

Project title| Sacred Harvest: revealing the forgotten beauty in food and farming.
Project location|R33 ,Witfontein District, Vaalwater, 0530
GPS location| 24°06'05"S 27°59'52"E
Student| Miré Pelser u04650612
Supervisor| Dr Johan N. Prinsloo
Discipline Coordinator| Dr Ida Breed
Research field| Syntax of the Sacred

Abstract

The impact of the mechanistic worldview on agriculture in rural landscape aesthetics, draws on the theories of Christopher Alexander (1936-2002). Alexander's critique of mechanistic viewpoints in built environment underscores a profound disconnect from spiritual and human dimensions in contemporary design. His advocacy for creating harmonious and meaningful spaces resonates strongly in the context of South Africa's agricultural landscapes, historically marked by Apartheid's divisive policies. By applying Alexander's principles locally, this proposes a transformative approach to address the fragmentation and placelessness prevalent in South African landscapes through the implementation of landscape architecture. Emphasizing both the tangible and intangible aspects of place, the project seeks to reintroduce aesthetic beauty and contextual significance into productive landscapes. The integration of agritourism emerges as a viable strategy to not only enhance economic opportunities but also preserve contextual heritage and promote sustainable development. In essence, this argues for a paradigm shift in landscape architecture towards designs that prioritize aesthetics, landscape form and principles of composition. By reconnecting landscapes with their contextual roots and fostering environments that evoke a sense of place, this approach aims to mitigate the impact of historical injustices while envisioning a more harmonious and enchanting future for South Africa's rural areas.

Contents

Project background 3
Introduction....3
Mechanised worldview....3
Productive landscapes in South Africa....4
Project context....5
Project location 6
Design concept....7
Project programme....7
From research to design. 9
Spatial design development 13
Design strategy and approach. 13
Critical reflection....18
Conclusion....18
References....20



Project background

Introduction

This project addresses the impact of the mechanistic worldview on agriculture in rural landscape aesthetics of natural environments, drawing on the critiques and design theories of Christopher Alexander (1936-2022). He advocated for an architectural education that emphasises creating beautiful, harmonious settings for daily life, learning from historical examples of places where people feel at home. Alexander's work, particularly *The Nature of Order,* provides a framework for designing meaningful, vital spaces, which has been underutilised in the design of productive landscapes in South Africa. The project aims to apply these ideas locally,. Alexander posited a connection between architectural beauty and a sense of the divine, suggesting that the absence of such a connection led to placelessness and ugliness. This echoes the broader theme of disenchantment in the modern world, as discussed by sociologists and philosophers who saw mechanistic rationalism as stripping away mystery (Alexander, 2002:6-15). However, the project acknowledges that enchantment can still be found, even in scientific wonders, and that the mechanisation of agriculture has brought positive advancements. The research is based on three key propositions: First, the creation of aesthetic wholes should be the primary concern of spatial design, focusing on the morphology and syntax of places to inform beautiful designs. Second, beauty reveals the invisible in the visible, making aesthetic experiences essential for encountering the intangible. Third, objects evoking a sense of the intangible exhibit specific properties outlined by Alexander (2002:77), which include levels of scale, strong centres, boundaries, and simplicity, among others. The project seeks to explore the tangible and intangible aspects of place to create beauty, accepting these propositions as foundational.

Mechanised worldview

In the ultimate pursuit of knowledge Descartes (1596-1650) said that to understand how something works you could imagine it to be a machine. By isolating the object from the rest of the world you invent a type of mental model in which the object will conform to certain rules and

replicate its behavior thereby understanding how the object works (Alexander, 2002:6-15). This led to the material world being seen as a machine made from a combination of objects. This became known as the mechanistic viewpoint. As the realm of the factual expanded the realm of the spiritual almost disappeared. Viewing the world through a mechanistic lens meant that the inner experience of what it means to be human was removed from the big picture. The scientific world around us, built with our mental machines resulted in a world that sidelined any definite feeling of value. In terms of architecture, Descartes' dualism led to a shift in perspective towards the design and function of spaces. In the modern era we have placed more importance on the functionality of buildings and landscapes and have forgotten how it impacts the human spirit. Approaching life through the lens of mechanism left the twentieth century world decontextualized, disembody, utilitarian and eventually lifeless (McGilchrist, 2021:156).

Productive landscapes in South Africa

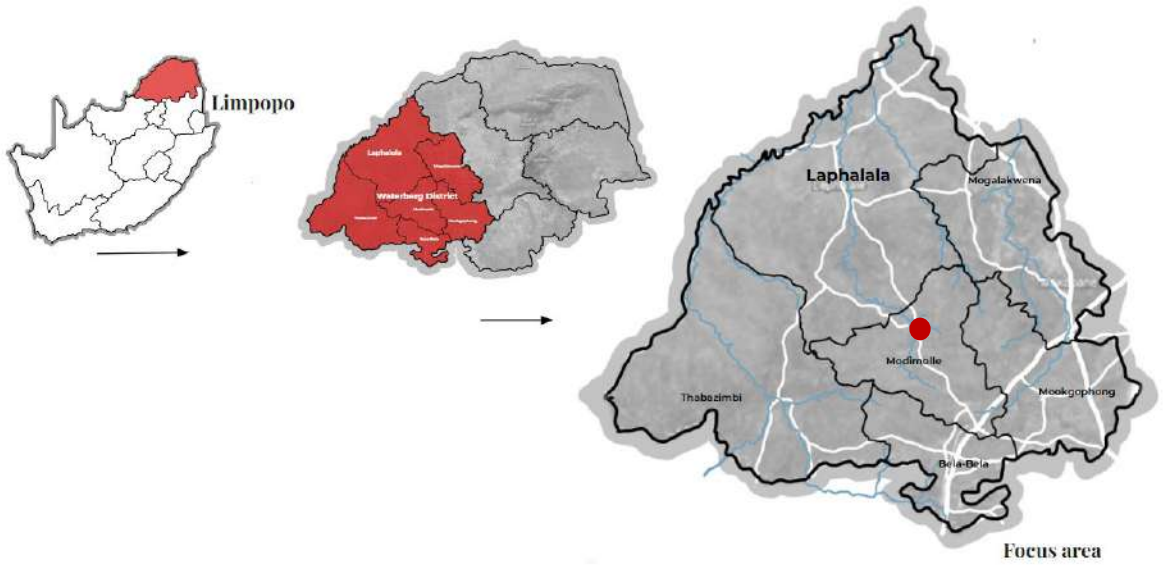
Rapid urbanization has intensified the need for productive, secure food landscapes in South Africa. The legacy of apartheid has left a divided agricultural sector, where provinces like KwaZulu-Natal, the Eastern Cape, and Limpopo—once homelands—still lag in agricultural progress compared to regions historically focused on commercial farming (Sihlobo, 2023). This division has created a sector characterized by "segregation, suppression, and support" (Sihlobo, 2023:16). Although agriculture contributes around 3% to South Africa's GDP, its potential is limited by a historical reliance on large-scale, mechanised farms that prioritise efficiency over ecological sustainability (*Netshipale et al*., 2022: 106-107). While mechanization has boosted food availability, it has also led to monoculture landscapes, reducing biodiversity, and weakening ecological resilience (BFAP, 2021:141-154). To address these issues, there is growing interest in integrating landscape architecture into agricultural spaces to promote sustainable practices (Lickwar & Thoren, 2019, pp. 25-35). Concepts like "landscape machines" merge productive landscapes with ecological processes, where natural succession isn't prevented but rather embraced, allowing biodiversity and sustainability to thrive alongside agricultural productivity (*Roncken et al.,* 2011:5,71). These innovations aim to reshape South Africa's food systems, fostering environments that support both human needs and ecological balance.

One of the provinces that has the potential to develop agriculture (Sihlobo, 2023:9) is the Limpopo province, where we find the Waterberg region. The Waterberg region is a popular destination for eco-tourism and hunting. It is home to beautiful landscapes with a rich history, from the remarkable people who lived there to the trials and tribulations of land occupation, agricultural hardships, and governmental neglect (Wadley, 2019). Historically, the Waterberg region has been too dry for arable agricultural practices. However, there are still some successful commercial agricultural farms that contribute to the food production systems of South Africa. Successful farms found in the area typically grow and commercially produce crops such as cotton, tobacco, maize, and other crops such as flowers (Netshipale *et al*., 2022:106). Myer and de Crom (2013:295) point out that many family farms that do not fall within the commercial agriculture categories struggle to compete with these commercial corporations. Due to rising production costs, globalisation, industrialisation, and the loss of government-supported agriculture programmes, these families are forced to explore alternative options when generating income to preserve their farms. Many of the non-commercial farms have adopted a form of agritourism to diversify their income sources (Zvavahera & Chigora, 2023:3). Vaalwater is a town located within the Waterberg region of

Limpopo, where there is a strong concentration of commercial farms and game farms with ecotourism activities. Land use within this area largely consists of wildlife game reserves for hunting and viewing wildlife, commercial dry crops, and irrigated farming. The small-scale farmers are located within the areas demarcated as buffer zones. In these zones, agriculture is not encouraged by the land development plan because agriculture risks the destruction of natural landscapes (LSDP, 2016:136).

Agritourism is a rapidly growing and increasingly significant form of tourism that is gaining prominence in both developed and developing countries around the world. In South Africa, agritourism is an up-and-coming activity that has yet to be explored to its fullest potential. Agritourism is a subcategory found under rural tourism that includes farmer markets, agricultural tours, and farm visits (Netshipale *et al*., 2022:106). Van Zyl and Van der Merwe (2021:3) found that agritourism invites tourists to engage in farm activities on an agricultural farm with the goal of providing fun activities and selling products made on the farm. This type of tourism can potentially generate income and employment for local communities and farmers, ultimately contributing to rural development (Zvavahera & Chigor, 2023:11). By providing new economic opportunities, agritourism can play a crucial role in poverty alleviation and contribute to more secure and resilient food systems, thereby promoting the Sustainable Development Goals (SDGs). Additionally, agritourism encourages farming communities to try entrepreneurship, enabling the community to make the most of their agricultural resources, cultural heritage, and distinctive tourist attractions. This form of tourism not only enhances the economic well-being of rural areas but also helps preserve and promote the cultural and environmental assets of these communities, leading to sustainable development and improved quality of life for residents. (Baipai *et al.,* 2021). In a rapidly urbanising world, reconnecting with the countryside is an experience that urban visitors enjoy. Agritourism is popular amongst international travellers looking for unique and memorable experiences that they typically do not find in the western world.

Project context

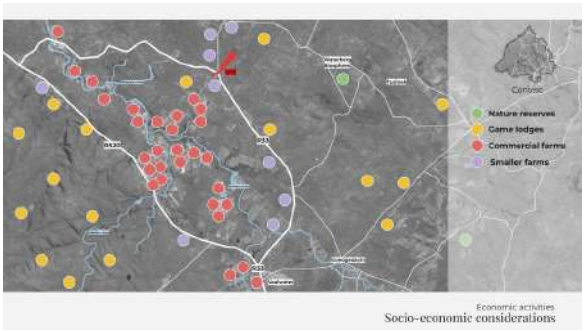


Project location

The project is located km outside of the Vaalwater town in the Waterberg district of Limpopo. The site is a working game viewing and hunting farm. The owners have recently incorporated an agri-tourism farm life experience to expand on the activities currently being offered on their farm. However, there is an opportunity to turn it into a productive landscape that provides food for the farmers and the guests incorporating culinary tourism. The farm stretches over almost 200 ha and is divided into two sections by the R33. The focus are for the project is on the lower section that stretches over 33 ha. The lower section of the site was converted into farm land in 2010 until 2018 when the current owners started using the land for feed production and small sheep farming.



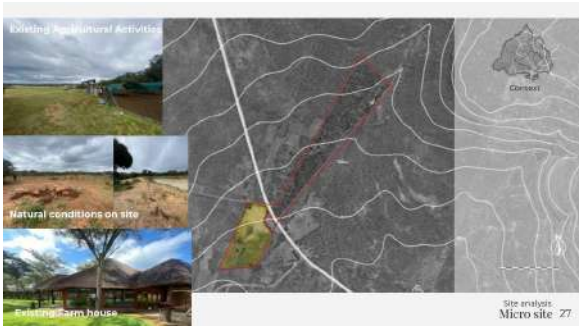
Site location



Socio-economic activities surrounding the site.



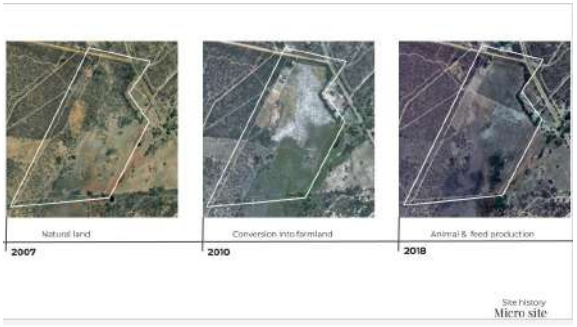
Upper northern section of the farm where the game hunting and viewing takes place.



Lower section of the farm and the focus area of the design.



This portion of the farm is proposed for the design intervention.



Google imagery of site from 2007 -2018



Google imagery of site from 2020-2024

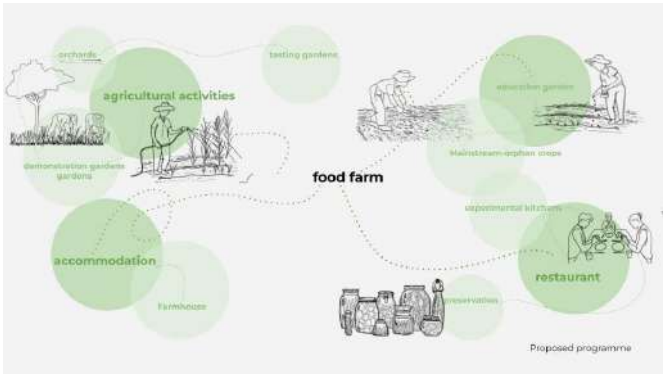
Design concept

The idea is to create a food farm in the Waterberg for agri-tourism. The food farm aims to address the lack of aesthetics and biodiversity found in commercial agricultural landscapes creating an authentic farming experience to be enjoyed by visitors from international to local communities The design focuses on three main areas, aesthetics in agricultural landscapes, biodiversity and sustainability in agricultural landscapes and economical and community enrichment through agritourism.

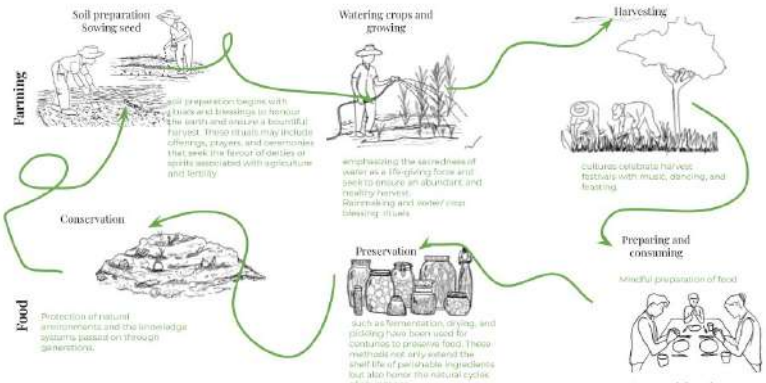
Project programme

Revealing the forgotten beauty in food and farming the design must incorporate the concept of enchantment. The experience of enchantment is to be profoundly moved by the exceptional that exists within the familiarity of the everyday (Bennett, 2001:4). By revealing the forgotten beauty in food and farming, there is potential for a restoration of deeper connections and meanings that

have been eroded over time. To increase the appreciation of food and farming, we must bring together the practices of farming and food consumption. By combining these aspects and creating a programme that will inform the design of a food farm, landscape architecture can serve as a platform that explores the idea of sanctifying food and farming processes.The design consists of a farmhouse accommodation for visitors, a large vegetable garden consisting of mainstream vegetables and African orphan crops, Animal pens and grazing paddocks, a restaurant with an outdoor food preparation area, a preservation room, Marula orchards, feed growing fields, parking and a store house.



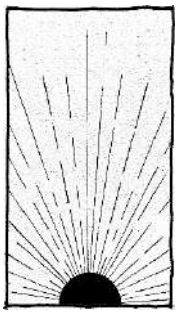
The processes behind revealing the beauty of food and farming will include exposing the systems that the mechanistic worldview hides from consumers—the farming process that happens in isolation where the consumers have little access. The systems include soil preparation and the sowing of seed, watering and growing of crops, and the harvesting process. (Bakier *et al.,* 2020:316). Allowing people to experience these processes will increase their appreciation of the farming process and thereby increase its sanctity. To this, I add the cycle of meaningful consumption. Meaningful consumption is the practice of thoughtful food preparation and consumption, the preservation of food, and the idea of conservation practices. Preservation includes aspects such as fermentation, drying, and pickling that have been used for centuries to preserve food. The idea of conservation concerns the protection of natural environments and the knowledge systems passed on through generations. Combining the placemaking skills of a landscape architect with the productivity of a commercial farm could lead to an intervention that focuses on reclaiming the sanctity in food and farming while resulting in a productive edible landscape.

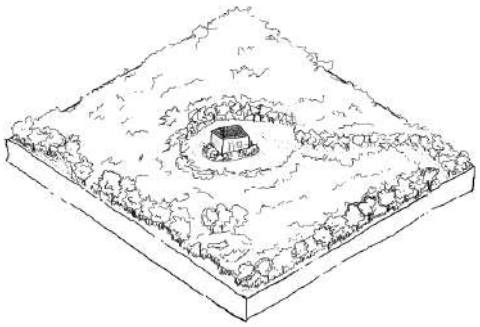


From research to design.

The DIT research addresses the impact of landscape architecture on the aesthetics of rural environments, drawing on the critiques and design theories of Christopher Alexander. The modernisation of our food systems led to a shift towards large-scale commercial farms, which often prioritise efficiency and production over ecological sustainability, resilience, and aesthetics. There is a growing recognition of the importance of incorporating landscape architecture interventions in productive landscapes. The study uses research by design approach, gathering qualitative and quantitative data by methods of mapping and sketching (see Appendix A). The goal of the research was to develop a regional landscape lexicon that could aid the design of a food farm for agri-tourism in the Waterberg region of Limpopo, South Africa.

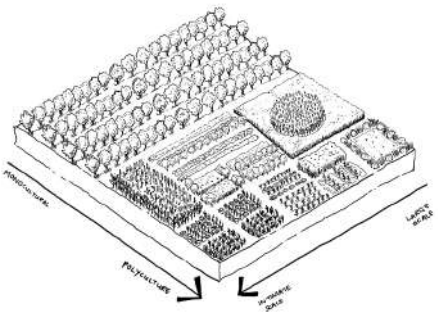
The following is a summary of the principles of compositions that exist within the context of the Waterberg region and can be used as a guide to design landscapes in this region.



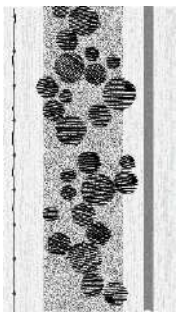


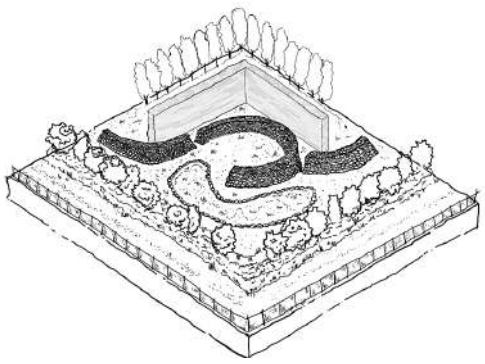
Nestled centres
Strong centres manifest nestled between architecture or the dense vegetation of the natural landscape that intensifies life and creates a platform for sharing knowledge. These centres are regions of concentrated physical and experiential order that facilitate a strong sense of relatedness among people, things, situations, and events.



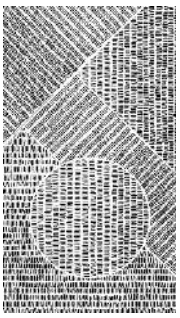


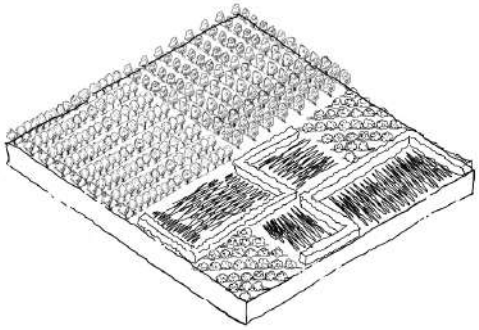
Vastness to intimacy
Objects that have life contain different scales. Centres which form these objects have a range of sizes that exists at different levels, with jumps between them. In the Waterberg region levels manifest on two scales: the first is large planting formats to intimate gardens and the second is a monoculture planting, intercropping to polyculture planting.





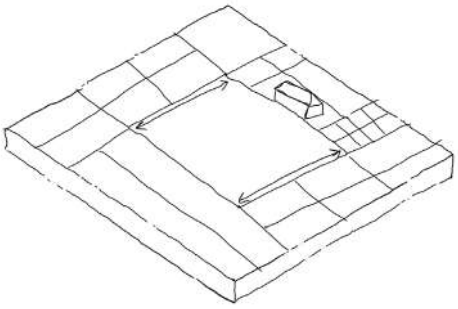
Privacy, protection, and connection
Centres are typically separated and strengthened by the boundaries surrounding them, therefore boundaries play two roles as connectors and separators. Regionally boundaries play a crucial role beyond spatial division. They are vital for protecting planting areas from wild animals that frequently roam into farms and informal villages in search of food. Additionally, boundaries serve purposes of privacy, providing protection for crops, and fostering a sense of connection within the agricultural landscape.



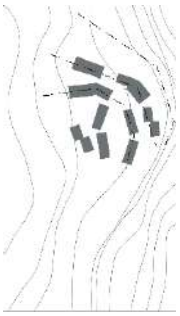


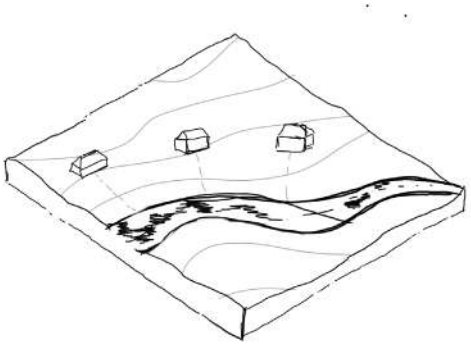
Alternating planting
Life is created by alternating centres that are subtly proportioned and different. Repetition of centres intensify other centres creating a satisfying rhythm and interplay between multiple centres. Alternating repetition introduces variation and diversity enriching visuals and spatial experiences. The planting patterns found in the orchards and gardens, the alternating wall structures and decorative patterns found in and on structures are examples of alternating repetition.



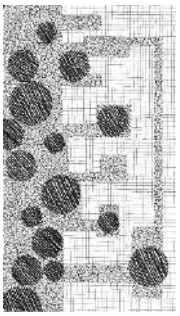


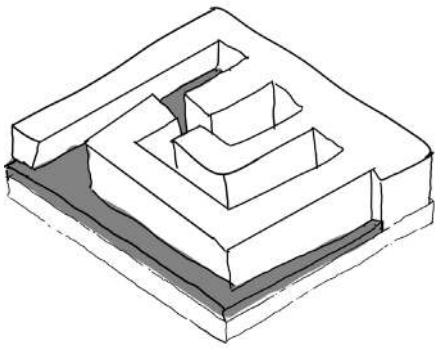
Efficient order
Gorgeous, beautiful, powerful shapes. Good shape is a combination of coherent centres that create a sense of composition that feels complete and satisfying. Positive space is characterised by a centre that moves outwards from itself. It creates a sense of shelter and protection, fostering a feeling of safety and security within the environment. In the region the positive space and good shape is determined by the efficient spacing of crops.



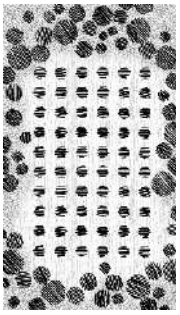


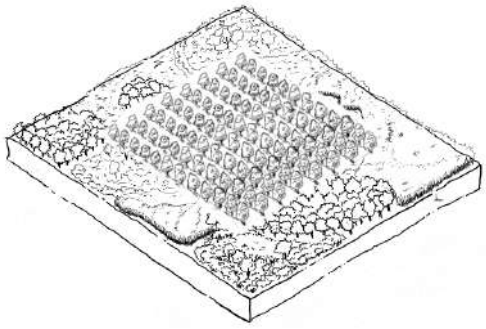
Local symmetries
Local symmetry refers to the presence of balance and harmonious relationships between elements. It does not refer to prefect symmetry but is rather more flexible and adaptable. Perfect symmetry is often the mark of death and not life (Alexander,2002:364) Here local symmetries can be explained by the way the architects chose to conserve the natural landscape



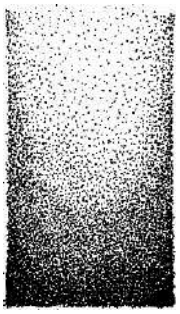


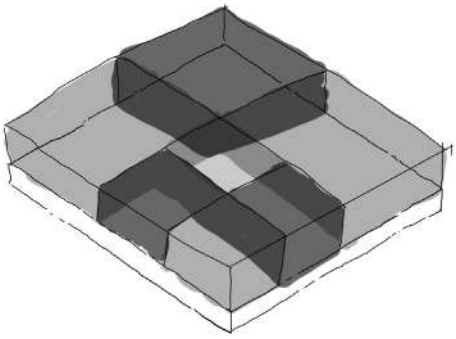
Interlacing spaces
Deep interlock refers to elements that hook into their surroundings. Elements with deep interlock are difficult to disentangle from one another allowing for nested relationships and enhancing the adaptability and resilience of the design (Alexander, 2002:195-198). In this region deep interlock manifests as the interlacing between spaces.



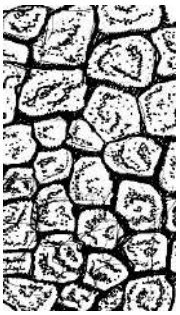


Order and chaos
Contrast is the juxtaposition of elements, qualities, or characteristics. It provides a sense of dynamic tension between elements. In this region contrast manifests in the disorder of natural vegetation and order of planted crops.





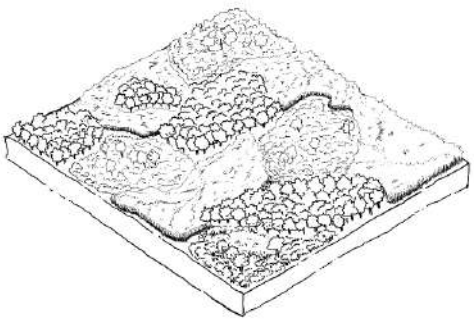
Enclosure
Gradient refers to an element that vary, slowly, gradually, and subtly across the extent of things. Centres adapt to changing circumstances systematically forming a gradient. In this region the Alexandrian principle 'gradients' refers to the way an open space gradually changing to a more intimate space and vice versa.



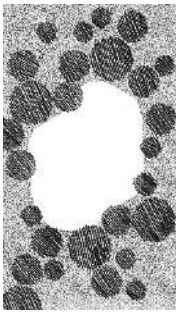


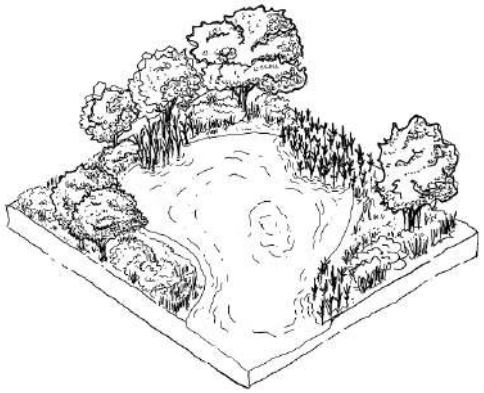
Roughness
Roughness is an important structural feature without which an element cannot be whole (Alexander, 2002:210). It is not the result of handcraft or inaccuracy. It adds an organic quality to a design, introducing asymmetries and irregularities that mimics the complexity and richness of the natural world. It is the unrefined and raw qualities reflected by the natural overgrowth.



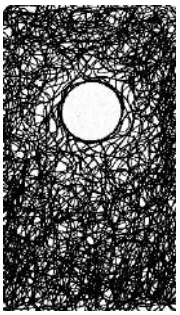


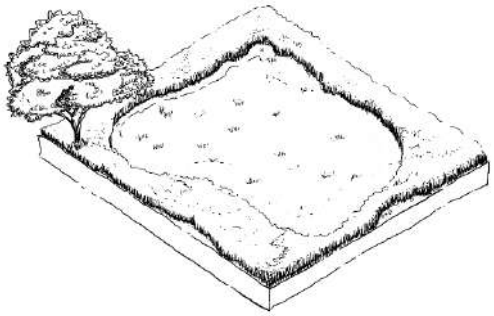
Echoes
Echoes are the deep intrinsic similarities among the elements (Alexander, 2002:216). It involves the subtle repetition of elements or patterns creating a sense of continuity throughout the design. Echoes manifest in the planting communities or singular plant that reoccurs throughout the region.



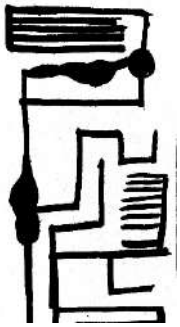


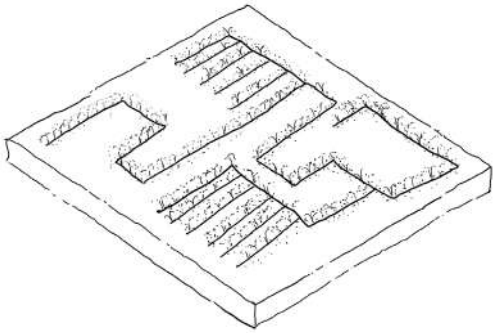
The watering holes
The void is a fundamental concept that involves the intentional incorporation of an empty of negative space within the composition. It emphasizes the importance of balancing positive space (occupied by elements or forms) with negative space (empty or unoccupied areas) (Alexander, 2002:222-225). In the region 'the void' principle manifest as a waterbody that embodies the balance between positive and negative space





Inner calm
Slowness, majesty, and quietness (Alexander, 2002:226). Simplicity emphasizes clarity of form and function, focusing on what is essential and meaningful while minimizing extraneous details or distractions. Inner calm and simplicity manifests as an open grazing field where cattle find nourishment.





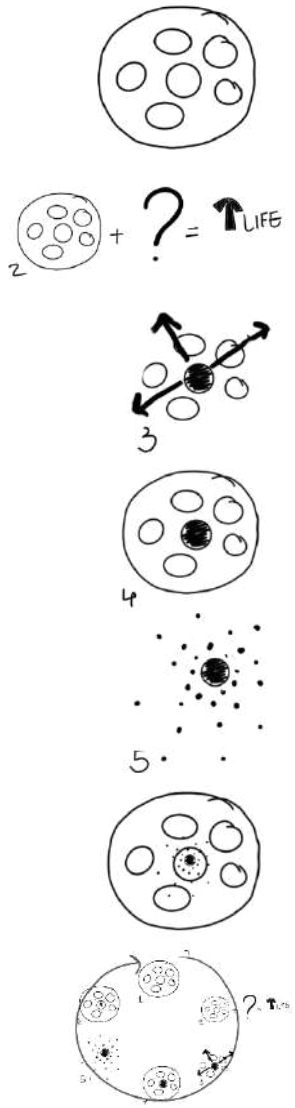
Interconnected
Centres with deep life are interconnected with their surroundings and do not exist in isolation or separation (Alexander, 2002; 231). Not-separateness encourages a holistic perspective in design, where individual elements are perceived as connected parts of a larger whole. Not separateness manifests in forms of material uses in compositions that support the exposing of the innerworkings of systems such as the irrigation systems and the reoccurring of specific elements such as a boma.

Spatial design development

Design strategy and approach.

Addressing aesthetics

With the derived regional lexicon of forms and compositions in landscape architecture the next step was to implement the lexicon in a design experiment for developing a food farm in the Waterberg region. Alexander uses the fundamental process to create a living structure therefore it is appropriate to adapt the fundamental process and uses it in the design process of a food farm to address aesthetics in the design of an agricultural landscape. The fundamental process is a step-by-step adaption process Alexander uses to create living structure (Alexander, 2002:217-219). The process consists of eight steps and/or questions a designer can ask, aiding in the design of a living structure.



The fundamental process:

1. Every step of the process should be concerned with the whole, whether you are making, designing, maintaining, or repairing.
2. Ask what act will contribute most to this wholeness to increase life?
3. Referring to the centers ask: Which one could be expanded to create a better sense of life within that center?
4. Are we working to increase the life within this center in such a way that would contribute to the larger center?
5. Simultaneously create a center next to the new living center in similar size and then add more smaller centers within that.
6. Revisit what has been created and evaluate if there has been an increase of life (deeper feeling of life). If not, start the process again otherwise continue.
7. Repeat the steps once again with the newly created centre.
8. If no further steps can be taken that intensifies the feeling of the whole, the end product has been reached.

Design explorations included pattern making. Inspired by artists that create striking patterned pieces of art, I made use of watercolour and ink paint to explore patterns to inform the composition of the plan.

