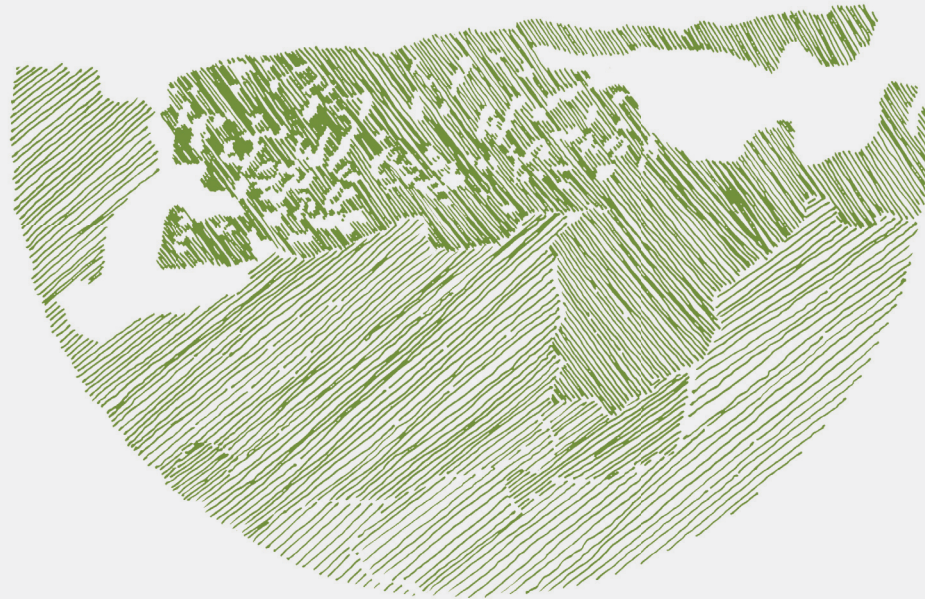


rural community pavilion and shepherd school

investigating hybrid placemaking in the cultural landscape of semonkong, lesotho



corné van niekerk 2009014719

rural community pavilion and shepherd school for the culturally marginalised

SEMONKONG, LESOTHO

Dissertation submitted in partial fulfilment of the requirements for the degree M. Arch. (Prof). All the work contained in this document is my own except where otherwise acknowledged.

Department of Architecture, Faculty of Natural and Agricultural Sciences,
University of the Free State. Bloemfontein, South Africa.
29 October 2015

Corné van Niekerk 2009014719

The work contained in this thesis has been submitted for proof-reading and/or editing by Annette Combrinck.

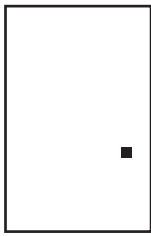
Supervisors: Prof. J.D. Smit, Messrs. J.W. Ras, H.B. Pretorius, J.I. Olivier, H. Raubenheimer

preamble

This dissertation is vested in certain phenomena that are unique to the country of Lesotho, its socio-economic problems, cultural context and the specific role-players that are affected by these circumstances. This paper first investigates the physical and abstract parameters of the Lesotho topography and how architectural hybridity can act as a model for change. A morphological exploration follows to test new ideas, as well as extend the accepted wisdoms of this specific group of people, in order to create sophisticated programme with simple and low impact technology. Relying on the reinterpretation of traditional and universal architectural typologies, this project is phenomenologically grounded in order to produce recognisable form that is both new and timeless.

A rural community pavilion and school for the culturally marginalised is proposed for a site between Semonkong, a small town in the Lesotho highlands, and the village of Ha Lesala, ± 4.55 km apart. A small shepherd night school is located on this site, currently functioning in isolation from the broader community. The community itself is without an existing community centre for adult education, childcare and basic services. The romantic/classical Lesotho landscape becomes a platform for expression in which the challenge is to actively engage with the cultural as well as physical phenomena in order to facilitate relational education. Mindful engagement with two marginalised groups: the shepherd boy and vulnerable women and children in Lesotho, questions known western institutional typologies and instead proposes one that promotes social integration and is informed by the user. Through this process architecture becomes the facilitator of expression by appointing itself as the intermediary; mediating between positions of presumed belonging and social abandonment.





■ table of content

introduction

research design

01

problem statements and aims

1.1 exploratory research

- 1.1.1 the effect of migrant labour
- 1.1.2 the sotho community
- 1.1.3 schooling for the nation's children

1.2 problem statements relating to typology

- 1.2.1 towards a problem statement
- 1.2.2 aim

1.3 problem statements relating to topology

- 1.3.1 towards a problem statement
- 1.3.2 aim

1.4 problem statements relating to morphology

- 1.4.1 towards a problem statement
- 1.4.2 aim

1.5 problem statements relating to tectonics

- 1.5.1 towards a problem statement
- 1.5.2 aim

02

exploration and grounding

2.1 conceptual developments

- 2.1.1 touchstone
- 2.1.2 concept
- 2.1.3 conceptual framework

2.2 typology

- 2.2.1 client
- 2.2.2 user
- 2.2.3 accommodation list

2.3 topology

- 2.3.1 quantative site analysis
- 2.3.2 qualitative site analysis
- 2.3.3 site understanding

2.4 morphology

- 2.4.1 school typology
- 2.4.2 cultural identity and the kraal
- 2.4.3 cultural identity and the landscape
- 2.4.4 semiotics
- 2.4.5 ubuntu as cultural narrative
- 2.4.6 from ubuntu to the ethics of care

2.5 logic of tectonics

2.6 design methodology

03

design and construction synthesis

3.1 design development

3.1.1 phase 01

3.1.2 phase 02

3.1.3 phase 03

3.1.4 phase 04

3.2 towards a final design

3.3 technical resolution

04

reflection and evaluation

bibliography

introduction

This investigation was initiated by an awareness of Lesotho's socio-economic problems, which are compounded by extreme poverty, unemployment and poor infrastructure. What intrigued me was the unique way in which socio-economic problems that are found in many third-world countries, manifest themselves in Lesotho, and the opportunities for change that these problems present. In the same way as architecture can be a discriminatory practice, isolating through design considerations, it should also be able to employ spatial imagination to the service of complex human problems to new knowledge of how we might comfortably dwell together. I will refrain from stating that architecture can solve all human problems, but as servant of humanity it should be able to offer profound solutions capable of mediation when produced ethically.

Part 01 (Problem Statements) gives an overview of the initial exploratory research done to identify the client, user and site. It also focuses on the specific typological, topological, and morphological problems that need to be addressed through the architectural intervention. Part 02 (Exploration and Grounding) is a further exploration through knowledge gathering and data analysis as a means of addressing these problems. This process is theoretically grounded and deductions drawn to design approaches that can be applied in the following chapter. Part 03 (Design and Construction Synthesis) is a process of applying and synthesising all the knowledge gathered and analysed in the previous chapters into a design that renders an appropriate and tectonically informed end product. I reflect on the process in the last part of the document titled, Reflection.



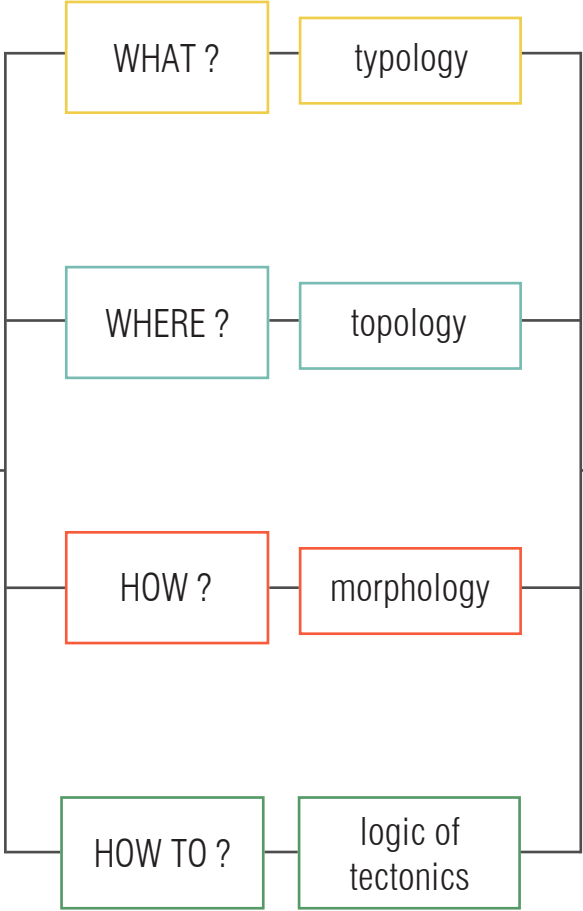
fig. **01**

There is a growing divide between the traditional and modern; synthetic blankets are becoming more popular as they are cheaper.

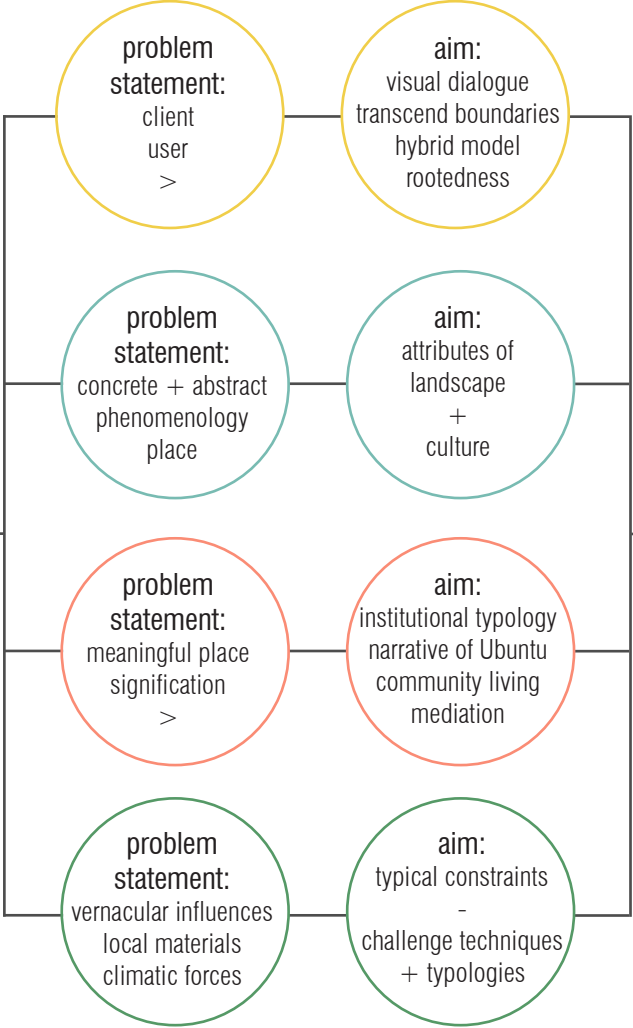
[Pinchetti & Tettamanti, 2013: online]

PART 01 problem statement

RESEARCH DESIGN



EXPLORATORY RESEARCH: migrant labour | sotho community | schooling



CONCEPTUAL DEVELOPMENT: touchstone | concepts | conceptual framework



PART 02 research components

PART 03 synthesis

touchstone:
bridging the gap
of marginalisation
through external
intervention

concepts:
enclosure
edge condition
forced tension

**conceptual
framework:**
inside/outside
dialogue
boundary
mediate
threshold

The client and user are introduced and investigated as a means of informing the architectural intervention. An accommodation list sets out the research document's requirements and guides the reader with regards to what practical outcomes are expected by the client and user.

Necessary information regarding site understanding, location and current status, to direct the proposed project. A morphological understanding of Semokong and Ha Lesala is given. The site is analysed in both a quantitative and cognitive manner, in terms of experience and surroundings.

Exploring how 'place' can be reconstructed through spatial awakening. Cultural constructs will be identified and investigated as possible signifiers, relating to the users connotation. Understanding African values and linkages to artistic and expressive cultural forms.

The structural touchstone progressed to an exploration of the linkages between stereotomic and tectonic elements and how interdependent layers of structure can be incorporated in creating space and place. The elements function as interdependent parts of the whole.

phase 01:
clear divide
between community
and shepherd
school

phase 02:
cultural complex
moves to the north of
site, incorporating
spatial clusters

The design progressed in four phases towards the final design. Lessons learnt from each phase is addressed and applied in the following stage. The design strategy was formulated from the conceptual framework and is theoretically grounded in architecture of community through Ubuntu.

phase 03:
radial and cluster
spatial organisation
used in
conjunction

phase 04:
design grew in
complexity, connected
to landscape with
low walls

The technical resolution shows the progression of the stereotomic and tectonic structural composition, building components and project sustainability. Materiality is at the core of the structural approach, and is influenced by the landscape, the building traditions, and the available skills and technology.

research design

This research is designed around the exploration of four broad problem statements relating to the fundamentals of design: What to design for whom? Where to design it? How the gestalt of the design is influenced? and lastly, How the design is constructed? For the purpose of this document these questions will relate to the sources of knowledge that influence the logic of type (typology), topos (topology), form (morphology) and structure (tectonics). The research originated from an interest in the Lesotho landscape and the socio-economic problems that are intrinsic to the country. The theme encompasses two marginalised groups from the same cultural background, but with different lifestyles and societal standings; trapped in the poverty cycle that is associated with rural Lesotho. The dual user is the community of Ha Lesala and Shepherd Boys in the Semonkong area. The aim of the project is finding a hybrid solution to address these socio-economic problems and different users. Different sources of knowledge were explored in an attempt to develop a design methodology specific to the design project.

touch stone

a touchstone is an abstract representation or installation performed in the absence of complete project information to suggest ones aspirations for the project. It can and should be used as a testing agent for future ideas. This suggestive representation is used to generate a set of concepts that are not necessarily form driven, but architecturally related, in order to capture the essence of the project.

precedent study

projects ranging from art, land art, engineering, and architecture are studied and analysed in order to gain knowledge of how the specific field relates to one's project and how these deduced principles can be applied.

cognitive analysis

a cognitive analysis is a phenomenological explanation of how one experienced something (a site, a piece of art, a building) by being there, and can also be known as a case study.

interpretive analysis

interpretive analysis is the subjective understanding of the author in regards to the topic at hand.

conceptual framework

a conceptual framework is a set of initial ideas that are constructed by the touchstone and concepts, and used to inform the exploration through precedent and case studies. These findings will be theoretically grounded.

literature review

this is an argument formed by a study of what has been written on the research topic, together with critiques and an understanding of the author, which can then be used to ground and inform certain morphological design decisions.

site investigation

a general site investigation progressing from quite broad to fairly specific on the history of culture, economics, and societal realities in Lesotho.

quantitative information

real measurements of the site received from literature of the site.

interview

interviews with client representatives and the teacher of the current shepherd school, as well as additional communications were held in Lesotho as means to gather information and serve as mouthpiece for the community.

quantitative data

quantitative data pertains to all measurements taken on site in regards to what could inform the project. This includes all concrete elements and physical features present on site.

cognitive analysis

a cognitive analysis is a phenomenological or lived world experience of the site, pertaining to all abstract elements of and influences on the physical area of study.

critical and reflection

interpretation and analysis of literature.



fig. **02**
Portrait of a local Basotho man wearing his blanket.

[Pinchetti & Tettamanti, 2013: online]

PART 01

problem statement

Working within a rural area brings certain typological, topological, morphological and tectonic polemics to the fore that are to be explored in search of possible solutions. This chapter considers project limitations and challenges in regards to user dualism, site activation, architecture as a means to positive social impact, meaningful place-making and the physical and abstract phenomena of the site. This is done by means of exploratory research on the cultural, social and economic realities in Lesotho in order to inform the choice of client, user, site and project.

1.1 exploratory research

In light of Franco Frescura's (1992: online) intensive research on African architecture, it is deduced that a society's architecture cannot be studied in isolation of its socio-economic context; especially if these socio-political realities forefront issues of economic development where basic shelter supersedes questions of fashion, style and aesthetics. Therefore Lesotho culture is researched broadly according to intrinsic socio-economic polemics to inform both client and user.

A great deal of these socio-economic polemics are tied to the HIV/AIDS pandemic which has been inflicting severe damage on society, pertaining to poverty, life expectancy, family relations and economic standing. About 40% of the population of Lesotho live below the international poverty line; 23% of its population between the ages of 15 and 49 are HIV positive, this small country has the 2nd highest HIV infection rate in the world, second only to Swaziland. 37 000 children under the age of 14 are HIV positive and almost a quarter of the 2.2 million inhabitants [488 526] are orphaned or vulnerable children (Lesotho Mission, 2013: online). Between 1996-2006 the average life expectancy declined dramatically from 59 years to just 48.7 years.

1.1.1 the sotho community

The Sotho patriarchal society is based upon an intertwined and complicated pattern of rights and obligations, both within and between various extended family networks. The family is generally regarded as the primary institution of societies and some

of the major functions of the family include socialisation, informal education, and transmission of cultural values to younger members of society. The family everywhere is controlled, sustained, and protected by the mores and laws of Ubuntu (Broodryk, 2002: 76).

From the first they seem to have been agriculturists, herdsmen, and hunters (Ellenberger, 1992: 293), villages being divided spatially into two realms, those of women and those of men. The division was extended as women were responsible for the fields, while men hunted and assisted the homestead in the rearing of animals (herding, breeding, milking and doctoring), in addition to showing community service to the chief (Gill, 1993: 48). The homestead's wealth was concentrated in the form of cattle, as it was essential for all important feasts and rituals connected with transitions in life: birth, initiation, marriage and death (Gill, 1993: 47). The significance of cattle in the family and community is directly equivalent to the central role that shepherds play in guarding the nation's wealth and the immense responsibility that is placed on their shoulders.

Women, on the other hand, contributed little to the body political directly, but the sustenance of the homestead depended upon their labour - the Sesotho word used to address women, *mosali*, meaning 'the one who remains at home' (Ellenberger, 1992: 294). They were responsible for field agriculture, as well as for collecting water for the family, grinding meal, cooking, raising the children, and making pottery and other craft. Women represented (to their husbands) the provision of social security, especially in their old age, as men only acquire land upon marriage. The reasonable social goal was to encourage the formation of families in order to produce children and strengthen society at large. Once land had been allocated, its use was only retained as long as it remained under cultivation, or the chief had the right to reallocate the land to someone else after two years.

WOMEN

MEN

and children



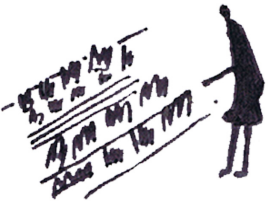
CULTURAL BARRIER



STORY TELLING
grandmothers and older women taught children from a young age through idioms, riddles and ways of speech



DEDICATED TO CHIEF
men were required to do a certain amount of work for the chief, as well as act as advisors



AGRICULTURE
women were not allowed to own animals, except pigs and chickens



CATTLE
only men were allowed to own or herd cattle, and were required to shepherd the chief's livestock as well



WEAVING
baskets for grain, skirts and mats for sitting on or providing shade were weaved from thrushes and grass



ANIMAL SKINS
men softened animal skins for the chief and for their own incentives, sometimes making leather products



ARCHITECTURE
women were in charge of the household and plastering and annually re-plastering the walls and floors of the home



ARCHITECTURE
men were involved in the building process, especially when stone as building material became more common

exploratory research

THE EFFECT OF MIGRANT LABOUR

1.1.2 the effect of migrant labour

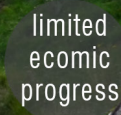
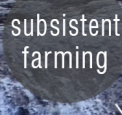
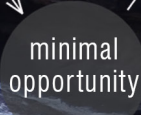
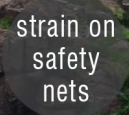
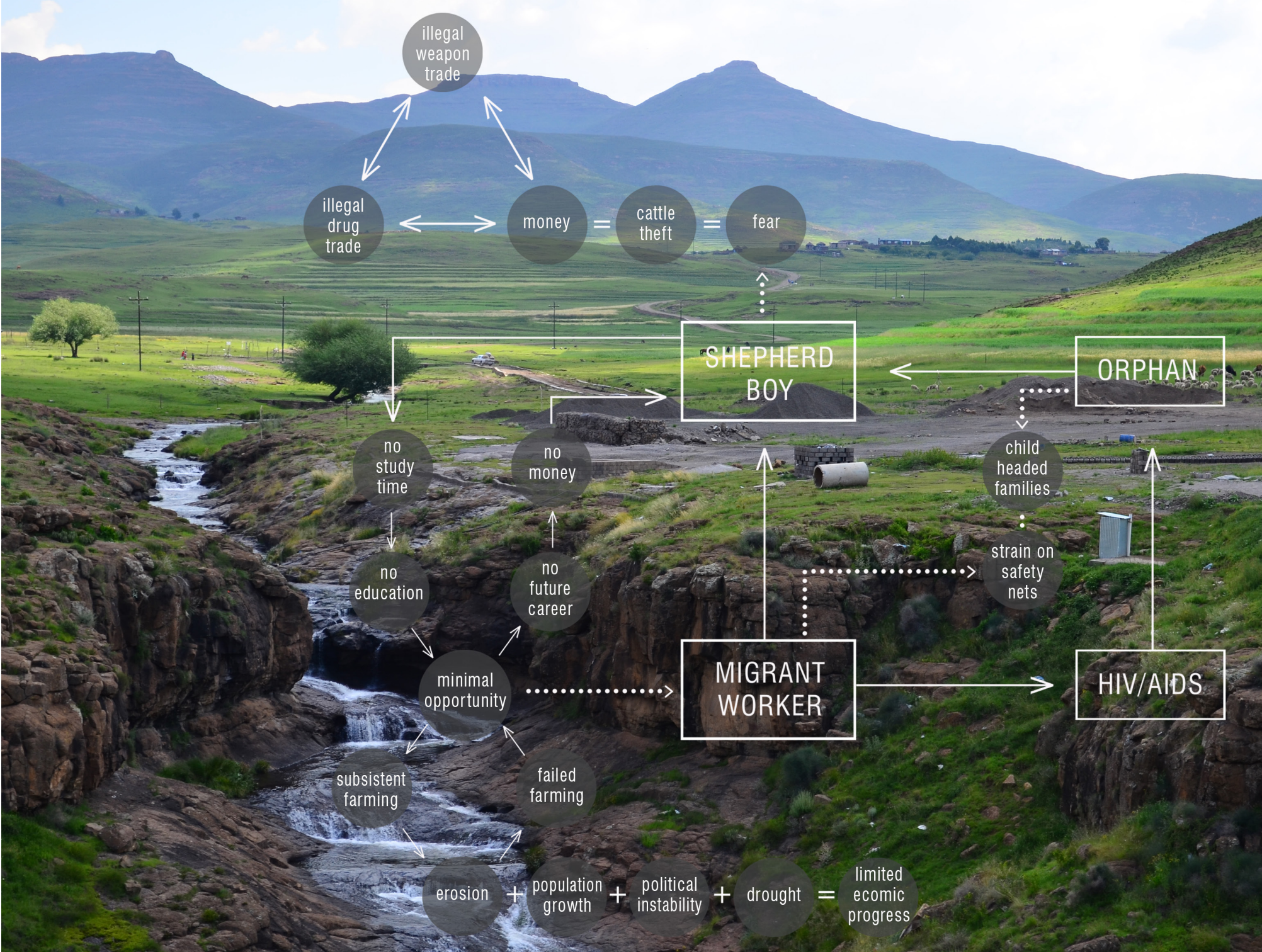
This complex societal system was severely influenced by the Basotho responses to migrant labour opportunities - the 20th century seeing half of the male population of Lesotho working on a temporary basis in South Africa. More than 150 000 Basotho left Lesotho between 1936 and 1957 (Gill, 1993: 178), predominantly to work on the gold mines, but also other economic sectors. The South African wage laws made Lesotho a preferred source of migrant labour, which changed from short periods of time, in order to gain essential items, to a way of life. More and more families were forced by inadequate agricultural resources and affected relations between chiefs and their subjects to depend on a regular income from the mines (Eldredge, 1993: 184).

An ecological disaster during the 1890s wreaked enormous havoc on agricultural production and further limited economic choices (Eldredge, 1993: 188). Poorer families succumbed to the economic disasters sooner and the number of passes granted to Basotho going abroad to seek work and alternative sources of income rose steadily in spite of declining wages (Eldredge, 1993: 188). During the later colonial period (1913-1960) women also contributed to the migration in search of a better life, in spite of attempts by the colonial authorities to discourage their flight from the "healthier social climate of rural Lesotho" to the urban "dens of iniquity" (Gill, 1993: 178).

The introduction of migrant workers from Lesotho has had a tremendous impact on the traditional community and family structure. For the majority of women who remained in Lesotho, the change in the nature and duration of migrant labour increasingly left

them to manage their households alone. Monetary resources from South Africa did not arrive regularly and the stability and security provided by extended family networks intrinsic to the African way of life, also started to deteriorate as the rate of desertion and the number of illegitimate children rose (Gill, 1993: 179).

Migrant labourers relied upon their wives to keep the land under cultivation, the household generally producing its own consumption during the 19th century (Eldredge, 1993: 95). Economic changes, poor ground conditions and a shift in traditional structures have, however, made it impossible for women to sustain the economic viability of their households through agriculture, even though it remains essential for the family to work the land to avoid becoming landless (Eldredge, 1993: 193). For women in Ha Lesala and other rural settings, this reality and pressing responsibility of being custodian to all that her husband owns, including land, remain.



exploratory research

SCHOOLING FOR THE CHILDREN OF LESOTHO

1.1.3 schooling for the nation's children

After Lesotho gained independence from Britain (1966), tremendous pressure was placed upon the government to meet the rising expectations of the nation. Because a growing number of families lacked adequate fields and animals to sustain themselves, and the family structure had been altered because of economic hardships, it was imperative that children should receive an education which, it was hoped, would guarantee them a brighter future.

During this period Lesotho enjoyed one of the highest literacy rates in Africa, with most children attending school for three or four years, which was enough to gain basic skills in reading, writing and numeracy. Higher primary and secondary schools grew quickly in number, however, and overcrowding in lower primary schools became endemic (Gill, 1993: 222). School also served as a means of parenting a growing number of children who had no responsibilities to perform at home like herding, field agriculture or caring for younger siblings (Gill. 1993: 222).

More equality of opportunity for the nation's children existed, but the lack of an adequate number of trained teachers, together with the introduction of the system of automatic promotion in primary schools, overcrowding and lack of equipment meant that the standard of education varied greatly from school to school and often declined. Lesotho's education system resembled a pyramid in which only a small percentage of those who began the first year of primary school continued on to complete high school and fewer still received passes which qualified them to enter the university, the teacher training colleges, or institutions devoted to technical,

agricultural or commercial vocations (Gill. 1993: 222). Parents also complained that while the modern teacher imparted knowledge, there was a lack of commitment to the child as an individual, who must be shaped and moulded into a responsible adult (Gill. 1993: 225).

A noteworthy feature of Lesotho's educational system was that boys were expected from an early age to work as shepherds in order to fill the gap created by older men migrating to South Africa or had to enter the mines themselves, and thus Lesotho became probably the only country in Africa which educated more women than men. (Gill. 1993: 225).

fig. 03

Abandoned pre-school on the periphery of Semonkong.

fig. 04

Current pre-school within the town of Semonkong, next to the airstrip. There is no existing pre-school in the village of Ha Lesala.

fig. 05

Secondary- and High School \pm 5 km from the bridge to Semonkong and Ha Lesala. The school is part of the training for self-reliance project run by Iain Louw from 1982-1987.

| 03



| 04



| 05



1.2 problem statements relating to typology

Lesotho is the homeland of the Basotho-Sotho-Tswana peoples who originally lived in small chiefdoms scattered around the Highveld of the present-day Free State - trading, cattle and cultivation being the economic mainstays of the kingdom. Environmental degradation, loss of prosperity and social change have thrown rural areas into a poverty cycle that is in dire need of external intervention focussed on partnering with the community in creating opportunities through education and the providing of basic needs.

1.2.1 towards a problem statement

client | The Lesotho Mission is a non-profit organisation established in 1998, to assist local communities in empowering themselves without exclusively relying on external aid, and has a local branch in the town of Semonkong, Lesotho, ± 1.55 km from the site and Lesala Shepherd School. The Lesotho Mission has collaborated with Sentebale, a charity organization founded in 2006 by Prince Harry of the British Royal Family and Prince Seeiso of the Lesotho Royal Family, and Julius Majoro, an ex-shepherd turned teacher, in running the Lesala Night School for Shepherds. Sentebale supports five other herd boys' schools in Lesotho. In addition, both organisations also aim to provide life-skills and psychosocial support to children and families affected by the harsh socio-economic circumstances of rural Lesotho. In addition to teaching four days a week and visiting shepherds at their make-shift homes, Julius Majoro is also actively involved in community upliftment by partnering with local programmes of the Lesotho Mission.

user | The poverty cycle introduces dual users with the same underlying socio-economic problems, but differing social standing and lifestyle. Statistics show that one third of the country's young men work full-time in tending cattle and livestock. Becoming a shepherd is a cultural tradition that is centuries old and synonymous with carrying burdensome challenges and expectations, both physical and spiritual. These young men live a nomadic lifestyle in the bleak conditions of the rural Lesotho mountain side (CNN, 2013: video). In previous years to have been called a shepherd was an insult, calling up visions of social abandonment.

Sotho women have traditionally taken on the role of caretaker in and around the house, with no opportunity for education. The absence of men and husbands who work as migrants in South Africa has put extra strain on the role of women as sole provider. Women are obligated to stay in Lesotho to tend to their land, household and cattle. Lesotho communities are overwhelmed by the demands of supporting orphans and vulnerable children to the point where culture, traditions, and society at large are showing early warning signs of irreversible strain.

1.2.2 aim

The typological exploration aims to facilitate a process of visual dialogue to transcend boundaries through architecture as intermediary. This task addresses the physical and internal boundaries introduced by the various 'bodies' of site, community and the individual, as well as the nature of their relationship to one another, trying to identify a hybrid model that is able to address the needs of differing users that have to be aided through the same intervention. It investigates typologies relationship to both history of architecture, architectural ideas, and the human aspect of association, aiming to provide a sense of continuity, connectedness or rootedness.

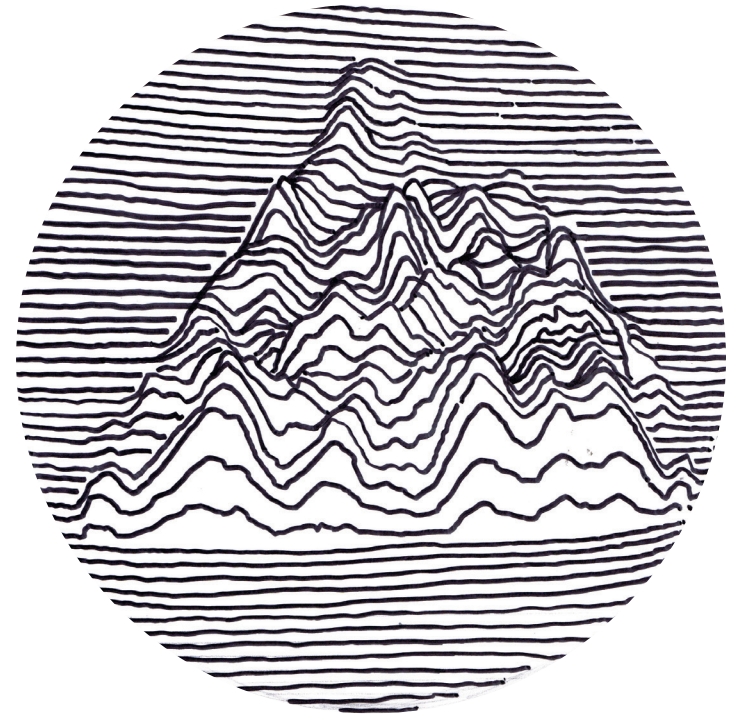
1.3 problem statements relating to topology

The small nation of Lesotho is an intriguing anomaly in a sea of modernity; a country completely landlocked by South Africa, and the only country in the world where the entire territory is more than 1,000 metres above sea level. Clearly delimited natural spaces make up this romantic and classical landscape, as classified by Norberg-Schultz, which is notorious for its changeable weather all year round.

1.3.1 towards a problem statement

It is meaningless to imagine any event without reference to a locality. The topography of a landscape is a comprehensive phenomenon that encompasses much more than physical coordinates or abstract location. In general some phenomena form an 'environment' to other phenomena. Norberg-Schultz (1979: 6) defines the concrete term for environment as place.

Place is a totality made up of concrete things having material substance, shape, texture, and colour. Together these things determine an 'environmental character', which is the essence of place. A place is therefore a qualitative, 'total' phenomenon, which cannot be reduced to any of its properties without losing its concrete nature (Norberg-Schultz, 1979: 6, 8). Lesotho is such a place; a place that needs to be understood beyond the delineation of earth and sky or the interaction there two. The landscape in which the structure is built must be reflected in the building itself.



1.3.2 aim

The aim is to investigate the topography of the natural Lesotho landscape by hand of its physical and abstract parameters, as well as principles and attributes of Sotho vernacular architecture, in order to find an applicable design approach and construction resolution.

1.4 problem statements relating to morphology

1.4.1 towards a problem statement

The morphological exploration of this dissertation is grounded on the investigation of creating meaningful place within the natural landscape of Lesotho, and will investigate how buildings carry meaning. The type of intervention is heavily influenced by the natural environment, as well as cultural and social realities that influence the way the Basotho relate to each other and their classical environment.

1.4.2 aim

This practical investigation is aimed at identifying design considerations, different educational typologies and spatial organisation principles for rural community living that will result in a competent design synthesis. The narrative of Ubuntu as formgiving factor for community living is explored, as well as the kraal as gathering agent, requiring the assimilation, transformation and mediation of distinctive architectural typologies to test and extend new and established ideas.

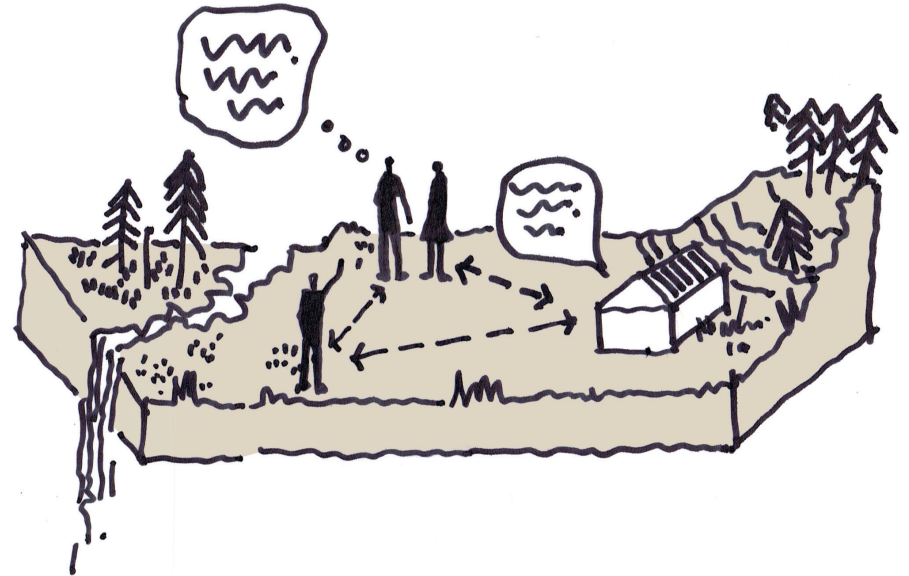


fig. 06

Creating meaningful place within the natural landscape, able of carrying meaning that can be interpreted by the users.

1.5

problem statements relating to the logic of tectonics

1.5.1 towards a problem statement

This dissertation, in regards to the logic of tectonics, is grounded on the investigation of how clever design and craftsmanship can possibly add to the quality of life. The type of intervention draws heavily on vernacular influences, and their cultural, social and environmental associations. In order to push the envelope of design, various local materials have to be studied and a significant understanding of the natural climatic forces has to be gained; as well as how the part relates to the whole when combined within a cohesive structural system. The concept of community and gathering space as part of the Lesotho tradition of dwelling be studied specifically with regards to how this is influenced by stereotomic and tectonic elements within the vernacular.

1.5.2 aim

The aim of this project is to realistically understand the typical building constraints pertaining to materiality and location, identifying which are valid and which are to be challenged, and to then push the boundaries by way of form, design, and structural reinforcement. The desired end result would be a schematic design for a rural community village and shepherd school, which challenges the typical Lesotho building techniques and western institutional typology, exploring other possibilities, while still staying true to important aspects of vernacular Lesotho architecture.

fig. 07

How parts of a building relates to the whole when combined within a cohesive structural system that is able to communicate as part and as whole.

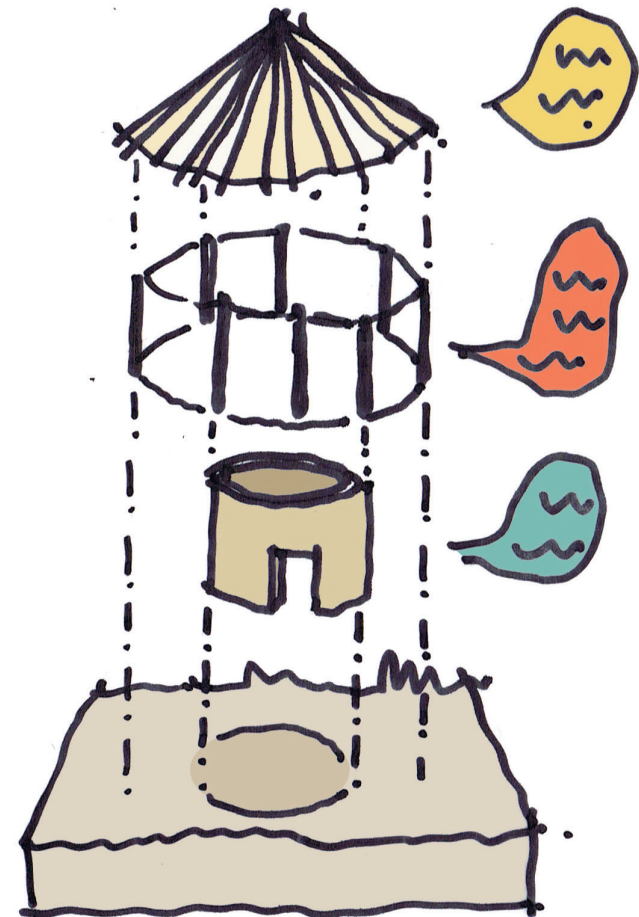




fig. **08**

Men usually wear the blanket as cape, while women wrap it around their bodies and fasten it at the shoulder or waist.

[Pinchetti & Tettamanti, 2013: online]

PART 02

exploration and grounding

This chapter further investigates the what, where, and how of the project as a means to gather knowledge to be analysed and applied. It provides the necessary background information for site understanding, its location and its current state. It gives an understanding of the cultural influences and the theoretical grounding of the morphological approach. The user and client will be analysed in accordance with the social and economic problems that they face as well as the lifestyle that these parameters dictate. The site is analysed in a quantitative manner, a full perspective of all the measurable aspects, as well as a cognitive manner, to understand the site in terms of experience and its surroundings. It is also followed by an investigation of the conventional building types of the area, as well as an analysis of traditional spatial organisations, which serves as the building analysis for the dissertation.

2.1 conceptual development

TOUCHSTONE

The touchstone is an abstract representation of the initial dissertation objectives and yardstick against which future thoughts and motifs can be measured. It is also a conceptual generator.

The essence of the touchstone lies in bridging the gap between two marginalised groups, which have been relegated to the outer edges of society, by introducing an external (architectural) intervention. Through the process of reintegration tension is created that can be harnessed to play a vital role in the success of the new relations established through change.

Two sheets of timber, each representing a marginalised entity trapped within the poverty cycle that is synonymous with rural Lesotho, were placed on a framed structure and held apart by elastic bands. The two marginalised entities are those of the shepherd boy, as well as of the vulnerable women and children. The elastic bands represent various socio-economic problems that are jointly responsible for creating this void in society.

The external weight that is added to the equation overcomes the strength of the tensioned elastic bands and the two sheets move towards each other – heightening the tension in the elastic. When the weight is removed, the two sheets move back in the direction of their initial position. The effect of the added weight is only effective when the elastic bands are introduced into a pulley system that multiplies the effect and heightens the tension. This speaks of a process driven intervention, where the effect of one element has to be multiplied by introducing another element, whilst action in both elements are initiated by an external catalyst.



fig. 09 The touchstone's timber sheets are pulled towards each other and bridges the 'cultural divide'.

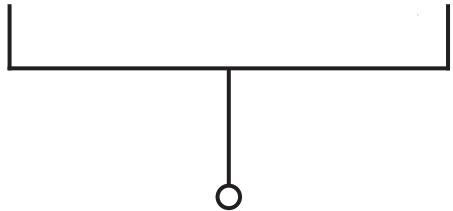
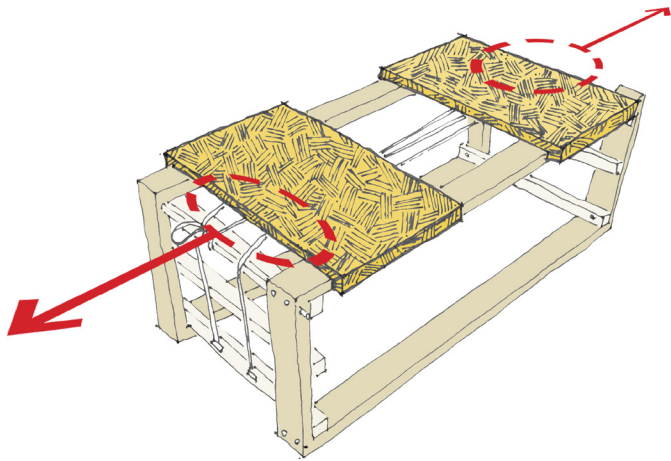


fig. **10** Two sheets of timber are kept apart by elastic bands representing the poverty cycle prevalent in Lesotho.

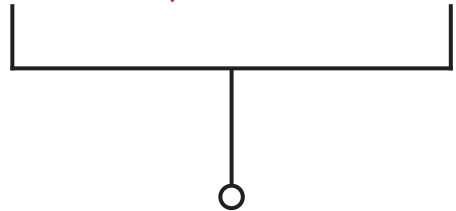
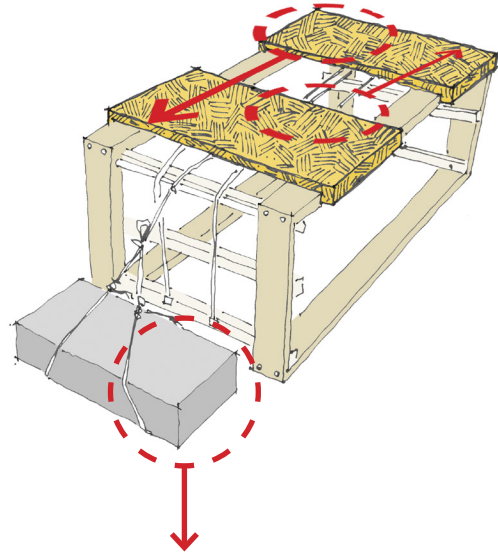


fig. **11** A weight is added as external agent to the initial system. The pieces of timber respectively represent the shepherd and community.

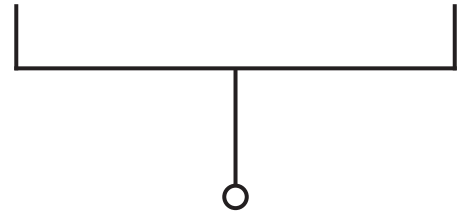
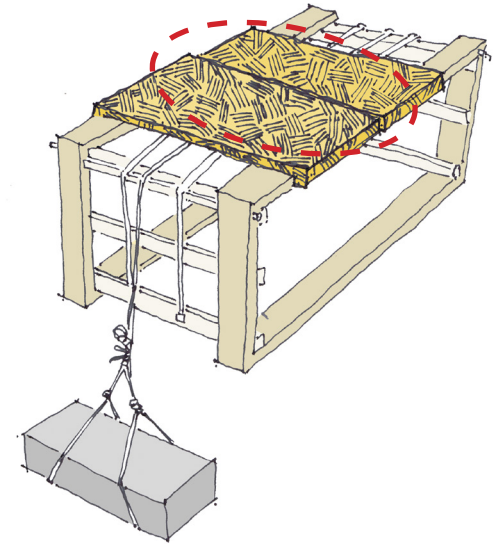


fig. **12** The effect of the weight on the system overcomes the strength of the elastic bands and bridges the gap separating the two groups.

conceptual development

CONCEPTS

From the touchstone a set of concepts was generated as a means of further conceptual investigation and to capture the essence of the project. The concepts are not formalistically driven, but are architecturally related and spatially orientated; relating to the claiming of space and how this dynamic informs and encourages use and interaction. The concepts speak of enclosure and the edge condition, specifically tension produced by the edge condition, focussing on the natural tension that is inherent of the edge condition, as well as a forced tension created by specific imposed edges.

enclosure | One of the basic properties of man-made places is a concentration of space and enclosure. Buildings enclose space in ways which either facilitate or inhibit a particular range of activities and filter out the external environment; possibly with openings in the envelope that relate to the outside. An enclosed space denotes inside form outside and 'gathers' that which is known as a contained space or as a hollow object (Norberg-Schultz in Nessbit, 1996: 418). This containment can either be experienced as a sense of enclosure, or as physical enclosure, meaning that it can be occupied by the body or the mind. Enclosure is a symbol of congregation, indicating the position of the body in space: I am in it. I am on it. I am below it. I am outside it.

When an object of enclosure is placed within the landscape, it not only defines the space within it, but also the space around it. The surrounding space that is defined by the object can in some instances be stretched to allow more interaction and a bigger part of the landscape to be inhabitable. The extent to which the space can be extended will be determined by the internal function of the 'object of enclosure',

as well as multiple external factors. On the first page of his book, *Edges and the In-between*, Edward Casey (2008: 1) describes navigating between the edges of a canvas whilst painting a landscape in Stonington, Maine. He questions the meaning of being between and in-between the edges of the canvas. The edges are described as serving more as frames than as limits; not necessarily denoting where the activity "must stop", but rather being a provisional structure that makes something else possible. In this capacity, the edges of a painting act not to close off but to open up: to give a special energy that would otherwise be lacking, creating interplay of created and defined spaces relating to one another.

Enclosure can be described as an artefact of possession, occupied, materialisation, evanescence and the interplay between public and private or the natural versus the built environment. Artefacts of possession can either be interior or exterior rooms, as Alvaar Alto (cited in Porter, 2004: 68) muses: "For the same reason as I previously wished to turn your garden into an interior, I now wish to make your hall into an 'open air' space." 'Containership' describes when there is no breathing space left between that which is held in place and what contains it — when no margin of interaction is allowed (Casey, 2008: 3).

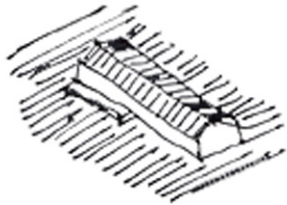


fig. **13**
When an object of enclosure is placed within the landscape, it not only defines the space within, but also the space around it.

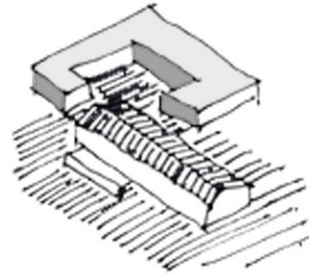


fig. **14**
By placing other objects or boundaries in the landscape, the defined space can be 'captured', enclosed or extended.

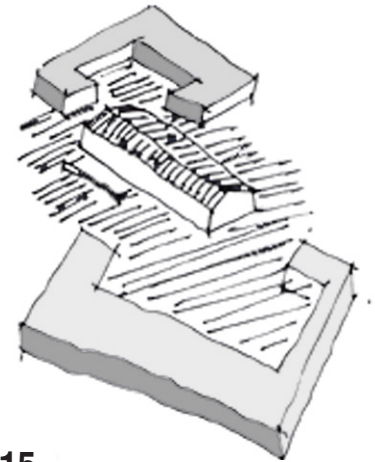


fig. **15**
A spatial interplay is created where these defined spaces overlap.



fig. **16**
sense on enclosure



fig. **17**
physical enclosure



fig. **18**
containment

conceptual development

CONCEPTS

edge condition | This margin of interaction, as described by Casey, is found in the zone or space immediately adjacent to the edge, whether inside or out, and has been identified as the preferred location of interaction or occupation (Porter, 2004: 66). When more than one edge and its denoted zone overlap, tension is created in this margin, heightening interaction and often causing conflict. Derrida supports this notion, when in “Parergon” he boldly declares that ‘everything will flourish at the edge’ (Derrida cited in Casey, 2008: 1).

