leading visitors on a journey through the park's different areas and themes, always allowing visitors to take their own path. One is invited to explore the site and understand the history and meaning of the setting. The space also evokes a sense of natural beauty and diversity, showcasing what the region has to offer while contrasting it with man-made elements (figure 73).

The three phases of the design create a ritualistic movement, encapsulating memory, and shared history in a different form than the normative way of commemorating a monument (Younge, 2009:98).`

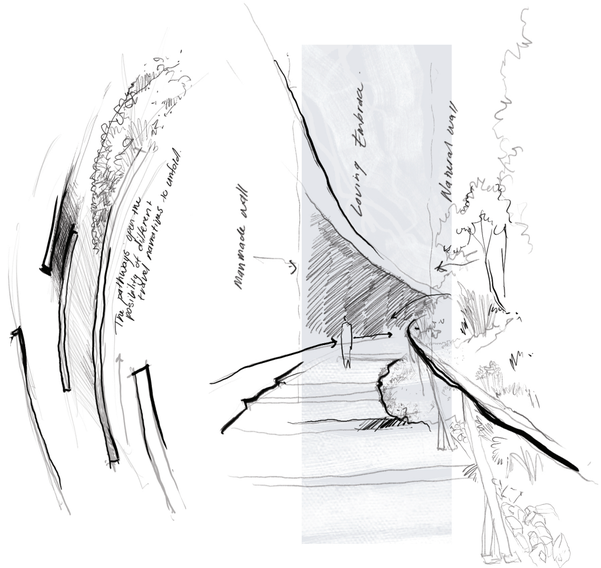


Figure 73: Site planning and landscaping (Author, 2023).

Ritual and movement

The park also incorporates various ritualistic elements and practices that honour culture in an architectural manner. Spaces are designed for groups or individuals to gather and witness or partake in the ritual. The ritual space is devoid of any symbols, not to direct the attention to any specific group (figure 74 & 75).

The abstracted space evokes emotion through its theme of commemoration and healing that could be understood cross-culturally (Young, 2011: online). Freedom Park illustrates how a journey can be sculpted to celebrate cultural diversity and interconnectedness between users from different backgrounds. The study reveals the importance ritual plays in connecting visitors with their cultural heritage.



Figure 74: Site planning and landscaping (Evans,2010:online).



Figure 75: Site planning and landscaping (Evans,2010:online).

3.9. PRECEDENT STUDIES

The following precedents were analysed to identify different ways in which materials can be used to celebrate a building, their structural approach, and the way in which they convey narrative.

3.10. LA RONDE

Location: Rivoli (TO), Italy
Architects: Hubmann Vass
Completed: 2010

La Ronde is a perceptual pedestrian pathway that allows multiple views and experiences to unfold as it carves pathways into a hill towards the old Castello di Rivoli. As the architects cut into the landscape (figure 76 & 77), they ensure to sustain the narrative connection to the surroundings, always keeping sight of the distance(Vass, 2010:online).

Function/Program:

The main function of the redesign at Castello di Rivoli is to create a closer link between the city of Rivoli and the historic castle, which currently houses an internationally renowned museum of contemporary art (Vass, 2010:online). The intervention aims to transform the prominent southeast slope of the hill into a sustainable urban recreational space while preserving its green character (Vass, 2010:online). The design seeks to use outdoor spaces sustainably and connect them more closely to the museum, offering visitors and residents a new perspective of the castle and its surroundings (Vass, 2010:online). The inclusion of visual elements, such as the loggia and medieval building remains, encourages visitors to explore the rich history and complex relationship between the city and the castle (Vass, 2010:online).



Figure 76: Circulation (Feiersinger, 2010:online).



Figure 77: Carving (Feiersinger, 2010:online).

Materials & Techniques:

The design incorporates a system of paths, ramps, stairs, escalators, galleries, courtyards, and grottoes, collectively known as La Ronde (Vass, 2010:online). This sequence of movement offers visitors a dynamic and rhythmic journey through the hillside, providing surprising views of the historic centre of Rivoli and Turin's landscape. The use of coloured concrete, Corten steel, Istrian limestone, gravel, and rammed earth for building components and surfaces contributes to the harmonious integration of man-made elements with the natural surroundings (Vass, 2010:online). The project utilizes a combination of materials to create a visually appealing design that speaks about the richness of its surroundings (Vass, 2010:online).

Vegetation:

The choice of vegetation, including plum, almond, and Mirabelle trees, is well-suited to the region's climate and pays homage to the historic fruit-growing tradition in Piedmont (Vass, 2010:online). The use of open-air spaces and well-considered paths allows visitors to enjoy the outdoor area throughout the year while being responsive to the local landscape and heritage of the site. The project aims to create a sustainable, accessible, and visually engaging recreational space that fosters a closer connection between the city and the historic castle.

Relevance to the Design:

By understanding the innovative architectural elements of La Ronde, one can redesign and addresses the tension between the two distinct poles of South Africa and Mozambique, through creating a narrative connection that celebrates the local indigenous vegetation and frames the local environment. The architects illustrate how one could carve into the landscape to create more personal experiences with the site. Movement is celebrated and used as a device to transport the viewer through the liminal and make one more aware of the journey.

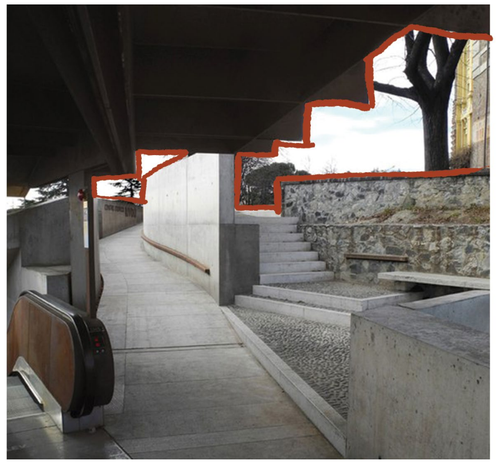


Figure 78: Framing (Feiersinger, 2010).

AIGÜES DE VILAJUÏGA

Location: Vilajuïga, Girona, Spain
Architects: TwoBo Arquitectura + Luis Twose Arquitecto
Completed: 2020

Aigües de Vilajuïga is an adaptive reuse of a historical underground aquifer (Ott, 2020:online). The project entailed bringing light to a space buried beneath the earth, a poetic challenge to reveal an event unknown to the plane above it (Ott, 2020:online).

Contrast in material and building techniques:

The project successfully juxtaposes the materials and building techniques of the old and the new (figure 79). The underground space features modernist design elements, exemplified by the sweeping ramps and submerged skylights that sculpt light to carefully fall onto the hard and weathered stone walls. The interplay of old and new, traditional and modern, creates a captivating dialogue between the layers of history and architecture.

Articulation of material and structure:

In this unique project, the articulation of material and structure is skillfully employed to create a harmonious blend between the historic and the new underground world of Aigües de Vilajuïga (Ott, 2020:online). While the surface above ground remains unchanged, the underground space exhibits expressive brick vaulting and exposed stone, paying homage to the timeless atmosphere of the site (Ott, 2020:online). The architects respect the existing context while introducing a new language through carefully chosen materials and structural elements (figure 79 & 80).



Figure 79: Contrast in materials (TwoBo, 2020:online).



Figure 80: Articulation (TwoBo, 2020:online).

Play with light:

The architect Luis Twose plays with light in its subterranean space. By excavating around a circular water tank and using submerged skylights, the team brings light into the underground site, filling the space freely from the vertical drop of the skylights (Ott, 2020: online). The interplay of light and shadow creates a surreal and mesmerizing atmosphere, enhancing the visitors' experience as they gradually descend from the bright surface into the twilight where the water used to quietly flow.

Application to the design of a border post:

While the Aigües de Vilajuïga project is not directly related to the design of a border, its approach to integrating the underground and surface spaces offers valuable insights. In a border post design, a similar strategy could be employed to create a harmonious intersection of cultures and narratives. The use of natural light, carefully selected materials, and innovative building techniques could transform the border post from a mere administrative space into a captivating and inclusive environment. By making the dweller aware of the in-between or the un-seen the potential for its transformative power is set in motion.

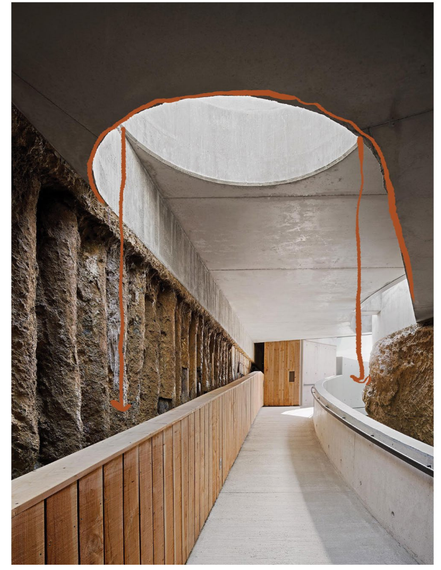


Figure 81: Play with light (TwoBo, 2020:online).

NEW ONE STOP BORDER POST AT BEITBRIDGE

Location: Beitbridge, Zimbabwe
Architects: Osmond Lange Architects
Completed: 2023

The last precedent directly ties to the design of the Lebombo border post. The Beitbridge border post has been a prominent topic due to its congestion and delays and has finally been redesigned. The new design of the Beitbridge as a One Stop Border Post aims to improve the movements of travellers and the flow of commers, through investing in high-tech facilities such as automated process flows (Fitzmaurice, 2021: online).

The structure consists out of a variety of facilities with large areas for processing of immigrations and customs (figure 83). The structure carries a large load but conveys a lightness by enlarging the threshold between the exterior and interior (figure82). This allows dwellers to linger before they embark on their journey.

The design certainly improved upon the previous building however the interior spatial configuration retains the potential for the liminal to creep in. Nonetheless, the roof structure draws elements of the exterior into the building to bring more natural light into the space. Given the newness of the building relative information is known of its effectiveness. Only time will tell if the structure was successful, if the automated processes stay maintained and if it succeeded to be a celebrated transition.

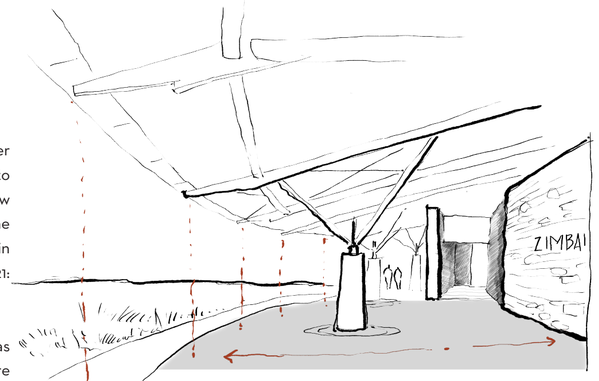


Figure 82: Exterior of Beitbridge (Author, 2023)



Figure 83: Interior of Beitbridge (Focus, 2021: online) adapted by author.

3.10. ONE STOP BORDER POST

A new approach

The Lebombo is a place that yearns for change, for a shift in cadence. To question the normative structure of the border is to recognise that borders are not merely lines on a map. They are shaped by the narratives of travellers, imbued with the rituals of nations, and immersed by the events that unfold upon them. By embracing this perspective, one can reimagine the border as a space of connection and shared identity.

A One-Stop border post (OSBP) introduces a similar concept to harmonise the movement of people and commerce across boundaries (Felix, 2022:online). South Africa has long undergone the process of approving the implementation of an OSBP system to replace the traditional Two-Stop system (figure84). As of 2022, the Department of Home Affairs (DHA) has made a One-Stop Border Post Bill open to the public for comments (Felix, 2022:online). The Lebombo border post is one of six land ports of entry the DHA aims to modernise using an OSBP system.

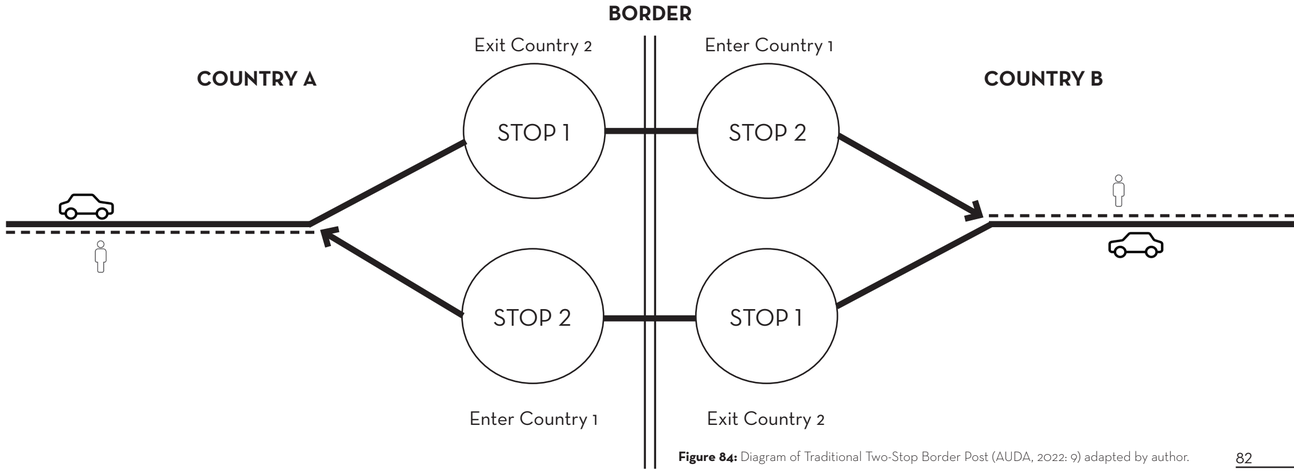


Figure 84: Diagram of Traditional Two-Stop Border Post (AUDA, 2022: 9) adapted by author.

This is an important factor to note, as border posts can very quickly become dystopian when focus is placed on authoritative structures.

The following will shortly explain the two most relevant ways in which an OSBP can be structured at the Lebombo border, due to is geographical area and some of the challenges that may influence theses systems.

Juxtaposed OSBPs (figure 85):

- Shared border facilities that operated in the country of entry for each direction, with two separate facilities but only one stop required in each direction (DHA, 2022:29).
- Requires enabling national laws and hosting arrangements, which can be more challenging if the border facilities are far apart (DHA, 2022:30).

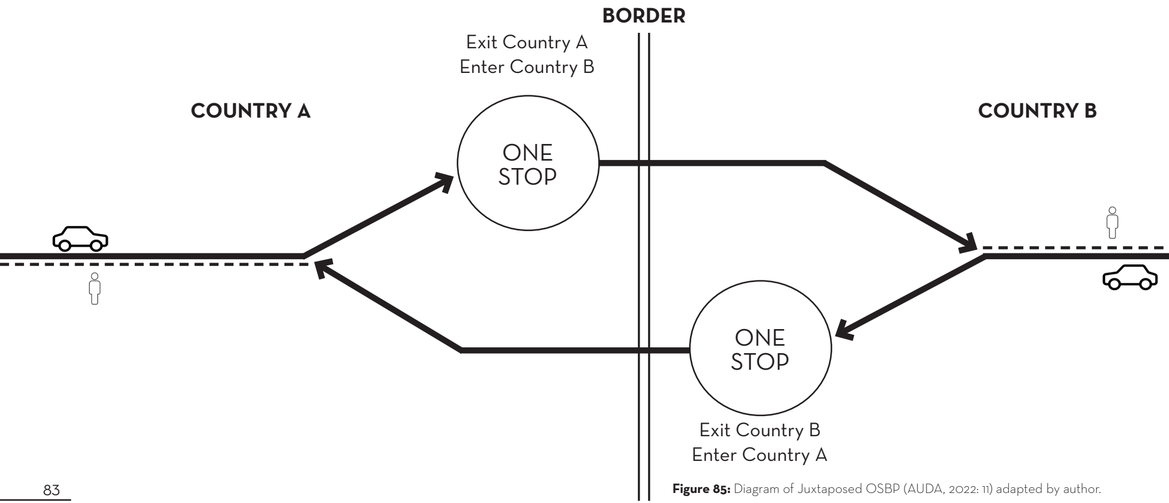


Figure 85: Diagram of Juxtaposed OSBP (AUDA, 2022: 11) adapted by author.

Straddling OSBPs (figure 86):

- A single facility is constructed across the borderline, which facilitates the cooperation of information sharing due to the proximity of facilities (DHA, 2022:29).
- Challenges may arise in maintaining the facility, depending on the agreed-upon management arrangements (DHA, 2022:31).

The introduction of OSBPs, especially the Straddling model, holds significant relevance for the Lebombo Border. Given the shared interests and the geographical proximity of South Africa and Mozambique, adopting an OSBP approach could streamline border processes, reduce congestion, and enhance trade efficiency. This system should still be questioned, in terms of the experience it composes for the different travellers.

I will structure my design according to the Straddling OSBP system as it brings the two nations closer together. By doing this, the no man's land can be articulated as a celebrated meeting.

Figure 86: Diagram of Straddling OSBP (AUDA, 2022: 12) adapted by author.

3.12. THE QUEUE

The Politics of Queuing and the Architecture of the Queue

By Marginal, Pablo Calderón Salazar, Rebekka Kiesewetter [Depot Basel], La Jetée, and Parasite 2.0.

Queues inherently involve spatial organisation led by the layout and flow of people within a space, ensuring a smooth and organised experience for travellers. Nonetheless, how the place is shaped, the aspect of waiting creates a clear hierarchy of power, separating the relationship between the user and authority, becoming a dominating spatial figure. Not only is the queue used as a managerial tool, it also creates a sense of unity as social difference appears arbitrary (Parasite 2.0, 2016:online).

Queues are described as threshold situations where individuals are in-between spaces and in flux as constant interaction and negotiation transpire among travellers. These spaces can foster a sense of activity, where individuals feel a part of a space rather than passively waiting. A queue can often involve an emotional aspect, as it can be a stressful and frustrating experience out of the user's control. These effects can be caused by the authority that prescribed the path, which could lead to a detached experience, a form of loss, a loss of time, and a loss of self.

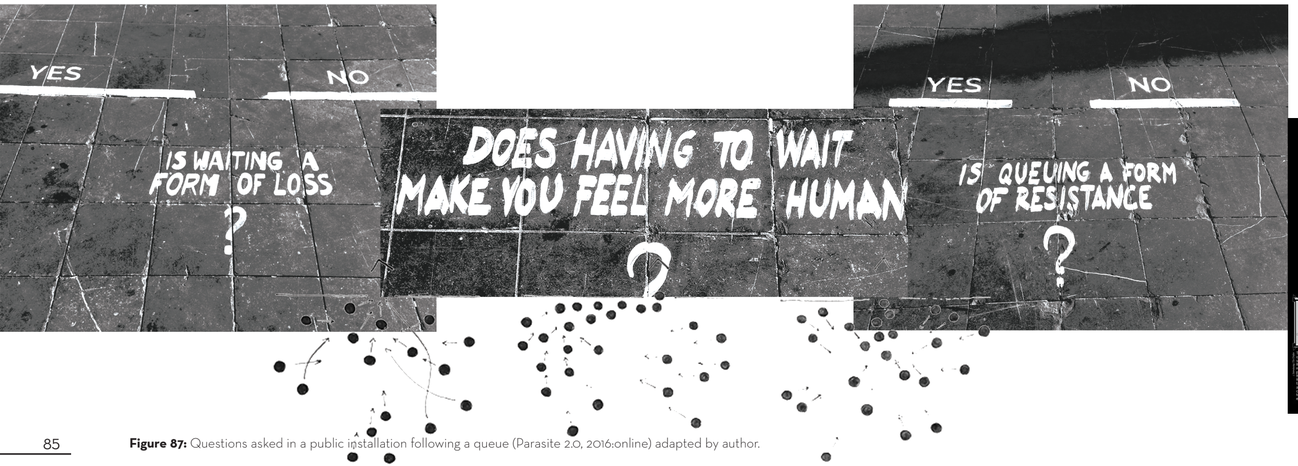


Figure 87: Questions asked in a public installation following a queue (Parasite 2.0, 2016:online) adapted by author.

Queue, an Exhibit about Waiting in Line

By Arch Hero

The installation "Queue, an Exhibit about Waiting in Line" is a drawn exhibition that provides a unique lens to explore the concept of waiting and the spatial dynamics that underlie the act of queuing. The exhibition uses a narrative that unfolds from two distinct perspectives, represented by the Drifter and the Tourist, each possessing contrasting insights into the intricate social contracts and spatial hierarchies that dictate queueing behaviour (Arch Hero, 2019:online). The installation underscores these environments' often uniform and standardised nature by reducing the architectural space to its most fundamental element — visitors navigating social hierarchies through space.

The installation sheds light on the need for border post designs that cater to a wide spectrum of user striving for a balance between functionality and inclusivity.

The feeling of loss at a border post grows with each passing second, especially at the Lebombo Border, as the queue stretches far beyond the no-mans land. Therefore, careful consideration should be taken when designing a line. This might involve creating spaces within the border post that serve multiple functions, making waiting time more productive. For example, exhibition spaces or cultural displays could be integrated into waiting areas, adding value to the waiting experience. This can create a more user-centric approach, where the waiting experience becomes an integral part of the overall journey, reflecting the principles of connection, agency, and efficiency.

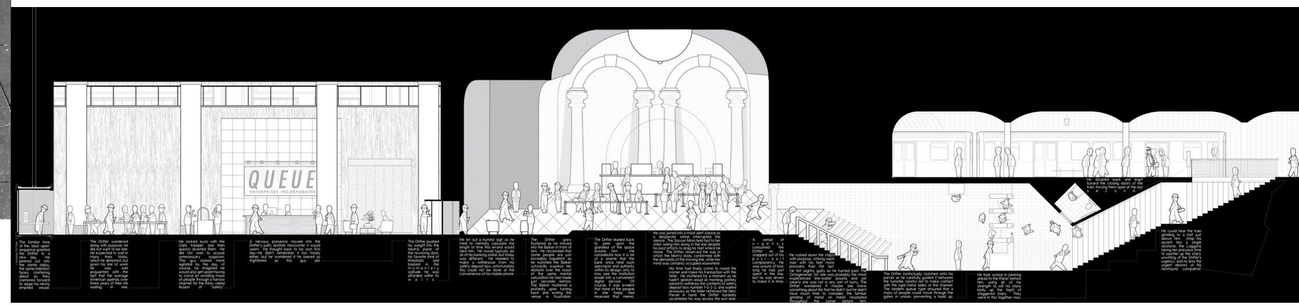


Figure 88: Queue, narrative of the Tourist and the Drifter (Arch Hero, 2019: online)

COMPOSING A MELODY

Overall, the research provides valuable insight into reimagining the Lebombo Border post as a space for connection, questioning conventional programs and emphasising the user as a crucial device in the composition of spaces. The One-Stop border post system provides a new way one can structure the program to celebrate the in-between, the edge and the boundary. The theoretical investigation provided a valuable understanding of the elements that transform space and accentuates the role of narrative in architecture, to transform space into place by understanding the dynamic form the users bring to it. The concepts, became a confluence of ideas that shaped the overall design of the border post.

The next chapter illustrates how the key theoretical ideas influenced the exploration and application of the program and development of the final design.



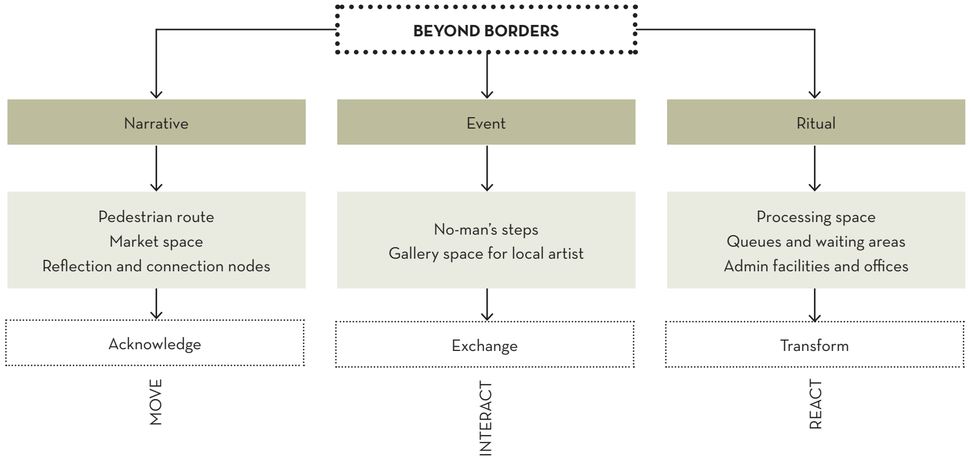
4. PROGRAM AND BRIEF DEVELOPMENT

Illustrating the influence of the investigation on the programmatic aspects

The main structures that were focused on were the pedestrian border post and the commuter border post facilities. The brief and program were motivated by the narrative, event and ritual aspects of transition.

The overarching programmatic objective seeks to conceive a space that acknowledges and respects the profound transformations transpiring at the pivotal juncture between two nations. The design incorporates the necessary facilities associated with a One-Stop border post system while seamlessly integrating them with the poetic elements of rhythmic movements.

As a result of this all-inclusive approach, a discernible hierarchy is established within the no-man's land while simultaneously reimagining the threshold spaces and waiting areas as immersive exhibitions. This strategic reinterpretation aligns with the overarching thematic aspiration of conceiving the border as the *Mbongi* dedicated to exchanging and preserving narratives that transcend geographical and cultural boundaries.



Where theory meets practice in the delicate fabric of architectural design, there emerges a domain that represents not just the physical necessities of a border post but also the underlying values of inclusion, unity, and cultural variety. The border post comes to life as a zone of transition and change, where theory and practice collide to create a cultural crossroads that embraces the 'in-between' as a meaningful and transformational experience for those who pass through. Figure 79 restates the idea of abstracting the normative flow to make room for movement and interaction.