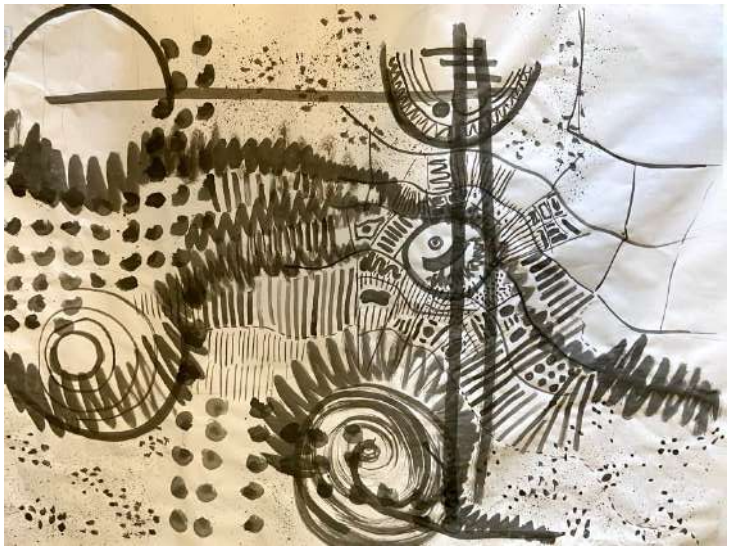




Watercolour on A4 paper



Watercolour on A0 paper

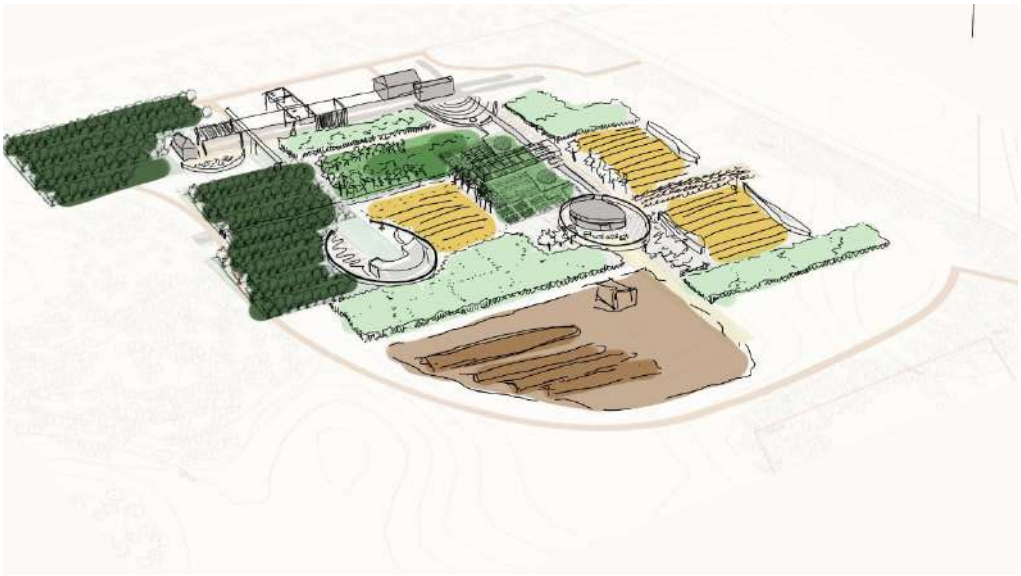


Acrylic inc on A0 paper

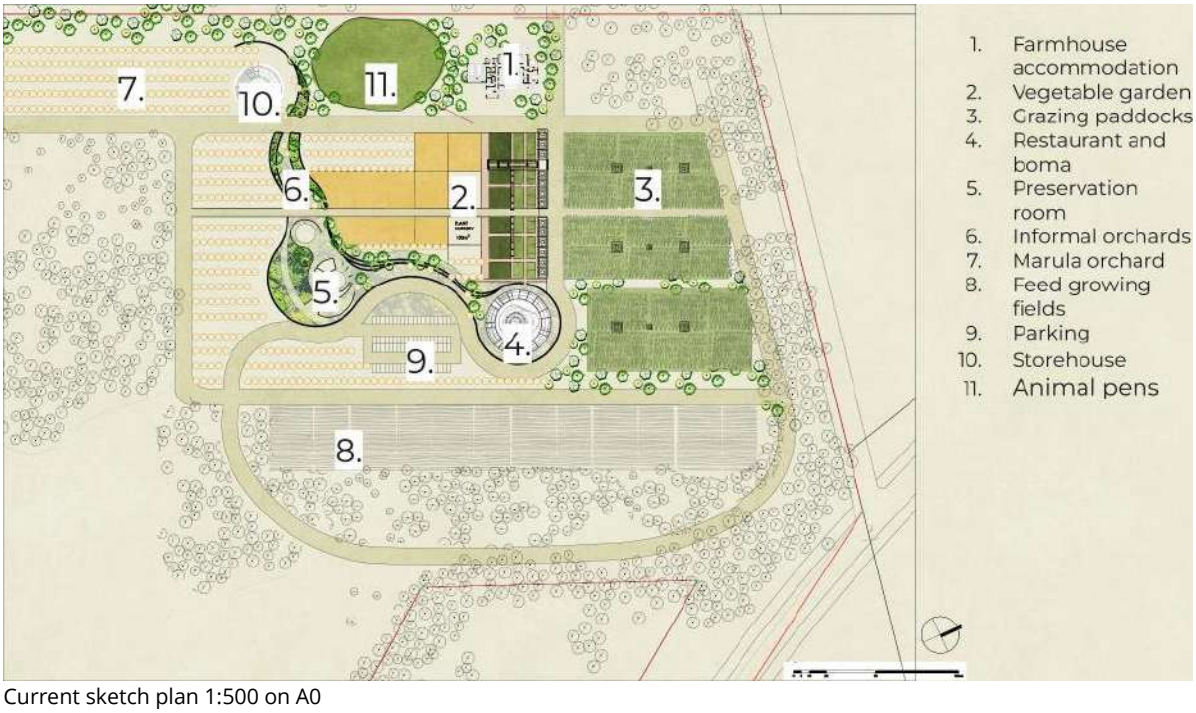
These painting explorations led to the current plant for the food farm.



Development drawings



Earlier 3D sketch

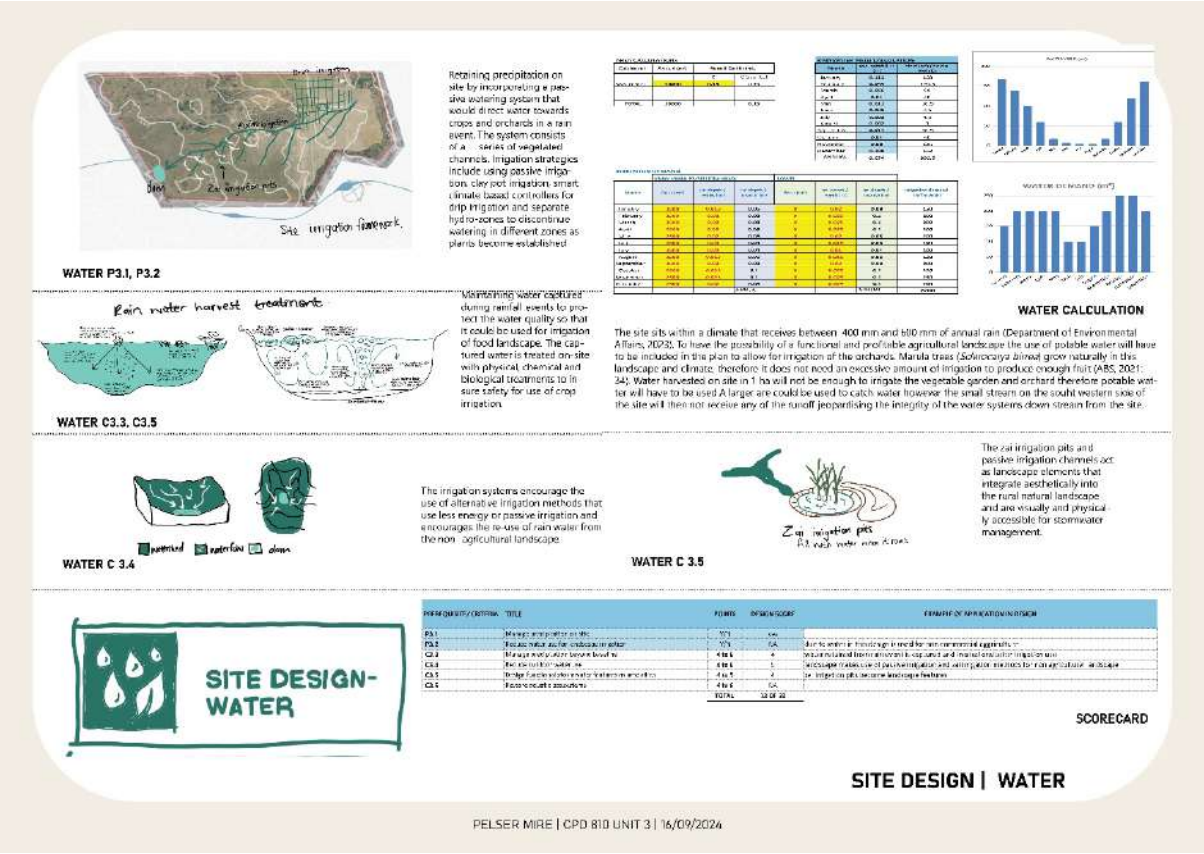


Current sketch plan 1:500 on A0

Addressing sustainability and biodiversity

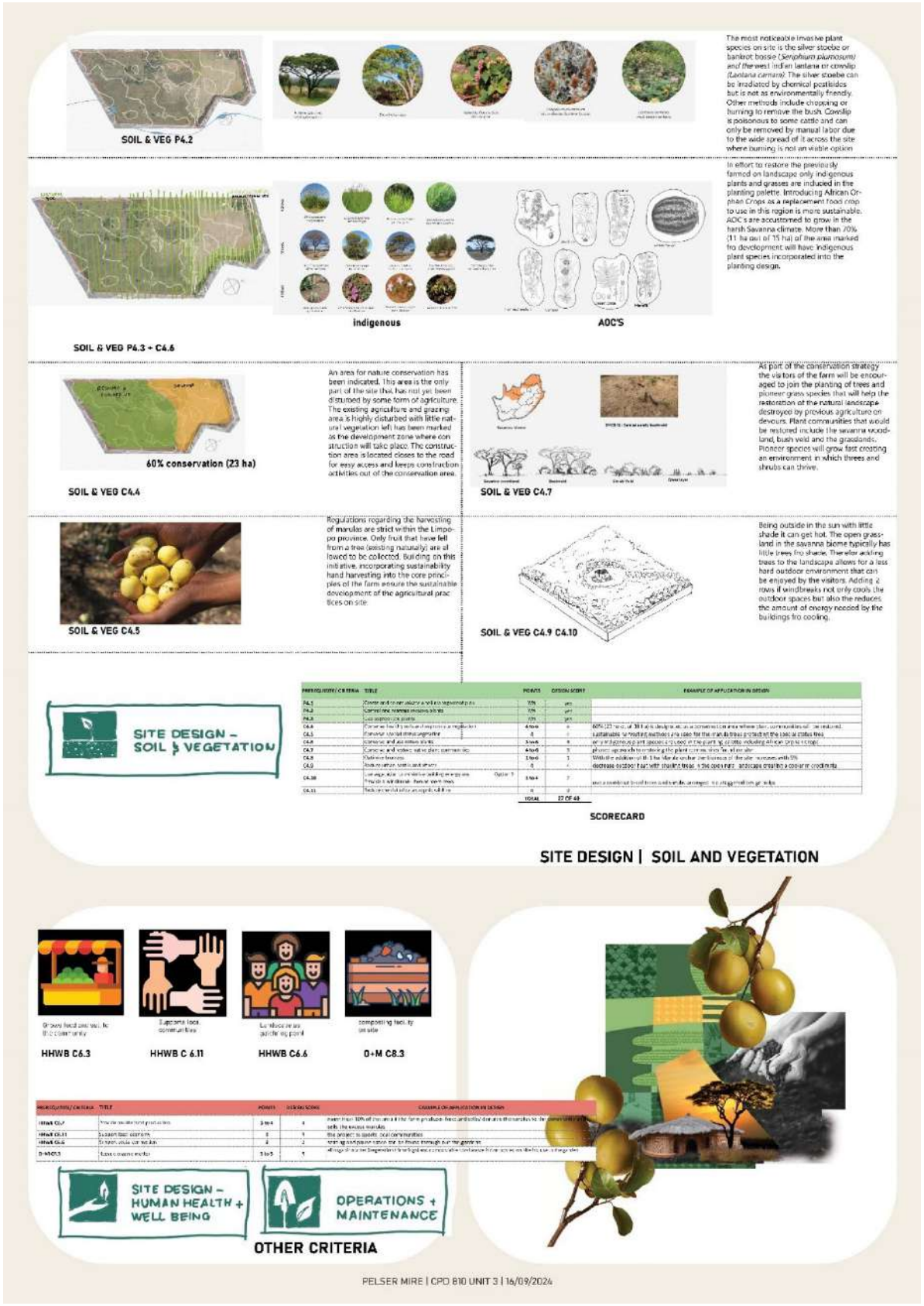
Designing a sustainable food farm that integrates the principles of the Sustainable SITES Initiative offers a unique opportunity to blend agriculture with ecological restoration. By focusing on water conservation through rainwater harvesting and soil management techniques like indigenous crop use, the project not only addresses environmental challenges but also enhances biodiversity and resilience. The introduction of African Orphan Crops and native vegetation creates a model for sustainable farming that promotes food security, conserves resources, and fosters a deep connection between visitors and the agricultural process. This holistic approach exemplifies how landscape architecture can shape the future of agriculture.

In South Africa's Waterberg region, water is a scarce resource for agricultural irrigation, sourced mainly from the Mokolo River or boreholes. While SITES promotes rainwater harvesting to reduce reliance on potable water, limited rainfall makes this challenging for crop irrigation. Alternative methods like hydroponics or aquaponics offer water-efficient options but may lack the authenticity of traditional farming. Therefore, to cultivate edible crops in this area, farms will likely need to rely on potable water from local rivers or boreholes.



Commercial agriculture in South Africa has created monocultured landscapes lacking biodiversity (Roncken et al., 2011, p. 69). The SITES initiative advocates for sustainable soil and vegetation management to reduce runoff, prevent erosion, and support wildlife. Integrating indigenous crops, such as African Orphan Crops (AOCs), offers a sustainable alternative well-suited to South Africa's climate, as some varieties are drought resistant (Makanda, 2011). Adding native fruit trees

like the Marula and Monkey Orange can support local agriculture and exports. These crops enhance food diversity, nutrition, and security (Akinola et al., 2020), creating a sustainable farm model that integrates agriculture with ecological restoration.



Economical and community enrichment

Implementing marula (Sclerocarya birrea) orchards in a food farm offers substantial economic and community benefits. Marula trees, known for their resilient growth in semi-arid environments, are well-suited to the South African landscape, particularly in regions like Limpopo. By establishing marula orchards, communities can generate income through the sale of marula fruits, oils, and other derived products. These products have growing international demand, providing a unique opportunity for local economies to tap into both domestic and global markets.The marula industry also promotes job creation, from farming and harvesting to processing and distribution. According to Shackleton et al. (2005), marula-related activities can enhance rural income and food security, especially in marginalised communities where employment options are limited. Moreover, marula trees hold cultural significance and support traditional uses, adding value to local identity and heritage. Their hardy nature makes them a sustainable agricultural option with lower water requirements than other crops, helping communities adapt to climate change and water scarcity. Thus, marula orchards serve as a valuable tool in sustainable development, blending economic growth with environmental resilience and social well-being (Shackleton et al., 2005).

Critical reflection

In reflecting on *Sacred Harvest*, this project has underscored the value of landscape architecture in bridging aesthetics, sustainability, and community enrichment within agricultural spaces. Drawing on Christopher Alexander's critique of mechanistic design, the project aims to integrate beauty into the rural landscapes of South Africa's Waterberg region, fostering an agricultural environment that is both functional and spiritually resonant. One challenge faced was balancing the functionality of a productive landscape with the need to create spaces that inspire connection and respect for nature. Implementing agritourism provided a solution that harmonised economic potential with ecological stewardship. However, achieving a truly "living structure" as Alexander envisions required iterative design adjustments, particularly to incorporate local ecological elements effectively. Ultimately, *Sacred Harvest* reflects an approach to landscape architecture that goes beyond functionality, inviting a deeper engagement with the aesthetics of place and promoting sustainable practices.

Conclusion

The *Sacred Harvest* project aims to reinvigorate South Africa's agricultural landscapes by merging aesthetic, ecological, and community-centred values. Through the integration of agritourism and sustainable farming practices, this design reimagines the agricultural experience, offering visitors an immersive journey into food production that transcends mere functionality. Drawing on Christopher Alexander's design principles, the project emphasises harmony and place-making, fostering spaces that reflect both human and natural rhythms. The introduction of marula orchards, African orphan crops, and native plants further aligns this design with sustainable, resilient practices suited to the Waterberg region's semi-arid climate.

This approach transforms rural landscapes from utilitarian food sources into sites of contextual and ecological significance, addressing the fragmentation caused by historical and mechanistic farming practices. By creating a balanced relationship between productive landscapes and ecological diversity, the farm enhances biodiversity and ensures that economic growth is achieved with environmental integrity.

Incorporating landscape architecture into farming also elevates the cultural value of agriculture, encouraging community engagement, job creation, and a deeper appreciation for sustainable food practices. The design promotes sustainable economic benefits while preserving local landscapes, showing that food production can be both enriching and regenerative. As visitors engage in the farm's rhythms and processes, they leave with a renewed understanding of food's sacredness and farming’s vital role in community life. The project ultimately represents a holistic vision for South Africa’s agricultural future, where beauty, productivity, and sustainability converge.

References

Abbott, M. 2018. The sustaining beauty of productive landscapes, *Journal of Landscape Architecture*, 13(2):8-19.

Alexander, C. 2002. *The nature of order : an essay on the art of building and the nature of the universe,* Berkeley, CA:Center for Environmental Structure.

Artefacts. 2023. St Johan the Baptist. [Online] Available from: https://artefacts.co.za/main/Buildings/bldgframes_mob.php?bldgid=7457 6021038 [Accessed: 2024-05-25].

Baipai, R., Chikuta, O., Gandiwa, E. & Mutanga, C. 2021. A Critical Review of Success Factors for Sustainable Agritourism Development. *African Journal of Hospitality, Tourism and Leisure,* 10:156.

Bakier, N.& El-Din, M.& Omran, R. & Ibrahim, I. 202). Deities of Agriculture in Ancient Egypt. *International Journal of Heritage, Tourism and Hospitality.*

Balula, L. 2011. The Novelty of Tradition: Creative Old Quarters at the Heart of Waning Cities.

Bennett, J. (2001). The Role of Science in Modern Agriculture: Demystifying Farming Practices and Food Production*. Agricultural Journal,* 12(3):33-40.

BFAP. 2021. *BFAP Agricultural outlook 2021-2030*. [Online] Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.sagis.org.za/BFAP-Baseline-2021.pdf. [Accessed: 2024-05-25].

Dee, C., 2001. *Form and fabric in landscape architecture: a visual introduction*. London: Spon Press.

de Vasconcellos, F., 2020. *Santar Vila Jardim*. [Online] Available at: www.eghn.org. [Accessed: 2024-02-25].

Ettlinger, O. 2023. The divided brain and ways of building the world: parallels in the thought of Iain McGilchrist and Christopher Alexander. *Journal Of Architecture And Urbanism,* 47:183-189. [Online] Available from: https://doi.org/10.3846/jau.2023.18548 [Accessed: 2024-03-15].

Fernández-Armesto, F. 2002. *Near a Thousand Tables: A History of Food.* NY: Free Press.

Gidado,U.M & Garba, A.I. & Maimuna, S.I. & Ibrahim, S.Z. (2023) Sense of place in ecologically degraded areas: the case of semi-arid Nigeria. *African Journal of Landscape Architecture*. 07:(05) [Online] Available from: https://www.ajlajournal.org/articles/sense-of-place-in-ecologically-degraded-areas-the-case-of-semi-arid-nigeria. [Accessed: 2024-03-10].

Godin, D. & Zahedi, M. 2014. *Aspects of research through design: a literature review*. In: *Proceedings of the Design Research Society Conference*. Umeå, Sweden: DRS, pp. 1667-1680. [Online] Available at: https://dl.designresearchsociety.org&#8203. [Accessed: 2024-05-20]

Ikerd, J. (n.d.). Reclaiming the Sacred in Food and Farming. *Sacred Ecology*. [Onine] Available at: https://sacredecology.com/blog/reclaiming-the-sacred-in-food-and-farming. Accessed: [2024-02-20].

Jiang B.2019. Christopher Alexander and his life's work: the nature of order. *Urban Science*. 3(1):30.

LDSP. 2016. Limpopo spatial development framework. [Online] available at: https://www.limpopo.gov.za/webDocs/SDF/Limpopo%20SDF_Phase%201_V0.9.pdf. [Accessed: 2024-03-15].

Lickwar, P. & Thoren, R. 2019 *Farmscape: the design of productive landscapes*. Milton: Routledge.

Louw, P.& Dewar, D. 2023. Sense of place in the spatial planning, landscape, and urban design disiplines. *African Journal of Landscape Architecture*. 07:(06) [Online] Available from: https://www.ajlajournal.org/articles/sense-of-place-in-the-spatial-planning-landscape-and-urban-design-disciplines [Accessed: 2024-03-10].

McGilchrist, I. 2021. The matter with things: Our brains, our delusions, and the unmaking of the world. Perspectiva Press.

Meyer, E.K.. 2018. Beyond "sustaining beauty": musings on a manifesto. In: F. Steiner, G. Thompson, and A. Carbonell, eds. *Nature and cities: the ecological imperative in urban design and planning*. Cambridge, MA: Lincoln Institute of Land Policy, pp. 12-37.

Mucina, L. & Rutherford, M.C. 2006. *The vegetation of South Africa, Lesotho, and Swaziland*. Pretoria, South Africa: South African National Biodiversity Institute

Myer, S. & de Crom, E. 2013. Agritourism activities in the Mopani District Municipality, Limpopo Province, South Africa: perceptions and opportunities. *The Journal for Transdisciplinary Research in Southern Africa,* 9: 14.

Netshipale, A.J., Raidimi, E.N., Mashiloane, M.L., de Boer, I.J.M. & Oosting, S.J. 2022. Farming system diversity and its drivers in land reform farms of the Waterberg District, South Africa. *Land Use Policy,* 117:106-116.

Oberholzer, B. (2023) Reclaiming sense of place in a country town. *African Journal of Landscape Architecture*. 07:(07) [Online] Available from: https://www.ajlajournal.org/articles/reclaiming-sense-of-place-in-a-country-town[Accessed: 2024-03-10].

Posthumus, C. 2016. Babylonstoren garden's vast abundance : food gardens. *SABI Magazine,* 8(5): 4-7. [Online] Available from: https://journals-co-za.uplib.idm.oclc.org/doi/10.10520/EJC190015 [Accessed: 2024-03-15].

Roncken, P.A., Stremke, S. & Paulissen, M.P.C.P. 2011. Landscape machines: productive nature and the future sublime. *Journal of Landscape Architecture,* 6:68-81.

Roggema, R. 2016. Research by Design: Proposition for a Methodological Approach. *Urban Science*. 1. 2.

Seamon, D. 2022. Finding the Center: Christopher Alexander's Concept of "Centers".

Sihlobo, W. 2023. *A Country of Two Agricultures,* Brysnston:Tracey Mc Donald Publishers.

Swaffield, S. & Deming, M. 2011. Research strategies in landscape architecture: Mapping the terrain. *Journal of Landscape Architecture*, 6: 34-45.

Toussaint-Samat, M. 2009. *A history of food*. Rev. ed. Malden, MA: Wiley-Blackwell.

Van Zyl, C. & van der Merwe, P. 2021. The motives of South African farmers for offering agri-tourism. *Open Agriculture,* 6:537-548. [Online] Available from: https://www.degruyter.com/document/doi/10.1515/opag-2021-0036/html [Accessed: 2024-03-10] .

Wadley, R. 2019. *Waterberg echoes,* Pretoria, South Africa, Protea Boekhuis.

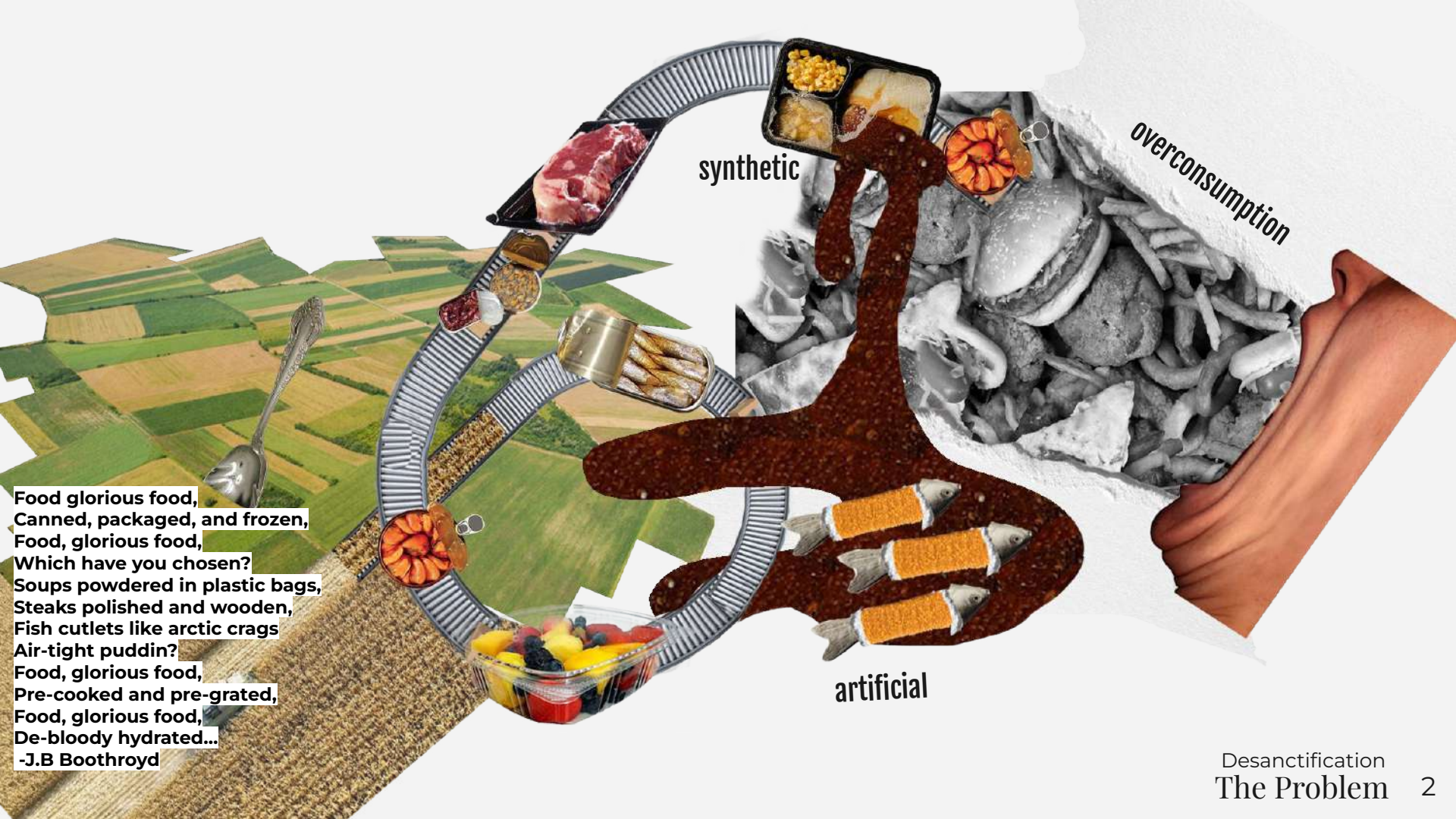
Zvavahera, P. & Chigora, F. 2023. Agritourism: a source for socio-economic transformation in developing economies. [Online] Available from: *Qeios*.10.32388/DXTYIG.2 [Accessed: 2024-03-10].



Sacred harvest

Revealing the forgotten beauty in food and farming

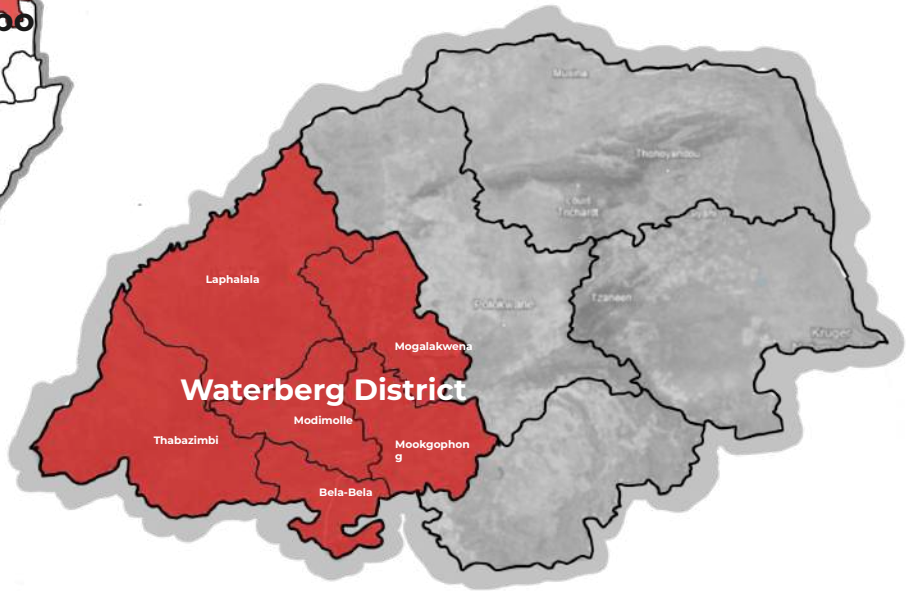
Miré Pelser 04650612
Supervisor : Dr Johan Prinsloo



Food glorious food,
Canned, packaged, and frozen,
Food, glorious food,
Which have you chosen?
Soups powdered in plastic bags,
Steaks polished and wooden,
Fish cutlets like arctic crags
Air-tight puddin?
Food, glorious food,
Pre-cooked and pre-grated,
Food, glorious food,
De-bloody hydrated...
-J.B Boothroyd