Edges can be delineated to that of either mental space or physical space. The edges of mental space are the implicit and unspoken margins of mentation, where the intuitively explicit mind ‘surrenders place to something that is pre-conscious in status’ (Casey, 2008: 1). *Edges of physical space* are directly in contrast with mental edges, which are prevalently temporal. The phrase “spatial edges” may be confusing because of conceptions that space as infinite; it is therefore suggested that “space” be substituted by “place” and that one rather speaks of “placial edges.” Such edges determine within which confines ‘it’ is happening (Casey, 2008: 2).

In regards to both mental and physical edges, *margins* are at stake. We therefore find ourselves not only between two or more physical edges, but between mental and visual (Casey, 2008: 2). Edges and that which happens in-between are active companies for one another – they *require* each other. Without edges there is no in-between, as the domain in-between is undermined and is rendered formless. Without an in-between, edges would not be able to distinguish one object or event from another (Casey, 2008: 6). Edges supply bounds to the in-between; *boundaries* (porous edges) that take in as well as give out.

When edges are projected forward forcefully or imposed on a site, it interrupts already set up spatial, cultural and social boundaries. These boundaries are then morphed according to the forceful influence, and may have a reciprocally forceful response. A forced tension is created where these projected edges meet, while at the same time creating inhabitable spaces in-between these forced connections. This causes friction, intensification and interaction.

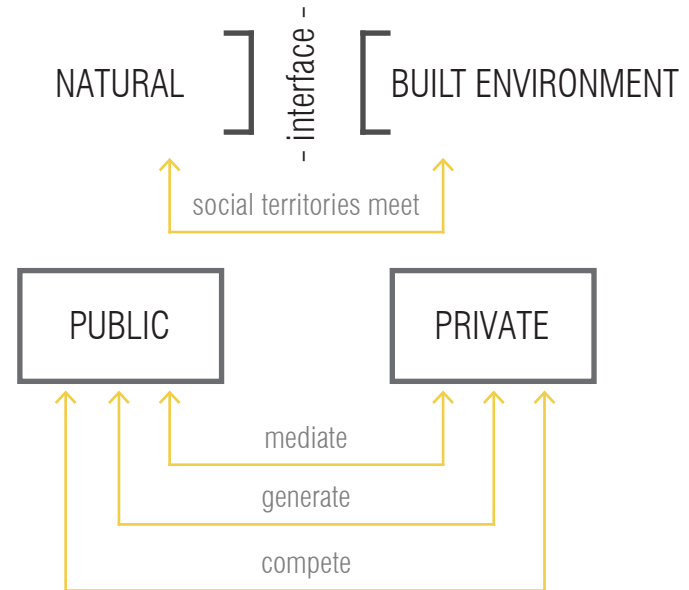


fig. 19

The edge condition is the interface where mediation takes place between the social territories of both the built and natural environment and the public and private realm.

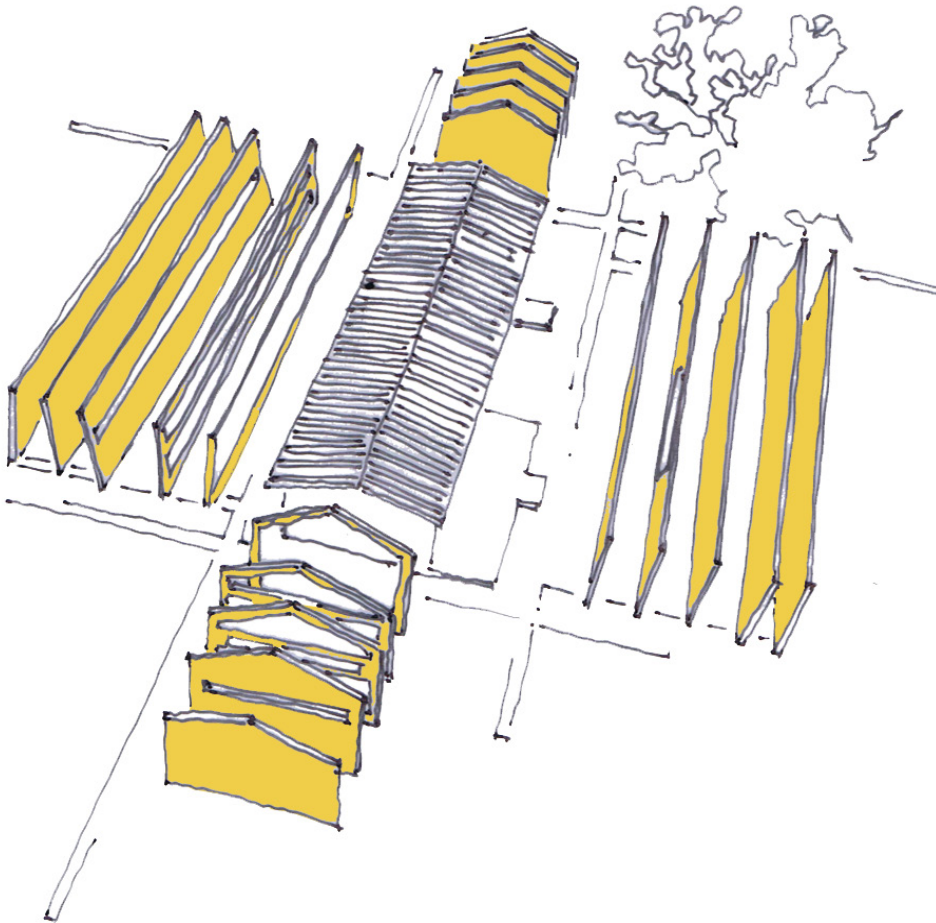


fig. 20
The edges/boundaries of a building is projected in all directions as the building provides a space to be inhabited around it.

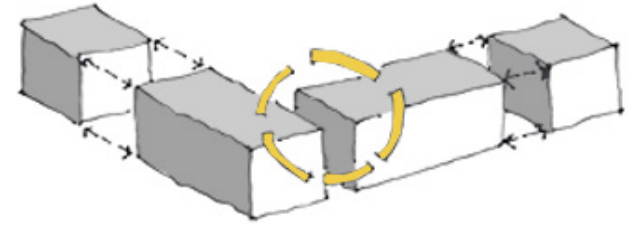


fig. 21
When two separate entities are forcefully projected towards each other, tension will be created at the meeting point.

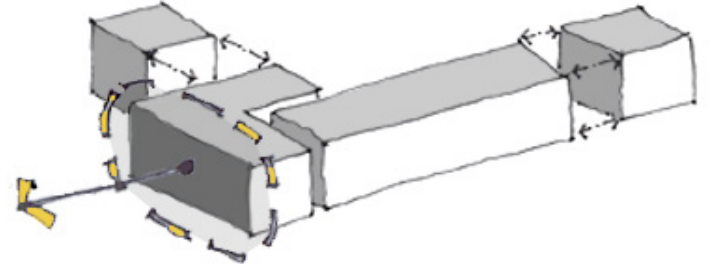


fig. 22
These entities are bound to influence each other in abstract and/or physical ways.

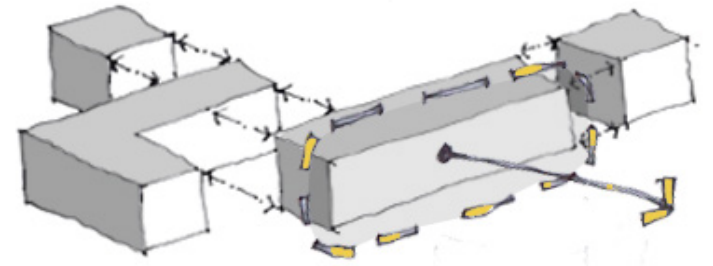


fig. 23
Additional spaces are also created in between the projected edges and the places where they meet.

conceptual development

CONCEPTUAL FRAMEWORK



boundary

According to Norberg-Schultz (1979: 11) the structure of place ought to be described in terms of 'landscape' and 'settlement', and analysed by means of 'space' and 'character'. 'Space' denotes the three-dimensional organization of the elements which make up a place, and 'character' denotes the general 'atmosphere' which is the comprehensive property of any place. Similar spatial organizations can have very different characters according to the concrete treatment of the space-defining elements (the boundary).

threshold

A threshold separates the inside from the outside, representing the 'rift' between 'otherness' and manifest meaning. In the threshold thus, the problem of dwelling comes to the fore, according to Norberg-Schultz (1979: 9). Rahul Mehrota (UIA, 2014: dialogue) describes architecture as a deadly instrument in hardening the boundaries between the communities in society; the communities that are supposed to be served by architects'. "It hardens thresholds very easily..." The edge refers to the threshold, as one enters or leaves a space, with the borderline between space and place.

inside-outside

The outside-inside relation which is a primary aspect of concrete space implies that spaces possess a varying degree of extension and enclosure. Whereas landscapes are distinguished by a varied, but basic continuous extension, settlements are enclosed entities (Norberg-Schultz, Nesbitt, 1996: 419).

dialogue

Dialogue is basically the exchange of information which implies a certain relationship between the transmitter and the receiver. It is an interaction between people and things. This contributes to the overall 'narrative' of a design. It further relates to engagement, interface and mediation.

mediate

Mediation is derived from the adjective 'median' which means to be in-between or in the middle. It speaks of intervening between conflicting ideas and principles and is associated with the edge condition and reciprocity.

+ precedent study | claiming space |

JUGAAD SHADE CANOPY, SANJEEV SHANKAR, NEW DEHLI, 2008

The Jugaad Shade Canopy is a suspended shade canopy fabricated from discarded cooking oil cans for a public arts festival in India. The final installation was spread over an area of 696 square meters and consisted of 692 discarded oil cans and 945 discarded oil can covers. The skins are suspended over pulleys using 12 mm and 6 mm steel cables which are fastened into the ground. The structure is a hybrid tensile and honeycomb structure, where the oil cans become both surface and structure.

The visual weight and the stability of the canopy is provided by its surface colour and lights during the evening, the pattern created and the texture of the flattened cans. The shade canopy is an overhead roof plane in the landscape that spans and shelters the interior space. A three-dimensional volume is defined between the roof plane and the base plane of ground that serves as the base for the installations form. The wall plane is the only visual field or vertical orientation that shapes and encloses the space within. This installation highlights the important role of the plane in architectural vocabulary.

fig. 24

The canopy being used during the day as shade and gathering device. [Shankar, 2008: online]



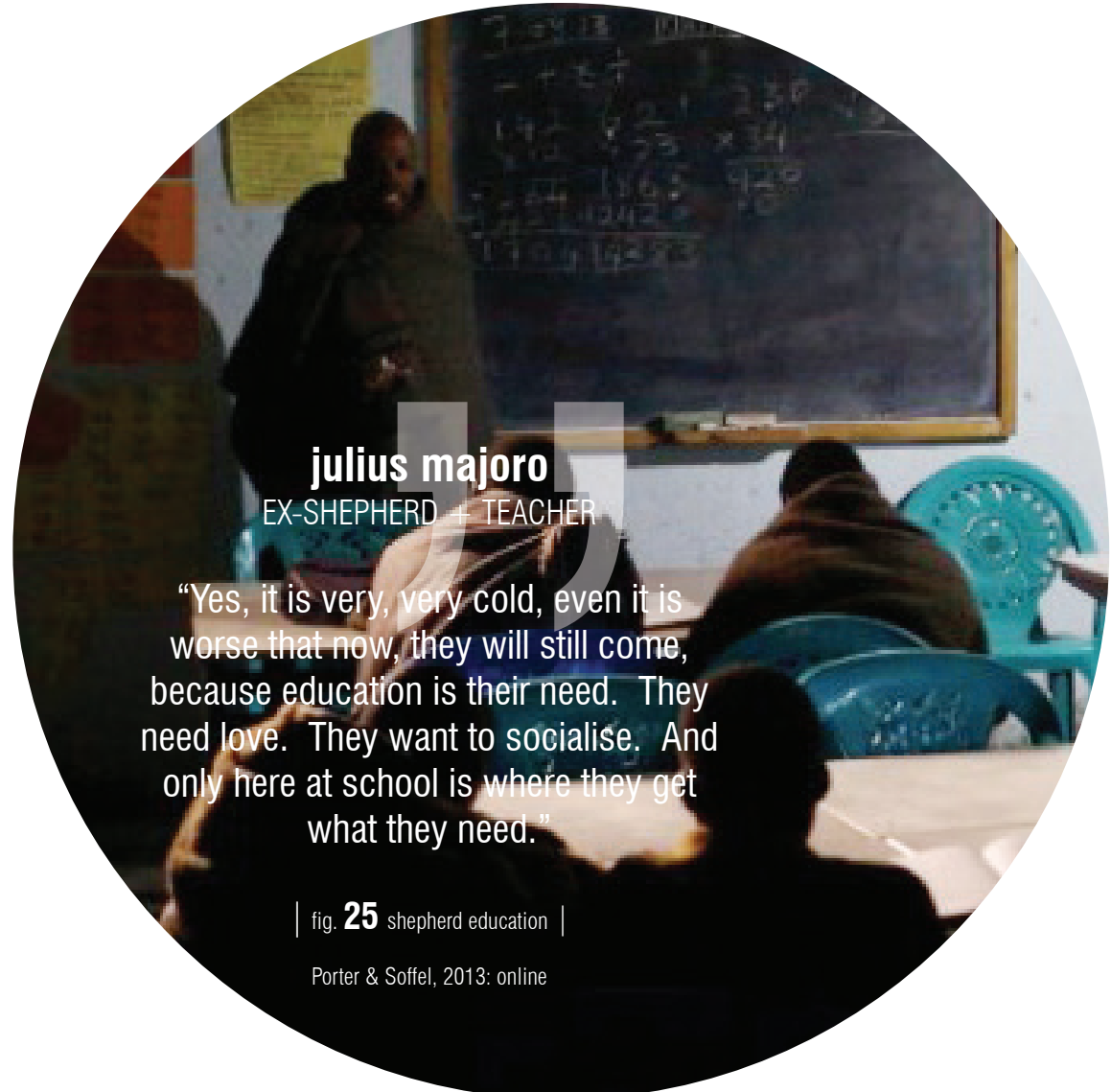
2.2 typology

CLIENT

The client and user are introduced and investigated as a means of informing the architectural intervention. An accommodation list sets out the research document's requirements and guides the reader with regards to what practical outcomes are expected by the client and user.

2.2.1 client

Both the Lesotho Mission and Sentebale are non-profit organisations that aim to provide life-skills and psychosocial support to children and families affected by the harsh socio-economic circumstances. In addition, these independent organisations have collaborated with and work in close connection with Julius Majoro, an ex-shepherd turned teacher, in running the local Lesala Night School for Shepherds. Each organisation is involved at a different social, economic and topographic level, widening the impact of available aid by moving from national and international circles to that of the direct community.



julius majoro

EX-SHEPHERD + TEACHER

“Yes, it is very, very cold, even it is worse that now, they will still come, because education is their need. They need love. They want to socialise. And only here at school is where they get what they need.”

| fig. 25 shepherd education |

Porter & Soffel, 2013: online



SENTEBALE

Sentebale is the international wing of the mentioned collaboration, aiding the most vulnerable children in Lesotho by working with local grassroots organisation, aiming to help increase life-expectancy and reduce the spread of HIV through education and child-to-child communication (Sentebale, 2015: online).

Sentebale currently supports five herd-boy schools in Lesotho, of which the Lesala Night School is one. They work in partnership with government ministries and local organisations, like Lesotho Mission, to establish and run night schools for shepherds in rural locations. These schools aim to provide 800 herd-boys with a basic education, knowledge of HIV prevention and sexual health, access to voluntary counselling and testing for HIV, first-aid training and livelihood training that can range from brick-making, beekeeping and bead work (Sentebale, 2015: online).



LESOTHO MISSION

Ferdie Visser (president of Lesotho Missions) and his wife Lulu (treasurer) are currently located in the village of Semonkong, where they run a local branch of the organisation. This branch of the organisation is involved hands-on in the Lesala Shepherd School and numerous upliftment projects in the many villages surrounding the town of Semonkong. The organisation support Julius Majoro and other individuals in the community of Ha Lesala through salaries and providing various resources for them the impact in the community. Involvement in the proposed social and architectural intervention, as well as communications with community accomplices like Julius Majoro, by external contributors will be organised through this specific branch of Lesotho Missions. The Visser's also acted as local researchers, source of information and a mouth piece of the community where direct contact was limited.



JULIUS MAJORO

Julius Majoro, one of the two current teachers at the Lesala Shepherd School, works in conjunction with both of these organisations. He started herding when he was twelve years old in order to support his family (mother and seven siblings) at the time. He is now a local teacher determined to keep young shepherds educated and safe. Around 60 herd boys in the Semonkong and Pulane district attend the Lesala Night School each evening, receiving a warm meal after classes in English, Mathematics and Sesotho. Julius Majoro sees his role as teacher, encourager and counsellor (Majoro, 2015: interview). He also assists in local ministry facilitated through the Lesotho Ministry, which impacts beyond only shepherd boys.

typology

USER

2.2.2 user

A dualism is experienced in regards to the user, as one entity pertains to shepherds and the other to the community – both influenced and struggling with the above mentioned reality. In the light of the 2014 International UIA Conference held in Durban, title 'Otherwhere', it has been deduced that socially orientated research should not be conducted from a distance, but should engage relationally with the community in question. This is a means of involving the community not only in the design process, but can also be seen as a means to generate ownership and responsibility, key aspects in the longevity and social sustainability of rural projects. The process can also be seen as insurance against ignorance of many informative aspects. Community members who that are involved in the building process will also gain valuable knowledge and skills that they can 'sell' again.

The Lesotho Mission and Julius Majoro, being closely involved in the shepherds that attend the school and the Ha Lesala community, prohibited information gathering directly from the shepherds to a certain extent. This was in the interest of the community, as expectations did not want to be formed that could not be met realistically. The Sotho are a very optimistic nation (Visser: personal communication) and one had to refrain from possibly inculcating disappointment. For this reason Julius Majoro and the Vissers took on the role of local researchers and informants, as they know the people and the culture and work with them daily. Julius Majoro, being a former shepherd and Sotho himself, had a deep insight into the project, and the Vissers being formerly from South Africa and of a Western mind-set made it more relatable to a researcher of similar background. The user is discussed in term of different social, economic, and cultural aspects, as well as the inter-relation and separation between the differing users.

the life of a shepherd | About a third of Lesotho's young men are sent away annually to be herd-boys, some as young as ten years old – their meagre income is often the only means of support for the whole family. There are cattle posts scattered throughout the landscape where shepherds and their animals stay during the night; either short or long term. This harsh socio-economic reality and tradition of life in Lesotho offers no prospect of overcoming the cycle of poverty or opportunities beyond the tending of cattle, denying these boys the freedom of their youth. The nomadic lifestyle sees boys sent to the remotest hill countries, where work is not only mentally and physically demanding, but also lonely. Julius Majoro says a shepherd alone in the mountains does not grow spiritually or emotionally, attributes that are part of life as they make us well complete (CNN, 2013: video). Shepherds are tasked to protect and care for the animals, but the responsibility is heavy when the cattle wander at night, jackals attack or stock theft occurs to finance the illegal drug and weaponry trade, a main problem.

The months, in extreme cases years, that these boys spend away from a stable support system renders them unable to attend school or gain an education. Winters in Lesotho are long and very cold; during this time shepherds in the area let thier animals graze around Semonkong. During the summer months (January to April) they move to higher ground for summer pastures after local chiefs hold a 'pitso' (community meeting) to decide when they are to depart. A donkey carries their maize meal, cooking pot and washing bowl. Some boys ride horses, but most walk for several days - others have dogs as protection against cattle thieves. The first frost is the sign to return to lower ground for winter, but this can be over ruled by the chiefs.

The current Lesala Night School is predominantly only open in winter (May to December), however, during the summer months when the shepherds are away, school staff try to visit them and provide reading materials, clothes and medicines (Baanen, 2015: personal communication). The school becomes the equivalent of the shepherd's family, says Majoro (2015: personal communication). Attending school brings the shepherds together, relieves the loneliness and gives them opportunities to share ideas, socialise and even sing and dance together. It has also improved their behaviour, as noted by the local chief, because the process of learning has relieved the boredom and sense of hopelessness that had previously resulted in the shepherds fighting and stealing cattle. They have greater confidence and self-esteem and are no longer looked down upon by others in Semonkong (Baanen, 2015: personal communication). Attendance is poor during the winter due to the cold, but if shepherds have enough to protect against the cold they come, as the boys realise that an education is important for their future. Many walk up to two hours, often in freezing temperatures, to reach the school.

Students start by learning basic reading, writing and counting skills; most cannot count their animals or money when they join the school. They also learn important life skills such as respect for others and the environment. Shepherds are provided with HIV/AIDS advice and, where possible, free HIV testing as Semonkong has a 1-in-3 infection rate.

fig. 26
[Porter & Soffel, 2013: online]



IN LESOTHO AROUND A
- THIRD -
OF ALL
school-age boys
WORK AS HERD BOYS

there are other shepherd
schools in Lesotho;
one school in the south
of the country has
students aged
8 to 62
years.

during the warmer summer months
JANUARY to APRIL
the shepherds move to higher ground and
may only return with the first frost of winter.

30-62
shepherds attend
the school regular-
ly after securing
their cattle at the
holding pen
-
lessons include
english,
sesotho and maths
from **MONDAY** to
THURSDAY, 7pm
to **10pm** after
which students
receive a warm
meal.



julius majoro
shepherd turned teacher

“For previous years, to be called a shepherd was something very, very, very, very bad. The word shepherd sounds like an insult to the shepherd. They have been abandoned by society. By our nation, by everybody. Nobody cares for them. Now what I always try to tell the shepherds, that for being a shepherd doesn’t mean something bad, but it means that you are doing something special. And I always try by all means to encourage them to proceed with that good work they are doing.

By that time [that I was a shepherd], I was already employed by the farmers, but he ill-treated me worse than his dog. There was a time when I used to stay there and he intended to give his dog food and did not give me anything to eat. Sometimes I used to help myself with that dog’s food, because I had nothing to eat and at home we had nothing to eat.”

fig. 27
[Porter & Soffel, 2013: online]



bokang mabuta
shepherd, 14 years old

“I wake up at 7 in the morning. This is the time I take a bath. I boil some water and take a bath. I clean my surroundings and prepare for the day ahead. Then I take the cattle that I herd to the grazing field. The most challenging task is going to the field. That is what I find to be the most difficult. The work in the plantation is very difficult because we plough with cows and we sow the seed. That is what I find difficult.”

fig. 28
[Porter & Soffel, 2013: online]

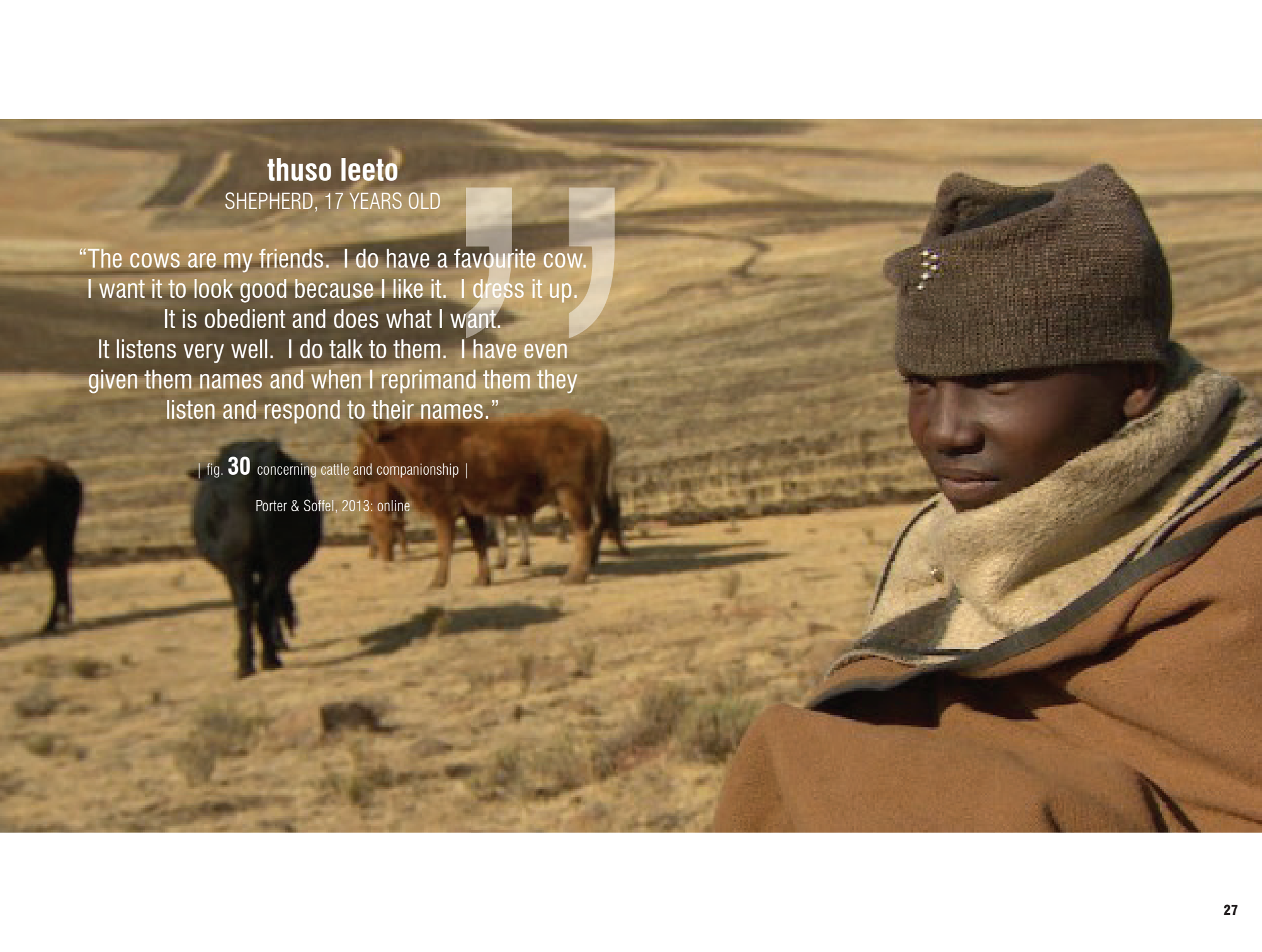


kabelo bakone
shepherd, 20 years old

“I used to be very lonely, because I was just staying with the animals and also not feeling free; during the day and also during the night time. Because I was supposed to care for the animals and protect them during night time, which wasn’t easy for me. Because I was still young and I knew that most of the thieves have guns. They might come anytime they wish and kill me. That was my fear.

Any bad weather affects us, because we are supposed to be out no matter how the weather is. We used to have snow here. It doesn’t matter how deep the snow is, we should take out the animals and let them graze. And we should be with them the whole day, and come back even in time to put them in the pen. We need to care for them, even if the weather is hostile.”

fig. 29
[Porter & Soffel, 2013: online]



thuso leeto

SHEPHERD, 17 YEARS OLD

“The cows are my friends. I do have a favourite cow. I want it to look good because I like it. I dress it up. It is obedient and does what I want. It listens very well. I do talk to them. I have even given them names and when I reprimand them they listen and respond to their names.”

| fig. 30 concerning cattle and companionship |

Porter & Soffel, 2013: online

typology

USER

the community | The broader community of villages around the town of Semonkong are spread in family clusters over the surrounding hills, the closest and biggest of which is Ha Lesala. Many spaza shops can be found along the road in Semonkong, and most villagers, especially into the country side, do subsistence farming in order to supply their households with fresh produce. These family clusters have no spatial connection to those around and little in the form of bigger community gathering spaces or places of instruction. In general, communities regulate themselves based on the principles of Ubuntu - each household is just as much responsible for themselves as they are for their neighbours, the same principle applying from village to village. The absence of men and husbands from the familial equation has put extra strain on the role of women and mothers within these family clusters, creating in them a dire need of opportunities through skills development and basic education.

Mothers and grandmothers are often not able to leave the household to seek better opportunities or education, as most look after their own children and grandchildren or that of their neighbours and family members who are away. A lot of these households are even run by children (Visser, 2014: interview) Adult education could go hand in hand with a pre-school where children can be taught to speak, and think, until the time comes for them to go to school. The pre-school would realistically start out as a play group focussing specifically on early childhood development. According to Lulu Visser, treasurer of the Lesotho Missions, the earlier children are cognitively stimulated, the better they will do at school and the bigger the chances are of them escaping poverty.

Storytelling is as old as the hills and the custom of artistic and metaphorical expression has existed among the Basotho since the most ancient times (Ellenberger, 1992: 297), also as a means for mothers and grandmothers to instruct the youth through riddles, fables, and tales. The Basotho think so much of these legacies that they judge one's knowledge of Sesotho by the use one makes of these proverbs and maxims in conversation.

Both men and women make goods of natural materials harvested from the landscape, ranging from crafts made of plant fibres and reeds, to flat ropes of rushes, which are used to make baskets, roofs and fences. Women weave smaller articles, by hand, including small baskets for winnowing or carrying food on the head, and floor mats for sitting and sleeping and for catching meal which falls from the grinding stone, as well as door coverings, sieves or filters for straining beer, straw spoons for skimming flies from beer. The manufacturing of some of these items does not require highly-specialized skills or extensive labour time, but some, like the making pottery has a certain amount of specialisation and is a fairly labour-intensive process. The making of these traditional goods can be harnessed in job creation and teaching opportunities.

It can be concluded that the main typological challenges relate to a rational design methodology where such a wide user body has to be incorporated into one community-based project. The lifestyle of these users can be deduced to either that of a nomad in the shepherd's case or that of a settler in the community's case. The herd-boy and the rural Lesotho citizen both face many of the same challenges, although each user has a set of unique lifestyle parameters within which these challenges have to be met and overcome. Education seems to be at the base of the problem solving process.

Because many households are run by women who have no other support, they will only be able to attend school or do extra training if provision is made to include the children they are looking after who cannot go to school yet. Children between the ages of one and six therefore are also users, as they can accompany their mothers or grandmothers to class to be taught in a bigger municipal setting.



fig. **31**
Part of the village of Ha Lesala, situated approximately 4.55 km from the town of Semonkong.

+ precedent and case study | cultural significance |

SOTHO 'KRAAL', TRADITIONAL SOTHO VILLAGE, LESOTHO

This case study introduces the image of the 'kraal' or cattle byre and its importance in the Sotho community. The general interpretation of space in Sotho settlements can be attributed to differentiations of hierarchy, approach and orientation, as well as the location and orientation of the cattle byre. The cattle byre is usually incorporated centrally within the village and is not accessible to women (Frescura, 1991: online). The central position of the cattle kraal within larger traditional Sotho settlements indicates its economic and symbolic importance in the life of the community (Gill, 1993: 29). The Sotho employ cattle as a source of wealth and as a means of gaining children through marriage, as cattle is the currency used to pay 'Lobola' for a young bride. The central location necessitates that those wishing to enter the cattle byre need to cross many thresholds before entering the general community space that surrounds the cattle byre. This not only acts as a precautionary safety measure in guarding wealth, but aids in visually connecting social gatherings and feasts to the cattle.



fig. 32

The kraal of an individual family located within the larger village setup of Ha Lesala.

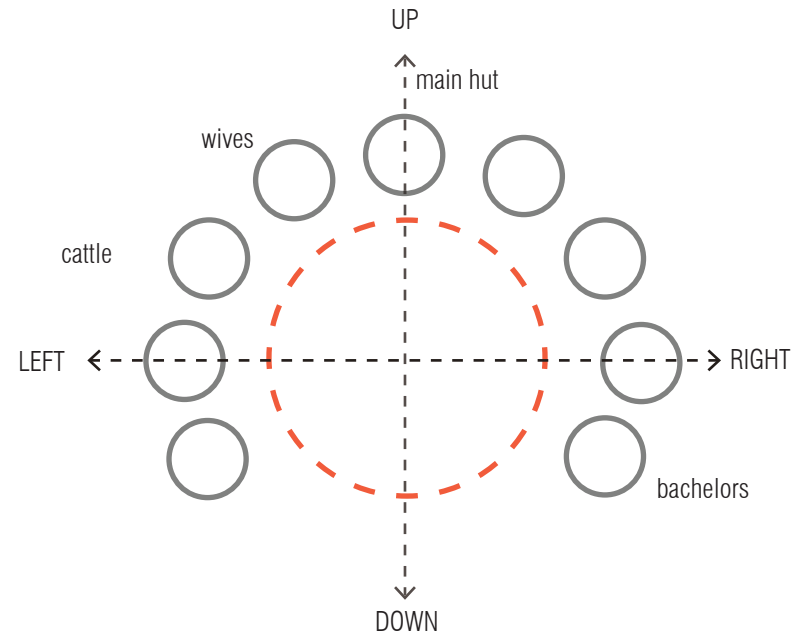
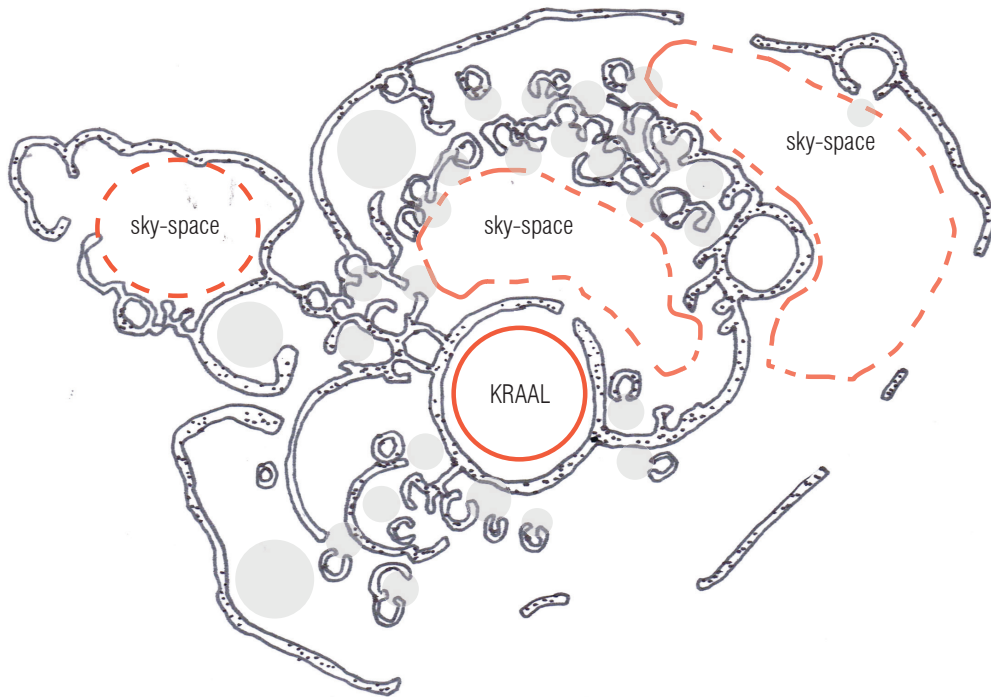


fig. **33**
 Place-capacity plan of a typical Sotho settlement,
 1400-1600 AD.
 Adapted from Maggs [cited in Mitchell, 2002: 168].

fig. **34**
 The central cattle pattern, redrawn from Kuper [cited in Mitchell, 2002: 168].

In defining the grammar of rural Lesotho settlements, a number of major themes can be identified, as a variety of settlement patterns were employed by the southern Sotho. This involves relationships between individual elements and the settlement as a whole. Internalised traditions and the culture of the people are mirrored in the spatial organisation, seeming to be highly ordered. An individual or family's location within the settlement as a whole is mostly determined by their status within the society (Frescura, n.d: online). This montage of interrelationships calls for a language of spatial organization in which built form and exterior space are complementary and reciprocal in forming each other, which softens sharp divisions. A spaces articulation largely determines whether it is suitable for a single large group, or for a number of small separate groups.

Central to the spatial organisation of Sotho villages is a large area referred to as a 'sky-space', which not only accommodates the protection of livestock (as the kraal is linked to this space), day-to-day social interaction; pedestrian crossing, and more special occasions. Both communal activities and acts of importance takes place here (Mitchel, 2002: 168).

The dwellings that line the edges of a sky-space generally function better if they are considered as extensions of that which happens within the sky-space. The concept of a 'sky-space' is based on the idea that its users have something in common – a reciprocal relationship wherein they expect something of each other. If the home is seen as the private domain, then the 'sky-space' is the public domain. The sky-space also serves as catalysing agent between different clans.

The Basotho generally preferred to build their homesteads on ridges overlooking river valleys, where building materials were close at hand – both wood and reeds for the pole structure type of house, or stone for corbelled houses (Gill, 1993: 28). A reliable source of clean water, adequate grazing areas for summer and winter, fertile soil, and a good vantage point for protection as well as the warmth of the sun were other important factors. Fields were often small and some distance from the actual village (Gill, 1993: 29). The homesteads of both the ruling class and ordinary citizens share a common vocabulary, sharing the same form, basic spatial organisation, materials of construction, and dwelling forms (Frescura, 1991: online).

Traditionally the external spaces were more important than the interiors, which were small and often uncomfortable as they were made solely for sleeping, not for living or working. In order to mediate the concerns of a comfortable indoor environment and external connection in the proposed project, a series of spatial thresholds, as well as experiential and formal approaches, will have to be incorporated. This ties in with the vernacular Lesotho architecture, as well as the traditional hut, which had an extended entrance threshold to keep icy winds from the interior. The front door is seen less as a single, abrupt moment, but rather becomes an extended threshold that is not yet explicitly inside, but less public (Hertzberger in chapter 5: 166).

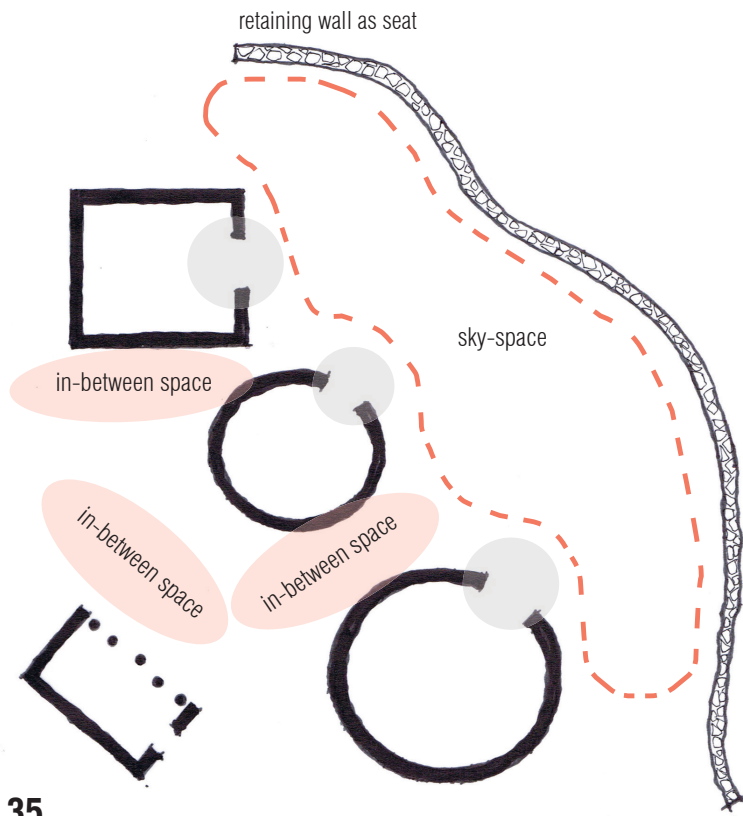


fig. **35**
 Plan of typical family unit layout, usually set on ridge overlooking land. Place-capacity has a degree of seasonal time and use, as climatic circumstances change. Adapted from Maggs [cited in Mitchell, 2002: 168].

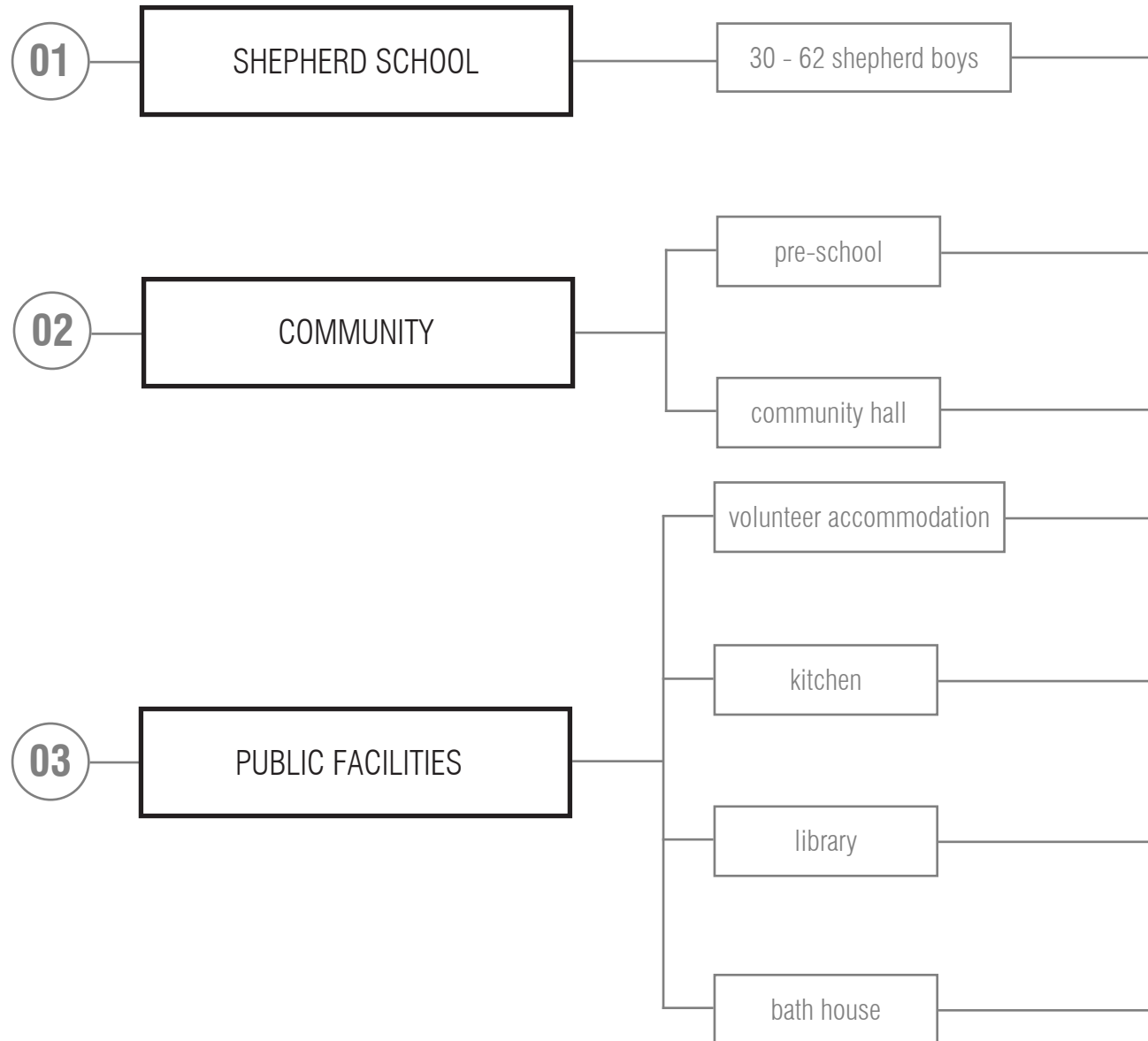


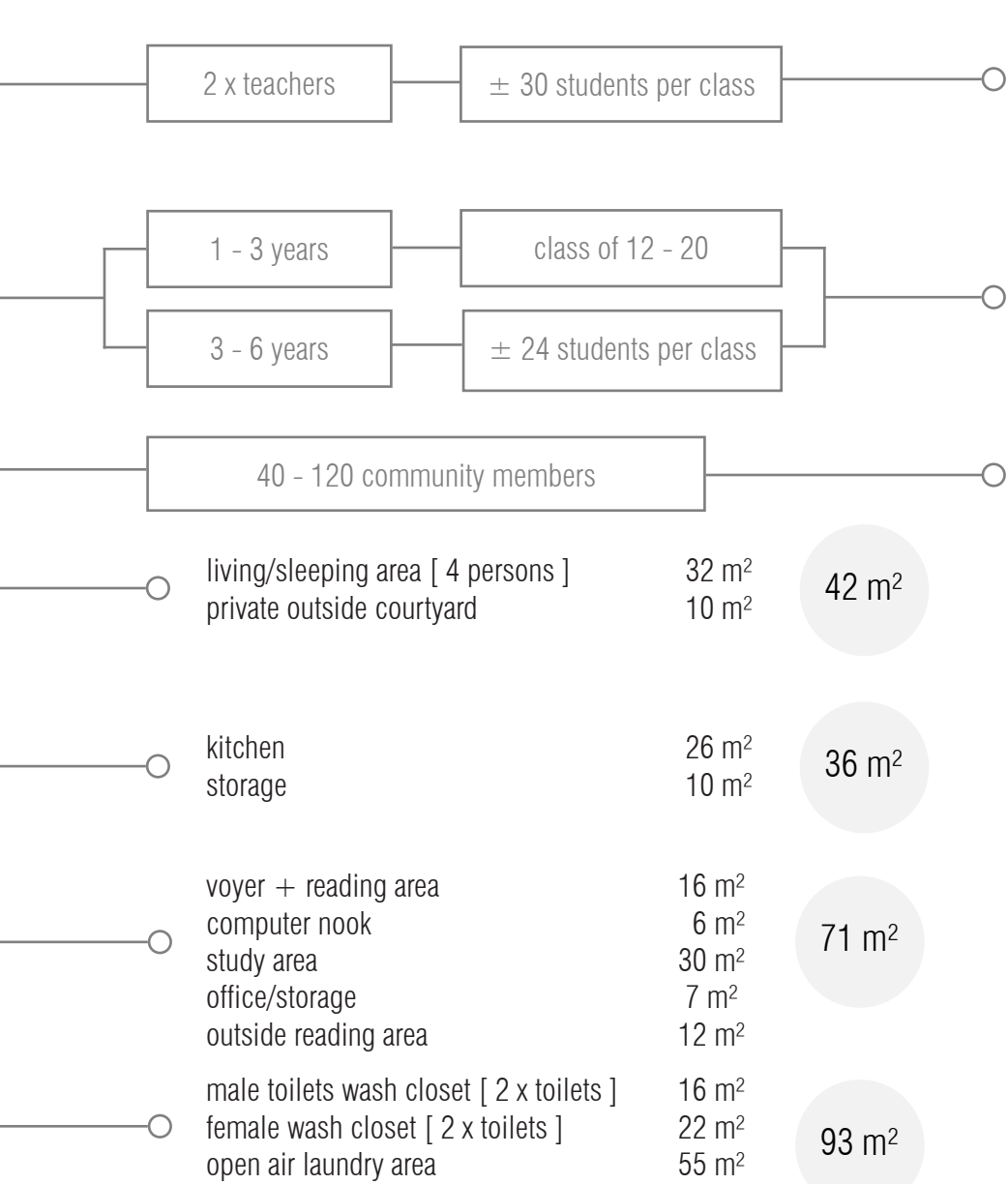
fig. **36**
 Family units scattered over the hills of the Lesotho Highlands. By means of retaining walls the space in front of the huts is gathered and claimed. The retaining wall doubles as seat and threshold. [Pinchetti & Tettamanti, 2013: online]

accommodation overview

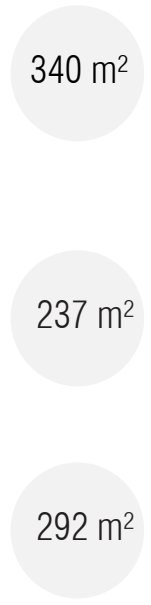
The main programmatic challenges relate to a rational design methodology. In order to accommodate a project with mixed users and functions within the natural landscape, it is important to consider scale, relation and sustainable design principles. These challenges are addressed in the design synthesis chapter and also form part of the conceptual framework. Multiple precedent studies are used to gain insight into how others have addressed similar challenges through design, aiming to extract design principles that can be applied in the project at hand.