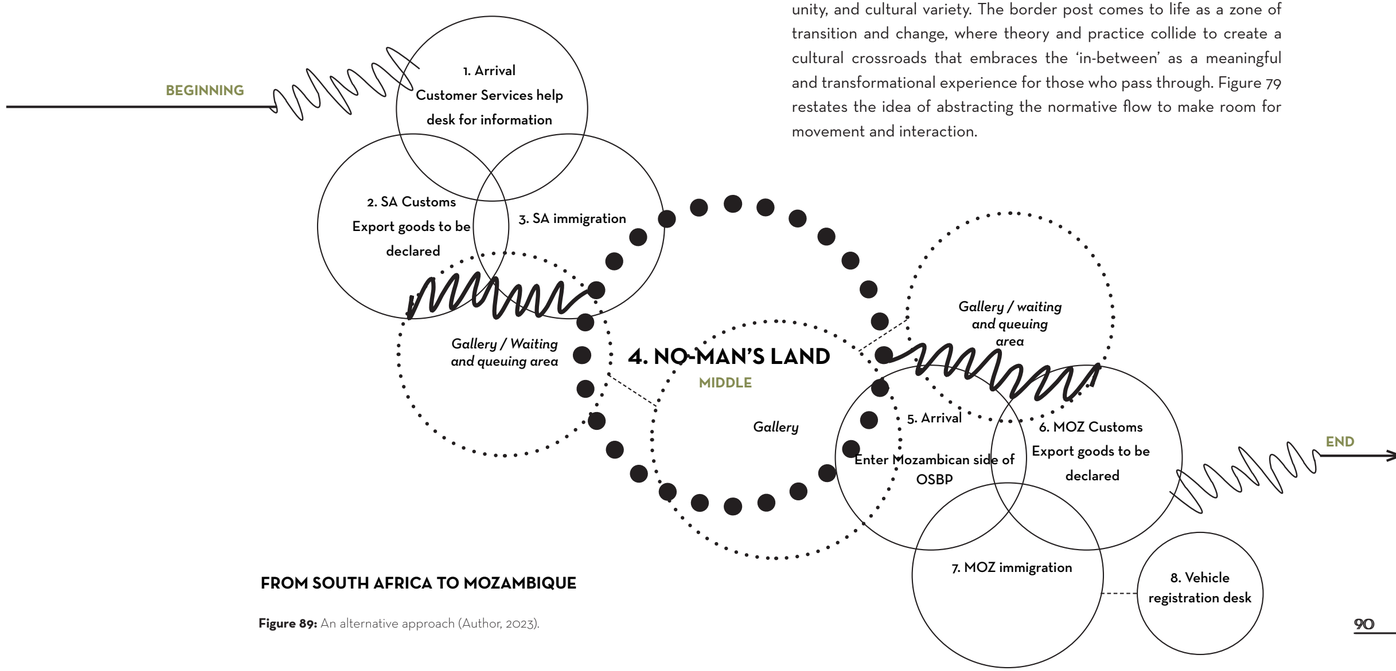


Figure 89: An alternative approach (Author, 2023).

Procedure of going through the Pedestrian Border Post

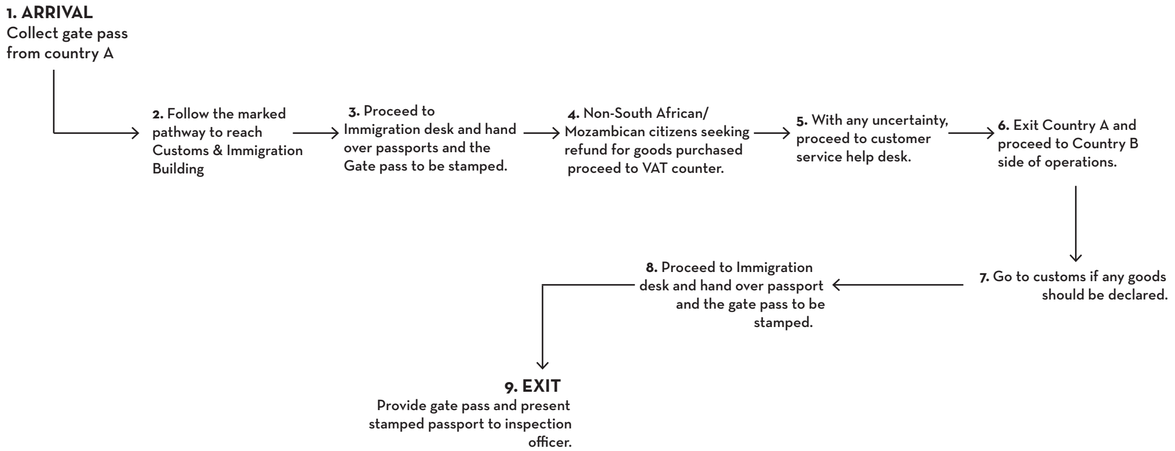


Figure 90: Pedestrian procedure (Author, 2023).

Procedure of going through the Commuter Border Post

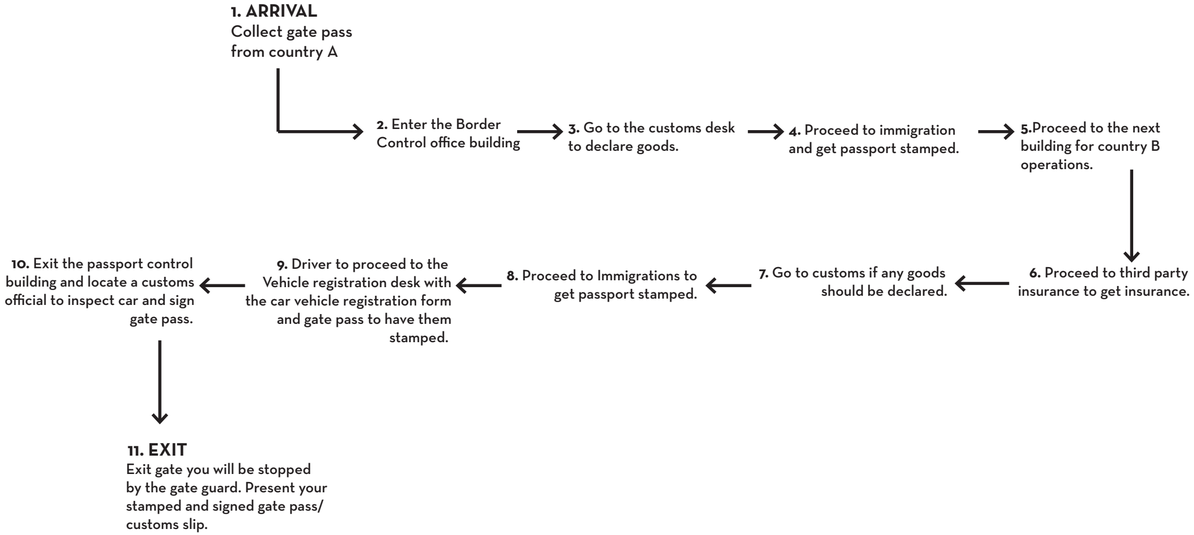


Figure 91: Commuter procedure (Author, 2023).

4.1. ACCOMMODATION LIST

Pedestrian Border Post

CONTROL FACILITY ENTERING AND DEPARTING TO/ FROM PEDESTRIAN BORDER

Entrance gate house (Inspection area to receive gate pass)	**50m²**
• Sound room	**65m²**
• Reflection space	**20m²**
• Story room	**75m²**
Public toilets	**50m²**

PEDESTRIAN CUSTOMS & IMMIGRATION FROM SOUTH AFRICA TO MOZAMBIQUE
The following facilities are mirrored in the two respective section - Going to Mozambique and going to South Africa.

Customer services help desk	**20m²**
Queue area for customs and immigration SA	**400m²**
Queue area for customs and immigration MOZ	**400m²**
Customs and VAT workstations	**44m²**
Consultation offices	**30m²**
General office	**16m²**
Strong room	**10m²**
Storeroom	**10m²**
Archive	**15m²**
Boardroom	**40m²**

THE IN-BETWEEN

Gallery space for local artists 300m²

PEDESTRIAN CUSTOMS & IMMIGRATION BUILDING
The following facilities are mirrored in the respective two section - Going to Mozambique and going to South Africa.

Customer services help desk	**20m²**
Queue area for customs and immigration SA	**400m²**
Queue area for customs and immigration MOZ	**400m²**
Customs and VAT workstations	**44m²**
Consultation offices	**30m²**
General office	**16m²**
Strong room	**10m²**
Storeroom	**10m²**
Archive	**15m²**
Boardroom	**40m²**

ADMIN BUILDING
This building is situated on a higher level which connects staff assess to the larger scheme.

Staff Lobby	**25 m²**
Staff lockers	**10m²**
Female toilets	**20m²**
Male toilets	**18m²**
Universal access toilet	**4m²**
Staff Break room	**60m²**
IT room	**15m²**
Consultation offices	**30m²**
General office space	**40m²**
Boardroom	**40m²**

This list highlights the main components of the Border Post Accommodation, by embodying the union of theory and program.

Commuter Border Post

The following accommodation list illustrates the direction of flow of commuters travelling from South Africa to Mozambique, the accommodation is mirrored on the Mozambique front, travelling to South Africa.

CONTROL FACILITY ENTERING AND DEPARTING TO/ FROM COUNTRY

Entrance gate house (Inspection area to receive gate pass) 50m²

ENTRANCE

Gallery **160 m²**

CUSTOMS & IMMIGRATION FROM SOUTH AFRICA TO MOZAMBIQUE
The following facilities are mirrored in the two respective section - Going to Mozambique and going to South Africa.

Customer services help desk	**20m²**
Vehicle registration desk	**33m²**
Queue area for vehicle registration	**100m²**
Queue area for customs and immigration MOZ	**250m²**
Customs and VAT workstations	**44m²**
Consultation offices	**30m²**
General office	**50m²**
Strong room	**10m²**
Storeroom	**10m²**
Archive	**15m²**
Boardroom	**40m²**
Male & female toilets	**30m²**

THE IN-BETWEEN TRANSITIONS SPACE

Gallery steps 180m²

PEDESTRIAN CUSTOMS & IMMIGRATION BUILDING
The following facilities are mirrored in the respective two section - Going to Mozambique and going to South Africa.

Customer services help desk	**20m²**
Vehicle registration desk	**33m²**
Queue area - vehicle registration	**100m²**
Queue area - customs and immigration MOZ	**250m²**
Customs and VAT workstations	**44m²**
Consultation offices	**30m²**
General office	**50m²**
Strong room	**10m²**
Storeroom	**10m²**
Archive	**15m²**
Boardroom	**40m²**
Male & female toilets	**30m²**

4.2. DESIGN DEVELOPMENT | Finding resonance in meeting

Three phases towards a final approach

The design developed in three phases, based on questioning how a border is experienced, how it could enhance the experience and how the in-between could be articulated as a threshold for transformation.

4.2.1. DEVELOPMENT 01 : THE ESSENCE

The initial reaction developed from the tradition of travel and movement through the site. The site analysis revealed that the user's rhythmic movement has the potential to shape the site. However, the two poles are so far removed that the in between connection is lost.

A conceptual sketch was created to find resonance between movement and the ritual repetition of transition (figure 92). The lines on the page followed the grid imposed by bureaucratic structures, which splinter off into the no-man's land. This questions the normative formation to instead create a more dynamic conversation, a dance in-between.

This essence transformed the edge to reveal new possibilities, to go beyond conventional notions, creating a frequented place instead of a non-place.

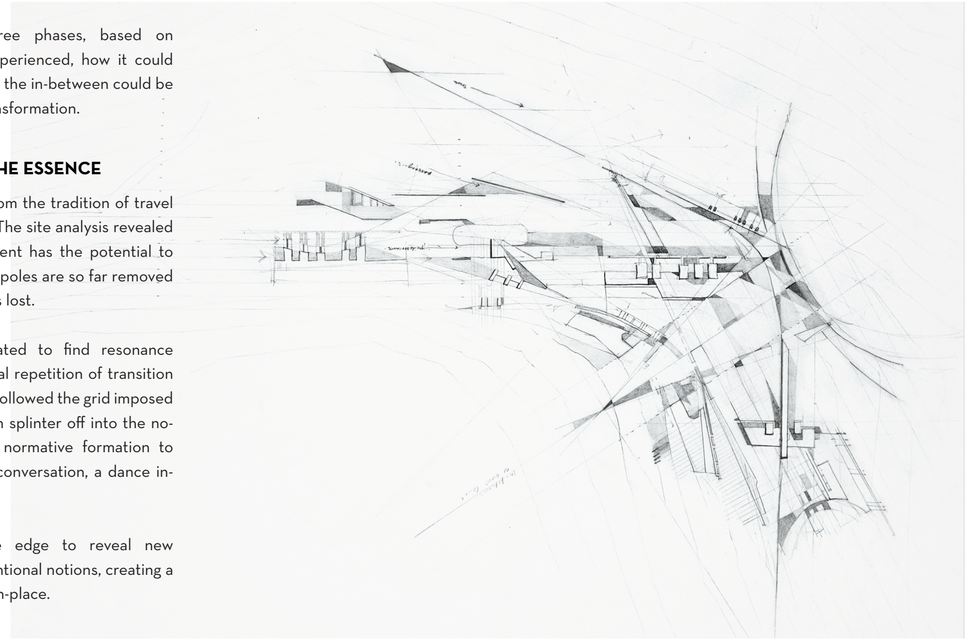


Figure 92: The essence of movement and the mystery in-between (Author, 2023).

The conceptual reaction led to the development of a mass that joins the two poles, South Africa and Mozambique, together in an attempt to celebrate the meeting between nations (figure 93). This first exploration defined the no-mans land as a critical threshold, that marks the edge of transformation. The no man's land becomes an important didactic device that orientates the viewer and locates him in a ritual state.



Figure 93: Conceptual model (Author, 2023).

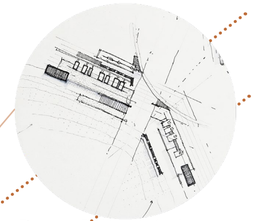


Figure 94: Exploration 1 (Author, 2023).

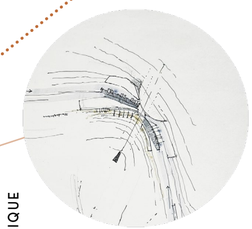


Figure 95: Exploration 2 (Author, 2023).

DEVELOPMENT 1.1

An additional iteration of the conceptual sketch was undertaken to clarify the theoretical framework underpinning the design.

While the massing of the second iteration (figure 97) did not eventually shape the final design, this approach facilitated a more comprehensive exploration of the nomadic narrative by focusing on the pedestrian route (figure 96).



Figure 96: Exploration of the pedestrian route (Author, 2023).

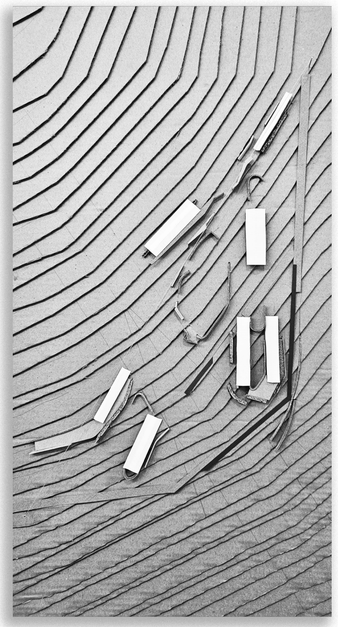


Figure 97: Model development (Author, 2023).

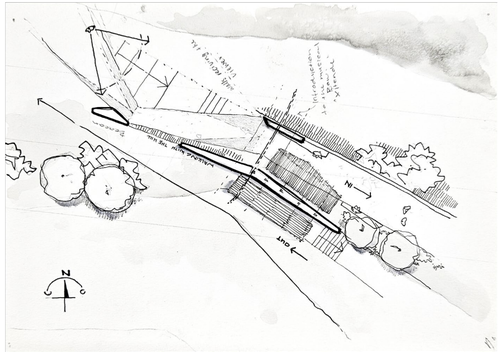


Figure 98: Entrance drop-off point for pedestrian from SA (Author, 2023).

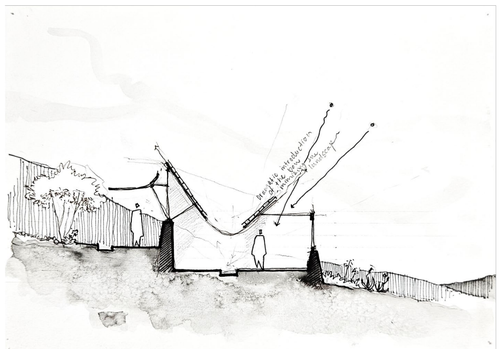


Figure 99: Section through Entrance into pedestrian (Author, 2023).

The sketches explored abstracting the musical instrument into a tectonic device to be used as a roof structure. These explorations are composed out of a lighter timber roof structure with suspension wires to transfer loads (figure 100 & 101). Thicker stone walls acts as the loadbearing system while paying homage to the regional stonework in Komatipoort.

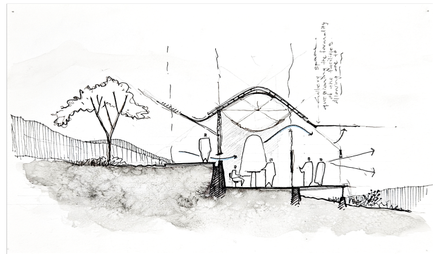


Figure 100: Section through pedestrian border (Author, 2023).

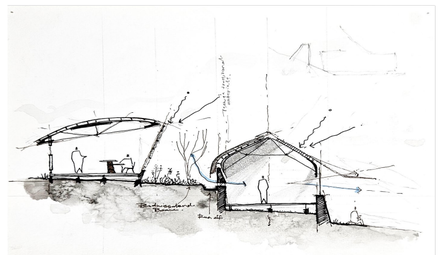


Figure 101: Section through commuter border (Author, 2023).

4.2.2. DEVELOPMENT 02 : THE NARRATIVE

Phase two develops the border into the nomad's device, integrating the theoretical discourse to connect South Africa and Mozambique. The axis curves to mimic the form of a broken *Xitende* while following the natural form and flow of the site. The drawing becomes a generator of circulation, inspiring different points of entry and exit (figure 102). This development starts composing the program to notice the event as a transformative denouement.

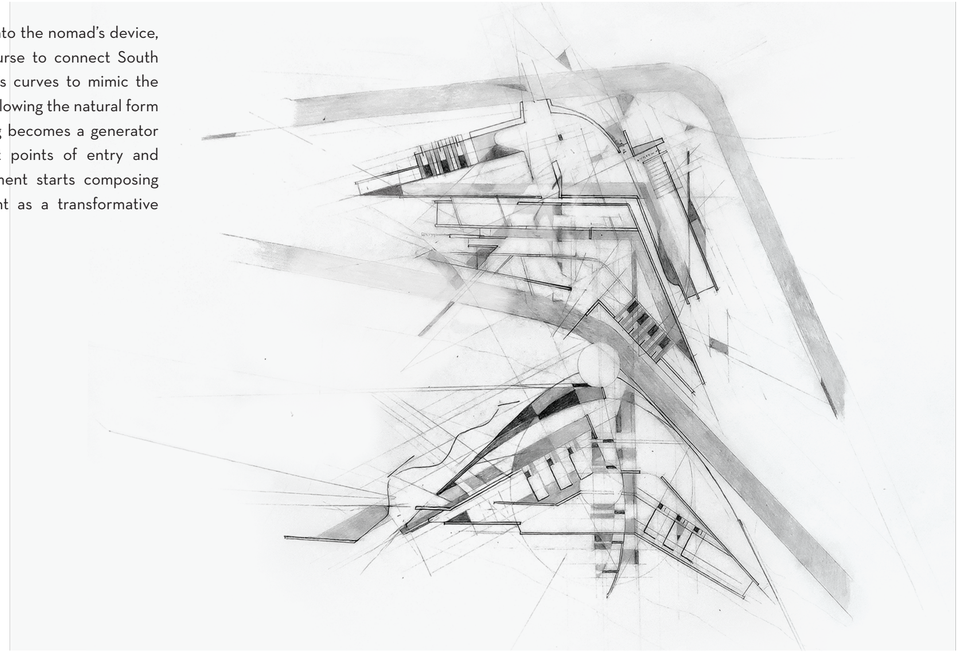


Figure 102: Abstract expression of movement on the site (Author, 2023).

The working model assisted in understanding the site's topography and determining the best place for gathering (figure 103). Here the fall off the site became a more notable feature in the design.

The design thus mimics a more organic extension of the landscape, while carefully crafting the in-between. The abstract sketch served as a roof plan that incorporates different structures to allow natural light to enter the building as a composed element.

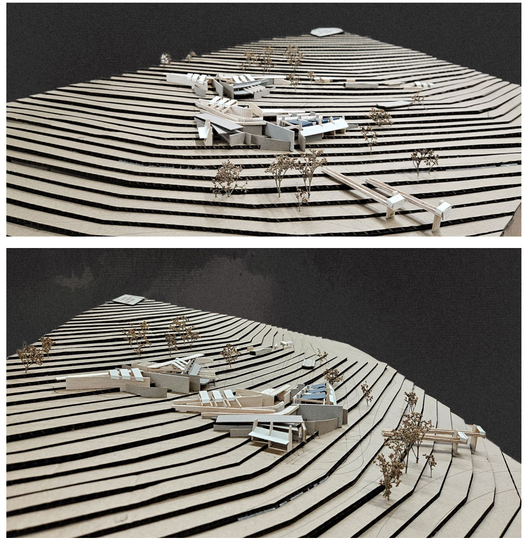




Figure 103: Working model (Author, 2023).



Figure 104: Perspective sketch of Pedestrian border (Author, 2023).



Figure 105: Perspective sketch of Pedestrian border (Author, 2023).



Figure 106: Perspective sketch of Commuter border (Author, 2023).

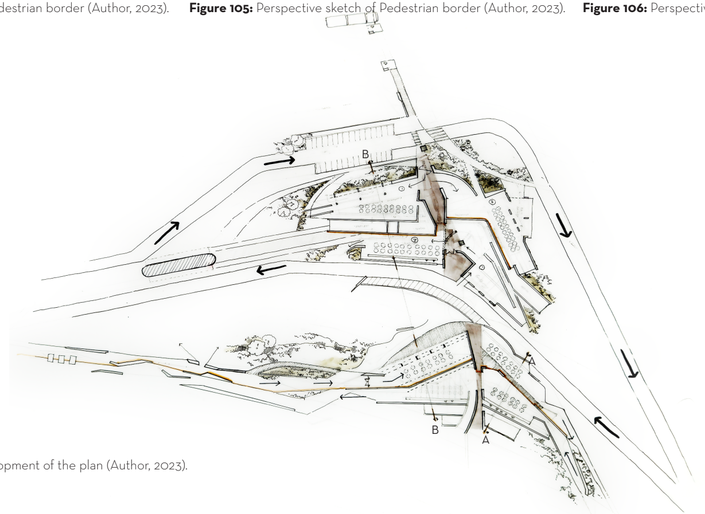


Figure 107: First development of the plan (Author, 2023).

Development two started to look more closely at the relationship of natural vs. artificial light in different programmatic experiences to create unique atmosphere in the queuing space. This could ultimately create a more emotional experience, aimed to connect the traveller with the ritual of transitioning.

The design also tries to develop an approach that would follow the natural fall of the site to create a more dynamic interior space (figure 108 & 109), that would introduce a new language that would oppose the normative structure.

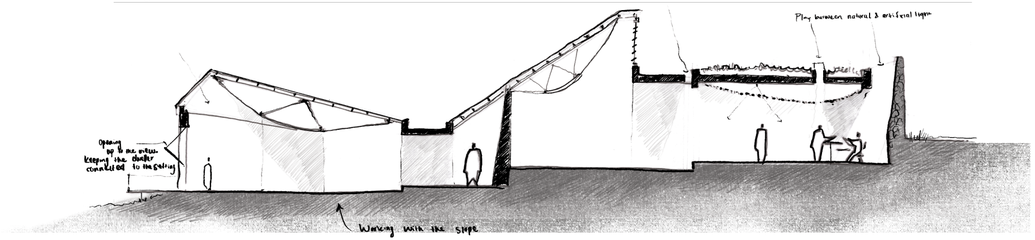


Figure 108: Section AA (Author, 2023).

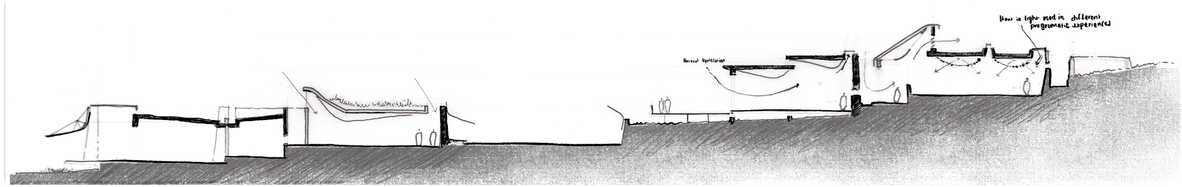


Figure 109: Section BB (Author, 2023).

DEVELOPMENT 2.1

Development 2.1. starts to refine the conceptual ideas and abstract drawings towards formal arrangement of spaces and structure. Here I really wanted to illustrate the look and feel of the buildings as one would arrive and departure.

The essence here lies with the landscape as a source of inspiration, natural stone and wooden pergolas act as the balance between nature and structure. The design aims to fade into the surroundings, by using it as an element of the design.

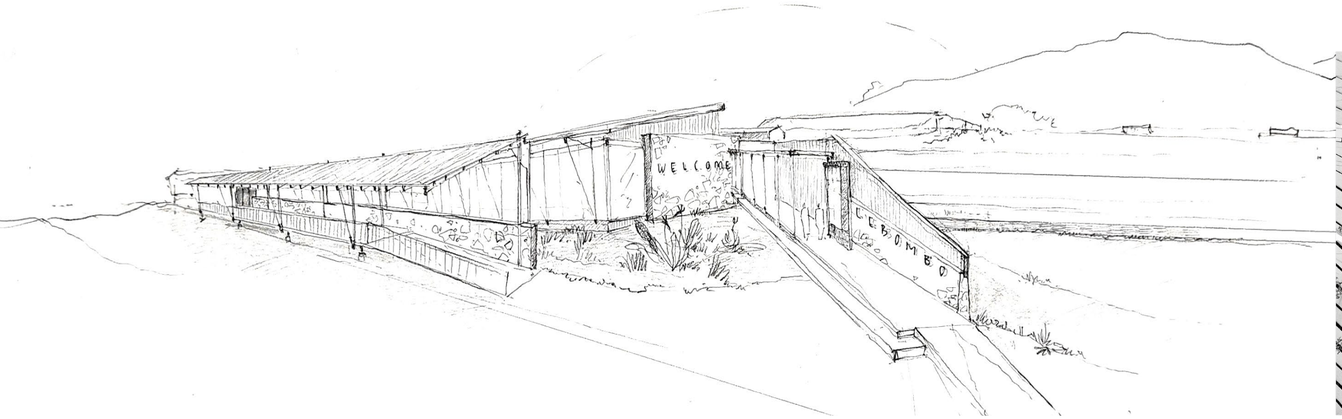


Figure 110: Development of Commuter border entrance (Author, 2023).