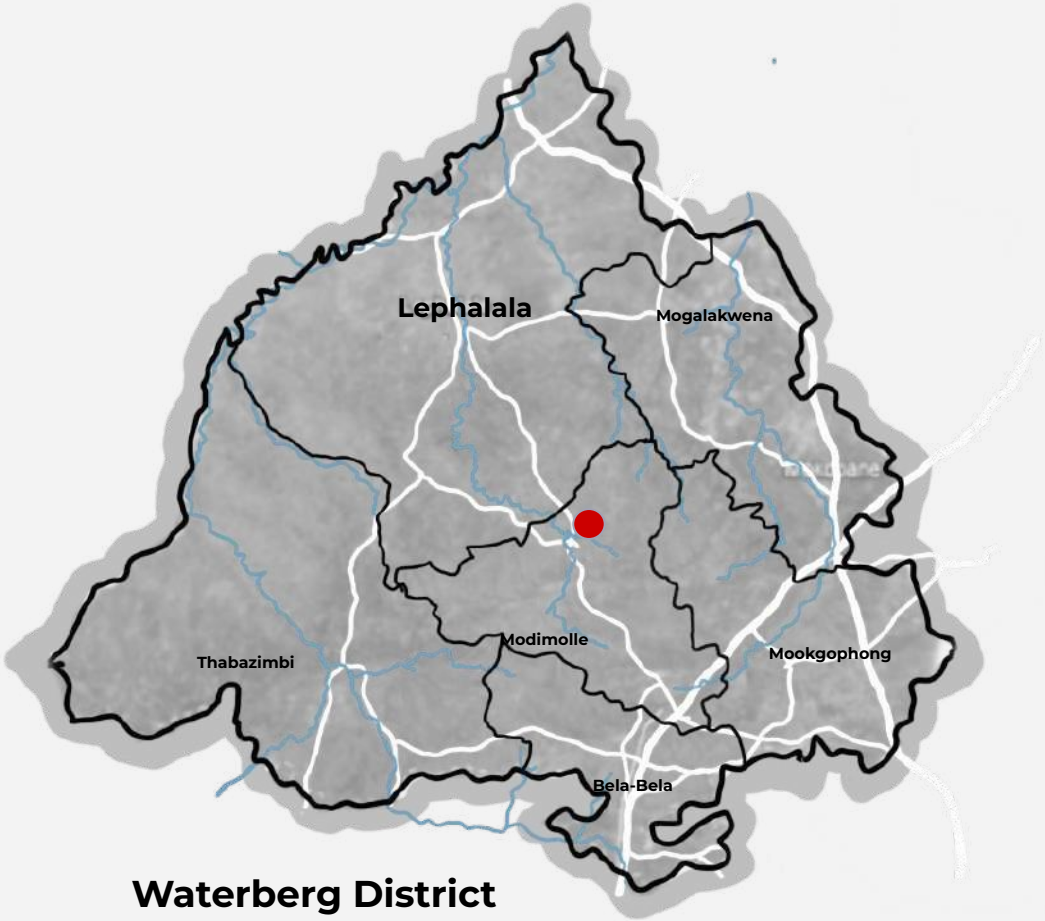








SITE LOCATION
VAALWATER, LIMPOPO



Waterberg District

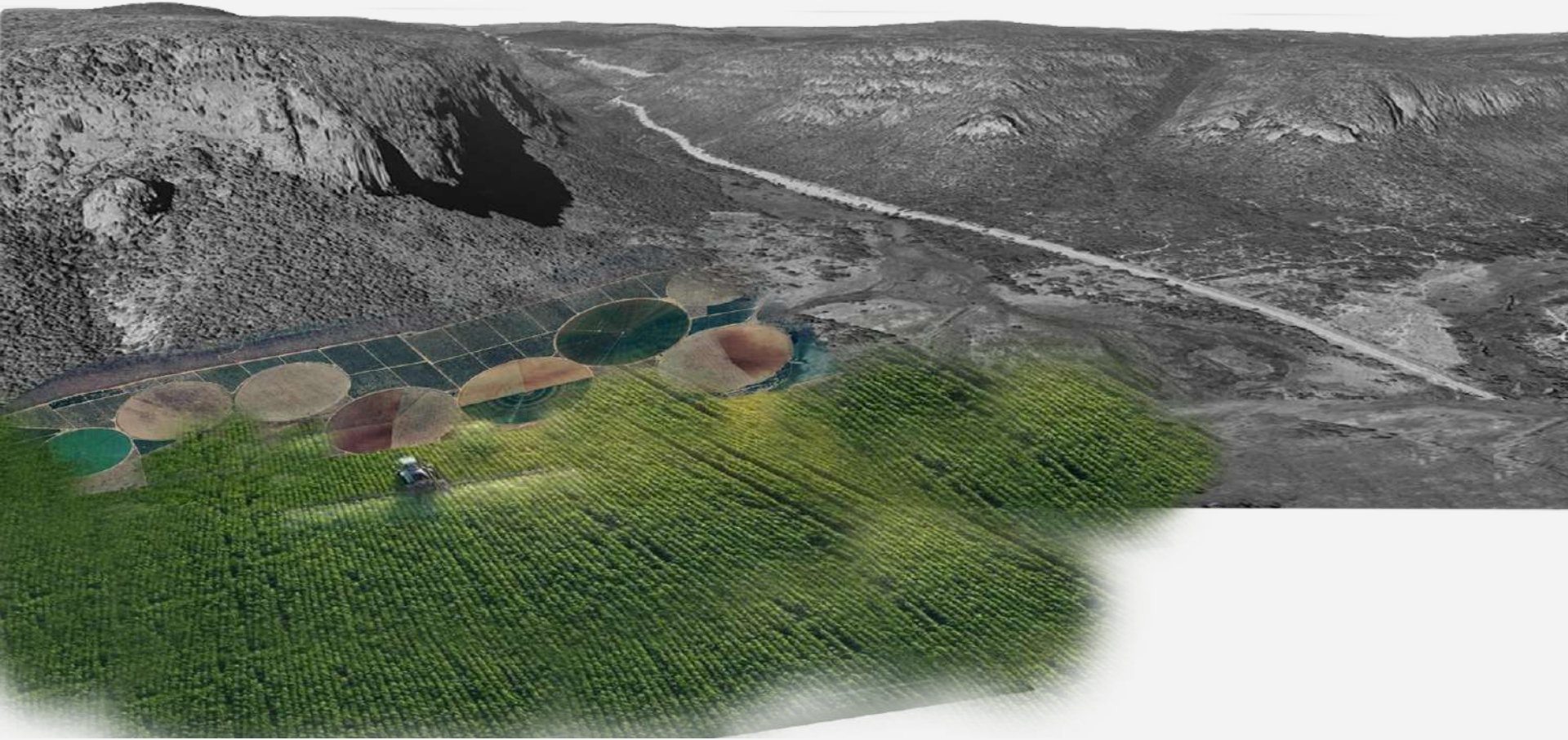


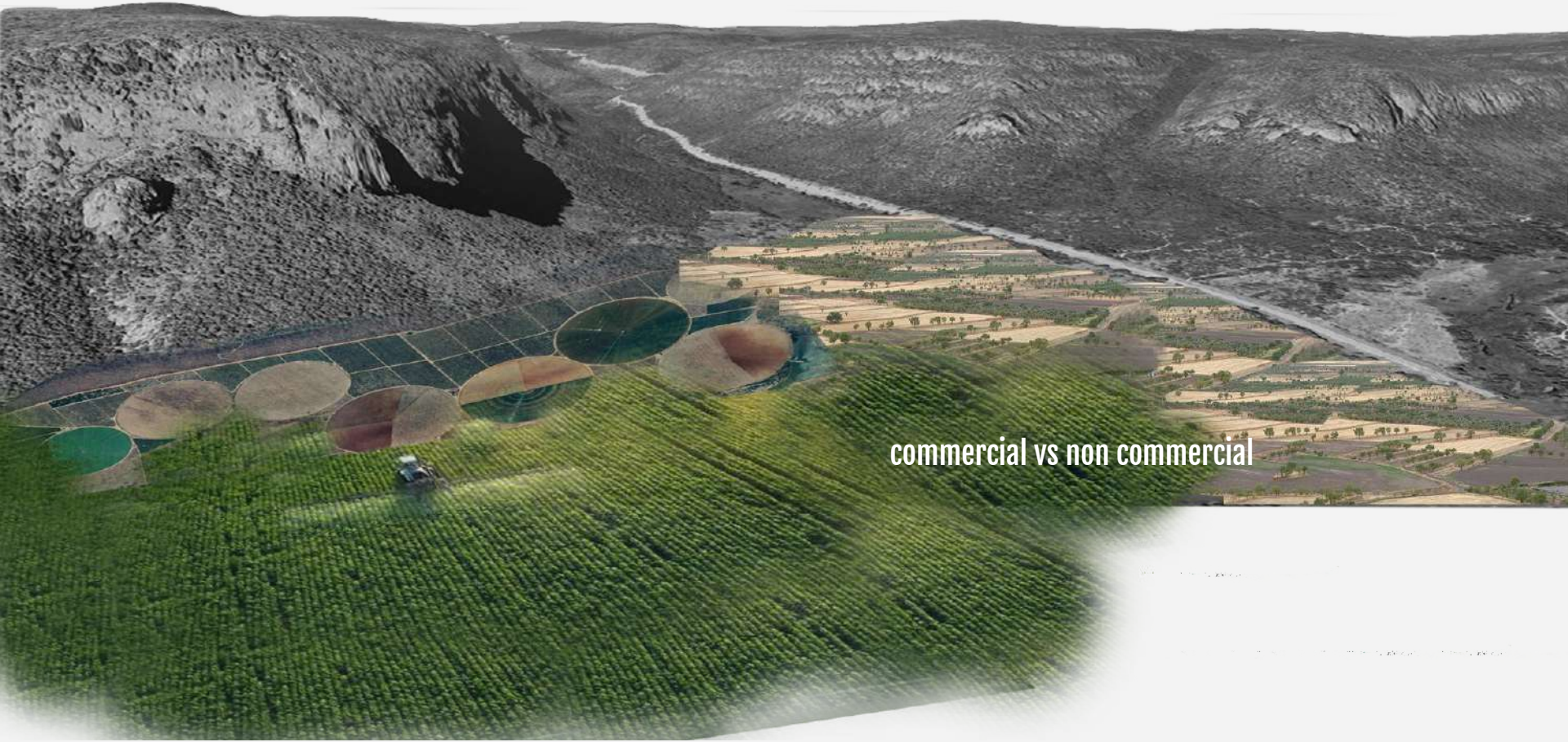
Conservation bufferzone

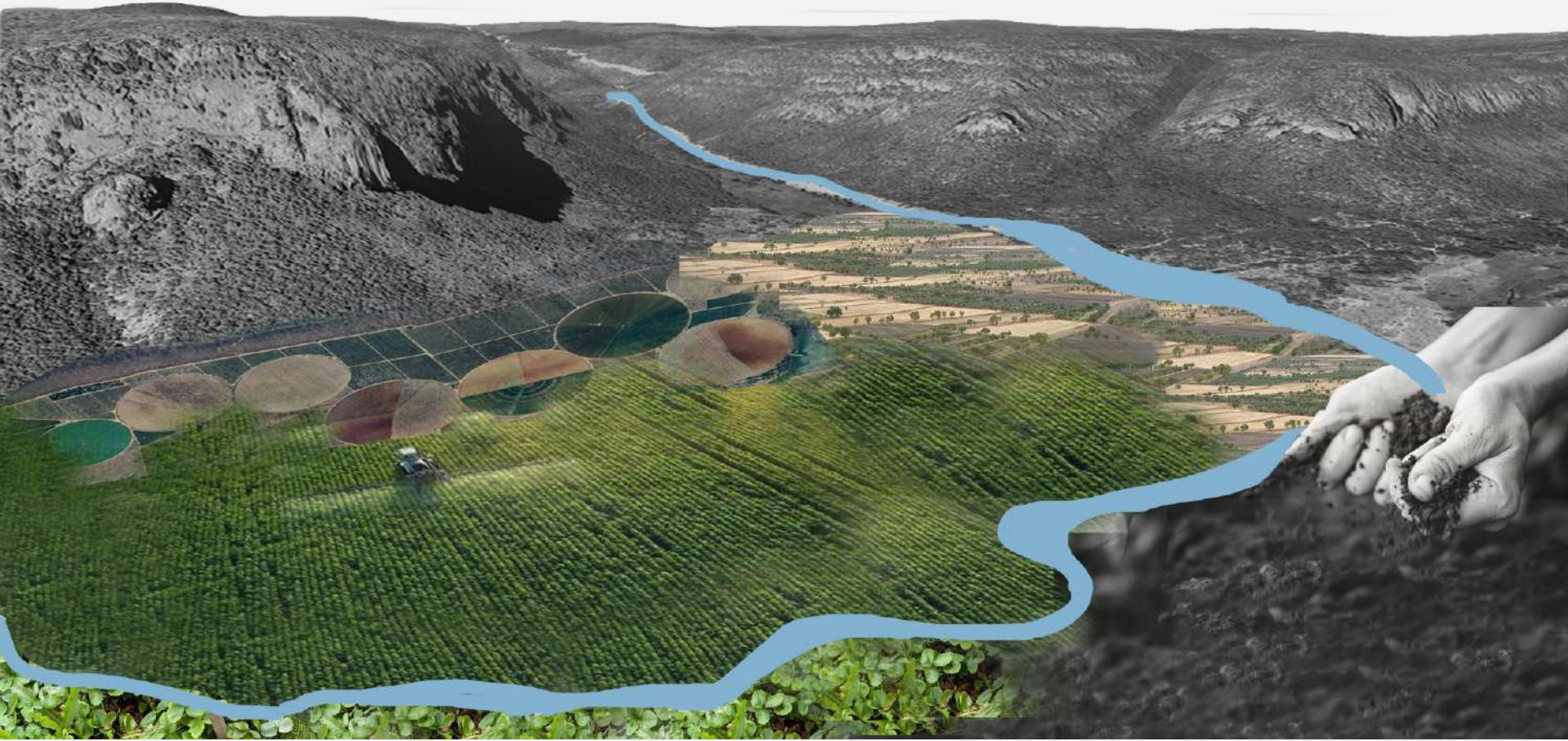
Transition zone

Conservation zones





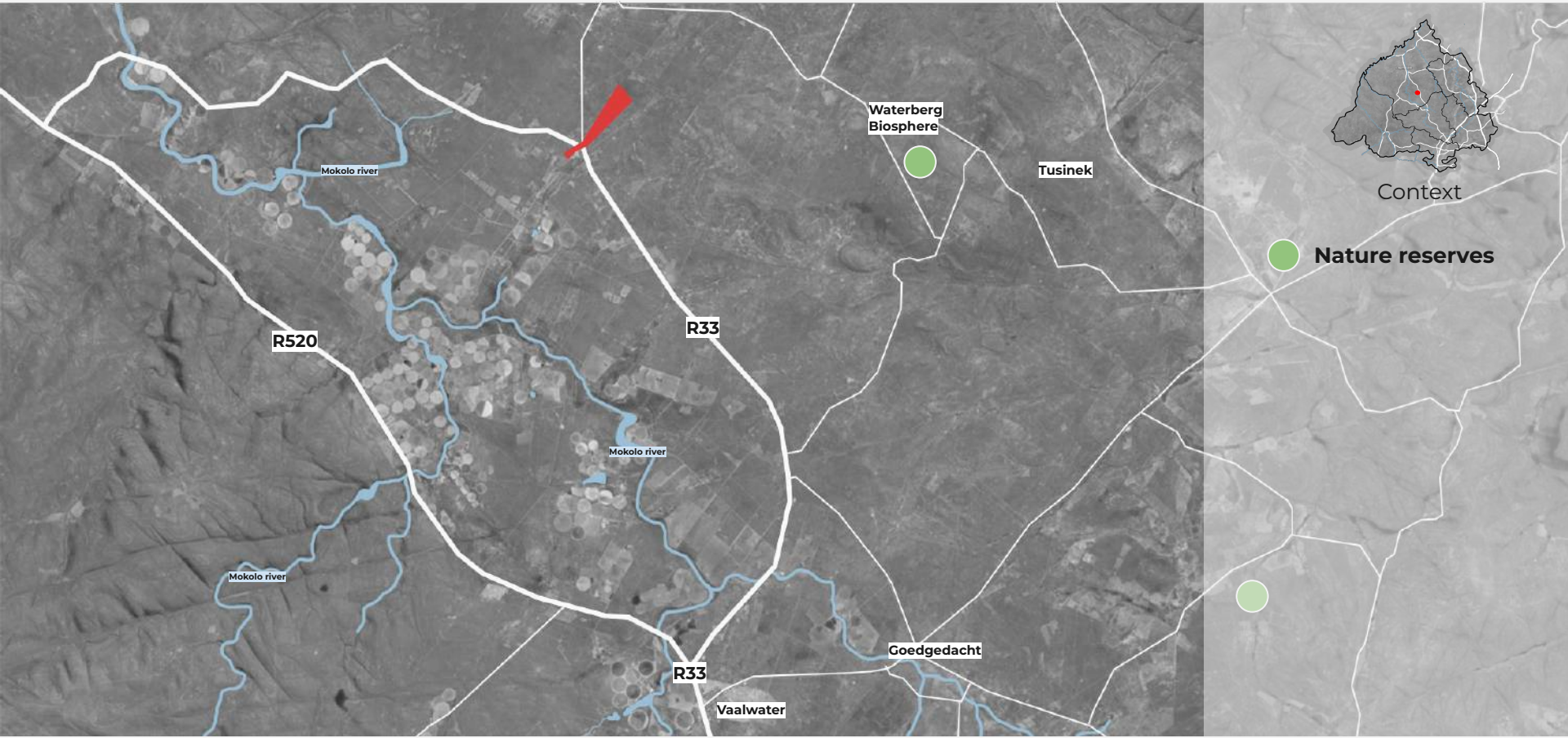

commercial vs non commercial

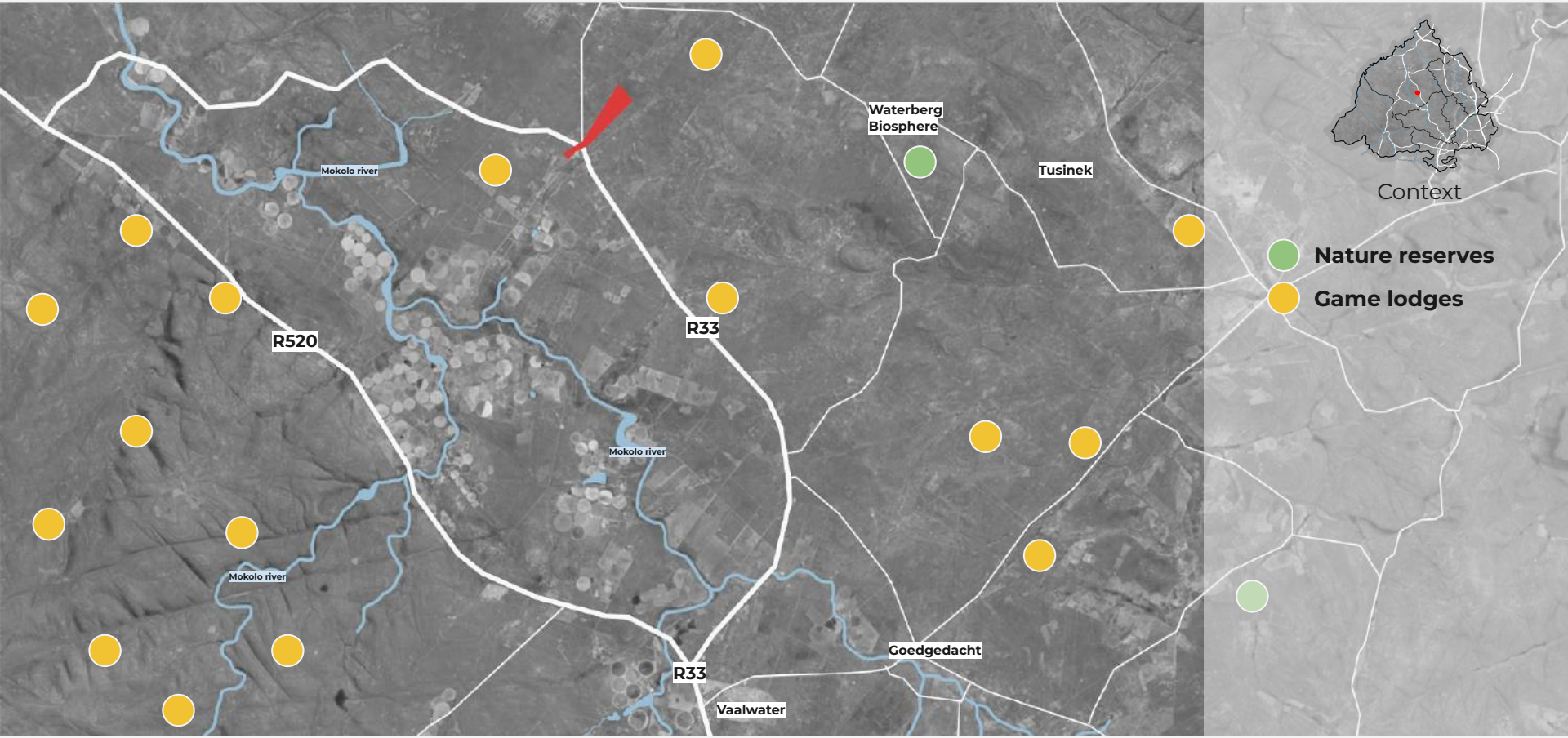


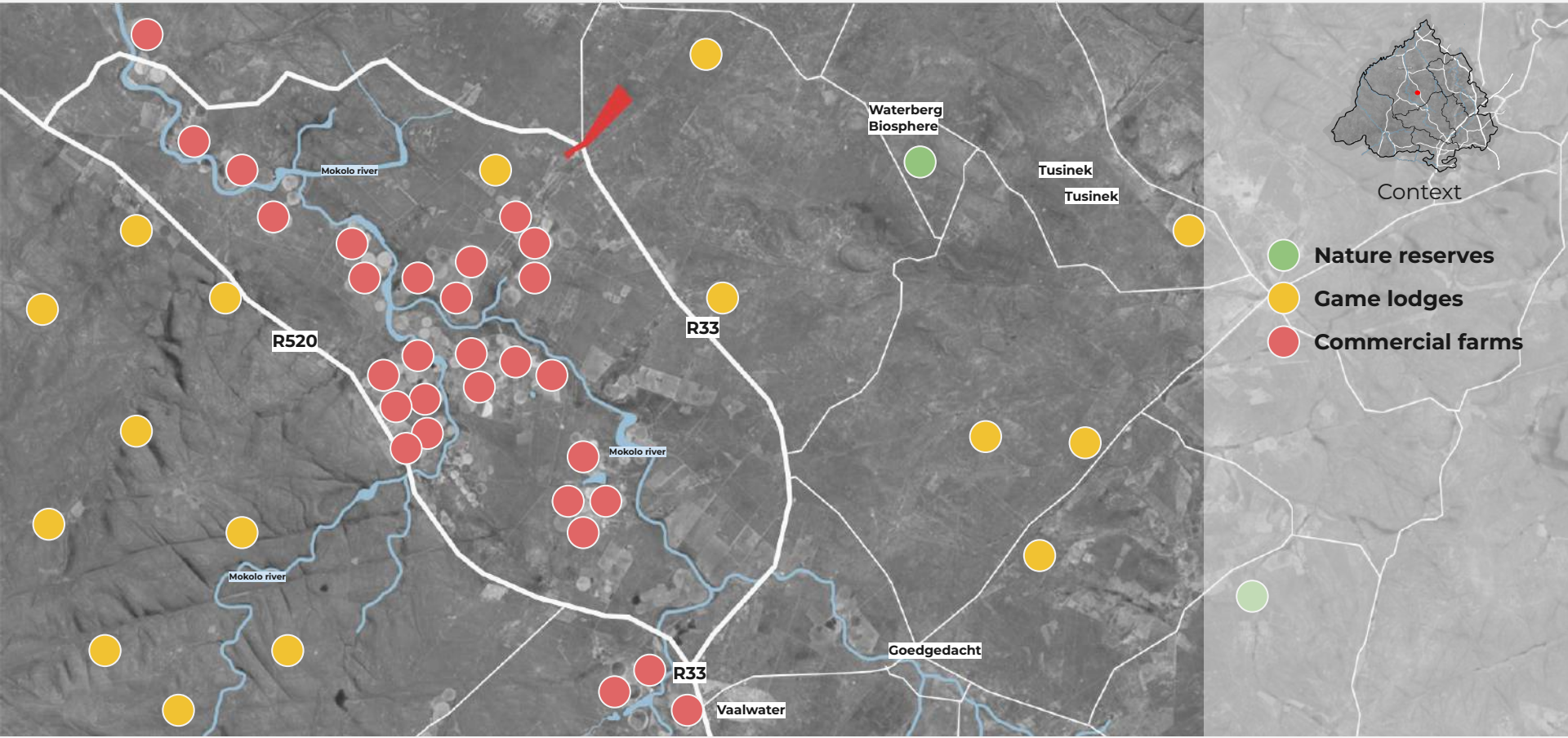


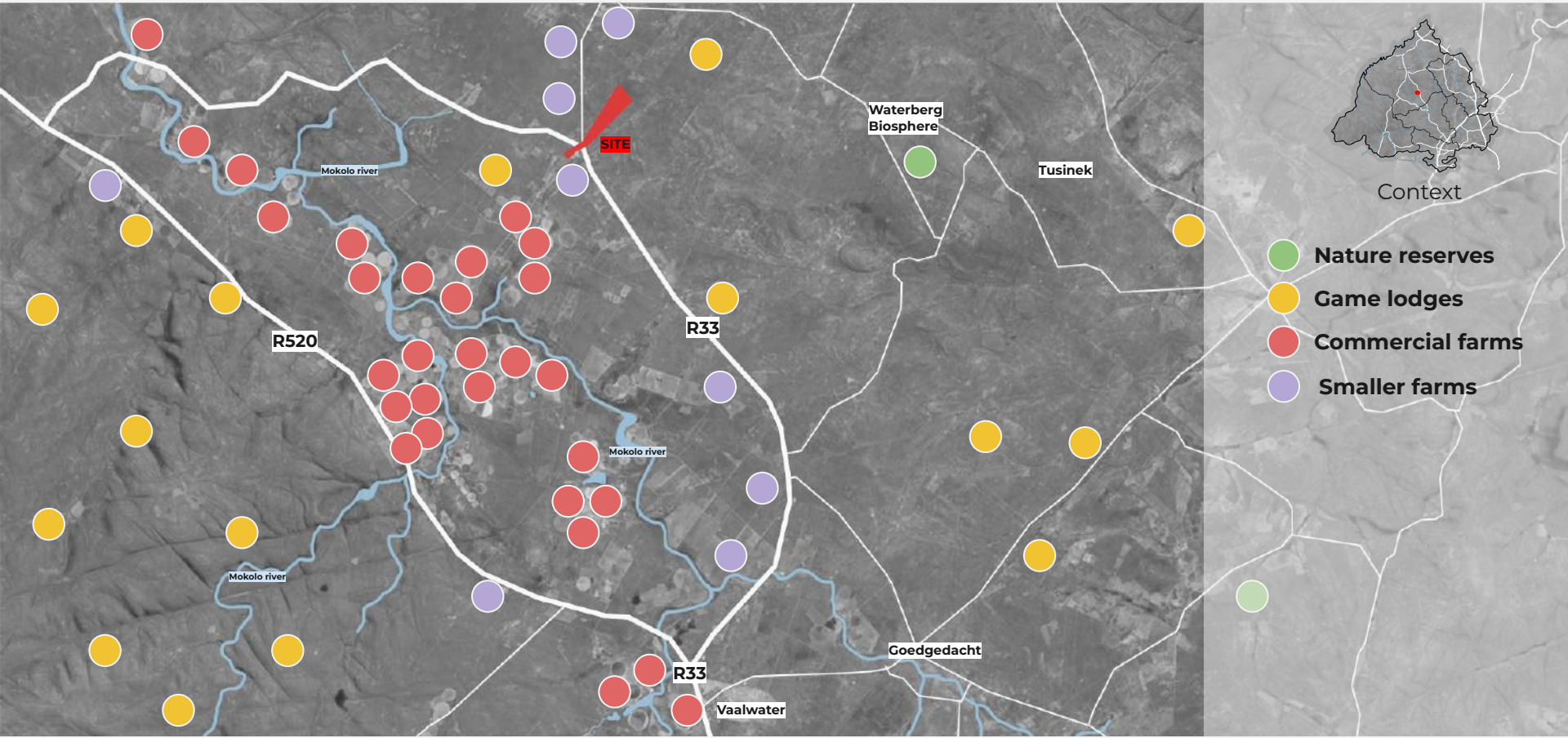
Economic activities

Socio-economic considerations


Waterberg
Biosphere
Tusinek
Mokolo river
R520
R33
Mokolo river
Mokolo river
R33
Goedgedacht
Vaalwater
Context
Nature reserves


Waterberg
Biosphere
Tusinek
Mokolo river
R520
R33
Mokolo river
Mokolo river
R33
Goedgedacht
Vaalwater
Context
Nature reserves
Game lodges


Waterberg
Biosphere
Tusinek
Tusinek
Mokolo river
R520
R33
Mokolo river
Mokolo river
R33
Goedgedacht
Vaalwater
Context
Nature reserves
Game lodges
Commercial farms



Economic activities

Socio-economic considerations



Savanna biome



SVCB 12 : Central sandy bushveld



Savanna woodland



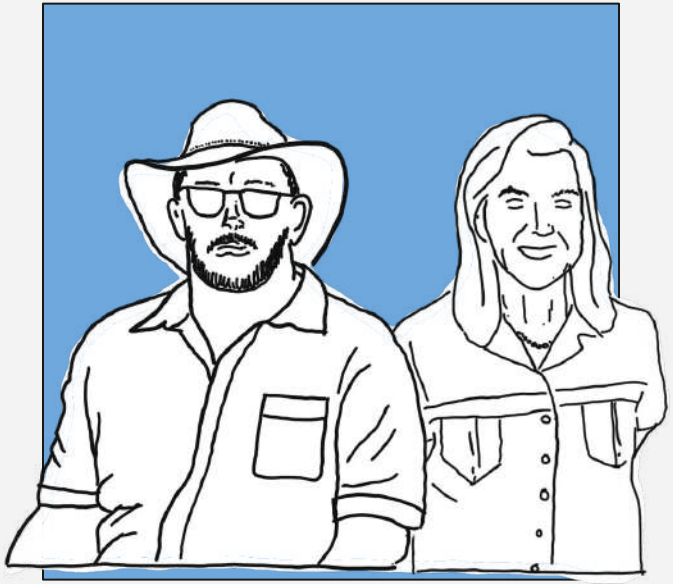
Bushveld



Shrub Veld



Grass layer



Farm owners

Financial

ppgi - public private growth initiative

In transformation initiative (ITI)

Regulatory

South african local government association
Limpopo provincial government

Waterberg district municipality

Lephalale municipality

Waterberg biosphere reserve

Other potential

Local tourism businesses

Waterberg nature conservancy

Sampada Agri



Tourists

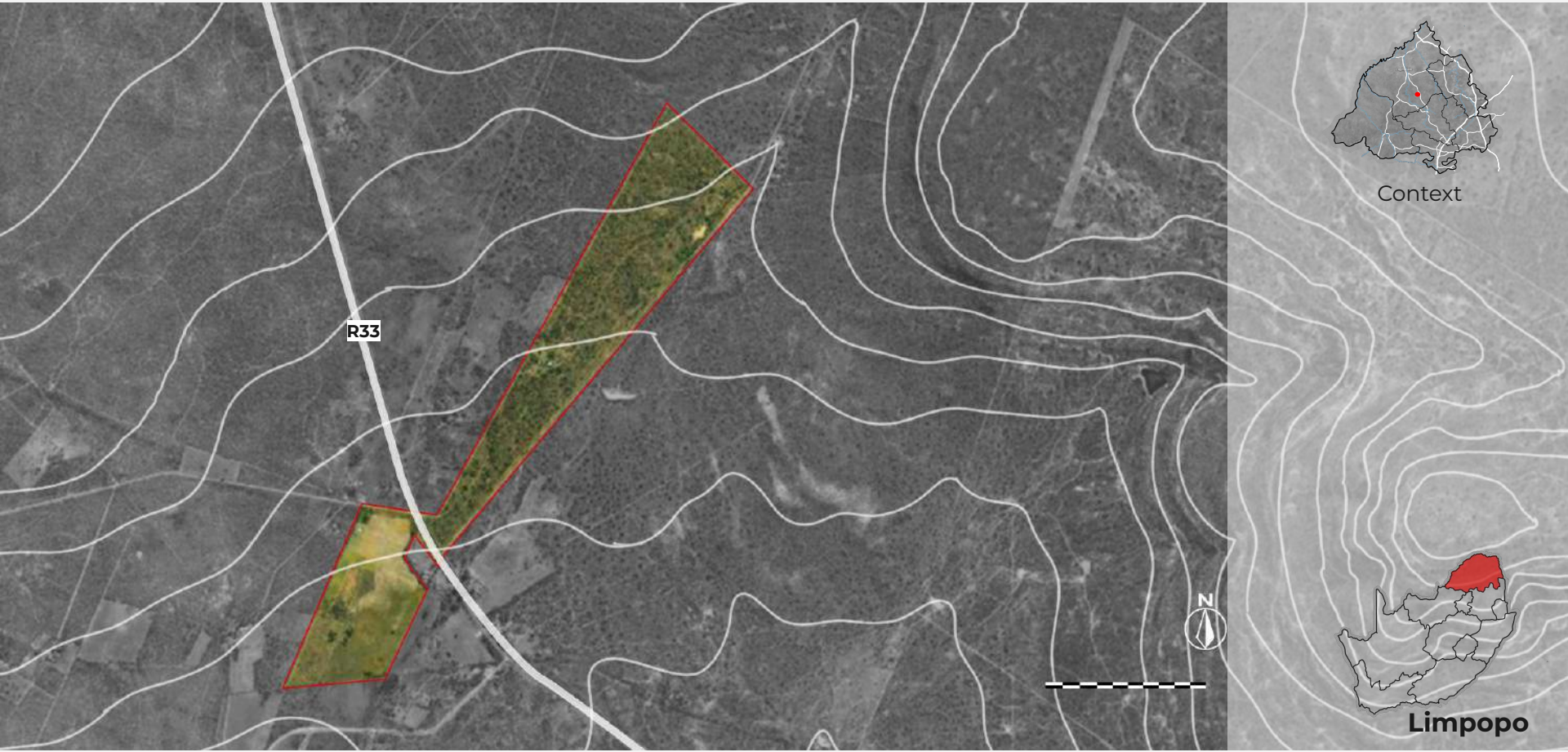


Culinary enthusiasts



Students


BERGHTESGADEN
BERGHTESGADEN


R33
N
Context
Limpopo



(SANBI BGIS)

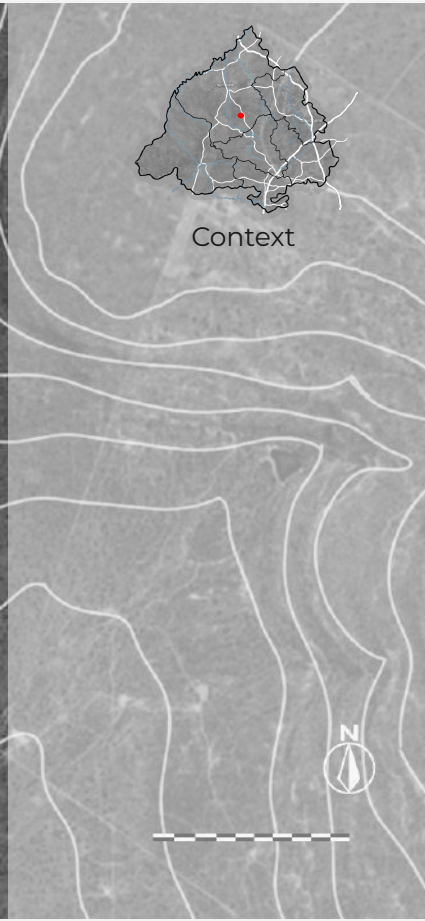










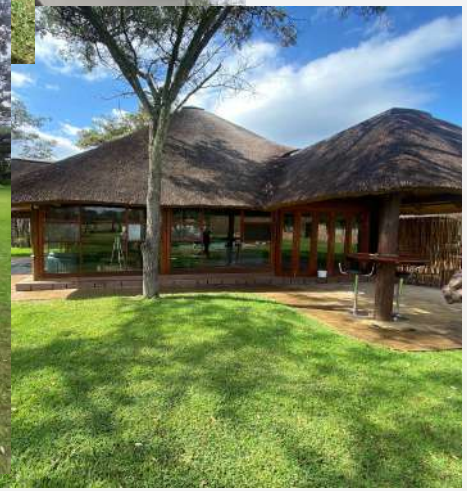


Site analysis

Micro site





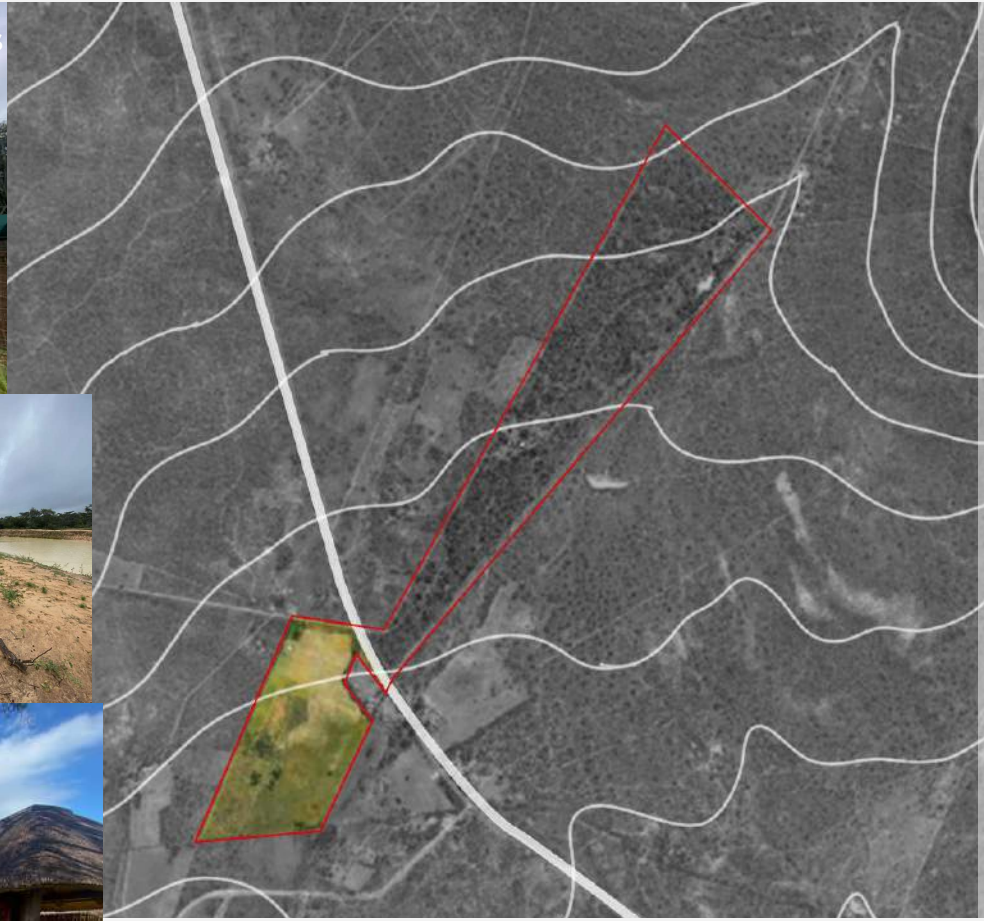


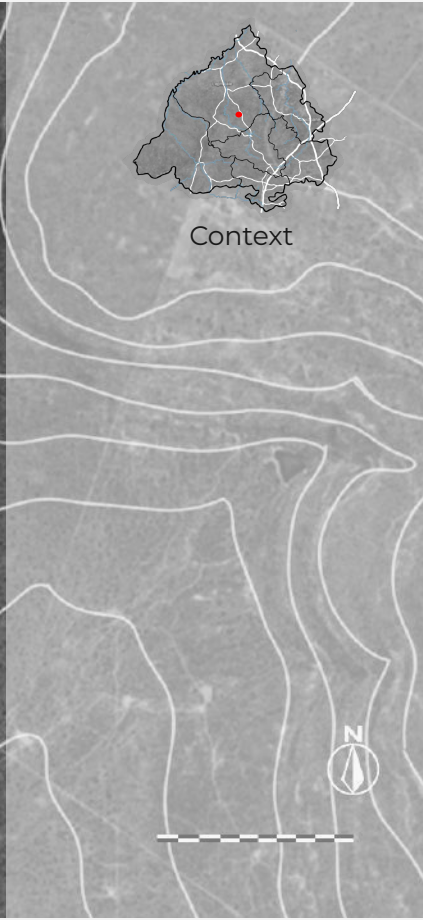



Existing Agricultural Activities


Natural conditions on site


Existing Farm house




Context
N

















Context

Site analysis

Micro site



Natural land

2007



Conversion into farmland

2010



Animal & feed production

2018



2020



2022



2024


1275
1270
1265
1280
1285
1290
1270
1265
1275
N


Natural plant growth
Planted grass field
Grazing field
Animal pen
Accommodation
Artificial Dam


RESTORE &
CONSERVE
DEVELOP
1275
1280
1265
1270
N



NWA- Section 21 (a)
Taking water from a water resource



NWA- Section 21 (a)
Taking water from a water resource



NWA- Section 21 (a)
Taking water from a water resource



NWA- Section 21 (a)
Taking water from a water resource



NWA- Section 21 (a)
Taking water from a water resource

Grass



Chloris gayana
rhodes grass



Digitaria eriantha
smiths finger



Panicum maximum
guinea grass



Lespedeza cuneata
poor man's lucerne

Trees



Terminalia sericea
silver leaf tree



Combretum spp.
bushwillow



Acacia ziziphus
buffalo thorn tree



Euclea undulata
small-leaved guarri



Vachellia tortilis
umbrella thorn tree

Other



Aloe greatheadii
spotted aloe



Dicerocaryum senecioides
devil's thorn



Barleria macrostegia
tong klapper



Hermannia lancifolia





?