The accommodation list is approached in three different sections: one section focusses on the additions to be made to the existing shepherd school and the specific needs of the shepherd boys; the second focusses on the community aspect of the project and their needs as a bigger body; and the third section that should be able to serve both of these parts, either individually or simultaneously. These different parts come together to form a cultural village of sorts, that should be accessible to visitors or volunteers through the Lesotho Mission, in order to render services or contribution to the community.





2 x classrooms [5 0 m ²]	100 m ²
2 x storage [10 m ²]	20 m ²
stoep	80 m ²
5 x kraal [± 28 ²]	140 m ²
classroom: 1-3 years	45 m ²
2 x classrooms : 3-6 years [37 m ²]	74 m ²
2 x storage [6 m ²]	12 m ²
male wash closet [2 x toilets]	9 m ²
female wash closet [2 x toilets]	9 m ²
outside gathering space	88 m ²
community hall	152 m ²
storage	20 m ²
covered outside gathering space	60 m ²
open outside gathering space	60 m ²



TOTAL BUILT AREA	1111 m ²
CIRCULATION + STRUCTURE	333 m ²
OTHER EXTERIOR AREAS	388 m ²

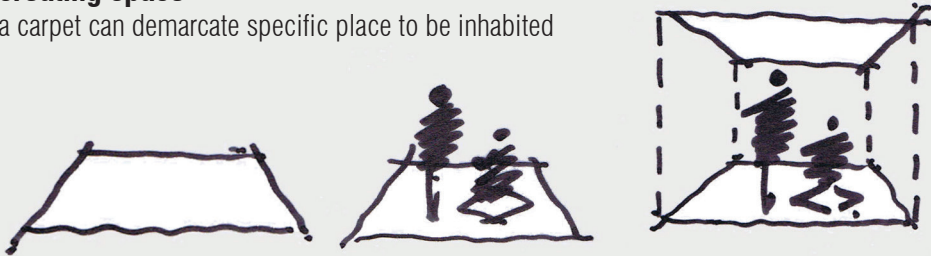


+ precedent study | public building |

SAFE HAVEN ORPHANAGE LIBRARY, RINTALA EGGERTSON ARCHITECTS, BAN THA SONG YANG

creating space

a carpet can demarcate specific place to be inhabited



This project resulted from a workshop held at the Safe Haven Orphanage in Ban Tha Song Yang, Thailand. TYIN Architects invited 15 Norwegian architecture students from the Norwegian University of Technology and Science (NTNU) to participate.

It was identified that the most pressing needs at the orphanage was a new sanitary building and a library. TYIN Tegnestue Architects worked on the sanitary building, together with the Karen workers from Noh Bo; while the workshop participants focused their efforts on the library.

With the assistance of TYIN and NTNU professors the Safe Haven Library was completed in only two weeks.

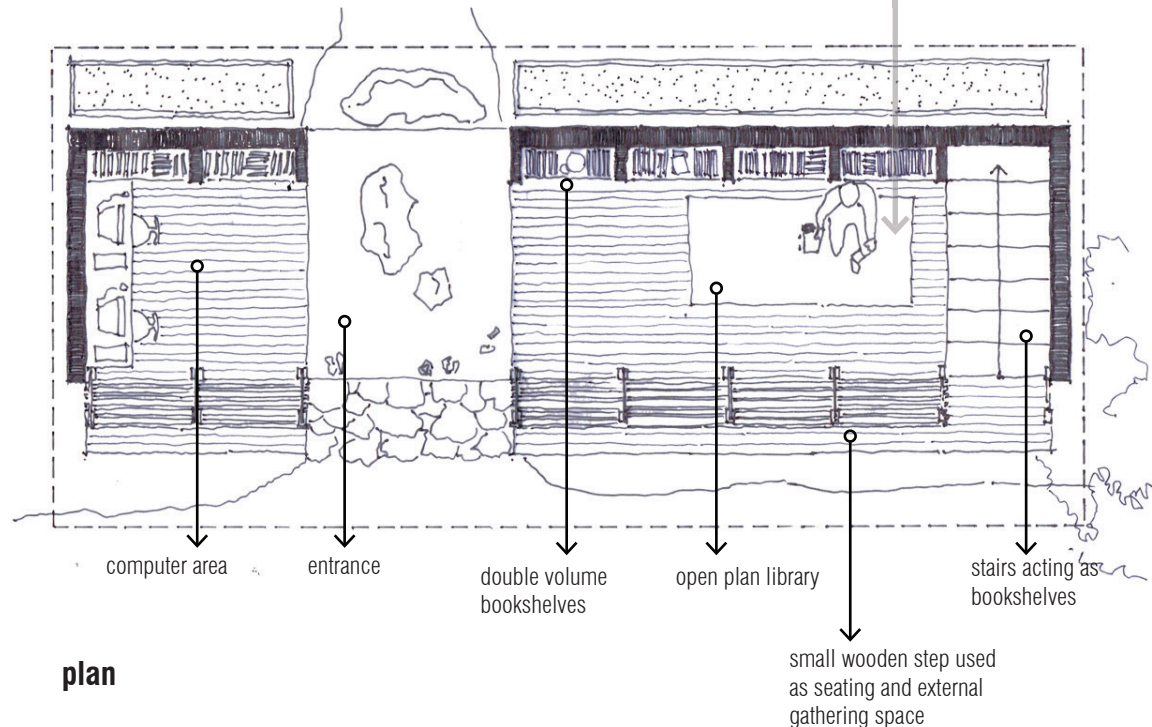
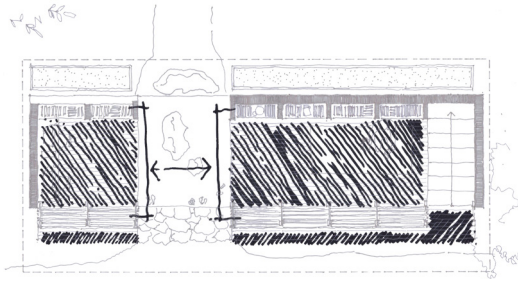


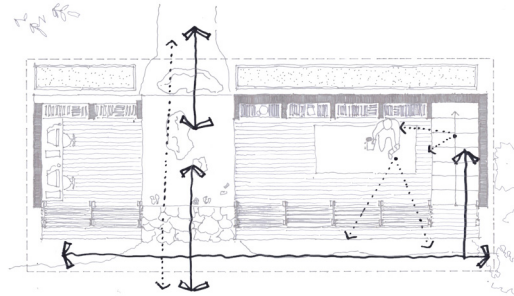


fig. 37
Children using library as social space.
[Archdaily, 2009: online].



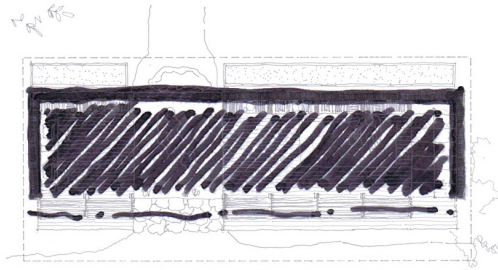
spatial layout

The bookshelves run along the full height of the concrete walls, and the floor is left unfurnished to give room for different activities. The entrance creates a buffer between outside and inside and also divides the ground floor into a small computer area on one side and a larger library room on the other.



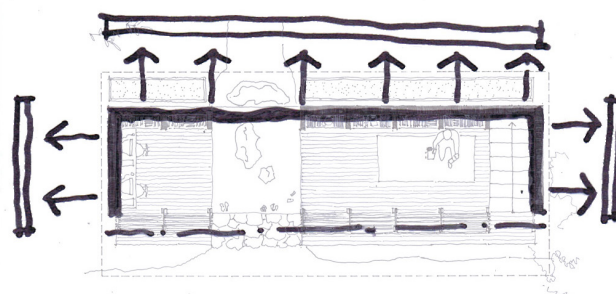
circulation + visual linkages

The concrete floor of the library is cast on a bed of large rocks gathered on-site. The entrance leaves the rock exposed, whereas the rest of the library has timber flooring. In addition to the entrance, the stairs can be reached directly through the bamboo screen or through the library. The building is also used as a gathering space and for play, games and crafts.



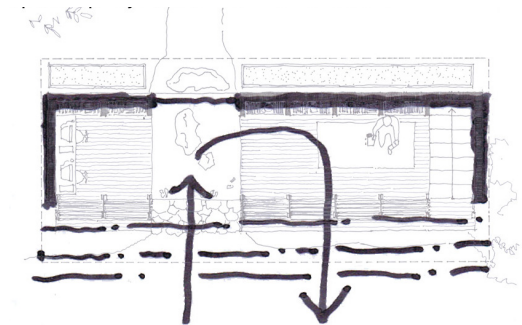
enclosed space

The solid northern facade acts as boundary between inside and outside, creating a strong sense of enclosure and safety.



projected space

The strong edge projects the northern facade past its physical boundaries.



porosity of bamboo facade

The southern bamboo facade acts as a porous edge, allowing views in and out.

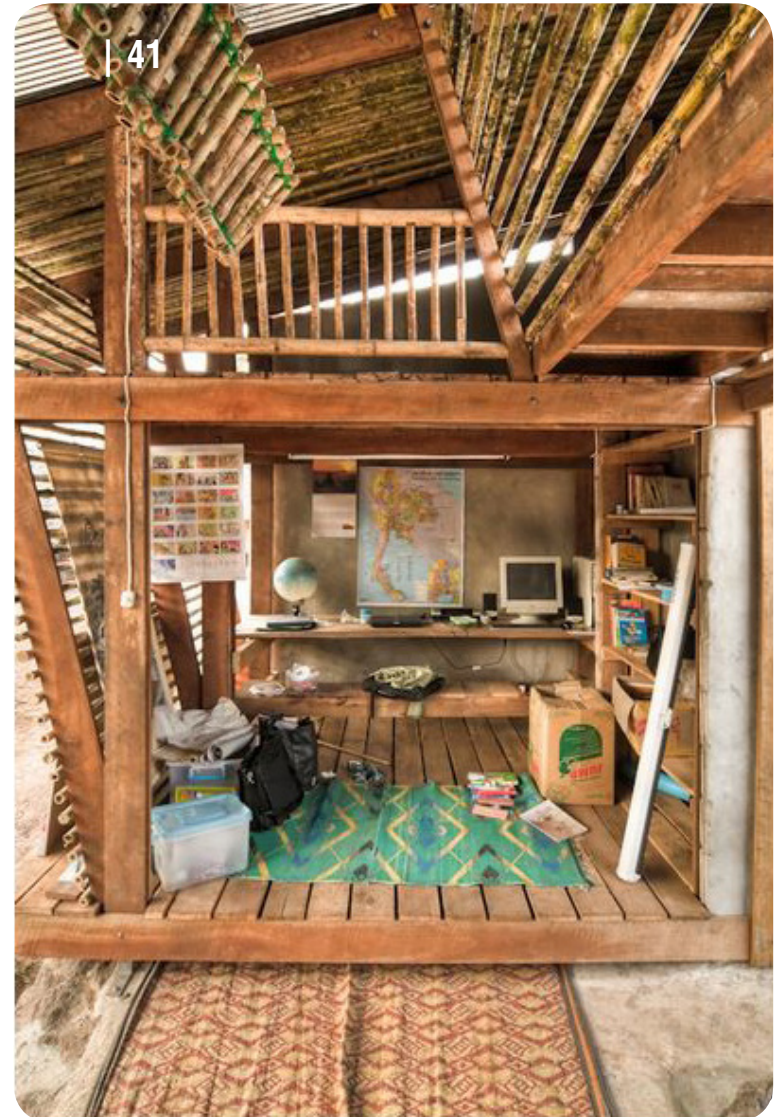


fig. **38**
Child-like dimensions for upper multi-functional area. [Archdaily, 2009: online].

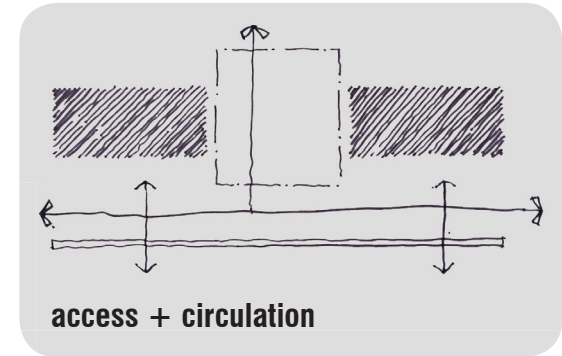
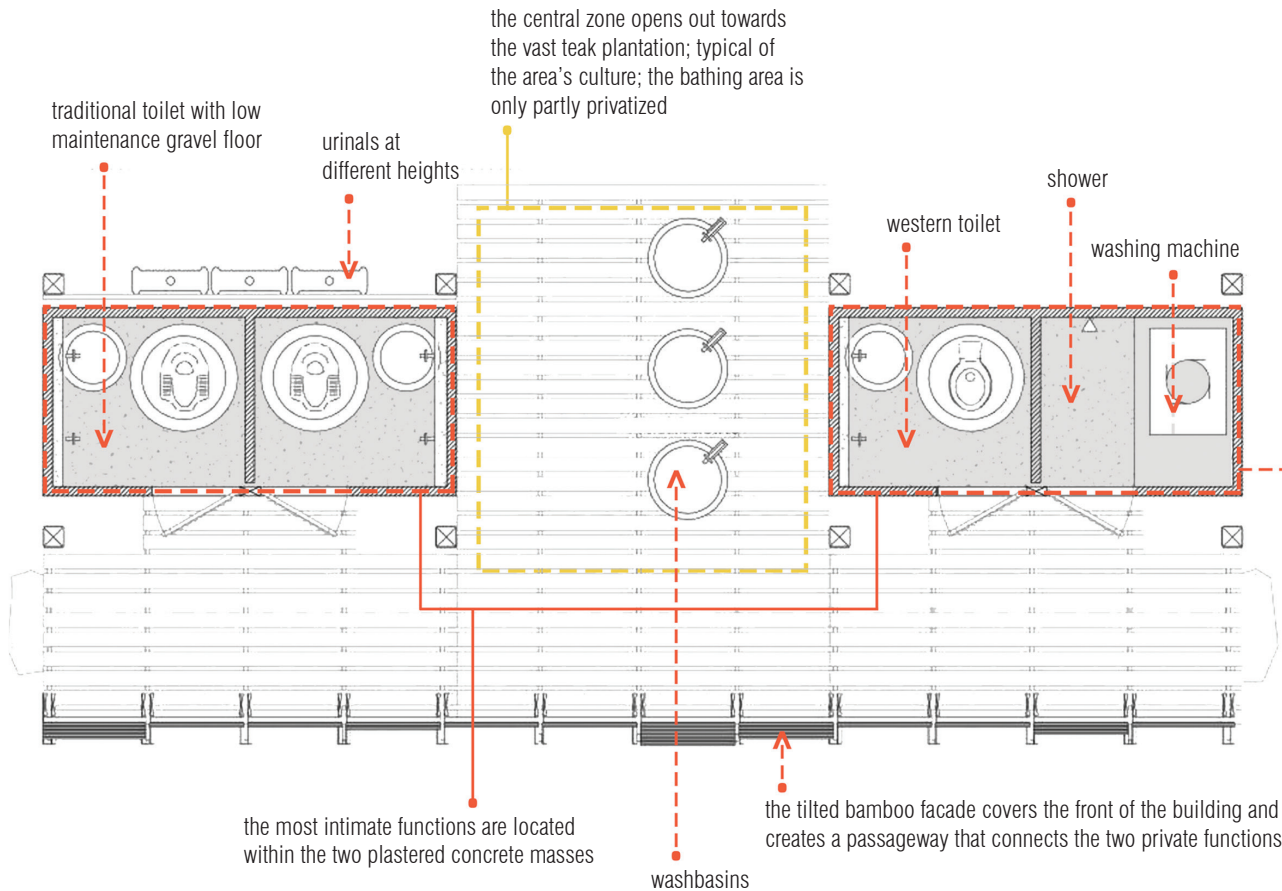
fig. **39**
Entrance with concrete floor cast on a rock bed, with timber floor open plan, viewed from computer area. [Archdaily, 2009: online].

fig. **40**
Exterior view of library through timber screen. [Archdaily, 2009: online].

fig. **41**
Computer area created through entrance, showing how a carpet can claim space. [Archdaily, 2009: online].

+ precedent study | sanitation facilities |

SAFE HAVEN BATH HOUSE, TYIN TEGNESTUE, BAN THA SONG YANG



gravel and wooden floors were used as alternative flooring solutions that cleans easily and dries quickly - layers of stone and gravel drains all wet rooms

Access is permitted from the back into the central bathing zone, which is only partly privatized. Access is also permitted by way of the bamboo screen, but not directly into the central zone.

| 42



The climate of northern Thailand makes good personal hygiene essential to prevent diseases, especially for small children. The aim of this bathhouse is to create a well-functioning and dignified facility for personal hygiene. The social value of this operation lies in meeting a real need and the exchange of knowledge and ability, housing the basic needs of the orphanage; toilets, and a laundry.

| 43



fig. 42
Bathhouse from the back, viewing urinals and wash basins. [Archdaily, 2009: online].

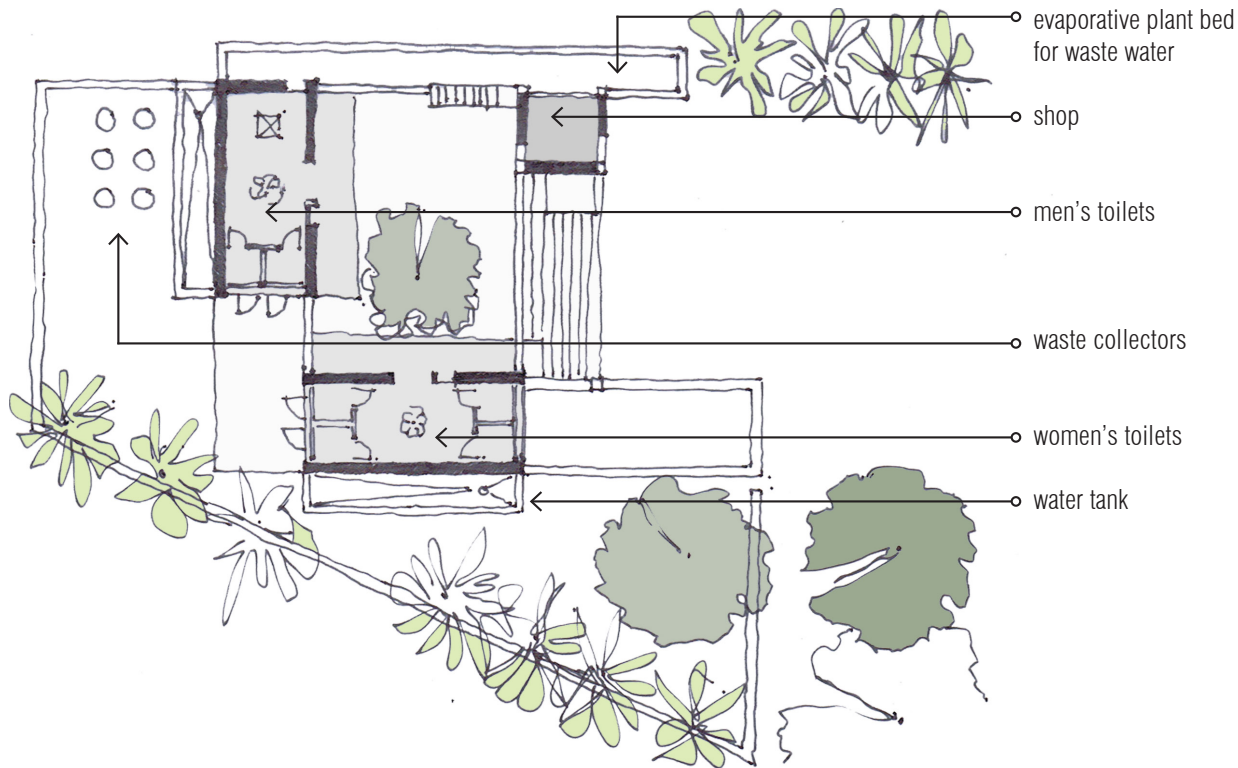
fig. 43
Partly privatised central zone and bathing area. [Archdaily, 2009: online].

fig. 44
Walkway and bathing area screened, creating ambient lighting. [Archdaily, 2009: online].



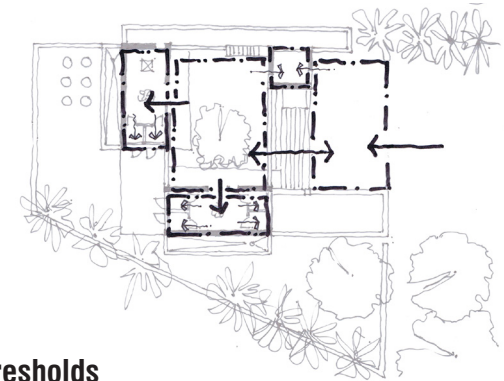
+ precedent study | sanitation facilities |

DELWARA COMMUNITY TOILETS, VIR.MUELLER ARCHITECTS, DELWARA, INDIA



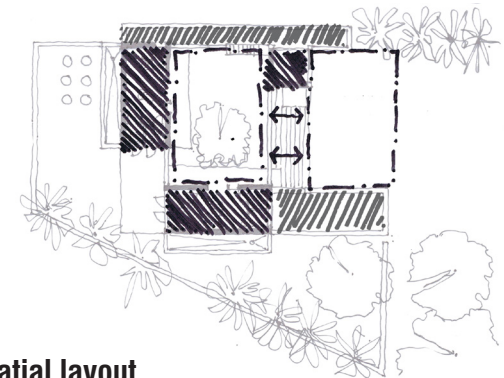
plan

The village of Delwara is a small, peri-urban settlement located 28 km from Udaipur, Rajasthan. Most villagers work on small agricultural plots adjacent to their homes or commute daily to Udaipur. Few have access to residential plumbing. The site was selected with the Delwara community's consent, being near to the state highway, the village bus stop, and the local clinic, to ensure active use by the entire village. A social space for gathering, holding meetings or socializing is also provided; establishing a community space for the villagers.



thresholds

Users move from an uncovered public space to a tree covered semi-public space before entering the private toilet area.



spatial layout

Two separate buildings serve as men's and women's toilets surrounding a tree-shaded courtyard that anchors village gatherings.

fig. 45

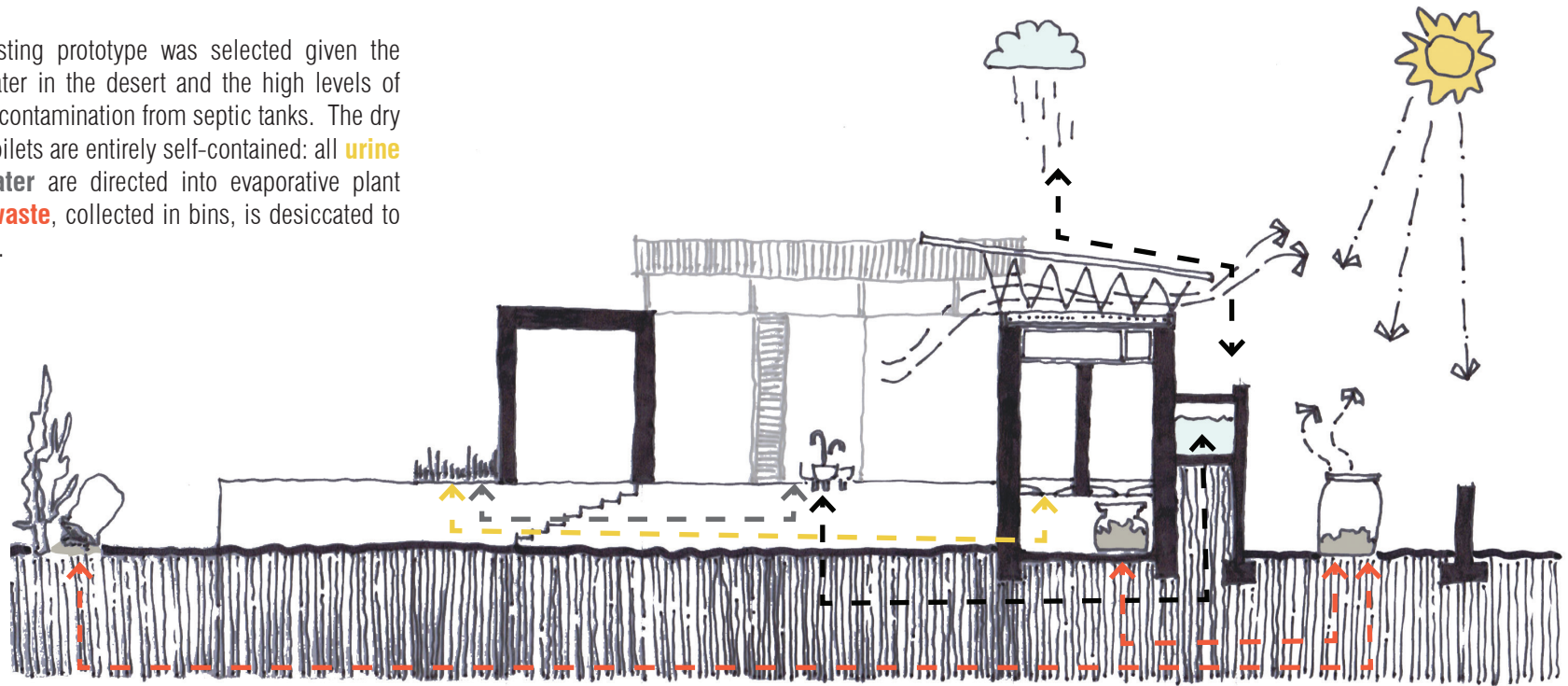
Approach to Delwara Community Toilets.
[Cilento, 2010: online].

Many villagers in rural India are in need of clean, safe toilet and laundry facilities. The National Foundation for India asked for a prototype for a public sanitation facility that could be built locally, emits no waste, and prevents groundwater contamination. New Delhi-based Vir.Mueller Architects responded with the Delwara Community Toilets, which features composting toilets, capturing of rainwater, and serves as a vital community space.

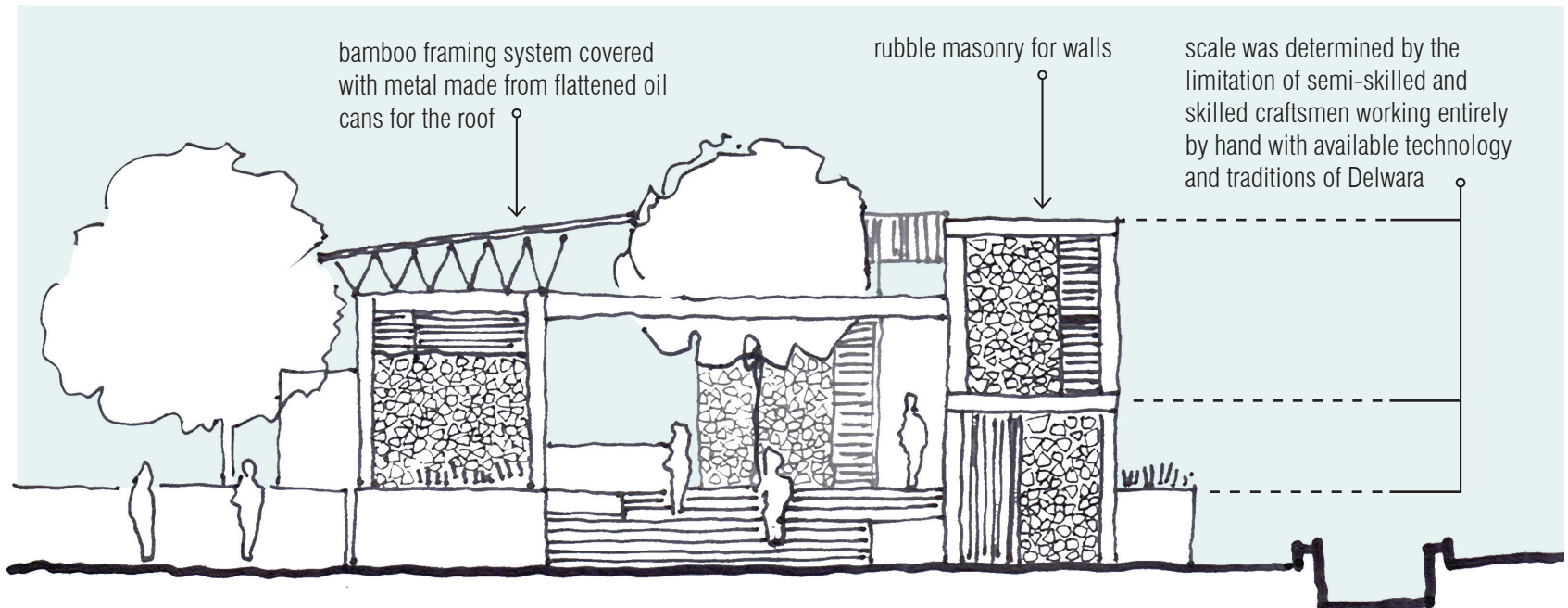


A dry-composting prototype was selected given the scarcity of water in the desert and the high levels of ground-water contamination from septic tanks. The dry composting toilets are entirely self-contained: all **urine** and **wastewater** are directed into evaporative plant beds. **Solid waste**, collected in bins, is desiccated to make fertilizer.

section



elevation





| 46



| 47



| 48



| 49

fig. **46**
Interior view of women's washing area and toilet facilities. [Cilento, 2010: online].

fig. **47**
Model showing tree shaded courtyard and approach to the Delwary Community Toilets. [Cilento, 2010: online].

fig. **48**
Model showing back of toilet complex, including the built water collection tanks. [Cilento, 2010: online].

fig. **49**
Tree shaded courtyard that is formed by the women's and men's separate toilet facilities, hedged in by a flight of stairs. [Cilento, 2010: online].

+ precedent study | sanitation facilities |

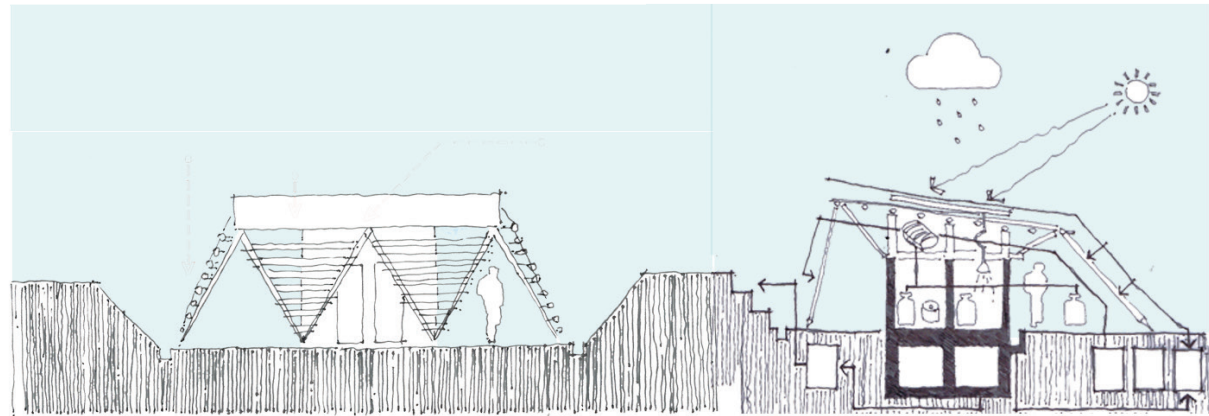
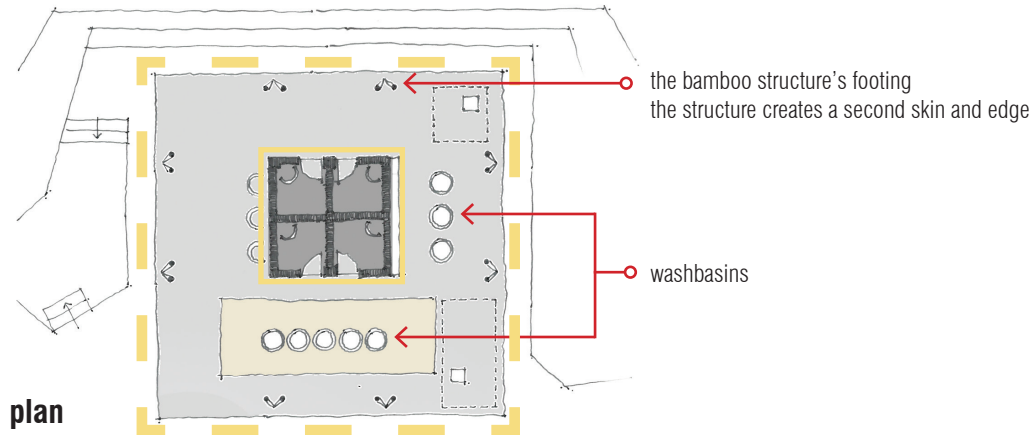
TOIGETATION, H&P ARCHITECTS, SON LAP COMMUNE, VIETNAM

The architects positioned the facility at the edge of the school's site on a sloping plot that was leveled using cut and fill.

The project was given the name Toigetation as the sanitation facility is combined with a branching bamboo structure covered in vegetation, helping it to merge the structure with its forested surroundings. The plants help to increase privacy and shade around the building's periphery, while reducing its visual impact and could possibly provide a source of food in future

The project was completed using local materials and labour, with simple construction methods that could easily be replicated elsewhere in Vietnam. The structure is inspired by the iconic image of a large tree with a wide canopy giving shade for the space below and within. Toigetation humbly blends into the slope at the foot of Phja Da mountain.

The stereotomic brick structure forms a physical enclosure whilst the bamboo structure further facilitates the sense of enclosure. The edge condition between the tectonic soft edge and the stereotomic hard edge is where the most activity is found; this is a place of intensification.



elevation

section + climatic system

Containing a toilet and washing area, the building was developed for a school in the Son Lap Commune of the northern Cao Bang Province, where the majority of inhabitants live in poverty and standards of sanitation are very low. The Vietnamese collective H&P Architects aimed to create a low-cost sanitation solution that can be constructed quickly using locally available materials.



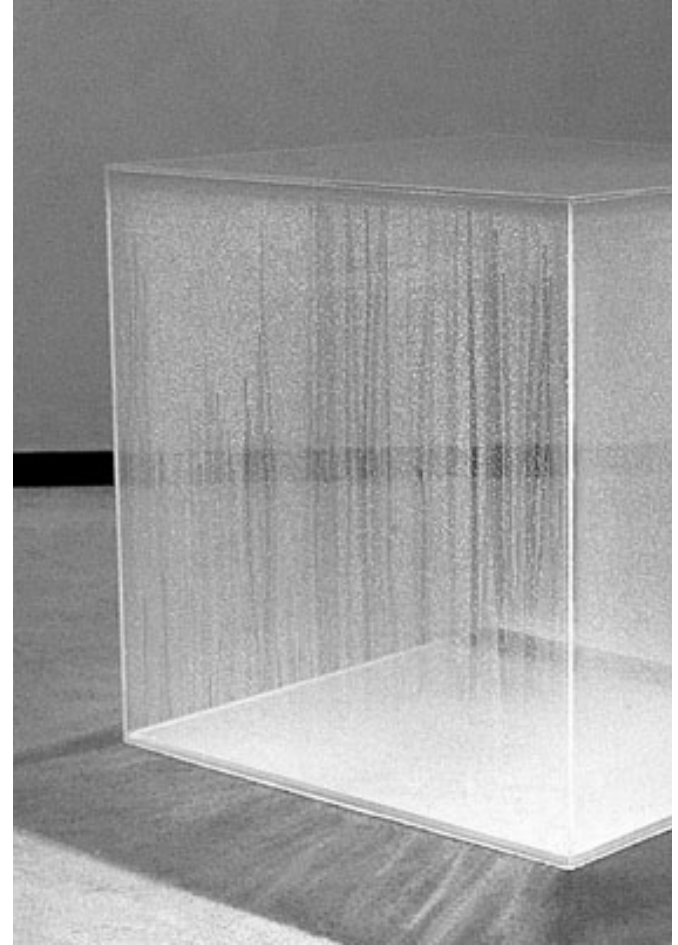
fig. 50
Exterior wash area and social space of the Toigetation sanitation facilities
by H&P Architects. [Archdaily, 2015: online]

2.3 topology

There are many matters that need to be considered simultaneously in making architecture, especially an architecture that is responsive to a specific place. This chapter provides the necessary background information regarding site understanding, its location and its current state, as means of directing the proposed project. My understanding of the morphology of the town of Semonkong and the village of Ha Lesala is given. The site is analysed in both a quantitative manner, providing a full perspective of all the measurable aspects, and a cognitive manner, understanding the site in terms of experience and surroundings. It is also followed by an investigation of vernacular and existing building types found in Semonkong, which serves as building analysis.

2.3.1 qualitative site analysis

The qualitative site analysis focuses on much more than abstract location. It investigates the site as a totality that is made up of concrete things having material substance, shape, texture, colour, scale, proportion, circulation patterns and distinctive topographical features. Together these things determine an “environmental character”, which is seen by Norberg-Schultz as the essence of place. A place is therefore a qualitative, total phenomenon, which we cannot reduce to any of its properties alone without losing sights of its concrete nature (Norberg-Schultz in Nesbitt, 1996: 414). Artworks like Hans Haacke’s Condensation Cube (1963-1965) uses site specificity as point of departure in unveiling the physical conditions of the exhibition space. The hermetically sealed, clear acrylic plexiglass box, thirty by thirty centimetres holds about one centimetre of water, causing condensation



to collect against the inner surface of the plexi-glass, forming vertical streaks on the inside. This exposes certain aspects of the exhibition space that the institution might like to obscure – the humidity level in the gallery is highlighted by moisture that is allowed to “invade the pristine minimalist art object” (Kwon, 2002: 14). This chapter presents an analysis on the type of landscape that is the Lesotho Highlands, as well as a macro, meso and micro site analysis of the proposed site, exposing the concrete elements already present.

fig. 51

Hans Haacke, Condensation Cube, exhibited at MIT in 1967 as Weather Cube. [Lynch, 2014: online]

classification of landscape | As discussed, an environment is experienced as a tangible reality whose identity consists of a unique combination of definite characteristics (Norberg-Schultz in Nesbitt, 1996: 422). This 'genius' has to be understood before introducing an architectural intervention, whether interruptive or assimilative, into the environment; as with site-specific work the intervention becomes part of the site; restructuring it both conceptually and perceptually according to Richard Serra, the minimalist artist (cited in Kwon, 2002: 12). The type of landscape and character of the specific site and general Lesotho area are part of these definite characteristics that need to be decoded and recoded to expose the 'hidden operations' of the site (Buren cited in Kwon, 2002: 14). The mountainous areas of Lesotho, which include Semonkong and Ha Lesala, have been identified as a combination of the classical and romantic landscape, constituting humane dimensions and tangible 'objects' that stand out in the strong and evenly distributed light quality. This provides a concrete and sculptural presence that is enhanced by the high and embracing Lesotho skies.

Norberg-Schultz (1979: 45), known for his writings on psychology and phenomenology, describes the classical landscapes as a permanent composition of distinct elements: hills and mountains which are rarely covered, and clearly delimited natural spaces like valleys and basins. These 'distinct elements' appear as separate, 'individual worlds'. The classical landscape therefore makes a human fellowship possible, where every part conserves its identity within the totality. The landscape is read as individual places captured in an encapsulating environment, where the one cannot be removed from the other. A valley, for instance, is read simultaneously as individual part and as part of the whole – it cannot be removed from the environment, as then the environment would not be whole anymore. A true 'gathering' thus becomes possible (Norberg-Schultz, 1979: 46).

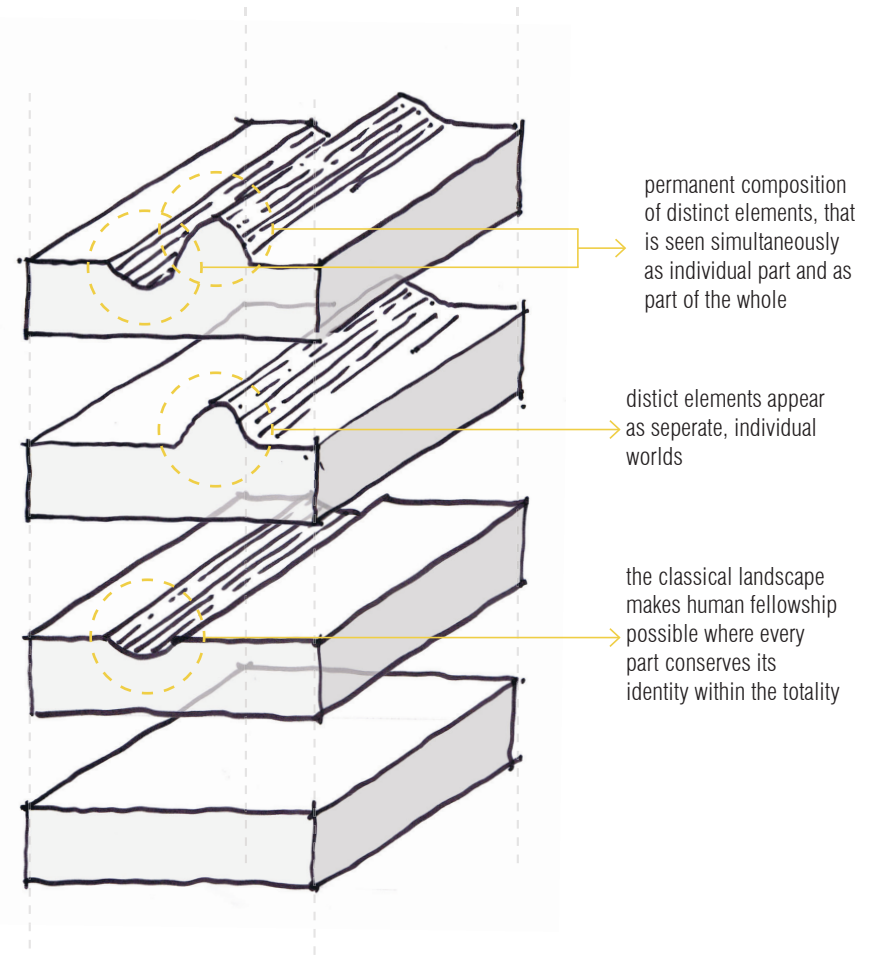


fig. 52
Clearly delineated spaces which can not be removed from the environment, for then the environment would no longer be whole.

quantative site analysis

CLASSIFICATION OF LANDSCAPE

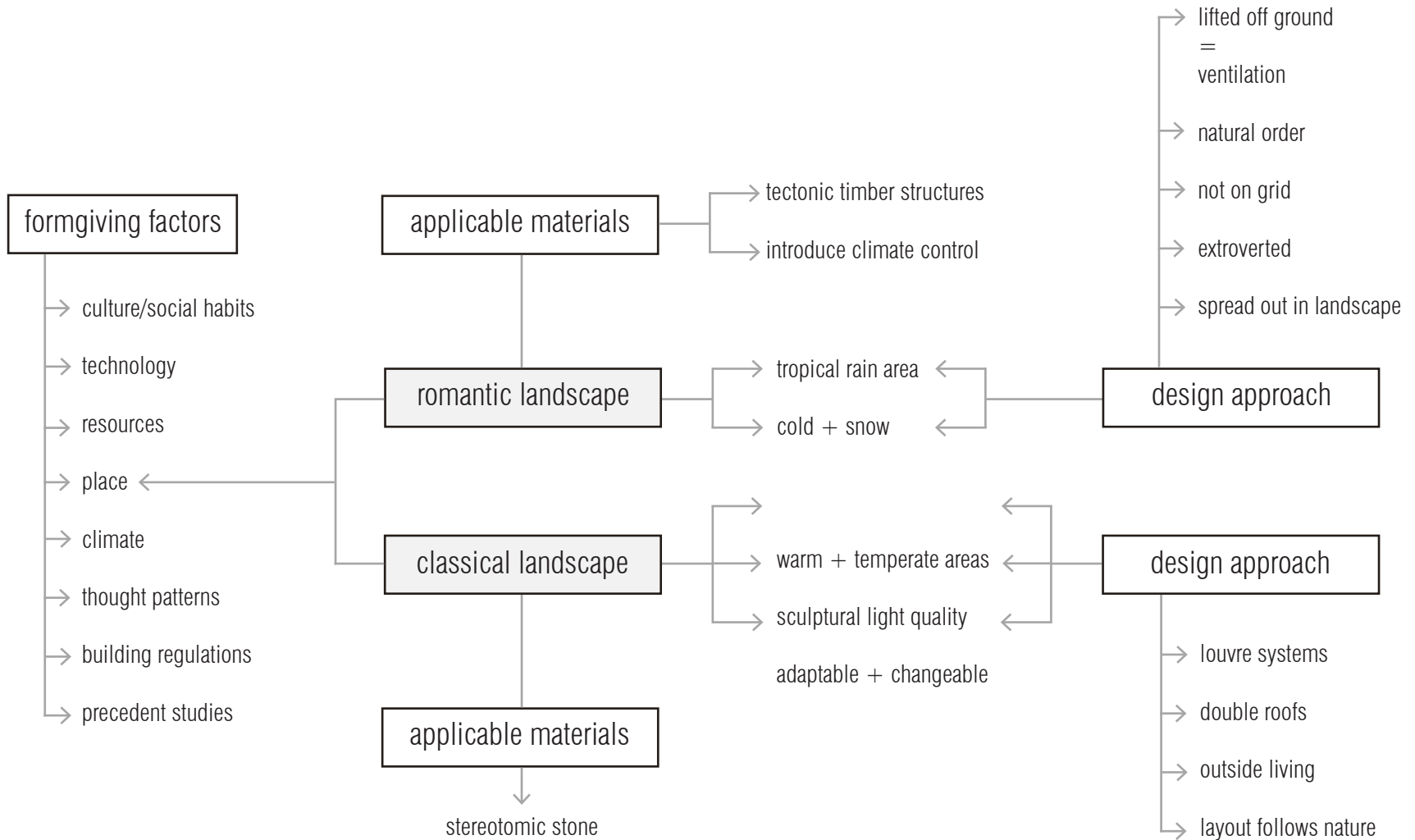


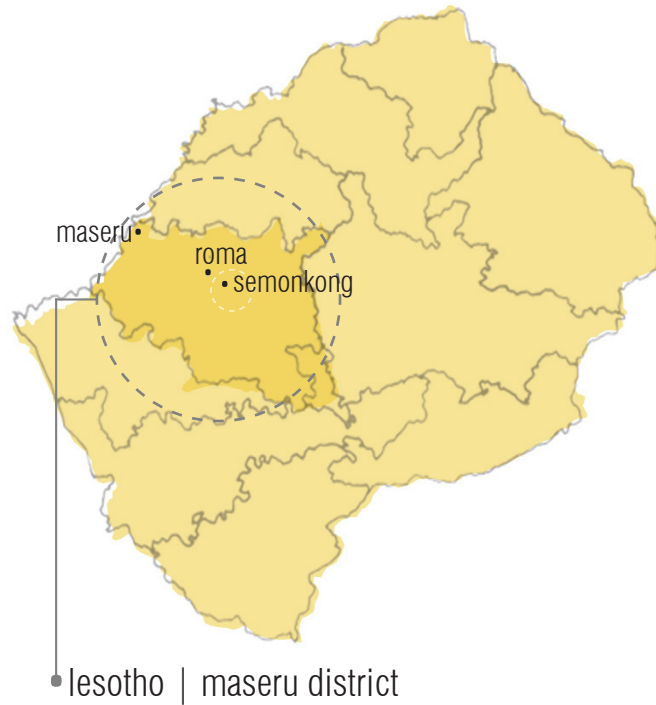


fig. **53**

Clearly delineated rolling hills and valleys of the Lesotho Highlands.
Semonkong, Lesotho.

quantative site analysis

MACRO CONTEXT



NEW BRIDGE
tar road from maseru
to semonkong

SITE
next to orphanage run
by methodist church

TOWN OF SEMONKONG
most dense / centralized
part of town

new hospital
complex to be
built next to
landing strip
AIRPORT

MARKET
highest activity

SEMONKONG LODGE

TERRACED FARMING
man made terraces for
planting on slopes



quantative site analysis

MACRO CONTEXT

According to a 2003 survey done in Lesotho:

- 37%** of people interviewed have family members working in **South Africa**
- 26%** family member **permanently** settled in South Africa
- 21%** sought **medical care** in South Africa
- 18%** own a South African **identification document**

[reference]



nineteenth century

Lesotho came into being under the leadership of King Moshoeshe the Great. The Basotho people sought sanctuary and strategic advantage in the Drakensberg and Maluti ranges as the difaqane [forced migration] and Boer infiltrations into the surrounding area were at their height.