Figure 112: Working model development on plan (Author, 2023).

The design of the commuter border posed some challenges. During the process I tried to incorporate a lot of facilities that I later realized were not needed. This also led me to remove the public toilets from the building as it became a large mass obscuring the form of the plan (figure 113). The form is an important part of the design as it was derived from the user movement on the site.

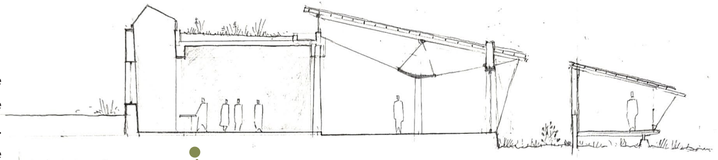


Figure 111: Commuter border structural development (Author, 2023).

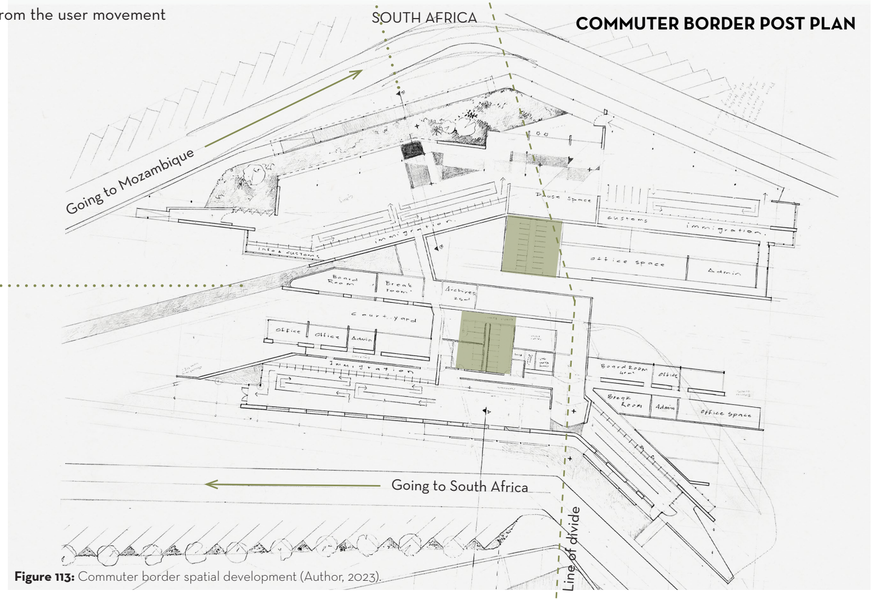


Figure 113: Commuter border spatial development (Author, 2023).



Figure 114: Section of Pedestrian Entrance (Author, 2023).

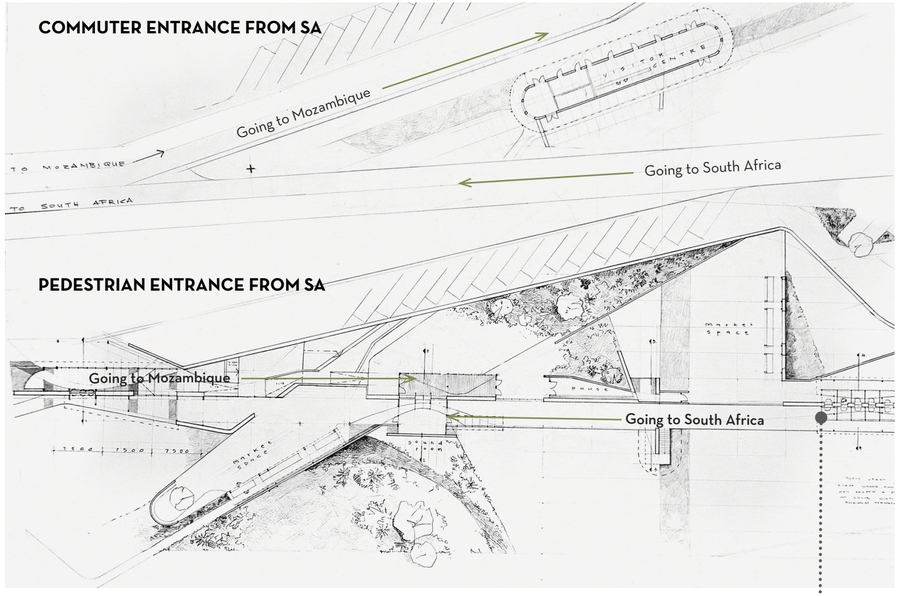


Figure 115: Pedestrian plan showing the route towards and from the border (Author, 2023).

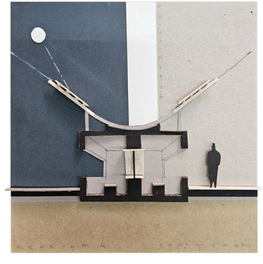
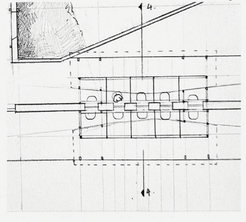


Figure 116: Section of Pedestrian Story room (Author, 2023).



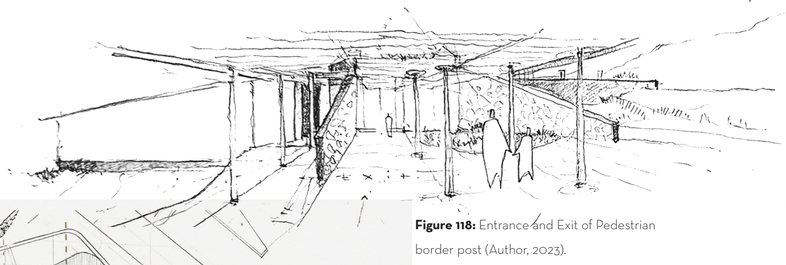


Figure 117: Pedestrian border post floor plan (Author, 2023).

Figure 118: Entrance and Exit of Pedestrian border post (Author, 2023).

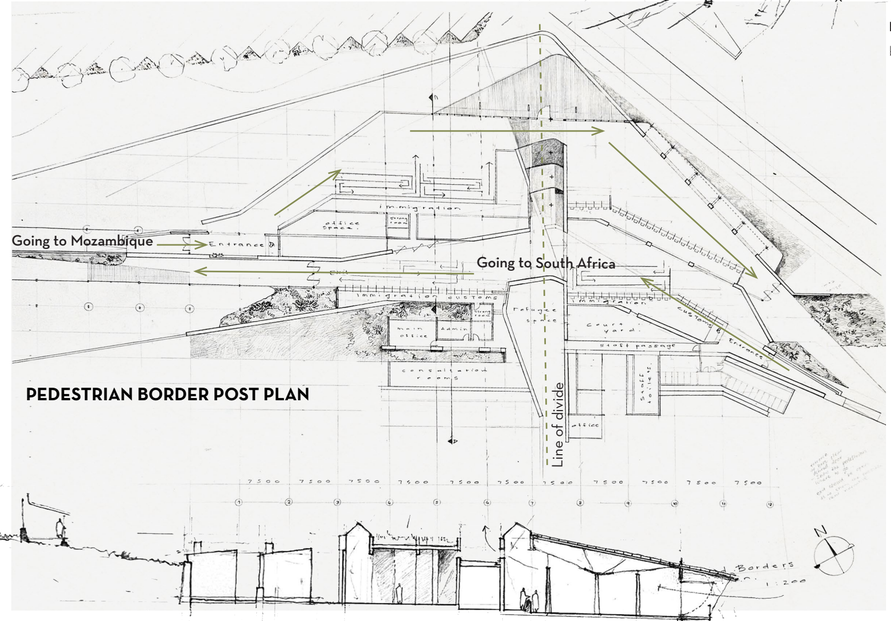


Figure 119: Section development of pedestrain building and the connection with the commuter border post (Author, 2023).

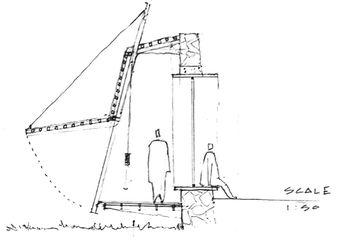


Figure 120: Detail development of commuter facilities (Author, 2023).

4.2.3. DEVELOPMENT 3: THRESHOLD OF TRANSFORMATION

Phase three builds on phase two, emphasising how one would cross through a threshold, from arrival towards the entrance, the ritual of processing, and the experience of the in-between that developed to the final design.



Figure 121: Development of Commuter border post entrance (Author, 2023).

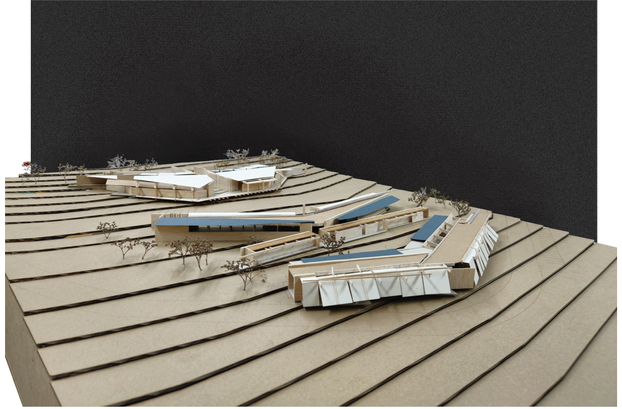


Figure 122: Towards a final approach (Author, 2023).

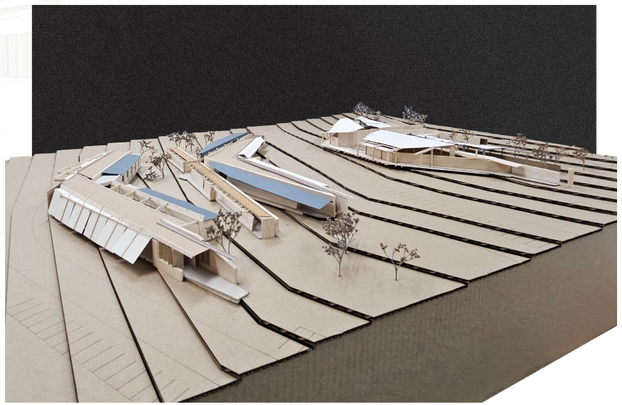


Figure 123: Towards a final approach (Author, 2023).

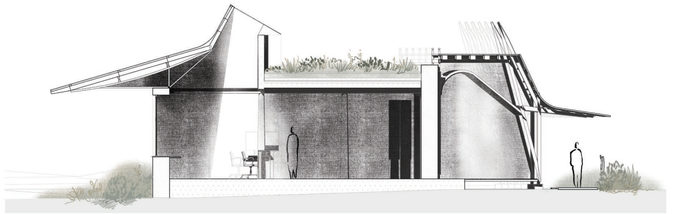


Figure 124: Section (Author, 2023).

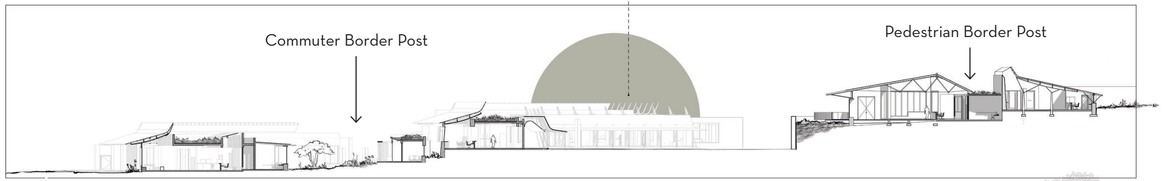


Figure 125: Long section showing the slope between the Pedestrian and commuter building (Author, 2023).

Here the design focuses on establishing a structural approach that would be capable of accommodating the unique form and load of the design. The form of the *Xitende* is abstracted to such an extent that only its essence is left. The objective is to achieve an approach that transforms architecture into a device encompassing multiple ethnicities. The structure is not designed to impose itself on any identity but rather to connect travellers through their shared identity.

The structure is also comprised of extensive green roof systems that serve a dual purpose. Firstly, they seek to ease the approach towards the building and similarly provide a more pleasant view to the pedestrian that is situated at a higher vantage point. Secondly, the system alleviates the effects of stormwater runoff caused by the large paved and built areas.

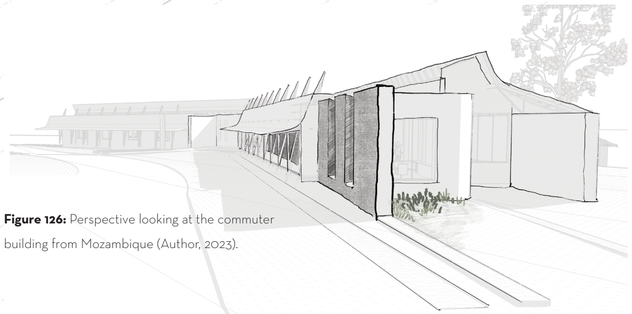


Figure 126: Perspective looking at the commuter building from Mozambique (Author, 2023).

The design of the commuter border post presented a significant challenge within the overall scheme. During a more detailed phase of development, the original plan started to deviate, which overlooked the transitional spaces - "in-between."

In figure 128, I initiated efforts to redefine and mold these in-between areas, with the aim of establishing a more seamless and harmonious flow for those passing through. This redesign directs travelers more effectively towards their destination in the next country, as opposed to following a subtle curve or ambiguous path. The intention behind this reconfiguration is to transform the in-between zones into spaces of greater significance and celebration, allowing travelers to acknowledge their passage.

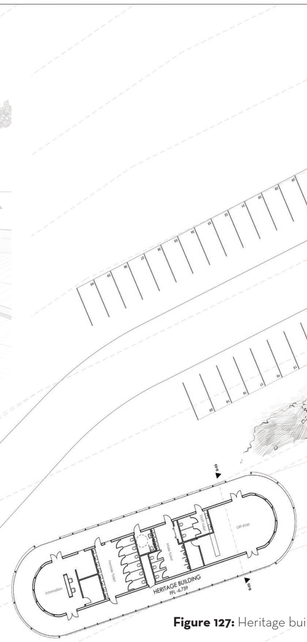


Figure 127: Heritage building (Author, 2023).

Figure 128: Commuter Border Post Floor plan (Author, 2023).

COMMUTER BORDER POST PLAN

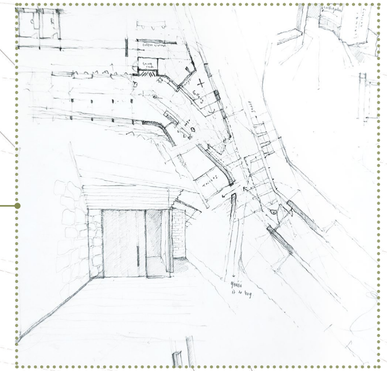


Figure 129: Directing the In-between (Author, 2023).

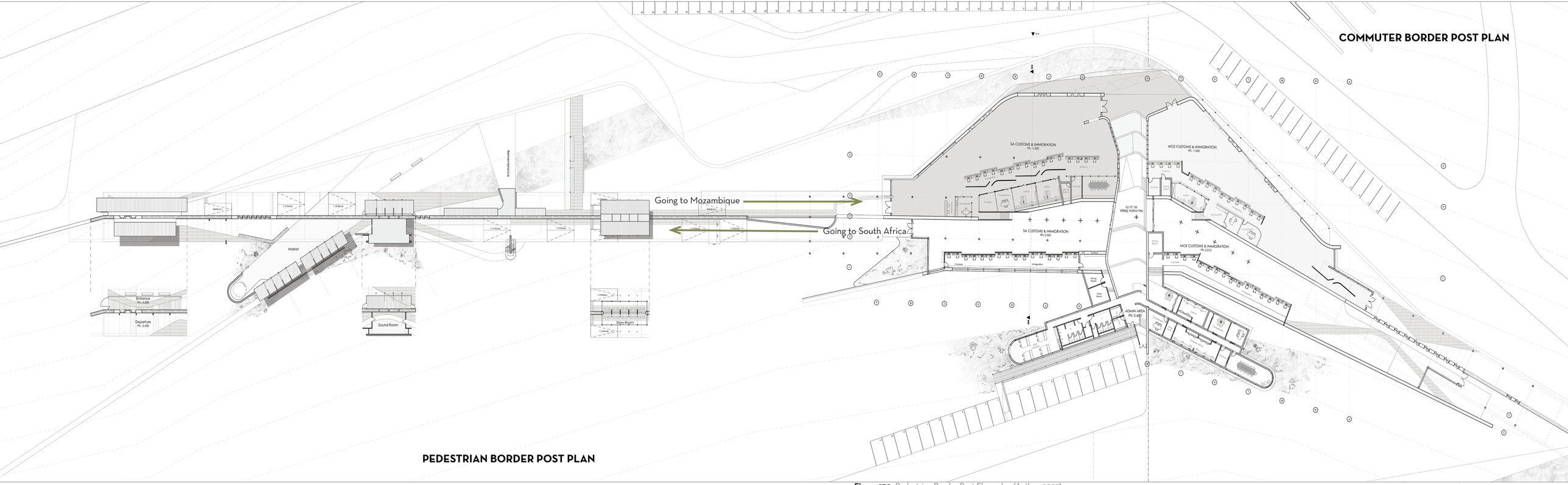


Figure 130: Pedestrian Border Post Floor plan (Author, 2023).

4.3. FINAL DESIGN PROPOSAL
A new song

Amidst a confluence of commerce and shared narratives the nomad began to reconstruct his instrument, this time with a new form in mind. A shared wire woven between many became a physical structure, a cultural bridge. The nomad could start to hear the songs of his travels, the stories of their journeys, their cultures, and their dreams. He found a home **in-between** kindred souls who passed through this threshold.

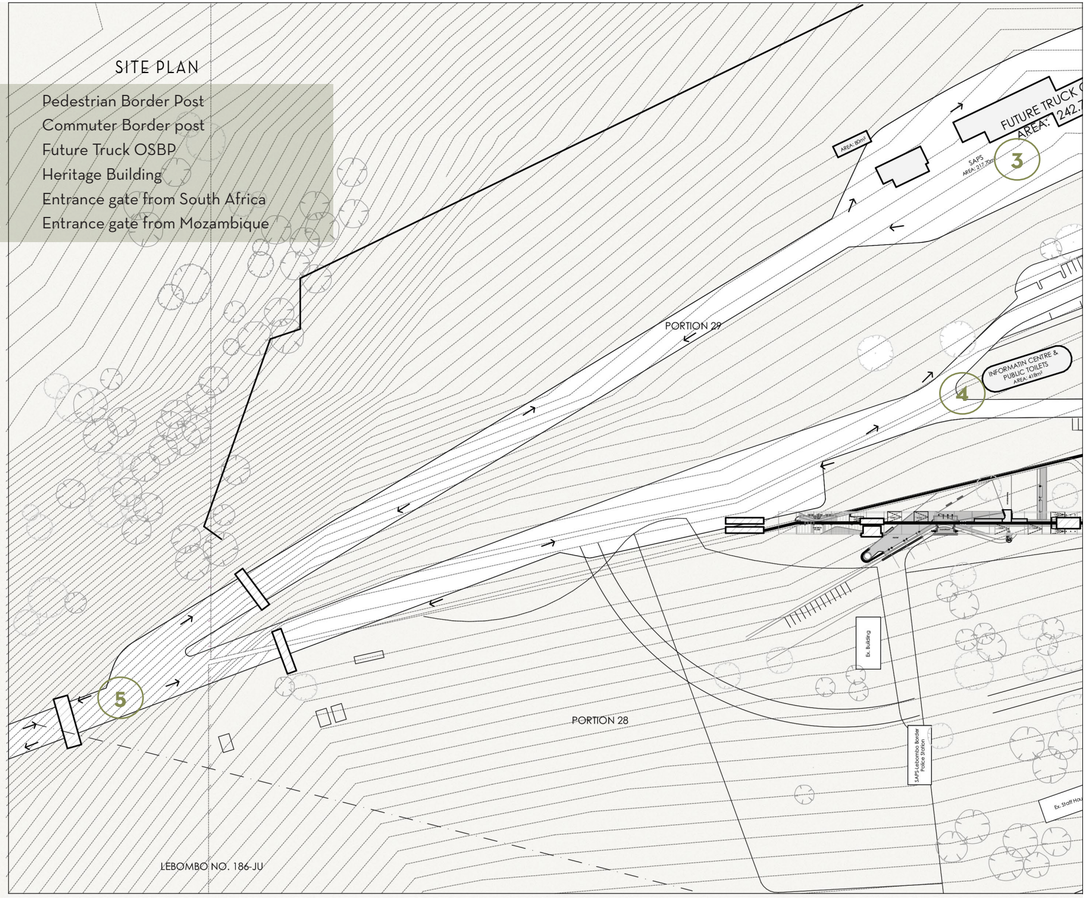
The border that separated lands and divided cultures was now intertwined with the rhythm of the earth. A place that sings of the rising sun and echoes the cadence of footsteps dancing upon its rugged terrain. Each step whispered tales of ancient lands and forgotten rituals. The *Xitende*, cradled gently in his weathered hands, took shape in a much larger form connecting the poles of two distant places, ***his voice now reverberating through the mountains as it did before.***

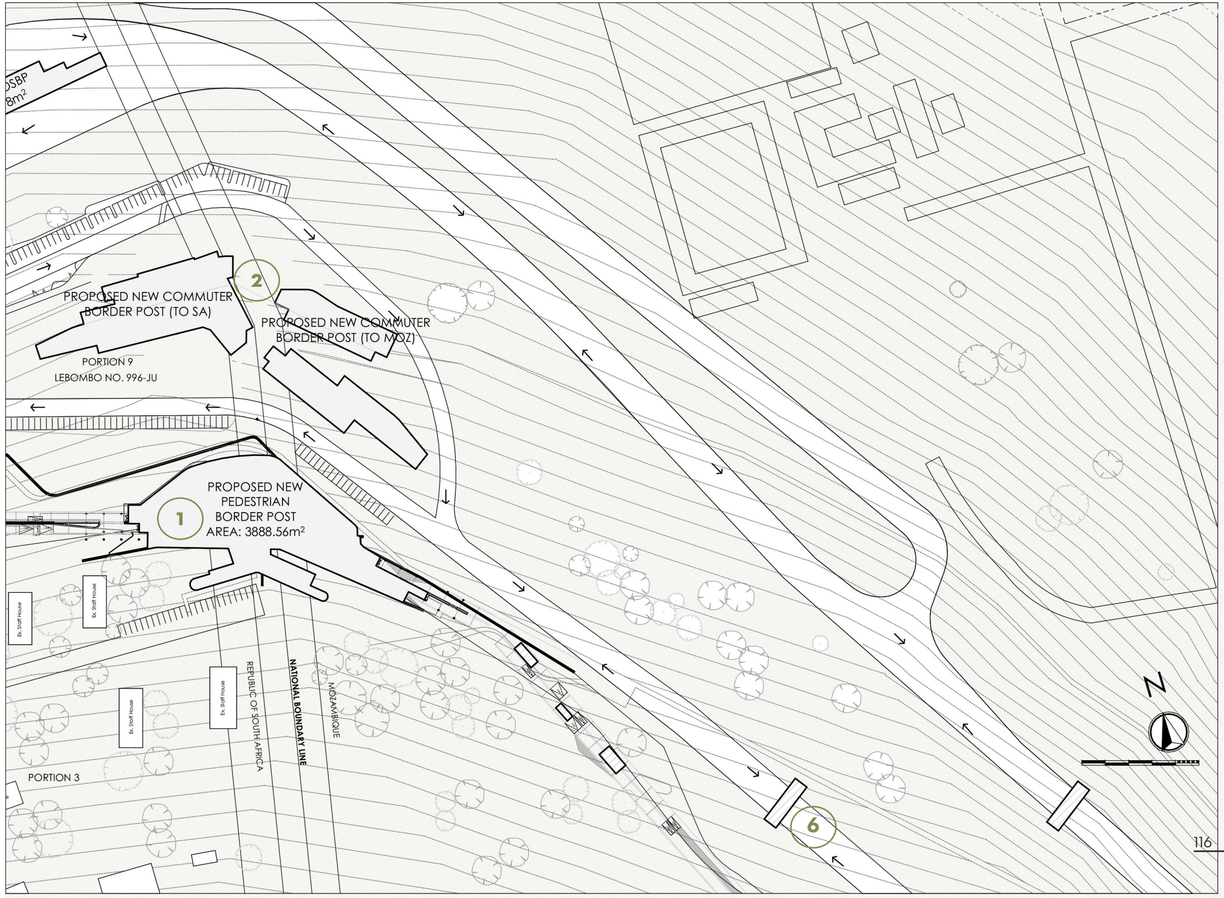


Figure 131: A new song, final design proposal (Author, 2023).