Agricultural landscape with placeness?



The living structure



Christopher Alexander

What is a living structure?
A living structure/ landscape provides a sense of environment that nourishes us emotionally

What is space?
Space is the raw material we use to create places.

What is place?
Where dimension is formed by peoples relationship with physical setting and meaning.

DIT Research question

What **forms** and **principles** of composition can inform the design of a **rural precinct** characterised by **coherence** and **placeness** within the **Waterberg region**?



A regional Lexicon of the waterberg



Design Enquiry

How can the **derived pattern language** inform the design of a **food farm** in Waterberg region that encourages the holistic development of **farm systems** ultimately **re-enchanting** the practices of **food and farming**.

...by incorporating CA's work: regional lexicon

...by expanding and adding the the current activities on the farm

Animals, veg garden and salt room (conservation)

From and composition
Improve farming aesthetics while keeping it authentic

Create an authentic farm experience

Holistic farm management

...by incorporating forms of conservation agriculture, succession farming.

Ultimately creating a space where food is celebrated.

Aims and Objectives

15 Principles of Wholeness

Levels of scale

Centres

Boundaries

Alternating repetition

Positive space

Good shape

Local symmetries

Deep interlock

Contrast

Gradient

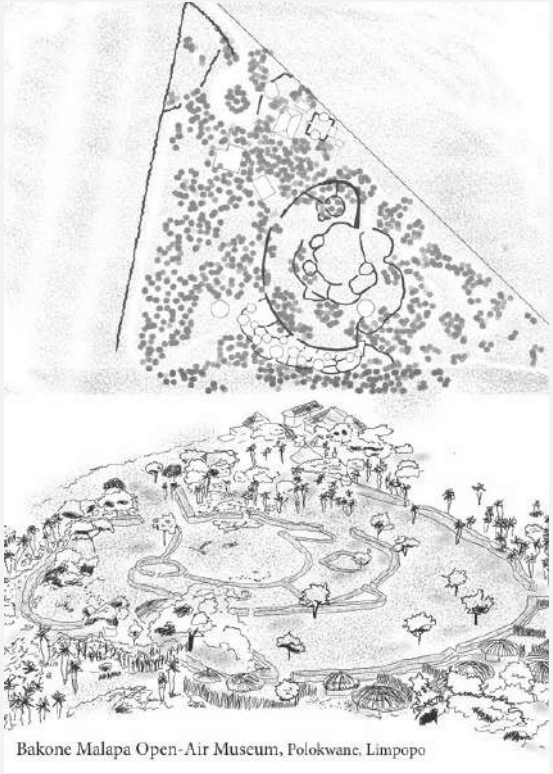
Roughness

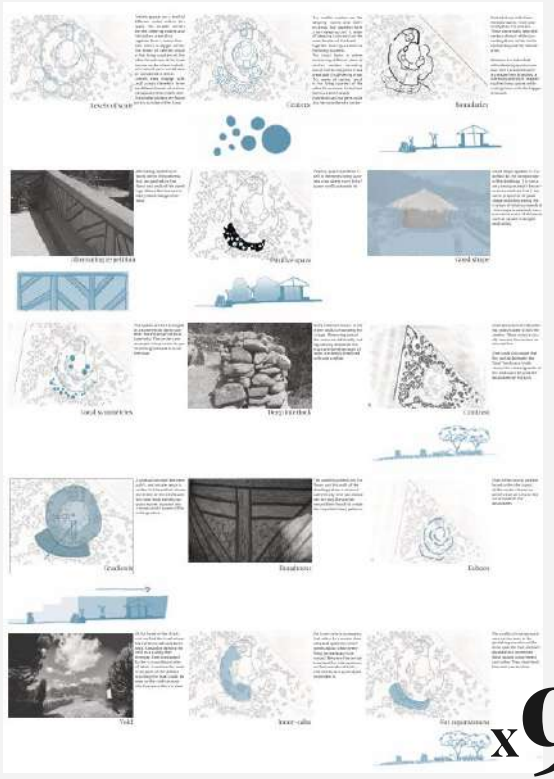
Echoes

The void

Inner calm

Not Separateness





x9

Regional Lexicon

Nestled centres

Vastness to intimacy

Privacy, protection, and connection

Alternating planting

Efficient order

Local symmetries

Interlacing spaces

Order and disorder

Enclosure

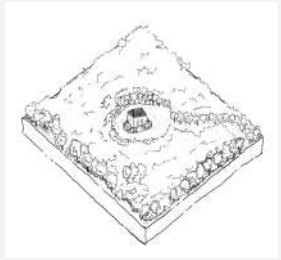
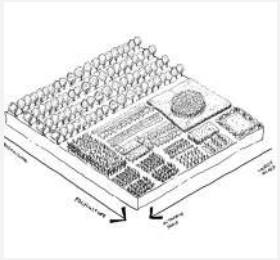
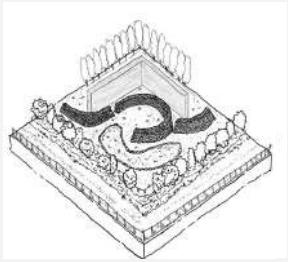
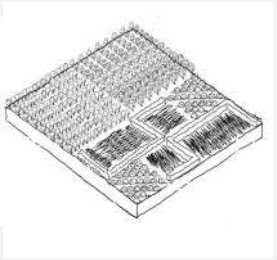
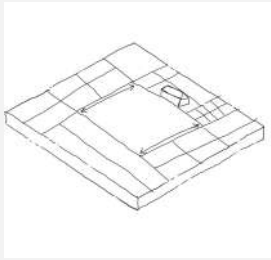
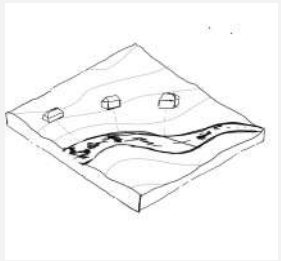
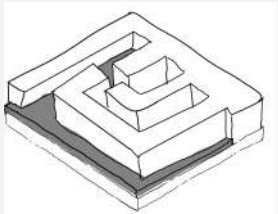
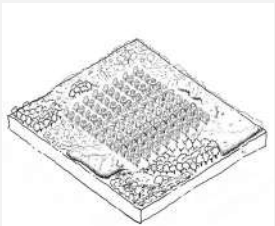
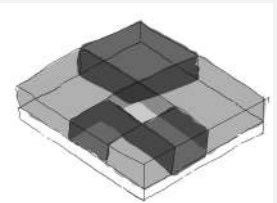
Roughness

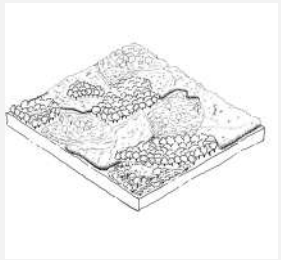
Echoes

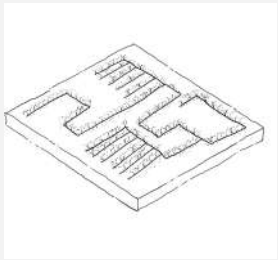
The watering holes

Inner calm

Interconnected



Farming

Soil preparation Sowing seed



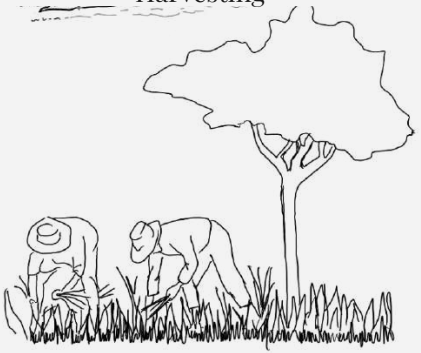
soil preparation begins with rituals and blessings to honour the earth and ensure a bountiful harvest. These rituals may include offerings, prayers, and ceremonies that seek the favour of deities or spirits associated with agriculture and fertility

Watering crops and growing



emphasizing the sacredness of water as a life-giving force and seek to ensure an abundant and healthy harvest.
Rainmaking and water/ crop blessing rituals

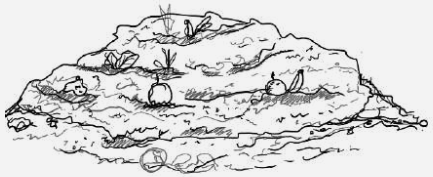
Harvesting



cultures celebrate harvest festivals with music, dancing, and feasting.

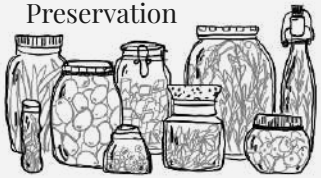
Food

Conservation



Protection of natural environments and the knowledge systems passed on through generations.

Preservation



such as fermentation, drying, and pickling have been used for centuries to preserve food. These methods not only extend the shelf life of perishable ingredients but also honor the natural cycles of abundance.

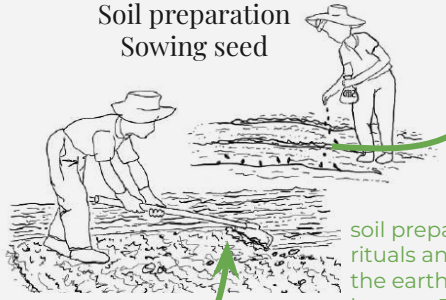
Preparing and consuming

Mindful preparation of food



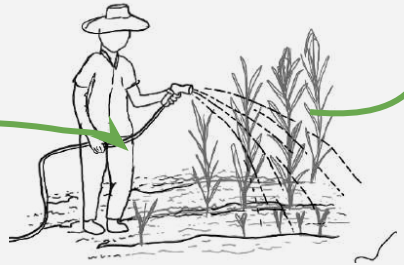
Farming

Soil preparation
Sowing seed



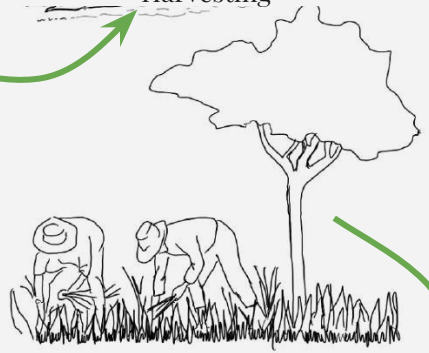
soil preparation begins with rituals and blessings to honour the earth and ensure a bountiful harvest. These rituals may include offerings, prayers, and ceremonies that seek the favour of deities or spirits associated with agriculture and fertility

Watering crops and growing



emphasizing the sacredness of water as a life-giving force and seek to ensure an abundant and healthy harvest.
Rainmaking and water/ crop blessing rituals

Harvesting



cultures celebrate harvest festivals with music, dancing, and feasting.

Preparing and consuming

Mindful preparation of food

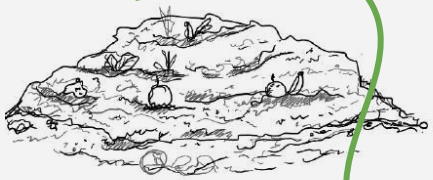


Preservation



such as fermentation, drying, and pickling have been used for centuries to preserve food. These methods not only extend the shelf life of perishable ingredients but also honor the natural cycles of abundance.

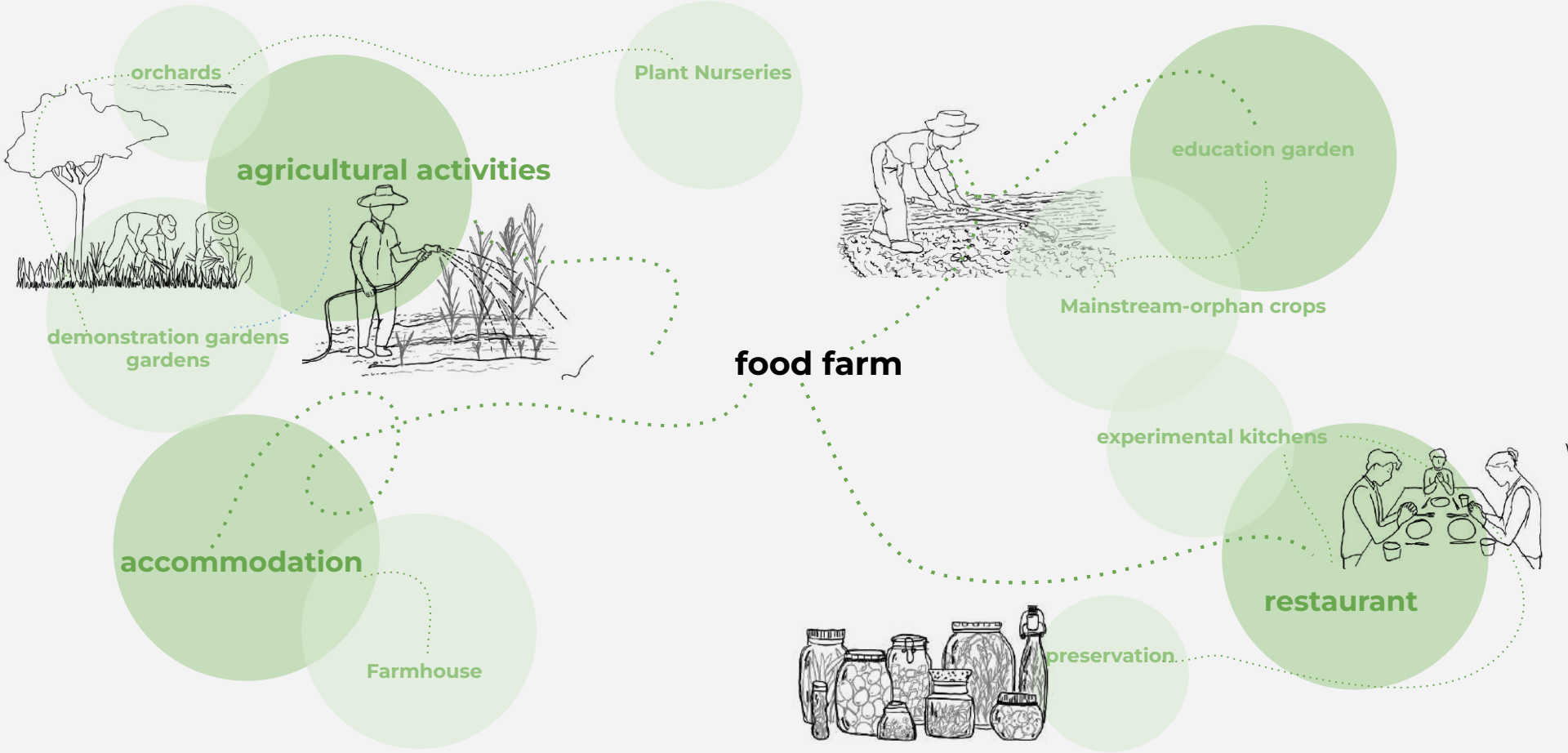
Conservation



Protection of natural environments and the knowledge systems passed on through generations.

Food

Concepts of sanctification


orchards
Plant Nurseries
agricultural activities
education garden
demonstration gardens
gardens
Mainstream-orphan crops
food farm
experimental kitchens
accommodation
restaurant
Farmhouse
preservation

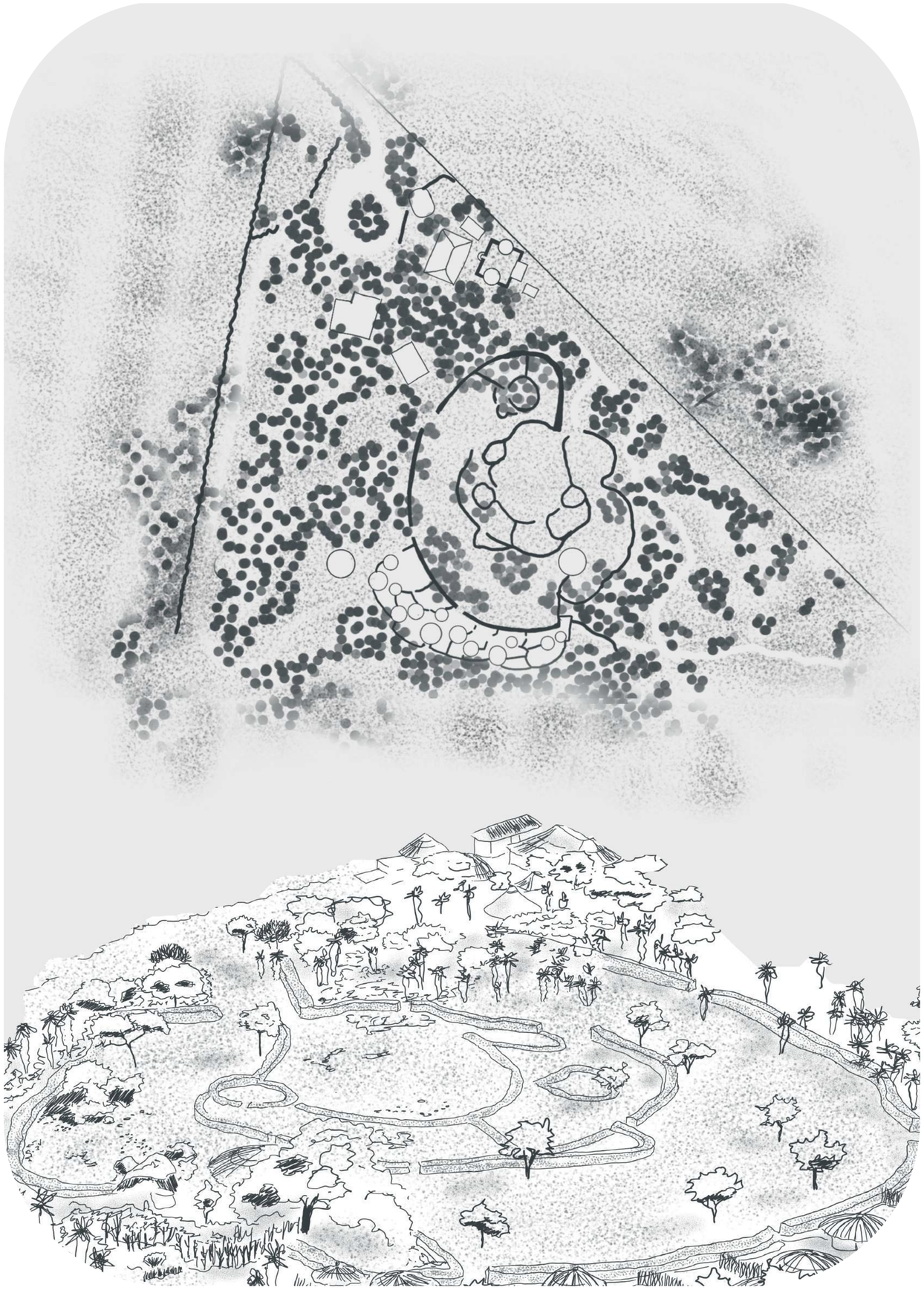
SACRED HARVEST

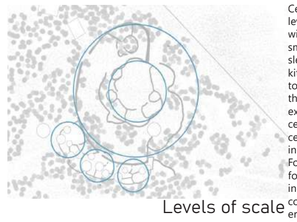
REVEALING THE FORGOTTEN BEAUTY IN FOOD AND FARMING



MIRÉ PELSER
MPROF LANDSCAPE ARCHITECTURE

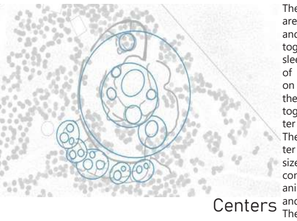
SUPERVISOR | DR JN PRINSLOO





Levels of scale

Centers appear on a level of different scales within this space. The smaller centers are the sleeping rooms and the kitchen areas that
together form a center that
exist within a bigger center. The series of centers result in the living quarters of the wifes. Found near it the Kraal forms a center where individuals animal pens could also be considered a center.
Centers sizes change with small jumps therefore there are different levels of scale in the layout of the Chiefs Unit. The smaller centers are found on the outside of the Kraal.



Centers

The smaller centers are the sleeping rooms and kitchen areas that together form a one sleeping unit. A series of sleeping units exist on the outer border of the kraal
together forming a center as the living quarters. The kraal forms a center containing different sizes of smaller centers consisting out of the animal pens Ritual areas and slaughtering areas
The series of centers result in the living quarters of the wifes. Found near it the Kraal forms a center where
individuals animal pens could also be considered a center.



Boundaries

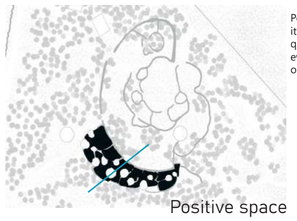
Packed stone walls form the boundaries from and strengthen the centers. These stone walls keep the centers distinct while connecting them to the to the context beyond the boundaries.

Between the individual wifes sleeping quarters we also find a second boundary made from branches, a screening wall type, separating the living spaces while uniting them with the bigger structure.



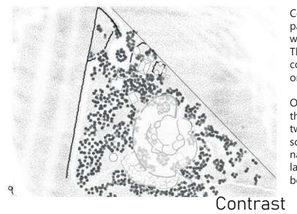
Alternating repetition

Alternating repetition if found within the patterns that are painted on the floors and walls of the dwellings. Where the lines painted by hand change directions



Positive space

Positive space manifests itself in the wives living quarters area where every bit of space swells outwards to



Contrast

Contrast occurs in the painting colours used within the centers. These colours visually connect the centers to one another.

One could also argue that the contras between the "kept"landscape inside versus the natural growth of the landscape beyond the boundaries of the Unit



Local symmetries

The spaces are not arranged in a symmetrical form however, there is a sign of local symmetry. The centers are arranged along a circular par stretching outward around the kraal.



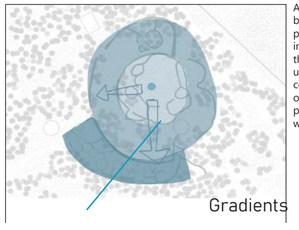
Deep interlock

Deep interlock occurs in the stone walls surrounding the village . Removing one of the rocks would literally and figuratively dismantle the structure therefore each of rocks are deeply interlined with one another.



Good shape

Good shape appears in this artifact by the composition of the dwellings. It is not a very strong example however one could see that it has some properties of good shape including strong distinction of what surrounds it , the shape is relatively compact and consist of elements such as squares triangles and circles.



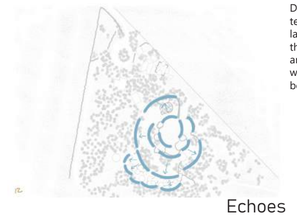
Gradients

A gradual variation between public and private space is evident in the artifact. Across the extent of the Chiefs unit the inner most communal space moves outward into a more private space of the wifes quarters.



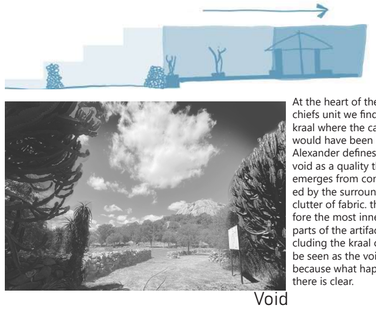
Roughness

The painted patterns on the floors and the walls of the dwellings show a sense of authenticity. One can almost see the way the painter moved their hands to create the imperfect lined patterns.



Echoes

Due to the circular pattern found within the layout of the centers there is a presence of an echo in the curved wall of the boundaries.



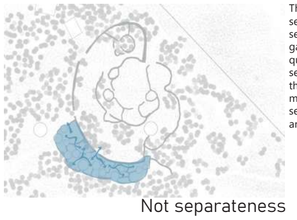
Void

At the heart of the chiefs unit we find the kraal where the cattle would have been kept. Alexander defines the void as a quality that emerges from contrasted by the surrounding clutter of fabric. therefore the most inner parts of the artifact including the kraal could be seen as the void because what happens there is clear.



Inner-calm

the inner calm is a property that refers to a certain slowness and quietness which comes about when everything unnecessary is removed. Between the central kraal and the wifes quarters we find corridor of sorts , that serves as a quite space to wonder in.



Not separateness

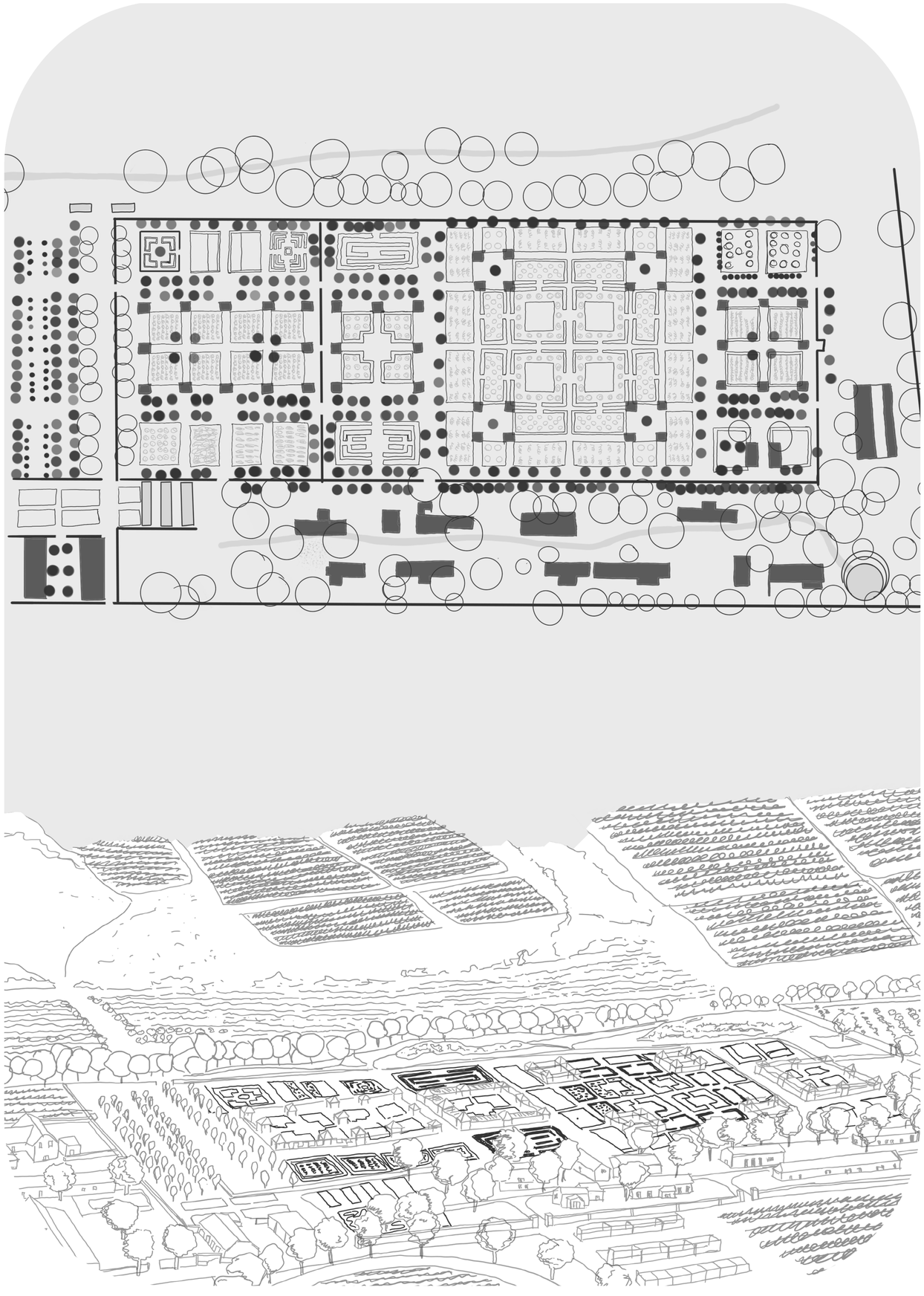
The quality of not separateness can be seen in the spatial organisation of the wives quarters that are both separate but connected these spaces complement each other. They seamlessly flow into one another.

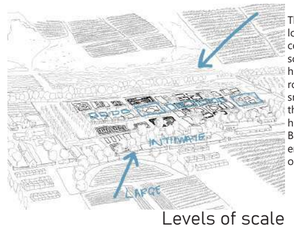
Project Name| Bakone Malapa Northern Sotho Museum, Polokwane, Limpopo (2011)

Landscape Architect| n.d

Project description| The Bakone Malapa Open-Air Museum is a place where tribesmen practise long-standing traditions to educate visitors about the customs of Africa's people. It is one of two similar museums in Limpopo, the other being the Tsonga Open-Air Museum near Tzaneen. Bakone Malapa is a meticulously reconstructed village modelled after the style used by the northern Sotho people around 250 years ago. It is designed to demonstrate the daily life of the Bakone, a highly sophisticated subgroup of the northern Sotho tribe.
The cultural village features two homesteads, or lapas, that exhibit and explain traditional activities such as fire making, maize grinding, and beer brewing, just as they were performed centuries ago

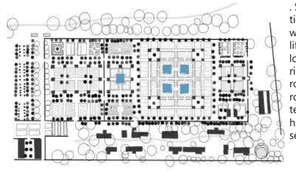
Bakone Malapa Northern Sotho Museum, Polokwane, Limpopo





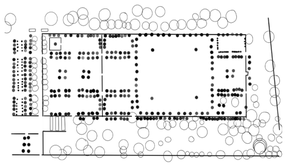
Throughout the Babylonstoren garden strong centers exist in different scales in perspective to human scale. Garden rooms vary in scale with small jumps in between them creating a friendly human scale interaction. Babylonstoren has larger planter areas on the outer edges of the farm.

Levels of scale



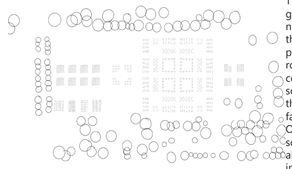
. Smaller garden sections alongside the walkway increase the life of the whole. Babylonstoren has a wide variety of smaller garden rooms. These smaller rooms are centres interwoven and alive with human life to promote a sense of place.

Centers



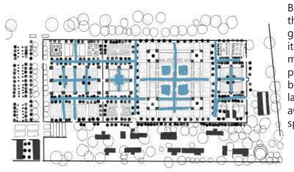
low walls are used to separate and structure the garden sections. Hedges are used as a boundary separating different planting communities. The use of pathways between gardens creates defining thresholds and connect the user toe different space could be considered a boundary.

Boundaries



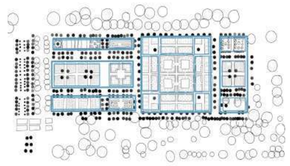
The Babylonstoren gardens have alternating repetition in the direction of the planted orchards. The rows alternate as the contours of the landscape change enriching the visual aspect of the farm in a wider context. On a more intimate scale the gardens show alternating repetition in the different garden sections.

Alternating repetition



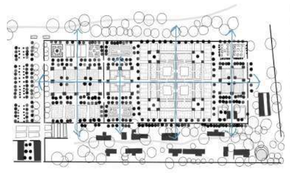
Babylonstoren gardens the central geometrical garden displays positive space where no meaningless leftovers paces exist however the bordering naturalistic landscape allows for awkward open unused spaces.

Positive space



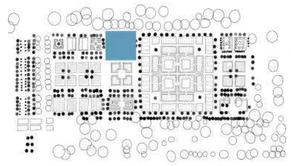
Babylonstoren gardens are good examples of what good shape looks like in a designed garden. The selection of square garden shapes forms strong distinctive centers that create a high degree of internal symmetries. The spaces created next to or in between the planted hedges create positive space. One can therefore conclude that this garden has good shape.

Good shape



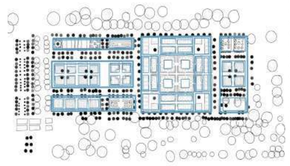
Babylonstoren Gardens have a high degree of geometrical arrangement but is complemented with naturalistic gardens bordering the central space. The gardens have a higher degree of overall symmetry because is only needs to respond to buildings that are closely related to the geometrical layout.

Local symmetries



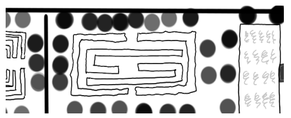
There is very little interlock in the Babylonstoren garden. There is this on part of the garden where the shapes do interlock deeply , but it does not occur throughout the garden.

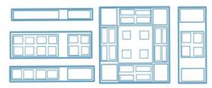
Deep interlock

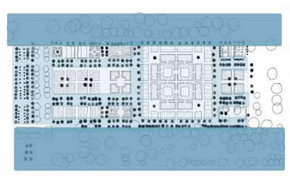


Babylonstoren garden the rectangular and square shapes echo across the garden. Not only in the plan but in the pergolas, we also see this echoing of rectangular shape. Another interesting echo is the triangular shape that the pergola roof structure form. Standing in the correct vantage point looking across the Babylonstoren garden you will see the triangular or pyramid shaped structures pop up multiple times.

Echoes







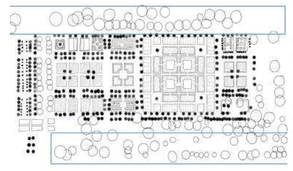
In the Babylonstoren gardens the planting area sizes are similar. However there is a gradation of intricacy from the outer edges to the center of the garden. Slowly, increasing in planting difficulty.

Gradients



At Babylonstoren the gardens are well kept but some of the plants are left to grow naturally exposing the rough natural growth. We see an example of this at the pergolas where creepers typically grow. In the neat landscape this image is teeming with life.

Roughness



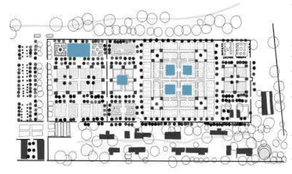
Babylonstoren gardens the contrast manifests in the neatly maintained landscape and the natural landscape that boarders the gardens. The different sections also have contrast in the neat hedges and the organic shaped plant growing within the hedge borders.

Contrast



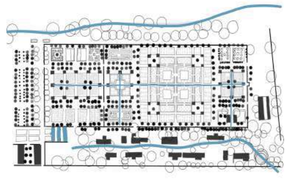
The water is the void again

Void



The gardens at Babylonstoren feature small lawns integrated within the garden's layout. These grassy areas provide a perfect setting for engaging in simple, wholesome activities, allowing visitors to unwind and connect with nature in a peaceful, inviting atmosphere. These tranquil lawns serve as a sanctuary for reflection and leisure amidst the vibrant garden surroundings.

Inner-calm



in the Babylonstoren artifact the water channels running through the gardens connect the different spaces. The exposed channels subconsciously reminds you that the garden is watered from the same source and highlight the inner workings of an irrigation system. This shows that the spaces are connected to a larger whole.