1824

Moshoeshe initiates policy of assisting refugees in return for defensive help in order to enhance his position.

1840

Moshoeshe's rule was firmly entrenched; his people numbering about 40 000.

1870

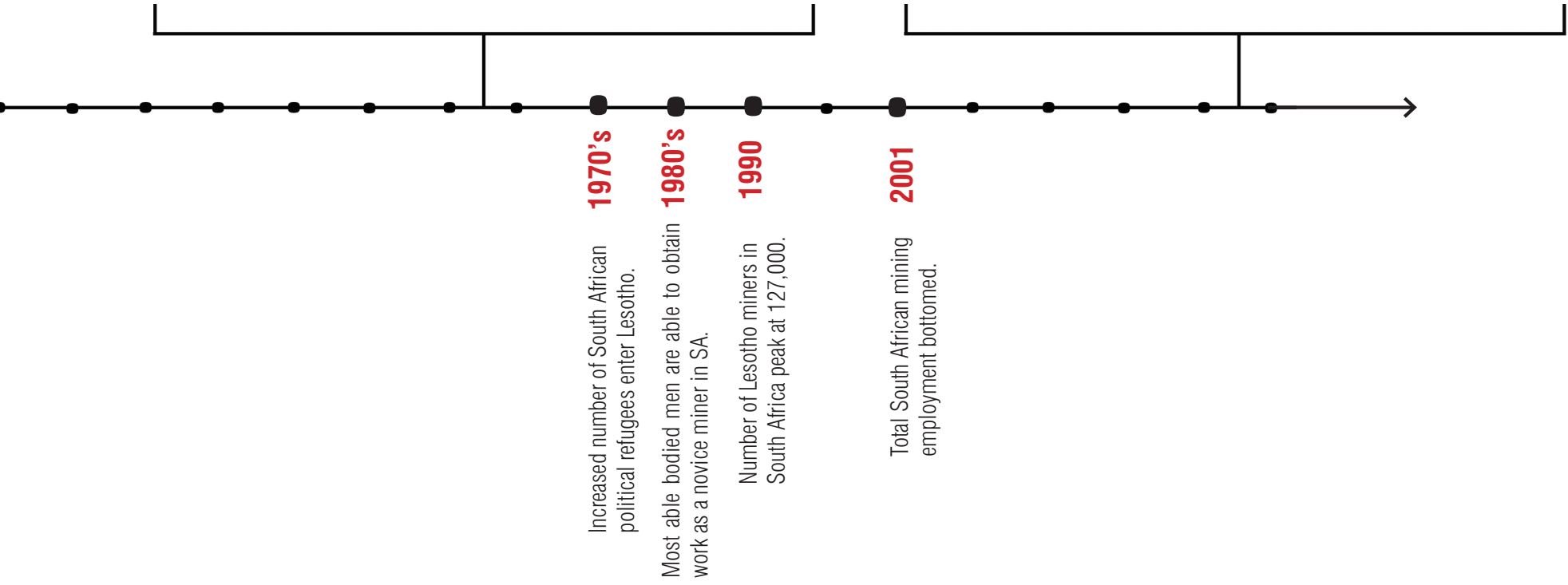
King Moshoeshe dies with the Basotho population exceeding 150, 000.

twentieth century

The 20th century saw half of the adult male population of Lesotho working on a temporary basis in South Africa [predominantly in the gold mines, but also most other economic sectors]. Lesotho was a preferred source of migrant labour due to South African wage laws.

twenty-first century

The new migration laws of South Africa and the struggling mining industry, combined with population growth in Lesotho, greatly limited the economic development. Continuing soil erosion sees poverty combined with recurrent hunger as agricultural output decreases.



quantative site analysis

MESO CONTEXT

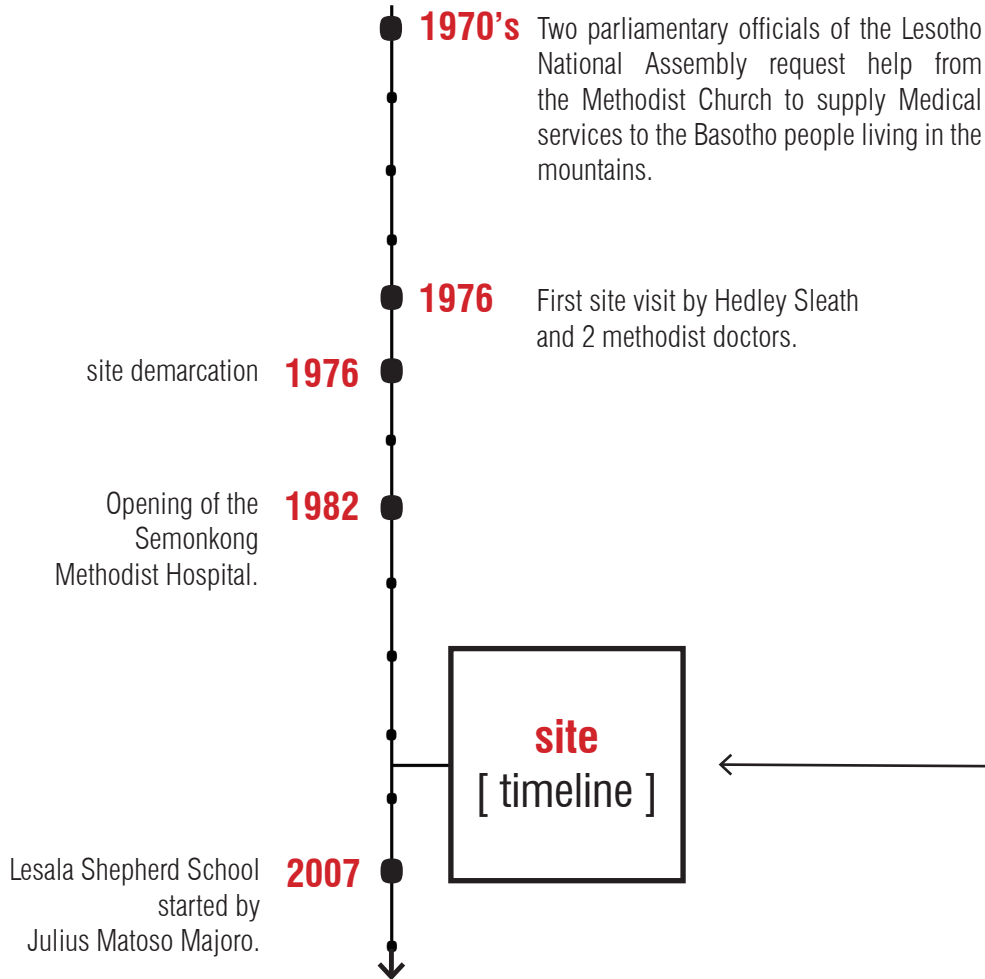
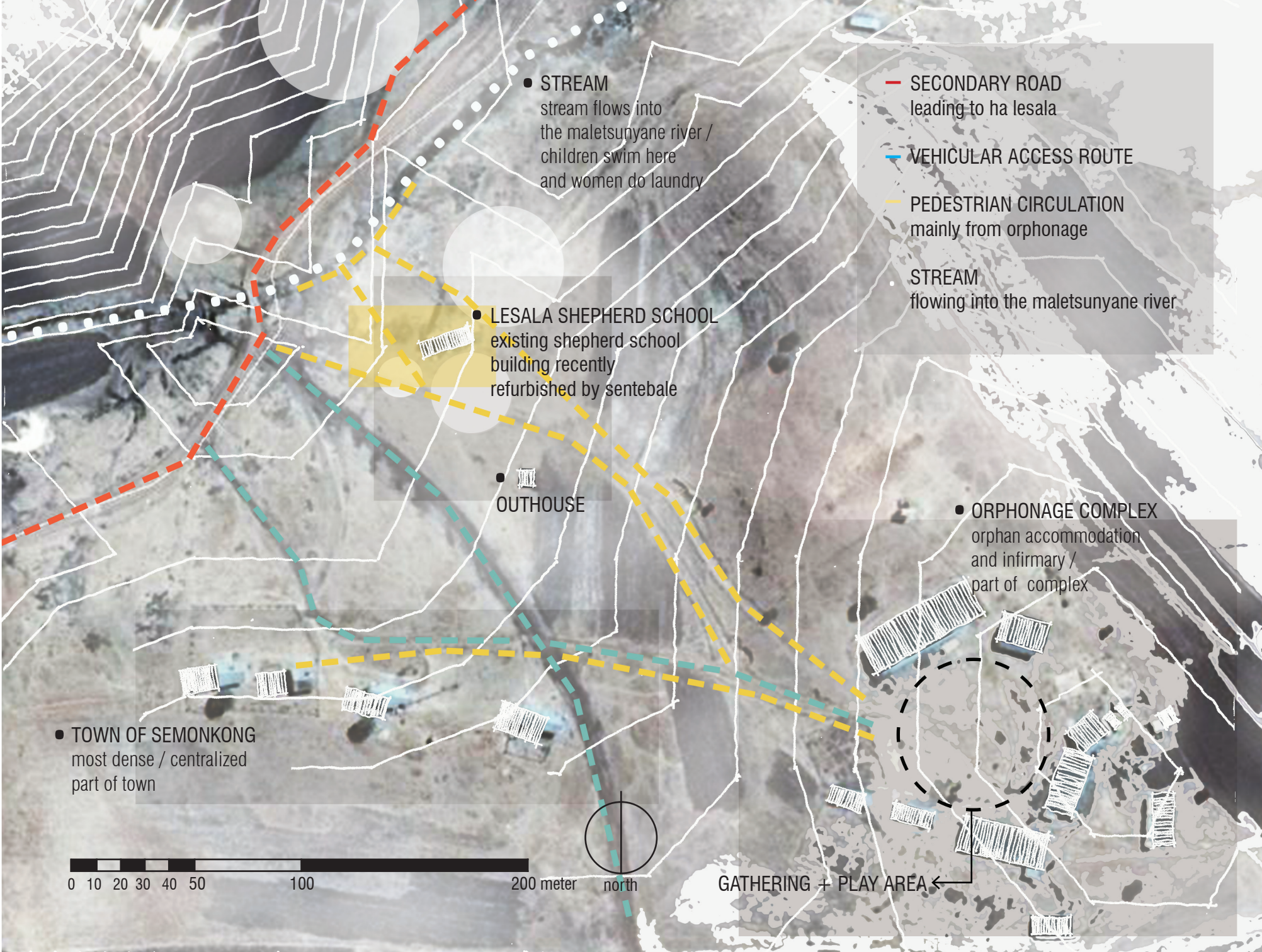


fig. 49
The current classrooms of the Lesala Night School for shepherd boys, located on the proposed site.

The Methodist Church of Southern Africa completed a hospital complex for the wider Semonkong area in 1984. The hospital, though being very successful for a whole, did not stand the test of time and is currently run as an orphanage. The staff accommodation is visible from the shepherd school, but the children's living quarters are hidden behind a hill to the south-east.



● **STREAM**
stream flows into
the maletsunyane river /
children swim here
and women do laundry

● **LESALA SHEPHERD SCHOOL**
existing shepherd school
building recently
refurbished by sentebale

● **OUTHOUSE**

— **SECONDARY ROAD**
leading to ha lesala

— **VEHICULAR ACCESS ROUTE**

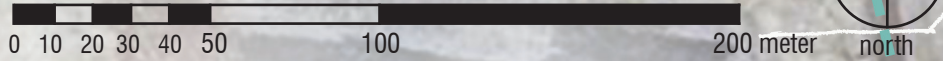
— **PEDESTRIAN CIRCULATION**
mainly from orphonage

● **STREAM**
flowing into the maletsunyane river

● **ORPHONAGE COMPLEX**
orphan accommodation
and infirmary /
part of complex

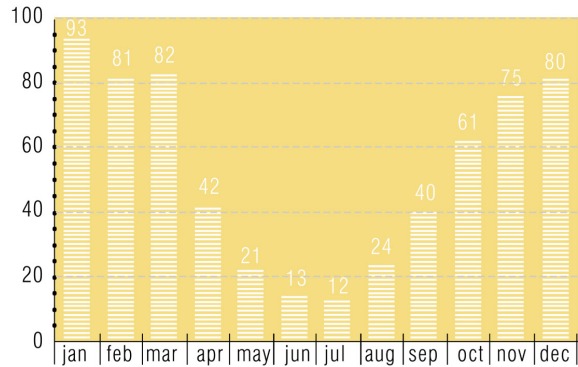
● **TOWN OF SEMONKONG**
most dense / centralized
part of town

← **GATHERING + PLAY AREA**



quantative site analysis

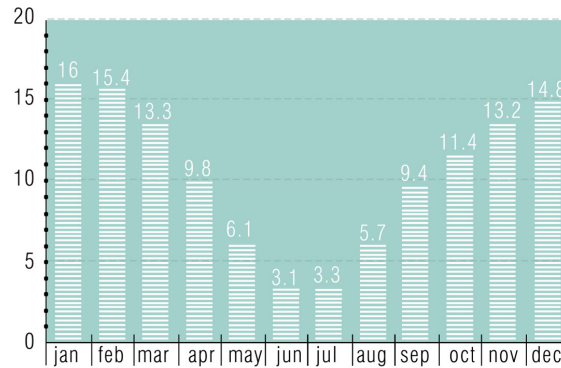
MESO CONTEXT | CLIMATE |



average rainfall in semonkong [mm]

rainfall

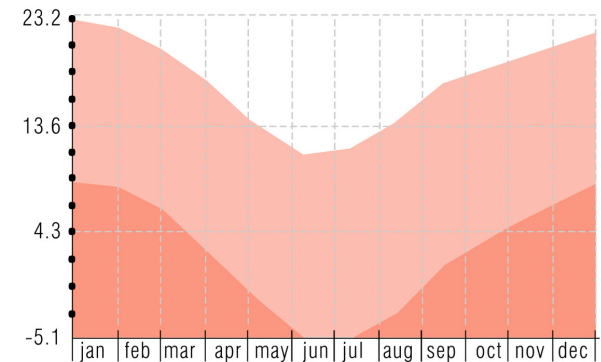
Climatic characteristics include general dry and cold winters. The dominance of high-pressure systems results in clear skies, dry air and moderate temperatures during the day. Temperatures suddenly fall after sunset. Precipitation is mainly in the form of snow during the winter – snowing annually over the highlands either at the beginning or end of the winter (2013: online). During summer months, cloud cover for most of the days ranges from partly cloudy conditions to overcast conditions, with widespread, short intermittent thunder showers and strong winds (2013: online).



average temperatures in semonkong [°C]

temperatures

Lesotho has relatively cool summers and very cold winters with frequent frosts. The combination of the landscape typology and the convection current uplifts the moist air masses from the Congo Basin during the summer, producing showers which constitute 85% of the country's total annual precipitation. In the highlands, the normal monthly winter temperature is 5.1 °C, with a minimum of -10.7 °C, but daily winter minimum temperatures can drop as low as -21 °C. Sub-zero daily minimums can be reached even in summer, both in the lowlands and in the highlands. The mountain region is relatively cooler and this tends to aggravate the winter conditions and frequent snow precipitations occur in those parts, often with little rain for months on end, and swept by bitterly cold winds. The mean annual summer temperature in the highlands is 7 °C and January records the highest mean temperature throughout the country, ranging from 20 °C at high altitudes to 32 °C in the lowlands (2013: online).



min/max temperatures in semonkong [°C]

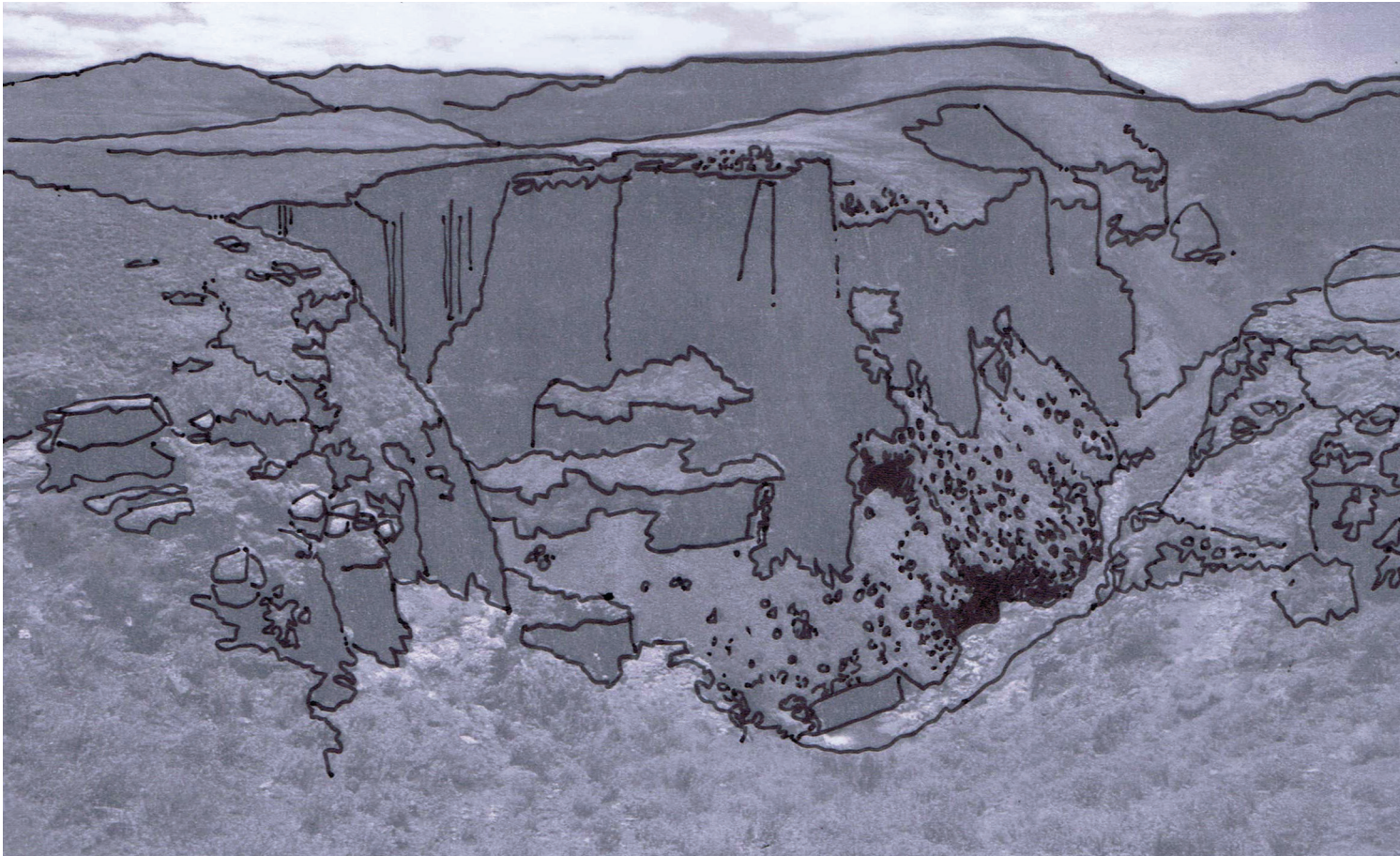


fig. **54**
Rock face and shrubbery.

quantative site analysis

MESO CONTEXT | TEXTURES AND BUILDINGS IN THE AREA

Rural architecture short-cuts the typical relationship between consumer and producer, as ‘clients’ build their own houses, economically using locally available materials. Frescura (online) classifies building techniques in Lesotho under the term ‘mountain technology’, being affected by climate, soil, and topography. He merits the attraction of vernacular architecture to its ability to merge with, and become part of, the immediate environ as the separate elements are harvested directly from the surrounding area. Whilst the aesthetics of rural architecture are charming, the fact that the dwelling is part of a delicate environmental balance, both at the level of an individual unit and at the larger scale of regional settlement is of greater importance. Thermal mass is essential for comfortable living in Lesotho, especially during the very cold winter months.

According to Gabriel Fagan’s (cited in Barker, [n.d.]: online) research, vernacular architecture developed organically and over a period of time; prescribed by the available materials, climate, and the builder’s way of living. This understandably developed into a tradition, with their descendants carrying on building as their fathers had done before them, unquestioningly, making only small individual adaptations. Unmistakably the value of tradition lies in its dynamic. This speaks of a respect for place, technology as craft, and the use of symbols – all relating to the use of materials in its simplicity and economy of means. Climatic and functional problems had to be solved by what was available on hand, which in turn fosters an inventive approach, structural integrity and honesty.

Existing buildings in Semonkong and Ha Lesala range from traditional huts, wattle and daub houses and materials such as stone, brick, cement blocks, corrugated iron and thatch being used separately and combined. This circumscribed range of materials are used in a wide variety – the earthy tones of the materials lifted with brightly painted windows and door within Semonkong



fig. 55 Textures regularly visible in Semonkong and Ha Lesala: stone, concrete block [usually of bad quality cement], corrugated iron.



fig. **56** Traditional stone hut with circular plan and thatched roof. Most of the homes in Ha Lesala follow this model, or have progressed to stone packed houses with a square plan and brightly painted windows.



fig. **57** Textures regularly visible in Semonkong and Ha Lesala: stone, concrete block [usually of bad quality cement], corrugated iron.

quantative site analysis

MESO CONTEXT | TEXTURES AND BUILDINGS IN THE AREA



fig. **58**

Wattle and chicken-mesh framed structure filled with stone and adobe. This form of building is not seen regularly. The frame and infill either act independently of each other, or the structure is plastered.

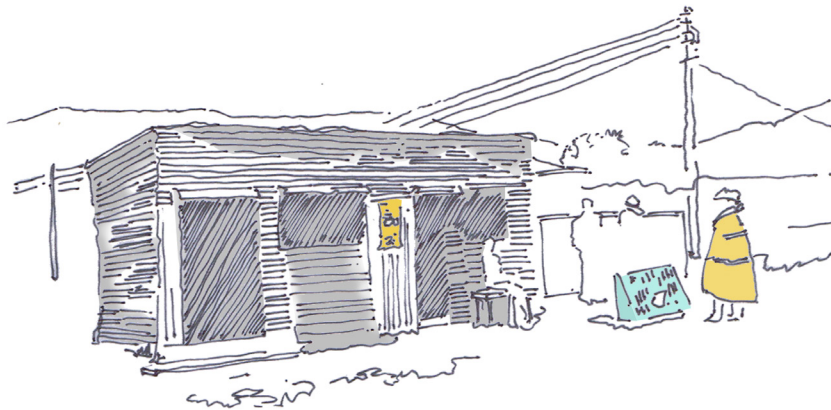


fig. **59**

Spaza shops line the streets of Semonkong's market place and the main roads in the town and village. These shops are constructed of corrugated iron, with operable panels to let in light and allow sales to take place. Temporary buildings are also built from this material.

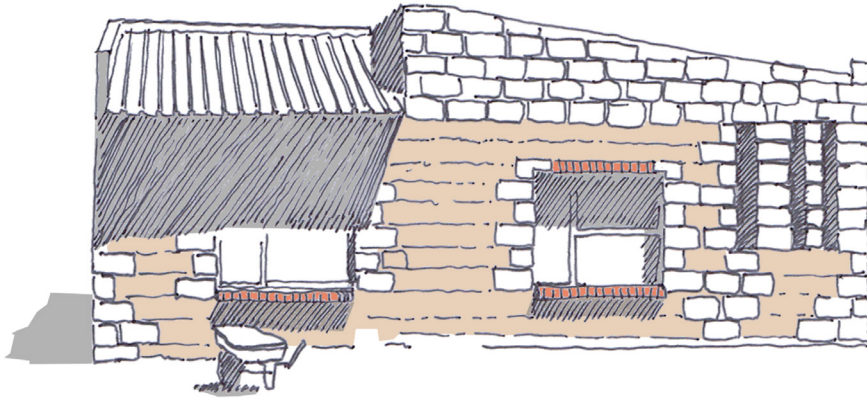


fig. **60**

Modern interpretations of traditional materials are seen more often within the town of Semonkong, but seldom in Ha Lesala. This building method is heavily influenced by the Training for Self-Reliance project that built numerous schools in Semonkong. Corner and window details are strengthened with concrete blocks to create a frame, that is filled in with either stone or bricks. Roofs are generally constructed from corrugated iron.

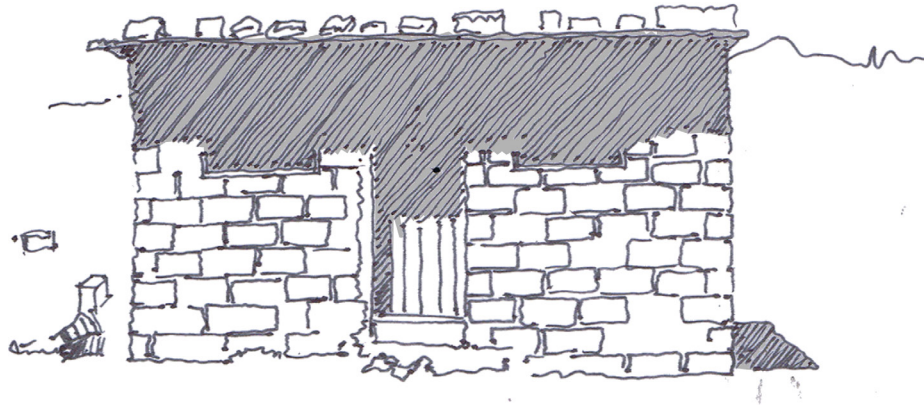
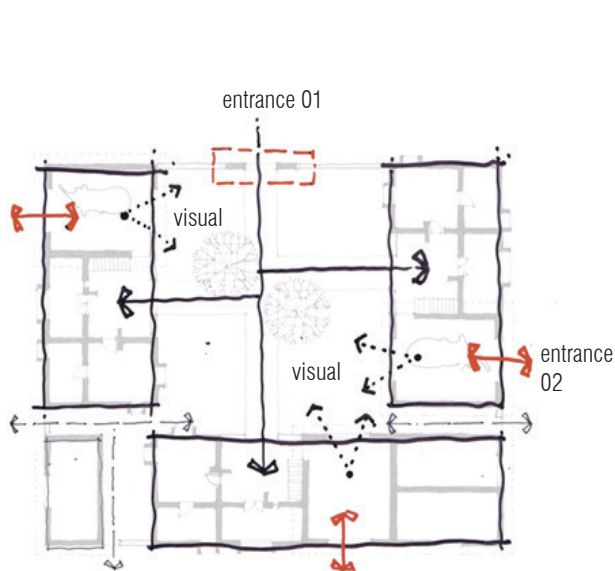


fig. **61**

Some smaller buildings are entirely constructed from concrete blocks as this is easy to produce and requires less manual labour than building with stone. Unfortunately, these blocks are of very bad quality in Lesotho.

+ precedent study | spatial organisation |

HATHIGAON ELEPHANT VILLAGE, RMA ARCHITECTS, RAJASTHAN

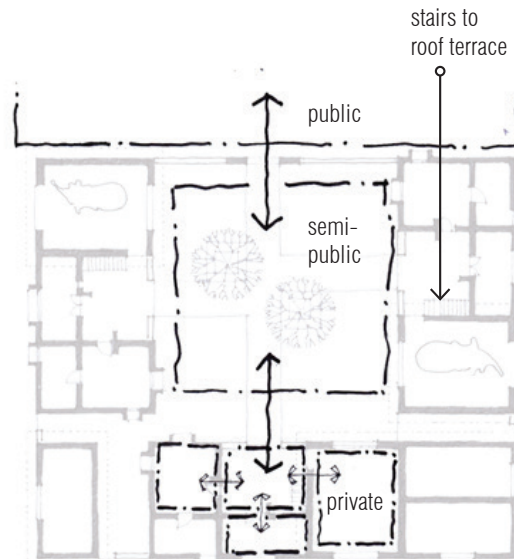


circulation

plan of typical housing cluster

Two separate entrances create a clear functional division of the respective living spaces, while maintaining a sharing of spaces

The elephants are housed in garage-like rooms that have exits on the outer, non-courtyard-facing sides of the buildings and big openings to the courtyard as visual connection.

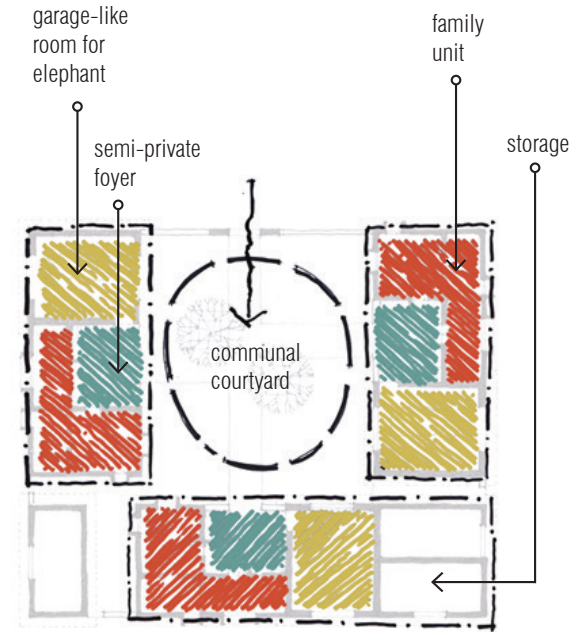


thresholds

plan of typical housing cluster

The site planning employed a system of clusters to create shared community spaces of differing spatial hierarchies. The aim was to build a sense of community among the inhabitants.

Users move from public space into the semi-public courtyard via a gated access point. From here every household has can enter their own open semi-private voyer before entering the privacy of the home.



spatial layout

plan of typical housing cluster

Families cook and eat their meals outside while children are free to play in the courtyard where physical boundaries separate them from the elephants, but a visual connectedness remains.

- family rooms
- garage-like room for elephant
- semi-private foyer

Indian architect, urbanist and educator Rahul Mehrotra's firm RMA, won a competition for a low-cost housing project for mahouts, the Hindi term for elephant riders, as well as their elephants and families - Hathigaon [elephant village]. A mahout enters the 'family profession' when he is assigned an elephant as a boy. They remain bonded for life through skill and a cultivated, longstanding relationship - elephants obeying only their Mahout.

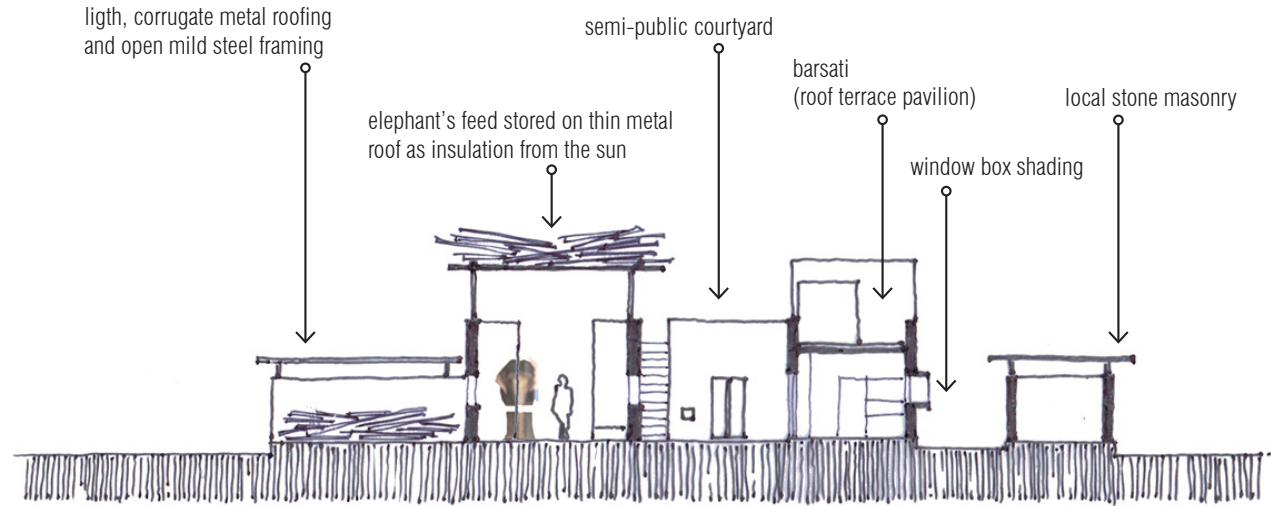
fig. **62**

Bathing is of great importance to the bond between elephant and his caretaker, as well as being essential for the elephants health.



The design strategy first involved re-structuring the landscape previously used as a sand quarry into a series of water bodies that act as reservoirs in harvesting rain runoff. A crucial resource as the process of bathing is both important for an elephant's health and a ritual facilitating the bond between mahouts and their elephants.

The housing units are organized in clusters and situated on portions of the site that are not used for the landscape regeneration. The dwellings are small - 18sqm - and arranged around communal courtyards. The intent in the design was to leave room for the inhabitants to transform their own homes incrementally and appropriate them through visual and spatial transformations over time. The distribution of the plan and volumes of the built spaces provides an effective response to the need for a high level of natural ventilation and passive cooling.



section showing ventilation



fig. **63**

The landscape was previously used as a sand quarry that was re-structured into a wet land with ample water and bathing space for the mahoots and their elephants.

fig. **64**

Mahoots take great care to decorate their animals. This also attracts more attention from tourists.

fig. **65**

The semi-public courtyard is only accessible to humans, but there is a visual connection to the elephants. This allows safe interaction.

fig. **66**

Bathing is an essential part of the daily routine in a mahoot and elephants life.



quantative site analysis

MICRO CONTEXT

The Lesala Shepherd School is positioned approximately halfway between the town of Semonkong and the village of Ha Lesala. Before crossing the Maletsunyane River from Maseru and the University town of Roma to Semonkong, there is a gravel road leading to Ha Lesala. A bowl is formed by the topography of the site in which the Shepherd School is situated – hills rise with a gradual slope in all directions from the site. This automatically gathers and creates an intimate, humane space within the larger context. The gravel road is not in a very good condition, especially after heavy rains. The school is part of the hospital complex completed by the Methodist Church of Southern Africa in 1982, which is currently used as an orphanage called The Semonkong Children’s Centre; caring for 82 orphans and vulnerable children.

62 shepherd boys regularly attend the school at the moment, receiving a nutritious meal after lessons in Sesotho, English and Maths every Monday to Thursday, from 7pm to 10pm. Shepherds have to secure their cattle in the kraal at their shepherd’s hut on the ridges surrounding the school before attending school (Baanen, 2015: personal communication). To allow more efficient time management and less travelling from grazing pastures to their home and school, a number of kraal’s will be provided around the existing school. Shepherds will now be able to receive and education while keeping an eye on their cattle – also providing an opportunity for specific teaching surrounding the care of cattle.

The current shepherd school is located approximately 150m from the other buildings on site and is in a much better condition. Sentebale made recent improvements to the building, including the addition of a water tank to collect water from the roof; a solar panel to power the school at night; a stoep and ramp to make the school accessible to everybody and a new coat of paint (Baanen, 2015: personal communication).



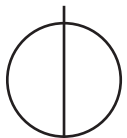
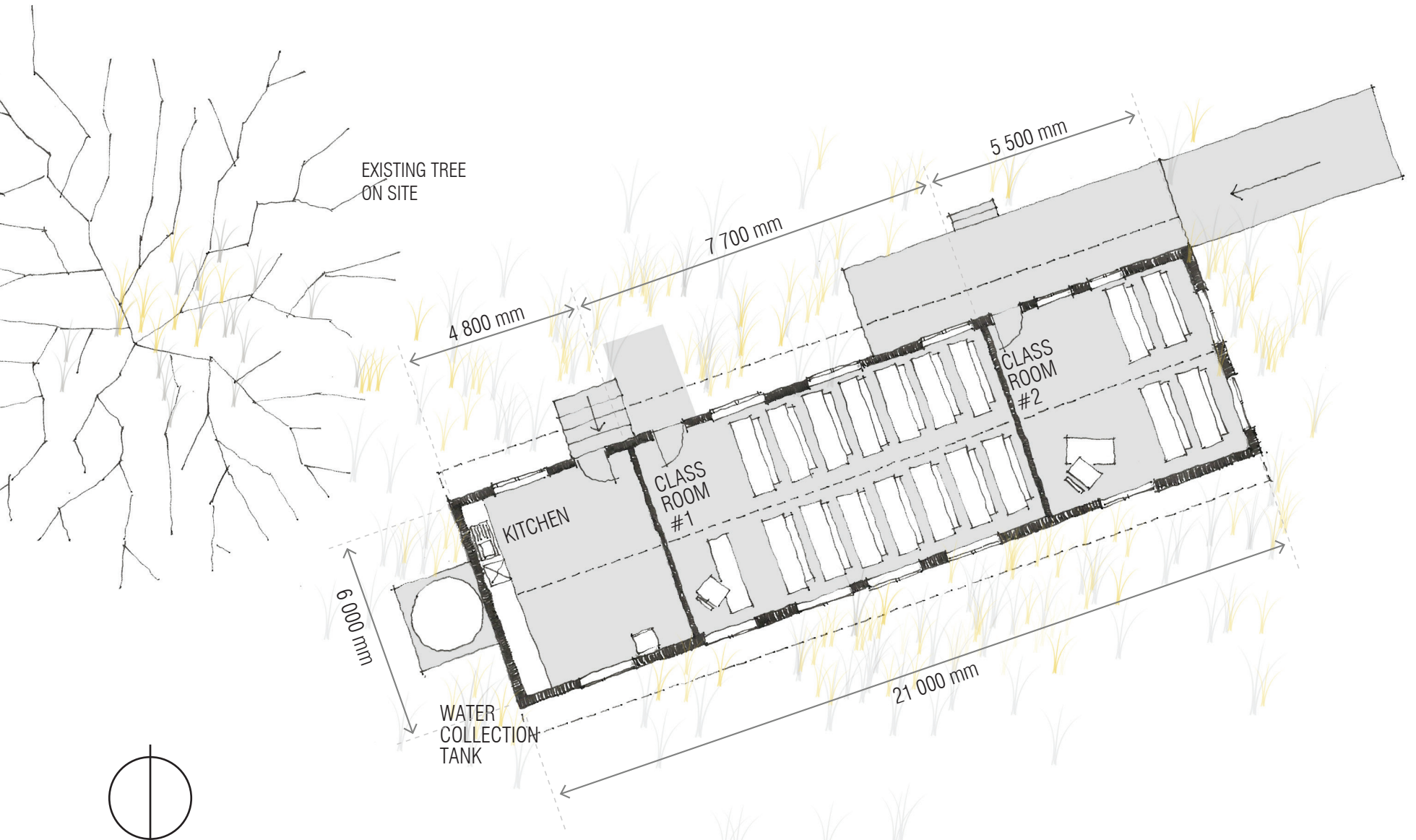
fig. 67
Taking his sheep out daily to graze is an immanent part of the shepherd’s life.



fig. 68
Children from the Methodist Church’s orphanage gather and play around the Lesala Shepherd School as they wait for a turn to drink water from collection tank.

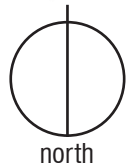
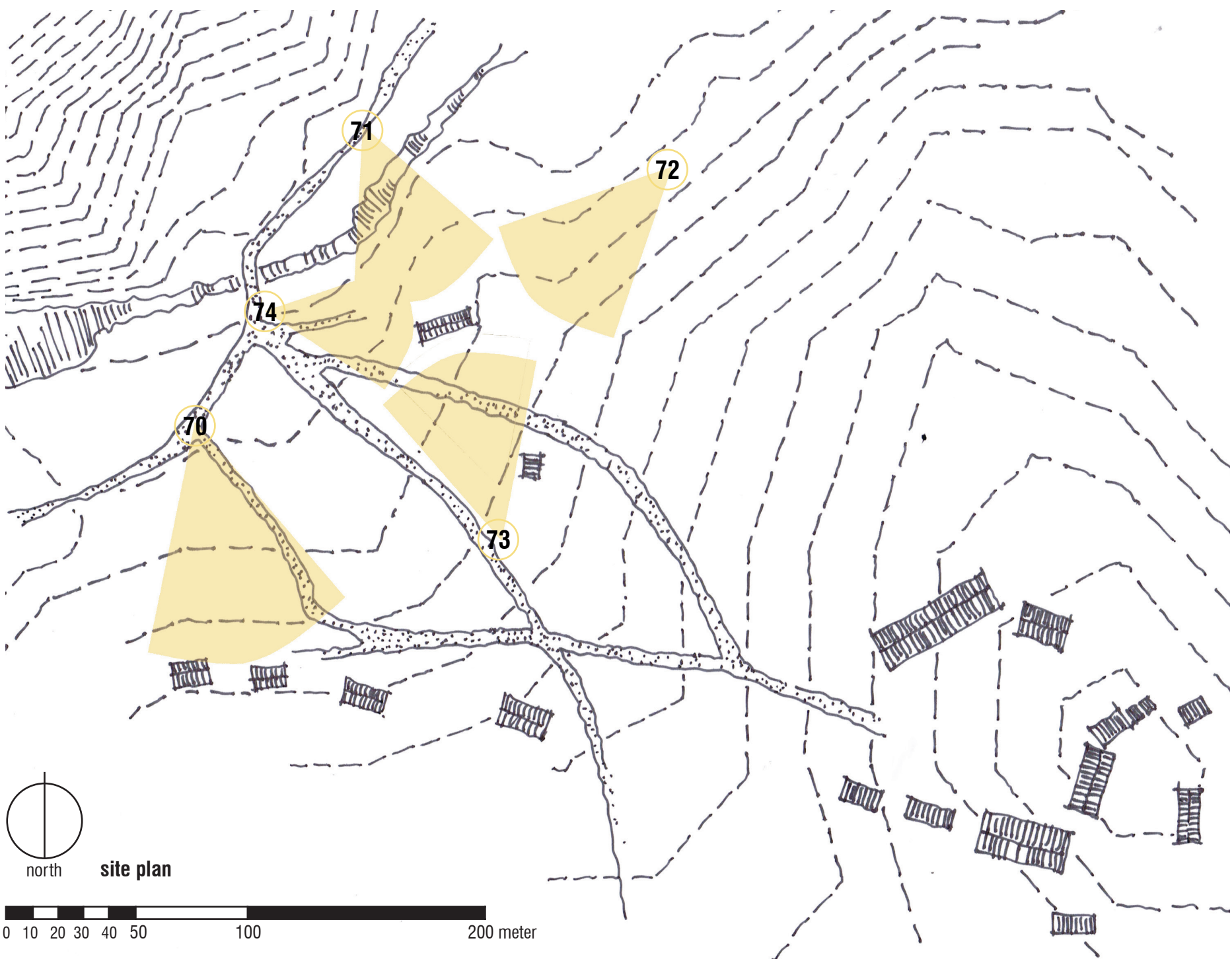


fig. 69
Doing laundry on the river bank is not only a task, but also a social ritual for women in rural Lesotho. Unfortunately the soap causes damage to the river.



north

plan of lesala night school



north **site plan**





fig. **70**
Orphanage caretaker residence. The orphanage is run by the Methodist Church of Southern Africa.

fig. **71**
View from the road across the stream to the existing Lesala Night School. This is how one would approach from Semonkong

fig. **72**
View from the north-east corner of the site.

fig. **73**
View from the orphanage to the Lesala Night School.

fig. **74**
The vehicular approach to the Lesala Night School.

+ precedent study | significant area |

TRAINING FOR SELF-RELIANCE PROJECT, IAIN LOUW, LESOTHO

This project is a school typology that was developed in Lesotho with the aims of being easily duplicated, as a means of creating an equal educational opportunity for all, as discussed earlier. This precedent study is seen as a critical view on the duplication of this school typology without addressing the site. The use of materials is all local and good passive heating and cooling has have been incorporated. The form-giving is unfortunately informed by the traditional school typology and does not at all address the culture of teaching that is intrinsic to Lesotho.

Professor Iain Low can share some valuable insights into designing and building with limited means. In 1982, the architect left South Africa in the midst of Apartheid to live in Lesotho and developed a school-building programme over five years (1982-1987) that encapsulates the principles of self-reliance. Low designed schools while working for the Training for Self-Reliance Project, that constructed schools funded with World Bank loans, a program both representing and endorsing self-reliance. Low estimates that two to three hundred schools were built by the draughtsmen and builders trained through the project; Lesotho today having one of the Africa's highest literacy rates (Le Roux, online: 2014).

The construction method for these schools makes use of a modular system, enabling replication by draughtsmen, and adaptation to different topographies and builders. This method engages transitions between the colonial, old vernaculars and modern construction. The concrete block piers were designed to accommodate either stone, site-constructed concrete blocks or clay bricks as infill – whatever was most accessible on site. Specifications being that of local materials and craftsmanship that contributes to a home-grown vernacular. In a YouTube video by Ilze Wolff (online: 2013), Iain states that these building are heavily over structured: with three-

dimensional structural systems composed of buttresses and ring beams of cement brick around stone or other infill panels. Low attributes this to the low quality of locally made cement in Lesotho and the fact that these structures are generally not maintained. Similarly, for climatic aims straightforward technologies were used: clear sheeting for day-lighting, trombe walls for passive solar heating, cross-ventilation and rainwater harvesting.

Both individual buildings and in larger complexes - such as the cluster of classrooms, support pavilions, church and housing at Qoaling - the schools work as catalytic urban interventions, laid out with careful consideration of external spaces as places of movement and gathering. The system that evolved did not only meet the demands of the enormous service delivery project, but also ensured local economic development and the continued growth and implementation of the project. Even without drawings, the School system has gone viral as builders have transferred the technology to other schools and houses.

Although it might have been Professor Low's intention that the schools be seen as positive urban and institutional intervention, it has not been replicated in quite the right manner. Buildings have been replicated all over Lesotho, but without sensitivity toward site, orientation, urban or public spatial influences. This contributes to bad architecture, although the intentions were good. The product is very institutional and western.

fig. 76

Typical school hall of the Training for Self-Reliance Project.



rainwater
collection

clear sheeting
for daylighting

natural cross ventilation

trombe wall

2.3.2 qualitative site analysis

Whereas “space” denotes the three-dimensional organization of the elements which make up a place, “character” denotes the general “atmosphere” which is the most comprehensive property of any place (Nesbitt, 1996: 418). Norberg-Schultz emphasizes that just as important as the basic elements of wall, floor, or ceiling are, we should also experience the landscape as horizon, boundary, and frame for nature (Norberg-Schultz in Nesbitt, 1996: 412).

Thus the experiential analysis focuses on the abstract elements that make up the site, which includes certain patterns and rhythms, visual boundaries, the site’s feel and its influence on the senses. These abstract elements (as with concrete elements) are influenced by variables such as seasons and the time of day, which determines the behaviour of the user or viewers to a certain extent. Weather shapes how people and communities get together and communicates how they use a space, and also how spaces are aesthetically formed.