SITE PLAN

1. Pedestrian Border Post
2. Commuter Border post
3. Future Truck OSBP
4. Heritage Building
5. Entrance gate from South Africa
6. Entrance gate from Mozambique





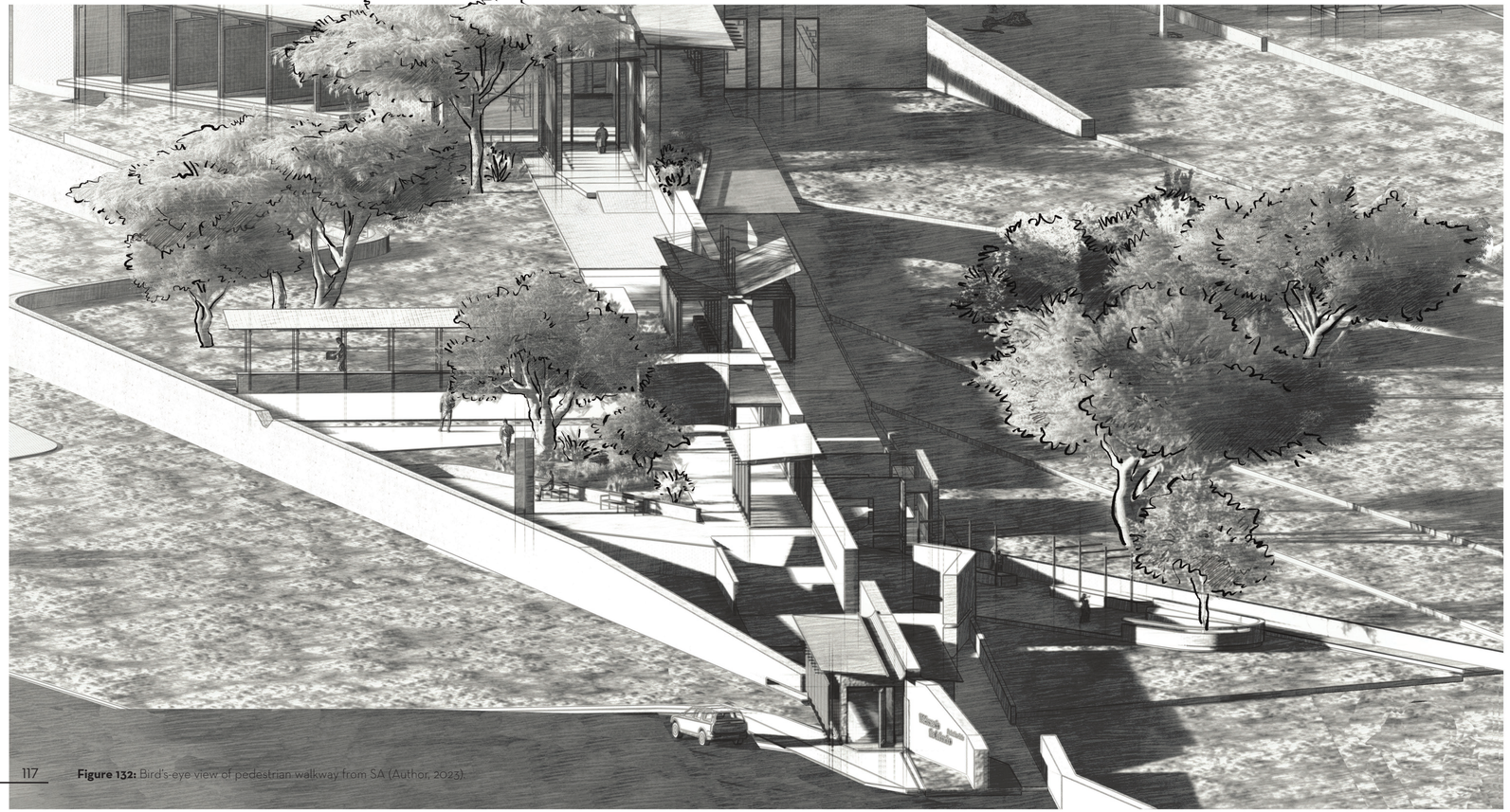


Figure 132: Bird's-eye view of pedestrian walkway from SA (Author, 2023).

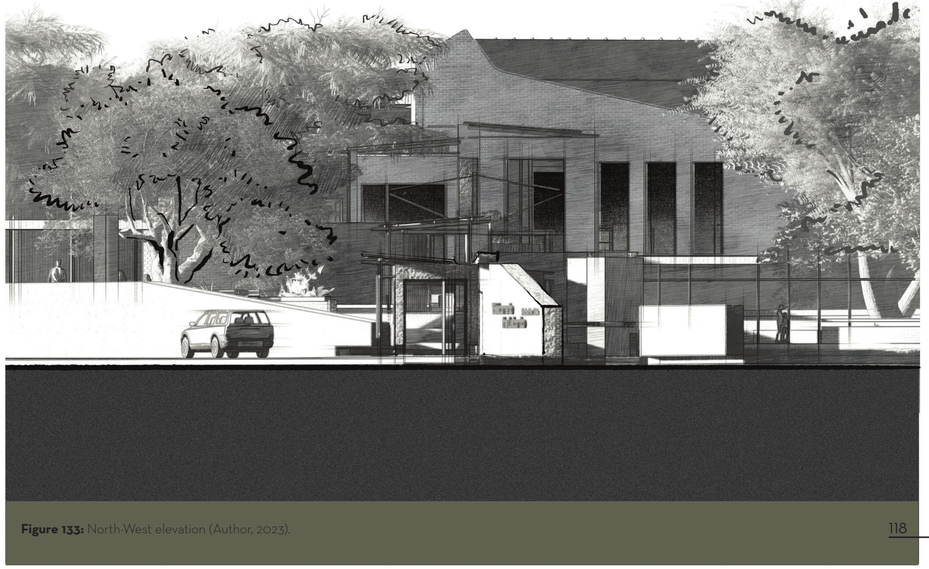


Figure 133: North-West elevation (Author, 2023).

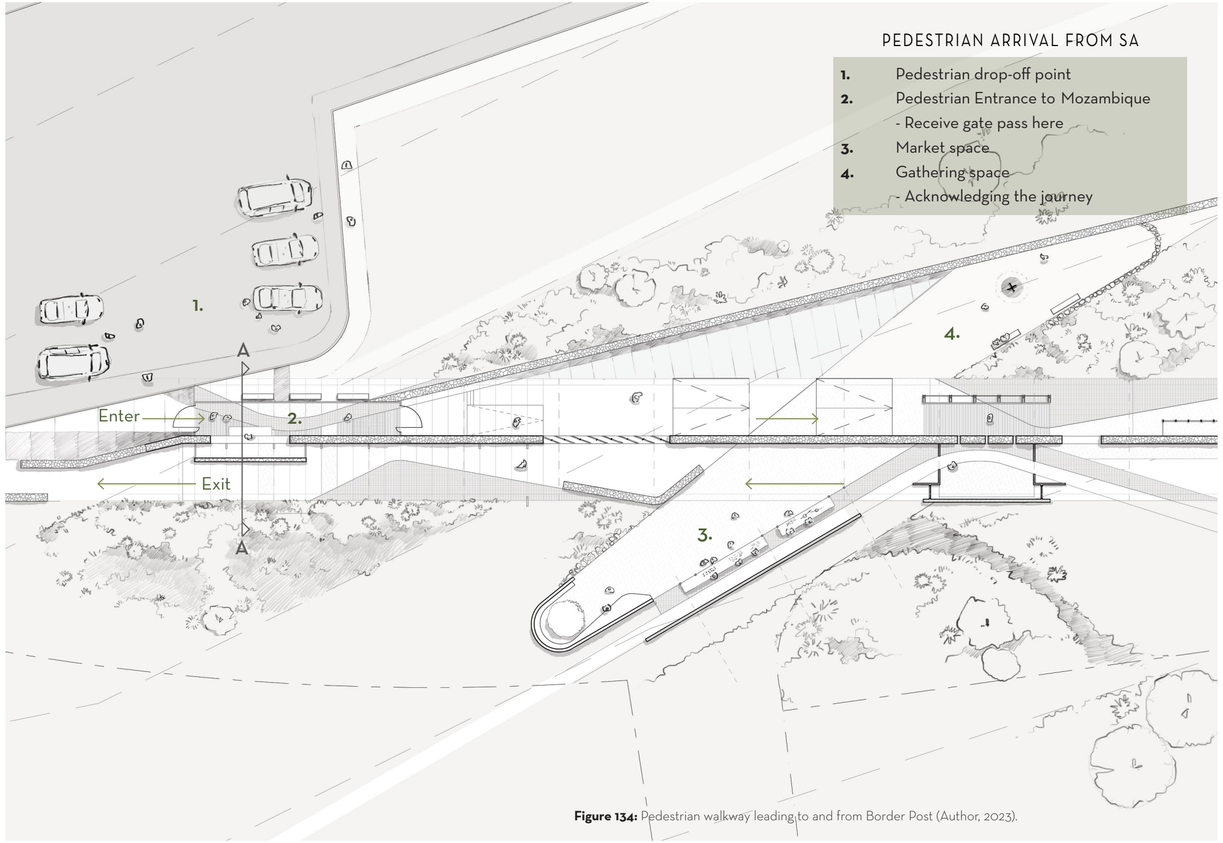


Figure 134: Pedestrian walkway leading to and from Border Post (Author, 2023).

Arrival

The entrance building is an extended threshold, emphasising the introduction to the journey ahead. The structure starts to allude to some of the elements that tie the narrative together.

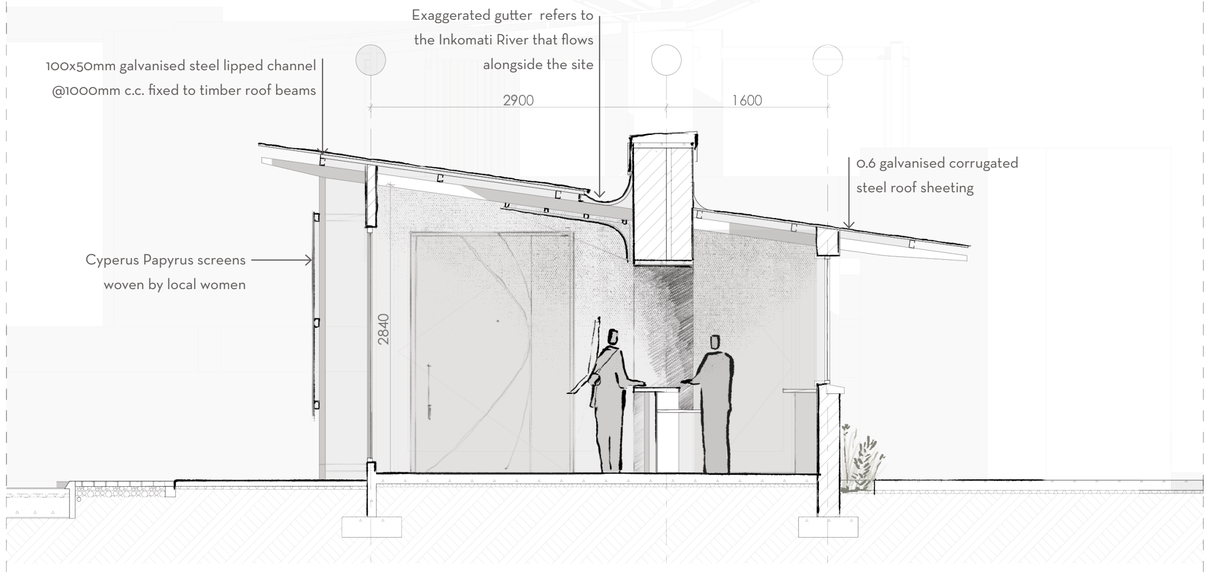


Figure 135: Section AA through Pedestrian entrance (Author, 2023).



Figure 136: Pedestrian Gate Entrance (Author, 2023).

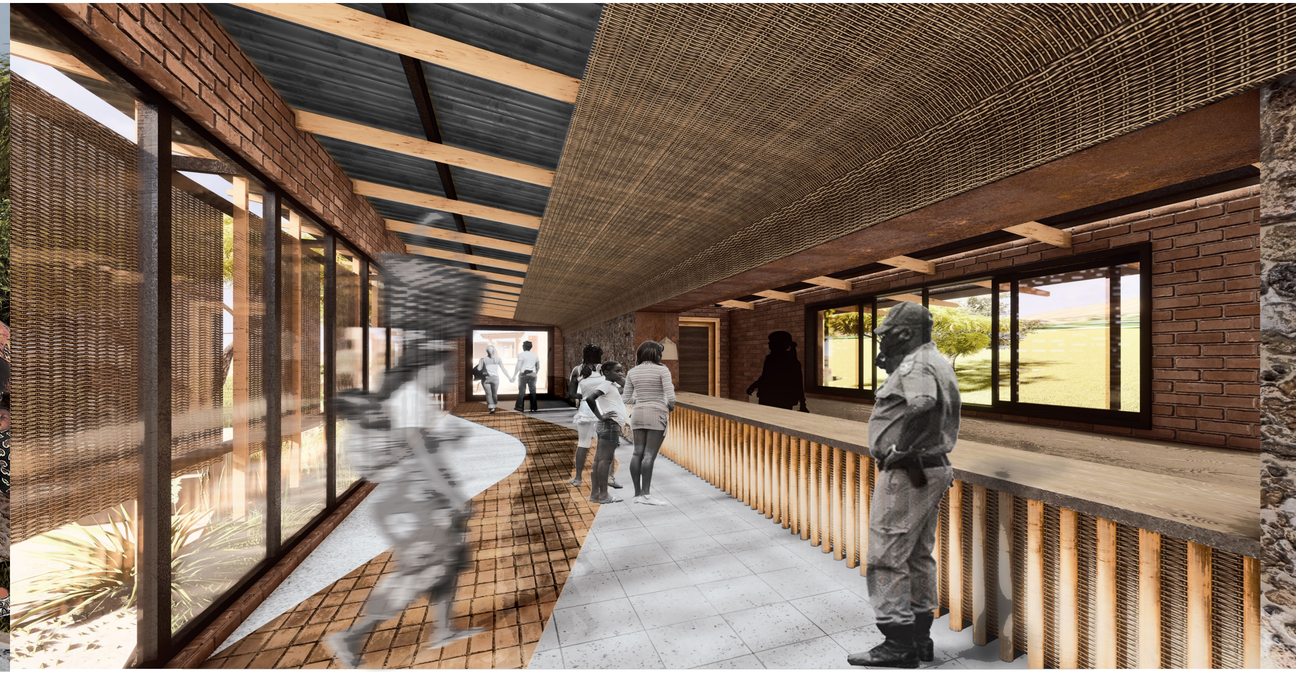


Figure 137: Interior (Author, 2023).

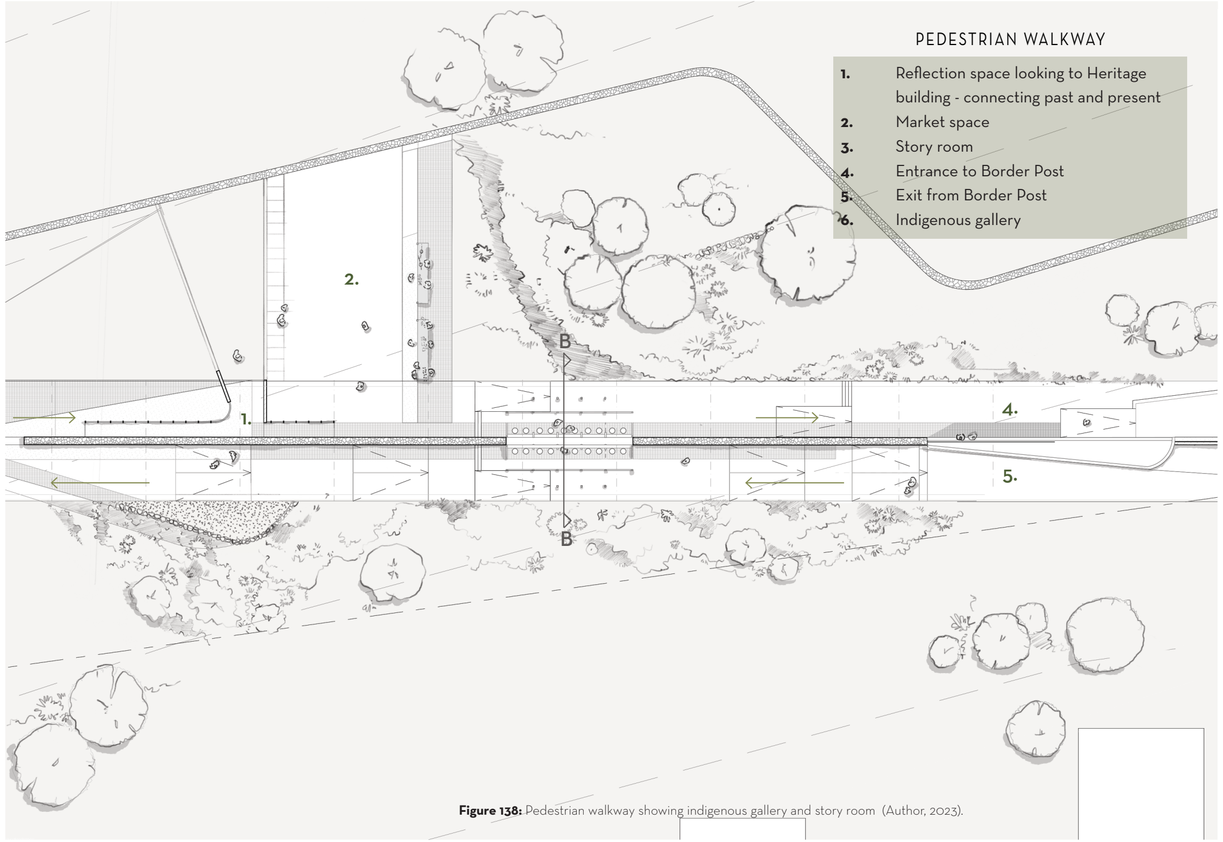
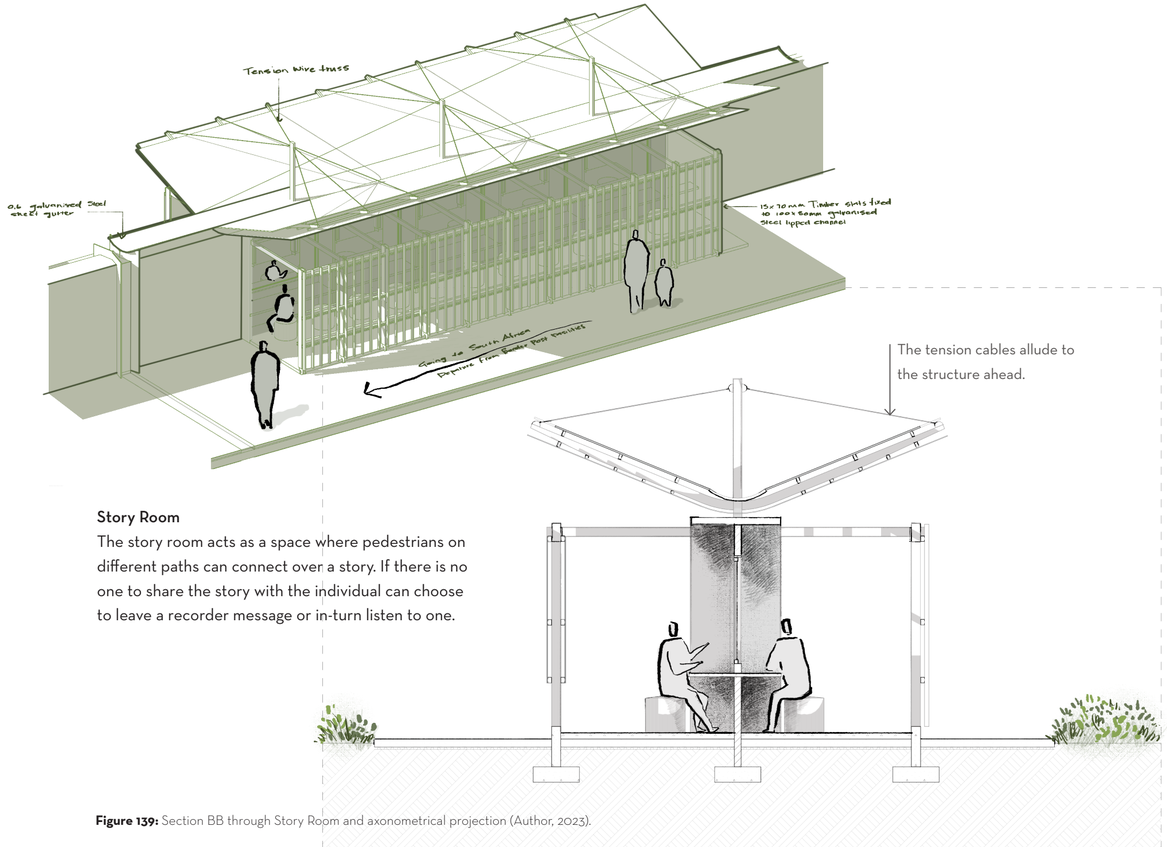


Figure 138: Pedestrian walkway showing indigenous gallery and story room (Author, 2023).



Story Room

The story room acts as a space where pedestrians on different paths can connect over a story. If there is no one to share the story with the individual can choose to leave a recorder message or in-turn listen to one.

Figure 139: Section BB through Story Room and axonometrical projection (Author, 2023).



Figure 140: Noticing the past (Author, 2023).



Figure 141: Exhibition from past to present (Author, 2023).



Figure 142: Main Entrance of Pedestrian Border Post travelling from South Africa to Mozambique (Author, 2023).



Figure 143: Preforming the first step of the ritual (Author, 2023).

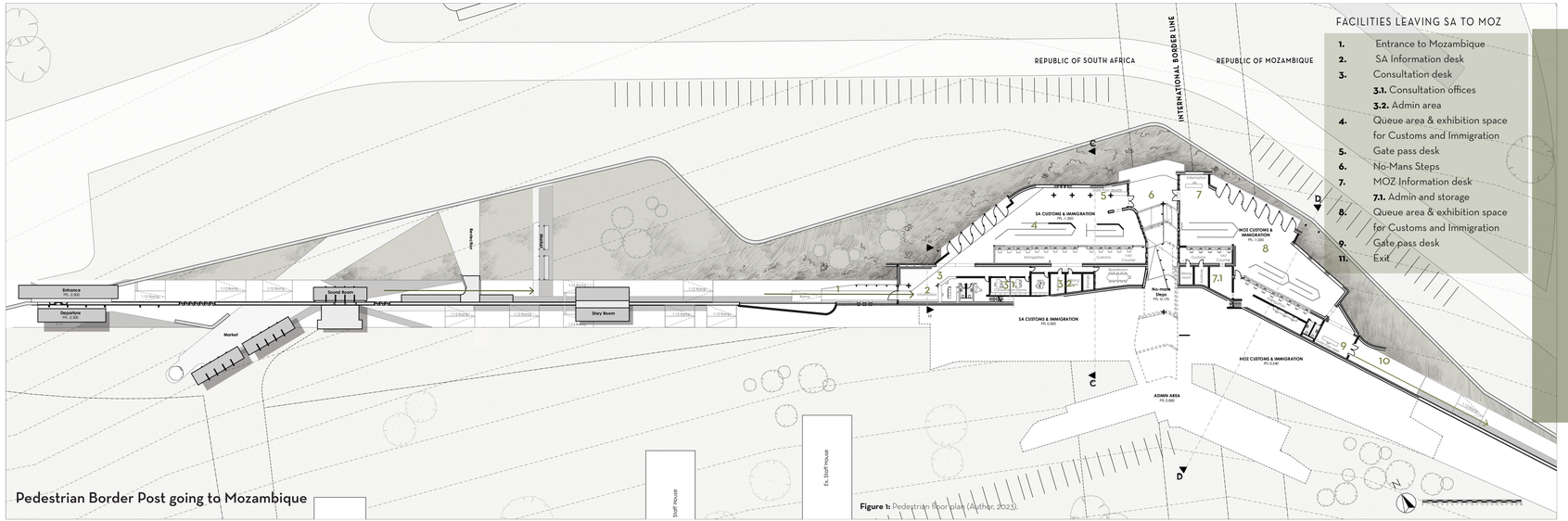


Figure 1: Pedestrian floor plan (Author, 2023).



Figure 14.1: Interior customs and immigrations (Author, 2023).

The limen of waiting

The liminal state of waiting at the border can be transformed into a celebrated threshold, a ritual of transition. Using form and natural light, the passage from South Africa to Mozambique becomes an experience that transcends the mere mechanics of a border control. It invites travellers to shift their perspective from perceiving the border as a space of control to one of transformation, where the journey itself holds significance and meaning. Therefore, connecting not just two countries but also the narratives of those who traverse the boundary.

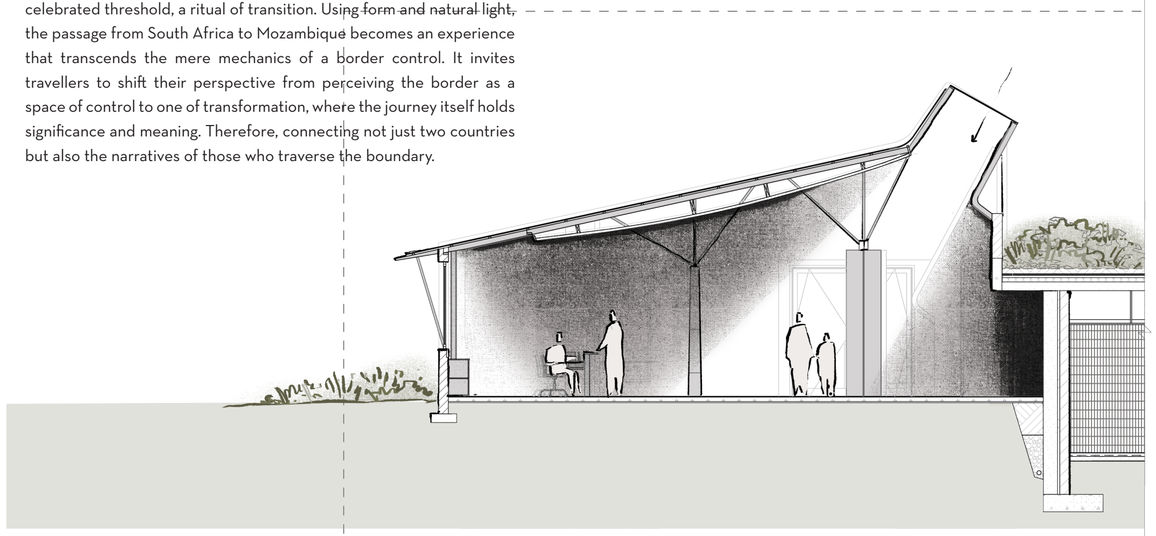


Figure 145: Section CC Pedestrian to South Africa (Author, 2023).