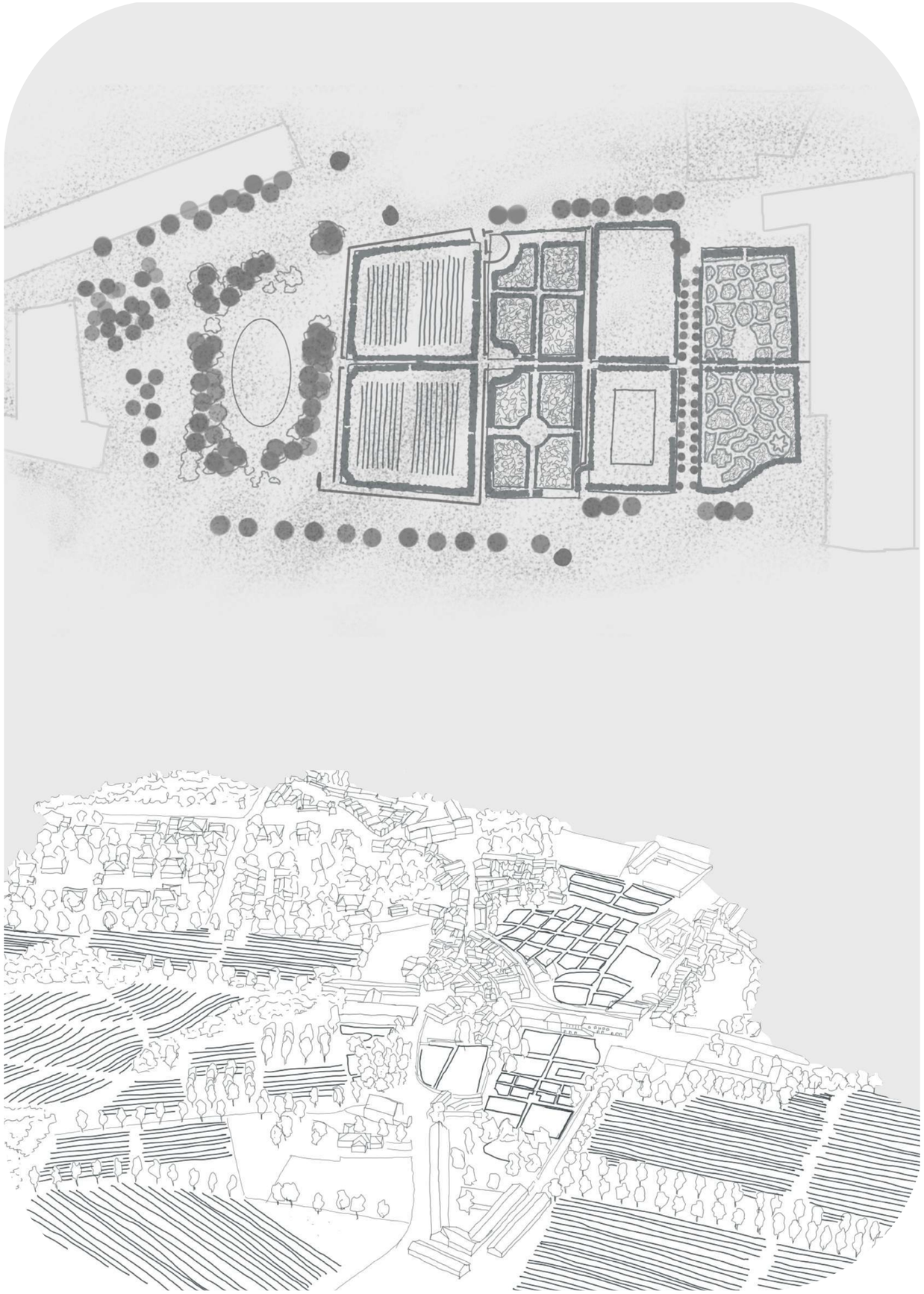
Not separateness

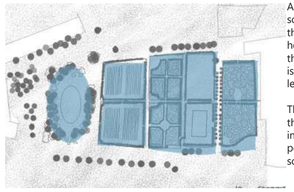
Project Name| Babylonstoren (2010)

Landscape Architect| Patrice Taravella

Project description| In 2007, owner Karen Roos enlisted the expertise of French architect Patrice Taravella to design the garden's layout. This meticulously planned garden consists of 15 clusters, each dedicated to different plant and animal life. These clusters include vegetable areas, stone and pome fruits, nuts, citrus trees, berries, beekeeping sections, herbs, ducks and chickens, and even a prickly pear maze. The garden's irrigation system is ingeniously designed, with gravity-fed water from a stream flowing through rills into the garden. This water then moves through ponds planted with edible lotus, nymphaea lilies, and waterblommetjies, ensuring a sustainable and aesthetically pleasing environment. More than 300 plant varieties in the garden are either edible or possess medicinal properties. The garden yields fruit and vegetables year-round, supplying two farm-to-fork restaurants. Along the garden's edge, a natural stream runs from Simonsberg Mountain to the Berg River, providing an ideal habitat for indigenous wild olive trees. In the shade of these trees, around 7,000 clivia lilies burst into a spectacular display every spring.

Babylonstoren, Franschhoek, Cape Town

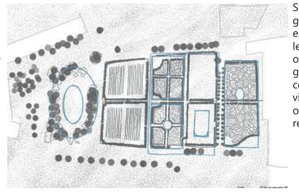




A small variation of scale is found within this specific garden however throughout the entire precinct there is good variation in levels of scale.

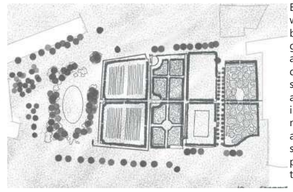
Throughout the garden the strong centres exist in different scales in perspective to human scale.

Levels of scale



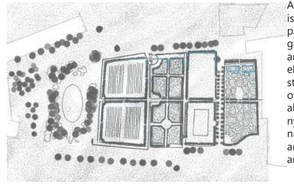
Strong centers in this garden are found within each of the different levels of scale. The pond on the left side of the garden creates a strong center to which the visitor navigates the rest of the space in order to reach the end.

Centers



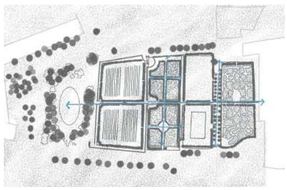
Buildings and tall stone walls form a visual boundary around the garden. Short boundary walls highlight the designed garden while still making it visually accessible when standing in front of the manner house. At different areas we find hedges separating certain plants strengthening the centers.

Boundaries



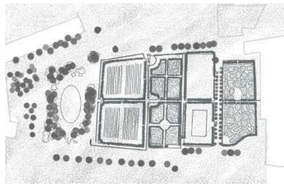
Alternating repetition is found in the planting patterns of the different gardens. Although there are not may alternating element to this design it still creates some sense of harmony. There is also alternating harmony found in the alternation between smaller and larger planting areas.

Alternating repetition



Deep Interlocking of hedge shapes can be found in the first part of the garden where each hedge is shaped differently. Removing on of these shapes will effect the structure of the whole center.

Deep interlock

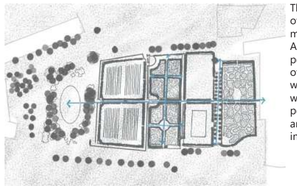


The selection of square garden shapes form strong distinctive centers that create a high degree of internal symmetries. The spaces created next to or in between the planted hedges create positive space. One can therefore conclude that this garden has good shape.

Good shape

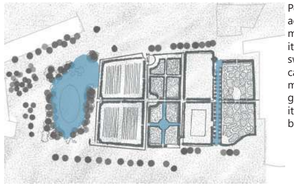






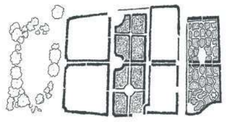
The geometrical design of this garden allows for many local symmetries. Alexander states that perfect symmetry is often the mark of death within a design,. Here we can see that to avoid perfect symmetry there are sections that are left in a more organic state.

Local symmetries



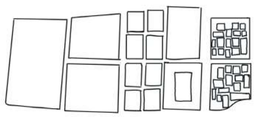
Positive space is charactered as a center that moves outward from itself. Every bit of space swells outwards. This can be seen as you are moving throughout the garden where this positive space is collected by the canopies .

Positive space



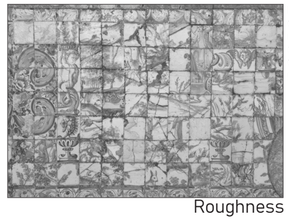
In these gardens there exists a contrast between the strong geometrically shaped hedges and the parts of the garden that has been left to grow and form more organically.

Contrast



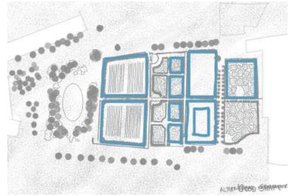
On plan there is a gradation of scale formed through the sizing of the hedges. Slowly and gradually throughout the garden the garden centers are divided less and less ending at a center that has an infinite depth surrounded by the clutter of the previous centers.

Gradients



Roughness is found within the chipped mosaic tiles and in the wear of the stone walls found around the garden.

Roughness



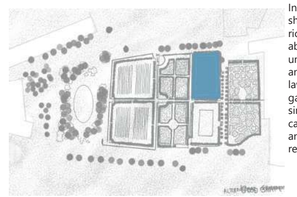
The geometrical square shape is echoed throughout the garden section on plan.

Echoes



The void as described by Alexander is in the most profound centers the heart is the void it is surrounded and contrasted by the clutter of the fabric around it. In this artifact we find a pond which seems infinitely deep and reflects the clutter that it is surrounded by. The stillness of the water is in contrast with the moving landscape around it.

Void



Inner calm usually shows it self in geometrical simplicity, it comes about when everything unnecessary is removed and therefore the open lawn area within the garden is an example of simplicity and the inner calm with all ornament and shaped planting removed.

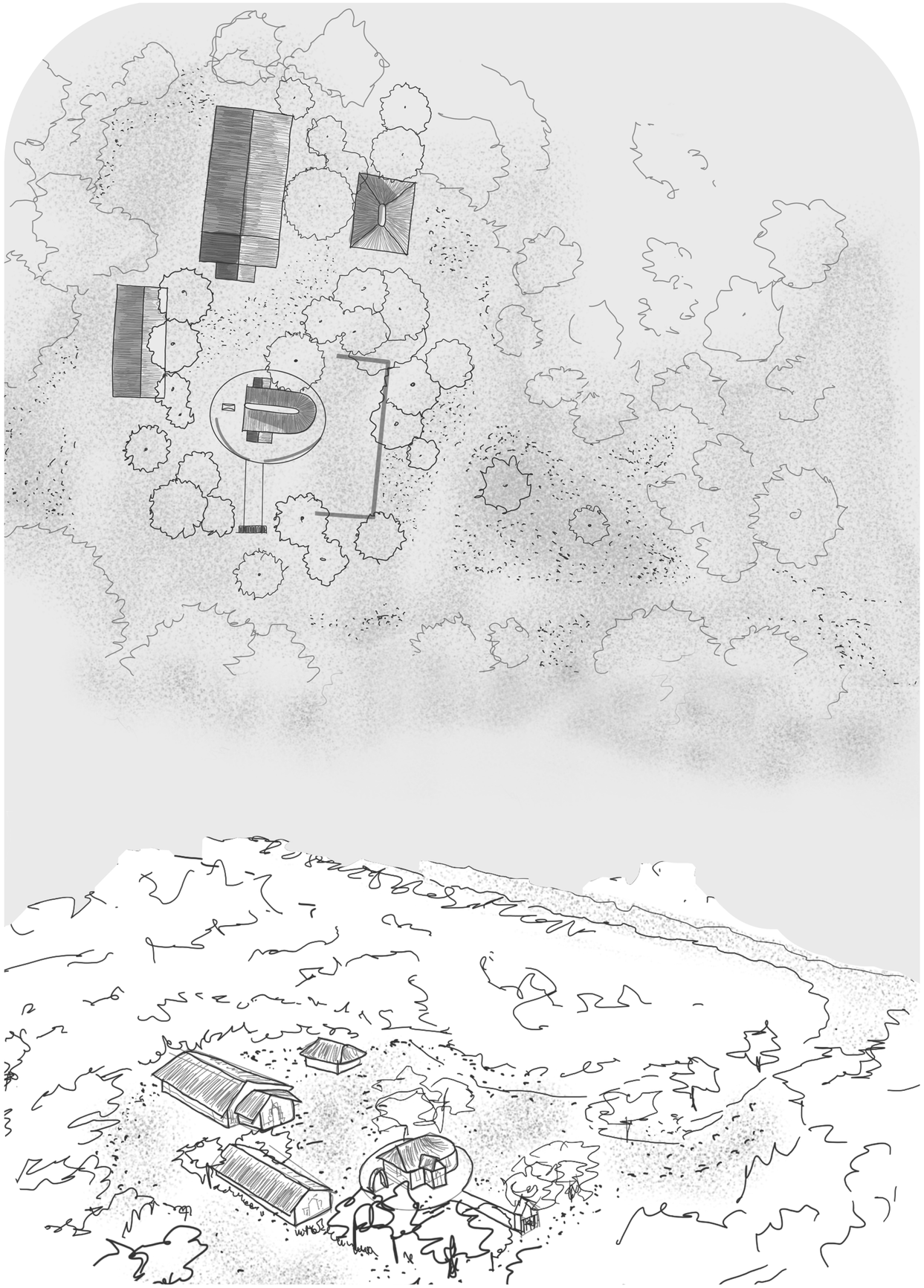
Inner-calm

Project Name| Santar Villa Gardens, Portugal (1950)

Landscape Architect| Fernando Caruncho

Project description| Santar is a picturesque village nestled in the valley of the Dao River region. The village is rich in history, with remnants from the Roman Empire, such as archaeological vestiges, ancient roads, and bridges still visible today. A series of stately manor houses stand with adjoining grounds that were once bustling with orchards, vegetable gardens, and vineyards along their edges. Over time, some of these enclosures have transformed into formal boxwood gardens. Since the 1950s, extensive vineyard plantations have become a dominant feature of this landscape. In a remarkable effort to rejuvenate the area, a group of property owners united their lands and initiated a conceptual project led by Fernando Caruncho, who deeply understood the spirit of the place. Caruncho successfully revived the dormant beauty and charm of the landscape. This project leverages the cultural landscape's inherent values to foster the region's social, cultural, and sustainable economic development. It brings people together by combining efforts and joining neighbouring gardens to create community gardens, opening passages, and building bridges over walls. Visitors to Santar can uncover the village's secrets and charms, including its gardens and architectural heritage, remarkable trees, emblematic camellias, and boxwood alleys. The granite structures, ranging from rustic and noble to religious, the traditions, the vineyards, and the wine all contribute to the joy of experiencing authentic country life (de Vasconcellos,2020).

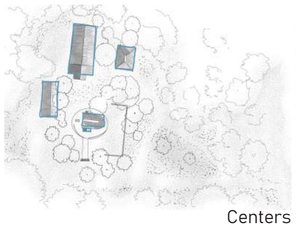
Santar villa Gardens Portugal





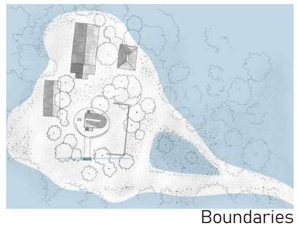
Levels of scale

In this artefact levels of scale manifest in the different scales of meeting spaces. From the vestry to the small chapel to the community church hall. From an intimate space to a space shared by the whole community



Centers

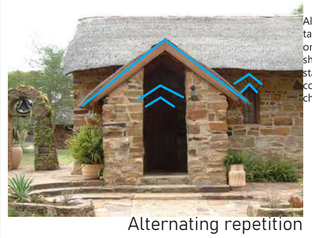
The Church of St. John the Baptist (1913) designed by Sir Herbert Baker (1862-1946) is, in itself, a centre that exudes life. From lychgate, the small pathway to the entrance portico and the vestry of the quaint Saxon chapel. The roof rests steadily on the sandstone masonry walls. With thin pointed Gothic timber windows with stained glass. The stained glass portrays images of members from founding family. Each of these elements show characteristics of wholeness and exist as centres.



Boundaries

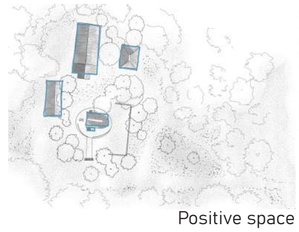
The dense vegetation of the natural landscape hugs the church forming a boundary between the buildings and the dist roads. We also find different thresholds when going into the chapel.





Alternating repetition

Alternating repetition takes from in the images on the windows. The shapes of the windows stay the same but the content of the image changes.



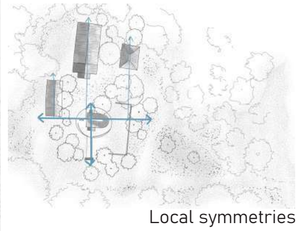
Positive space

Each building almost stands alone within the property with nothing but informal footpaths connecting each one. The simplistic layout of the building allows for one big shape of positive space that does not swell outwards.



Good shape

Good shape is found in the simplistic layout of the buildings interior. Using space preciously there are no meaningless leftover shapes of space.



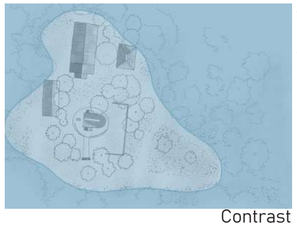
Local symmetries

The buildings are locally symmetrical in layout to each other.



Deep interlock

How each stone locks into place to create the walls of the church.



Contrast

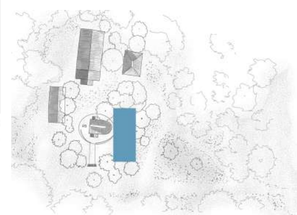
There is a stark contrast between the manicured landscape surrounding the buildings and the natural vegetation that surrounds the property.

Roughness

Roughness in the construction of the walls contribute to the roughness of the artefact.

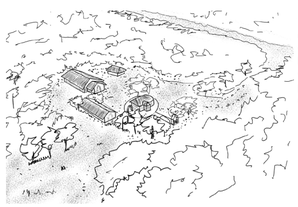
Echoes

Echoes are found in the material use in each building. Each building uses stones from the region to construct walls, thatch roofs with a timber pole structure, and stained glass windows. The walkways are made from the same stones that the walls are made of. There are echoes of the triangular shape of the gothic timber windows.



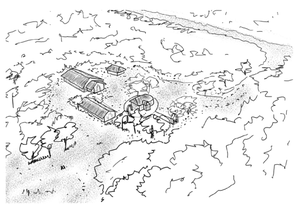
Void

The small cemetery next to the chapel functions as a void. It is a centre of peace where family members go to visit their loved ones that have passed.



Inner-calm

The presence of this church is the inner calm within this area. Nestled between the dense vegetation the solemn presence of the chapel creates a calm centre.



Not separateness

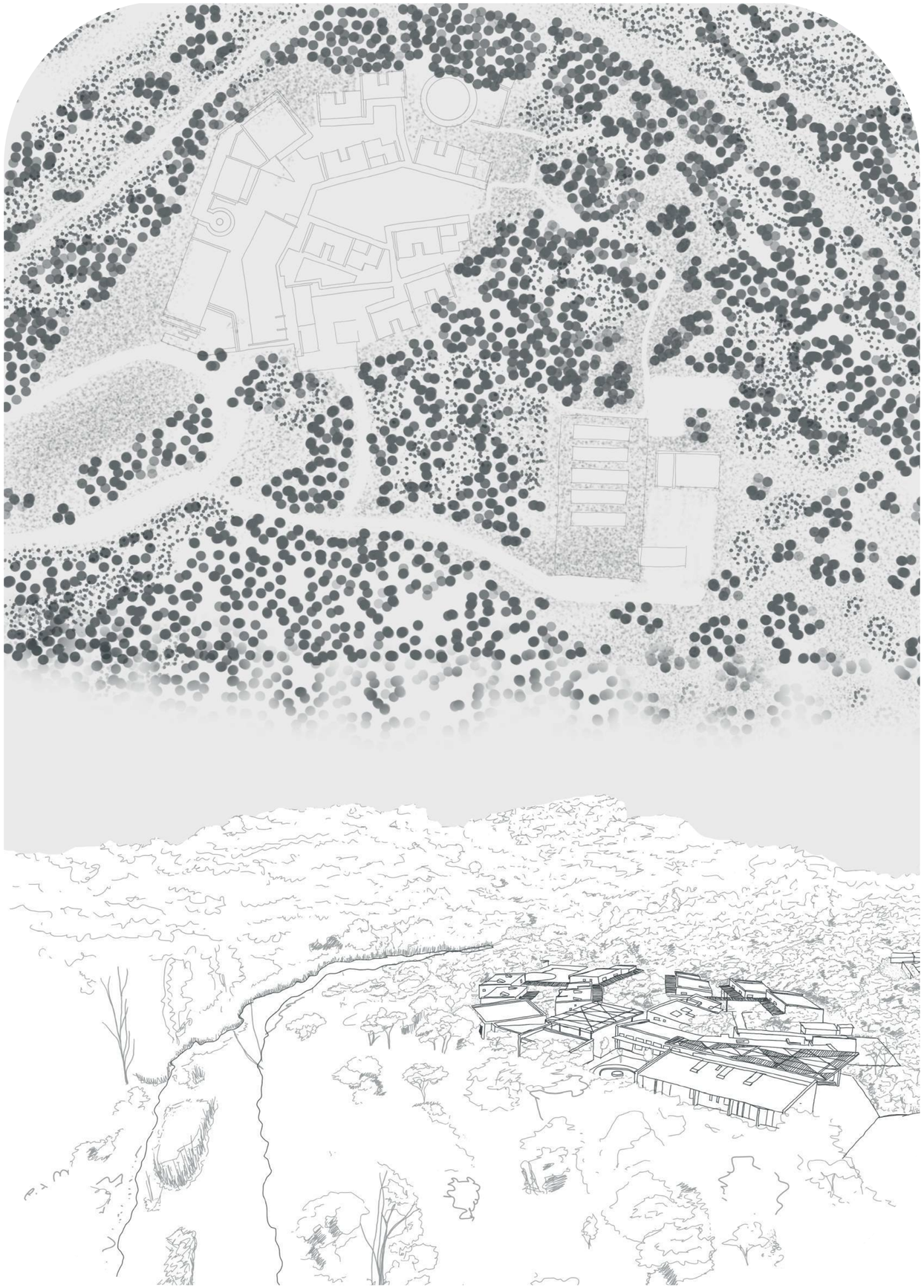
The act of the community gathering every week at the same place creates a sense of not being separate from your community. The church creates the foundation where people can feel connected to the community around them.

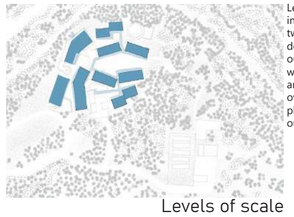
Project Name| St Johns Baptist Church, 24 Riviere, Limpopo (1914)

Landscape Architect| Sir Herbert Baker (1862-1946)

Project description| The St John the Baptist Church in Vaalwater, Limpopo, designed by Sir Herbert Baker's office in 1914, exemplifies Critical Regionalism. It features rough-hewn sandstone walls, a thatched roof, and Gothic-inspired windows with stained glass. The design incorporates local materials and climate considerations, avoiding traditional Gothic elements unsuited to Africa's sun. Memorial plaques, graves, and adjunct structures enhance its historical significance. The church reflects Baker's architectural philosophy, merging simplicity with regional context.

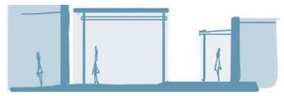
St Johns Baptist Church, 24 Riviere, Limpopo





Level of scale manifest in the transitions between indoor and out door spaces. Throughout the extent of the wilderness school there are different levels of overhead structures that place emphasis on the outdoors.

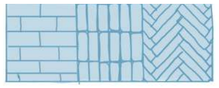
Levels of scale

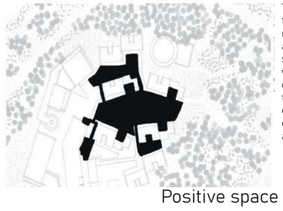




In the brickwork around the buildings we find alternating forms of patterns. The repetition does not occur deliberately however it does create a sense of harmony with the structures surrounding the pavement.

Alternating repetition

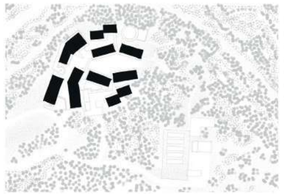




The central atrium is formed by the surrounding rooms. This atrium is a planted space that fills the area with positive space even stretching beyond the pathway to the entrances to the rooms creating small courtyard along the atrium.

Positive space





Buildings form the primary centers where the outdoor spaces are a secondary form of a center these outdoor centers support and strengthen the buildings

Centers



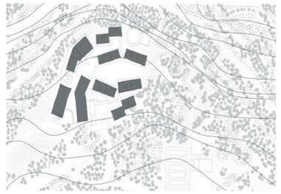
The thick rammed earth wall creates a boundary that separates the inside from the outside. The material it is made from connects the interior to the idea of the exterior.

Boundaries



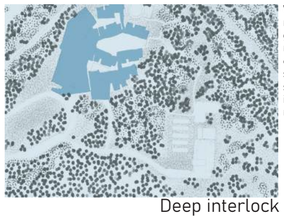
The extent of the building is formed by combining a set of geometrical elements however it does not have a high degree of internal symmetry . to some extent is does have good shape.

Good shape



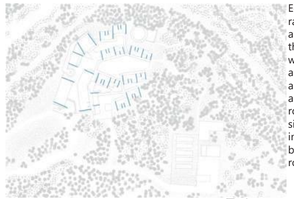
The local symmetry is found in the positioning of the buildings. The layout of the structure follows the kink in the river that flows next to the main building. In relation to the natural contours of the area the building is places well in local symmetrical fashion

Local symmetries



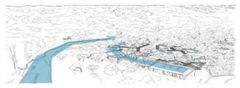
When comparing the natural element (plant growth) and the man-made elements that cover the area there is a sense of interlocking. To some extent the building hooks itself into the nature.

Deep interlock



Echoes are found in the rammed earth wall that are used throughout the space. Together with the walls we find a border of rocks that are used in conjunction around the area. These rocks can also be considered a boundary that intensifies the center buildings that are the rooms

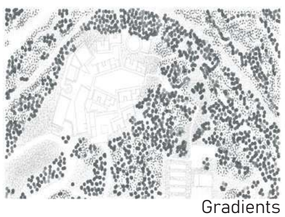
Echoes





The boma area found between the two main building is a center that at hear is a void. It is surrounded by clutter.

Void



The gradients that exist in within this artifact relates to the gradual thickening of the natural plant growth. In this area we find the thicker woodland savanna plant communities, less dense savanna bush-veld and then the grass layer

Gradients



Roughness occurs in the in the areas between the rooms where the "garden"is left to grow wild. This quality gives a certain organic feeling to the environment and connects to the wider context of the wild state of the natural environment the school is located in. It is not a overly maintained garden

Roughness



Project Name| Lapalala Wilderness School, Melkrivier, Limpopol (2022)

Landscape Architect| Local Studio Architects

Project description| The Lapalala Wilderness School, established in 1981, has earned widespread recognition as a centre of excellence for its environmental education programs. These programs are enthusiastically received by a diverse audience, ranging from primary and secondary school students to university students specialising in various aspects of conservation and biodiversity management. Local Studio's years-long effort to develop new forms of public space in South African rural communities is exemplified by the Lapalala Wilderness School. The project entailed creating new infrastructure for the wilderness education program, which was relocated from its original site within the Lapalala Wilderness Reserve to a new, neighbouring property.The new infrastructure includes teaching and administration buildings, short-term residential accommodation for students, and long-term residential accommodation for teachers and staff. The project stands out for its context-driven materiality, utilising rammed earth, rock, and hardwood alongside concrete and masonry base structures. Furthermore, the project is net-zero rated, powered entirely by a new solar farm, and features a grey and black water recycling plant.

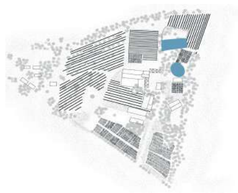
Lapalala Wilderness School, Melkrivier, Limpopo





Levels of scale

Orchards on the outer edge are planted with only one type of fruit tree, mono-cultural farming, moving in towards the homestead the planting is poly-culture where multiple different species of plants grow together. Suggesting that spaces that are used more often contain a greater feeling of life. It is also where people spend more of their time living and shaping the envi-ronment



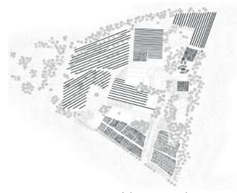
Centers

At the end of the dirt road entrance there is a restaurant that attracts people and is typically the most lively place on the farm. Passing the small garden you will see the entrance to the resaturant.



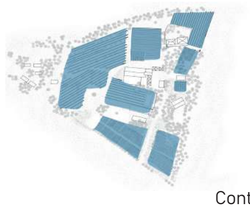
Boundaries

Tall trees form a visual boundary between the road and the farm. Oth-er boundaries include vegetation beds . These beds separate growing areas. Small rocks are used as a boundary around a planted bed.



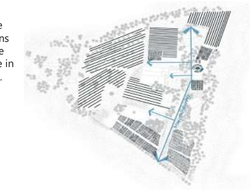
Alternating repetition

Walking between the rows of trees, the planting configuration changes as the contours change. The variation is present between the groups of different gar-den layout systems.



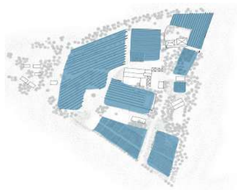
Contrast

Contrast between the neatly laid out gardens and orchards, and the naturalistic landscape in the surrounding area.



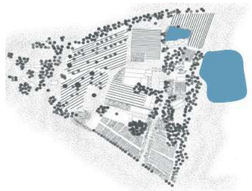
Local symmetries

Some local symmetry is present. The buildings and gardens follow in the direction of the path ways and main entry way.



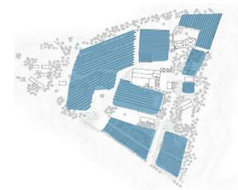
Gradients

Gradation of open space planted with on type of tree/plant to small intimate gardens with different plants



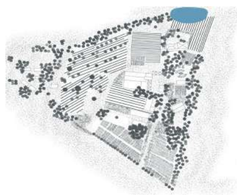
Inner-calm

Inner calm is the sol-emn presence of an open lawn or a field where the cows graze. The simplicity of the action that takes place there creates a sense of calm.



Echoes

Echoes of the same plant throughout the garden creates a sense of coherence. In this case it is the echo of aloes and aloe trees throughout the planted areas.



Void

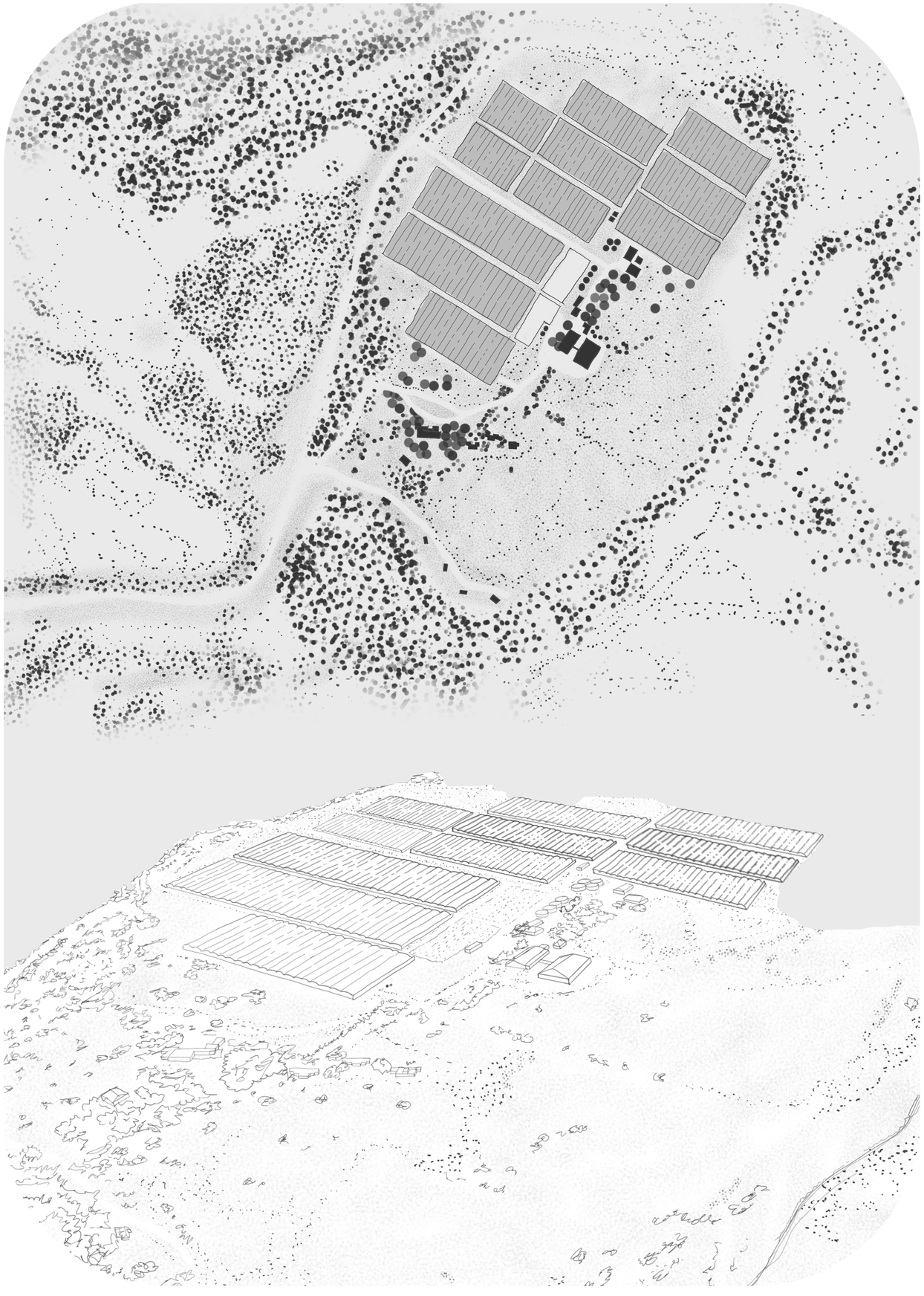
Past the smaller gar-dens and the restaurant there is a small artificial dam that is used for water storage and irrigation. This creates a focal point in the landscape.

Project Name| Geluksfontein Farm, Modimolle, Limpopo (n.d.)

Landscape Architect| farmer

Project description| Originally a goats cheese farm that went out of business and was bought by the current owner that transformed it into a produc-tive landscape. The original restaurant is still in use with the addition of a small plant nursery . The farm is home to a few cows and some goats. The grows different types of indigenous plants including edible plants.

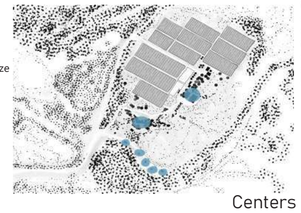
Geluksfontein Farm, Modimolle, Limpopo





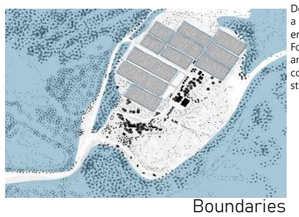
Levels of scale

vast, mono-cultural planting to small and intimate polyculture gardens closer to the living areas. There is a large jump between size of the planting areas.



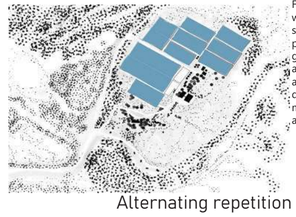
Centers

the small dams create strong centres. the other centres such as the restaurant , chalets ect are located alongside the water (natural) centres.