These same principles apply to the micro-site and Methodist Church Complex. Certain daily rituals have been established by the daily and weekly users and visitors to the site. Rituals differ from morning and afternoon to dusk and night fall. People and animals move in a certain direction during certain hours of the day and in the opposite direction later, while spending pockets of time in one place to perform certain daily tasks.





fig. 77

Children from the orphanage gather and play around the water collection tank in the afternoons while their caretakers do laundry on the bank of the stream.

qualitative site analysis

DAY



constant breeze associated with the
lesotho highlands

sound of women talking while
washing clothes and linen in the
stream

chatter of children swimming in
the stream and sitting in the sun

freshly ploughed earth

untainted fresh air [no pollutants]

children from the orphanage mill
around on the shepherd school's
steep - enjoying the sun

gathering space because of naturally
supplied shade

children from the orphanage drink
water and play around the water tank
before returning to their home

sheep bleat and the bell around
a rams neck clangs while grazing
under a shepherds watch

qualitative site analysis

NIGHT



strong winds usher in the evening's cold

orphanage children finish off their last game for the day with laughter

the shepherd school becomes a safe, warm, familiar place at night where shepherd boys receive a warm meal and education

the slower, less urgent jangle of a cowbell as shepherd and animal move to higher ground for the night

shepherd boys heading to the cattle kraal on horse back shout over long distances and laugh audibly as their horses trot through the stream

the sound of moving water from the stream travels farther at night and sounds more aggressive

2.4

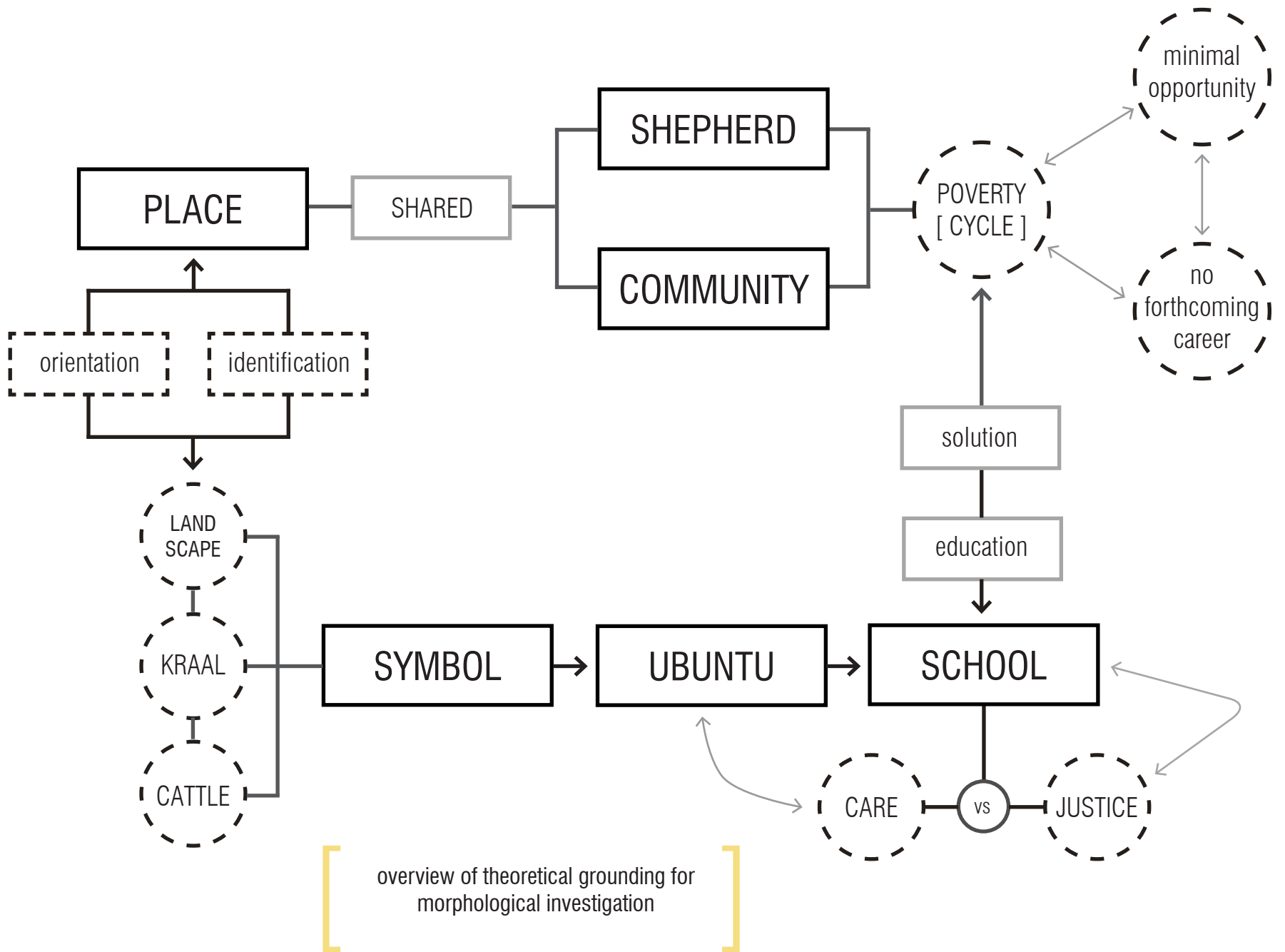
morphology

The proposed Rural Community Pavilion and Shepherd School is an educational complex for the culturally marginalised and is designed specifically for those who have no or little means of receiving an education. From the typological study it has been gathered that education is a valid solution for the two groups of user in overcoming the crippling effects of the infringing poverty cycle. This chapter explores, as theoretical grounding for the design solution of the identified project polemics, the concept of how 'place' can be reconstructed through spatial awakening. This study further explores the nature of how we conceive, construct, perceive and interpret 'place' and how we can successfully transform it by introducing new architecture. It investigates how buildings carry meaning.

The proposed architectural intervention serves two users, as earlier identified through the typological investigation as the nomad and the settler – the shepherd and the community. These users belong to the same cultural identity with similar cultural constructs, but possible differentiations in perception or interpretation of these cultural objects

or ideas are caused by dissimilar social standing. A few cultural constructs will be identified and investigated as possible signifiers, relating to the users connotation thereof. This will allow the users of the building to identify and orientate themselves within both the landscape and the building complex.

An overview of Ubuntu and its social relationship and approaches offers insight to the reader with limited knowledge on the subject. This framework of the African way of life is critical to equip the reader with the knowledge required to fully grasp the design endeavour and decisions made in respect of design resolution and theoretical argument. The intention is to formulate a theoretical grounding as structuring element for the process of creating place and functional space. The challenge lay in understanding the role of traditional African values and how they are linked to the artistic and expressive cultural forms. If successful, an environment will be created in which there are no longer boundaries of social constructs and exclusion.



morphology

SCHOOL TYPOLOGY + PLACE

2.4.1. school typology

The tremendous pressure placed upon the Lesotho government post-independence (1966) in regards to education led to schools growing rapidly; with the focus being placed on the imparting of knowledge, rather than commitment towards the child to be shaped and moulded as was previously the case in smaller schools. On the topic of embedding the ethic of care into schools, Nel Noddings (1992: 20) writes that 'the current structures of schooling work against care' and relationship. School should not just be seen as a place of education, but also a place where social and emotional needs are met, and in Noddings' opinion the current schooling structures work against this outline.

Today, the majority of schools across the world continue to follow the standard model and its associated typologies of teacher-centred classroom-and-corridor organisation that has been applied for almost two centuries (Kühn, 2012: online). The instigators of this typology attempted to create 'aesthetically neutral' spaces, hoping that the users would 'fill them with life', although these mono-functional classrooms have been found to be underused and circulation spaces are mostly impracticable for learning. In spite of the fact that education in traditional Sotho culture is significantly different than that of the Western world, being much more relational and even informal through storytelling, schools in Lesotho have none-the-less been built on this same standard model.

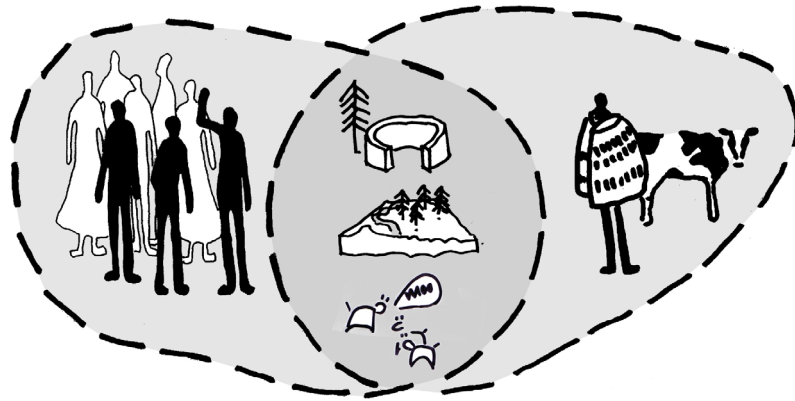
Healthy relational activities have a multitude of indirect social benefits that cannot be captured or necessarily measured. Wolff (2011: online) argues that the failure of architects to recognise the nature of the society that they are serving, is not justifiable

grounds for developing creative work. This stirred an investigation into how the school typology can be challenged, adapted and changed in order to architecturally incorporate caring into school as means to dwell meaningfully.

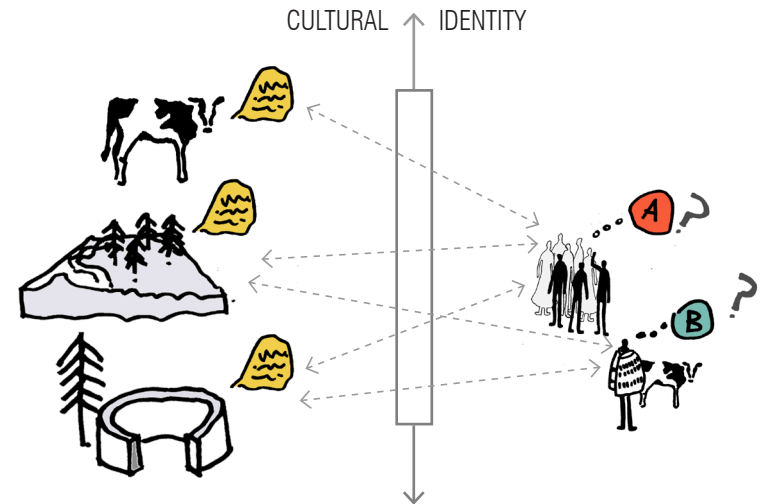
2.4.2 place

Living involves the conceptual organisation and the physical arrangement of site elements in order to form a place. This includes places to work; places to rest; places to spectate from; place which protect and inspire; place which are nice as well as nasty; places which are cold and places which are warm; mine and yours. In a talk on the architecture of place at Design Indaba, David Adjaye (2013: online) states that to him 'architecture makes sense when it connects with culture, society and climate.' He refers to the physical environmental elements, but also how they allow responses.

According to Tadao Ando (1996:461), the presence of architecture in a place, 'irrespective of its self-contained character,' unavoidably creates a new landscape. It therefore becomes necessary to discover the architecture which 'the site itself is seeking.'" In the same way as the architecture has to belong to the place, Heidegger says that to dwell (being-in-the-world) in the true sense of the word, poetry is needed to bring man into the earth and make him belong to it (Norberg-Schultz, 1979: 23). In other words, humans are only able to dwell if we belong, and we can only belong when our fundamental human need of meaning is met through poetry.



Both the community and shepherds can relate to the kraal, the landscape and cattle as cultural constructs.



Because of differing social standings and cultural histories, the community and shepherd may relate differently to these cultural constructs, even though they convey one message.

That which the built form wishes to communicate will inevitably influence the emotions of its users and the way they experience it. The user's desires, in turn, will continue to shape and change the building. Moore (2012: 18) sees these desires and emotions as 'overlapping concepts' and infers that architecture is 'engaged with both'. Dwelling is a subtle concept, not easily translatable, which makes it difficult to transform into architecture. Human identity presupposes the identity of place; therefore Norberg-Schultz (1979: 18, 22, 45) has identified the primary aspects of man's being-in-the-world as that of orientation and identification. For in order for man to gain an existential foothold in the world, he has to know where he is, but he also has to know how he is in that specific place. While identification intends the qualities of things, the bodily form, orientation grasps their spatial interrelationships (Norberg-Schultz, 1985: 15).

The duality of the user, one marginalised from the community and the other the community itself, necessitates a hybridity of dwelling which implies identifying cultural constructs that are shared by both users. The classical Lesotho landscape, the kraal and cattle as object of wealth has been identified as cultural constructs that are shared by the users of the aimed architectural intervention. These objects are known to the users, but because of differing cultural identities caused by social standing, each user will identify and orientate differently in regards to each of these. The various physical parts of a space act as signifiers through the actions and experiences of the participant; the participant then assembles these connoted meanings into a personal construct. The fundamental idea behind the architectural intervention is to facilitate dialogue between shepherds, the community and the landscape; dealing with conditions pertaining to the social structure of society.

morphology

CULTURAL IDENTITY AND THE KRAAL

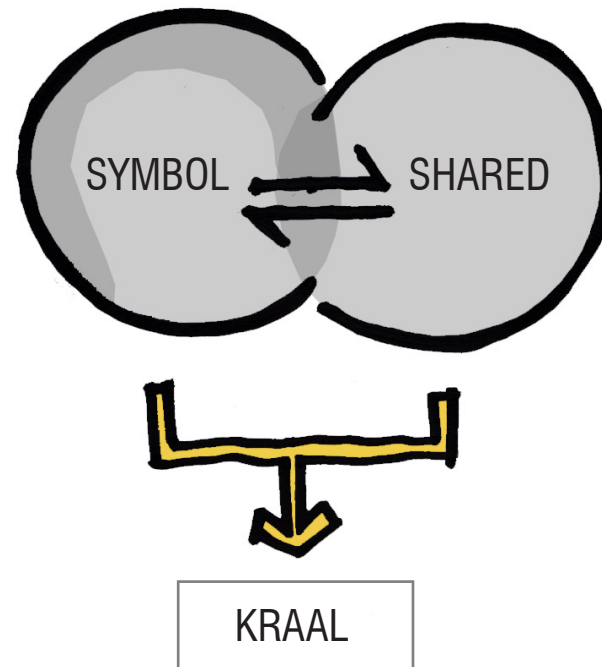
2.4.3. cultural identity and the kraal

As identified through the precedent study in Part 2 (page 30), the cattle byre has a central location within the homestead and traditional Sotho settlement; evidence that the kraal is of great economic and symbolic importance in the life of the community (Gill, 1993: 29).

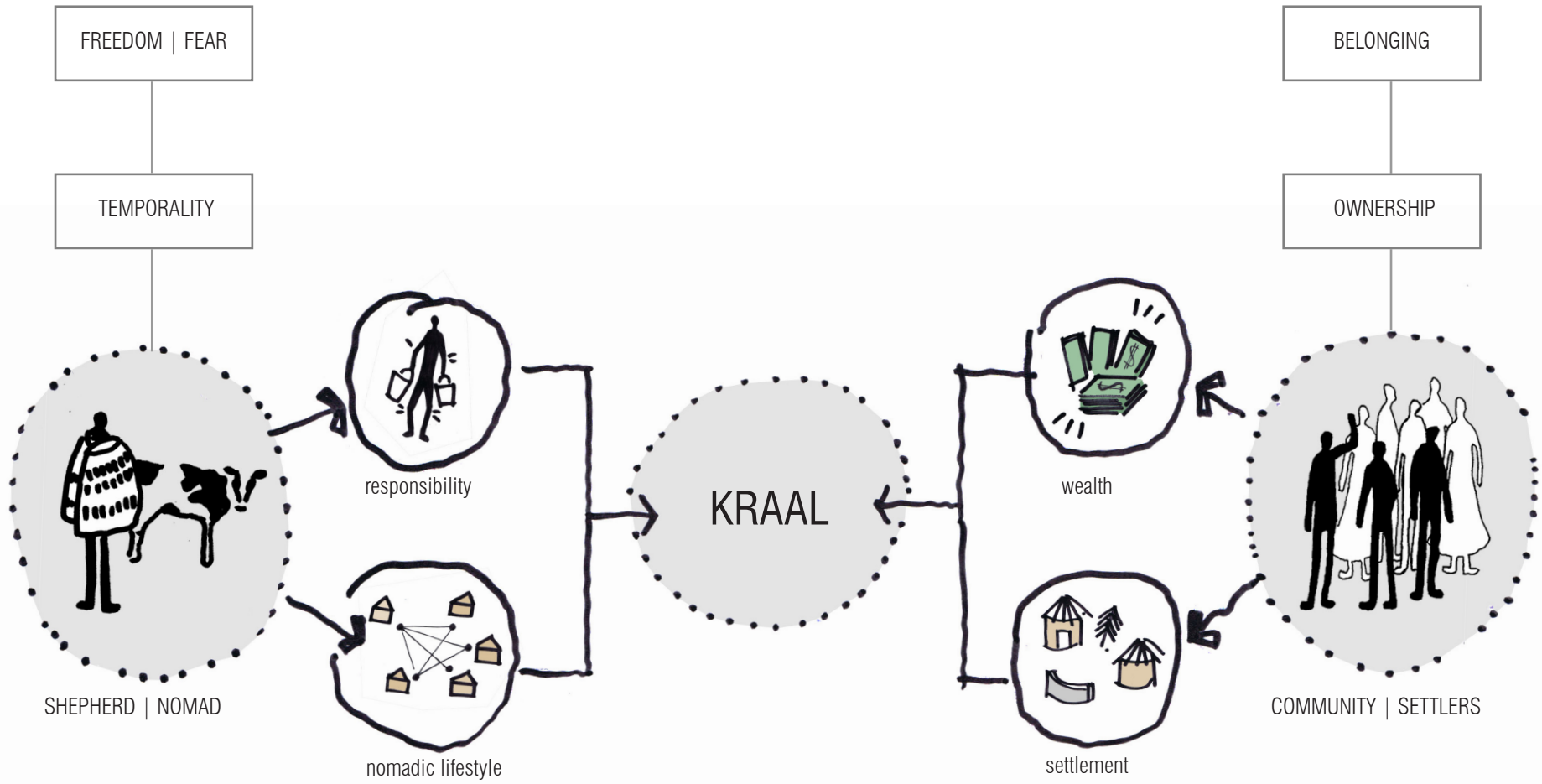
The community as user identifies with the kraal as a symbol of settlement and visual representation of their wealth. In other words, the existence of a kraal necessitates the existence of cattle and therefore wealth. When a kraal is built within the community settlement, it denotes inside and outside, and claims space for the owner of the kraal or the owner of the cattle in the kraal. It is a manifestation of belonging and ownership.

The shepherd as nomad does not belong to a community or village, but travels from place to place in search of adequate grazing for the cattle. In contrast to that of the community, cattle as image of wealth do not represent the wealth of the shepherd or that of his family necessarily, but that of an employer – an employer that can change. The living arrangement of a shepherd and his relation to the cattle and employer both introduces a sense of temporality. This reveals a freedom on the part of the shepherd, although not necessarily by choice.

While the kraal is an image of settlement for the community, it represents temporality for the shepherd. It becomes a symbol because both users can relate to it. Suzanne Langer sees architecture as coming into being when the “total environment is made visible” through the architectural intervention. In general, this means to concretise the genius loci.



The kraal can be seen as a symbol, because it is shared by both community and shepherd.



For the shepherd, the kraal represents the temporality of his nomadic lifestyle and the fear that comes with carrying responsibility. His freedom is not necessarily a chosen one.

For the community, the kraal represents settlement in gathering the landscape and wealth through owning cattle. The kraal becomes a symbol of belonging.

morphology

CULTURAL IDENTITY AND THE LANDSCAPE

2.4.4. cultural identity and the landscape

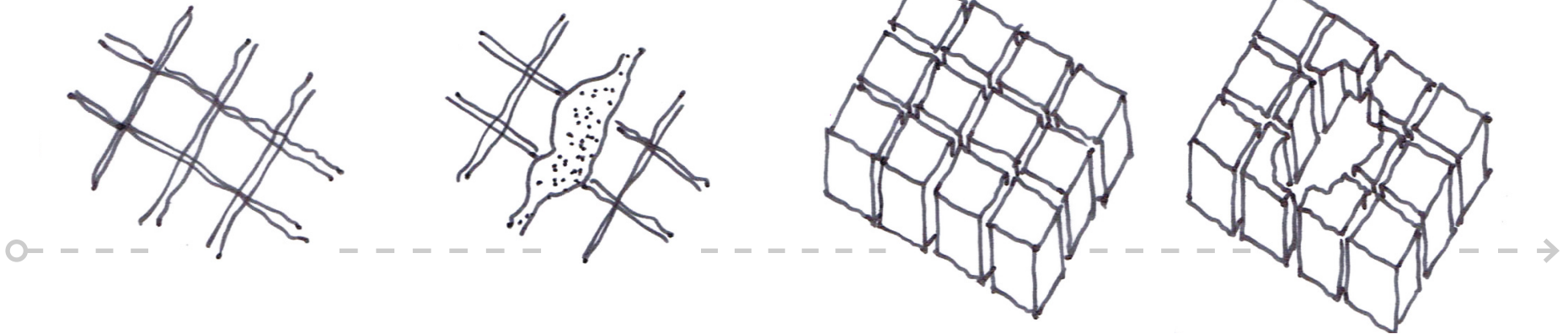
The rolling hills and clearly defined natural spaces of the classical landscape make human fellowship possible: however, it is advised to expose the true site through intervention, rather than impose on the site. In this sense the landscape acts both as 'a mirror and a lens' within which we can see the space we occupy as well as 'ourselves as we occupy the space' (Kastner, 1998: 53). Therefore, site-specific work would focus on establishing an inextricable, indivisible relationship between the architecture and its site, but demands the physical presence of the viewer for the work's completion (Kwon, 2002: 12).

According to Norberg-Schultz (1979: 46), man should dwell in the classical landscape by placing himself in front of nature as 'equal partner'. He is where he is, and looks at nature as a friendly complement to his own being. The genius loci of the classical landscape becomes manifest where these clearly defined natural places are emphasized by the loving care of its human inhabitants (Norberg-Schultz, 1979: 46), making true 'gathering' possible. The kraal can be seen as a 'gathering' agent – an object constructed within the continuous landscape that defines space. In the vastness, humans need a point of reference, and the kraal becomes a manmade version of a clearly delineated natural space as seen in nature.

In the same way as 'gathering' is made possible by placing an object within the 'void' of the continuous classical Lesotho landscape, 'gathering' is made possible in Venice by doing the exact opposite. If I can boldly compare the city(land)scape of Venice to that of Lesotho and St Mark's Square to that of the kraal. Venice becomes a reflection of the spatial principles seen in the classical landscape, where within the strong and continuous city grid of Venice each part (building) is fully its own and fully part of the whole (city). In this dense and continuous city grid, a gathering space would look much different than in the natural landscape, asking more for a 'freeing up' than for the containment achieved through the kraal. Where in the landscape to contain is to gather, in the dense city of Venice a square or breathing space is to gather. The tower in St Mark's Square claims the space around it while the kraal claims the space within it.

+ precedent study | creating places of gathering |

ST MARK'S SQUARE, VENICE

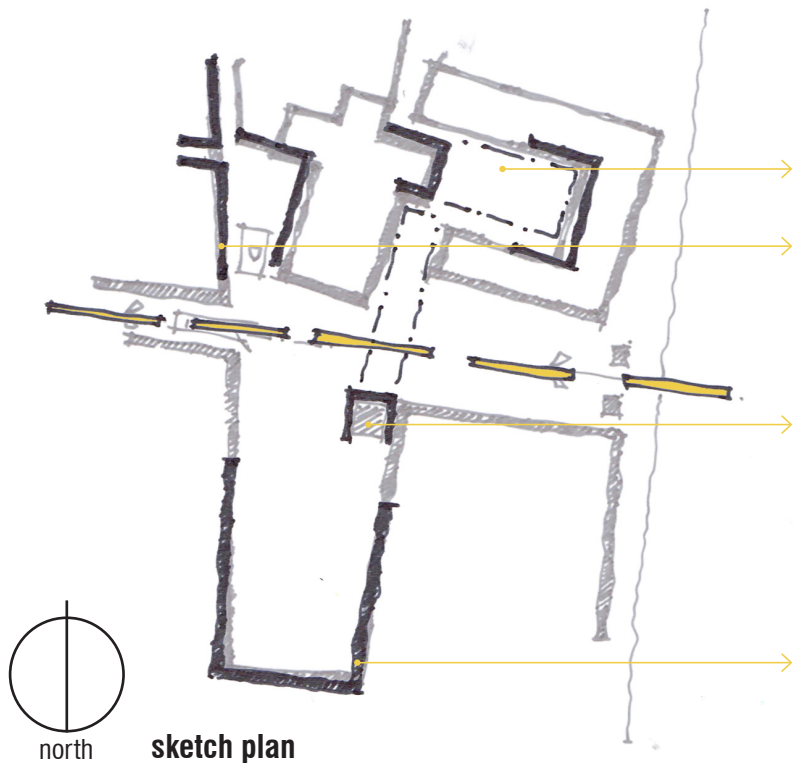


The city(land)scape of Venice. Tight interwoven streets and buildings.

Creating breathing room within this tight system allows its inhabitants to gather.

The dense city is made up of clearly delineated elements that form part of the whole. Much the same as the classical landscape.

The city asks more for a freeing up, than an enclosure in order to gather.



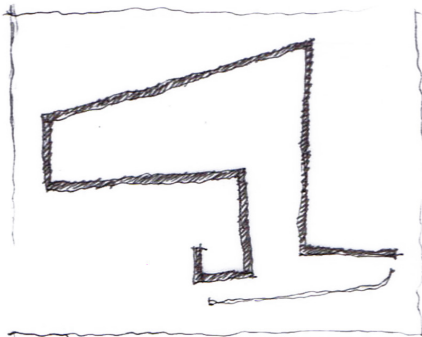
Buildings show respect for adjacent buildings by arching around them to create inhabitable space between two edges.

Solid building edges act as catchment for the space.

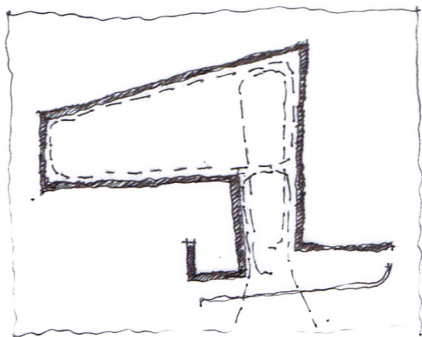
While the tower invites gathering around it, its mass is also placed across from the void next to the Basilica, enhancing the interplay between solid and void.

Solid building edges act as catchment for the space.

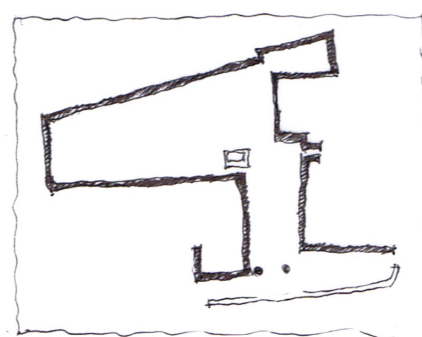
sketch plan



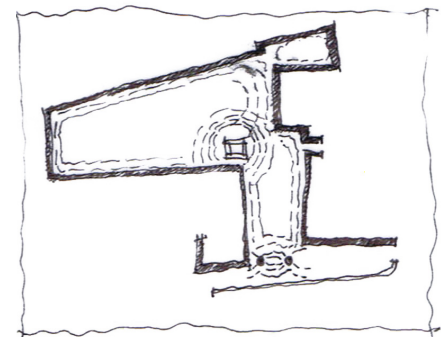
St. Mark's Square forms a void within the city grid of Venice, which allows gathering.



The interplay between solid elements projecting their presence into the void lends a certain character to these spaces and clues on how to be used.



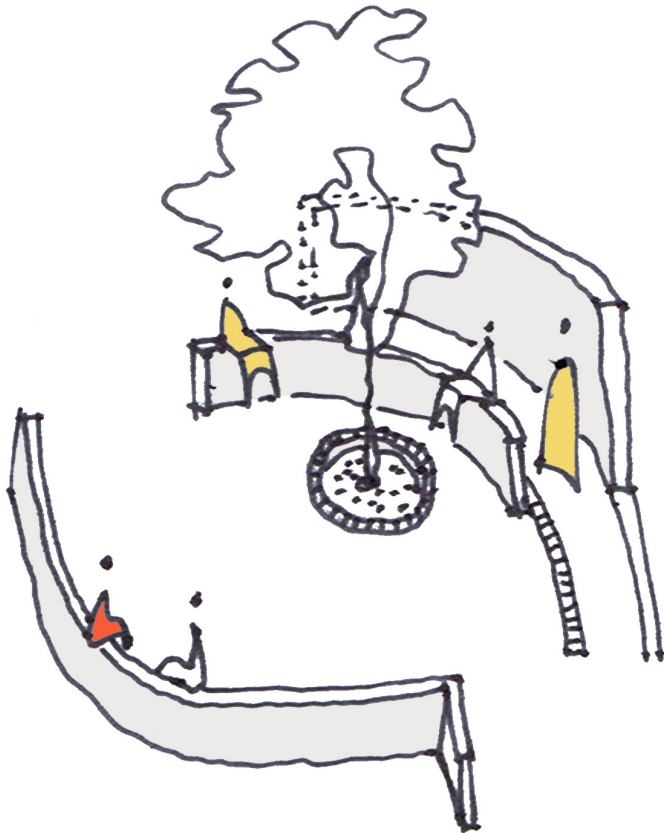
This simple space created by adjoining buildings is made more complex where facades push into the square, buildings are cut away at corners and a tower element is added.



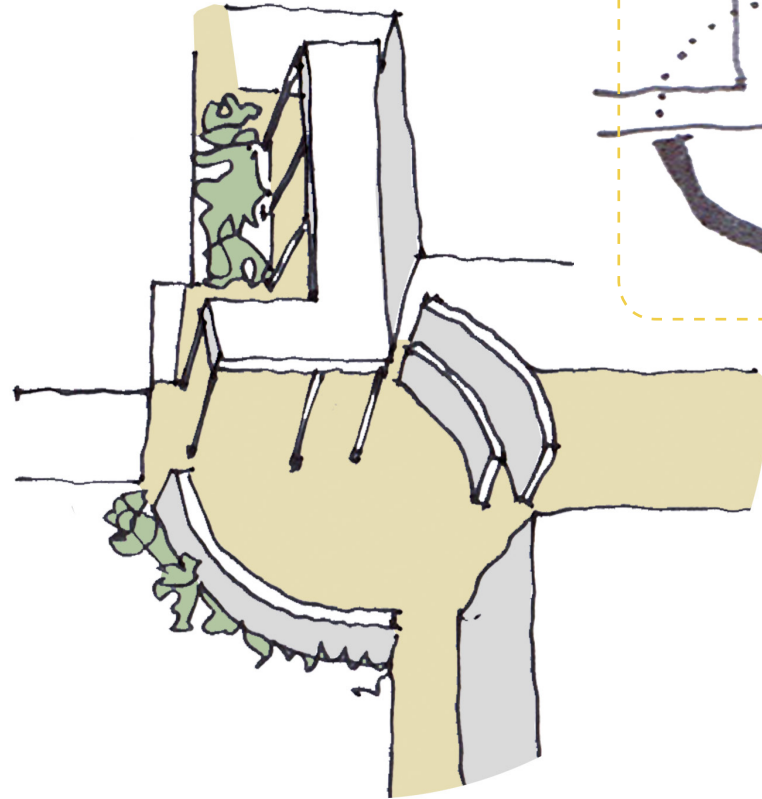
The elements that have been added and taken away from the simpler geometry of the void create tension on their edges that either entice people to gather or scatter. The tower gathers.

+ case study | creating places of gathering |

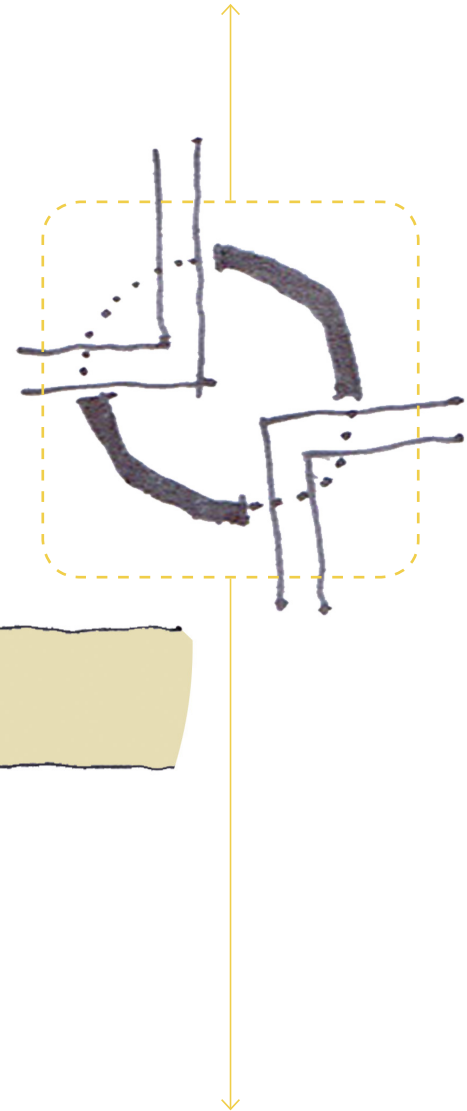
STUDENT WAITING AREA, QUANTITY SURVEYING DEPARTMENT, UFS, BLOEMFONTEIN



The meeting space outside the Quantity Surveying Department on the UFS campus, Bloemfontein, is defined with loose standing circular walls and captures the dynamic pedestrian traffic into a space where one can rest.



The space is quite vast, but curved seating allows for smaller intimate spaces, while a heavy flow of pedestrian traffic is allowed to pass through.



The gathering space is formed where four paths meet and two buildings are entered. This creates a complex space that mediates differing circulation patterns.

morphology

SEMIOTICS

2.4.5. semiotics

Lynch (1960: 4) asserts that ‘a good environmental image gives its possessors an important sense of emotional security,’ but where the system is weak, the imagery becomes difficult to, and man feels ‘lost’ (Norberg-Schultz, 1979: 18). To be lost is evidently the opposite of what Norberg-Schultz (1979: 19) meant by dwelling. It is therefore not only important that our environment has a spatial structure which facilitates orientation, but that it consists of concrete objects that one can identify with.

The kraal becomes a symbol of what the community needs – a shared space that is relatable to both the nomad and the settler. Symbolisation implies that an experienced meaning is “translated” into other mediums (Nesbitt, 1996: 421-422), in other words the object has been invested with a fictional plane of signification that renders it figurative and subject to interpretation by the user. If a conventional narrative in a work of fiction binds characters, events and places within an overarching plot framework, then an environmental narrative carries all of the above, but the fictional is tested against physical reality. In the same way as one cannot separate what somebody says from the manner in which they say it, we must be conscious of how buildings say what they will inevitably say.

An understanding of the user, as well as the relationship between narrative structure, perceptual experience and representation are most relevant aspects of narrative in architecture (Psarra, 2009: 2). Symbols can lead one towards becoming part of the surroundings. If the community needs a shared space, this shared space can be translated into the African moral theory of Ubuntu, as it should be possible for architecture to enhance itself by welcoming cultural identity into the design process of a hybrid solution. The exploration of shared cultural entities by both nomad and settler, as well as their different associations to said entities, brings us to an investigation of the African strand of moral theory, Ubuntu.



fig. 78

Symbolisation implies that an experienced meaning is “translated” into other mediums (Nesbitt, 1996: 421-422), and that an object now contains a fictional plane of significance that renders it subject to interpretation.

morphology

UBUNTU AS CULTURAL NARRATIVE

2.3.6. ubuntu as cultural narrative

Every aspect of African life, and consequently also Sotho life, is moulded to 'embrace Ubuntu as a process and philosophy' that reflects African heritage, culture, traditions, beliefs, customs, value systems and extended family structures (Makhudu, 1993: 40). This encompasses thought patterns, ways of speech, values and how one would 'arrive at the destinies of life' (Broodryk, 2002: vi). These facets of African life will act as morphological contributors for the proposed architectural intervention to be less of an end in itself and more an instrument, reaching to be just a bit more than 'a response to utility' (Coates, 2012: 1).

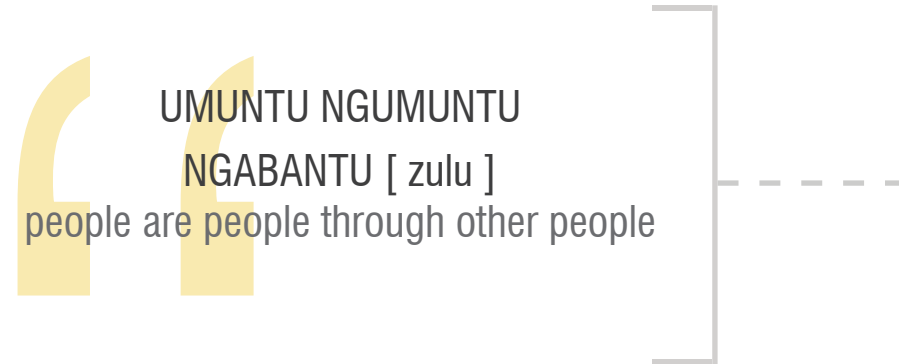
If architecture is an instrument, then Psarra (2009: 2) argues that it should be able to not only express meaning, but also participate in the construction of meaning (Psarra, 2009: 2). In an attempt for the proposed Rural Community Pavilion and Shepherd School to be more than just empty forms and social meanings, Ubuntu will assist in the construction of architectural meaning. Just as in texts, where the form of the content is not attainable without the expression thereof (Juodinyt-Kuznetsova, 2011: 1272), architecture is the expression of the cultural content, and if the content is to be a 'shared space', then Ubuntu must aid in the expression of the spatial storytelling. The narrative approach depends on a parallel code that adds depth to the basic architectural language (Coates, 2012: 5).

Ubuntu is a traditional African philosophy that offers an understanding of the individual in relation to others. According to Ubuntu, there exists a common bond between all humans and it is through this bond, through the interaction with fellow human beings, that the individual's human qualities are discovered. The humanity of the individual is only affirmed when those of others are acknowledged - wholeness is the regulative principle (Murove, [n.d.]: 308).



morphology

UBUNTU AS CULTURAL NARRATIVE

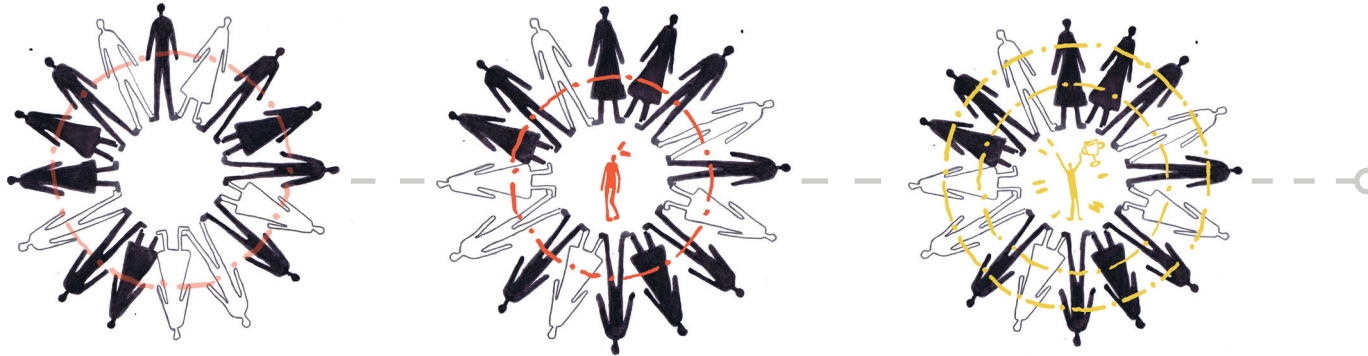


If the symbol of the 'kraal' can be translated into the strength of the community, then a possible morphological application to architecture would be the importance of inter-relationship between each architectural element or part of the whole. This would pertain to each construction element, or each part of the accommodation list in relation to the whole. A multitude of architectural parts and wholes can be grouped together by different classifications as form giving instruments.

Ubuntu is not readily translatable into humanism, rather into humanity, humanness, or even humaneness, propagating common humanity. As such, it is both a factual description and a rule of conduct or social ethic. It not only describes human beings as 'being-with-others,' but also prescribes how they should relate to others (Louw, 2006: 161). Neither the single individual nor the community can define and pursue their respective purposes without recognising their mutual foundedness. This implies that achieving the state of being a 'mensch', or having Ubuntu, is entirely constituted by positively relating to others in a certain manner (Ments, 2010: 51). Fulfilling these obligations and maintaining social harmony are central to Sotho morality and law (Gill, 1993: 48). The well-being of the community is preserved if individual members fulfil their respective obligations.

Taking into account the different users that are to be incorporated, and the safety and privacy of each, it is proposed that functions should be arranged in relation to the type of user, as well as the type of function. These organised clusters can then again be seen as 'individuals' that need to relate to each other as well as to the whole. Each 'individual' cluster will also be answerable to certain spatial obligations in creating responsible spaces that are bound by designed thresholds that clearly delineate who the user is. Each cluster in the community pavilion complex will be responsible for the complex as a whole, in terms of safety and responsible use.

Mutuality, however, presupposes a space that does not have any social or privacy restrictions in relation to the user. It denotes a mutual community space and gathering court that is open for all to use, while still being connected to every 'individual' cluster. In the same way, the meaning of place is closely associated with space, as these two concepts rely on each other for clarification. The general interpretation of space in Sotho settlements can be attributed to differentiations of hierarchy, approach and orientation of aspect, and the location and orientation of the cattle byre.



Ubuntu can become 'constrictive' when it is frowned upon to elevate one person beyond the community. Although the individual should not take precedence over the community, Ubuntu does take plurality seriously and does not necessarily negate individuality.

Ideally, the community nurtures individuals who in turn give back to it (Mkhize, 2006: 28), making Ubuntu not only a given, but also a task. For Mbiti, Biko, Tutu and several others who have reflected on African ethics, harmonious or communal relationships are to be valued for their own sake, not merely as a means to some other basic value. Harmony constitutes the combination of two logically distinct forms of interaction, identity (sharing a way of life) and solidarity (caring for other's quality of life). The proposed architectural intervention therefore aims to support identity and solidarity in the built form. The community that Ubuntu pursues applies to all spheres of life, the public sphere as well as the private space of the nuclear family. Unfortunately, in practice not all communities in rural Lesotho always fit this model.

Not to fall in the trap of painting Ubuntu as only good and incorruptible, the desire to agree, which is supposed to safeguard the rights and opinions of individuals and minorities, and the extreme emphasis on community, might be abused to legitimize what Themba Sono calls the 'constrictive nature' or 'tyrannical custom' of a derailed African culture, which 'frowns upon elevating one beyond the community' (cited in Louw, 2006: 163). As a comment on this, the lesser known translation is promoted

as 'a human being is a human being through [the otherness of] other human beings' (van der Merwe cited in Louw, 2006: 167), saying that true Ubuntu takes plurality seriously. While he applauds the 'distinctive African' inclination towards collectivism and a collective sense of responsibility, Teffo (cited in Louw, 2006: 169) is quick to add that the African conception of man does not necessarily negate individuality, but merely discourages the view that the individual should take precedence over the community (Louw, 2006: 169).

Generally, the self in African societies is relational. The person is extended in space and time and is embedded in social and communal relationships (Mkhize, 2006: 28). This 'individuality' is not however the same as the Cartesian conception of individuality in terms of which the individual or self can be conceived without thereby necessarily conceiving the other. The Cartesian individual exists prior to, or separately and independently from, the rest of the community or society. The rest of society is nothing but an added extra to a pre-existent and self-sufficient being (Louw, 2006: 168). Thus understood, the word 'individual' in terms of Ubuntu signifies a plurality of personalities corresponding to the multiplicity of relationships in which the individual in question stands.

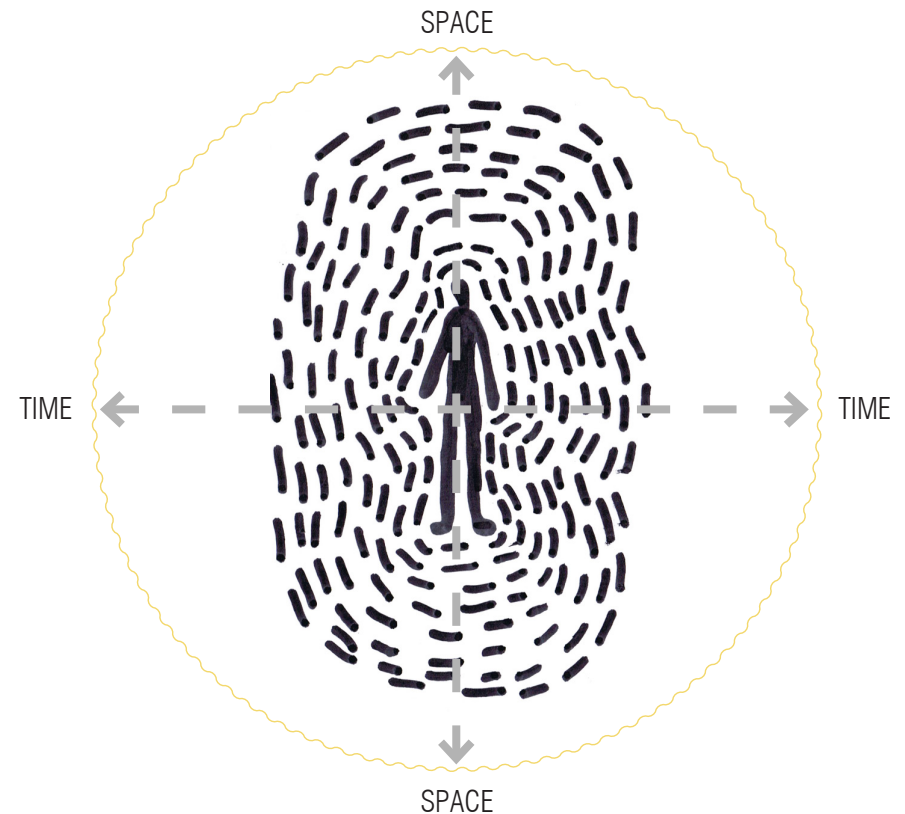
morphology

UBUNTU AS CULTURAL NARRATIVE

Being an individual by definition means 'being-with-others' and 'with-others,' as Macquarrie (cited in Louw, 2006: 169) rightly observes, 'is not added on to a pre-existent and self-sufficient being', instead both the self and the others are part of the whole 'wherein they are already related'. Ubuntu unites the self and the world in a peculiar web of reciprocal relations in which subject and object become indispensable, and in which 'I think, therefore I am,' is substituted for 'I participate, therefore I am' (Schutte cited in Louw, 2006: 168).

The participation of different materials in creating an interdependence of structure is presumed. Traditionally, structures were either built using wattle and daub frames that would be filled in with a variety of materials ranging from stone, mud, weaved mats, or a combination of the above. The elements of roof, wall and floor can be reinterpreted by means of these traditional materials, creating a tension between dynamic forms and static grounding elements. If the wall, floor, and roof elements are handles as individual elements that are interdependently related, the wall element should perhaps be allowed to transform independently in response to the functional and contextual requirements, and the roofs designed to respond in a similar manner.