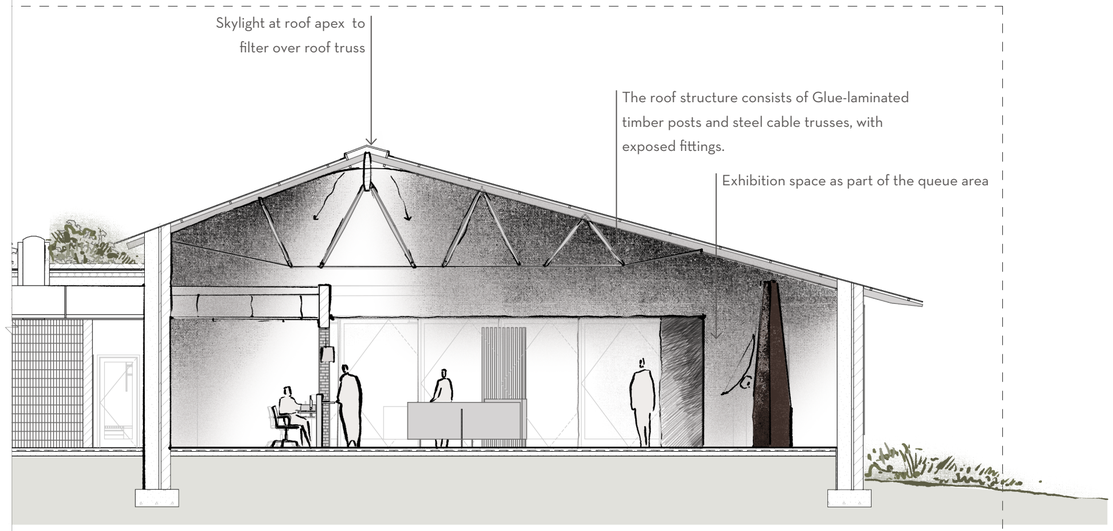


Figure 146: Section CC Pedestrian to Mozambique (Author, 2023).

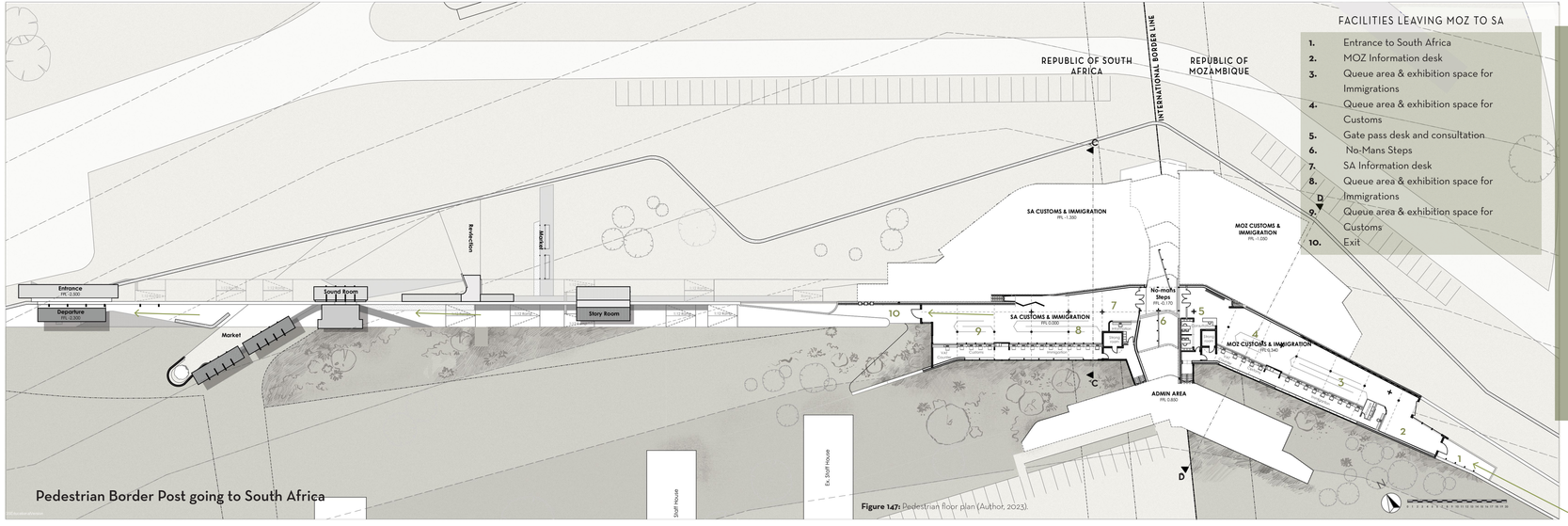


Figure 147: Pedestrian floor plan (Author, 2023).



Figure 148: Interior customs and immigrations (Author, 2023).



Figure 149: Threshold spaces (Author, 2023).



Figure 150: Admin floor plan (Author, 2023).



Figure 151: North elevation of pedestrian building (Author, 2023).



Figure 152: Section through pedestrian processing areas (Author, 2023).

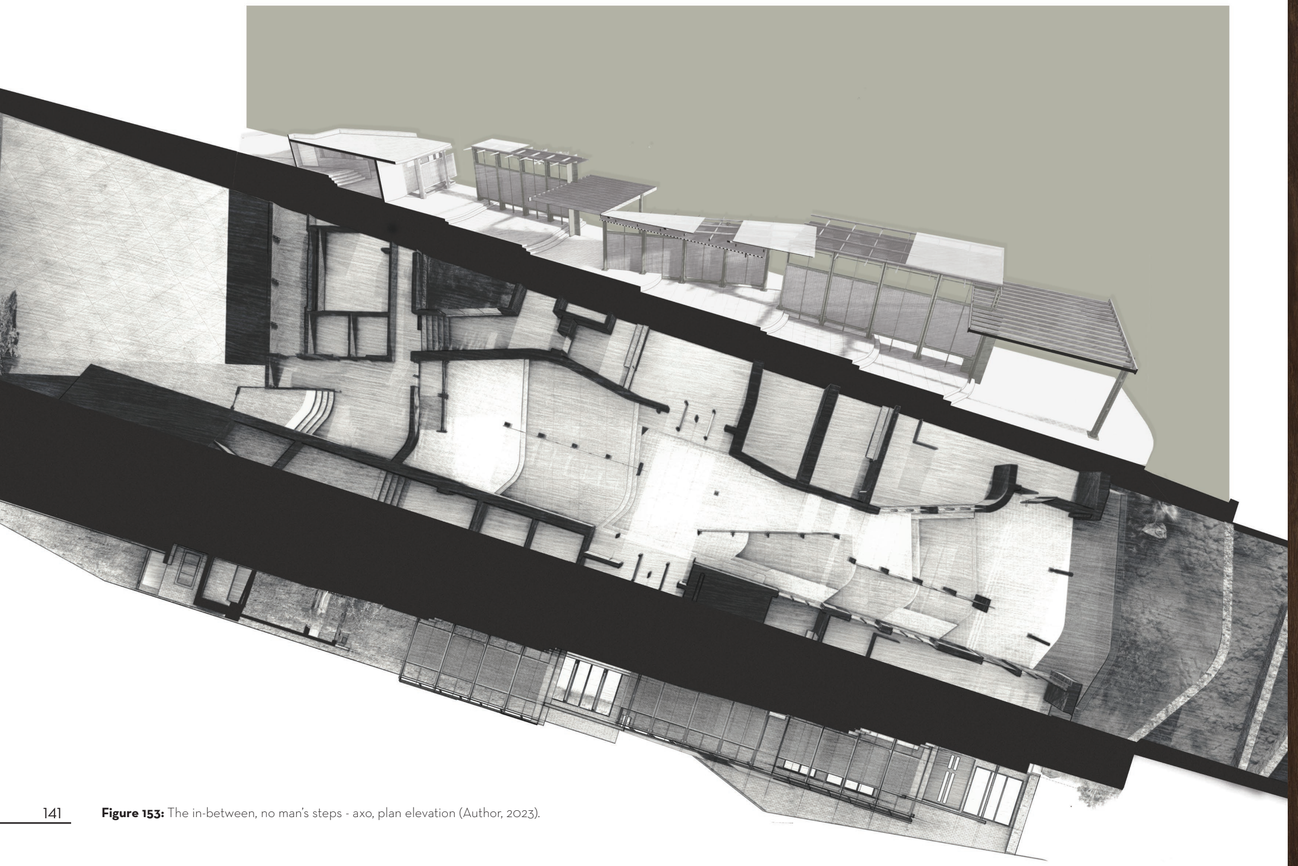
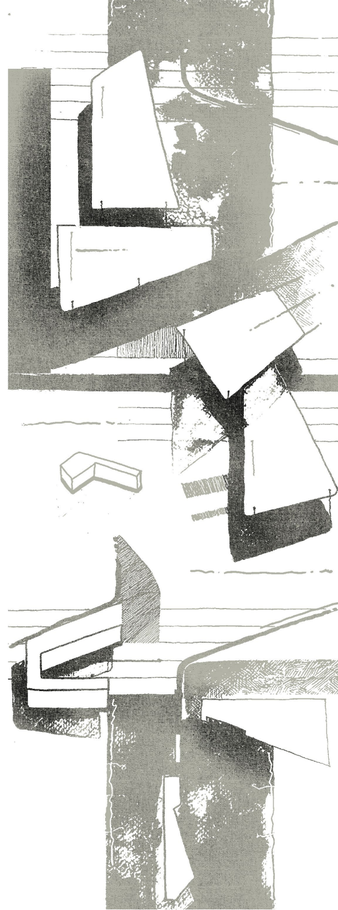


Figure 153: The in-between, no man's steps - axo, plan elevation (Author, 2023).



Figure 154: Looking down the in-between (Author, 2023).



The “No-Mans Steps” represents a pivotal and intriguing element of spatial design – the in-between. These steps function as much more than a mere physical connector between South Africa and Mozambique it extends beyond bridging two physical spaces; it is a symbolic bridge between cultures, narratives, and shared experiences.

These steps become a refuge from the impersonal and structured environment of a border post. It’s a space where the architecture, becomes a storyteller and a mediator. Here, the in-between becomes a platform for events, rituals, and gatherings to take place.

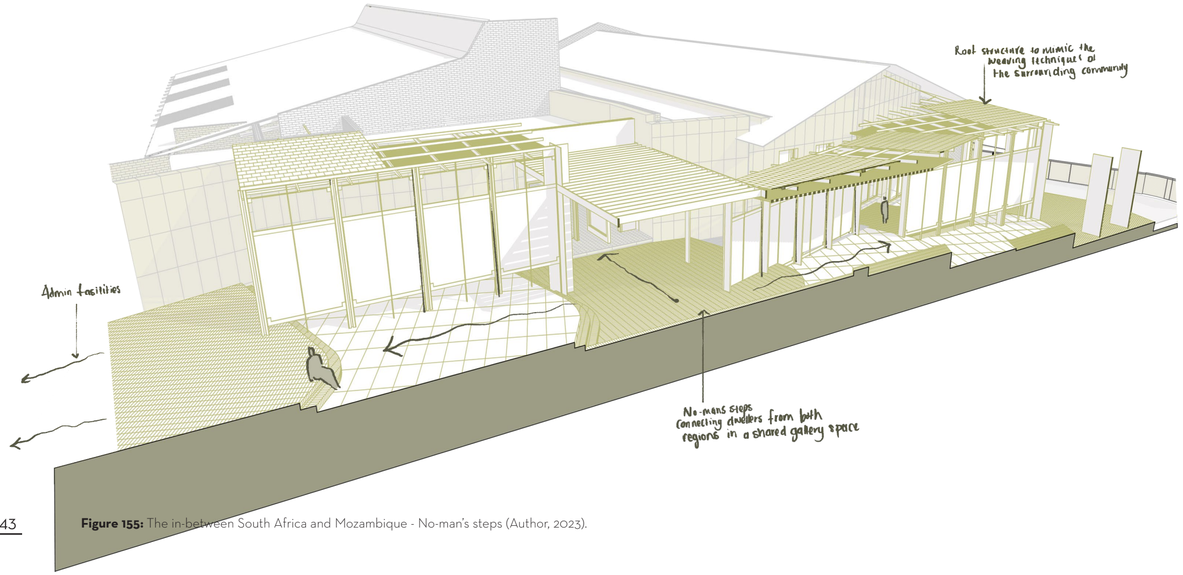


Figure 155: The in-between South Africa and Mozambique - No-man’s steps (Author, 2023).



Figure 156: Perspective looking up No-man’s steps (Author, 2023).

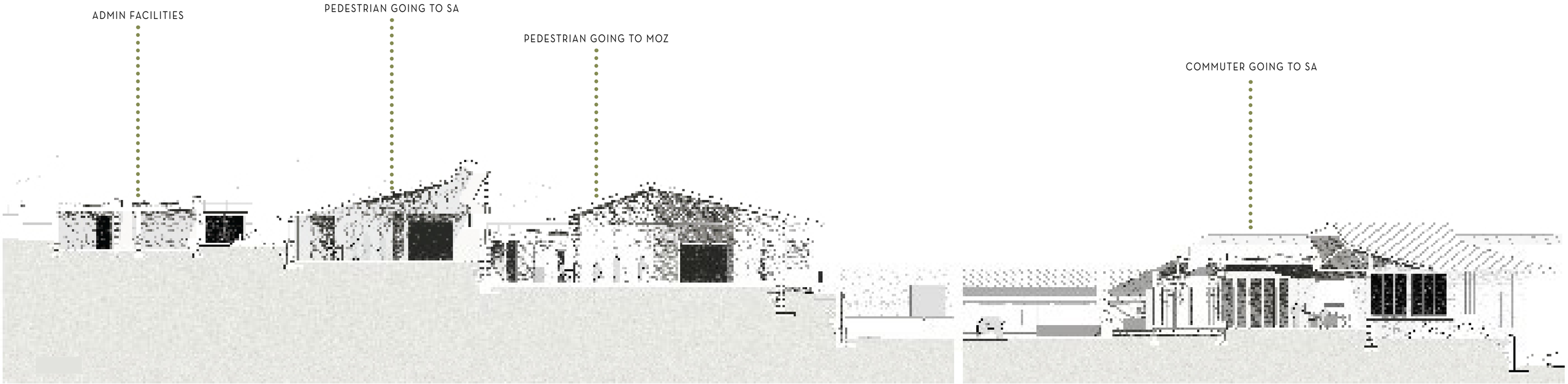


Figure 157: Long section through pedestrian and commuter border post (Author, 2023).

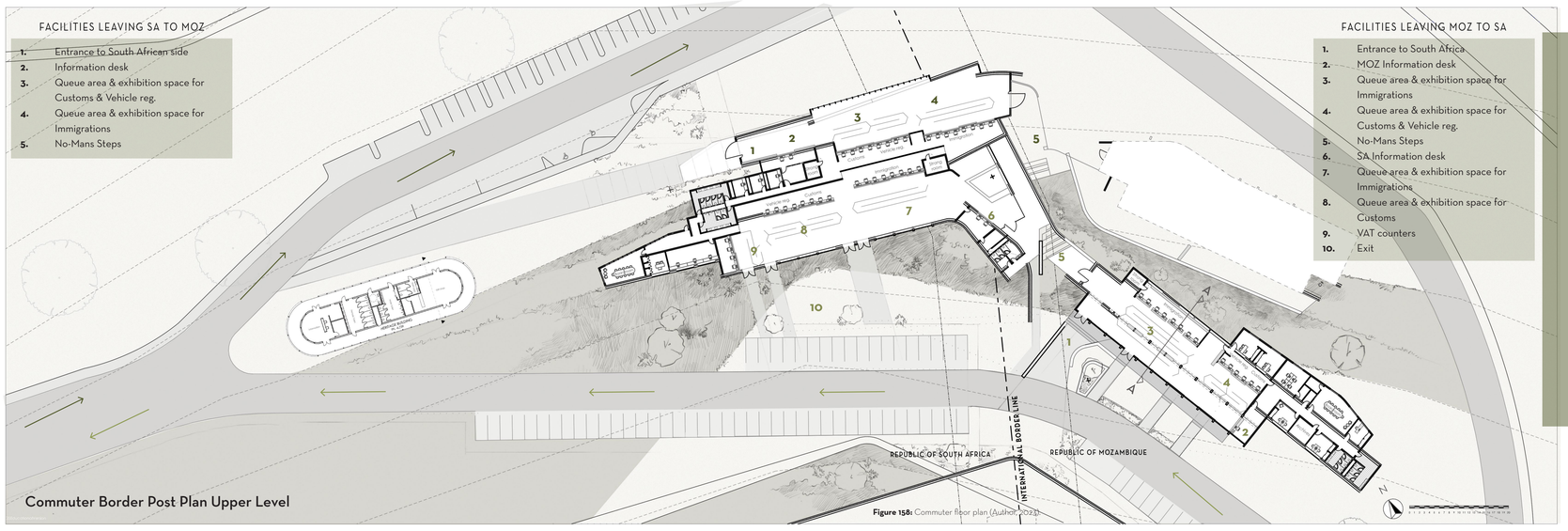


Figure 158: Commuter floor plan (Author, 2023).

STRUCTURAL COMPOSITION:

Commuter border structure

The Lebombo Border Post design incorporates a structural system that combines both durability and functionality to meet the specific requirements of the site's unique context. The primary structural components are thick stone walls, a 100mm thick concrete slab with timber-decked pathways, and a lightweight steel truss roof featuring a skylight and natural ventilation through louvres, all topped with galvanized corrugated roof sheeting fixed to top hat steel purlins.

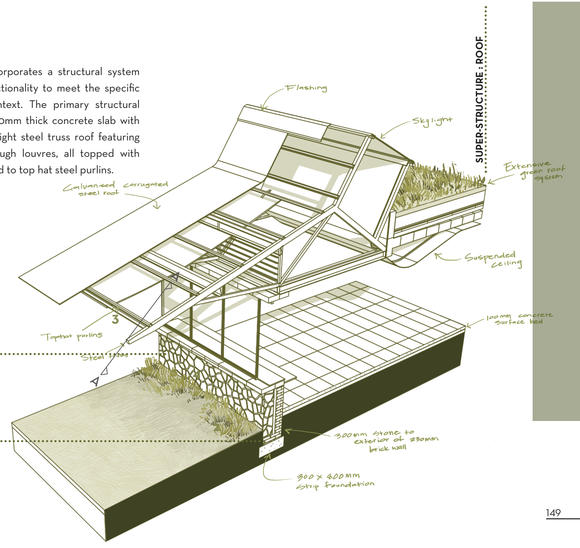


Figure 159: Commuter floor plan (Author, 2023).

- **300 mm Thick Stone Walls:**

The utilization of 300 mm thick stone walls serves multiple purposes. Firstly, these walls provide robustness and stability, ensuring the structural integrity of the border post. Secondly, they are an essential element in the context of the Lebombo Border. Not only contribute to the building's aesthetic by blending with the natural surroundings but also pay homage to the local construction traditions. The thickness of these walls also aids in thermal mass, helping to regulate the interior temperature naturally.

- **Concrete Slab and Timber-Decked Pathways:**

The 100 mm thick concrete slab forms the foundation of the border post, offering a stable platform for the structure. The inclusion of timber-decked pathways not only enhances the visual appeal but also serves a rhythmic purpose.

- **Lightweight Steel Truss Roof with Skylight and Louvres:**

The roof structure is a critical component of the Border Post's design, as it not only shelters users from the elements but also incorporates sustainable features. The lightweight steel truss system provides the necessary structural support while minimizing the load on the walls. The inclusion of a skylight brings natural light into the building, reducing the need for artificial lighting during the day.

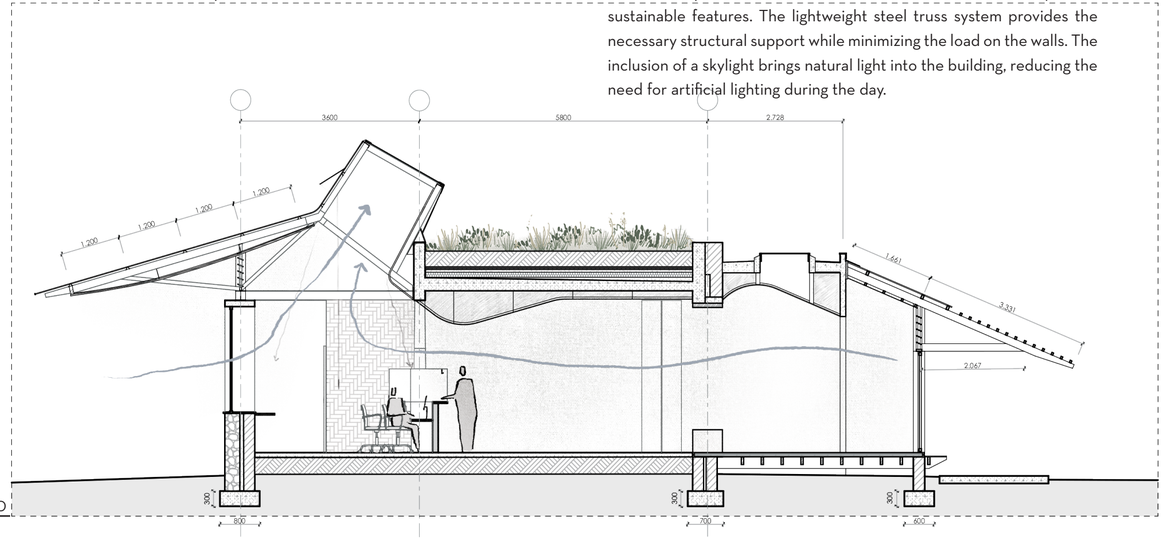




Figure 160: Commuter Border Post, sun set (Author, 2023).



Figure 161: No-mans steps (Author, 2023).



Figure 162: Commuter Border Post, going to South Africa, elevation of entrance (Author, 2023).



Figure 163: Commuter Border Post, Lower level - going to Mozambique (Author, 2023).

IN CONCLUSION

In this dissertation, the intricate realm of the Lebombo Border Post was explored from historical, social, and economic factors that define this border post and its profound consequences on the communities it serves. The border transcends its conventional administrative and security roles drawing from the theories of Marc Augé and Bernard Tschumi, the notion of non-place and the potential to craft spaces that challenge the normative designs of such facilities. Furthermore, the exploration into the role of music as a cross-cultural identifier has unveiled the latent power of cultural elements to bind communities across borders.

The Lebombo Border Post has been reimagined, from a dystopian non-place into a vibrant, culturally sensitive space. The central narrative revolves around the integration of narratives, events, and rituals into the architectural fabric, creating spaces that resonate emotionally and inclusively while paying homage to the site's rich history and cultural identity by weaving the site's characteristics into design concepts. The site's inherent features became instrumental in composing the structure and layout of the border post, aligning it with its environment and the people it serves.

The theoretical exploration supports the initial notion of the border post as a place in-between, inhabited and constantly questioning the boundaries. In essence, the dissertation plans a transformative journey for the Lebombo Border Post, where architectural innovation aligns with the narratives and culture of the site to build a bridge, not just between nations, but between people and the very essence of the border itself.

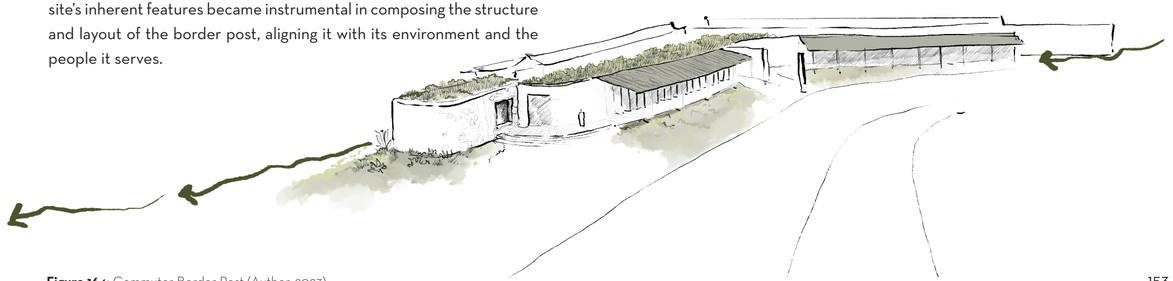


Figure 164: Commuter Border Post (Author, 2023).

CHAPTER 05

Connecting the wire and finding resonance

This chapter examines the technical aspects of the project further, synthesizing the insights gained in the preceding chapters. Two primary factors are considered: understanding how the architectural structure interacts with the surrounding environment and integrating movement mechanisms.



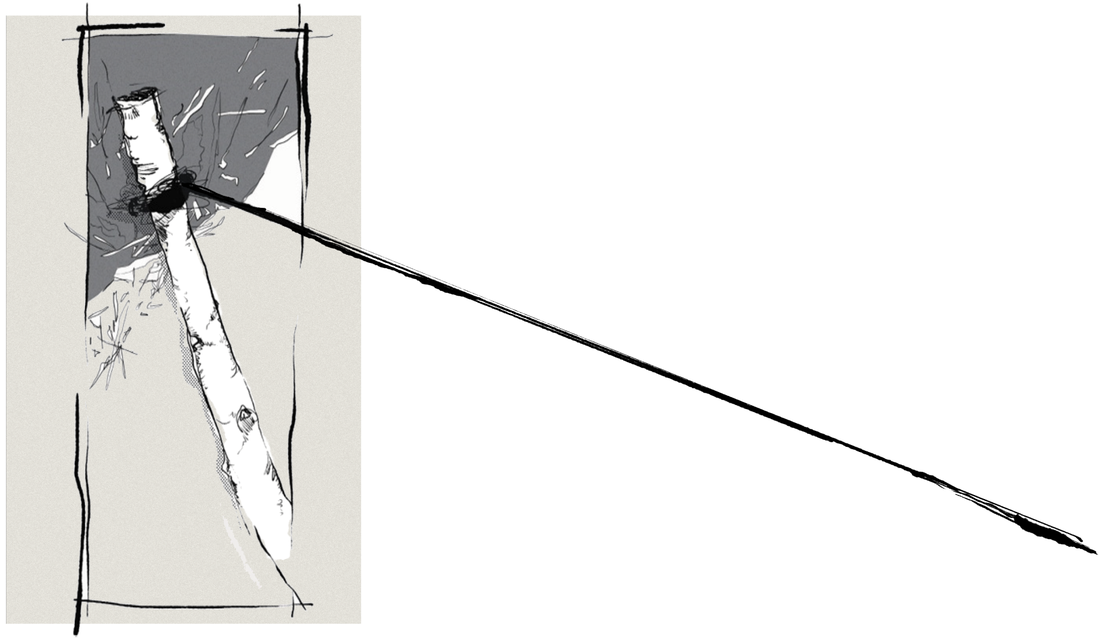


Figure 165: The in-between (Author, 2023).