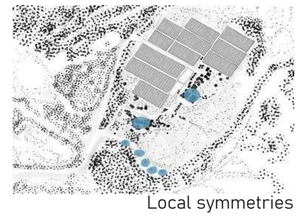
Boundaries

Dense vegetation forms a boundary on the outer edges of the farm. For protection against animals, the crops are covered within a netted structure.



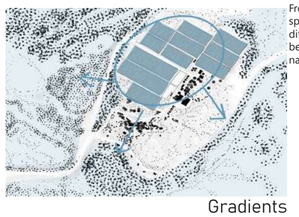
Alternating repetition

For example, the Leeuwenhof farm grows strawberries that repeats throughout the garden but the species alternate. Other that the alternating repetition does not have a strong manifestation in the artefact.



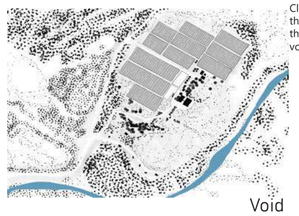
Local symmetries

like in other artifacts we see that the buildings are arranged, closely following the contour lines and some of the buildings or the forest cabins are arranges along the river (what is the rivers name?) creating a local symmetry that follows the natural alement in the area



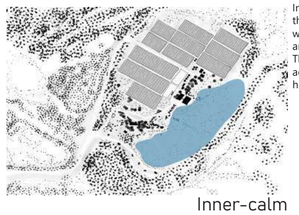
Gradients

From the larger planting spaces with one or two different types of strawberries tot the diverse natural landscape.



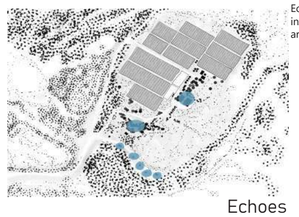
Void

Closer to the chalets there is a watercourse that manifests as the void in this artefact.



Inner-calm

Inner calm is expressed through the open fields where the game graze and find nourishment. The simplicity of the activities that take place here creates calm.



Echoes

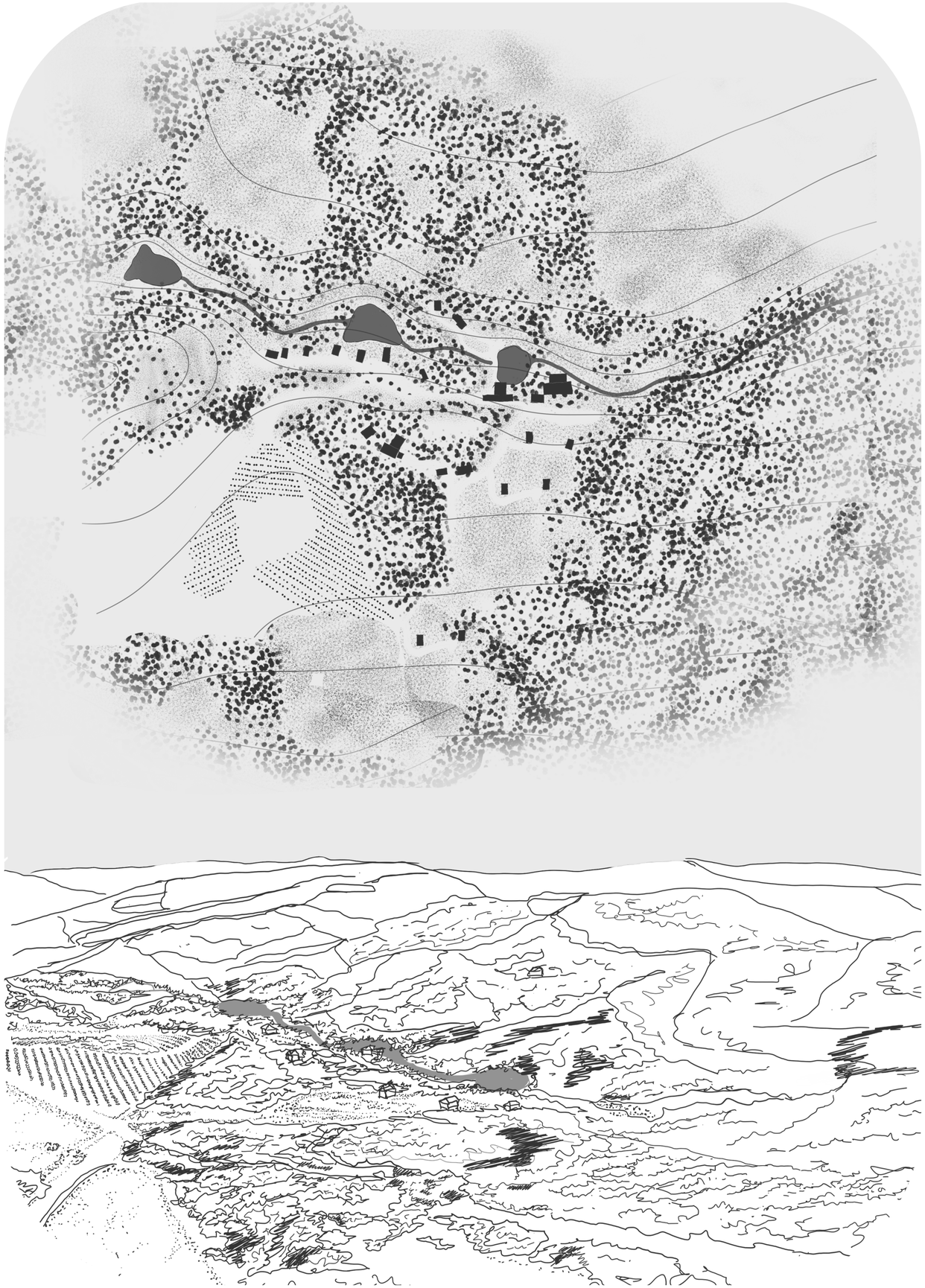
Echoes of similar building shapes across the artefact.

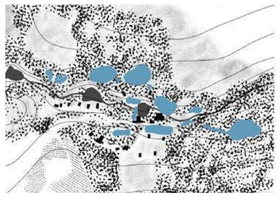
Project Name| Leeuwenhof Farm, Modimolle, Limpopo (n.d.)

Landscape Architect| Farmer

Project description| A wildlife reserve with accommodation turned into a productive landscape. The farm grow different types of strawberries, inviting the public to participate in the harvesting process of the farm. The farm still includes forms of wildlife, and the tourism surrounding the wildlife.

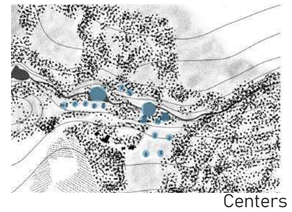
Leeuwenhof Farm, Modimolle, Limpopo





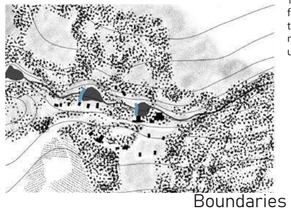
The scale of the open spaces that occur throughput the area changes in scale form small spaces big enough fot two people to vast open spaces where a large group of people can gather.

Levels of scale



It takes form in a simple homestead built in a clearing of vegetation across the dam or the humble coffee shop. These buildings act as centres that attract people.

Centers



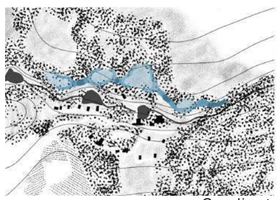
The natural vegetation forms boundaries within this area. Very little to no fences and walls are used.

Boundaries



Similar to other artifacts we see that the buildings are arranged, closely following the contour lines and some of the buildings or the forest cabins are arranges along the river ,creating a local symmetry that follows the natural element in the area

Local symmetries



The cheerio farm is situated in a forest vegetation unit. Hiking through the area we find the dense forest and then you get to a clearing that almost brings relief, this clearing also brings in natural light where the dens forest only allows for a small amount of light to filter through the vegetation creating a gradient of light throughout the artifact.

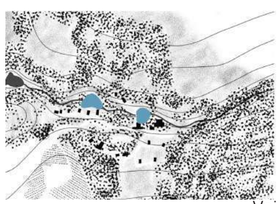
Gradients

The roughness in this artifact manifests in an old hand built wooden fence that acts as a door to the outdoor chapel.

Roughness

The colours in the cherry trees echo throughout this landscape. Colour change throughout the year echoes throughout the entire season.

Echoes



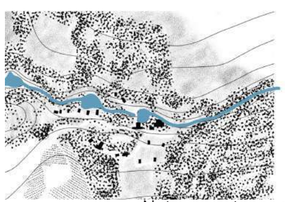
Throughout the gardens there are three dams that create a strong centre and manifests the principle of void. Acting as the heart of the gardens the water aspect is evident throughout the gardens.

Void



In the forest we find two large trees acting as the roof creating an opening in the dens forest. This space has been turned into a small outdoor chapel.
You also find a clearing in the forest with a single bench allowing for rest or contemplation.

Inner-calm



Hearing the water running while walking around the hiking trail you can mentally position yourself in the vicinity of the cheerio farm knowing that you are not separated from civilization

Not separateness

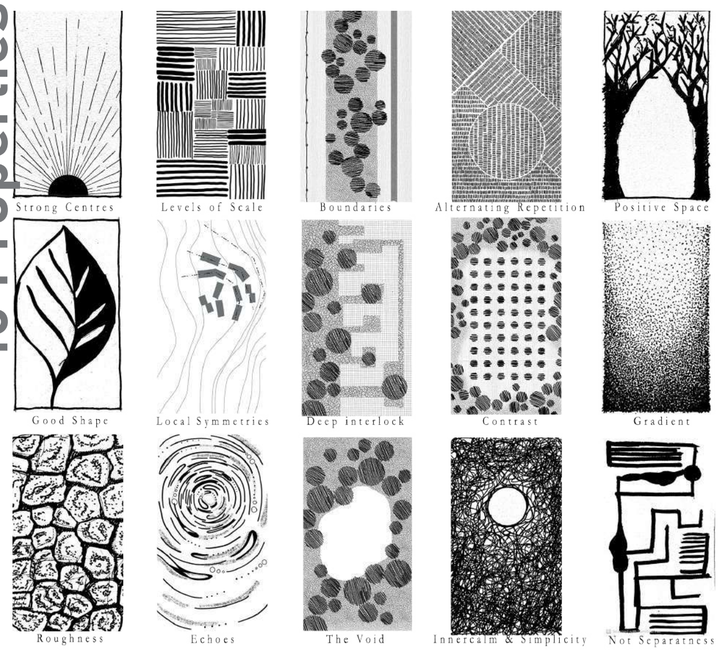
Project Name| Cheerio Farm, Haenertsburg, Limpopo

Landscape Architect| Farmer

Project description| Cheerio Gardens was established by Sheila (Box) Thompson after she was discharged from the army in 1946. She was a keen botanist and wanted to establish indigenous plants in the area. Because of the cool temperatures in the valley, she also decided to grow deciduous trees and shrubs from the northern hemisphere. These included maples and flowering cherries which boasted beautiful autumn colors. A lot of the indigenous bulbs were eaten by bush pigs, porcupines and moles. Even tree ferns were eaten by porcupines during the drought. The garden was eventually established by Box Thompson, her mother Audrey Thompson and Station. All the terraces where made by hand, and the love and dedication that went into the task is visible as you wander along the moss-covered pathways. The garden has stayed in the same family since inception. Our vision is for visitors to enjoy the peace and tranquility the gardens have to offer.

Cheerio Farm, Haenertsburg, Limpopo

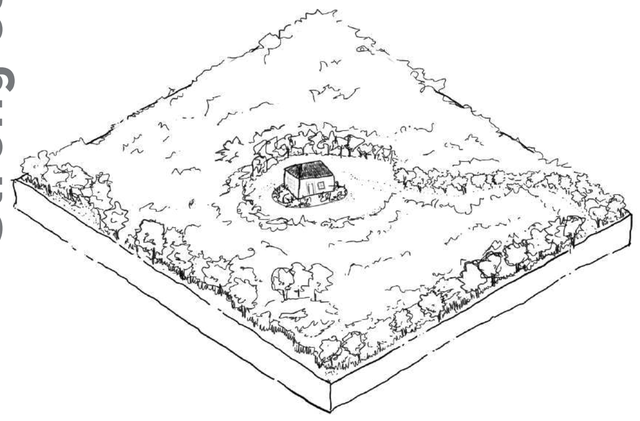
15 Properties



Strong centres

Nestled centres

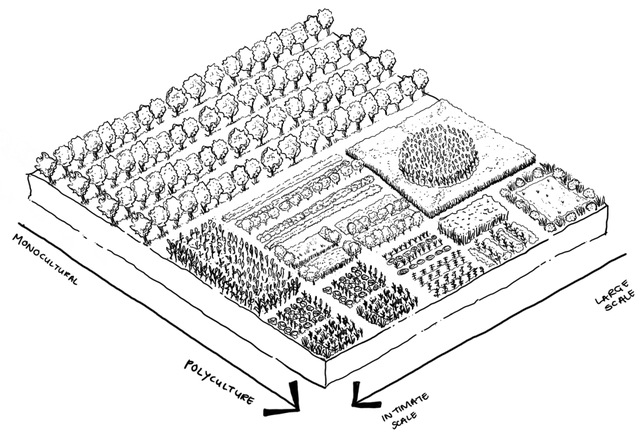
Strong centres manifest nestled between architecture or the dense vegetation of the natural landscape that intensifies life and creates a platform for sharing knowledge. These centres are regions of concentrated physical and experiential order that facilitate a strong sense of relatedness among people, things, situations, and events.



Levels of scale

Vastness to intimacy

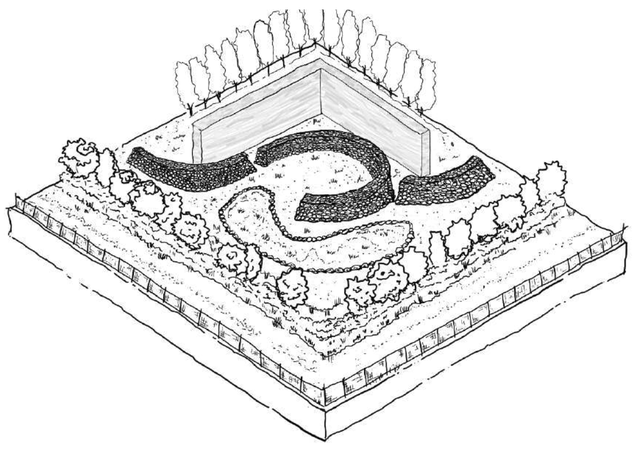
Objects that have life contain different scales. Centres which form these objects have a range of sizes that exists at different levels, with jumps between them. In the Waterberg region levels manifest on two scales: the first is large planting formats to intimate gardens and the second is a monoculture planting, intercropping to polyculture planting.



Boundaries

Privacy, protection, and connection

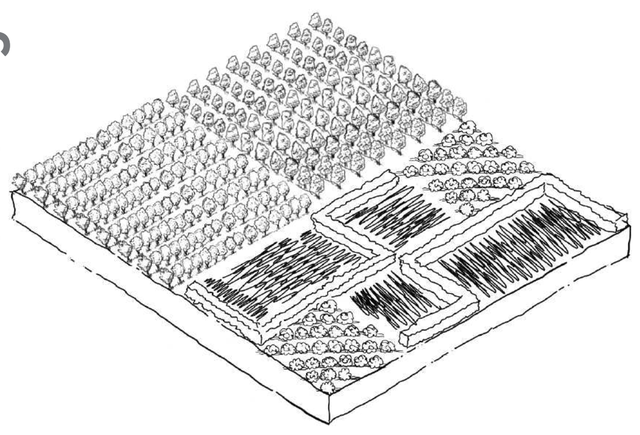
Centres are typically separated and strengthened by the boundaries surrounding them, therefore boundaries play two roles as connectors and separators. Regionally boundaries play a crucial role beyond spatial division. They are vital for protecting planting areas from wild animals that frequently roam into farms and informal villages in search of food. Additionally, boundaries serve purposes of privacy, providing protection for crops, and fostering a sense of connection within the agricultural landscape.



Alternating repetition

Alternating planting

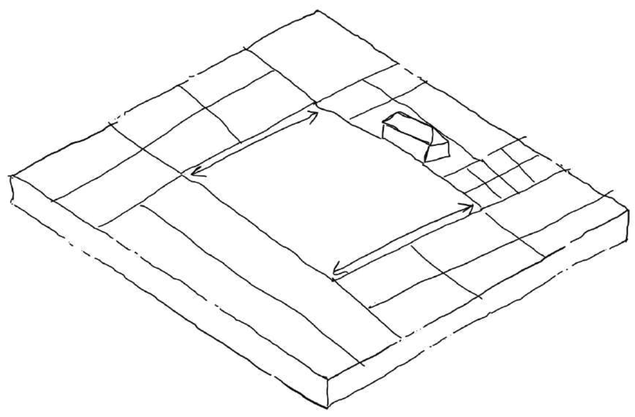
Life is created by alternating centres that are subtly proportioned and different. Repetition of centres intensify other centres creating a satisfying rhythm and interplay between multiple centres. Alternating repetition introduces variation and diversity enriching visuals and spatial experiences. The planting patterns found in the orchards and gardens, the alternating wall structures and decorative patterns found in and on structures are examples of alternating repetition.



Positive space
Good shape

Efficient order

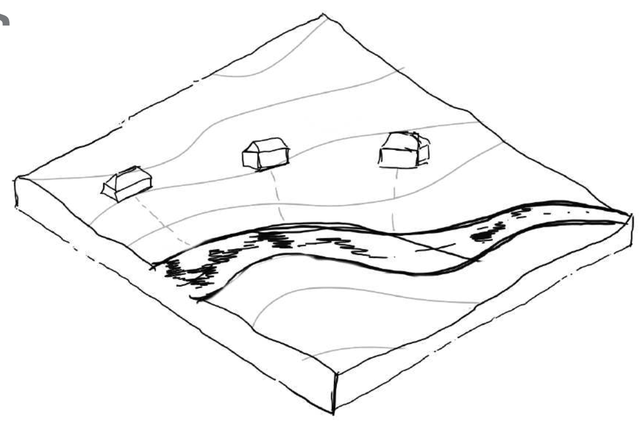
Gorgeous, beautiful, powerful shapes. Good shape is a combination of coherent centres that create a sense of composition that feels complete and satisfying. Positive space is characterised by a centre that moves outwards from itself. It creates a sense of shelter and protection, fostering a feeling of safety and security within the environment. In the region the positive space and good shape is determined by the efficient spacing of crops.



Local symmetries

Local symmetries

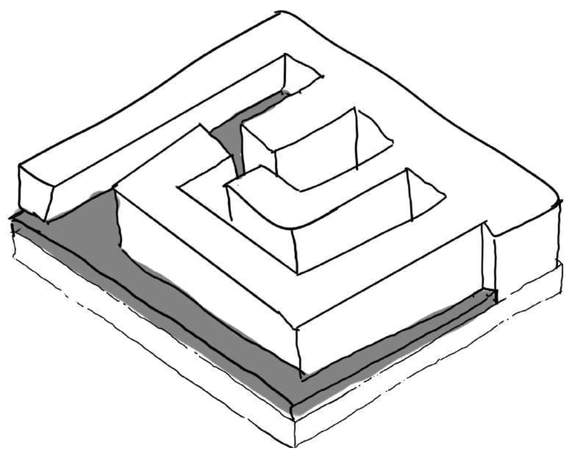
Local symmetry refers to the presence of balance and harmonious relationships between elements. It does not refer to prefect symmetry but is rather more flexible and adaptable. Perfect symmetry is often the mark of death and not life (Alexander,2002:364) Here local symmetries can be explained by the way the architects chose to conserve the natural landscape



Deep interlock

Interlacing spaces

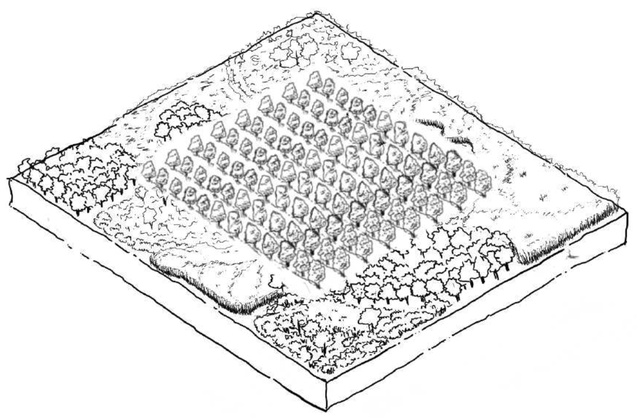
Deep interlock refers to elements that hook into their surroundings. Elements with deep interlock are difficult to disentangle from one another allowing for nested relationships and enhancing the adaptability and resilience of the design (Alexander, 2002:195-198). In this region deep interlock manifests as the interlacing between spaces.



Contrast

Order and chaos

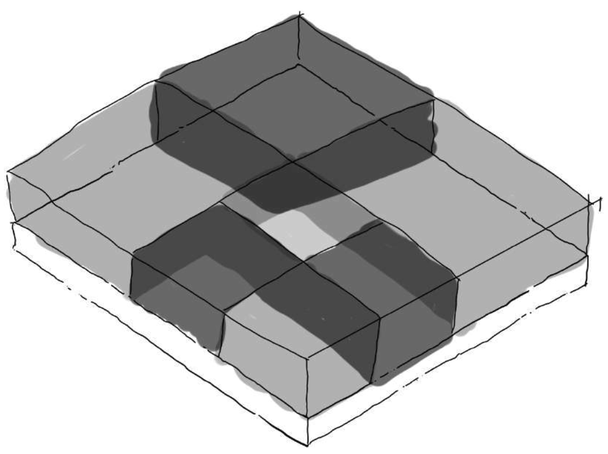
Contrast is the juxtaposition of elements, qualities, or characteristics. It provides a sense of dynamic tension between elements. In this region contrast manifests in the disorder of natural vegetation and order of planted crops.



Gradient

Enclosure

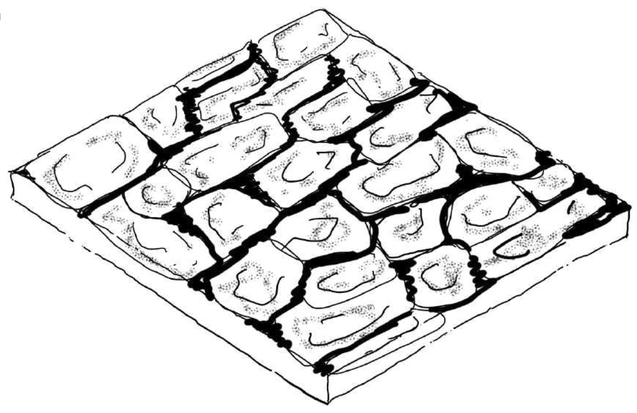
Gradient refers to an element that vary, slowly, gradually, and subtly across the extent of things. Centres adapt to changing circumstances systematically forming a gradient. In this region the Alexandrian principle ‘gradients’ refers to the way an open space gradually changing to a more intimate space and vice versa.



Roughness

Roughness

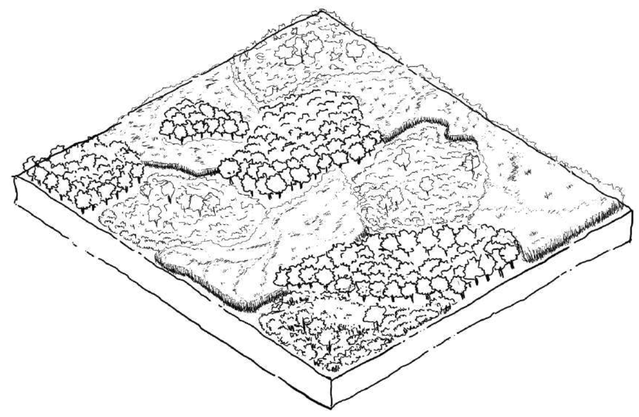
Roughness is an important structural feature without which an element cannot be whole (Alexander, 2002:210). It is not the result of handcraft or inaccuracy. It adds an organic quality to a design, introducing asymmetries and irregularities that mimics the complexity and richness of the natural world. It is the unrefined and raw qualities reflected by the natural overgrowth.



Echoes

Echoes

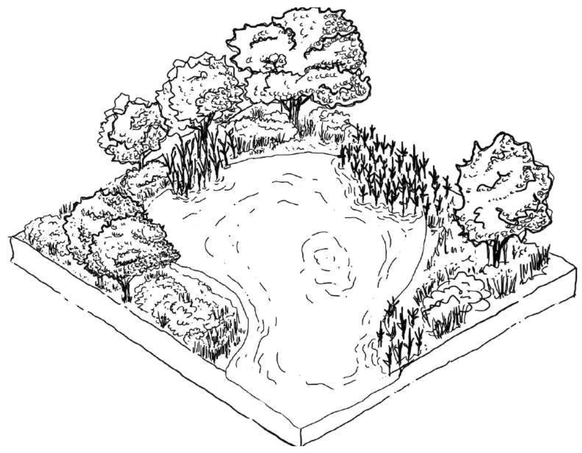
Echoes are the deep intrinsic similarities among the elements (Alexander, 2002:216). It involves the subtle repetition of elements or patterns creating a sense of continuity throughout the design. Echoes manifest in the planting communities or singular plant that reoccurs throughout the region.



The void

The watering holes

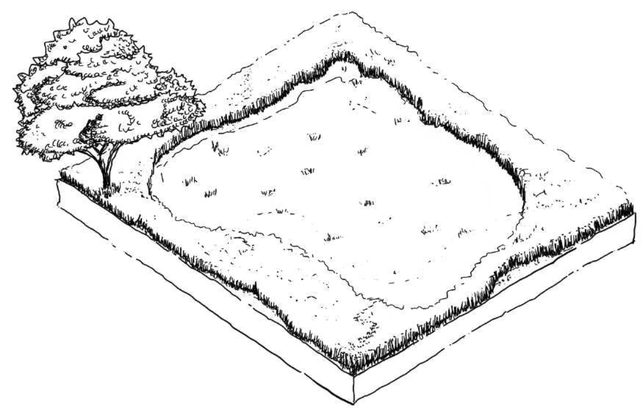
The void is a fundamental concept that involves the intentional incorporation of an empty of negative space within the composition. It emphasizes the importance of balancing positive space (occupied by elements or forms) with negative space (empty or unoccupied areas) (Alexander, 2002:222-225). In the region ‘the void’ principle manifest as a waterbody that embodies the balance between positive and negative space



Inner calm & simplicity

Inner calm

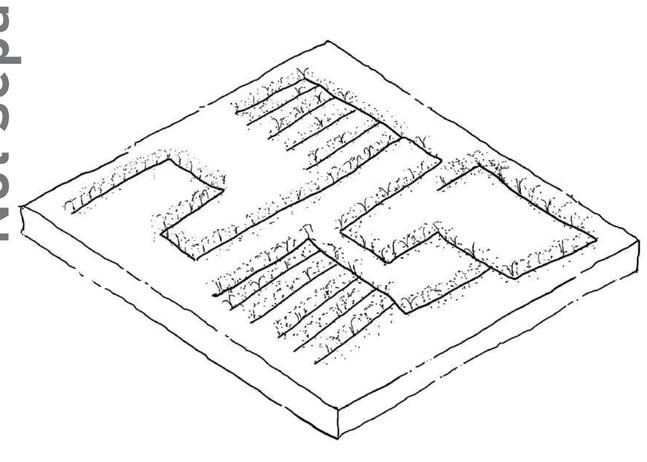
Slowness, majesty, and quietness (Alexander, 2002:226). Simplicity emphasizes clarity of form and function, focusing on what is essential and meaningful while minimizing extraneous details or distractions. Inner calm and simplicity manifests as an open grazing field where cattle find nourishment.

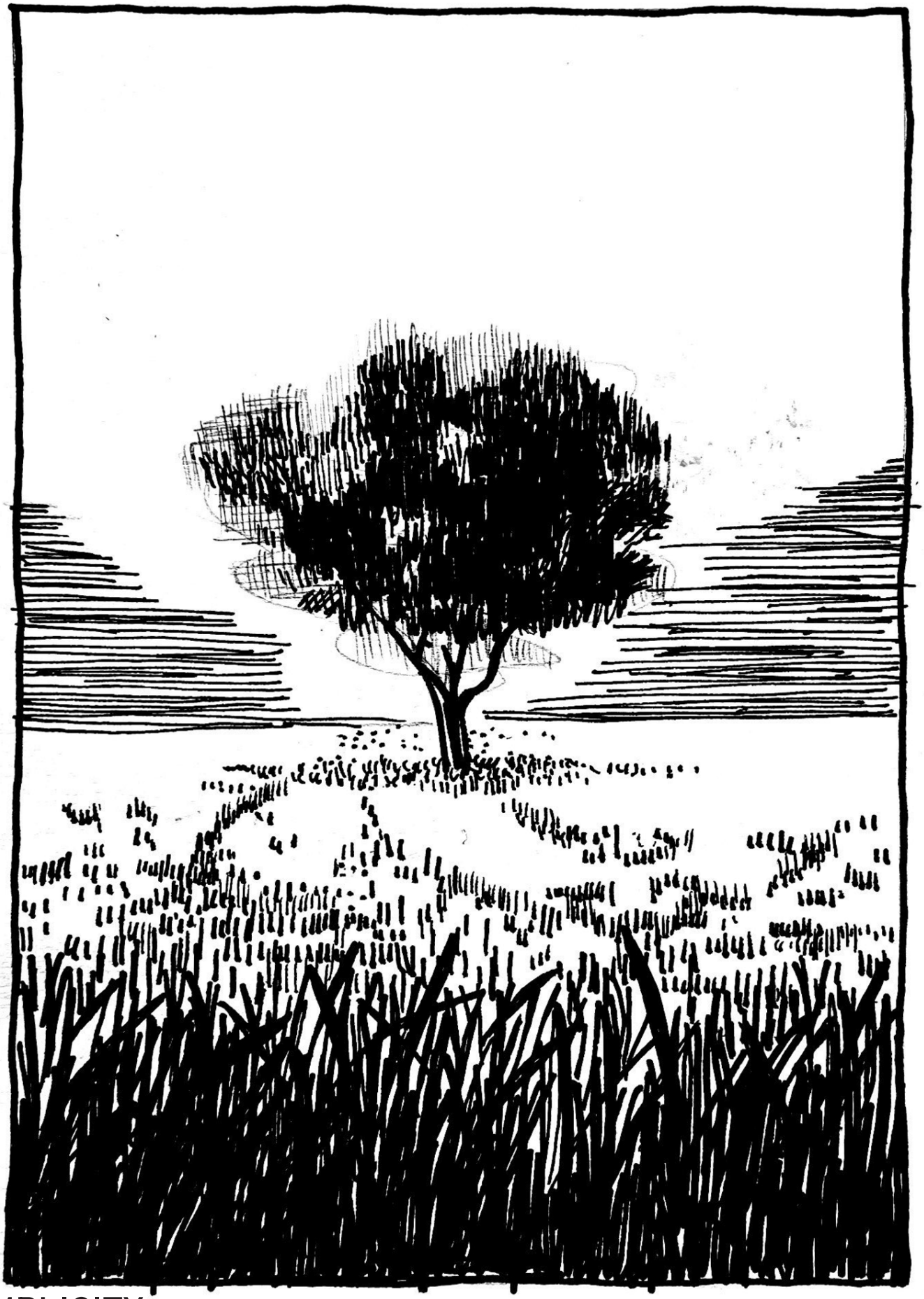


Not separateness

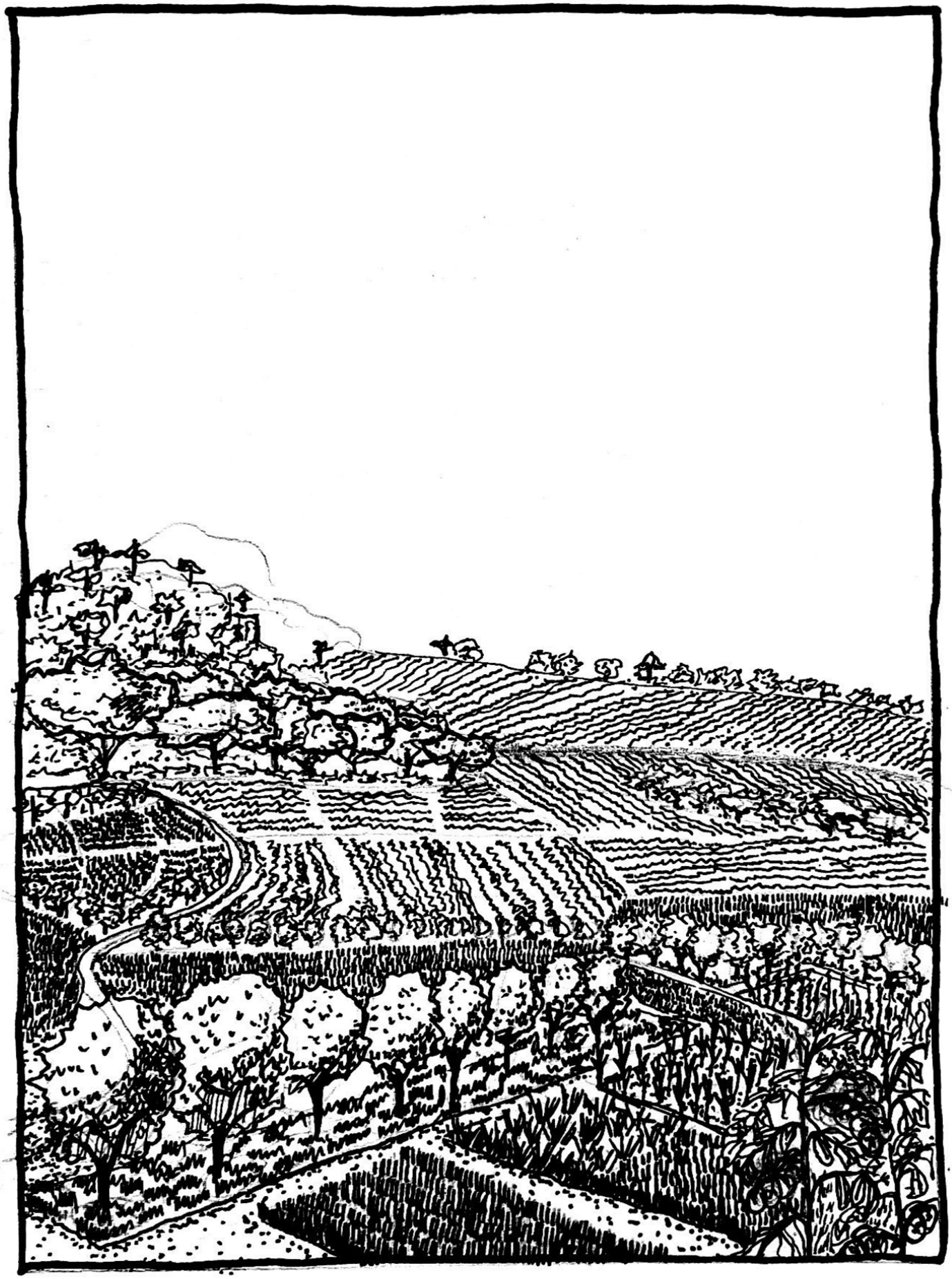
Interconnected

Centres with deep life are interconnected with their surroundings and do not exist in isolation or separation (Alexander, 2002; 231). Not-separateness encourages a holistic perspective in design, where individual elements are perceived as connected parts of a larger whole. Not separateness manifests in forms of material uses in compositions that support the exposing of the innerworkings of systems such as the irrigation systems and the reoccurring of specific elements such as a boma.