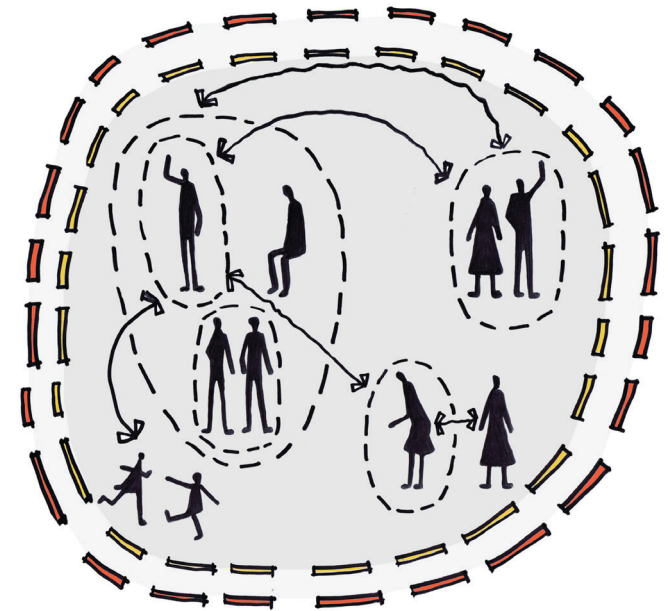
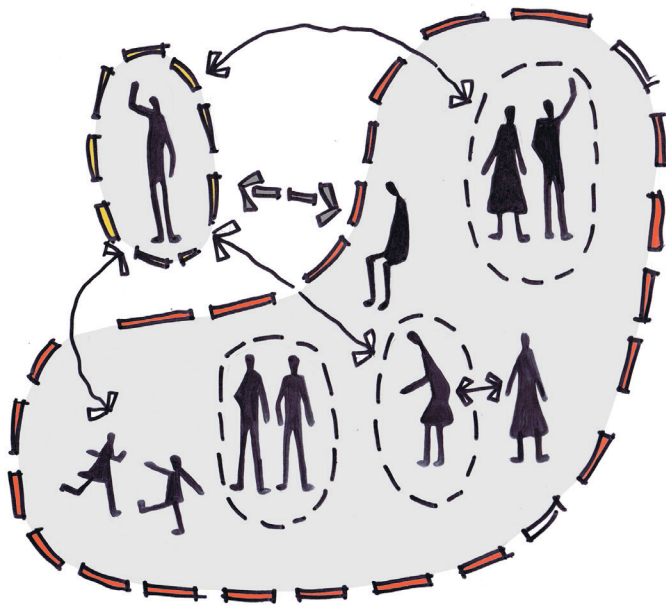
By mediating the regular grid pattern of the supporting roof structure and the more organic form of earth walls, a complexity of plan can possibly be achieved, attributing to spaces for various moods and seasons. By intersecting certain continuous planes as means of defining spaces and functional zones, ever-changing internal experiences that are part of the whole can be produced.



Humans who live according to the principles of Ubuntu are extended in space and time through their relationships with peers and older/younger generations.

i think,
therefor i am.

i participate,
therefor i am.



The Cartesian individual is seen as a pre-existent and self-sufficient being, to which community and other relations are only added, but without which the individual still remains whole and complete.

In regards to Ubuntu both the individual and the 'others' are part of the whole 'wherein they are already related' - one can not be removed from the other or else it is no longer complete. This strongly relates to the composition of the Lesotho landscape.

morphology

FROM UBUNTU TO THE ETHICS OF CARE

2.4.7. from ubuntu to the ethics of care

It is proposed to refrain from an uncritical identification of the ethics of care with the African ethic of Ubuntu, but seeing as both these theories focus on relationship rather than on contract-like interactions between atomistic individuals, it can indeed be argued that they are related to each other and to a large extent compatible. Ethics of care relates to upholding harmony through an emphasis on relationships through communication, dialogue and negotiation, and letting this drive moral decision making. It leans toward a moreover contextual mode of moral judgement, with the implication that more attention can be paid to the particulars of the unique situation and all the relationships affected by decision-making (Gilligan, 1998:v, xii).

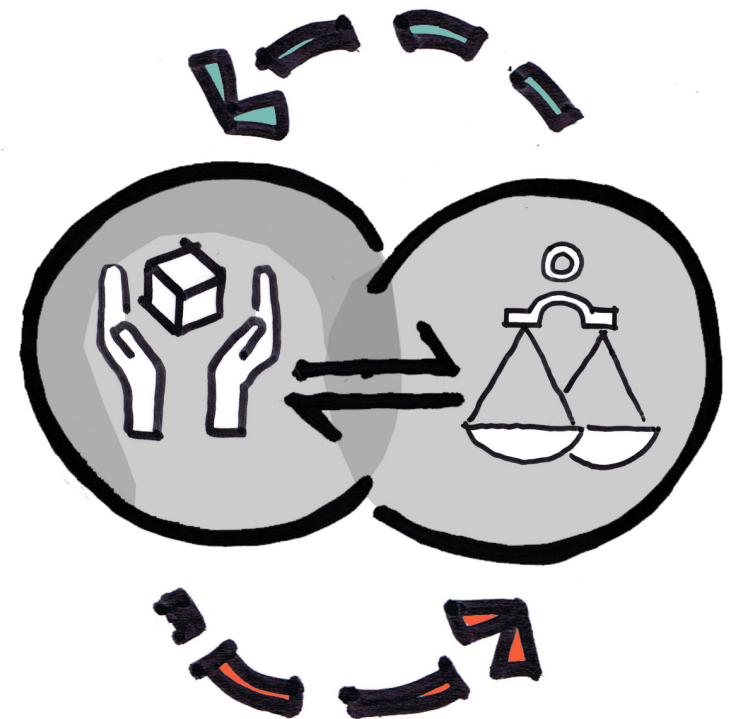
It is argued that the public and private spheres of the Western world operate according to different moral codes (Hall, 2013: online). Under this position the public sphere of society is governed by the abstract, individualistic norms of the ethic of justice or rights, ensuring equality for citizens. While the private sphere relating to family and personal relationships is governed by the concrete norms of care ethics. According to Gilligan this often results in the public and private spheres speaking different languages that are perceived as being the same (Gilligan, 1982: 14). Gilligan asserts that it is difficult to say “different” without saying “better” or “worse,” as we tend to ‘construct a single scale of measurement’. It is reasoned that the justice perspective, when summarised, views autonomy to be the ideal, which implies ‘separation from others’ which, in her opinion, indicates detachment and therefore, the ethic of justice can be characterized by detachment (Gilligan, 1998: v, xii).

Gilligan argues that the ethics and moral insights of care must be allowed to impact, modify and generally complement the rule-based and abstract ethic of rights in order to ‘extend and enlarge the universally human moral domain’ (Hall, 2013: online). Susan Moller Okin (cited in Hall, 2013: online), in return argues that care ethics should not only be extended into the public realm, but similarly, aspects of the public ethic of rights must be more deliberately extended into the private sphere in order to ensure justice in the family as well.

From this information it can be confidently inferred that systems of education based on the principles of Ubuntu (or subsequently the ethic of care) being fit into architecture based on principles of a differing, and in some views opposing, ethic of justice, may cause considerable confusion and weakened outcomes of signification. Whether it is for the service of power or for vernacular commodity, architecture cannot avoid materialising meaning and should therefore aim to construe meaning in the best way possible. It can be deduced that if the ethic of Ubuntu is not traditionally relegated to either the private or public sphere, but both, then schools should also be informed by the ethics of care (or then the ethics of Ubuntu) in order to create and foster better educational outcomes through care and relationship. Care should function as a “necessary base” or corrective element to the way schools are currently built.



According to Gilligan the private domain is ruled by the ethics of care and the public domain is ruled by the ethics of justice. This often results in conflict or confusion as these two realms speak different languages which they perceive to be the same.



Susan Moller Okin (cited in Hall, 2013: online) argues that care ethics should be extended into the public realm and the ethics of rights must be more deliberately extended into the private sphere.

morphology

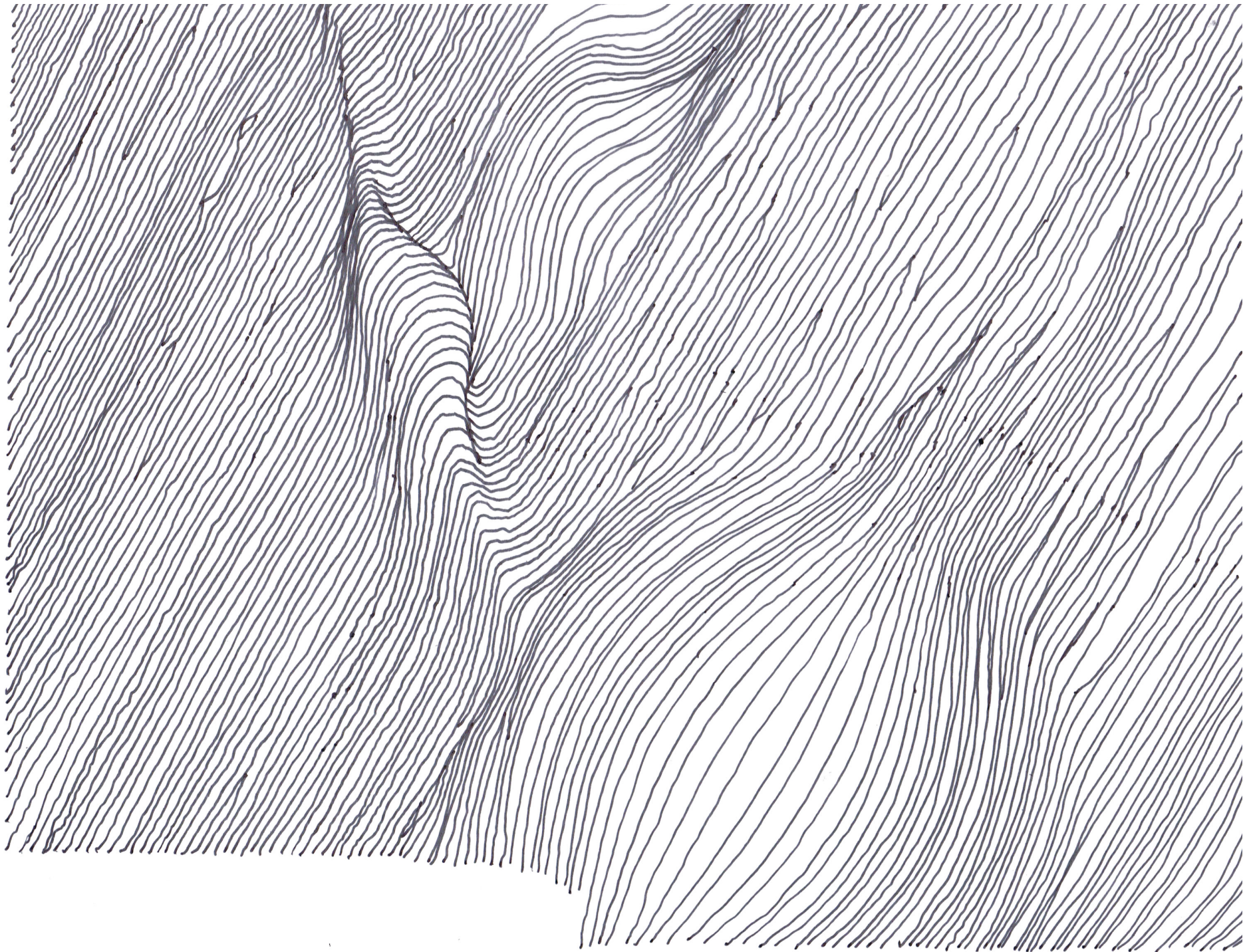
CONCLUSION

New typologies can be developed by reworking and refining the existing influences through a process of mediation. These mediations can however not be reductive or simplistic interpretations of their antecedents, but must mediate an understanding of the principles that generated the original typologies and the forms that have become associated with them. This can possibly be achieved by gathering the properties of the place in order to bring it close to man. This gathering, however, has to reach far beyond the concrete properties of earth and sky to also gather the abstract properties that form the culture.

With the African way of life being typically process orientated and characterised by communally shared responsibilities, the system of education can be seen as a community and not as a structure of power or position for the individual (only) to prosper. It should therefore be possible to emerge with an improved building form. The impossible task to give expression to a cultural identity in a design, when such an identity is seen as a complex but coherent whole, will not be attempted. The project will merely aim to create architecture as a mediator between dual approaches, in terms of the differing users, as well as the differing school typologies of justice and care. It will also serve as mediator between human and the surrounding natural environment.

fig. **79**

By gathering the properties of the landscape it can be brought close to man. This gathering has to move beyond the concrete properties to the abstract.



2.5

logic of tectonics

The technical report is part of the design resolution and investigates site conditions, tectonic and stereotomic structures, building components and project sustainability. The structural systems used and explored are critically informed by the classical Lesotho landscape, as well as the social and economic standing of the community in question. The materiality, which is at the core of the structural approach, is influenced by the landscape, the building tradition, technology and the availability of skills and materials. The combined structural composition supports Pierre von Meiss' (1990: 101) statement that "architecture is the art of the hollow", in which both the exterior and interior define this "hollow", necessitating an investigation into the notion of edge condition and the in-between spaces formed by layered structural systems.

The tectonic concept for the Rural Community Centre and Shepherd School stems from a model that aspires to carry reference to its context. Kenneth Frampton wrote that tectonics are the poetics of construction (1990: 517), arguing that the "irreducible essence of architectural form" is found in the structural unit – a dialogue of expression and cognition.

2.5.1 site

The micro-site analysis offers an investigation of the site topography, vegetation, geological information and climate. The site analysis in the technical report therefore only gives a brief overview of the following: climate, topography and soil classification, and storm-water runoff.

climate | The climate of Lesotho is primarily influenced by the country's location in the Karoo Basin and the oceanic influences of both the Atlantic and Indian Oceans. According to SANS 10400, Lesotho is located in climatic zone 1, described as a 'cold interior' (Schmidt, 2014: 104). The dominance of high-pressure systems results in clear skies, dry air and moderate temperatures during the day. Temperatures suddenly fall after sunset. Temperatures are highly variable, on diurnal, monthly and annual time scales, and are generally lower than those of other inland regions. The climate of the Semonkong area is generally sub-humid, and about 85% of the precipitation occurs in the summer season (October –March). The winters are normally dry. Hail occurs frequently and snow is common and may fall in any month of the year. Sudden weather changes are common.

topography and soil classification | The project area is situated within the Great Karoo Basin, defined as a shallow depression in the earth's crust

covering a large area in Southern Africa (Letlatsa, 2004: online). This depression is capped by volcanic outpourings of basalts that have been deposited in extensive alluvial flood plains, river channels and ephemeral lakes (Letlatsa, 2004: online). Basalts have been extruded flow upon flow to a thickness of at least 1 450 m, and are described as being a dense and compact stone in most cases.

Semonkong, situated in the higher regions of Lesotho, has a mountainous topography. The micro- site slopes 6 m over approximately 75 m in a north-westerly direction. Lesotho generally struggles with deteriorating soil conditions and erosion, but the site's soil conditions are desirous and won't complicate the construction process as it is not sandy, clay or loamy soil. Rock outcroppings are found next to the stream that acts as north-western boundary to the site, which will necessitate specific construction methods and attention to water and waste runoff. The construction will be of low-impact and site reconstruction will not be necessary.

storm-water runoff | The micro- site slopes towards the small 4-6 m wide stream that flows into the Maletsunyane River to the north. The typical drainage of the project is divided into two systems: either using gutters to collect water into harvesting tanks to be cleaned for public use, or using an on-grade water runoff system to manage water accumulation on the earth's surface.



fig. 80
Ground erosion within Lesotho.

logic of tectonics

STRUCTURAL TOUCH STONE

2.5.2 structural touchstone

The structural touchstone is an abstract representation of the initial structural objectives and as mentioned before, it can act as a yardstick against which future thoughts and structural motifs can be measured. The structural touchstone was influenced by the folding and three-dimensional layering of the Basotho blanket. This progressed to an exploration of the linkages between the stereotomic and the tectonic and how interdependent layers of structure can be incorporated in creating space and place.

The structural touchstone is comprised of a system of tectonic and stereotomic elements that function as interdependent parts of the whole. Each element is dependent upon at least one other element for structural support and, in turn, has to support at least one other element structurally. This creates a layered system that allows pockets of activity and heightened interaction in between the created edges. The structural touchstone speaks of a layering of spaces, a layering of structure, of tension between these layers, and to the extents at which these layers act dependently versus independently. This system can also be juxtaposed against the canopy of a tree as filtering system – layers of leaves and branches create an extruded threshold between the earth and sky and that which is experienced under the tree as opposed to that which takes place above its canopy.

The structural system is critically informed by the notion of edge condition, enclosure and the in-between of a layered structural system. Pierre von Meiss (1990: 101) states that “architecture is the art of the hollow” and that both the exterior and interior define this “hollow” in which activity takes place.

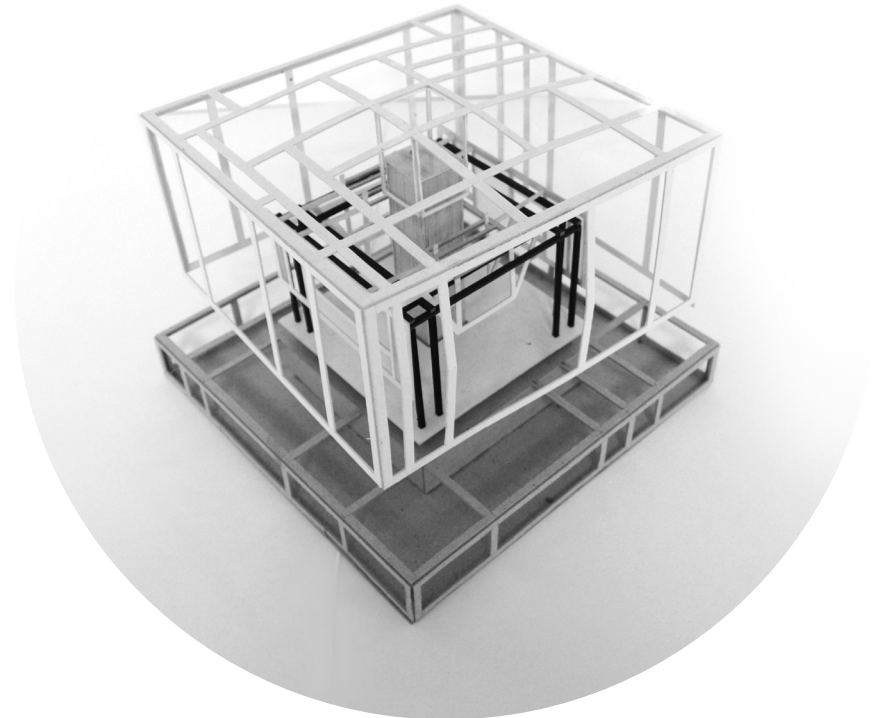


fig. 81 The structural touchstone when wholly assembled. Each individual part of the touchstone is dependent on another element and each element has a certain task to fulfill.

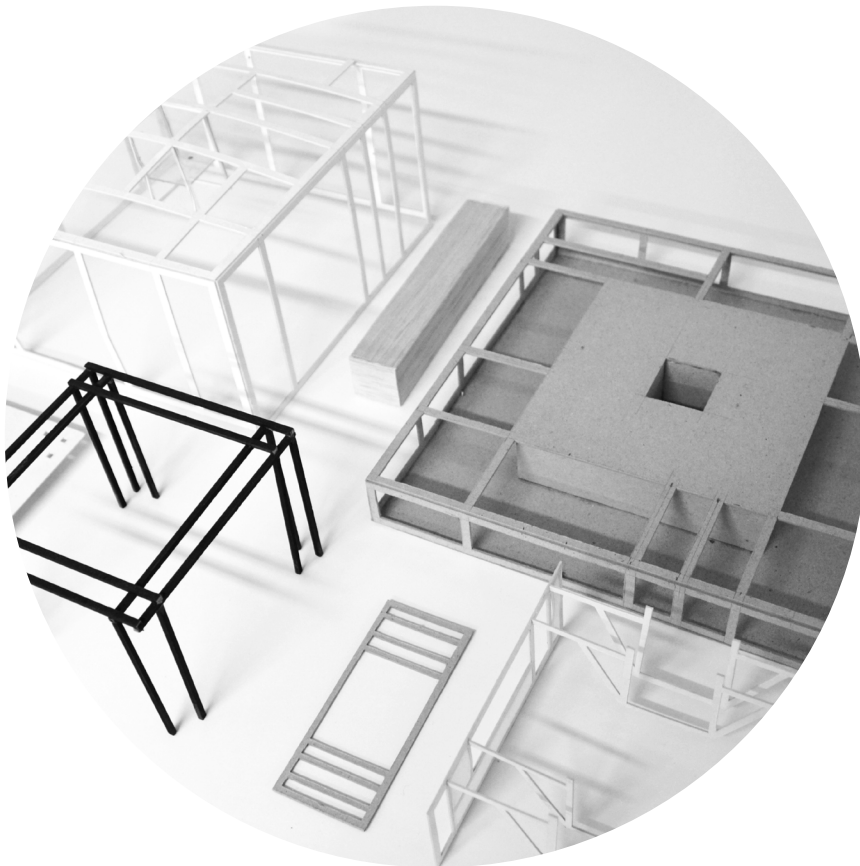


fig. **82** The individual parts that make up the whole structural touchstone. Without any single individual element, the whole will be incomplete.

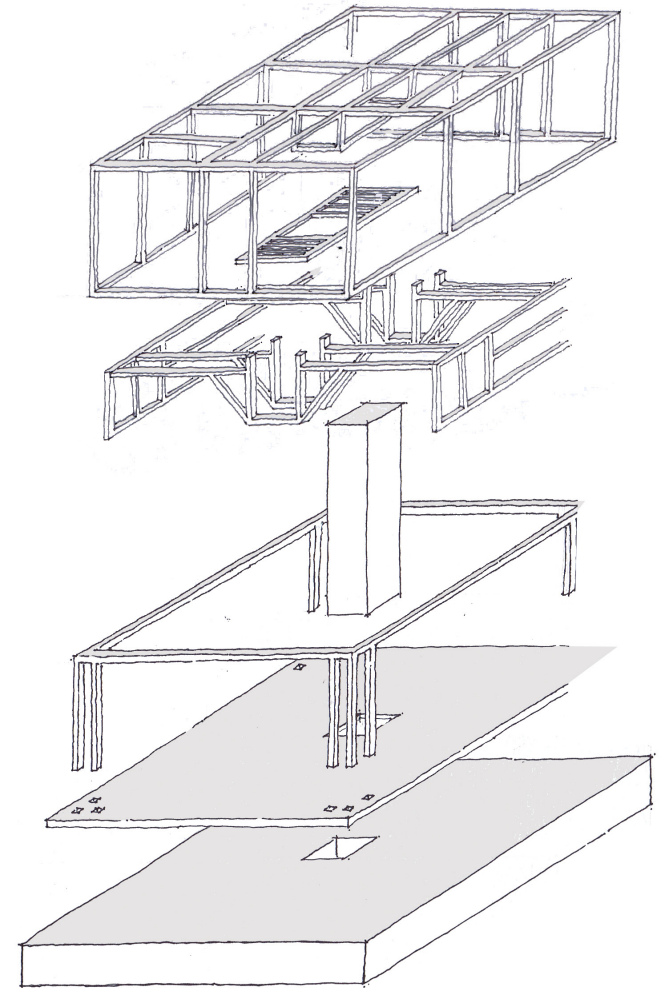


fig. **83** Exploded axonometric illustration of structural touchstone.

+ precedent study | tectonic super-structure |

HOUSE LAUBSCHER, ORA JOUBERT, PRETORIA, 1996

Similar to House Tzaneen, House Laubscher is an exploration of the expression of three-dimensional space and the South African typology in terms of material use and climate-responsive design by architect Ora Joubert. The building is a timber pole construction with a thatch roof (Architecture SA, 1994: 18).

The timber pole structure of 150mm diameter gum poles and the thatch roof were erected first, before the not load-bearing internal walls were built, showing the distinction between structure and infill (Architecture SA, 1994:18). Each structural element consists of two gum poles that are fixed into the ground and one pole that is fixed between the two at first floor level using steel bolts. Timber poles span across the different structural column elements as beams and these support the rafters of the roof.

Glazing is fixed directly to the timber poles using silicon to form a clerestory that aids in letting daylight into the building, particularly the first floor (SA Architectural Digest, 1998: 89). Some spaces between the brickwork are filled in with frameless glazing or timber-framed doors. The doors slide into the walls between the two skins of brickwork (Architecture SA, 1994: 18).



fig. **84**
Structural system made up off gum-poles as tectonic framed structure to be filled in.

fig. **85**
Bathroom window and concealed entrance. Double gum-pole connection-detail visible.

fig. **86** A groove is made in the gum-poles where glass panels are inserted flush against the timber and sealed with silicone.



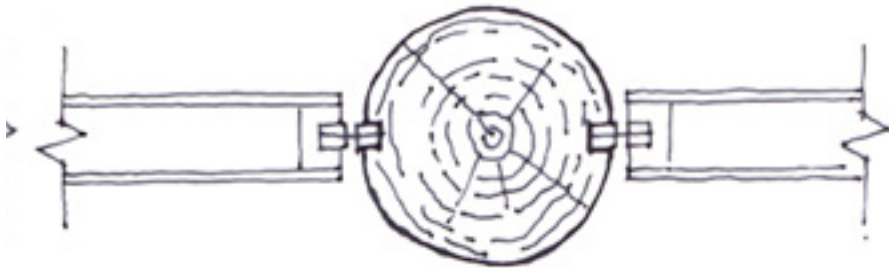


fig. **87** A very elegant, but technologically not applicable to Lesotho, is setting flashing into the gum-pole to which the frame and sealant is then attached to. A shadow gap is created where the two objects meet.

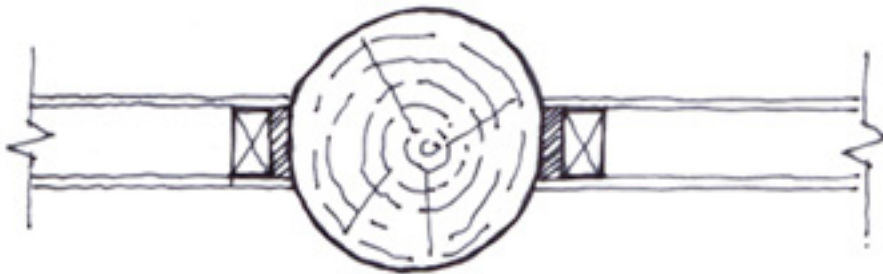


fig. **88** The round structural gum-poles make connections very difficult. Here a sealant is added between the frame and the pole.

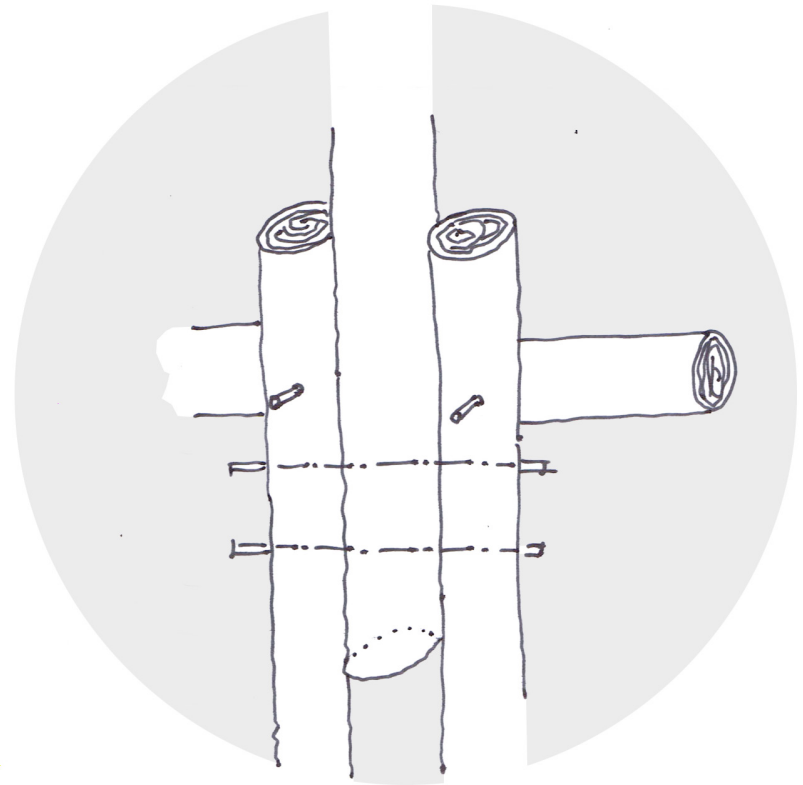


fig. **89** The roof structure's column is wedged in between two other gum-poles on first floor and is braced horizontally. These are attached by rods.

logic of tectonics

ALTERNATIVE MATERIAL USE

2.5.2 alternative material use

alternative roof insulation | Insulating the roof is one of the most important factors in cooling a building. Most of the heat in summer is radiated through the roof, whereas in winter warmth is lost through a non-insulated roof. Air tightness of the roof is therefore important in reducing the loss of warmth in winter and minimizing heat gain in summer. A readily available and place specific material that can be used as roof insulation in Lesotho is sheep's wool that is placed into material bags and inserted in between the roof structure.

Wool fibre is hollow; giving it the ability to breathe and trap air within the fibre as well as in air pockets between the fibres. The more air an insulation material can trap, the better the insulating effect (2012: online). The outer cuticle and epicotyl layer of wool fibre allows wool to shed water, yet readily admit water vapour. This delays the heating and cooling of roof air spaces according to the external air temperature. When temperatures drop rapidly at night, the air in the ceiling space becomes moist. Wool fibres absorb this moisture and releases it the next morning when heated, prolonging the cooling effects of the night. This means that it takes much longer for wool to reach maximum heat absorption.

cladding | polycarbonate sheeting | Polycarbonate sheeting is half the weight of plate glass, streamlining handling and installation, and its complex chemical structure makes it the strongest and toughest of the translucent plastics. It saves energy by permitting natural light; but protecting against UV radiation. It is suitable for high wind areas, hail, and holds its strength at temperatures from below zero degrees to above 100°C and is fire resistant. It can be extruded from 10 mm thick double or 16 mm triple-walled glazing panels (Wegelin, 2009: 89).

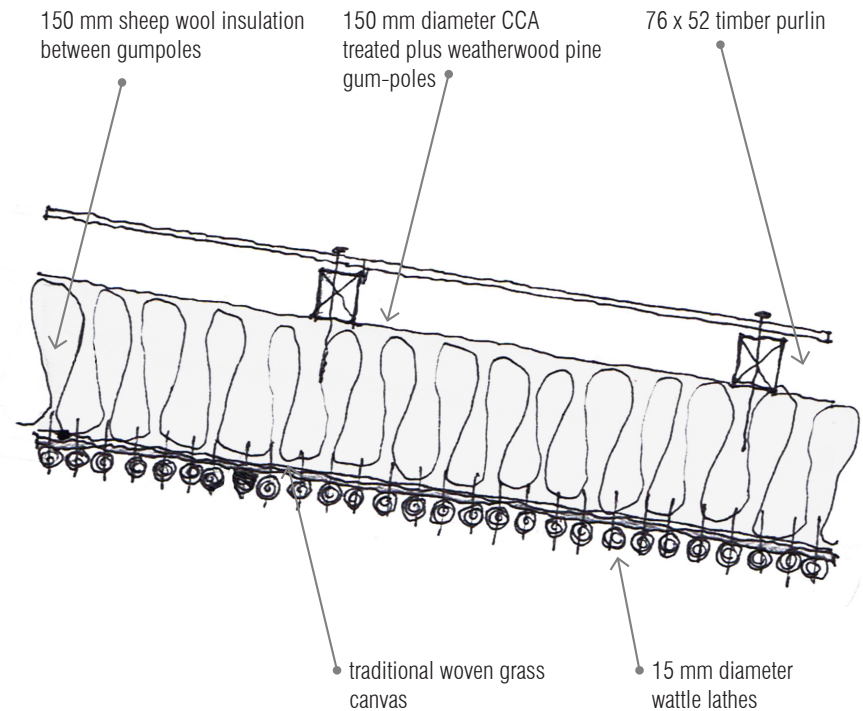
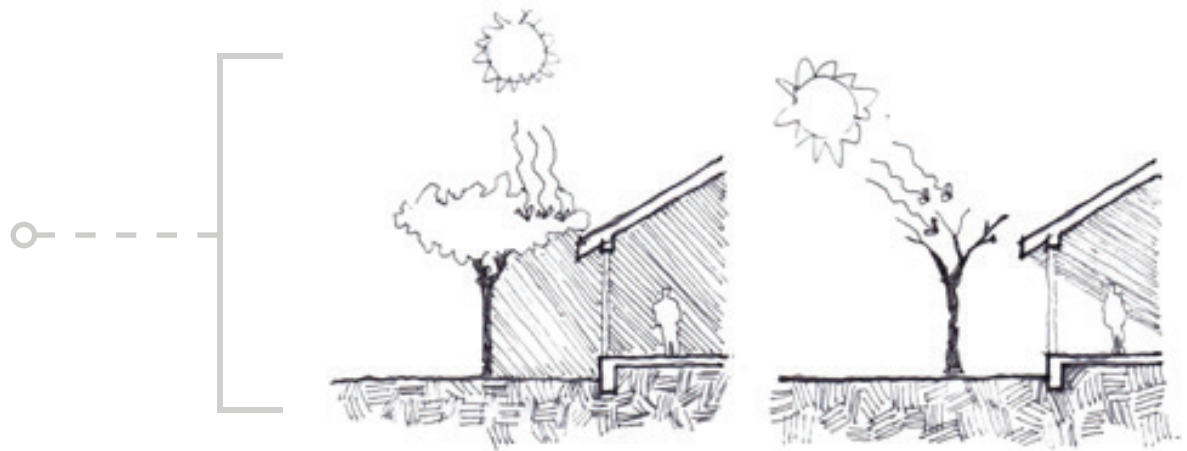


fig. 90 Investigated roof composition, including wattle lathes and woven grass canvases as ceiling and sheep's wool as insulation. The main structure is of gum-poles.

Adding trees to a site according to the correct orientation and fenestration can have a big influence on regulating interior temperatures. During summer months the tree provides shade for the building and during the winter when there is no foliage sun is allowed into the building.



passive solar heating, cooling and ventilation | The varying temperatures and climatic conditions of Lesotho necessitate good passive control in regards to heating and cooling. Adaptable building elements are incorporated to allow for passive ventilation during summer months, and good insulation during winter months to prevent heat loss. A well-insulated and well-designed building will provide year round comfort by minimising heat loss and maximising heat gain through building elements – keeping buildings warm in winter and cool in summer (Schmidt, 2013: 115).

Passive heating is achieved by planting deciduous plants which allow rays of sun through during the winter months, while blocking the sun in the summer months (Schmidt, 2013: 113). Foliage not only enhances the indoor environment, but also acts as wind- break to protect the building against the constant winds of Lesotho. Adjustments are made for cooling winds, sunlight, humidity and buildings can open and close to perceive the changing light levels, temperatures, wind patterns, and sun positions.

- Materials with good thermal mass like stone are used to assist with passive heating and cooling
- Glazing installations have suitable roof overhangs or adjustable shading devices.
- Spatial planning ensures that habitable living spaces like classrooms, lounges and social gathering spaces are orientated to the north and service areas like bathrooms, the kitchen and stores are orientated to the south and west.
- The building has operable shading devices, except on the west façade where shading devices are fixed and fenestration is minimal.
- Shading of glass to reduce unwanted heat gain is critical during summer.
- All areas of the building are naturally cross-ventilated.
- Most of the buildings in the complex are raised, increasing airflow
- The building provides protection against cold winds.
- High mono-pitched roofs allow heated air to accumulate and escape through operable clerestory windows.
- Windows are positioned to permit air into the building at lower levels and forces air out at higher levels.

logic of tectonics

SUSTAINABILITY REPORT

daylighting | The need for artificial electric lighting (and therefore the need for electricity) is lessened by allowing natural diffused light into the buildings through high ceilings, adjustable shading devices and polycarbonate roof sheeting. Clerestory windows are installed in high mono-pitched ceilings, to allow indirect natural sunlight. Spatial planning is optimised to ensure living spaces are well lit.

orientation | Spatial planning was done to ensure the longest facades of the buildings in the complex to be orientated directly north or north-east in order to gain maximum sun penetration. A long, narrow building increases the effectiveness of passive design (Schmidt, 2013: 113).

sewerage system | A dry composting sewage system is used near the rock based areas near the stream to prohibit waste leaking into the water. To manage and recycle human waste from the bathhouse and preschool ablution, dry composting toilet systems are employed for the natural decomposition and evaporation of human waste. Waste entering the toilets is over 90% water, which is evaporated and carried back to the atmosphere through the vent system. The small amount of remaining solid material is converted to useful fertilizing soil by natural decomposition. When human waste is properly composted, the end product does not contain any pathogens or viruses (these are destroyed by bacterial breakdown) and the nutrient-rich fertilizer can then be used on plants or around the base of trees. This forms part of the natural cycling of nutrients and reduces the need for commercial fertilizers while preserving local water quality.

A composting toilet must perform three completely separate processes:

- compost the waste and toilet paper quickly and without odour;
- ensure that the finished compost is safe and easy to handle; and
- evaporate the liquid.

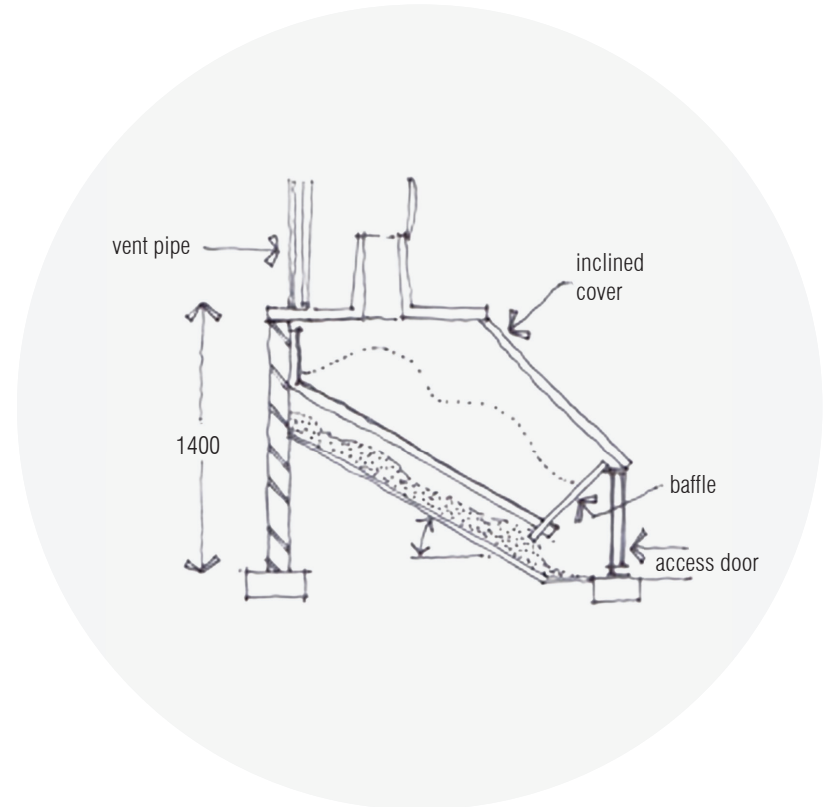


fig. 91 diagram of typical built dry composting toilet

labour, skill transfer and community | Project construction within an involved community can be used as a tool for affecting social and economic change – to ensure the community also benefits from distributing its resources. By employing local unskilled workers and offering training in both trade and management, materials and professional expertise from the local area is used to make the project economically feasible.

An equal number of women and men will be employed, if not more women than men, as in poor communities women and children are often the ones who bear the burden. According to Orkidstudio (2015: video), women form half the global population yet represent 70% of the world's poor. Additionally they fulfill 70% of the world wide working hours but only receive 10% of the income. Women, however, are important to the economy and society of a developing country like Lesotho, as they are responsible for looking after for their families and food production. This offers women the opportunity to make informed choices about family and community life.

Sustainability is key in ensuring economic development. The goal to implement long term social change requires sustainable change. Training gained through construction of the Rural Community Pavilion can be used to kick-start a recurring training programme in which community members from each subsequent enterprise will be trained to manage the next enterprise. This provides additional skills sets as well as ensures that the enterprises are self-generating.

Social infrastructure in the area led to the decision that appropriate parts of the school should be accessible to the public – library, computer lab and bathhouse. The qualitative, spatial and technical decisions about the school emerged from cultural observations. Extensive community participation will be invited by sourcing the entire labour force from the local community.




hellen nyambura ramau

CASUAL LABOURER

We can not build our nation without either gender.
We must work as one to build this nation.

| fig. 92 on social change in rural areas through architecture |

Empowerment Series. 2015. Video. Orkidstudio.

A young man with short dark hair, wearing a bright yellow short-sleeved button-down shirt and dark trousers, stands in front of a wall made of irregular, greyish-brown stones. He is holding a single, rough-textured brick in his left hand. The lighting is soft, highlighting the texture of the wall and the man's shirt.

hakizimana emmanuel

MASTOR MASON

What makes me happy is that people in this neighbourhood, when we meet they tell me i have done something beautiful here.

| fig. **93** social change through architecture, butaro hospital, rwanda |

Dream me. Build me. Make me. 2014. Video. TEDCity2.0.



rosemary njeri
CASUAL LABOURER

In my view the building will change the area. Everyone is curious to know what is going on in that building. Therefore people are definitely expecting change.

| fig. 94 on the social impact of the nakuru orphanage, kenya |

Empowerment Series. 2015. Video. Orkidstudio.

2.6

design methodology DESIGN RECOMMENDATIONS

In order to create a place that aims to guide the user towards a better understanding of the landscape, the functionality of the building is essential. It will have to serve a dual purpose in that it will be a place of settlement for the nomadic shepherd, but also a place of discovery and freedom for the community. The building is therefore not merely an abstract translator between surrounding and human, but also a functional entity. Dialogue can be created through the nomad receiving a place of belonging, while the community is made aware of the shepherd's nomadic life where freedom is not automatically a choice.

Moore (2012: 95) very boldly states that buildings have the capacity and capability to change the physical and social experience of the things and people they serve through use and doing. Certain design recommendations have been taken from this morphological study that will be carried over to PART 3 in order to inform the design process and synthesis:



01

the development of memorable school spaces that can be kept open for future changes.

02

finding the right balance between robust infrastructures and carefully designed (but not over-designed) micro-environments that can be adapted by the users.

03

fostering an approach in relation to flexibility and connectivity.



fig. **95 / 96 / 97 / 98 / 99**

[Pinchetti & Tettamanti, 2013: online]

04

designing different learning arrangements to meet different needs, may imply a flexible usage of the granularity of room sizes.

05

clustering can be achieved by dividing up the school into a hierarchy of smaller clusters and introducing intermediate levels between classrooms and the school as a whole.

06

none of these ideas are essentially new, but merely applied to a unique design process.

07

the common should act as informal meeting place, placing special emphasis on learning through the landscape.

08

intermediate spaces could serve as additional outdoor teaching spaces and it is recommended that they have different qualities and orientations as to be used at different times.

09

the idea of connectivity plays a vital role, implying that the school is a node in a wider network of learning.

10

variety of teaching spaces can be achieved by possibly adding mezzanine or loft areas in the classrooms to provide breakaway spaces for creative teaching and project work. Outdoor teaching spaces can also provide alternative learning environments when the weather is good.

11

spatial coherence can be achieved through a layout that responds to solar orientation and a hierarchy of courtyards where users of various age groups can interact. The community 'at large' would have to access facilities through a series of pathways and gates that do not compromise security.



fig. **100**

Both beautiful and functional, the Basotho blanket is popular amongst all classes of society.

[Pinchetti & Tettamanti, 2013: online]

PART 03

design and construction synthesis

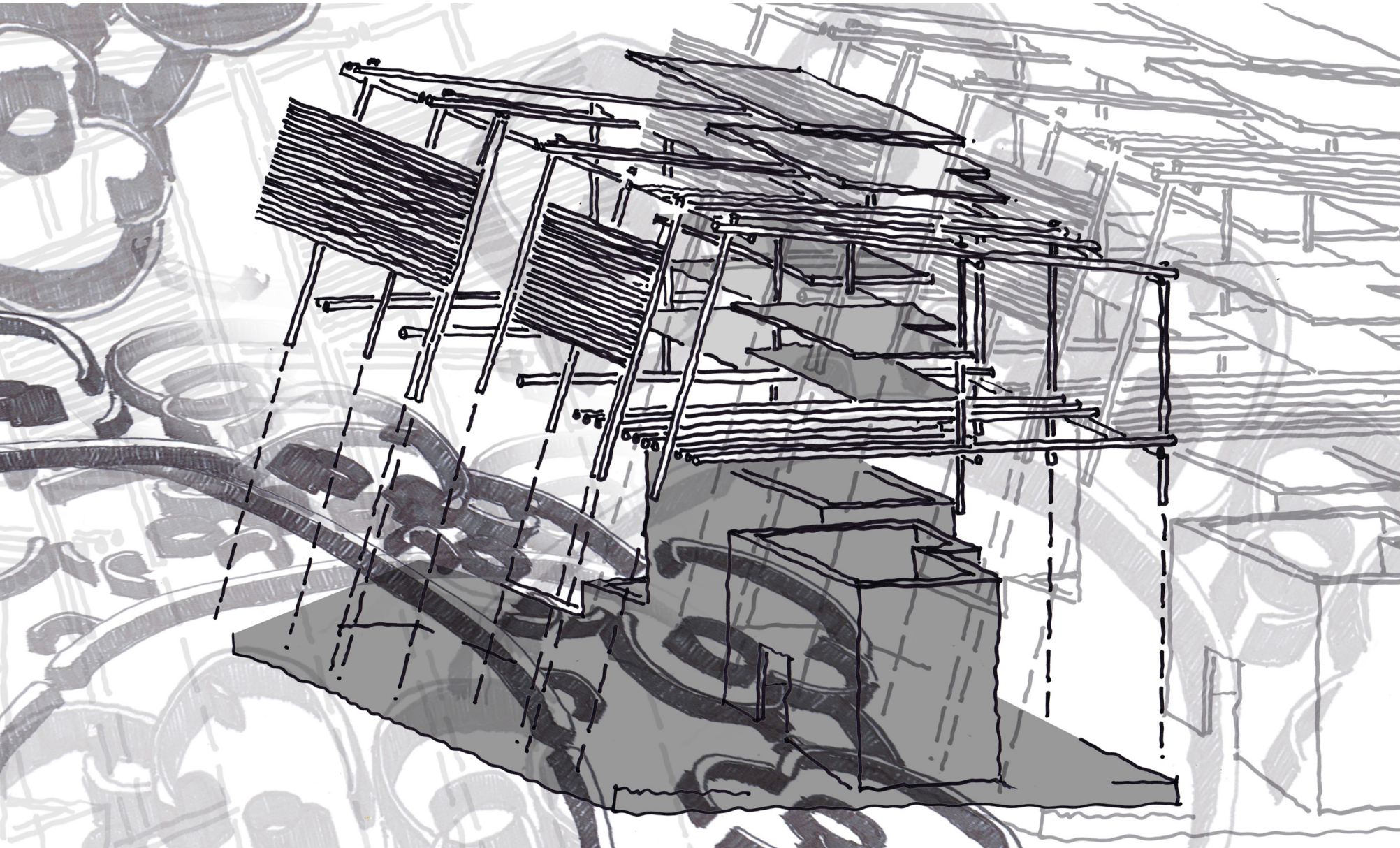
Working within a rural area brings certain typological, topological, morphological and tectonic polemics to the fore that are to be explored in search of possible solutions. This chapter considers project limitations and challenges in regards to user dualism, site activation, architecture as a means to positive social impact, meaningful place-making and the physical and abstract phenomena of the site. This is done by means of exploratory research on the cultural, social and economic realities in Lesotho in order to inform the choice of client, user, site and project.

3.1 design development

The design strategy was formulated from the concepts of enclosure, edge-condition, the dialogue between inside and outside, and the mediation of the natural and built environment and is theoretically grounded in architecture of community through Ubuntu.

- New architectural elements are introduced into an existing natural order as means of bridging the gap between two marginalised societies.
- The existing natural order remains, but is exposed through the presence and intervention of man.
- This human intervention gathers the landscape by creating a place to dwell.
- Contrasting elements of the Sotho vernacular; old, new and re-appropriated materials; and a school typology influenced by the African philosophy of Ubuntu is merged into a unifying whole.
- Other aspects considered in the design development process is that of contrasts found throughout the landscape and in the brief; including topographical, morphological and typological influences that are applied.
- A new inclusive composition is created.