5. TECHNICAL INVESTIGATION

25°26'35.7"S 31°59'11.9"E

A pivotal juncture between South Africa and Mozambique. This locale is not just a physical point but a symbol of the infamous no-man's land, a liminal space that serves as the project's core inspiration and subsequently becomes the location for the proposed site. The building balances the scale between South Africa and Mozambique, incorporating the long history of cross-border movement and trade while composing the building style of the surrounding neighbourhoods, Komatipoort and Ressano Garcia, in a dynamic dance with the environment.

CIRCULATION

An essential part of the design is emphasising circulation in a manner clear to the different users to create a cohesive denouement. Circulation is thus not only a way to connect destinations but rather an architectural device that articulates the journey narrative.

However, critical security factors need to be assessed to ensure that the project is not only poetic but functional.

The approach:

The three users, the pedestrian, commuter, and truck driver, enter the site on the same axis (N4). Once they have joined the site, each have a specific route that splits off in different directions to accommodate the site's fall towards the Inkomati River, and additionally helps with the processing and security aspect of the design.

The composition of the design defragments the structure of a normative border post, by blurring the boundaries between waiting, processing and private areas.

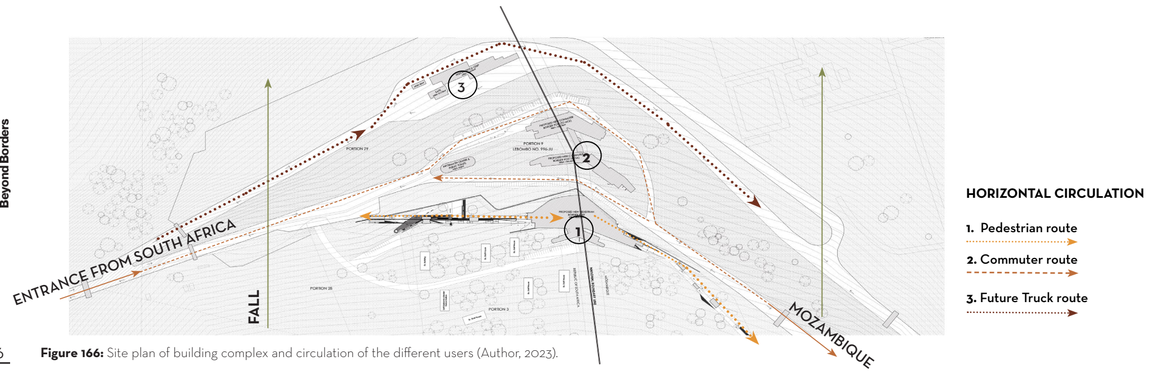


Figure 166: Site plan of building complex and circulation of the different users (Author, 2023).

The concept of a "no-man's land" between two countries refers to the area that lies between the borders of two countries but is not under the control or jurisdiction of either country (Maswabi, 2016:online). The existence, size, and use of a no-man's land between two countries can vary depending on various factors, including historical, political, and geographical considerations.

In the case of the Lebombo border post between South Africa and Mozambique, there is no official no-man's land as such, but there is a buffer zone or transit area that lies between the two border posts. This area is generally used for the temporary parking of vehicles and processing of individuals who are crossing the border. The following regulations are, however, important to understand and apply to the design of a border.

Applicable Regulations

THE NATIONAL BUILDING REGULATIONS AND BUILDING STANDARDS ACT, 1977 (ACT NO. 103 OF 1977)

This Act sets out the national building regulations and standards that apply to the design and construction of buildings, including border posts.

THE IMMIGRATION ACT, 2002 (ACT NO. 13 OF 2002)

This Act regulates the entry and exit of persons into and out of South Africa, including the design and operation of border posts (Isa, 2022:online).

THE CUSTOMS AND EXCISE ACT, 1964 (ACT NO. 91 OF 1964)

This Act regulates the import and export of goods into and out of South Africa, including the design and operation of border posts.

THE INTERNATIONAL HEALTH REGULATIONS, 2005

This regulation sets out the requirements for the prevention and control of the spread of infectious diseases across international borders (Bakari, 2013:online).

This regulation sets out the requirements for the prevention and control of the spread of infectious diseases across international borders, including the design and operation of border posts.

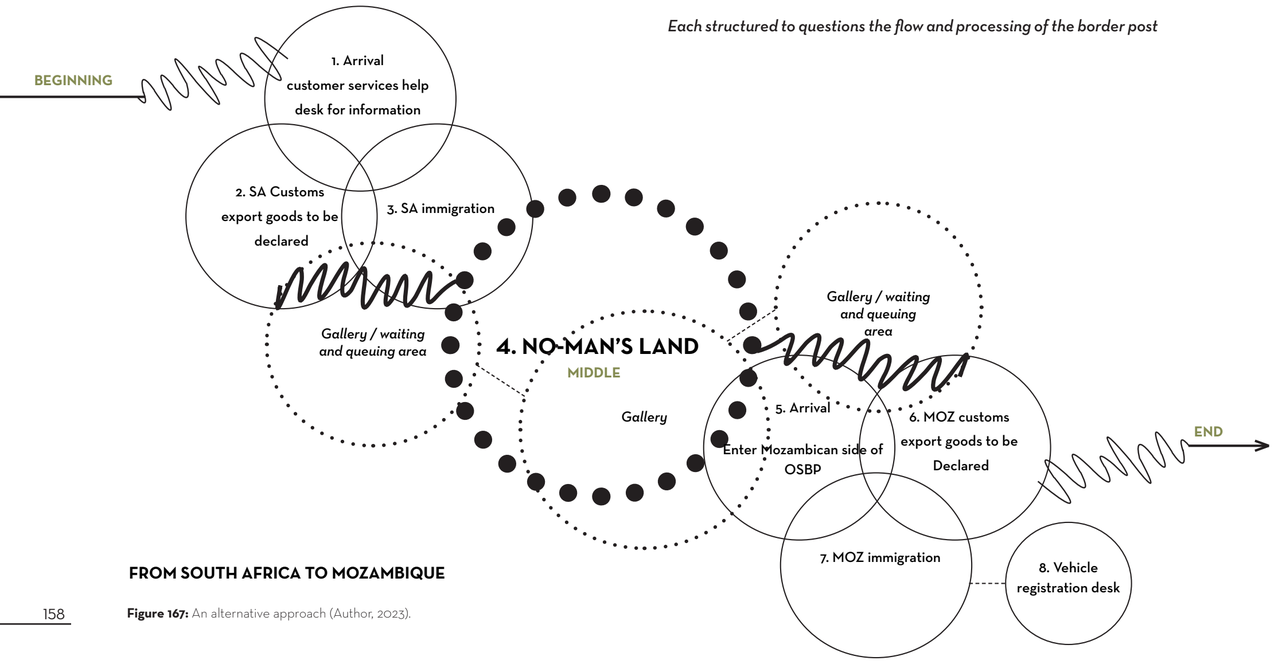
What each of these regulations has in common is the importance of flow and processing, placing emphasis on security and not the user. On the following page, I again highlight the difference in the approach I applied to design the border post.

COMPOSING PUBLIC - PROCESSING - PRIVATE:

Circulation of processing in:

1. Pedestrian border post
2. Commuter border post

Each structured to questions the flow and processing of the border post



FROM SOUTH AFRICA TO MOZAMBIQUE

Figure 167: An alternative approach (Author, 2023).

5.1. PRECEDENT
KGALAGADI TRANSFRONTIER PARK

Location: Botswana
Architects: PlanEco

The following precedent also questions the normative structuring of a border post by incorporating a completely different structure. It brings travellers from both sides together into one building while incorporating elements of the natural landscape.

The project is located at the entrance of the Kgalagadi Transfrontier Park in Twee Rivieren, where South Africa and Botswana meet (figure 166). The design is influenced by the natural structure and arrangement of an organic anthill and consists of a central chamber surrounded by a series of rooms arranged in a circular pattern (Planco, nd: online).

To control the amount of solar radiation and reduce heat gain, significant timber shading screens are incorporated, and the lower section of the walls is covered in dry-stacked rock cladding. This not only insulates the building but also protects it from the unyielding sun (Planco, nd: online). The border post learns from the environment it is situated in, it becomes a beacon in the landscape instead of a dystopian structure of control.

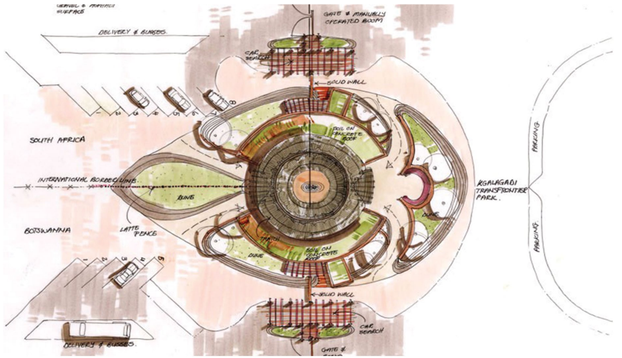


Figure 169: Plan of border post (Planco,nd:online).

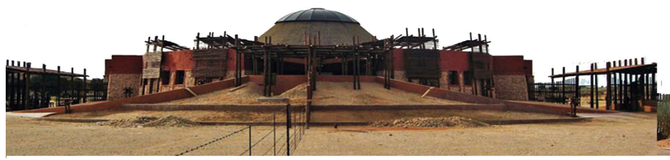




Figure 168: Kgalagadi Transfrontier park border post exterior elevations (Planco,nd:online).

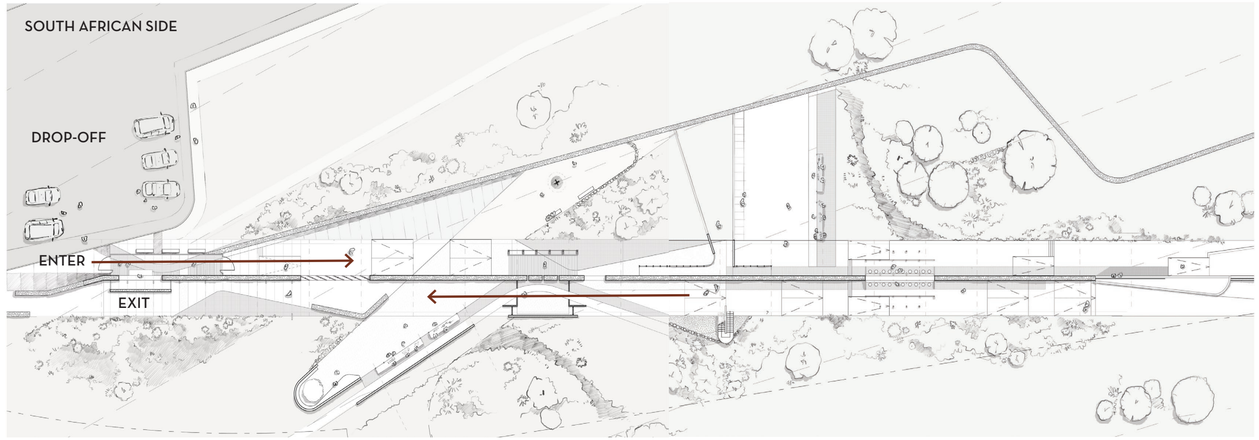


Figure 170: Plan of Pedestrian entrance from South Africa (Author, 2023).

5.2. PEDESTRIAN CIRCULATION

The pedestrian journey starts from the country of origin, they are oriented by a beacon signaling the path that leads them onto the promenade. The promenade is used as a device of the journey narrative, along with architectural nodes used to accentuate the events individuals discover as they move through the site. The circulation of the pedestrian is a 100 m long route that moves uphill with 1:12 ramps before they are met with the processing facilities. This long progression through the site aims to capture the beginning, middle and end of a story that is unique to each traveller.

The first section of the promenade establishes the beginning of the journey as pedestrians must enter the gate pass facilities to receive a gate pass, here they are checked for contraband before they are approved to go on the journey. The journey entails a set of landscaped areas that are specifically aimed to make the viewer aware of their surroudings and the indigenous plants of the region. The promenade articulates the connection between the building, landscaping, and the history of movement.

5.2.1. THE JOURNEY IN THE STRUCTURE

Pedestrians are led through the building which positions in the middle of the story, the place where the event unfolds, and unexpected interactions can occur. The middle part of the story underscores the waiting area's active role in the transitional experience. The composition of the pedestrian building draws inspiration from the tectonics of the *Xitende*.

As depicted in figure 163, the initial form of this structure encapsulates two key elements: firstly, the foundational branch of the *Xitende* and secondly, the *Xitende's* wire stretched between two poles. The two different roof systems are unified by an earth roof designed to effectively manage and redirect stormwater runoff. Subsequently, the design of the pedestrian building served as an anchor, influencing the response and form of the commuter building.

The pedestrian then circulates towards the exit of the building. The end however is only the start of a much larger narrative, one could say the whole is only an event in a chapter of the story.

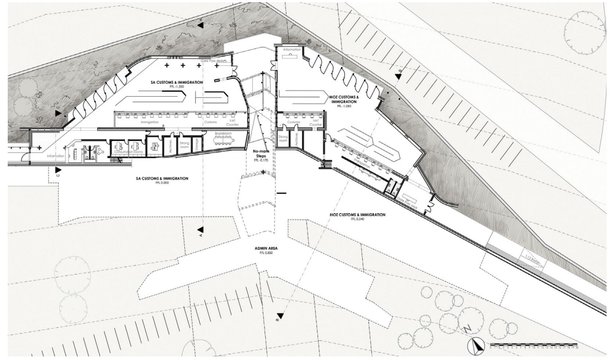


Figure 171: Pedestrian circulation in the building going to Mozambique (Author, 2023).

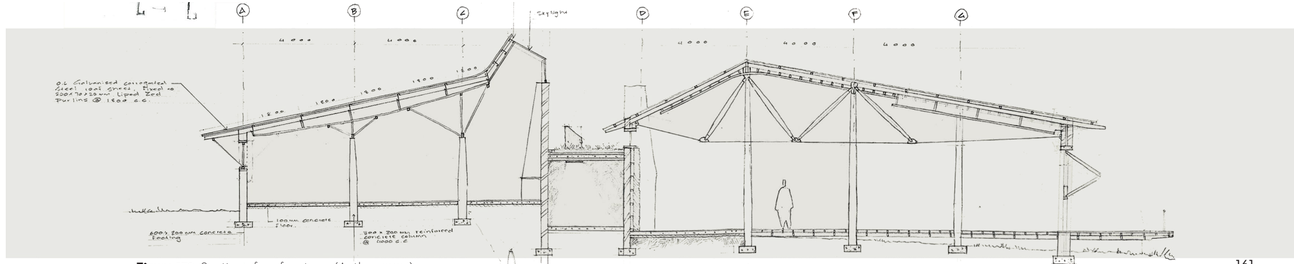


Figure 172: Section of roof systems (Author, 2023).

5.3. STRUCTURAL PRECEDENT SIMPSON–LEE HOUSE

Location: New South Wales, Australia
Architects: Glenn Murcutt
Completed: 1988-93

Glenn Murcutt's design of Simpson-Lee House celebrates a deep connection with the natural environment through the integration of sustainable elements. Murcutt's work embodied an architectural approach that harmonises with the surroundings and integrates narratives subtly into the fabric of the structure. Simpson-Lee House constantly influenced the design thinking and aided in the understanding of the structure.



Figure 173: Simpson-Lee House (Speck, 2010:online).

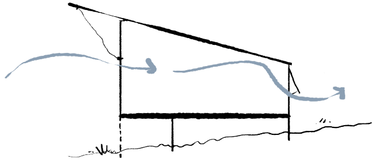


Figure 174: Cross-ventilation (Author, 2023:online).

The roof structure

In contrast to an overly complex architectural composition, the structure primarily consisted of polished concrete floors, a steel structural frame, and exterior corrugated metal sheeting all of which allowed the roof to appear free of the building, this is also articulated even more by the clerestory window which makes the steel roof seem light mimicking the tree canopy that surrounds it (OZ.E.TECTURE, 1988:online). The precedent emphasised the importance of a roof as more than just a functional covering but as an integral part of the overall design. The roof not only provides shelter but also interacts with the environment, allowing for natural ventilation and daylighting (OZ.E.TECTURE, 1988:online).

Influence on the design

The building's structure takes note of many elements to establish a comfortable environment. For instance, the placement of louvres at both ends of the building fosters a more effective system of cross-ventilation, enhancing natural airflow and cooling within the structure (figure 172). However, the significance goes beyond functional considerations. The roof becomes a narrative device, that connects man with the surrounding landscape.

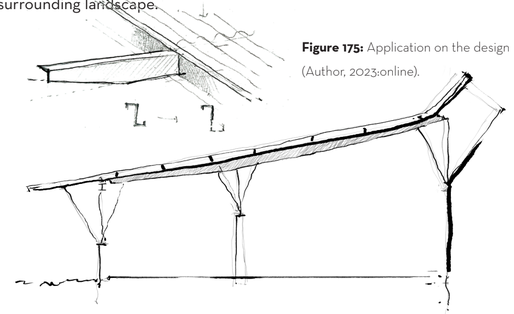


Figure 175: Application on the design (Author, 2023:online).

5.4. MORE THAN A ROOF

The tectonic intricacies of the *Xitende* instrument offered many possibilities. As shown in figure 168, I attempted to harness the inherent rhythmic qualities of this device as the second roof system was a direct attempt to mimic the wire that spans between two pivotal poles—a wire that resonates with different harmonies depending on its tension.

The aim of the structure is to make the dweller more aware of his surroundings, of the banging of stamps on hardwood tables and the movement of people, to look up and notice a place designed with care and not only focused on processing.



Figure 176: Detail of tension cable truss (Author, 2023:online).

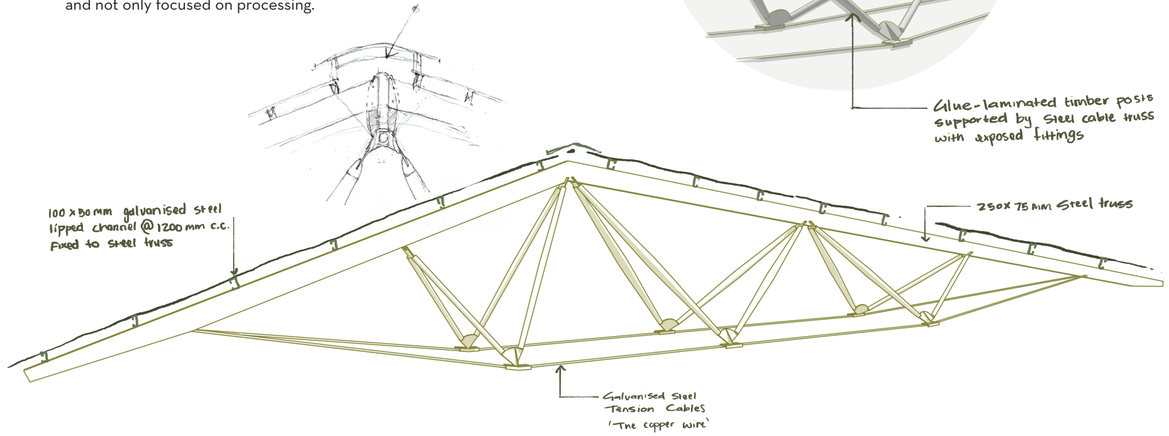


Figure 177: Steel tension wire truss (Author, 2023:online).

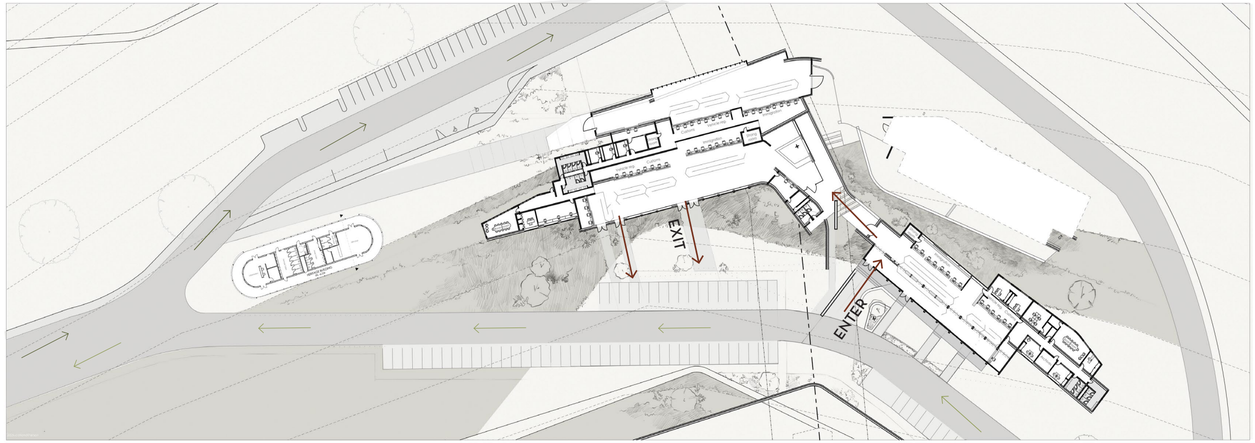


Figure 178: Plan of Commuter circulation from Mozambique and parking area (Author, 2023).

5.5. COMMUTER CIRCULATION

The commuter's story takes on a different form, as the journey is reduced to a long stretch of tar. Emphasis is thus placed on the built form as a mechanism of journeying. Parking is located close to the building. Users circulate from the parking lot to the entrance of the first processing facilities. A small indigenous garden acts as the first threshold, and the second threshold is emphasised by large swing doors which open to the processing area intertwined with a gallery space, this creates a buffer between the liminal as a fleeting experience but rather transforms it into a more frequented place.

The journey starts to take form as commuters exit the first building, they travel through the "no man's land" to reach the second building, in this act they can acknowledge their passage with other travellers in-between a moment of transition.

Parking

Parking and stormwater management are vital considerations at the commuter border post. The current South African facilities only have 55 parking spaces for vehicles entering South Africa and 32 for those heading into Mozambique, it's essential to note that the parking capacity might not be the primary issue at this site. Instead, the efficiency of the processing in the facilities and the impacts on waiting times, were the main concerns.

The proposed design of the commuter border post accommodates 120 parking spaces, with 50 spaces on each side four additional disabled parking spaces and six longer lanes for trailers and mini buses. However, this extensive parking area significantly alters the natural landscape as it involves the construction of tar roads and parking bays. Consequently, the management of stormwater runoff is a critical aspect of the design, and alternative methods, like green roofs and permeable pavers, must be integrated to mitigate these effects.

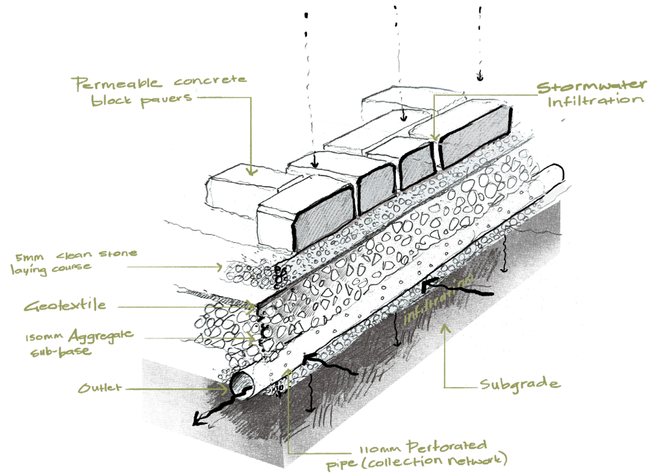


Figure 179: Permeable concrete block pever system (Author, 2023).

5.6. SYSTEMS FOR WATER MANAGEMENT

5.6.1. PERMEABLE PAVERS

Permeable pavers can be constructed to promote the infiltration of stormwater runoff into a sublayer (Armitage, Vice, Fisher-Jeffes, Winter, Spiegle & Dunstan, 2013:30). While permeable pavers are well-suited for pedestrian pathways, they can also be modified to support heavier loads, making them suitable for vehicular use in areas with heavy traffic, such as around the commuter border post. However, due to the continuous traffic flow, only permeable concrete block pavers will be employed to bear the load and facilitate stormwater runoff management. This approach aligns with the overarching design concept that aims to create an awareness of the surrounding landscape. The key advantage of permeable pavements is their ability to reduce stormwater discharge rates and volumes from impervious surfaces, thereby lessening the impact on the local environment (Armitage et al., 2013:32).

Construction:

The construction of permeable concrete block paving typically begins on a layer of 5 mm clean stone with a geotextile membrane, the membrane is then placed on top of a 150 mm layer of stone aggregate (Armitage et al., 2013:32). A perforated drainage pipe is also installed at the bottom layer of the geotextile, spanning the entire permeable pavement system. This facilitates the infiltration of stormwater into the underlying layer, promoting groundwater table recharge nevertheless, it's crucial to note that permeable pavements are most effective on slopes of less than 5%, ideally flat surfaces, as high-velocity stormwater from steep slopes may struggle to penetrate the pavement surface (Armitage et al., 2013:32). Due to the lack of extended detention within the structure, pollutants may pass through and damage the natural soil condition (Armitage et al., 2013:32). This could however be alleviated by the use of a rain garden for heavy rain bursts that might overwhelm the sublayers.

5.6.2. RAIN GARDEN

Rain gardens are another eco-friendly stormwater management technique. Essentially, a rain garden serves as a natural filtration system by directing stormwater runoff into a specially designed garden area that utilises specific plant species known for their ability to remove toxins from water (Meade, 2017:online). Indigenous plants like bird-of-paradise, small wild iris, and common couch grass can be used as visually pleasing ways to manage stormwater while also promoting biodiversity within the border post's surroundings.

Incorporating these stormwater management techniques, specifically permeable pavements and rain gardens, into the design of the commuter border post not only addresses critical environmental concerns but also aligns with the broader goal of creating a functional and sustainable border crossing that respects its natural surroundings.

Furthermore, the landscaping serves as a sustainable solution to manage rainwater runoff effectively. By absorbing and filtering rainwater, it prevents erosion of nearby rivers (Inkomati) and streams, safeguarding these vital water bodies from the adverse effects of excessive runoff.

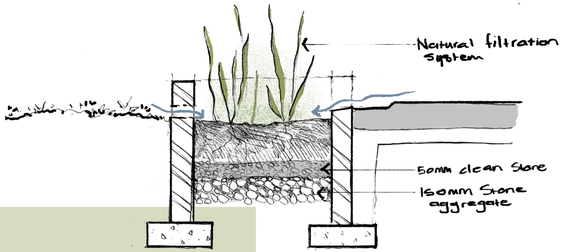


Figure 181: Rain Garden system (Author, 2023).