SIMPLICITY



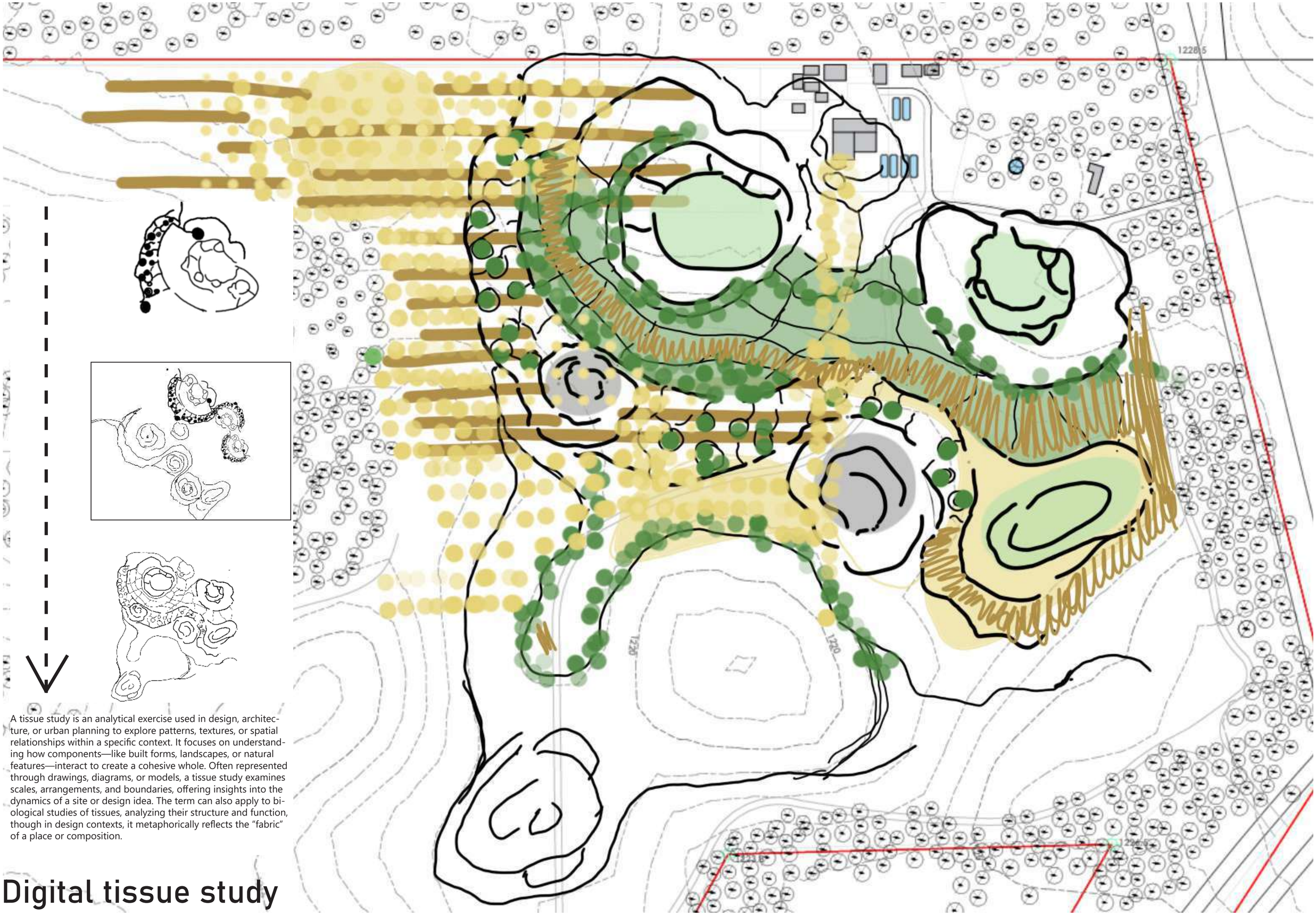
VEGETATION



WATER

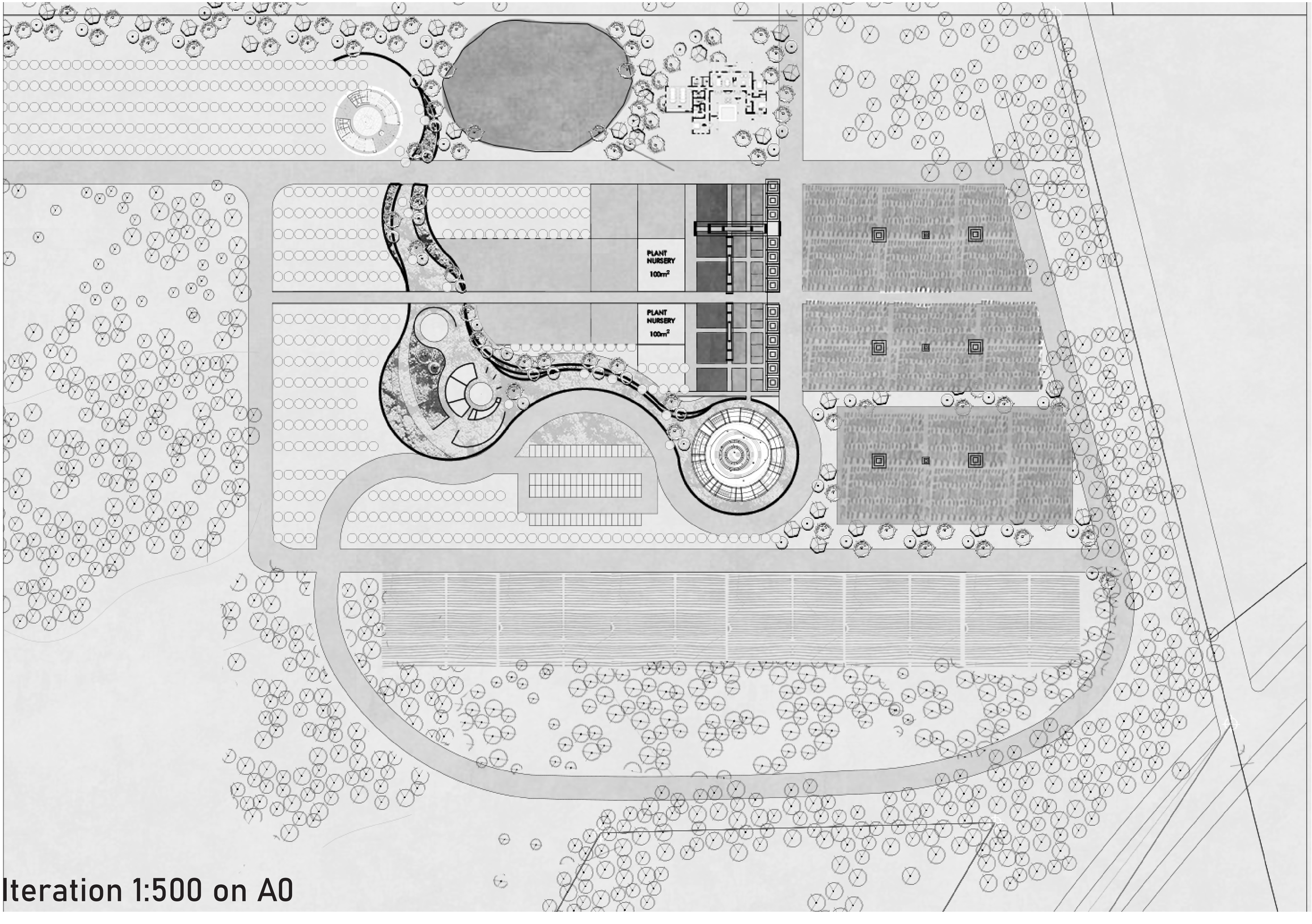


Pattern Exploration



A tissue study is an analytical exercise used in design, architecture, or urban planning to explore patterns, textures, or spatial relationships within a specific context. It focuses on understanding how components—like built forms, landscapes, or natural features—interact to create a cohesive whole. Often represented through drawings, diagrams, or models, a tissue study examines scales, arrangements, and boundaries, offering insights into the dynamics of a site or design idea. The term can also apply to biological studies of tissues, analyzing their structure and function, though in design contexts, it metaphorically reflects the "fabric" of a place or composition.

Digital tissue study



Iteration 1:500 on A0

BOUNDARY LINE

1228.5

1215

1225

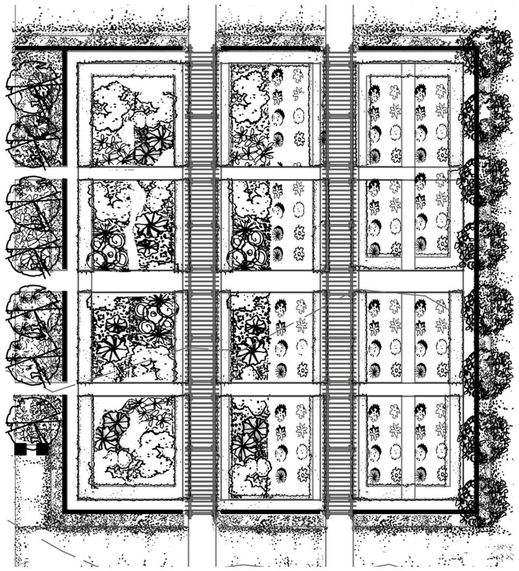
1227.5

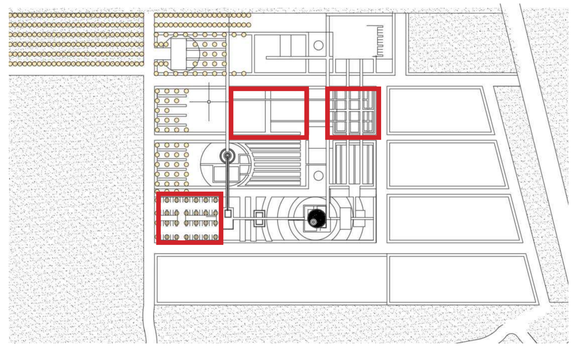
1223.8

1226.5

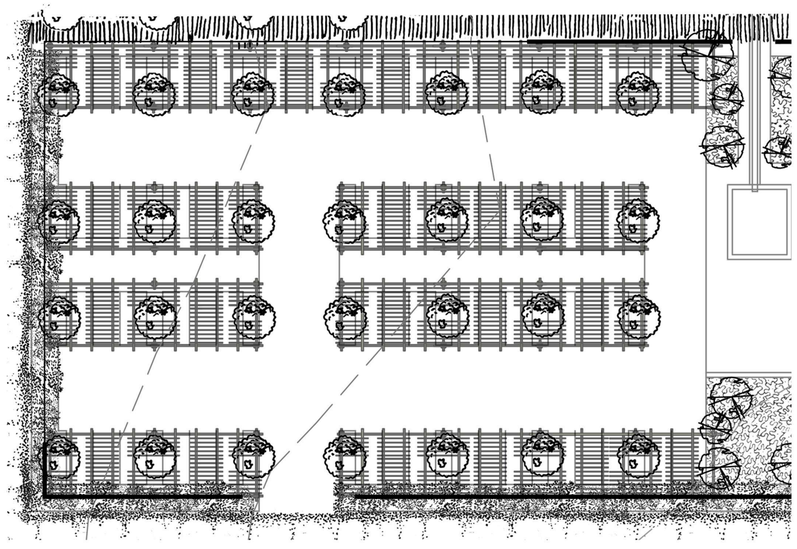
01 FARMHOUSE
02 MARULA ORCHARD
03 ANIMAL PENS
04 MARULA WOODLAND
05 ENTRANCE 1
06 ENTRANCE 2
07 HERB GARDEN
08 MAINSTREAM VEGETABLES
09 MAINSTREAM AND AFRICAN ORPHAN CROPS
10 AFRICAN ORPHAN CROPS
11 MEDICINAL PLANT GARDEN
12 THE REST SPOT
13 THE GRASSVELD WAY
14 THE GROVE STOP (PARKING)
15 THE STOREHOUSE
16 THE PRESERVATION ROOM
17 THE WASHING WELL
18 THE KITCHEN
19 EARTH AND EMBER COURTYARD
20 LARGER GROWING AREAS
21 GRAZING PADDOCKS
22 FEED FIELDS

SKETCH PLAN 1:500

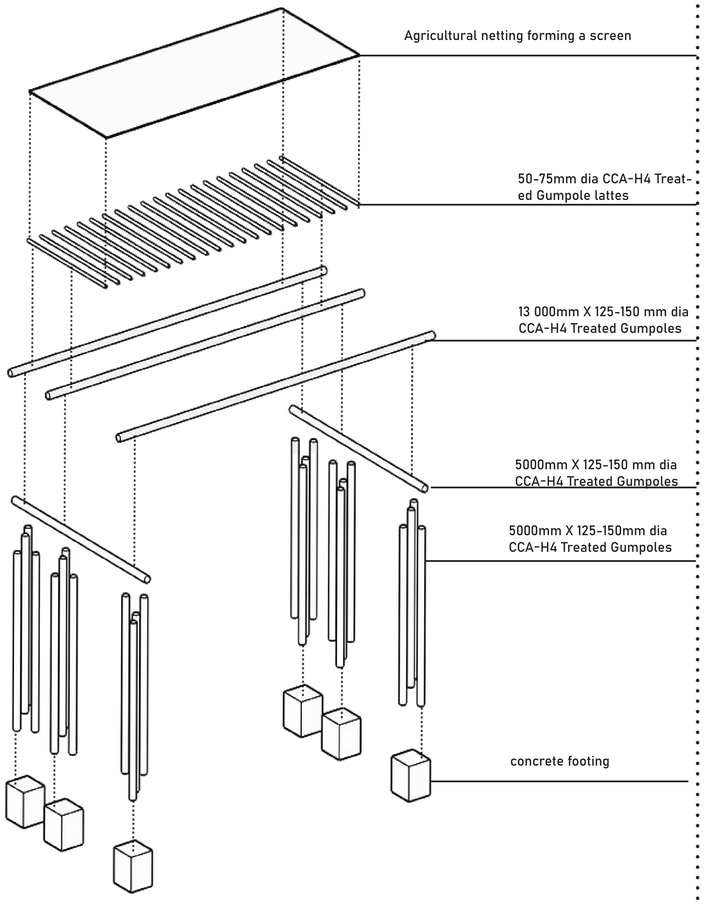




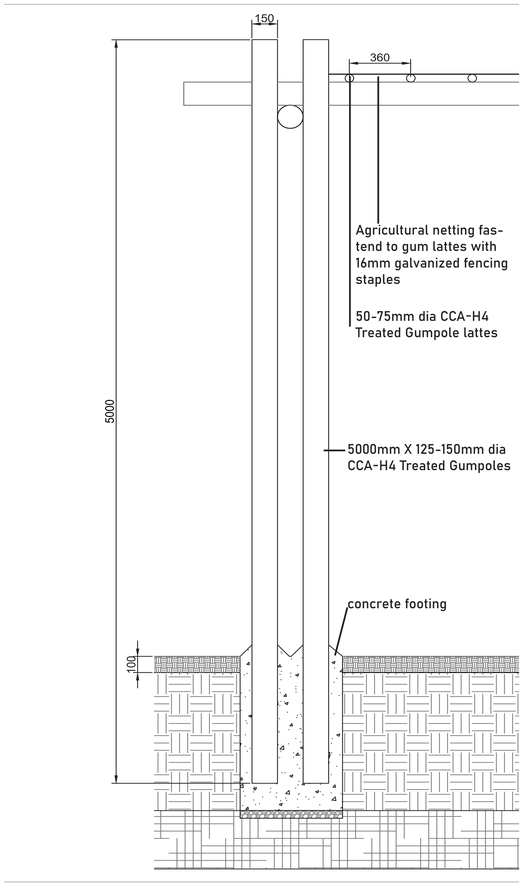
LOCALITY



Parking structure

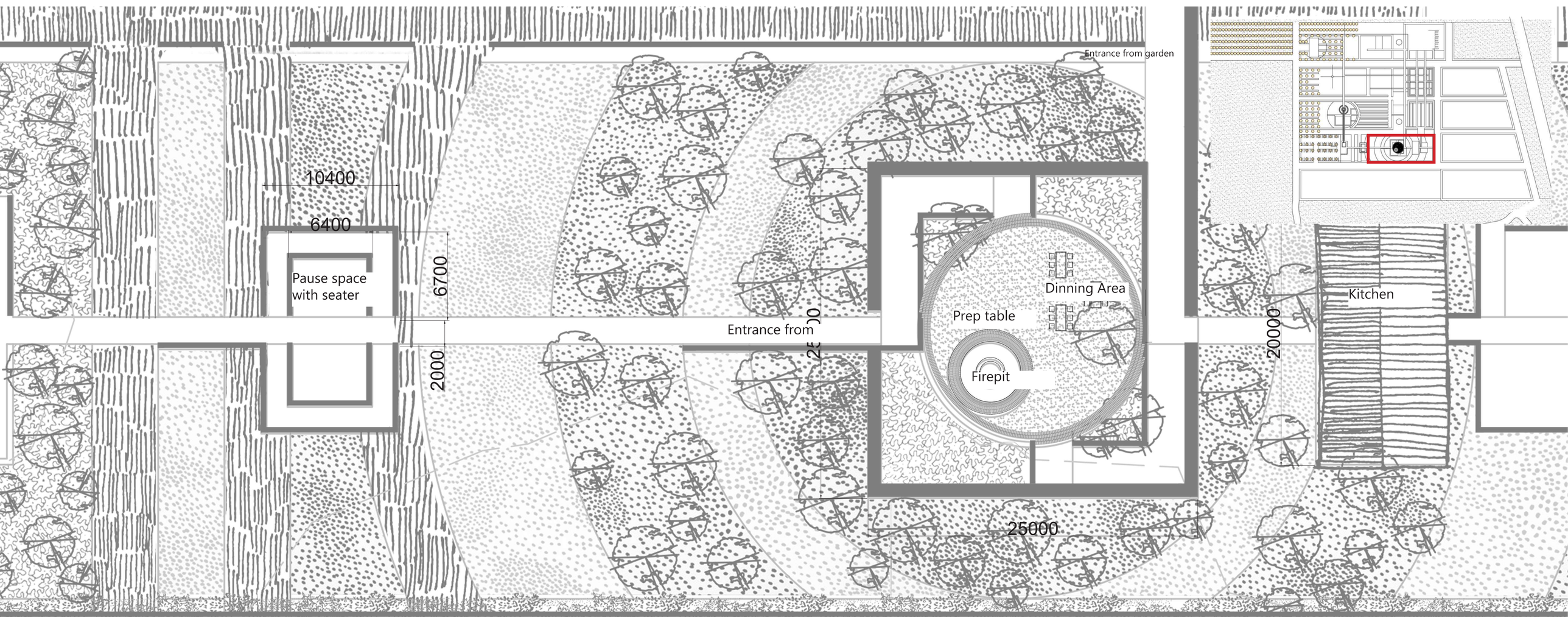


Assembly Axo

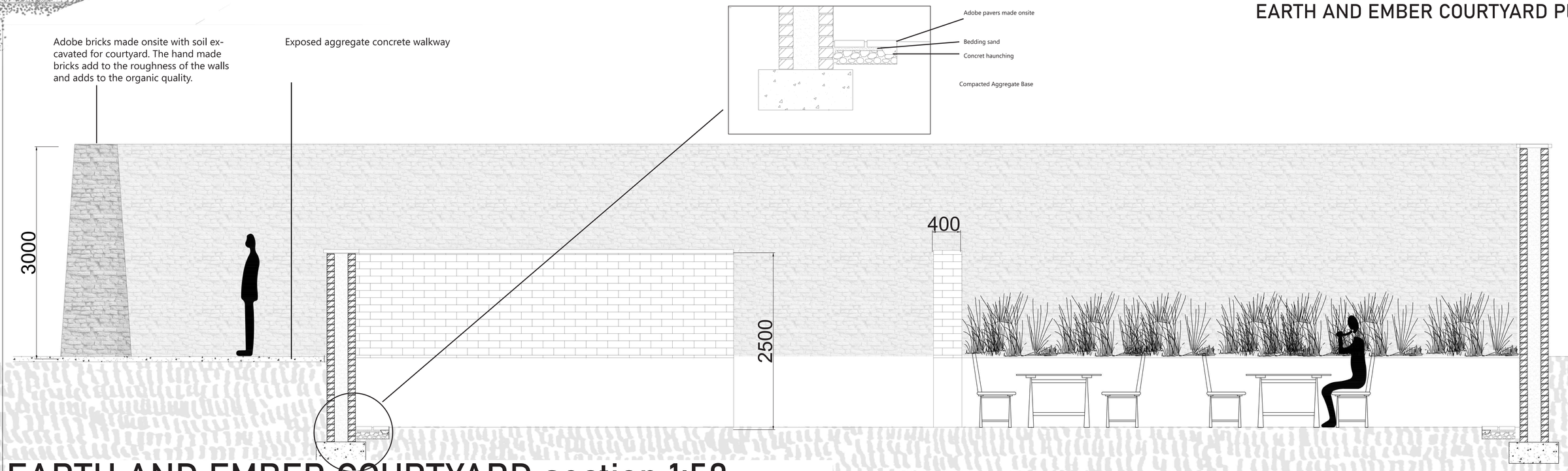


1:10 Detail on A2

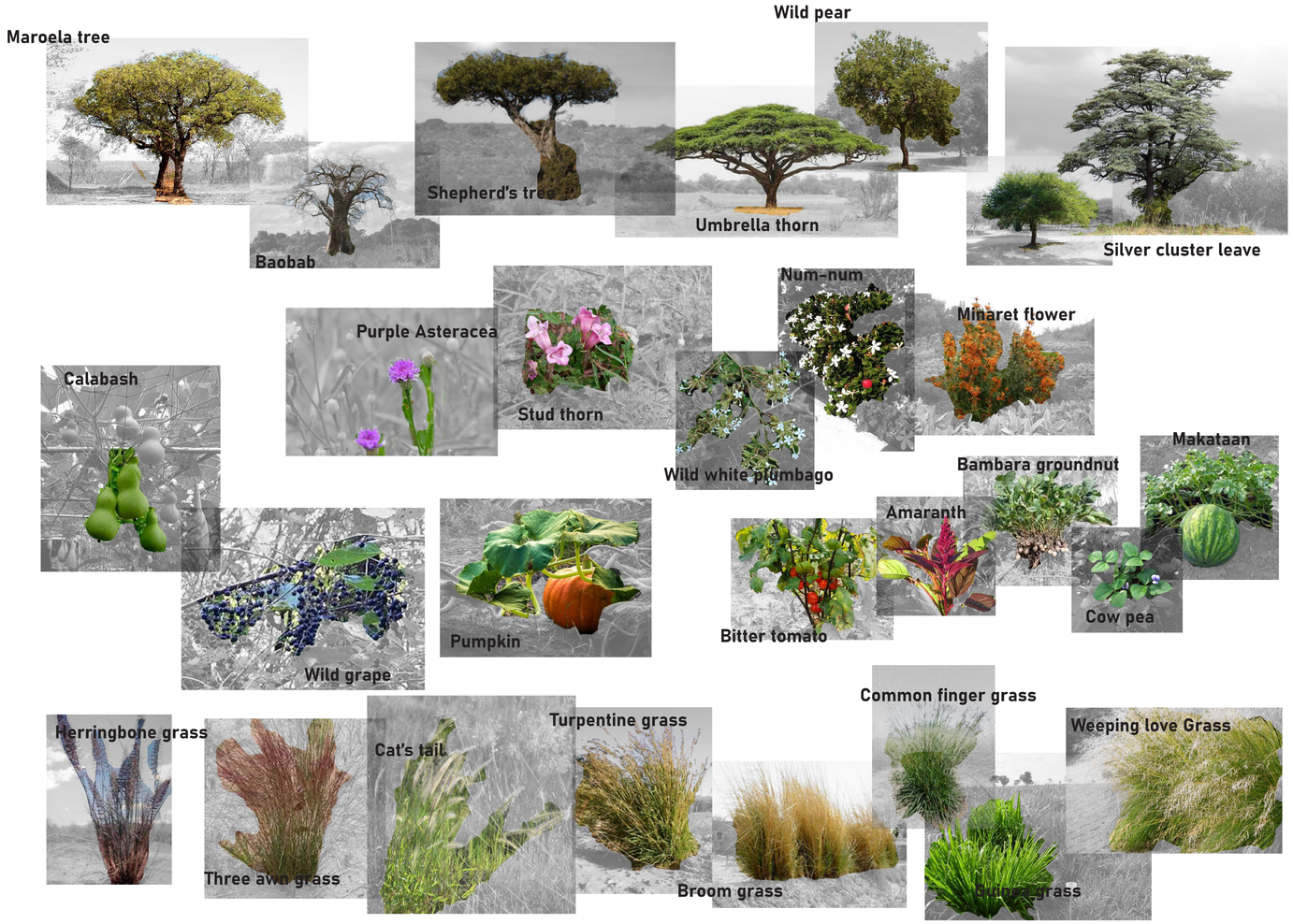
PERGOLA AND SHADE NET STRUTURES



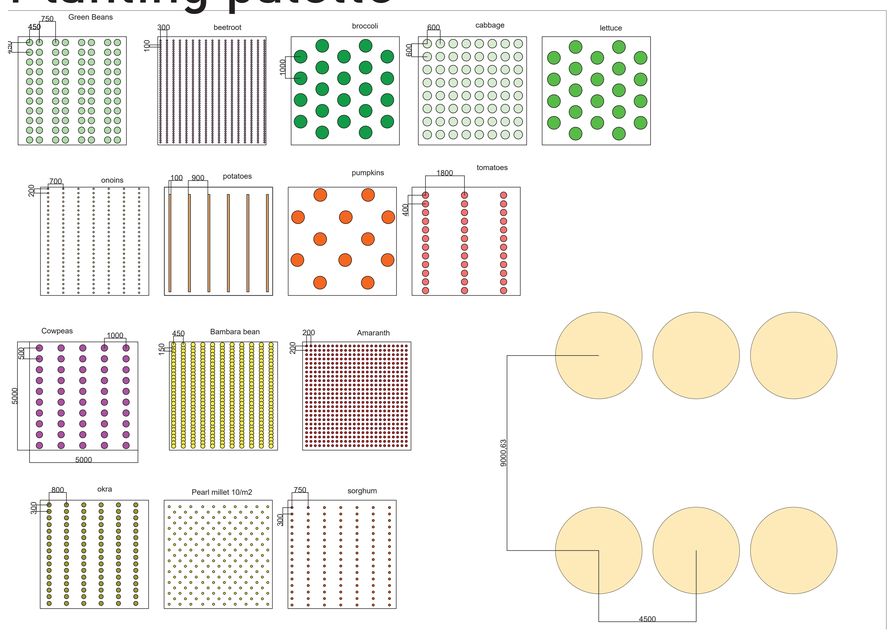
EARTH AND EMBER COURTYARD Plan 1:100



EARTH AND EMBER COURTYARD section 1:50



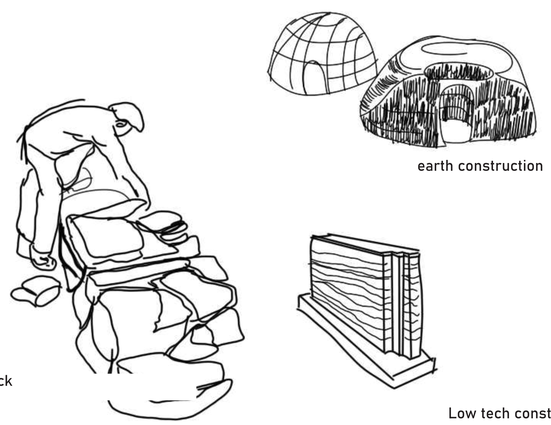
Planting palette



Planting patterns

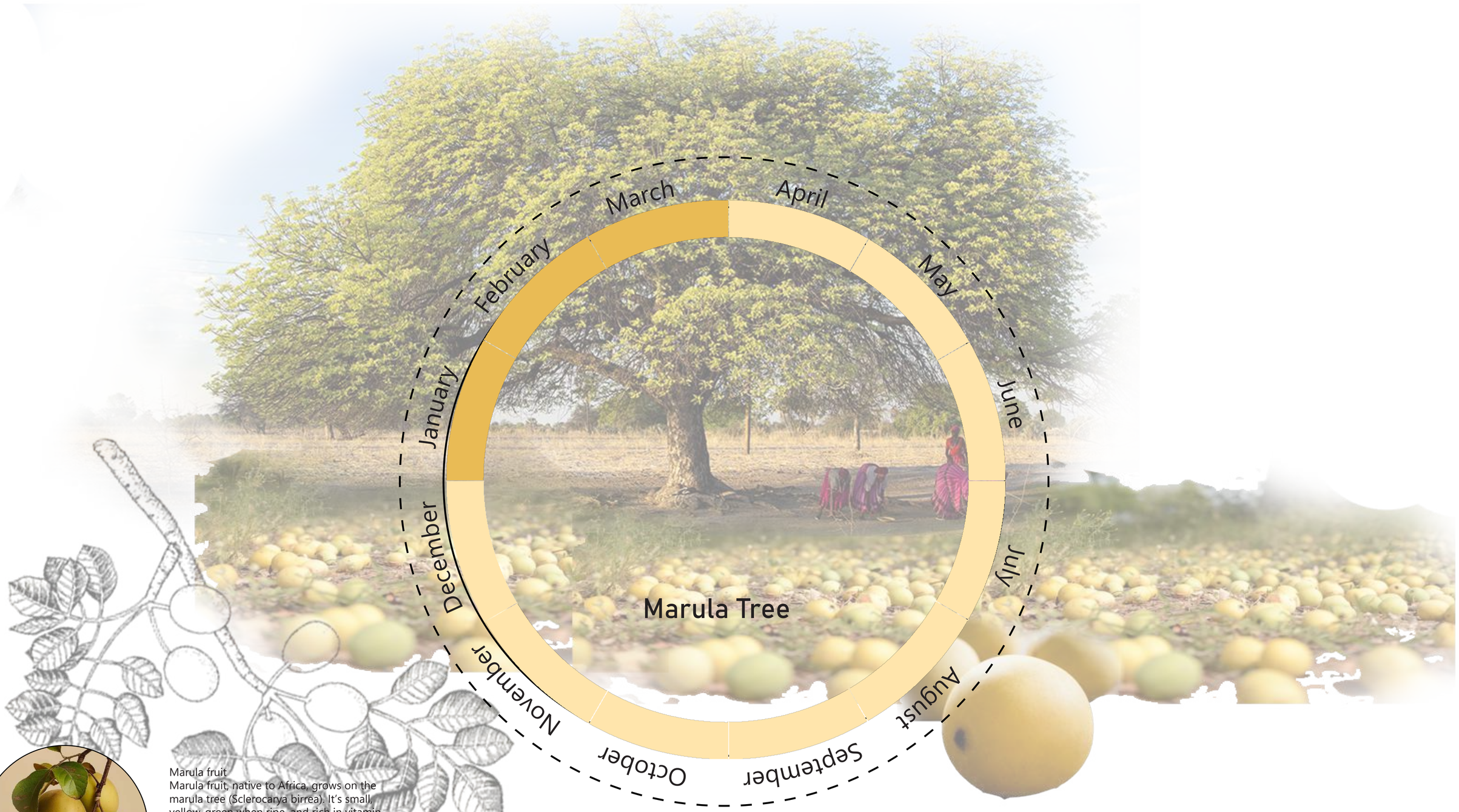


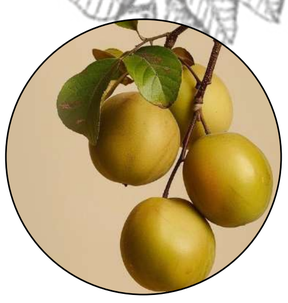
Material Palette



Construction techniques

The mighty Marula tree
Sclerocarya birrea





Marula fruit
Marula fruit, native to Africa, grows on the marula tree (Sclerocarya birrea). It's small, yellow-green when ripe, and rich in vitamin C. Known for its sweet, tangy flavor, it's used in juices, jams, and alcoholic beverages like Amarula liqueur. Wildlife, especially elephants, often enjoy eating marula fruit.



Marula skin
The marula fruit's skin is thin and tough, protecting the juicy pulp inside. Its texture becomes slightly leathery as the fruit ripens. Often discarded during processing, the skin is rich in antioxidants and can be repurposed in sustainable products, such as compost or animal feed.



Marula pulp
The pulp of marula fruit is juicy, aromatic, and slightly acidic. It is a key ingredient in African cuisines, used to make beverages, jams, and traditional brews. High in vitamin C and natural sugars, marula pulp is a nutritious food source and contributes to the fruit's widespread culinary appeal.



Marula seeds
Found within the marula fruit's hard pit, the seeds are small and edible. They are nutrient-rich, containing proteins and healthy fats. Marula seeds are traditionally eaten raw or roasted, and they serve as the source for marula oil extraction, which is a valuable byproduct.



Marula nut
Marula nuts are encased within the hard stone of the fruit. Once cracked, they reveal the tiny seeds. These nuts are prized for their rich, buttery flavor and are used in African diets. They also hold cultural significance, often featured in traditional dishes and rituals.

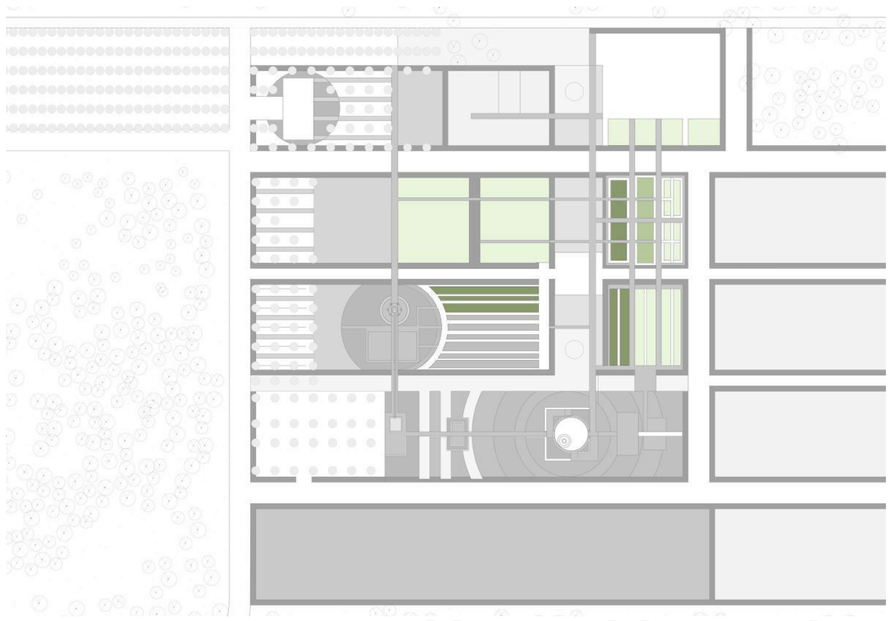


Marula oil
Extracted from marula seeds, marula oil is a lightweight, non-greasy oil revered for its moisturizing properties. It's rich in antioxidants, essential fatty acids, and vitamins E and C. Widely used in skincare and haircare, marula oil promotes hydration, elasticity, and a radiant complexion.