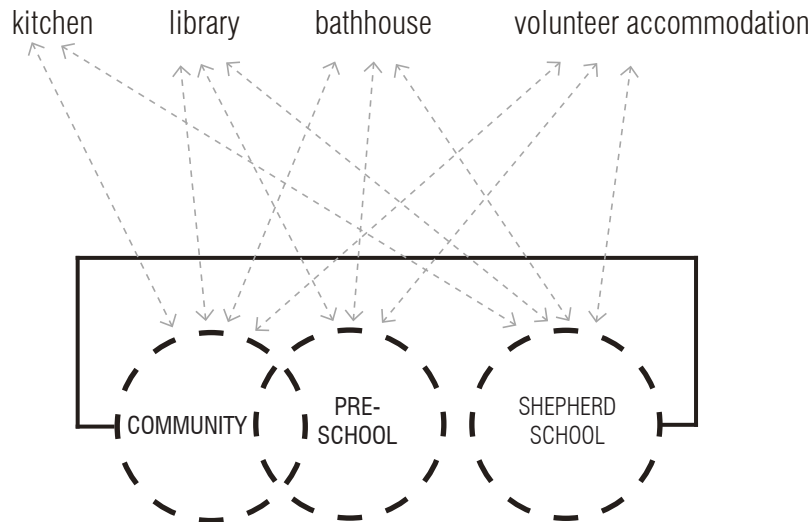




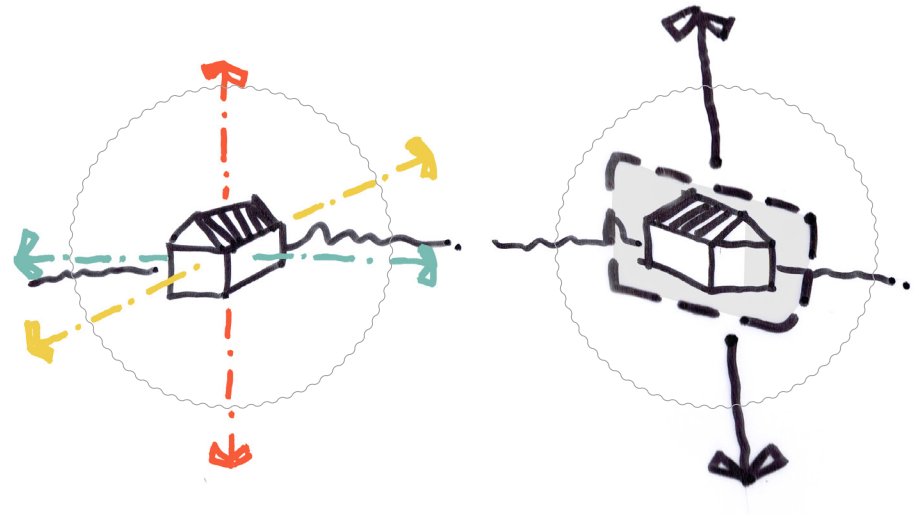
design development

PHASE 01

The first phase of the design proposal features a clear divide between community functions and that of the shepherd school. The existing building, currently used as classrooms for the Lasala Shepherd School, is seen as a boundary in the landscape: the community functions take place to the south of this 'boundary' in the direction of the Ha Lesala village, and the shepherd school function extend to the north and river in front of the 'boundary'.



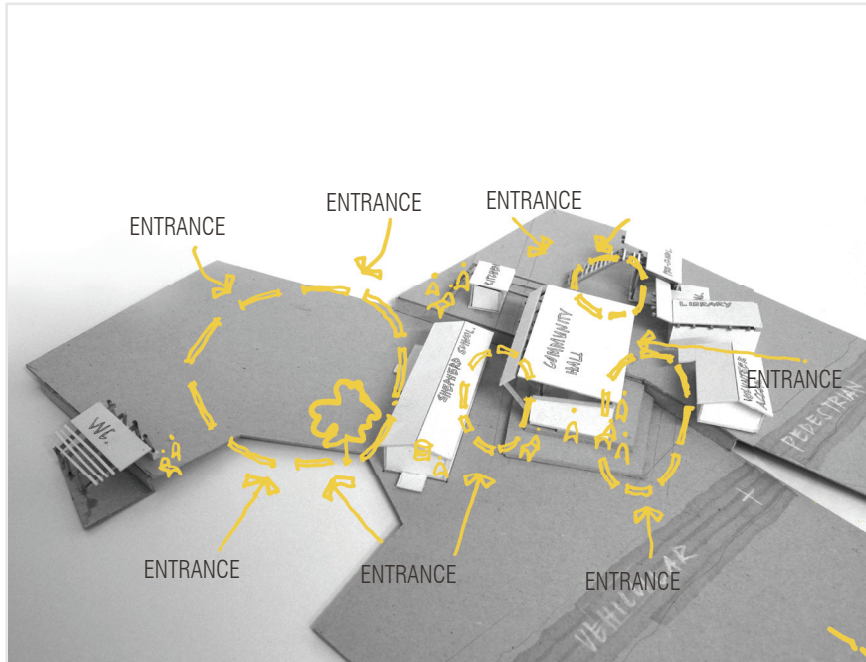
diagrammatic programme of how users relate to uses



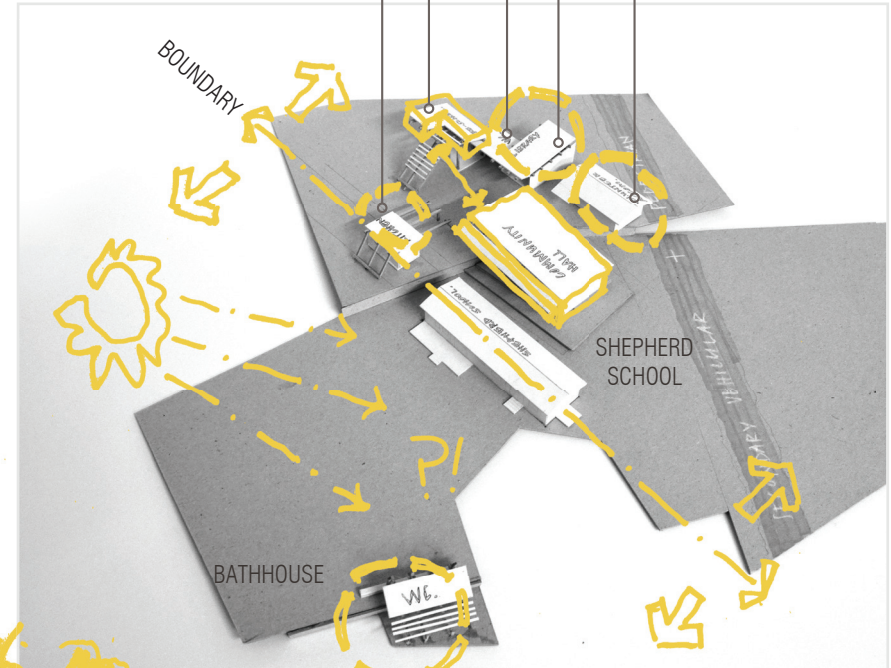
the existing Lasala night school is read as voundary on site

model one

PHASE 01



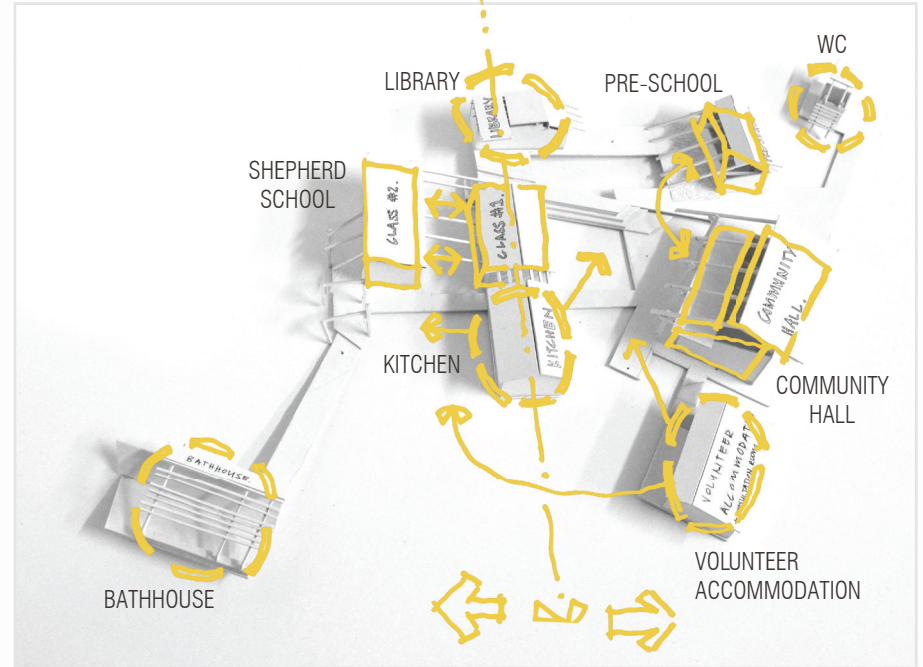
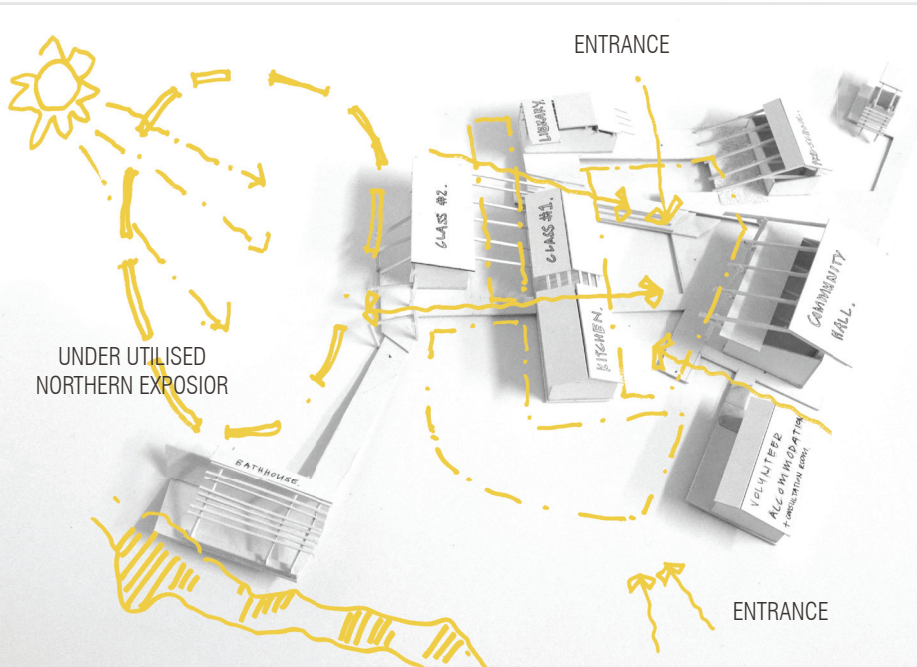
the complex can be approached from all sides, but no entrance is defined



Space for interaction between old and young is created between the community hall and pre-school: where grandmother can look after the children whilst their parents learn.

model two

PHASE 01



[only two entrances define the complex]

[the kitchen and volunteer accommodation connects to both community and shepherd facilities.]

design polemics:

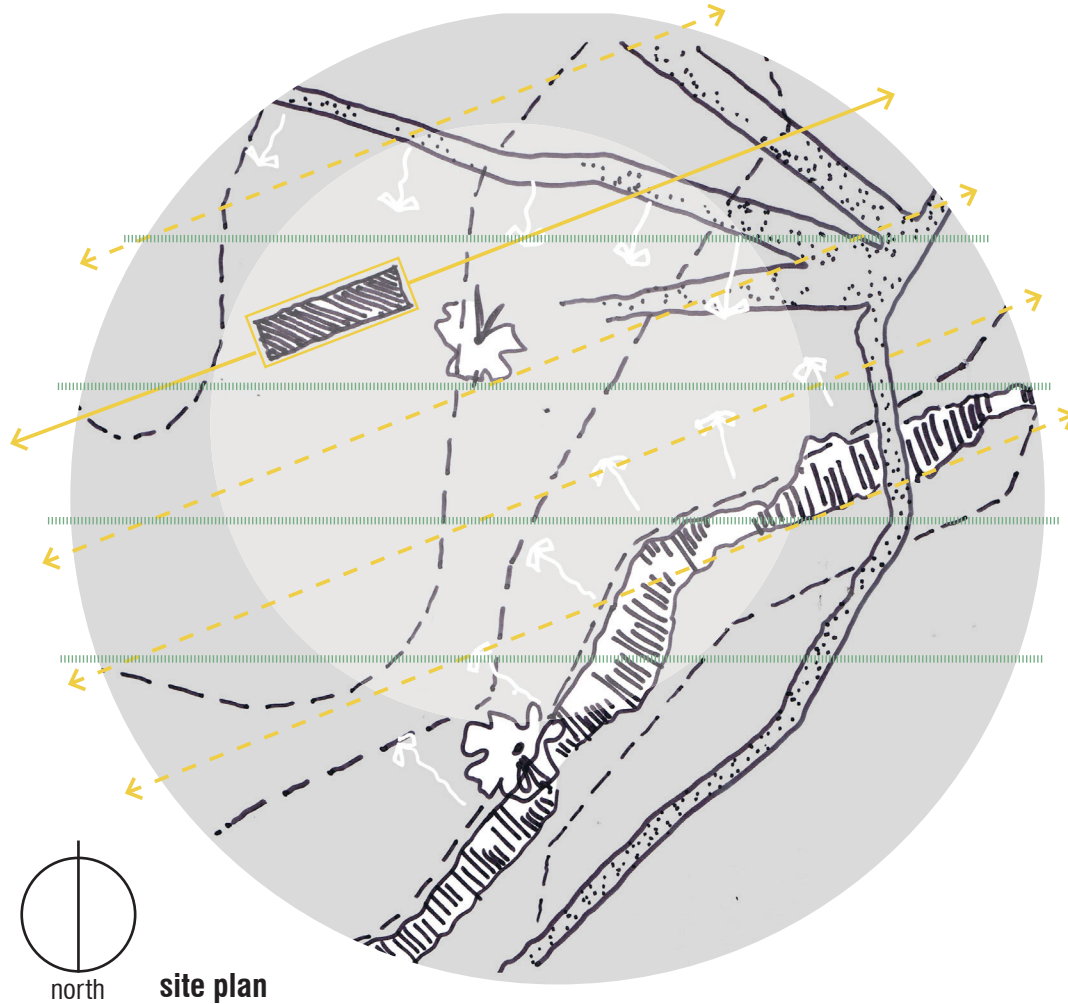
- The landscape is addressed inappropriately and not enough attention has been paid to the rhythms and patterns of the site.
- Decent building orientation has been neglected and certain site parameters ignored.
- Spaces are undefined and cluttered, with no clear indication of entrance or approach.
- There is no clear hierarchy or architectural language and the typology is not suitable and does not relate to the context.
- By separating the functions of the two users, equal and safe access to facilities such as the bathhouse becomes difficult and distances between buildings too expansive.
- Because class rooms for the shepherd school is already available, this part of the project has a very small accommodation list, leaving the area demarcated for its use on site vast and empty, as opposed to the cramped functions to the back of the shepherd school.
- As traditional Sotho living and building typologies allowed and encouraged outside living and socialising, important public spaces and possible habitable areas between buildings should be identified first and allowed to shape the building mass and form. In a sense the void should determine the solid.

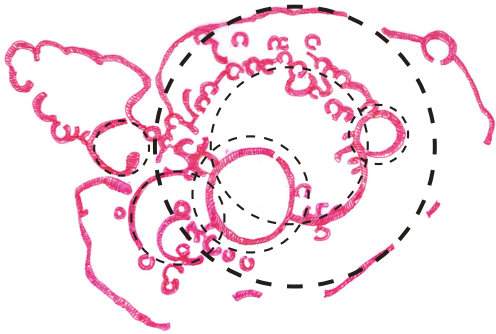


design development

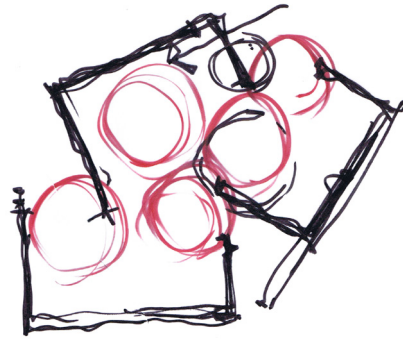
PHASE 02

After evaluation of the first phase of the design process, the site analysis was critically revisited to identify an appropriate buildable area that responds to the context. In phase two the complex moves to the northern side of the existing school building. The traditional Sotho village and its spatial organisation is used to inform how buildings can be used to create outside spaces. The aim is that the cultural pavilion will be designed around the social gathering spaces; creating spatial clusters that are all interconnected. Outside spaces are well defined and connected to each other as well as the central core. A specific south-western direction of approach is identified and the community centre and preschool act as framing element to define the entrance next to the shepherd school and existing tree on site. The space in front of the shepherd school is enhanced by a kraal for cattle to the east and the tree to the west. Where a solid mass is placed on site, voids are introduced as 'opposing' elements that allow breathing room in the complex. The use of two bathhouses is seen as redundant and has been reduced to only one. The bathhouse serves all users and the connection between adjacent buildings and the bathhouse is streamlined.





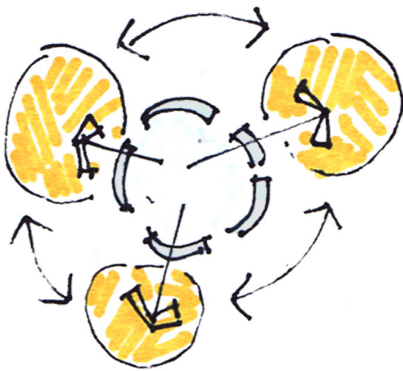
traditional sotho village with cluster organisation and sky-spaces



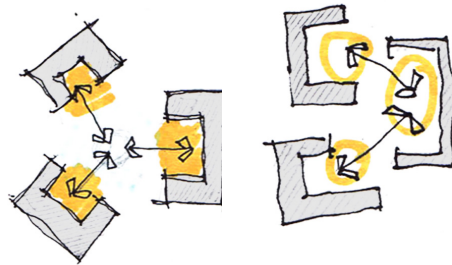
reinterpreted spatial layout of sotho village with formed spaces



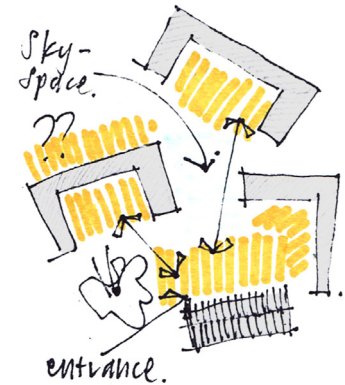
how the spaces created by the cluster formation relate and connect to each other



individual spaces/clusters all relate back to one central public space



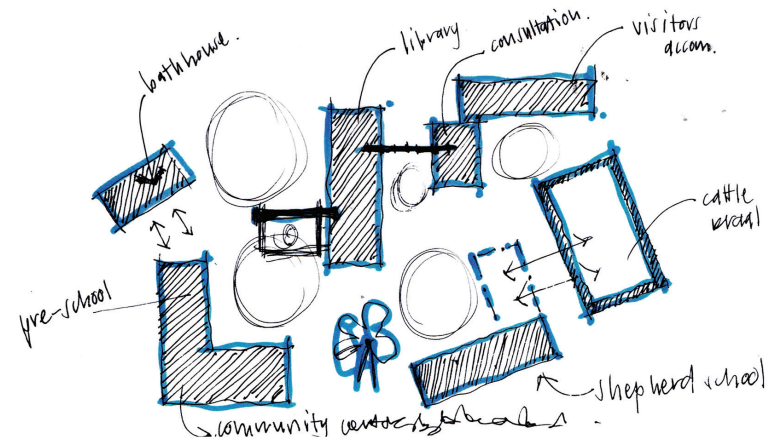
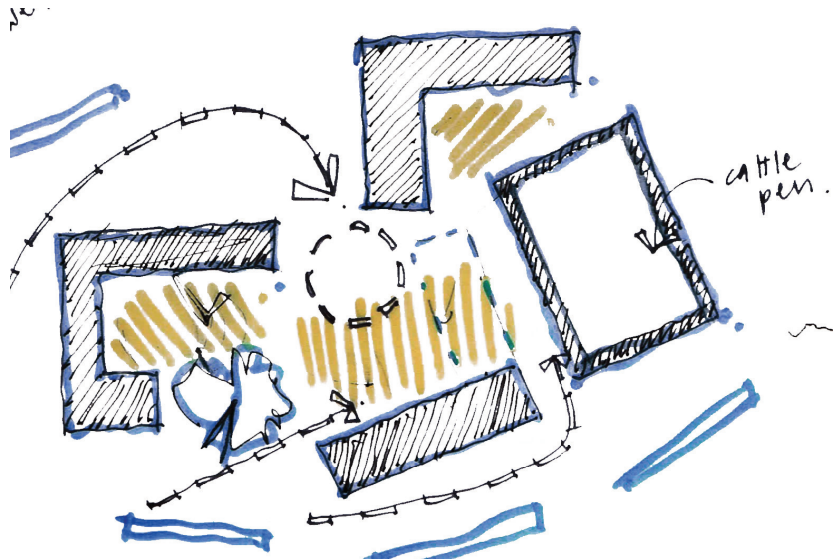
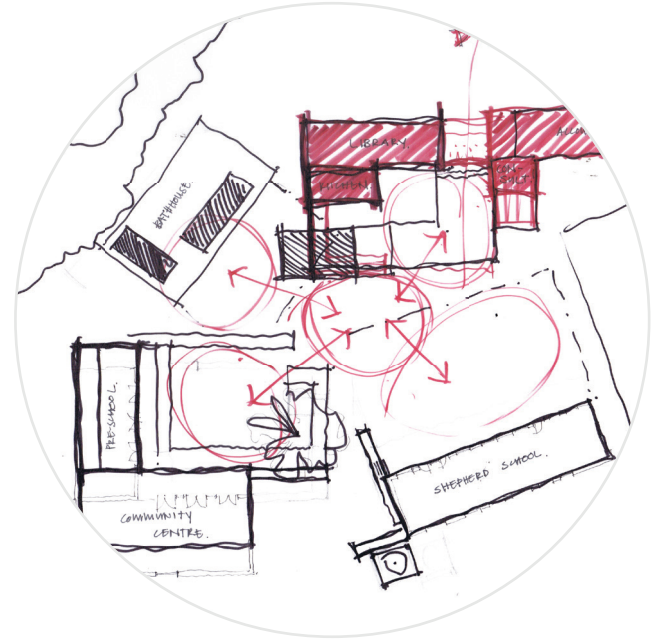
relating space into built form that will facilitate safety and accountability

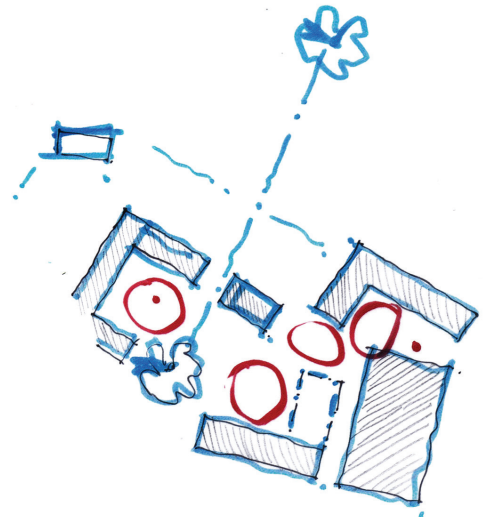
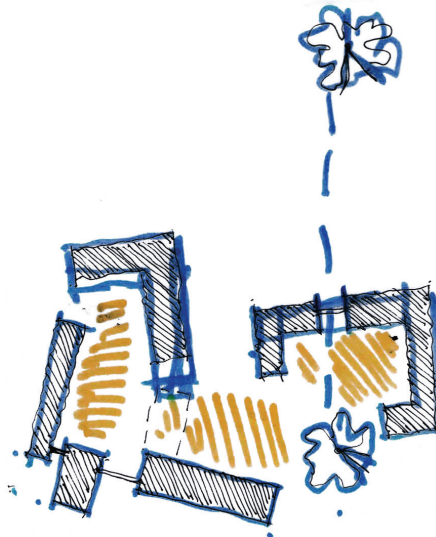
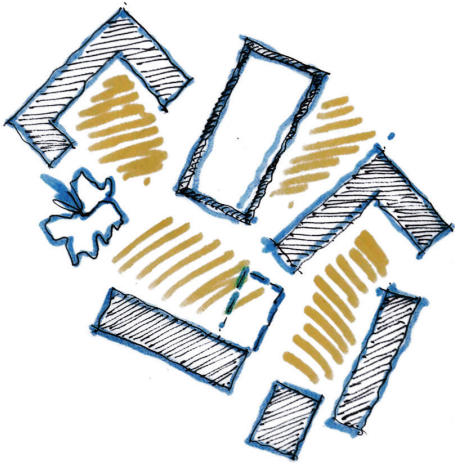
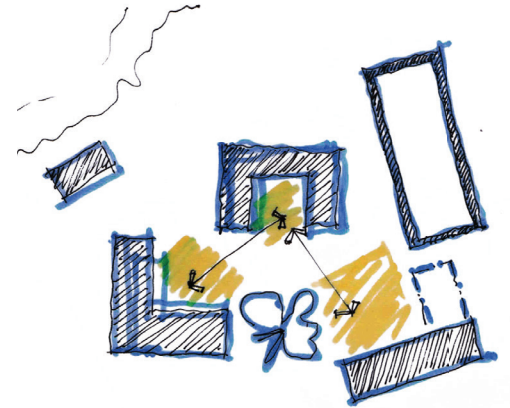
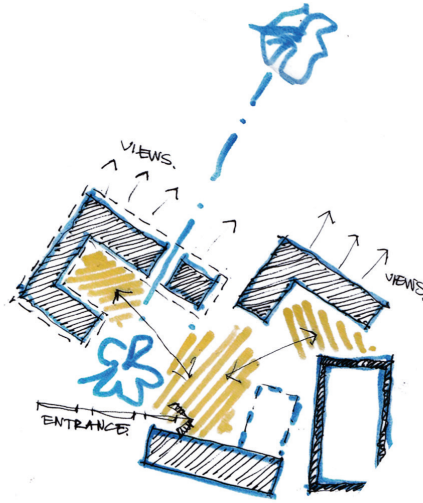
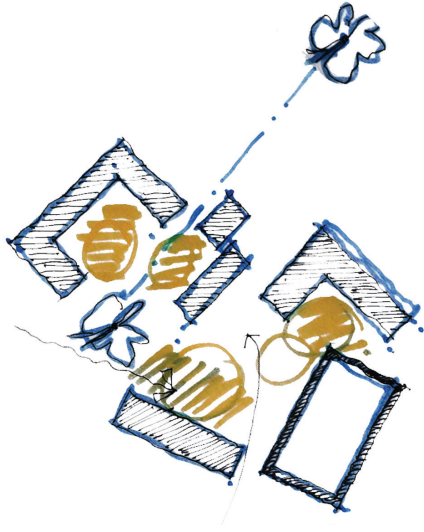


certain building layouts forms and contains space well, but does not necessarily relate to physical climatic aspects of the site.

development sketches

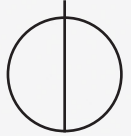
PHASE 02





plan

PHASE 02



north plan



design polemics:

- Buildings open up to the northern sun, but turn their backs on approaching users as one enters from the south-western corner. The entrance and approach is unsuccessful.
 - The spatial layout reflect the Sotho building culture, but the quality of space is still inadequate.
 - The central 'sky-space' is lost by undefined edges and buildings protruding into the space too much.
 - The layering of the threshold needs to be extended to create defensible space in front of buildings and a clear delineation of who may enter certain buildings and areas, and who may not. Spaces need to be 'fenced off' mentally and visually.
 - By creating courtyards with the building envelope, buildings do not profit enough from good orientation and northern sun angles.
 - The community centre and pre-school is situated too close to the river.
 - More attention has to be paid to the animals on site.
- Terraces can be employed to make optimum use of the site.

design development

PHASE 03

In order to address the safety and accessibility issues identified in the previous design approach, radial spatial organisation was investigated to be used in conjunction with the already employed cluster organisation of the cultural complex. The project's users are not bound to vehicular transport; they approach from all directions within the landscape. Trademarks of a radial organisation are that it can attach to specific element and features, combining elements in both a centralised and linear organisation.

Focus is placed in one main approach, entrance and dominant central space, but three other entrances are provided into the central gathering space. From this central core a number of smaller spaces extend radially. Anyone is able to enter the public space, but visual policing, low boundary walls and the organisation of buildings prohibit free access into the smaller semi-private clusters. Attention was first given to the articulation of space, as means of exploring the movement of architecture over the landscape and creating a unifying element.

The typical school typology functions within a decentralised network where a linear structure with long, narrow rooms is connected by corridors. In this phase of the design process the cultural complex starts to resemble a village-like layout and includes the existing building on site.

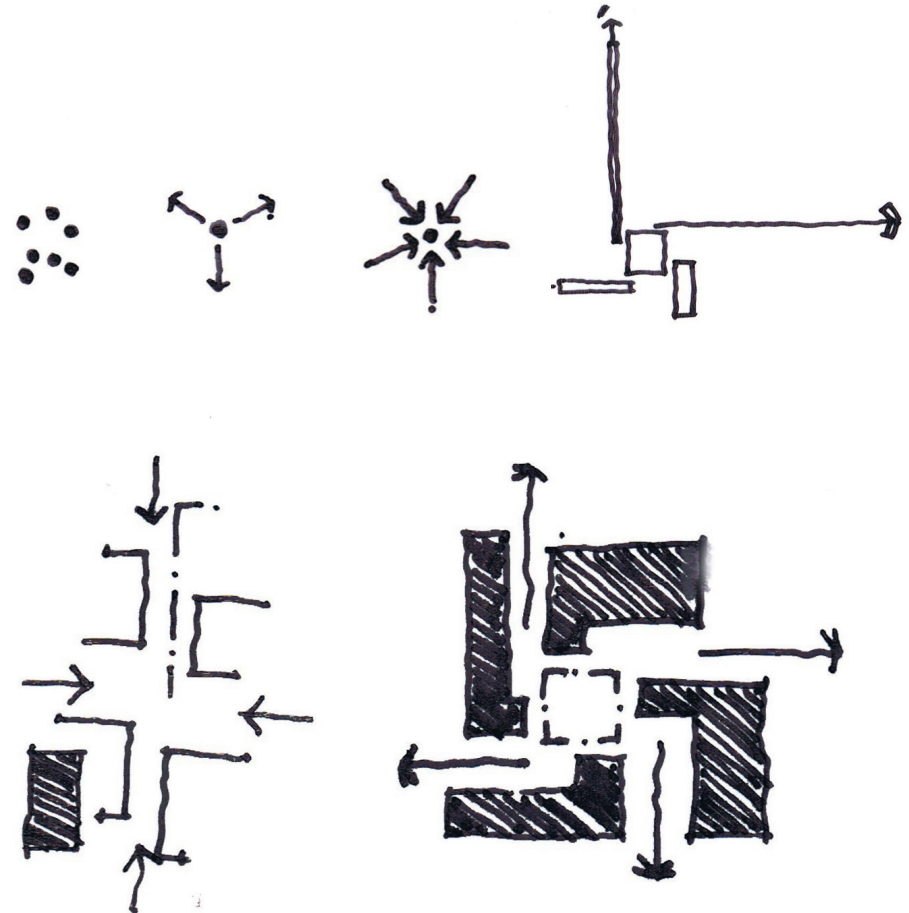
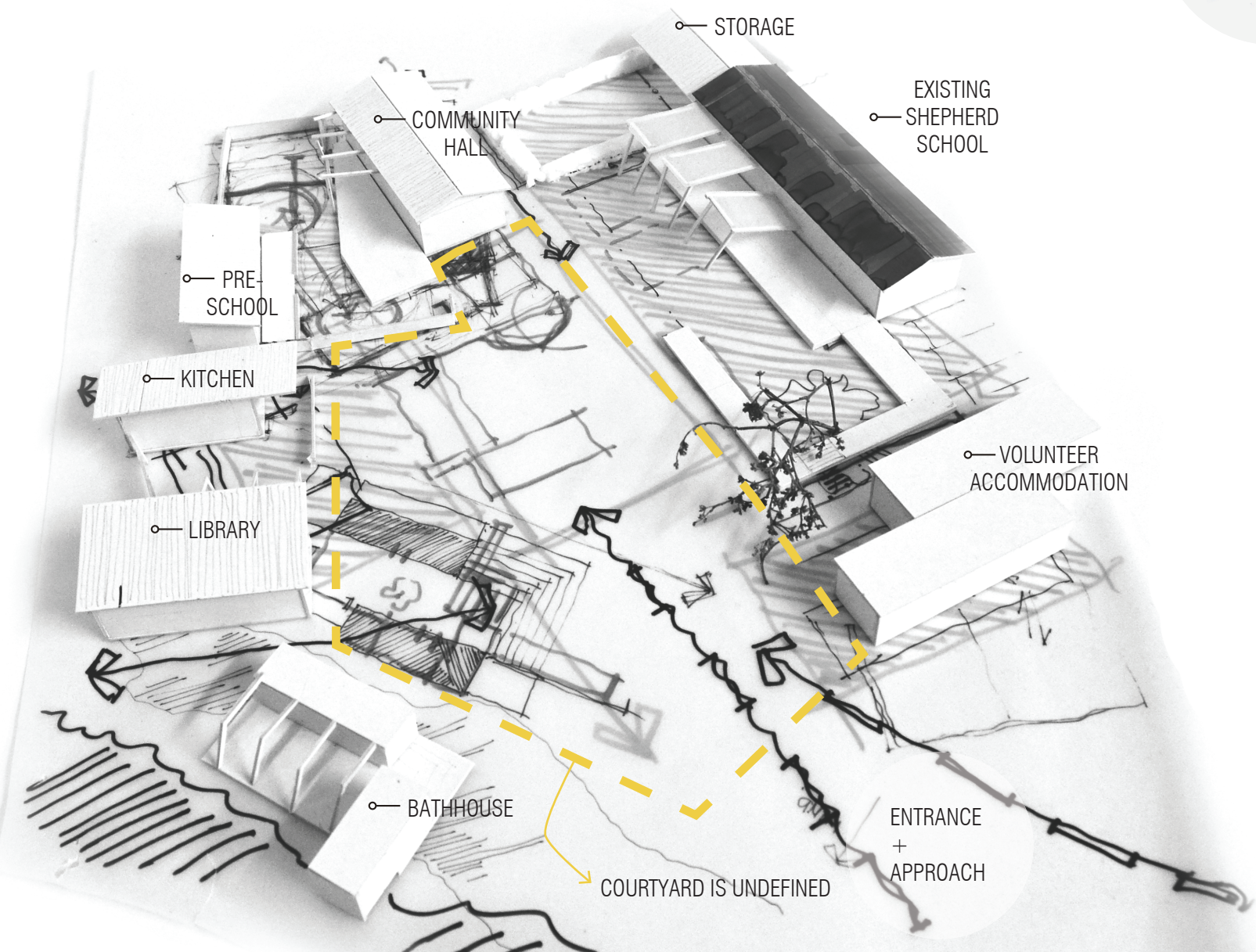
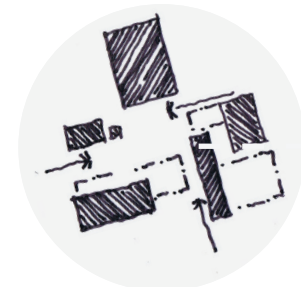


diagram sketches of radial plan evolution

model

PHASE 03



STORAGE

COMMUNITY HALL

EXISTING SHEPHERD SCHOOL

PRE-SCHOOL

KITCHEN

LIBRARY

VOLUNTEER ACCOMMODATION

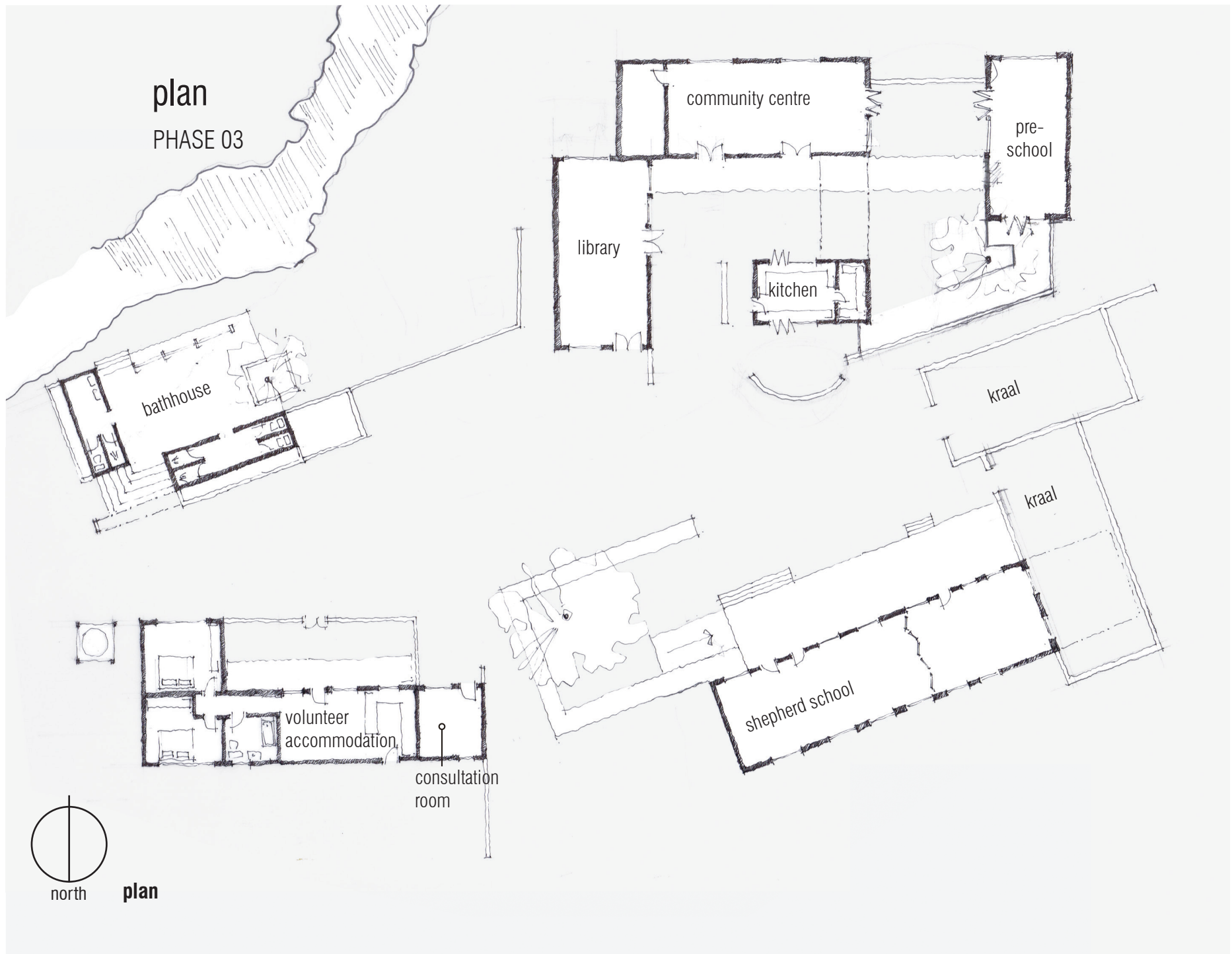
BATHHOUSE

COURTYARD IS UNDEFINED

ENTRANCE + APPROACH

plan

PHASE 03



community centre

pre-school

library

kitchen

bathhouse

kraal

kraal

volunteer accommodation

consultation room

shepherd school

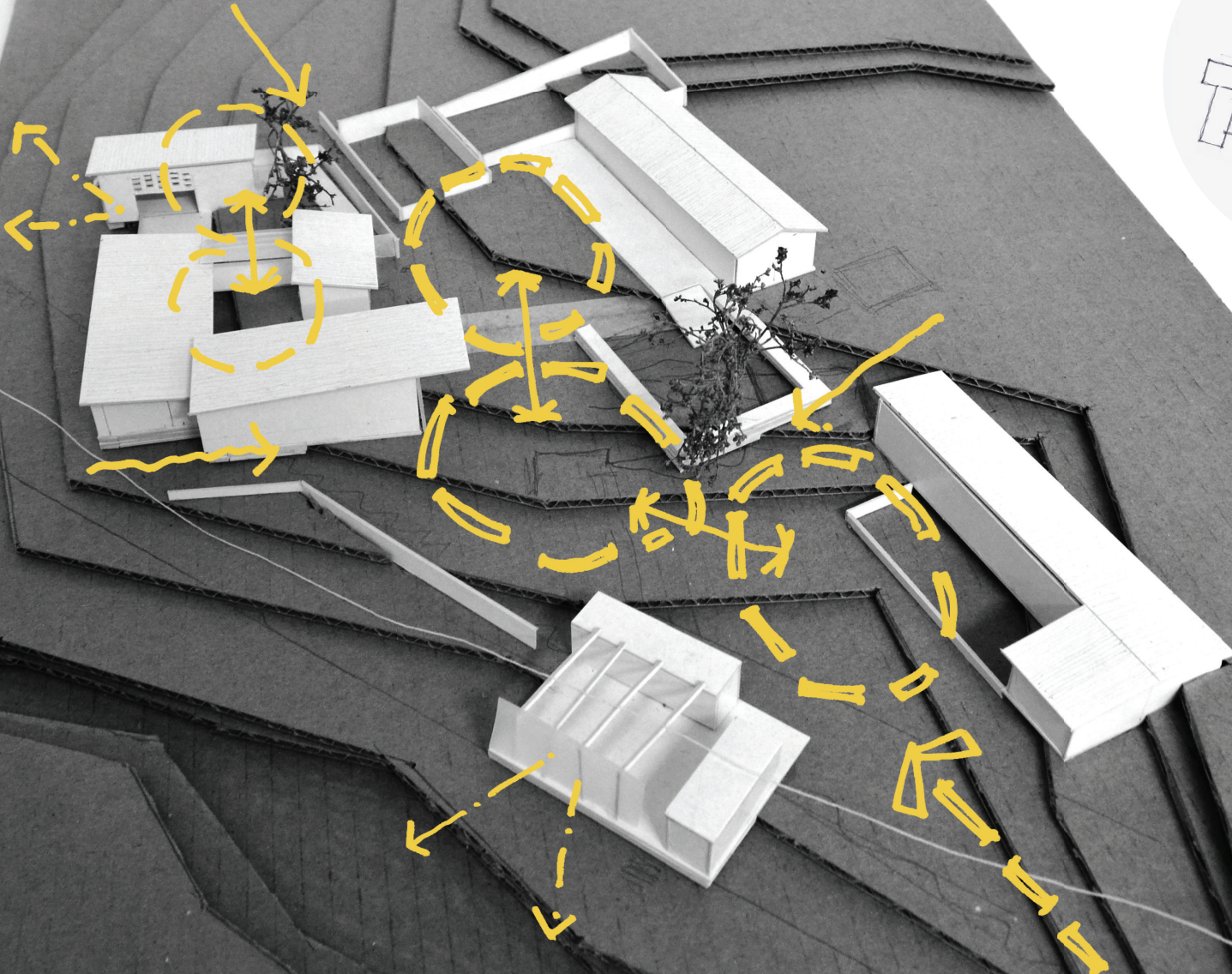


north

plan

model

PHASE 03



→ identify spaces

→ identify views

frame these with building



The page is filled with hand-drawn architectural sketches. At the top left, there's a large rectangular area with some internal lines and arrows. Below it, a vertical rectangular structure is shown with a circular element at its base. To the right, there are several vertical rectangular forms, some with circular elements, and a more complex, scribbled-out structure. At the bottom left, a long horizontal rectangle contains two smaller squares. At the bottom right, a large, complex structure is drawn with many overlapping lines and a central rectangular area. The sketches are done in black ink on a white background.

design polemics:

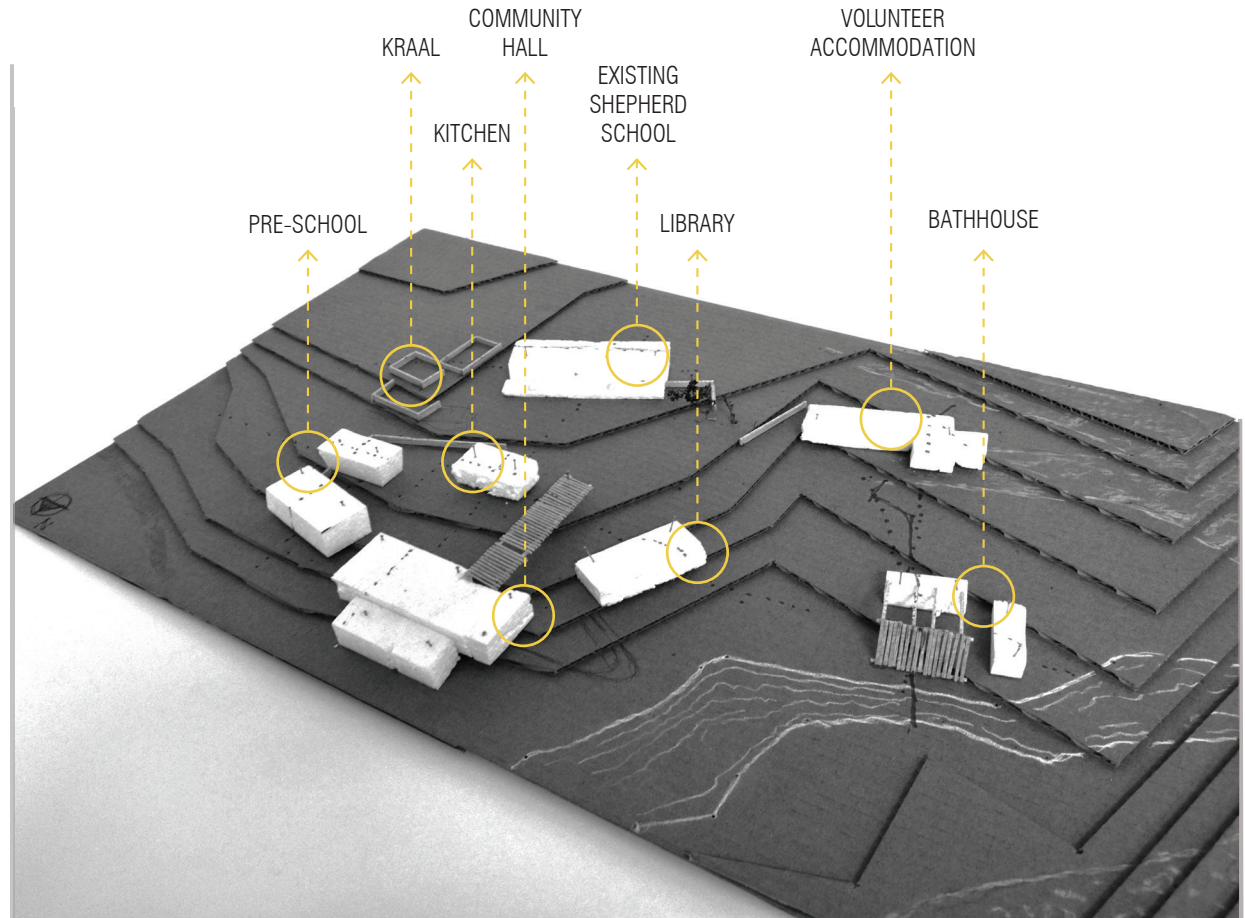
- The spatial organisation works well in gathering the landscape and creating usable courtyards, but site contours need to be taken into account more.
- Connections between adjacent buildings are difficult and a lot northern façade is lost.
- The kraal(s) can be used as tools to create usable space and a more defined entrance for the cattle if they are moved further to the east from the shepherd school.
- Public and semi-public spaces are claustrophobic.
- Building sizes and hierarchies need to be reconciled with the building programme.
- Thresholds are unclear and buildings seem to 'float' in the landscape. Buildings need to be anchored.
- Not enough reference is made to the gathering qualities of the Sotho kraal.