Figure 180: Rain Garden infront of Commuter border post (Author, 2023).

Landscaping:

The external floor finishes of this border post design constitute a harmonious mosaic of natural stone and brick, carefully integrated to celebrate the movement of people across the landscape. This deliberate choice not only serves aesthetic purposes but also carries significant functional and environmental importance within the project.

The landscape surrounding the border post emerges as a crucial element of the design, weaving together the architectural and natural realms to create a seamless experience for the site's users. As travelers wait to undergo processing procedures, the carefully curated landscaping provides a unique and enriching learning experience. It engages visitors with the natural world, allowing them to observe and appreciate the local flora and fauna, turning what might otherwise be a mundane administrative process into an opportunity for cultural and ecological education.

One of the more notable features of the border post design is its extensive green roofs. The specific architectural choice for green roofs, originated from the pedestrian's elevated perspective as the site slopes from the pedestrian building to the commuter building. While the pedestrian building allows for an elevated view of the site (figure 180), the green roofs function as more than just a visual spectacle.

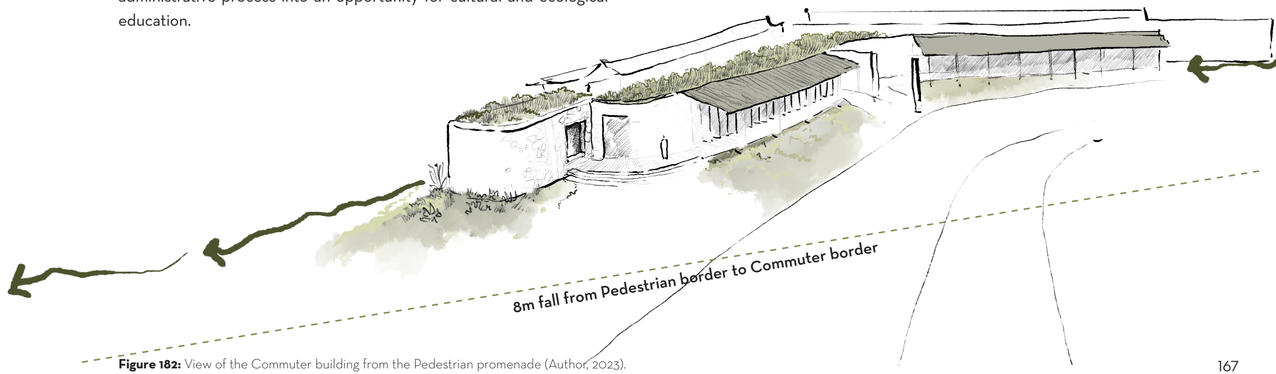


Figure 182: View of the Commuter building from the Pedestrian promenade (Author, 2023).

5.6.3. EXTENSIVE GREEN ROOF

Green roofs are used as a device to blend the building with the landscape as well as to serve as a sustainable urban drainage system (SuDS) to manage stormwater runoff (Armitage et al., 2013:22). The location of the design is not classified as an urban zone. However, it comprises many hard surfaces, resulting in considerable stormwater runoff. Green roofs are thus a sustainable way to mitigate the harshness of the roadways.

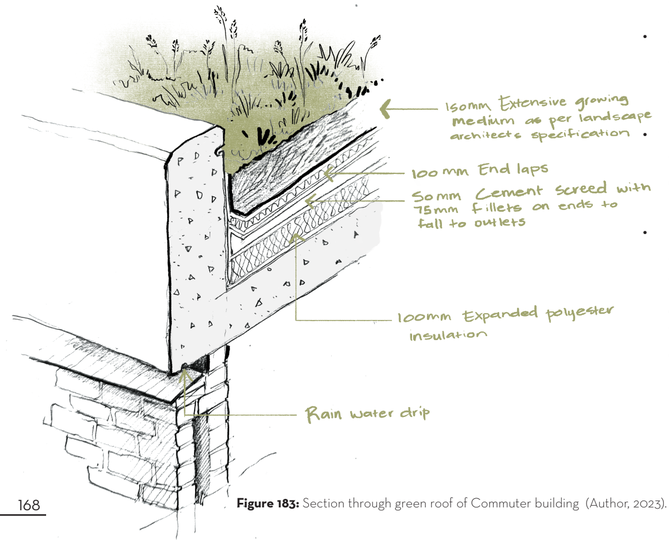


Figure 183: Section through green roof of Commuter building (Author, 2023).

Typically, sedum, a resilient small shrub, is the primary vegetation for green roofs however, adaptability allows for various vegetation types depending on local conditions (Armitage et al., 2013:30). A 255 mm reinforced concrete flat roof supports an extensive green roof system of indigenous flora.

Advantages:

- Energy Efficiency: The insulation properties of green roofs contribute to more stable building temperatures, resulting in energy savings (Armitage et al., 2013:23).
- Improved Air Quality: The biophysical attributes of green roof vegetation can enhance local air quality by mitigating pollutants (Armitage et al., 2013:23).
- Biodiversity and Amenity: These roofs significantly enhance urban amenity and biodiversity, due to the slope of the site the roofs of the different facilities are clearly visible, the aim is thus to foster green and more visually pleasant environments. Indigenous plant varieties are often preferred for suitability and resilience (Armitage et al., 2013:23).

5.7. MATERIALS:

The choice of building materials is a critical aspect of architectural design, deeply influenced by the resources, traditions, and environmental conditions of the region. Along the border between South Africa and Mozambique, these material choices are not only pragmatic but also culturally significant, reflecting the unique character of each side.

5.7.1. SOUTH AFRICAN SIDE

The uniqueness of the vernacular architecture of southern Mpumalanga is partly the result of the regions geology, climate and vegetation. The area is characterised by undulating grassland habitats with very little indigenous wood available for brick burning or large-scale use in construction work (Naude, 2000:31). The building tradition has relied on the variety of stone available for construction work.



Figure 184: Stone ruin detail of window lintel (Naude, 2000:17).

Stone:

Stone is a locally available material in Mpumalanga, sandstone, granite, ferricrete, shale and slate are used for both structural and aesthetic purposes (Naude, 2000:31). It has a long history as a building material on local farms for residences and in indigenous villages for kraal structures. Stone were traditionally quarried on the landowner's farm and transported with ox-wagons to the building site (Naude, 2000:46). However, with the commercialisation of farms, many of these structures are left to decay (figure 182 & 183) as the farmers opted for modern commercially available materials (Naude, 2000:33).

Types of stones

Some dwellings were built entirely of sandstone, while others were constructed only of granite or ferricrete, with sandstone used only for quoining (Naude, 2000:37).



Figure 185: Stone and brick ruin (Naude, 2000:22).

Ferricrele or “ouklip” is also a common stone used to construct minor buildings, with or without the use of motar, it can also be used as a base or foundation for brick walls (Naude, 2000:37).

Koppieklip refers to stone that is hard and weather resistant as found in nature on or near surfaces (Naude, 2000:41). They can be used for drystacking together with smaller stones to achieve stability or with mortar. These stones will be encorporated along the pedestrain route as low drystacked walls deviders.

Plaster was typically applied to the interior of the walls. In numerous residences, the inner partition walls were bricks, while the external walls were exclusively crafted from stone (Naude, 2000:47).

Application to design

The design integrates stone components into both the interior and the exterior portions of the pedestrian and commuter buildings. This utilisation of stone plays a pivotal structural role in the composite wall, which makes up an overall thickness of 600 mm. The stone layer itself constitutes 300 mm of this total measurement, with an additional 230 mm of brickwork and a 70 mm cavity contributing to the wall’s dimensions (figure 184). It is crucial to emphasise that the thickness is purposefully designed to support the weight of the superstructure.

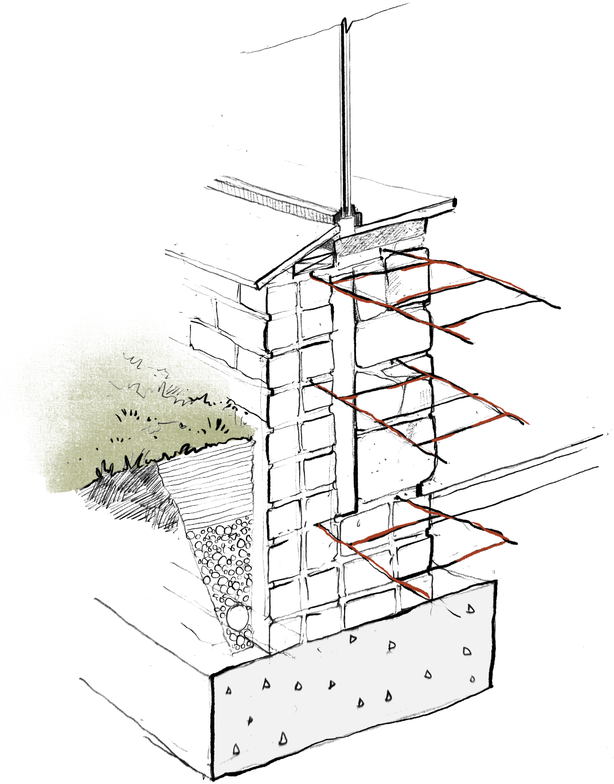


Figure 186: Section through wall of the lower level Commuter building (Author, 2023).

MATERIALS:

The material choice of the Mozambique side was heavily influenced by the structures in the region around the border post. The utilisation of these materials not only addresses practical construction needs but also establishes a meaningful connection between architecture and its surroundings.

5.7.2. MOZAMBIQUE SIDE

Mozambicans have a complex relationship with cement, as it holds political and affective significance as historically, colonial cities were divided into the cement city for settlers and the reed city for the indigenous population (Archambault, 2023: online). The decay of colonial infrastructure stands as a reminder of more prosperous days and what might have been as Modern architecture in Mozambique tells a story of progress and hope, with freshly moulded concrete blocks symbolising aspirations for a better future (Archambault, 2023: online).



Figure 187: Pile of concrete hollow blocks infront of a uncompleted structure near the border post on the Mozambiquen side (Author, 2023).

Accessible cement represents a shift in construction materials, and it embodies the changing socio-political landscape of the region. All over Mozambique, neatly stacked concrete blocks are abundant, representing steps toward the realisation of distinct building aspirations, with “making blocks” becoming a prominent local endeavour (Archambault, 2023: online).

Concrete hollow blocks

Concrete hollow blocks serve as a versatile building material in Mozambique, finding application in constructing walls, partitions, and boundary fences. This material is locally available, making it a prominent building material in the area surrounding the border post, it grew even more evident as I travelled around the site.



Figure 188: Building constructed of conctete hollow blocks (Author, 2023).

Advantages of Concrete hollow blocks

Firstly, their deployment in construction allows for swift assembly and adaptable shaping in accordance with project requirements, ensuring the rapid execution of work, thus making it easy for locals to construct their homes. The manufacturing process involving high pressure and vibration results in these blocks being inherently sturdy, capable of withstanding severe loads and substantial weight, thus guaranteeing their durability (Hessam, 2023:online). Moreover, the incorporation of air-filled holes within these blocks contributes to their high insulation properties, effectively regulating temperature, mitigating moisture, and dampening sound (Hessam, 2023:online), thereby creating a comfortable living environment across diverse weather conditions, which is ideal for the hot climate of the region. It is also more cost-efficient as it reduces the overall volume of required construction materials and requires less maintanance, resulting in economic savings (Hessam, 2023:online).

The choice of these materials is not merely about construction; it's a reflection of cultural heritage, environmental adaptation, and the evolving socio-political landscape of Mozambique. Architecture on the Mozambique side of the border post is a manifestation of both tradition and progress, striking a balance between heritage and aspirations for the future.

Application to design

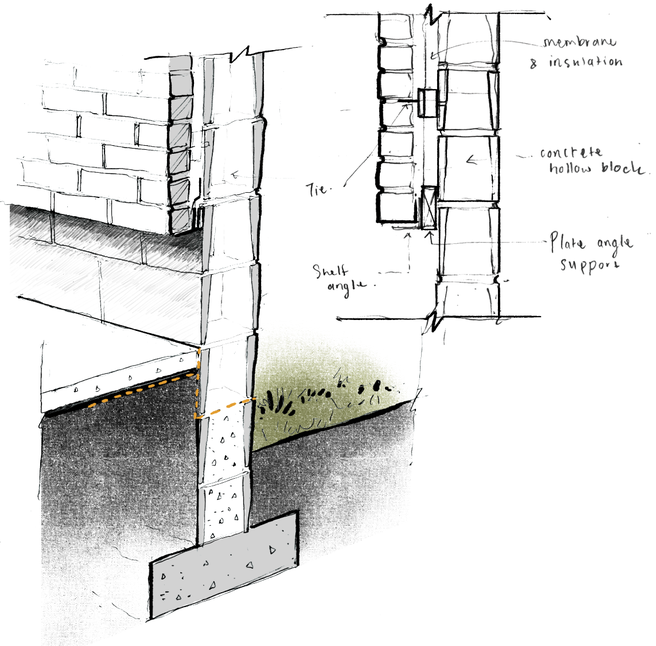


Figure 189: Section through wall of the lower level Commuter building (Author, 2023).

5.8. STRUCTURAL COMPOSITION:

Commuter border structure 1 - Mozambique

The subsequent section demonstrates how the examination of materials influences the design of both the commuter and pedestrian buildings, with a focus on the commuter building, which serves as the foundation for the technical documentation.

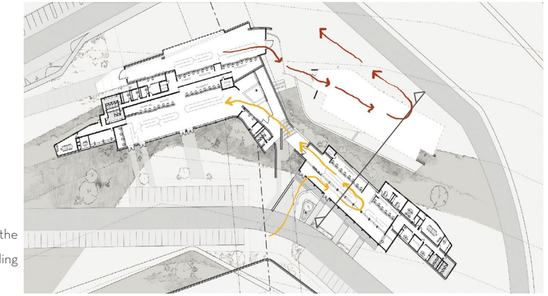


Figure 190: Circulation through the Commuter building

Going to MOZ

Going to RSA

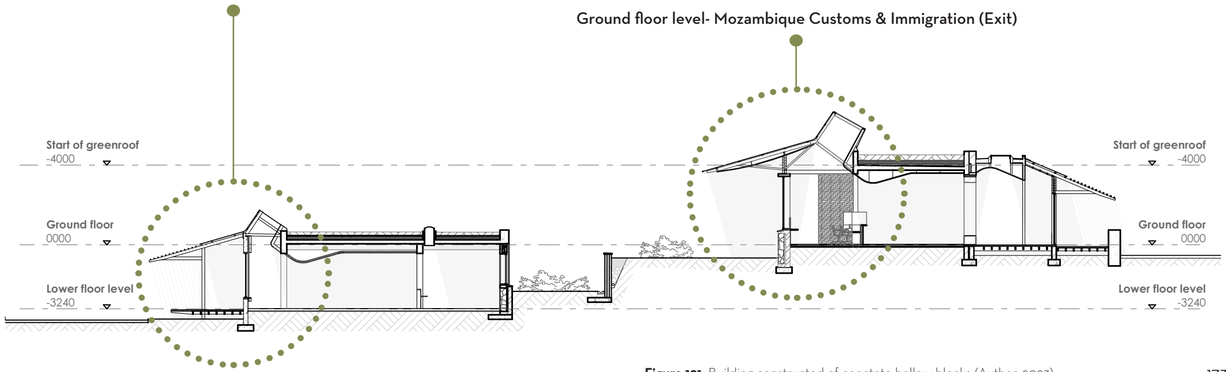


Figure 191: Building constructed of conctete hollow blocks (Author, 2023).

Concrete Hollow Blocks:

The design incorporates the use of concrete hollow blocks in specific areas of the structure (figure 190). The blocks serve as a load-bearing element that supports the skylight structure, which spans the main communal area of the lower level of the commuter building. The standard dimensions of these blocks are used, 390 mm x 190 mm x 190 mm which are then stacked, interlocked, and mortared.

To create a more dynamic interior waiting space, the concrete hollow blocks are paired with a brick curtain wall. Wall ties are used to ensure the stability of the concrete hollow block wall and the brick curtain wall. Flashing is also installed above windows, doors and other openings to prevent water from entering the wall system.

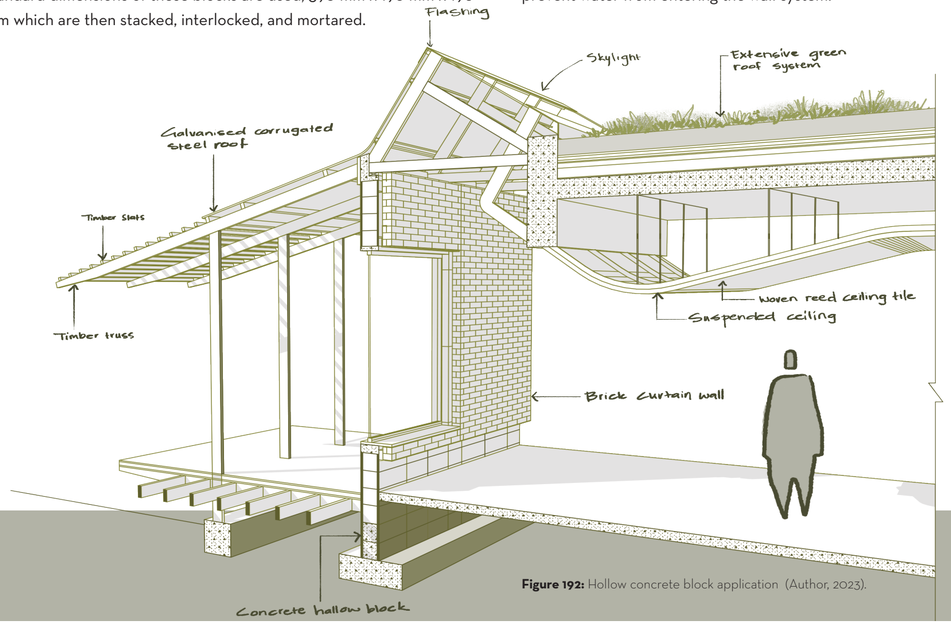


Figure 192: Hollow concrete block application (Author, 2023).

Roof:

A planted roof is constructed on a 255 mm reinforced concrete roof slab supported by a 300 x 600 mm column and tapered beams towards the outer edge of the building. The green roof is composed of several layers such as a waterproofing layer, drainage system, root barrier, a 150 mm growing medium and indigenous vegetation. Part of these layers is a 75 x 75 mm concrete fillet along its edges with a perforated drainage pipe for effective water management.

The green roof serves multiple purposes: enhancing thermal mass to reduce heating and cooling expenses, mitigating air temperature by limiting the absorption of solar radiation, and preventing the formation of heat islands in the region (Pienaar & Vollimer, 2018:297).

Stone and Brick Walls:

On the ground floor level of the commuter building, stone and brick walls are used to support a steel truss. The stone and brick walls accommodate the steel truss's weight. The truss is anchored to the load-bearing stone and brick walls to create a more intriguing interior space. A steel truss is also used as it spans an interior space of 3500 mm but the truss itself stretches 5700 mm (figure 191).

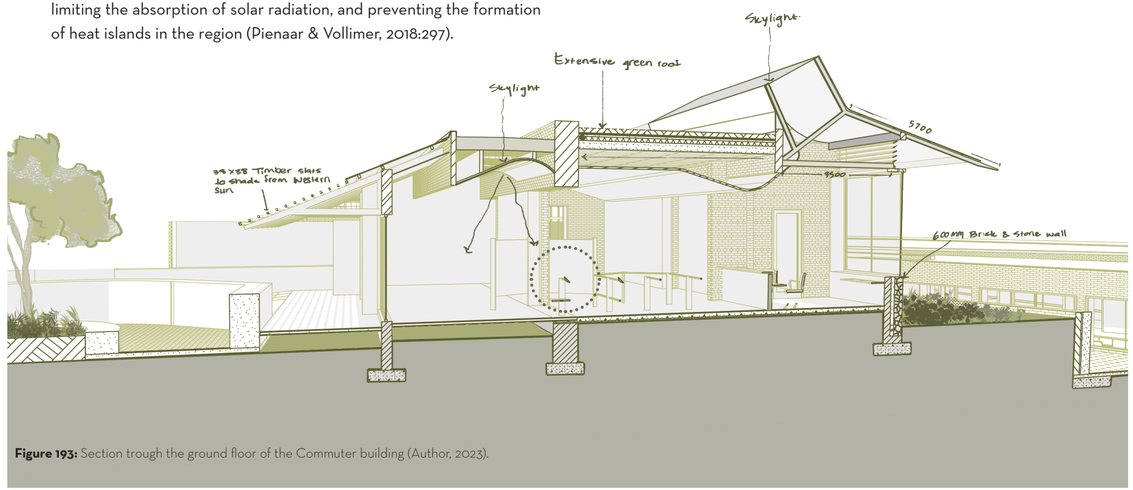


Figure 193: Section trough the ground floor of the Commuter building (Author, 2023).

Passive design strategies

The building is orientated towards the north and follows an east-west axis. This orientation allows all the spaces to receive northern sunlight, promoting a well-lit and naturally illuminated environment. Courtyards at the front and back of the building, serve a dual purpose by not only providing aesthetically pleasing spaces but also by cooling the air that enters the building.

The roof structures prevent direct summer sun radiation into the building from the northeast, acting as a shield. Louvres at the upper half of the structure allow naturally occurring airflow and fresh air into the building, the structure creates more effective cross-ventilation as louvres are placed on both ends of the building (figure 192). This approach to building orientation and design reflects a commitment to creating a space that harmonises with its natural surroundings while enhancing the user's and worker's comfort in the space.

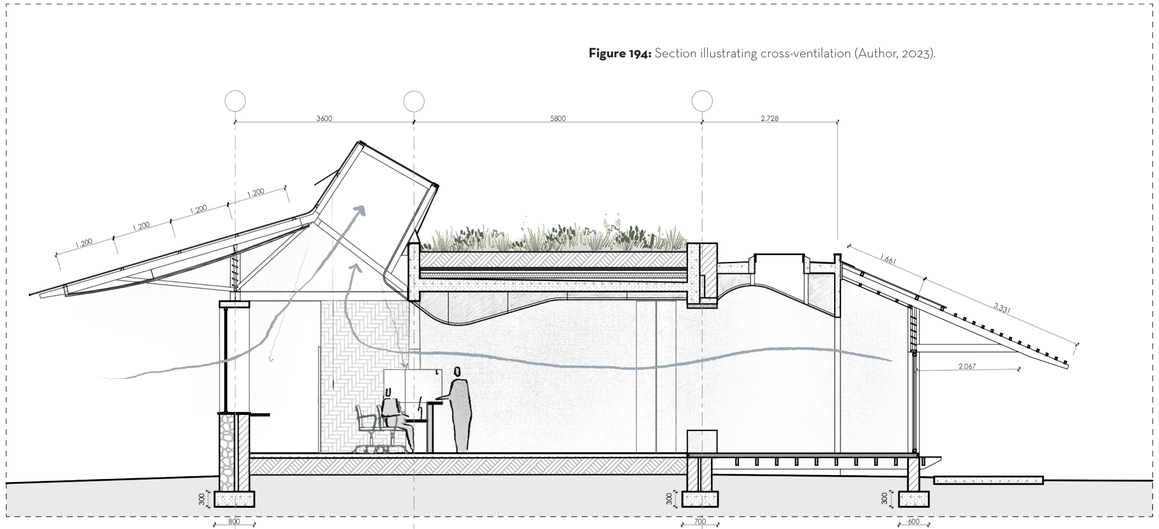


Figure 194: Section illustrating cross-ventilation (Author, 2023).

Commuter border structure 2 - South Africa

The structure of the commuter border remained consistent in its design, with the only modification being the adjustment in the truss span. The second half of the commuter border building serves as the accommodation for South African staff that manages the flow of travellers heading to Mozambique and those entering South Africa.

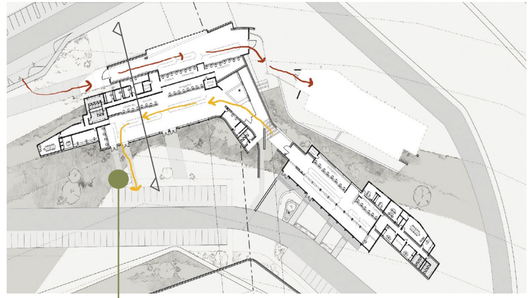


Figure 196: Circulation through structure two of the Commuter building

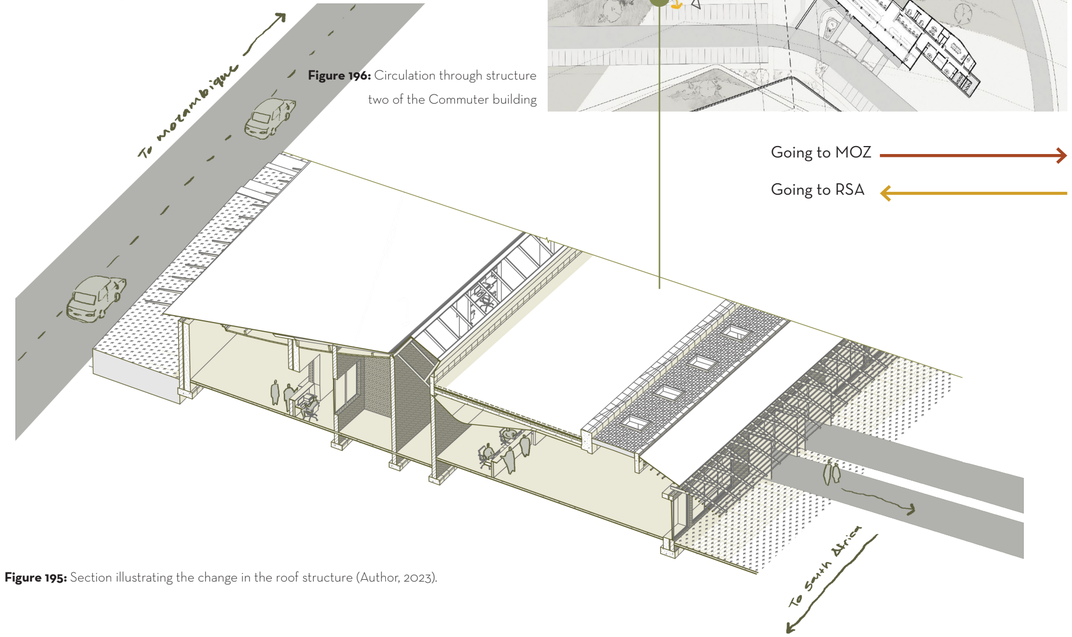


Figure 195: Section illustrating the change in the roof structure (Author, 2023).