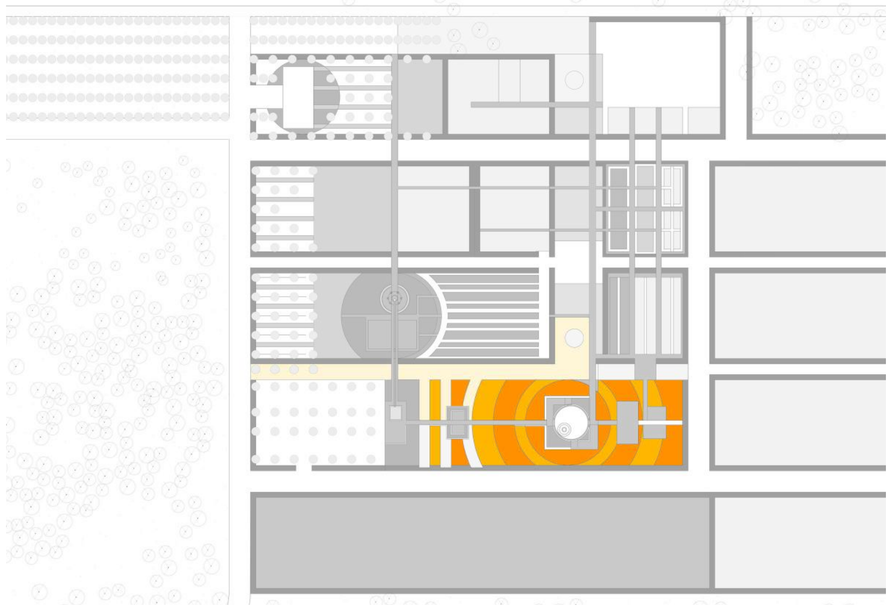
natural plant community

orchard planting

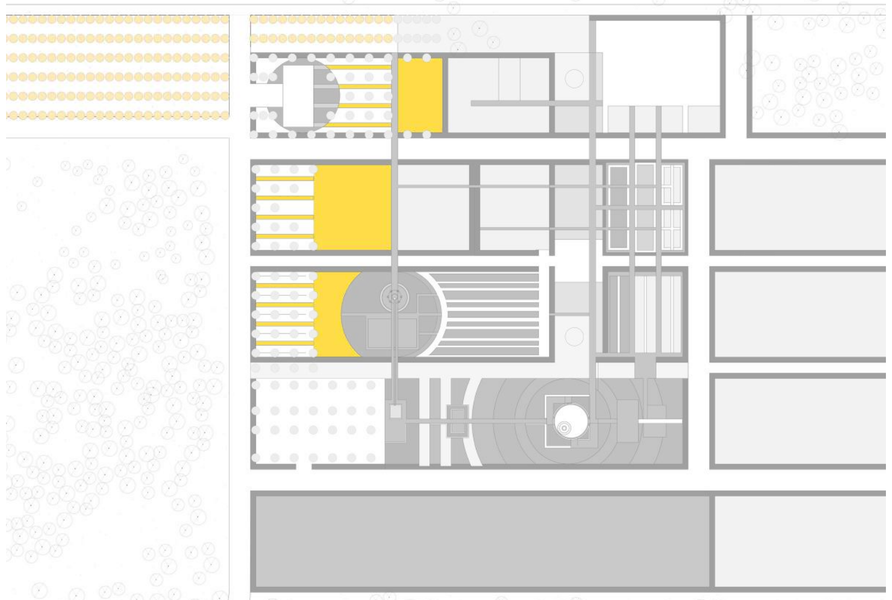
500kg
of fruit per year
per tree



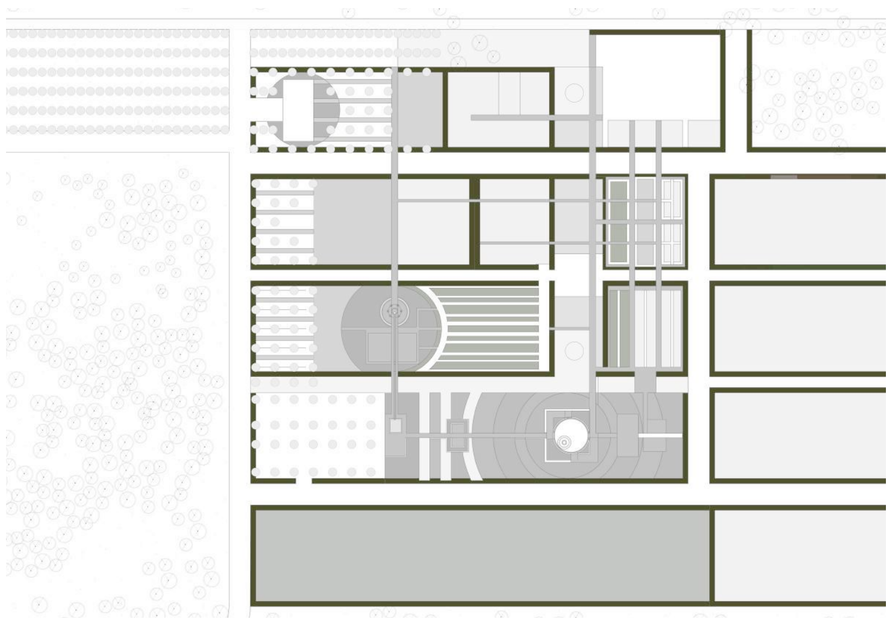
Vegetable garden



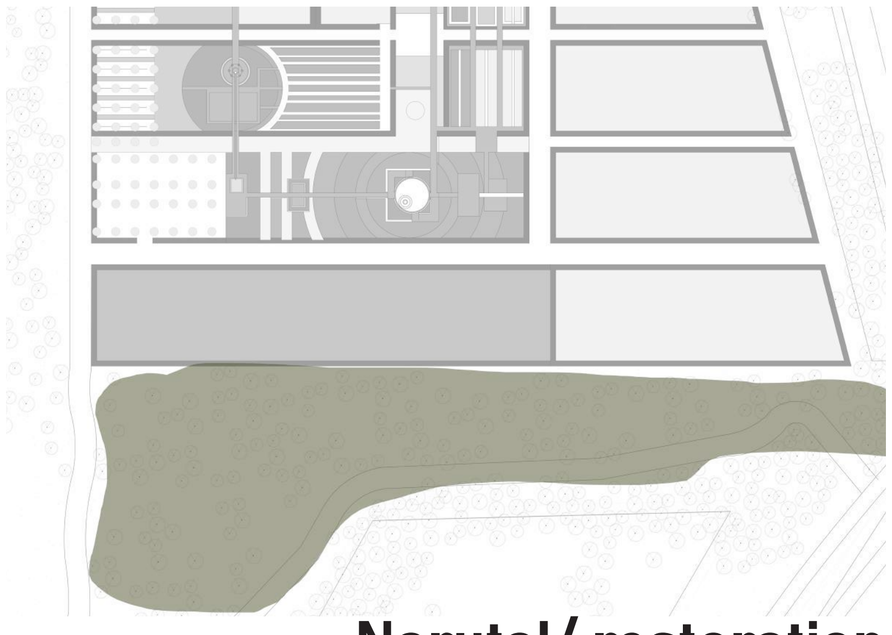
Woodland Walk



Marula orchard and woodland



Boundary vegetation



Narutal/ restoration

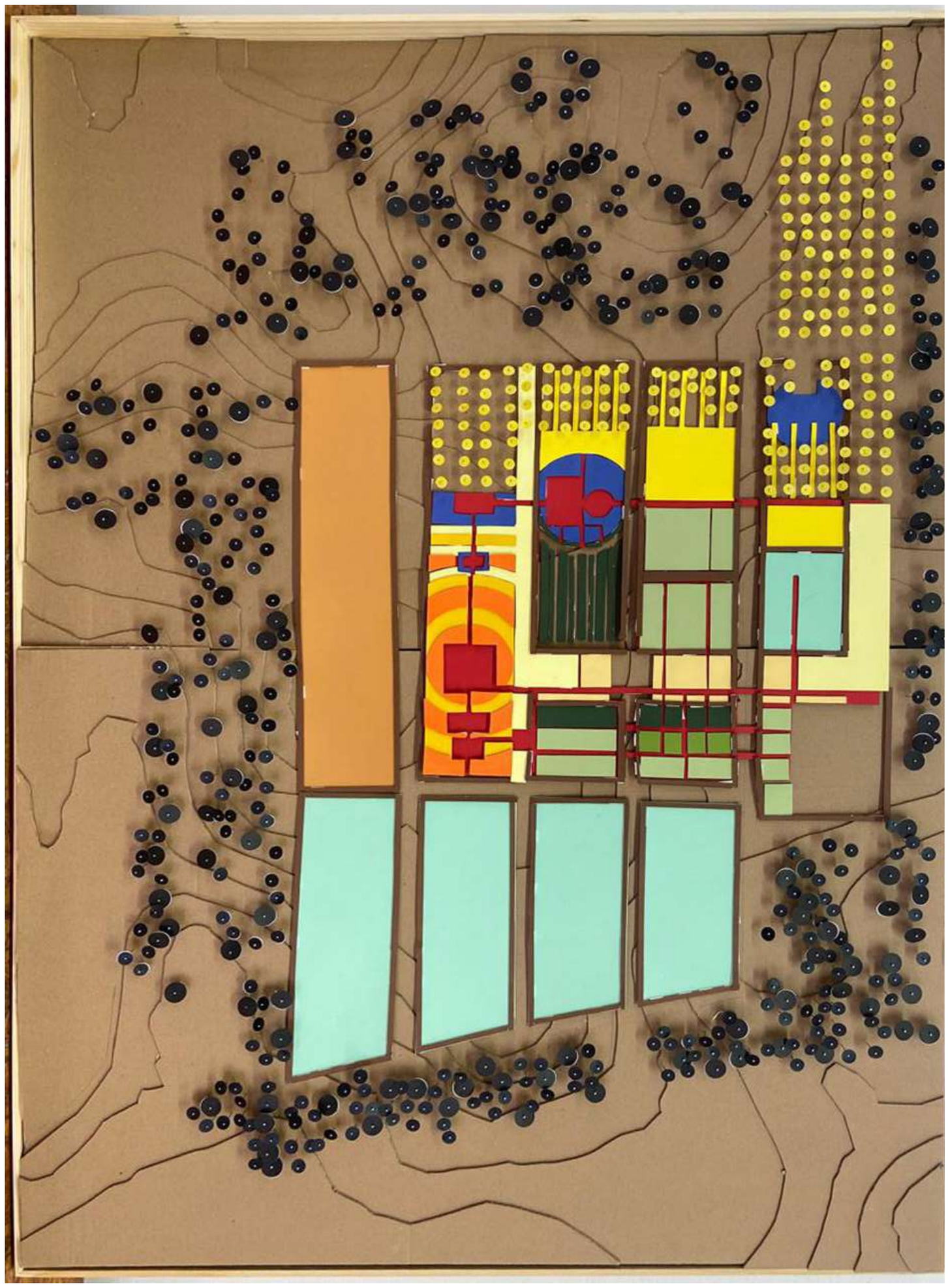
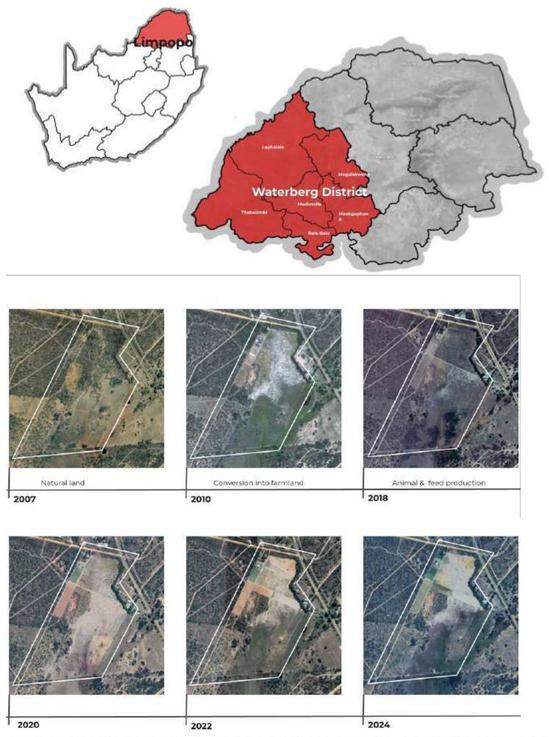


Photo of model

Planting layers

SITES

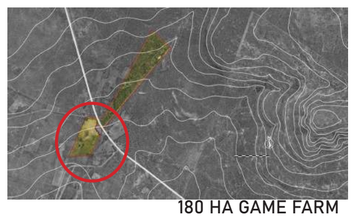
SUSTAINABLE INITIATIVE
FOR SUSTAINABLE LAND DESIGN AND DEVELOPMENT



SITE HISTORY SHOWING DEGRADATION DUE TO COMMERCIAL AGRICULTURE



SITE LOCATION
VAALWATER, LIMPOPO



180 HA GAME FARM



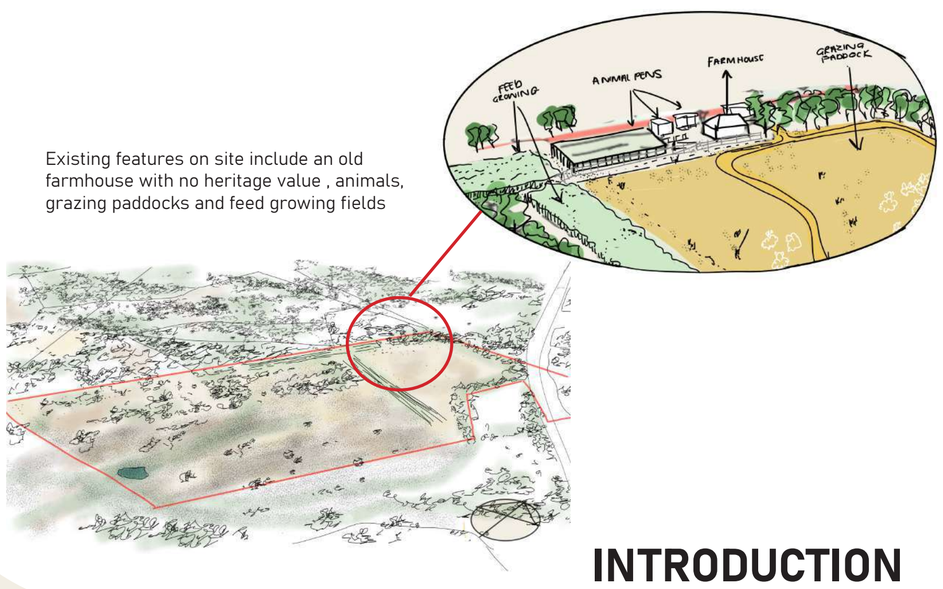
38 HA FOCUS AREA



OLD DEGRADED AGRICULTURAL (WHITE)
NATURAL GROWTH (GREEN) (SANBI, 2024)

SITE CONTEXT

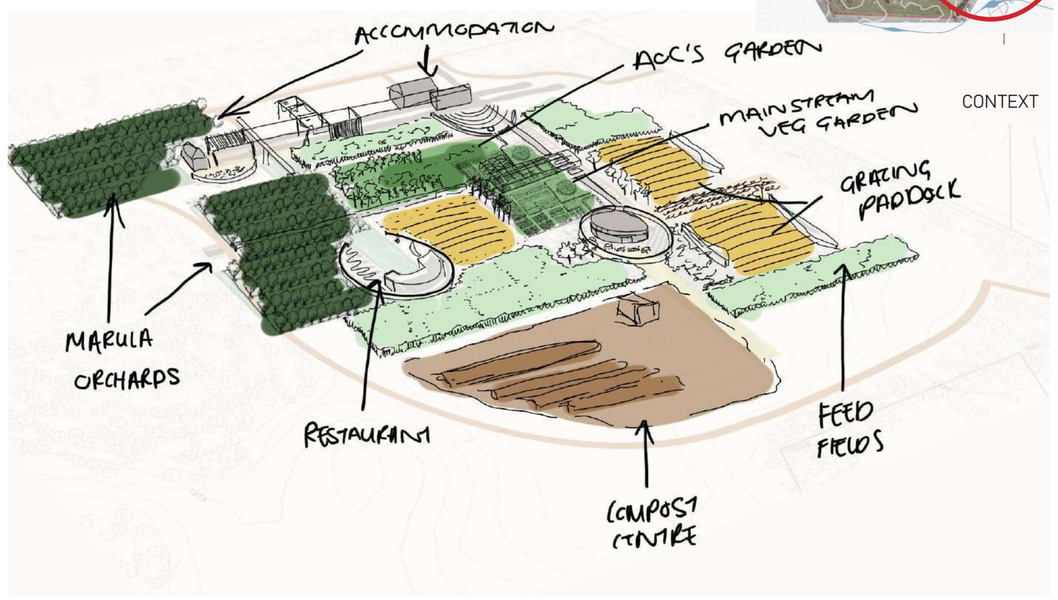
Existing features on site include an old farmhouse with no heritage value , animals, grazing paddocks and feed growing fields



INTRODUCTION



CONTEXT



CURRENT DESIGN



Retain precipitation on site
Use water for irrigation
Manage precipitation on site
reduce water use
storm water features

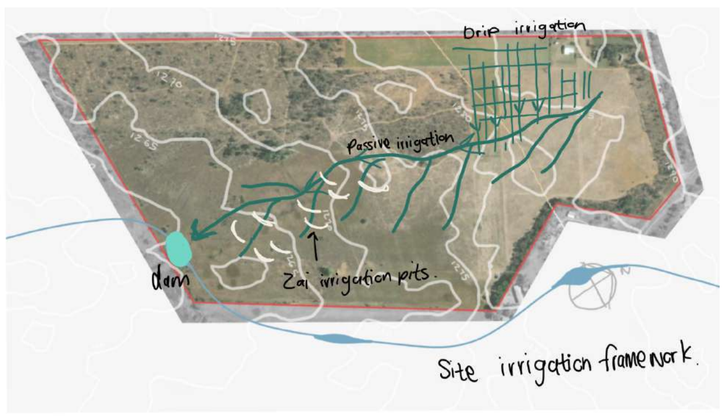


control and manage invasive species
Use indigenous plants
Conserve healthy soils
restore native plant communities
Reduce heat affects

ECOSYSTEM SERVICES

- WASTE DECOMPOSITION
- PRODUCING FOOD
- CLIMATE REGULATION
- EROSION AND SEDIMENT CONTROLE
- HABITAT FUNCTIONS

ASSESSMENT CRITERIA



WATER P3.1, P3.2

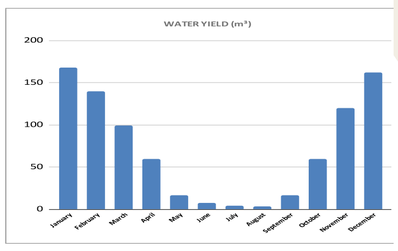
Retaining precipitation on site by incorporating a passive watering system that would direct water towards crops and orchards in a rain event. The system consists of a series of vegetated channels. Irrigation strategies include using passive irrigation, clay pot irrigation, smart climate based controllers for drip irrigation and separate hydro-zones to discontinue watering in different zones as plants become established

AREA CALCULATIONS

Catchment	Area, A (m²)	Runoff Coefficient,	
		C	C (weighted)
SANDY SOIL	10000	0.15	0.15
TOTAL	10000		0.15

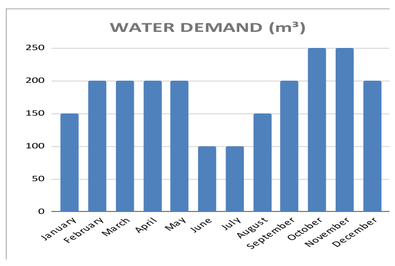
RAINWATER YIELD CALCULATION

Month	Ave. rainfall, P (m)	Yield (m³) (Yield = PxAxC)
January	0.112	168
February	0.093	139.5
March	0.066	99
April	0.04	60
May	0.011	16.5
June	0.005	7.5
July	0.003	4.5
August	0.002	3
September	0.011	16.5
October	0.04	60
November	0.08	120
December	0.108	162
ANNUAL	0.674	856.5

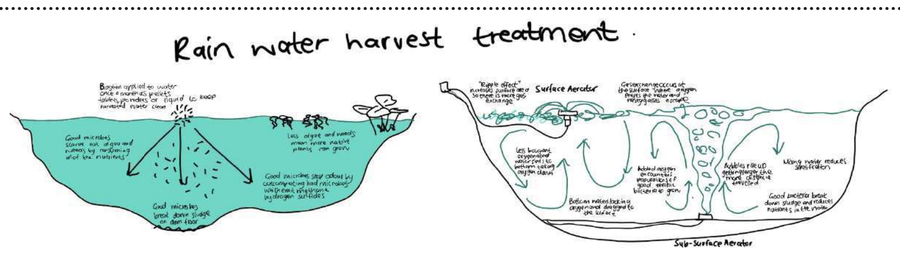


IRRIGATION DEMAND

Month	VEGETABLE PLANTING BEDS Area (m²)	Irr. depth / week (m)	Irr. depth / month (m)	LAWN Area (m²)	Irr. depth / week (m)	Irr. depth / month (m)	Irrigation demand (m³/month)
January	2500	0.015	0.06	0	0.02	0.08	150
February	2500	0.02	0.08	0	0.025	0.1	200
March	2500	0.02	0.08	0	0.025	0.1	200
April	2500	0.02	0.08	0	0.025	0.1	200
May	2500	0.02	0.08	0	0.02	0.08	200
June	2500	0.01	0.04	0	0.015	0.06	100
July	2500	0.01	0.04	0	0.01	0.04	100
August	2500	0.015	0.06	0	0.015	0.06	150
September	2500	0.02	0.08	0	0.02	0.08	200
October	2500	0.025	0.1	0	0.025	0.1	250
November	2500	0.025	0.1	0	0.025	0.1	250
December	2500	0.02	0.08	0	0.025	0.1	200
			ANNUAL			ANNUAL	2200



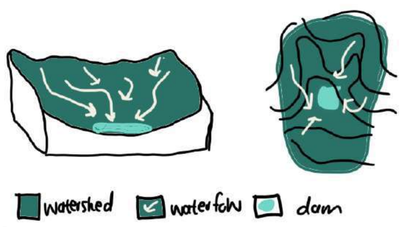
WATER CALCULATION



WATER C3.3, C3.5

Maintaining water captured during rainfall events to protect the water quality so that it could be used for irrigation of food landscape. The captured water is treated on-site with physical, chemical and biological treatments to insure safety for use of crop irrigation.

The site sits within a climate that receives between 400 mm and 600 mm of annual rain (Department of Environmental Affairs, 2023). To have the possibility of a functional and profitable agricultural landscape the use of potable water will have to be included in the plan to allow for irrigation of the orchards. Marula trees (*Sclerocarya birrea*) grow naturally in this landscape and climate, therefore it does not need an excessive amount of irrigation to produce enough fruit (ABS, 2021: 34). Water harvested on site in 1 ha will not be enough to irrigate the vegetable garden and orchard therefore potable water will have to be used.A larger are could be used to catch water however the small stream on the souht western side of the site will then not receive any of the runoff jeopardising the integrity of the water systems down stream from the site.



WATER C 3.4

The irrigation systems encourage the use of alternative irrigation methods that use less energy or passive irrigation and encourages the re-use of rain water from the non- agricultural landscape.



WATER C 3.5

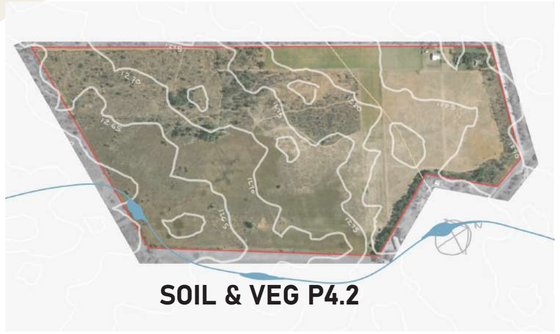
The zai irrigation pits and passive irrigation channels act as landscape elements that integrate aesthetically into the rural natural landscape and are visually and physically accessible for stormwater management.



PREREQUISITE/ CRITERIA	TITLE	POINTS	DESIGN SCORE	EXAMPLE OF APPLICATION IN DESIGN
P3.1	Manage precipitation on site	Y/N	yes	
P3.2	Reduce water use for landscape irrigation	Y/N	NA	due to water in this design is used for non-commercial aggriculture
C3.3	Manage precipitation beyond baseline	4 to 6	4	water retained from rain event is captured and treated onsite for irrigation use
C3.4	Reduce outdoor water use	4 to 6	5	landscape makes use of passive irrigation and zai irrigation methods for non agricultural landscape
C3.5	Design functional stormwater features as amenities	4 to 5	4	zai irrigation pits become landscape features
C3.6	Restore aquatic ecosystems	4 to 6	NA	
		TOTAL	13 OF 23	

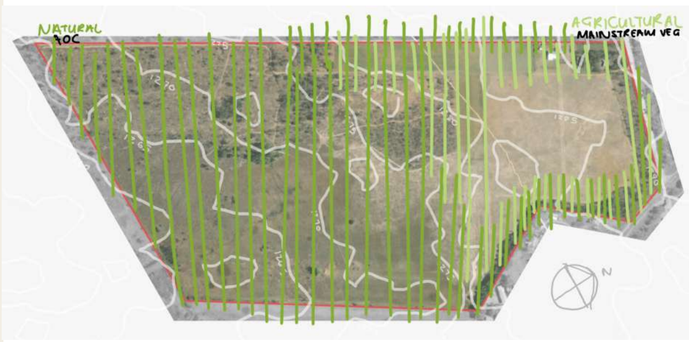
SCORECARD

SITE DESIGN | WATER



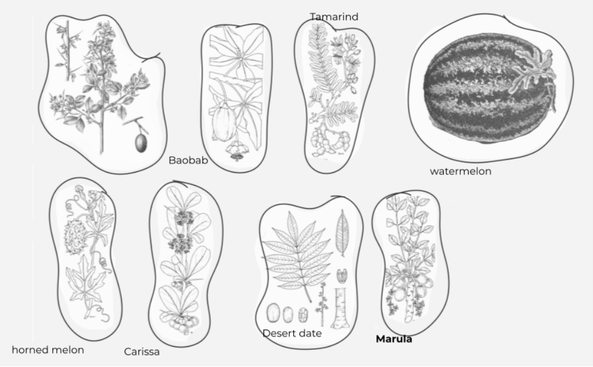


The most noticeable invasive plant species on site is the silver stoebe or bankrot bossie (*Seriphium plumosum) and the* west indian lantana or cowslip *(Lantana camara).* The silver stoebe can be irradiated by chemical pestisides but is not as environmentally friendly. Other methods include chopping or burning to remove the bush. Cowslip is poisonous to some cattle and can only be removed by manual labor due to the wide spread of it across the site where burning is not an viable option





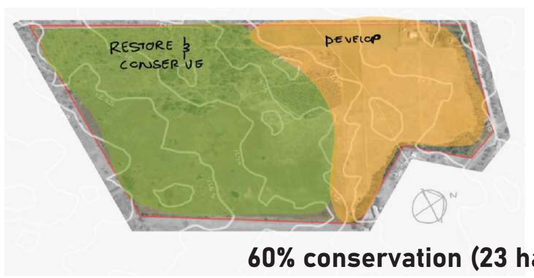
indigenous



AOC'S

In effort to restore the previously farmed on landscape only indigenous plants and grasses are included in the planting palette. Introducing African Orphan Crops as a replacement food crop to use in this region is more sustainable. AOC's are accustomed to grow in the harsh Savanna climate. More than 70% (11 ha out of 15 ha) of the area marked fro development will have indigenous plant species incorporated into the planting design.

SOIL & VEG P4.3 + C4.6



60% conservation (23 ha)

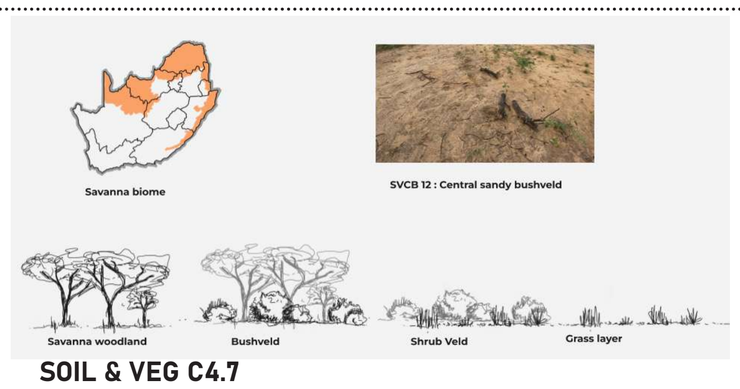
SOIL & VEG C4.4

An area for nature conservation has been indicated. This area is the only part of the site that has not yet been disturbed by some form of agriculture. The existing agriculture and grazing area is highly disturbed with little natural vegetation left has been marked as the development zone where construction will take place. The construction area is located closes to the road for easy access and keeps construction activities out of the conservation area.



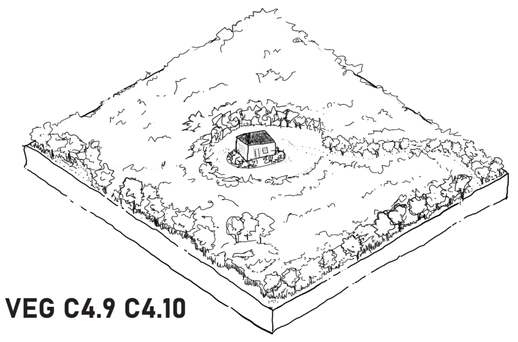
SOIL & VEG C4.5

Regulations regarding the harvesting of marulas are strict within the Limpopo province. Only fruit that have fell from a tree (existing naturally) are allowed to be collected. Building on this initiative, incorporating sustainability hand harvesting into the core principles of the farm ensure the sustainable development of the agricultural practices on site.



SOIL & VEG C4.7

As part of the conservation strategy the visitors of the farm will be encouraged to join the planting of trees and pioneer grass species that will help the restoration of the natural landscape destroyed by previous agriculture en devours. Plant communities that would be restored include the savanna woodland, bush veld and the grasslands. Pioneer species will grow fast creating an environment in which threes and shrubs can thrive.



SOIL & VEG C4.9 C4.10

Being outside in the sun with little shade it can get hot. The open grassland in the savanna biome typically has little trees fro shade. Therefor adding trees to the landscape allows for a less hard outdoor environment that can be enjoyed by the visitors. Adding 2 rows if windbreaks not only cools the outdoor spaces but also the reduces the amount of energy needed by the buildings fro cooling.



PREREQUISITE/ CRITERIA	TITLE	POINTS	DESIGN SCORE	EXAMPLE OF APPLICATION IN DESIGN
P4.1	Create and communicate a soil management plan	Y/N	yes	
P4.2	Control and manage invasive plants	Y/N	yes	
P4.3	Use appropriate plants	Y/N	yes	
C4.4	Conserve healthy soils and appropriate vegetation	**4 to 6**	4	60% (23 ha ot of 38 ha) is designated as a conservation area where plant communities will be restored.
C4.5	Conserve special status vegetation	**4**	4	sustainable harvesting methods are used for the marula trees protecting the special status tree
C4.6	Conserve and use native plants	**3 to 6**	6	only Indigenous plant species are used in the planting palette including African Orphan Crops
C4.7	Conserve and restore native plant communities	**4 to 6**	6	phased approach to restoring the plant communites found on site
C4.8	Optimize biomass	**1 to 6**	1	With the addition of th 1 ha Marula orchar the biomass of the site increases with 5%
C4.9	Reduce urban heat island effects	**4**	4	decrease outdoor heat with shading trees in the open rural landscape creating a cooler microclimate
C4.10	Use vegetation to minimize building energy use Option 3: Provide a windbreak - two or more rows	**1 to 4**	2	use a combination of trees and shrubs arranged in a staggered design helps
C4.11	Reduce the risk of catastrophic wildfire	**4**	0	
		TOTAL	**27 OF 40**	

SCORECARD

SITE DESIGN | SOIL AND VEGETATION



Grows food and sell to the community

HHWB C6.3



Supports local communities

HHWB C 6.11



Landscape as gatehring point

HHWB C6.6



composting facility on site

O+M C8.3

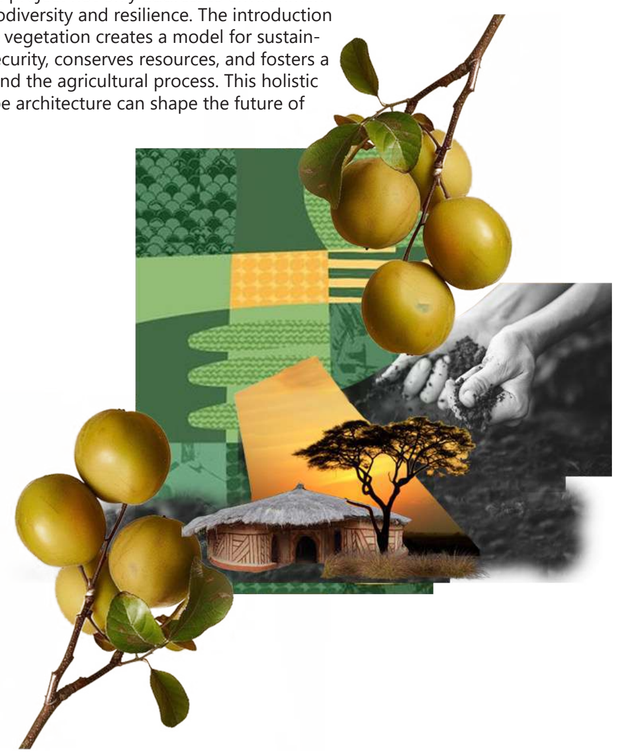
PREREQUISITE/ CRITERIA	TITLE	POINTS	DESIGN SCORE	EXAMPLE OF APPLICATION IN DESIGN
HHWB C6.7	Provide on-site food production	**3 to 4**	4	more than 10% of the area it the farm produces food and sells/ donates the surplus to the community and sells the excess marulas
HHWB C6.11	Support local economy	**3**	3	the project supports local communities
HHWB C6.6	Support social connection	**2**	2	seating and pause space can be found through out the gardens
O+M C8.3	Recycle organic matter	**3 to 5**	5	all organic matter (vegetation trimmings) and compostable food waste is composted on site fro use in the garden





OTHER CRITERIA

In conclusion, designing a sustainable food farm in the Waterberg district that integrates the principles of the Sustainable SITES Initiative offers a unique opportunity to blend agriculture with ecological restoration. By focusing on water conservation through rainwater harvesting and soil management techniques like indigenous crop use, the project not only addresses environmental challenges but also enhances biodiversity and resilience. The introduction of African Orphan Crops and native vegetation creates a model for sustainable farming that promotes food security, conserves resources, and fosters a deep connection between visitors and the agricultural process. This holistic approach exemplifies how landscape architecture can shape the future of agriculture.



CONCLUSION