CONCLUSION

Chapter 5 delves into the technical intricacies and considerations that underpin the design of the Lebombo Border Post, with a particular emphasis on how the architectural structure interacts with its surrounding environment and the incorporation of movement mechanisms. Emphasising circulation as an architectural device plays a pivotal role in the project's narrative. The design not only connects destinations but also articulates the traveller's journey. In summary, Chapter 5 provides a comprehensive overview of the technical aspects that contribute to the Lebombo Border Post's design, by integrating cultural, and environmental elements into its architectural narrative. This approach resonates with the environment while creating a user-centric design.



Figure 197: Acknowledging the transformation in-between (Author, 2023).

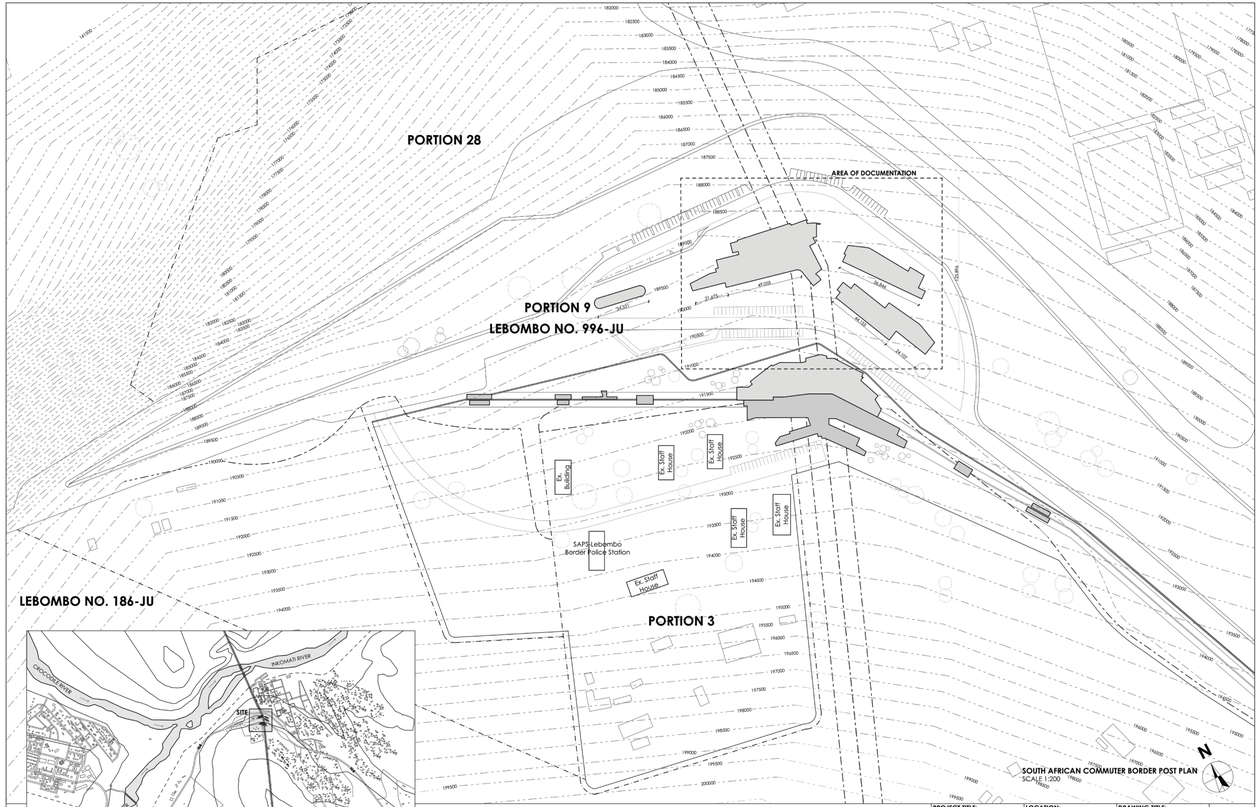
REFLECTION

My deep engagement with this research and project was rooted in the concept of the "liminal realm," a fascination with the moments encountered and just as easily forgotten. It is the kind of introspection that surfaces as one approaches the culmination of a journey, prompting a deliberate examination of the places where one lingers, etching in memory the fundamental junctures of transformation. The importance of these transitional edges demanded recognition and celebration, as they define the crux of transformation. Instead of standing as a beacon of transition, the Lebombo border post has regressed into a bureaucratic labyrinth, where travellers and nomads have become little more than faceless entities caught in endless queues. The project tries to reject the prevailing metanarrative that casts a dystopian hue over the site. The *Xitende* became an instrument of unity, weaving together diverse cultures and bridging the non-place. The design tried to adapt to the rhythmic composition of the users' movements, allowing them to inscribe their histories upon its canvas.

Overall, the design of the border post was a challenging task. Trying to weave a narrative through the site while conforming to the flow of queue areas posed some obstacles in terms of the dynamic form derived from the pedestrian movement. However, I challenged myself to question the structures that control free movement and design a place for the nameless nomad (the individual) in need of connection. The design aims to unravel the very essence of liminality, celebrating the transformative power of the in-between. The border post represents a place that signifies the interconnectedness of humanity and celebrates the importance of transition.

APPENDIX A

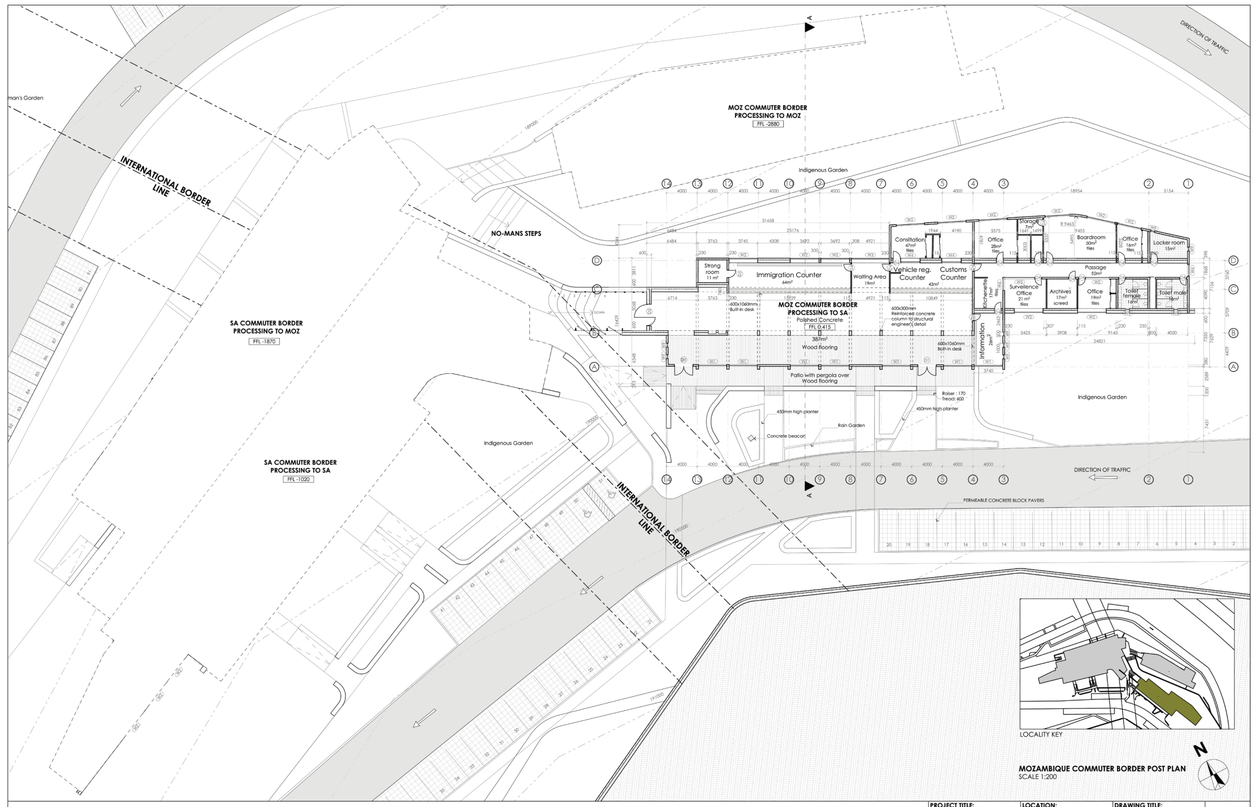
Construction Documentation



LOCALITY PLAN
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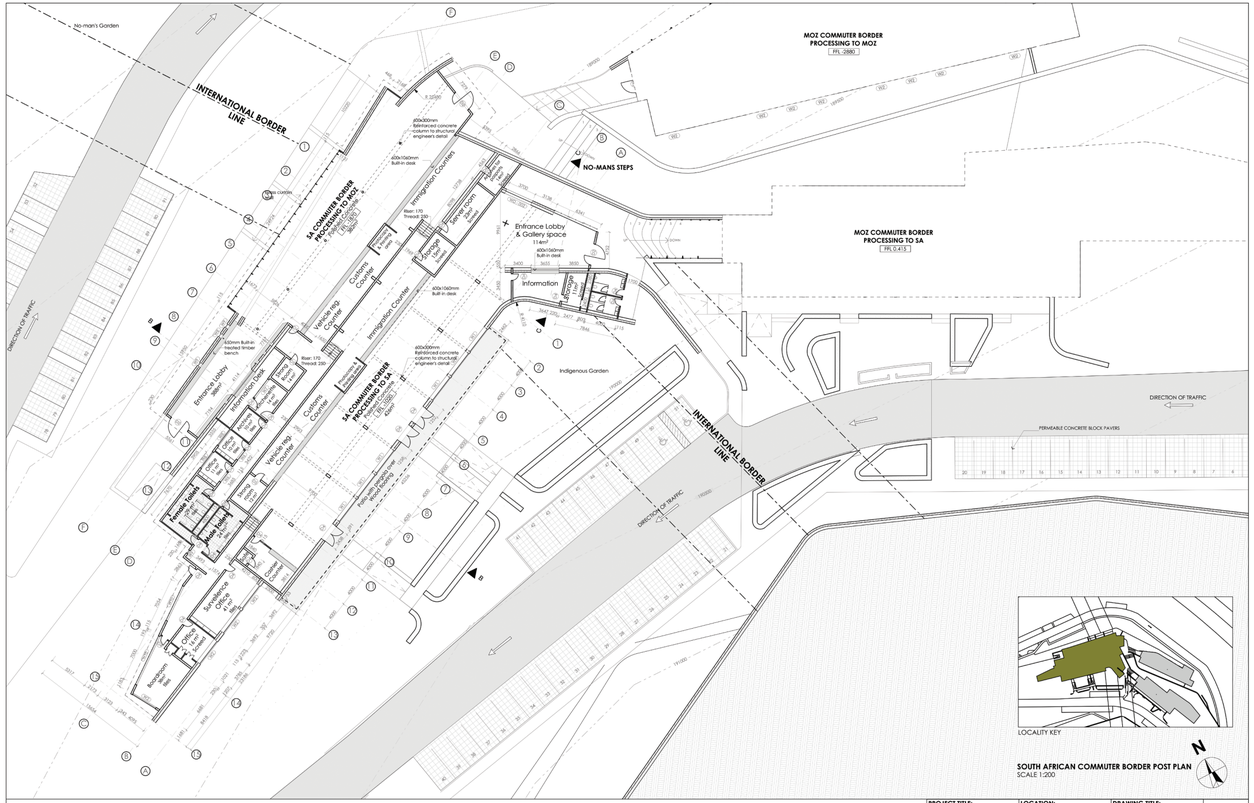
SOUTH AFRICAN COMMUTER BORDER POST PLAN
SCALE 1:200

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		DATE: 27-10-2023	**SHEET NO:** 001



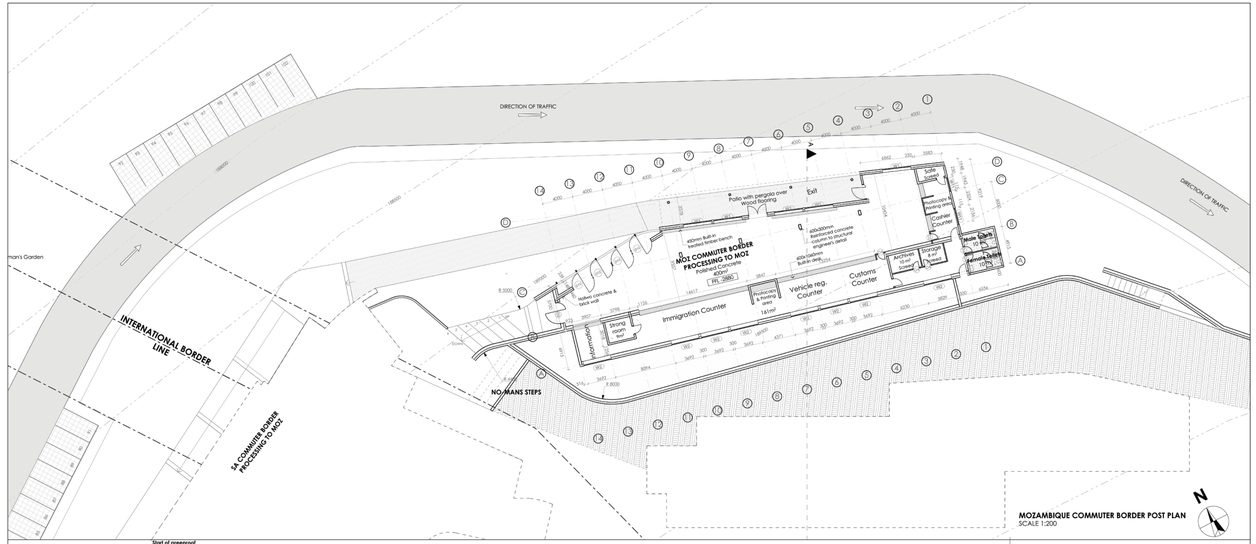
MOZAMBIQUE COMMUTER BORDER POST PLAN
SCALE 1:200

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		DATE: 27-10-2023	**SHEET NO:** 002

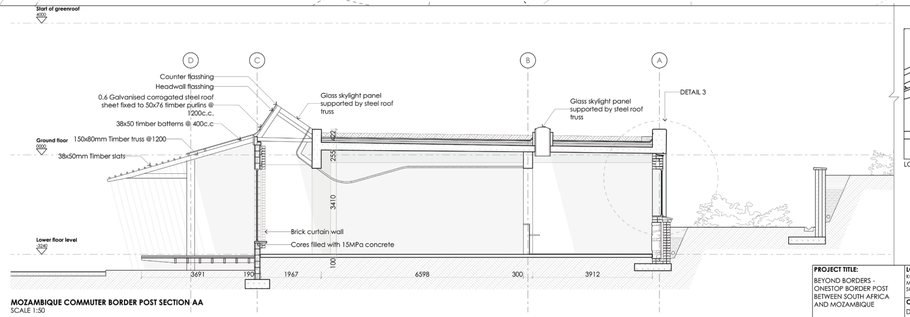


SOUTH AFRICAN COMMUTER BORDER POST PLAN
SCALE 1:200

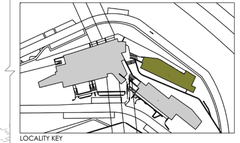
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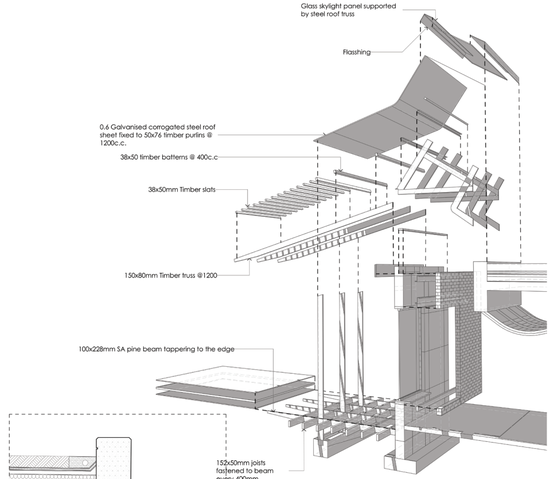
MOZAMBIQUE COMMUTER BORDER POST PLAN
SCALE 1:200



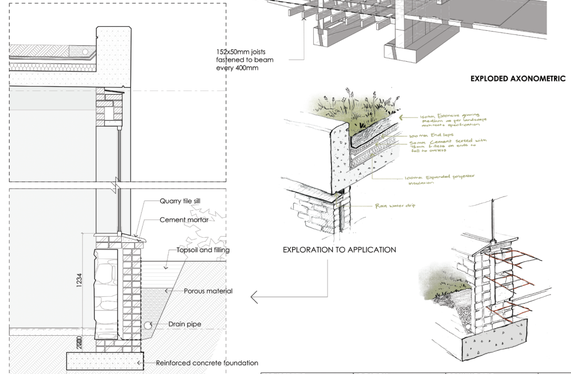
MOZAMBIQUE COMMUTER BORDER POST SECTION AA
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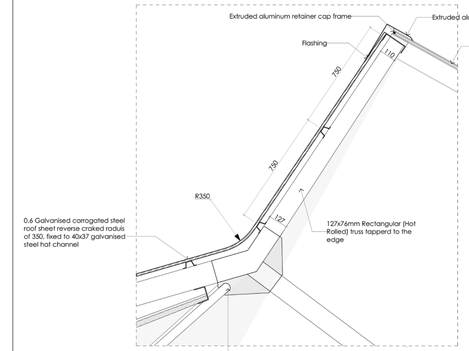
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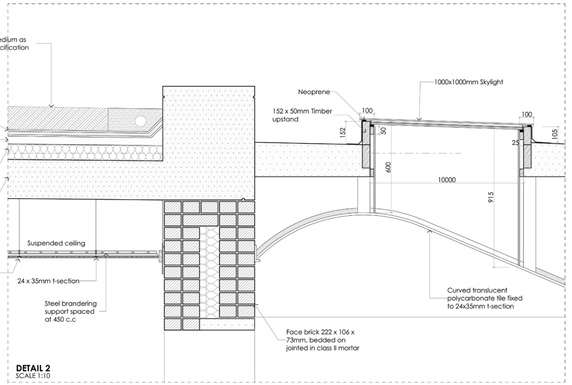
DETAIL 3
SCALE 1:20

EXPLORATION TO APPLICATION

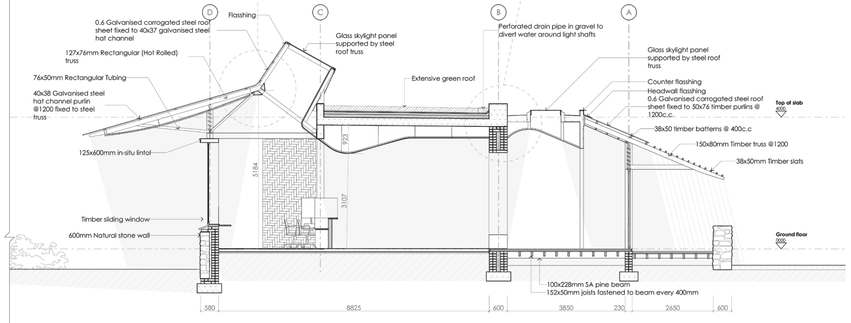
PROJECT TITLE: BEYOND BORDERS - ONESTOP BORDER POST BETWEEN SOUTH AFRICA AND MOZAMBIQUE	**LOCATION:** KOMATIPOORT, 1340 MPUMALANGA SOUTH AFRICA, MOZAMBIQUE **CLIENT:** DEPARTMENT OF HOME AFAIRS & DEPARTMENT OF ARTS AND CULTURE	**DRAWING TITLE:** SECTION AND DETAILS OF MOZAMBIQUE PROCESSING FASILITIES **SCALE:** 1:50 & 1:10 **DATE:** 27-10-2023	**SHEET NO:** 005



DETAIL 1
SCALE 1:10

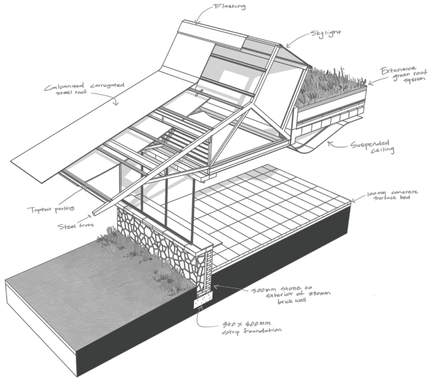


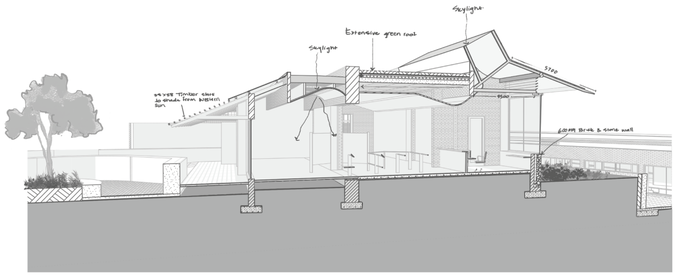
DETAIL 2
SCALE 1:10



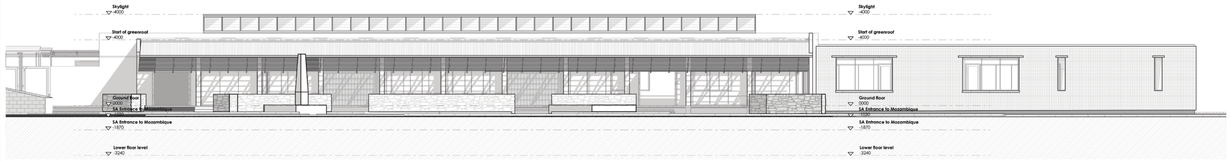
MOZAMBIQUE COMMUTER BORDER POST SECTION AA
SCALE 1:50

PROJECT TITLE: BEYOND BORDERS - ONESTOP BORDER POST BETWEEN SOUTH AFRICA AND MOZAMBIQUE	**LOCATION:** KOMATIPOORT, 1340 MPUMALANGA SOUTH AFRICA, MOZAMBIQUE **CLIENT:** DEPARTMENT OF HOME AFAIRS & DEPARTMENT OF ARTS AND CULTURE	**DRAWING TITLE:** SECTION AND DETAILS OF MOZAMBIQUE PROCESSING FASILITIES **SCALE:** 1:50 & 1:10 **DATE:** 27-10-2023	**SHEET NO:** 006



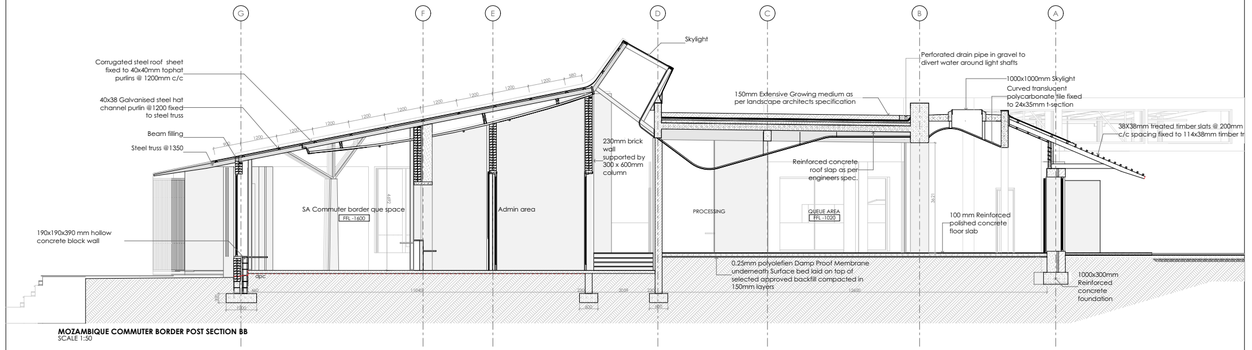


AXONOMETRIC VIEW OF STRUCTURAL APPROACH

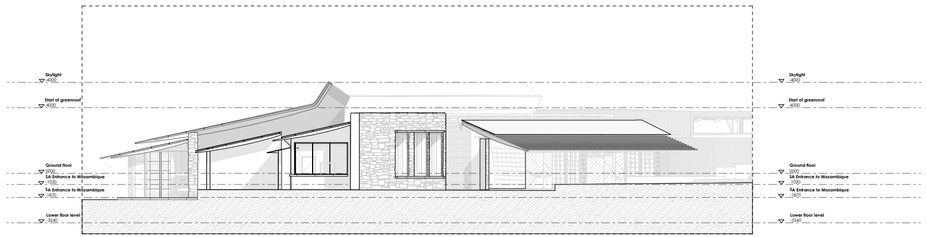


SOUTH ELEVATION
SCALE 1:100

PROJECT TITLE: BEYOND BORDERS - ONESTOP BORDER POST BETWEEN SOUTH AFRICA AND MOZAMBIQUE	**LOCATION:** KOMATIPOORT, 1340 MPUMALANGA SOUTH AFRICA, MOZAMBIQUE	**DRAWING TITLE:** SOUTH ELEVATION OF COMMUTER BUILDING	
	CLIENT: DEPARTMENT OF HOME AFAIRS & DEPARTMENT OF ARTS AND CULTURE	**SCALE:** 1:100 **DATE:** 27-10-2023	**SHEET NO:** 007



MOZAMBIQUE COMMUTER BORDER POST SECTION BB
SCALE 1:50



WESTERN ELEVATION
SCALE 1:100

PROJECT TITLE: BEYOND BORDERS - ONESTOP BORDER POST BETWEEN SOUTH AFRICA AND MOZAMBIQUE	**LOCATION:** KOMATIPOORT, 1340 MPUMALANGA SOUTH AFRICA, MOZAMBIQUE	**DRAWING TITLE:** SECTION AND WEST ELEVATION	
	CLIENT: DEPARTMENT OF HOME AFAIRS & DEPARTMENT OF ARTS AND CULTURE	**SCALE:** 1:50 & 1:100 **DATE:** 27-10-2023	**SHEET NO:** 008

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