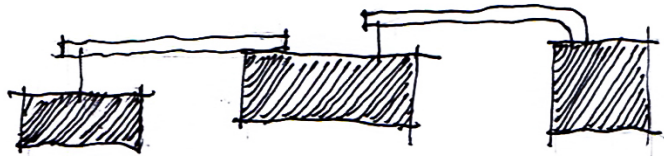
design development

PHASE 04

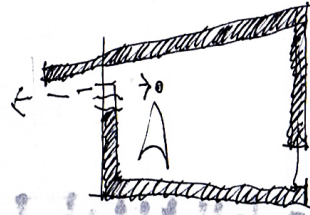
The synthesis towards the final design proposal pertains to all areas mentioned and discussed in previous chapters. This final design proposal is more grounded in the landscape and reads as a whole, even though it is composed of many smaller parts that are connected by low walls which also double as outdoor seating. The circle as a social geometry is edited and incorporated on plan, aiding in the complexity of spaces. Local skills and materials influence the formgiving in a response to appropriate technology.

In response to the information gained and progress made in phase 1, 2 and 3, separate sanitation facilities have been allocated to the pre-school, which has grown from one class room to three classrooms. More kraals have been added to the complex, which is placed on both sides of the existing shepherd school and frames the tree to the north western corner of the site. The pre-school capitalises on northern exposure for class rooms and play areas. The volunteer accommodation has been minimised extensively and the additional consultation rooms removed.

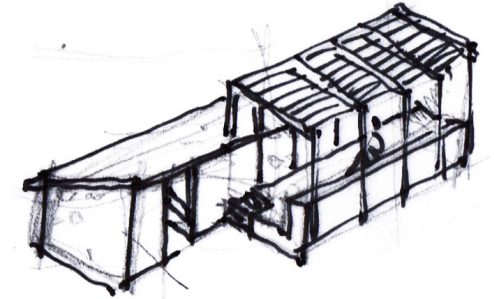
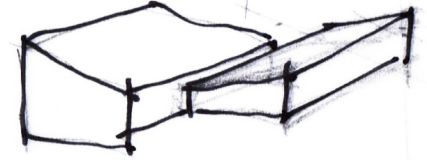




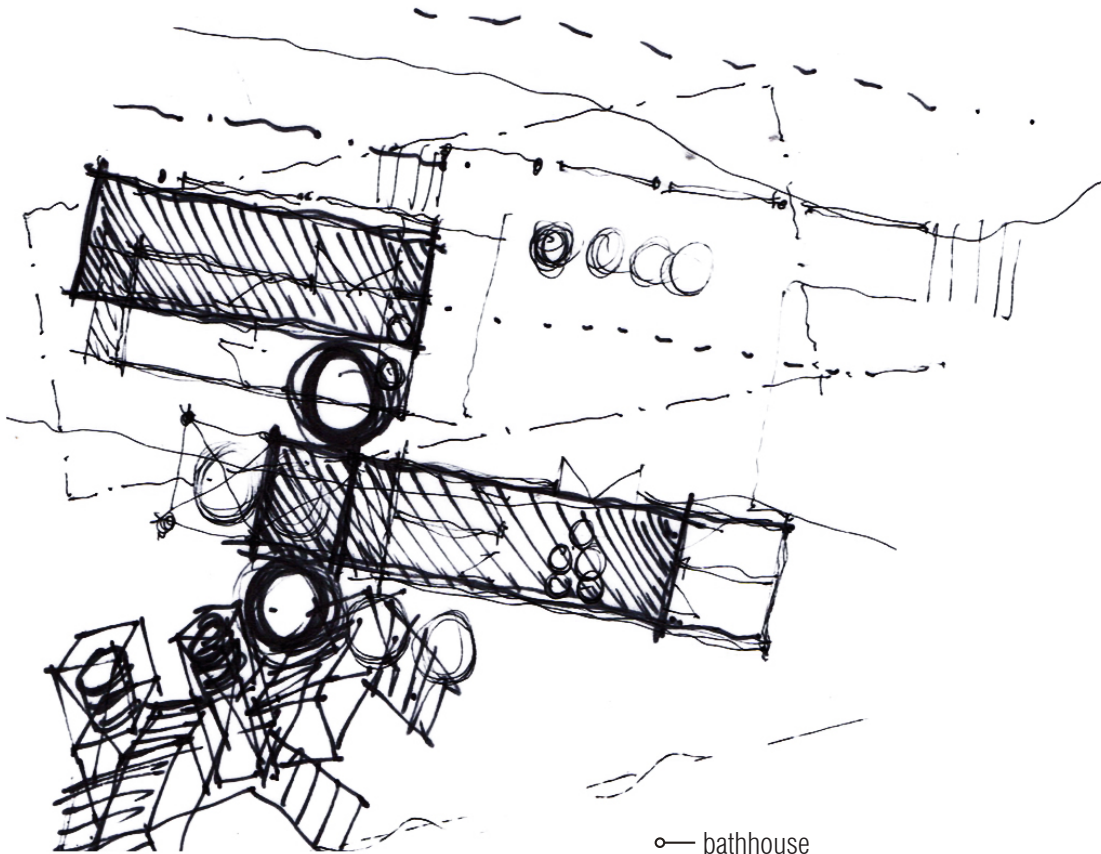
○ boundary walls + seating



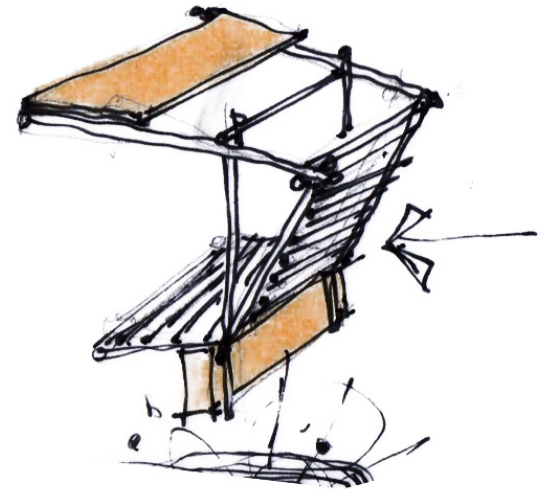
○ building connections



○ community hall

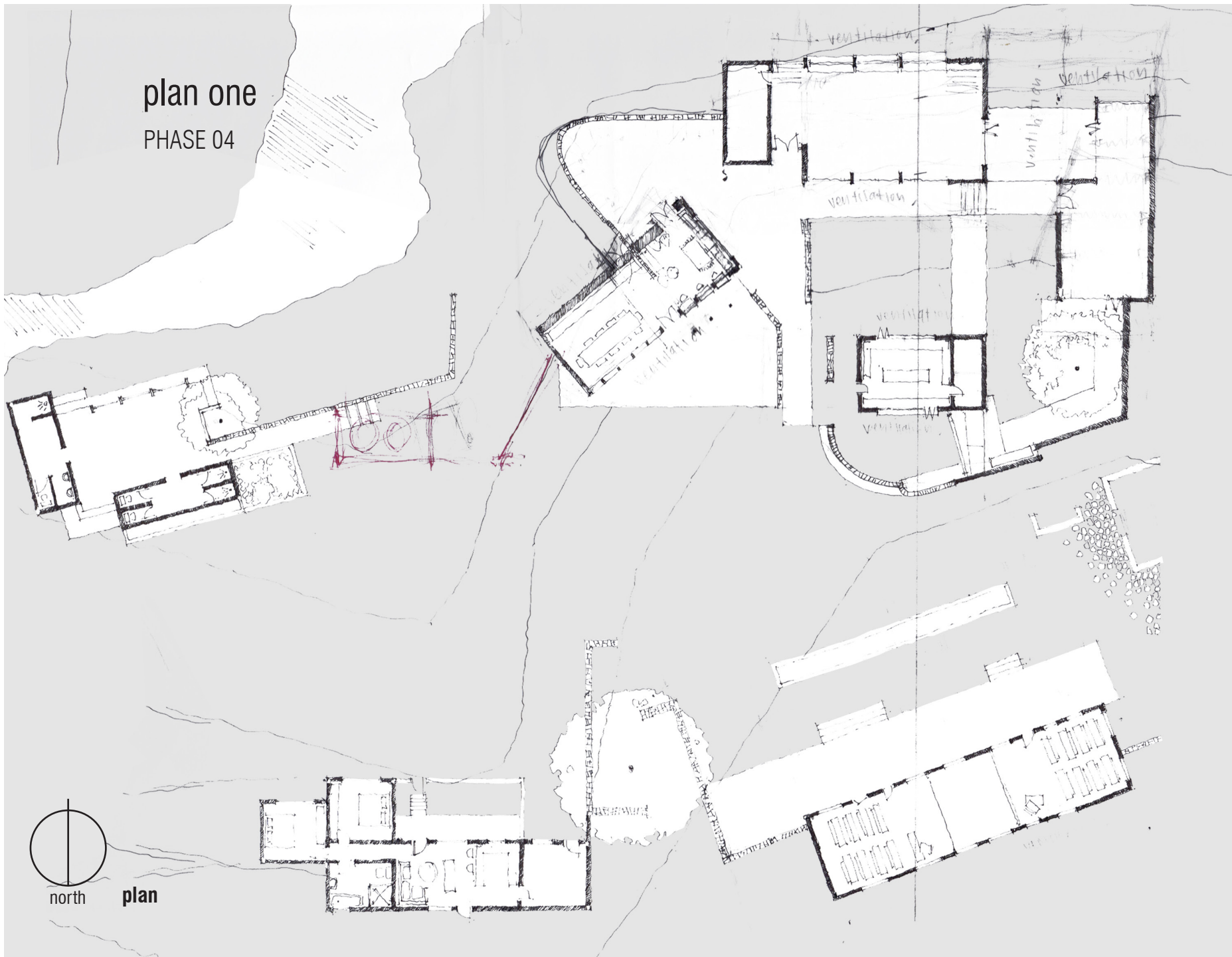


○ bathhouse



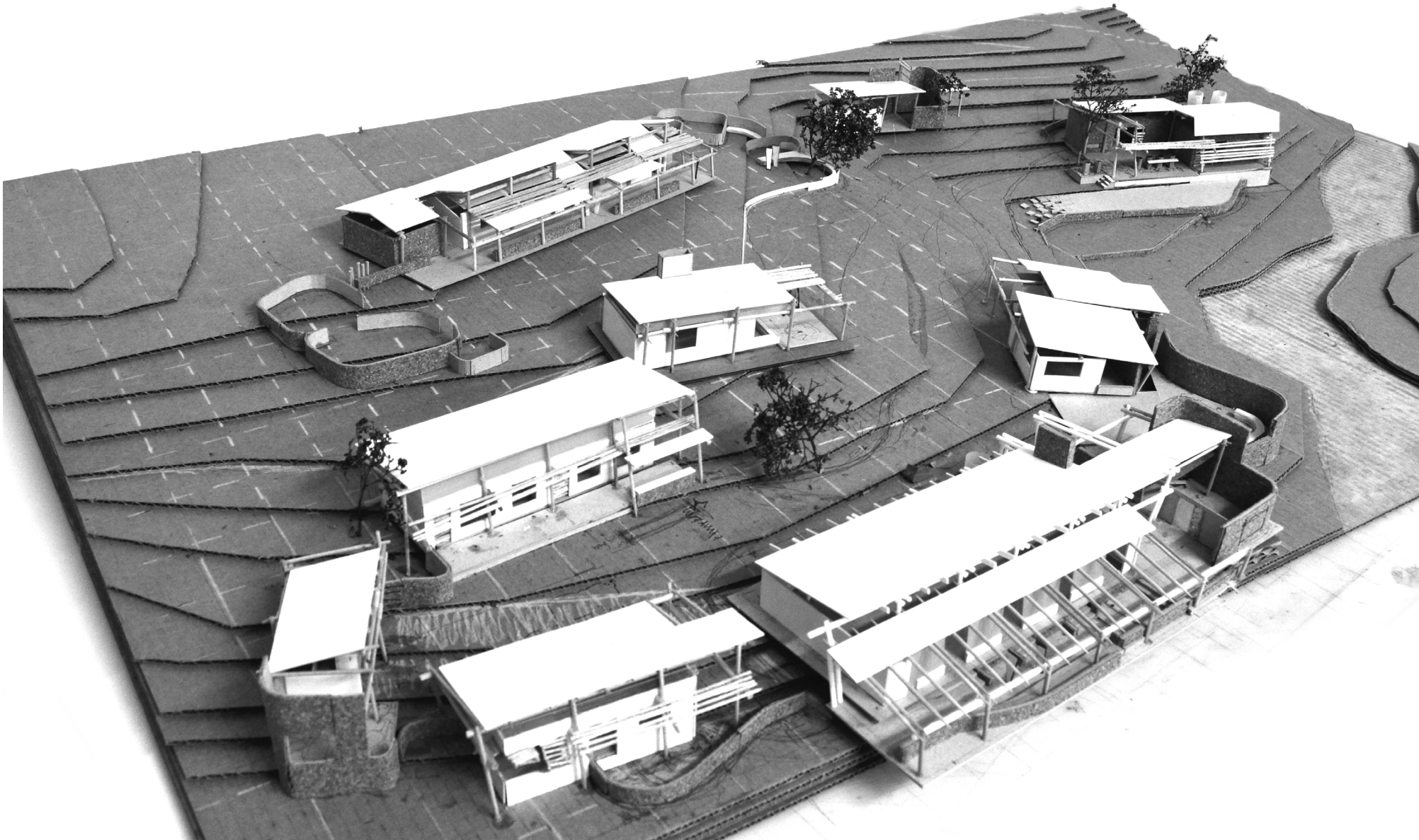
○ seating | study area

plan one
PHASE 04



model

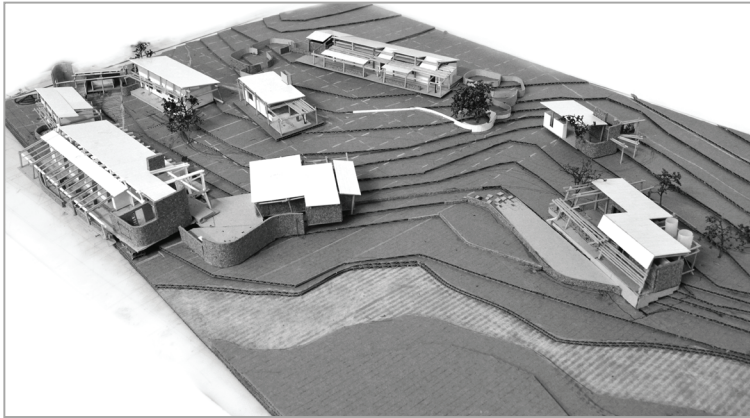
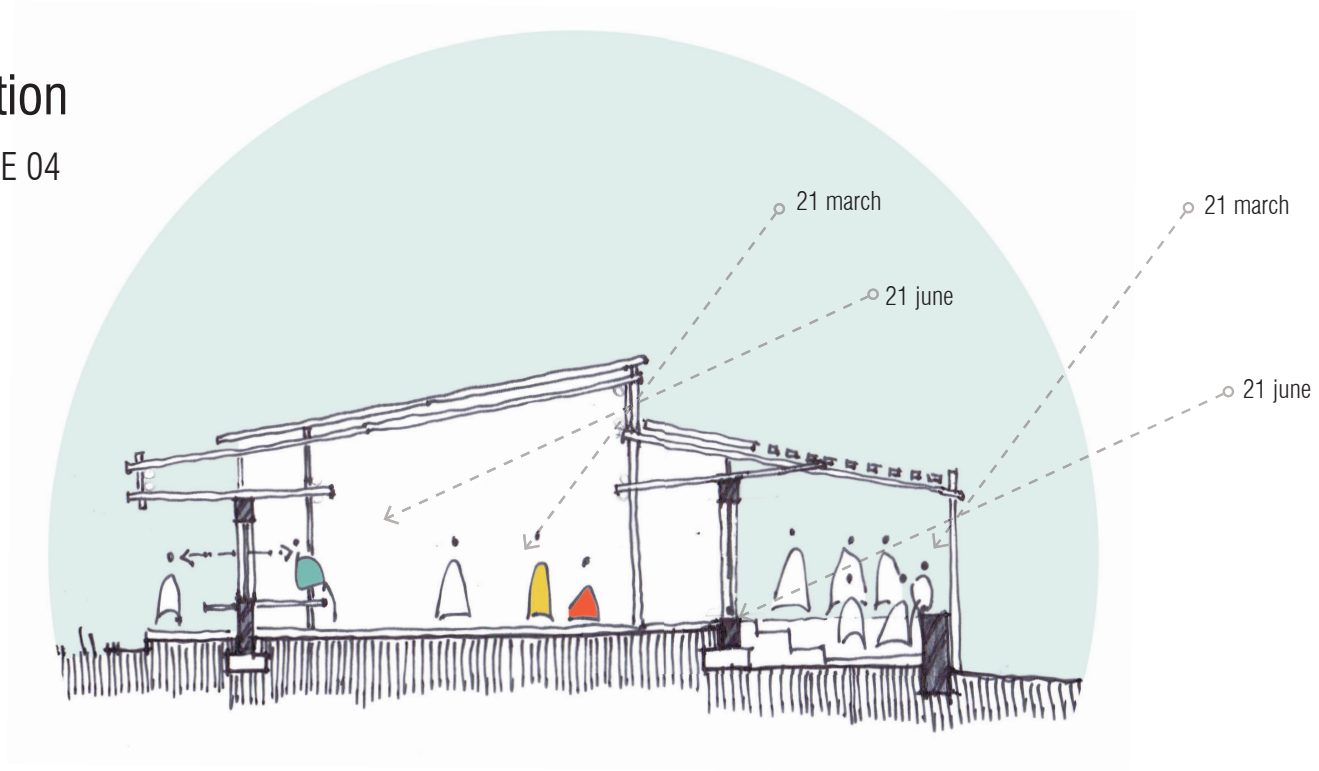
PHASE 04



section

PHASE 04

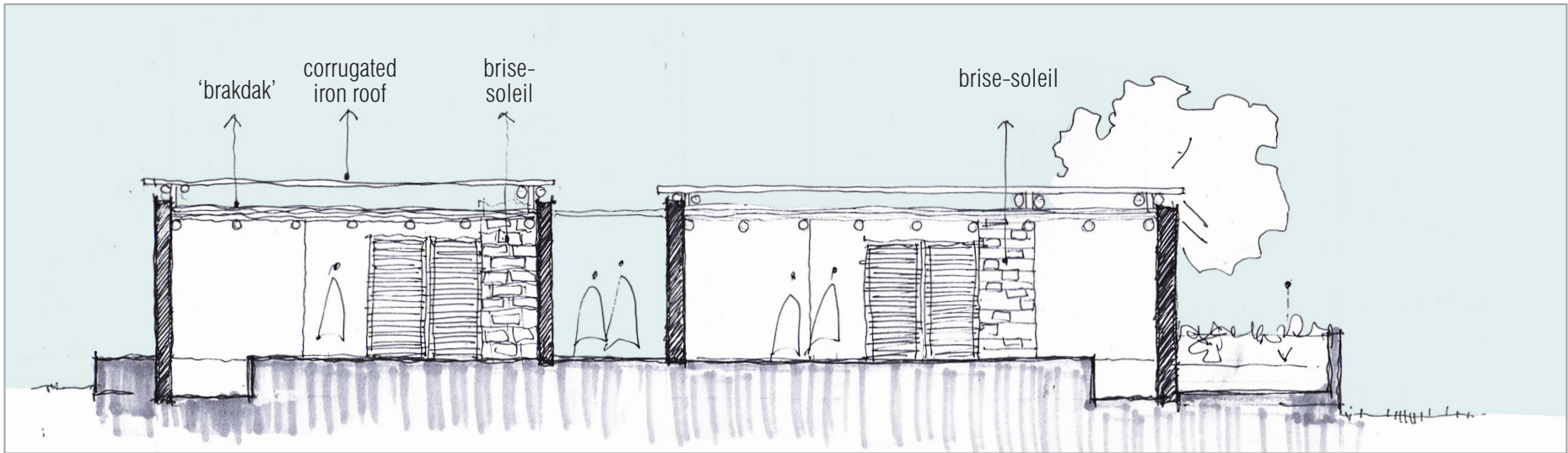
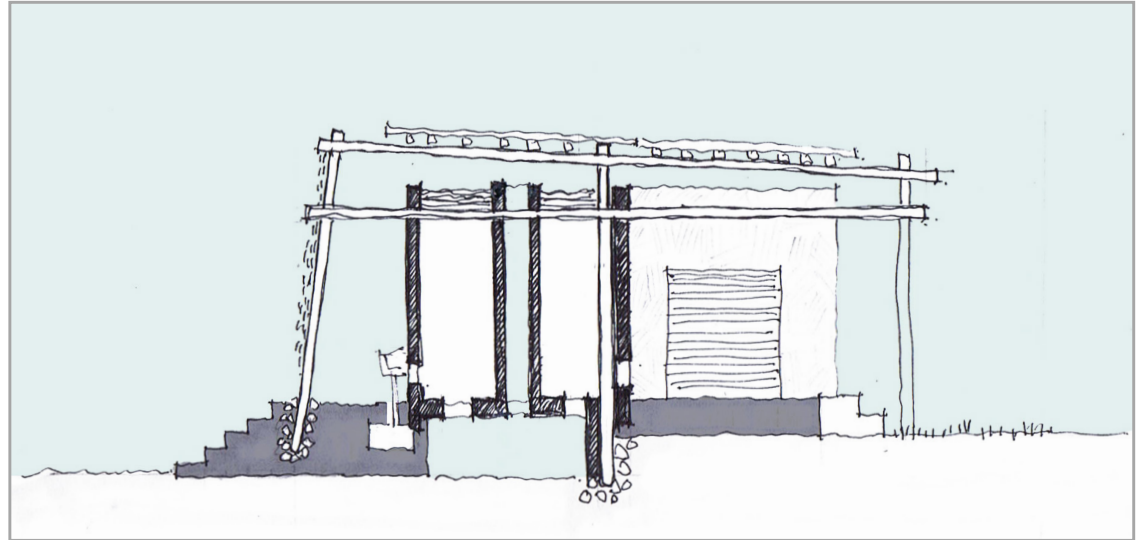
community hall



section

PHASE 04

bathroom



bathroom

plan two

PHASE 04



north

site plan

model

PHASE 04



3.2

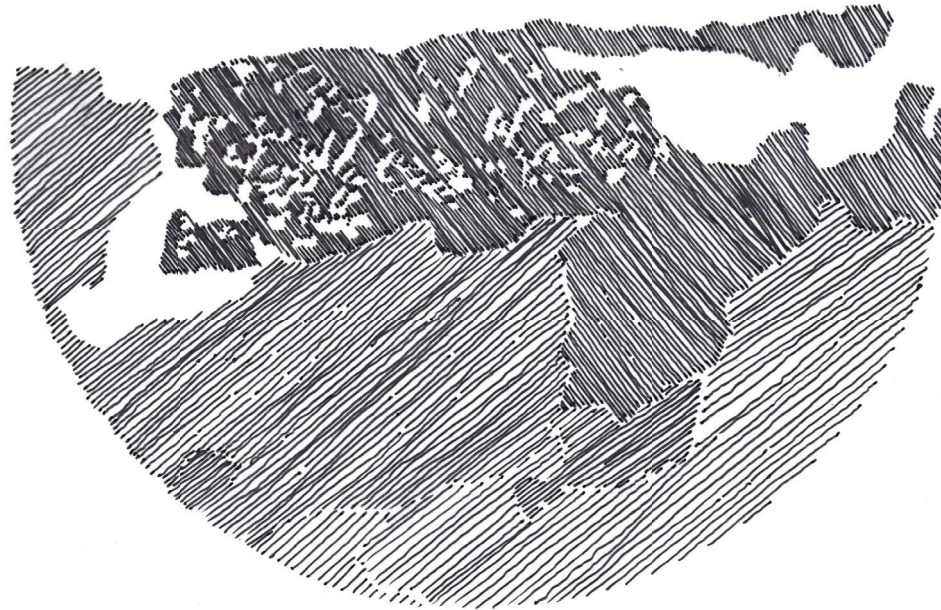
towards a final design

SHEPHERD SCHOOL [view from kraal]

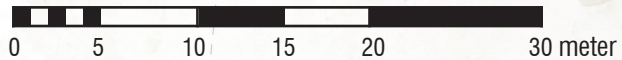
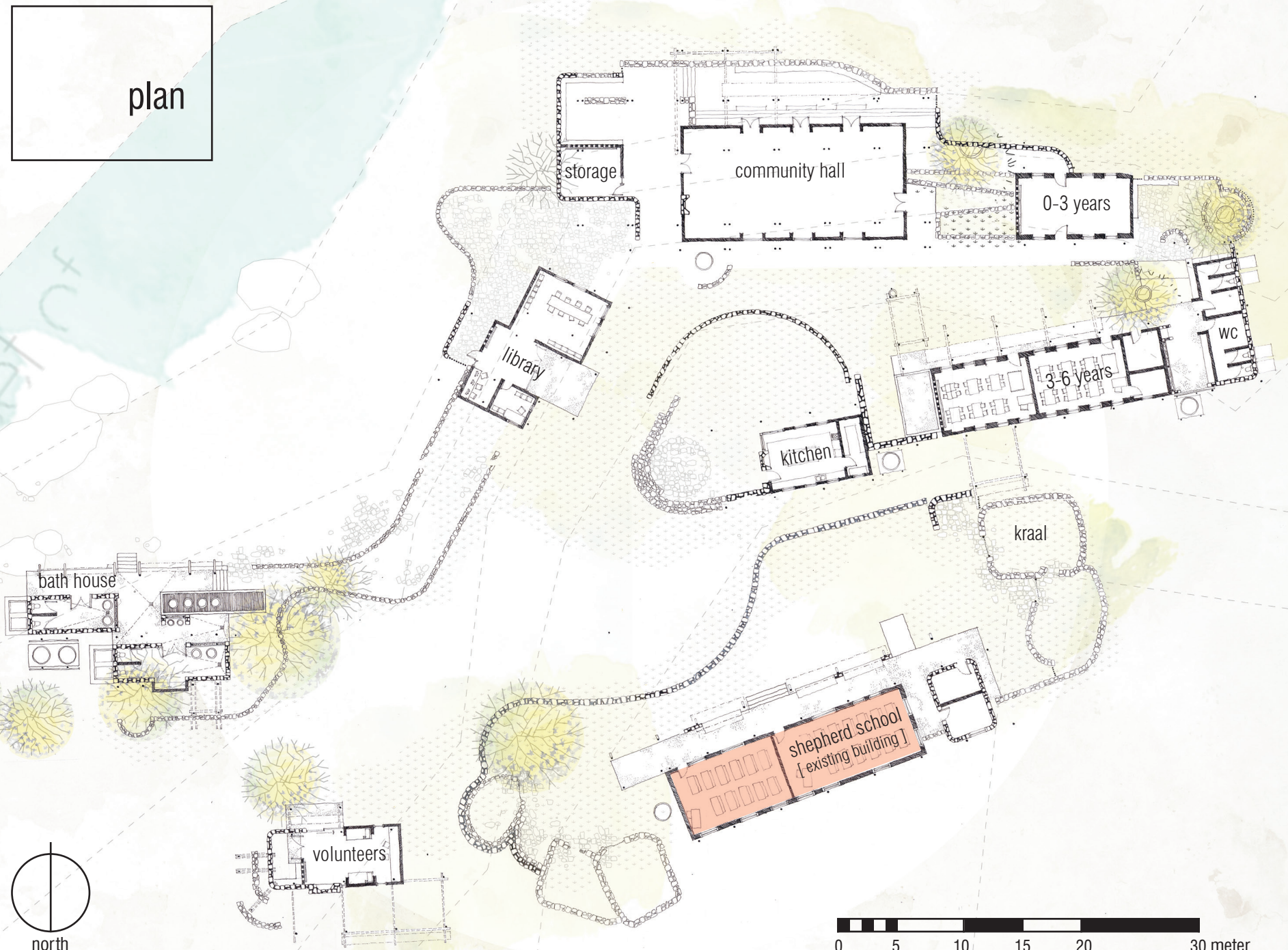


rural community pavilion and shepherd school

investigating hybrid placemaking in the cultural landscape of semonkong, lesotho

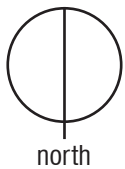
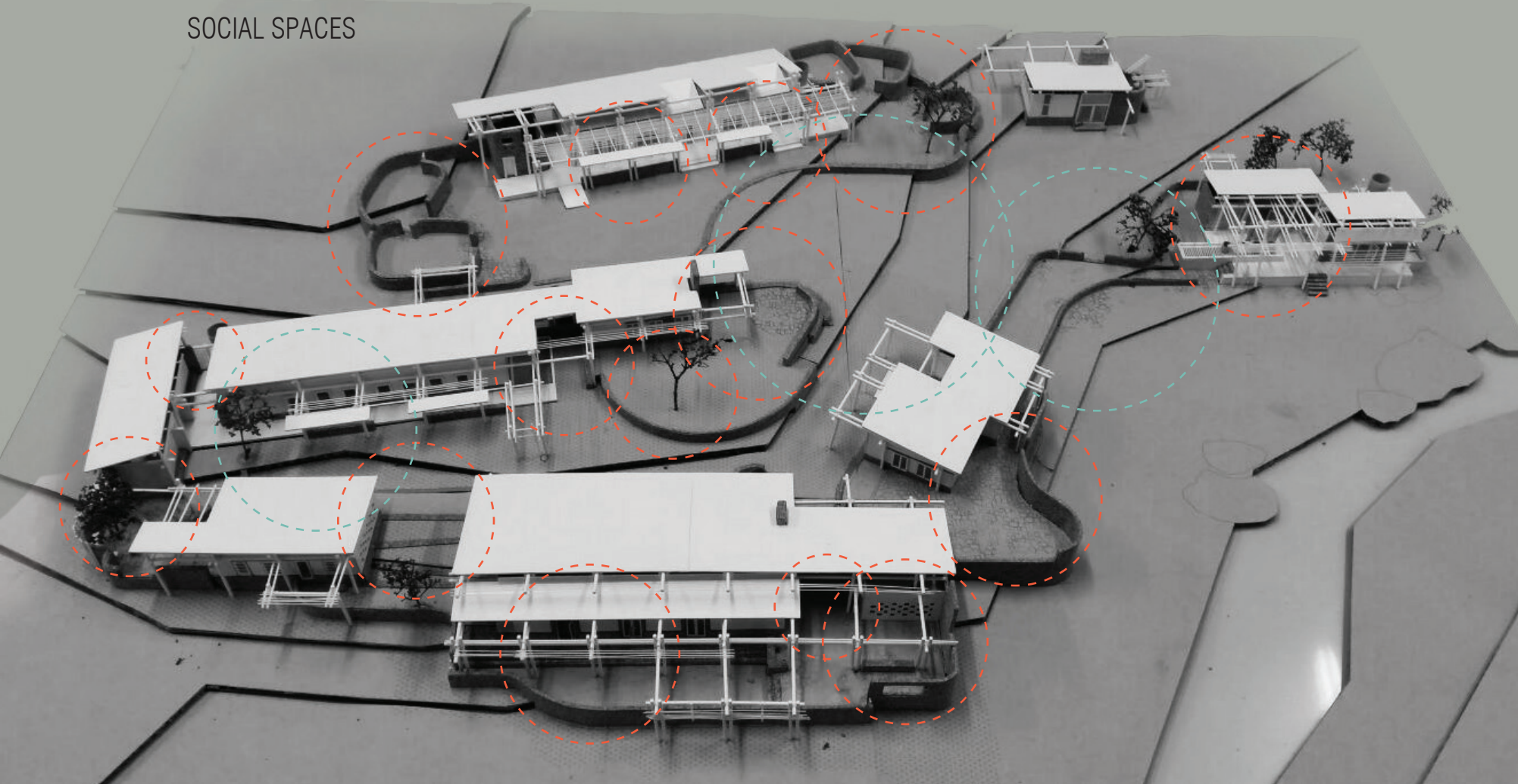


plan



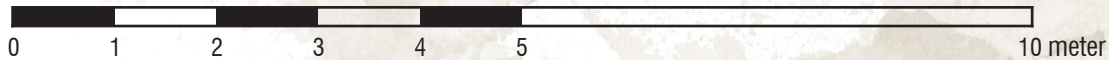
final model

SOCIAL SPACES



eastern elevation

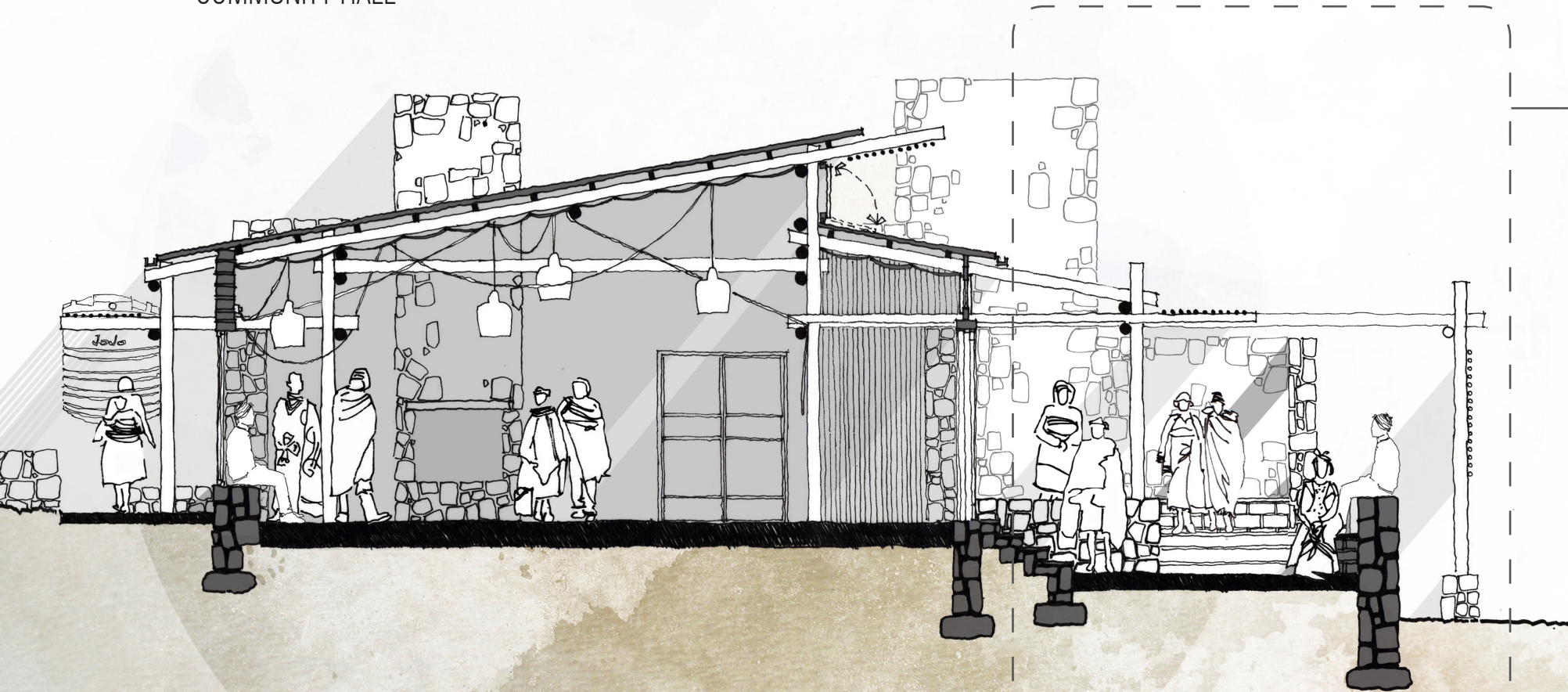
COMMUNITY HALL





cross section

COMMUNITY HALL





northern elevation

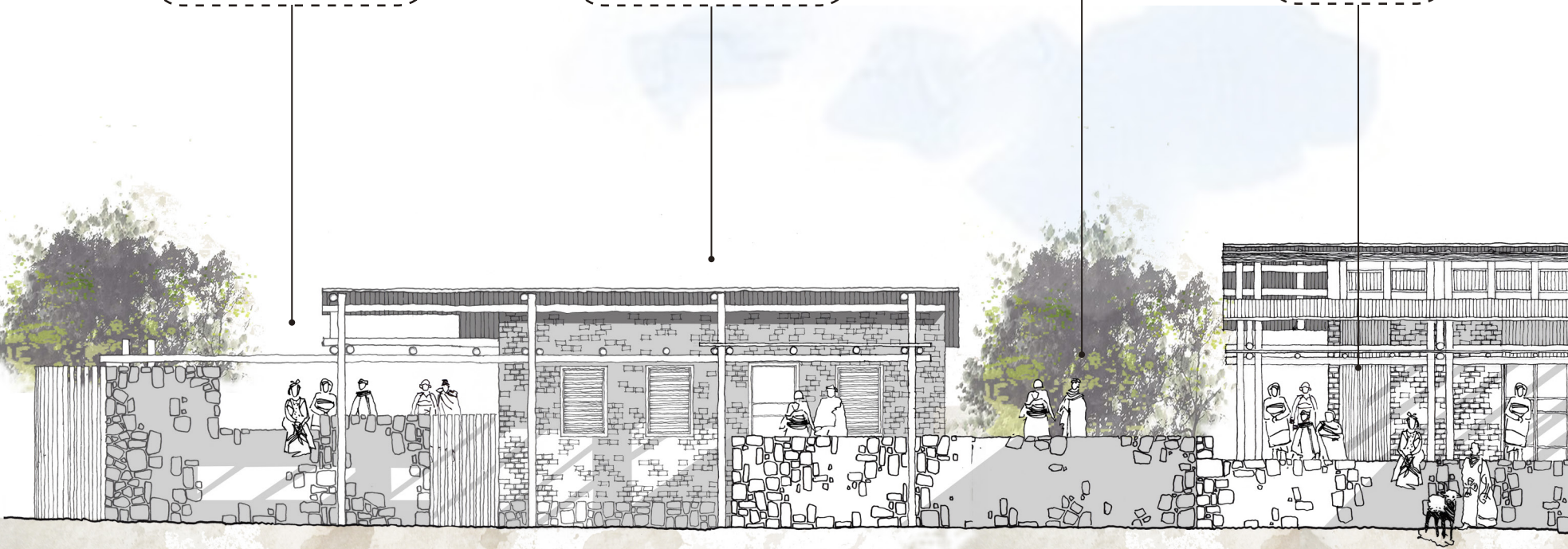
COMMUNITY HALL [n.t.s.]

pre-school outside
gathering area

pre-school class room
0-3 years

storytelling area
between community hall +
pre-school

northern
'stoep'

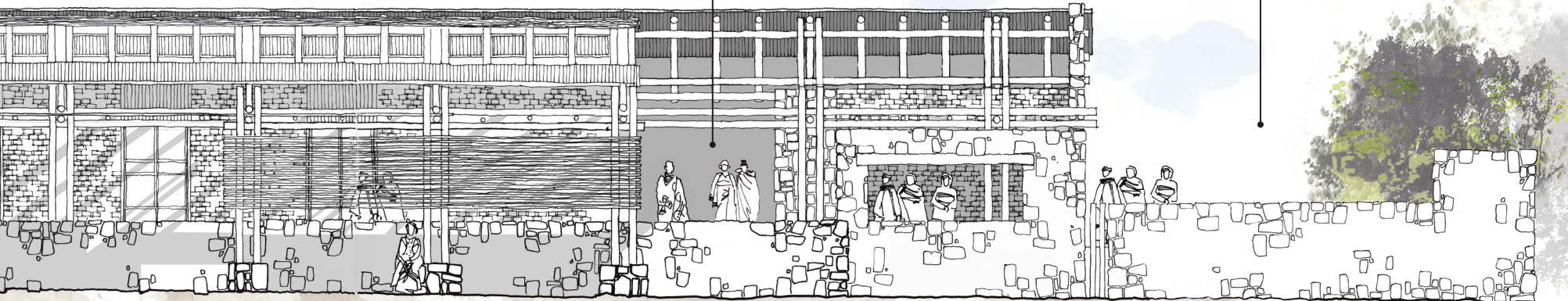


community hall

entrance
and
foyer area

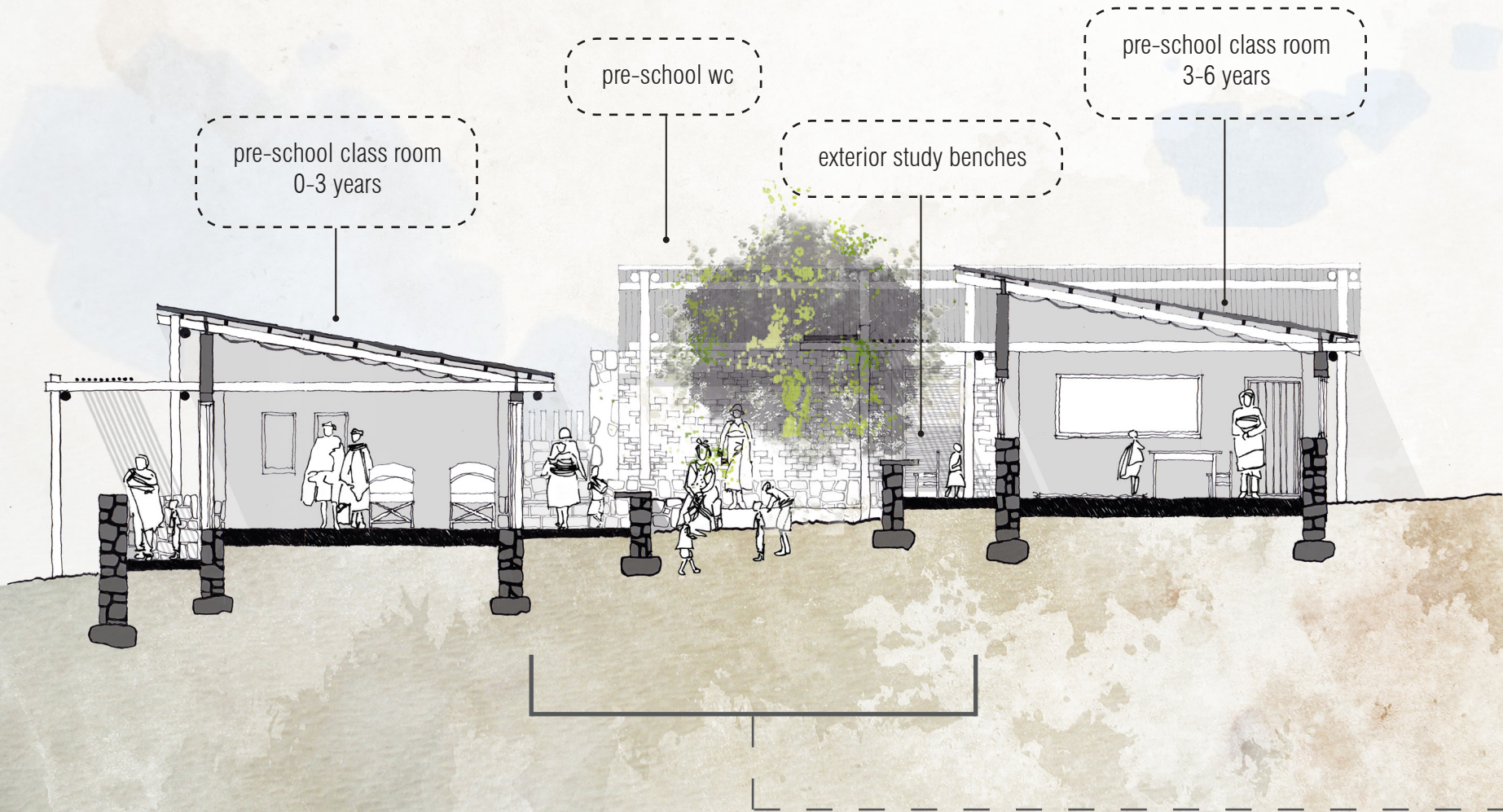
firing kiln for
clay pots and
gathering area

external link
between library and
community hall



cross section

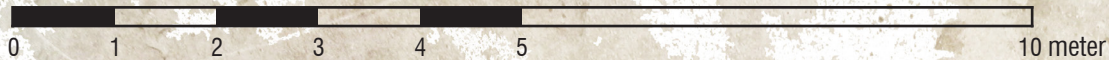
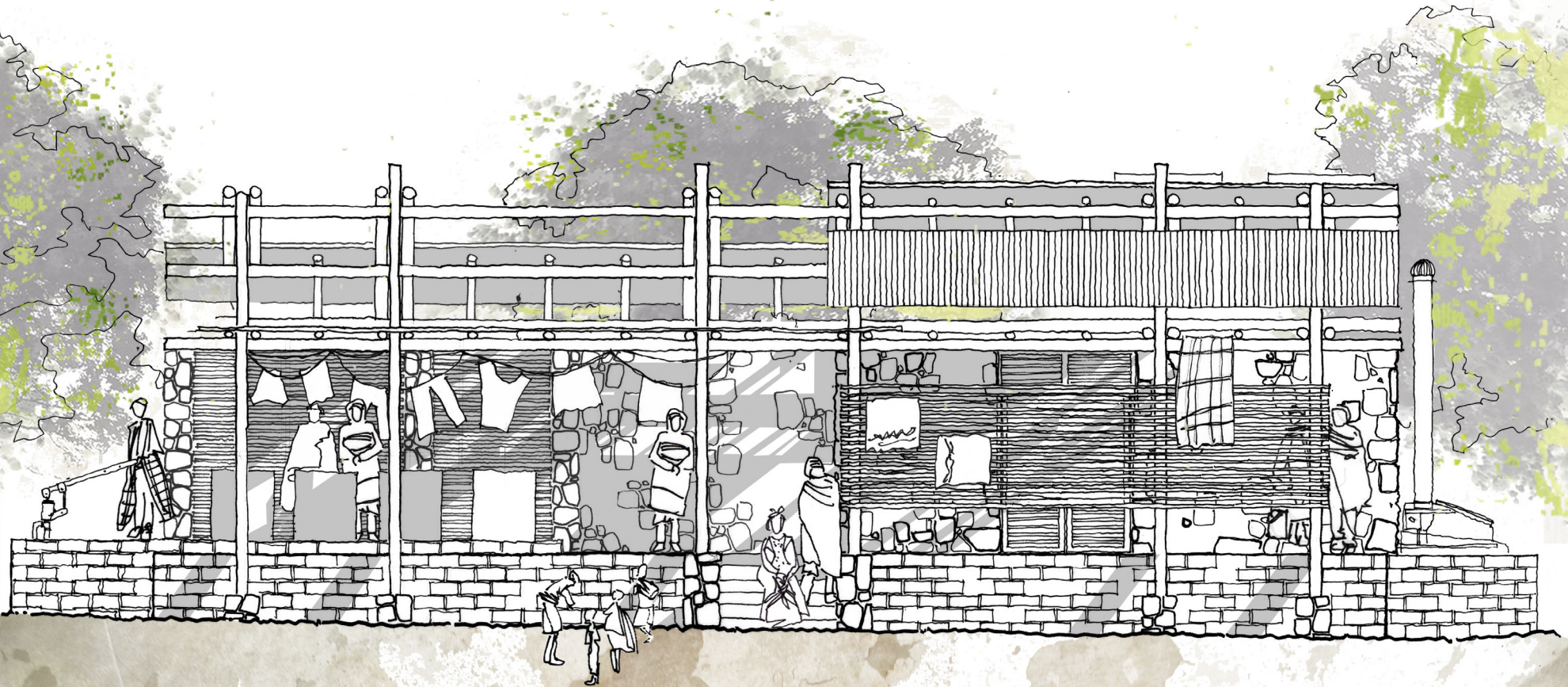
PRE-SCHOOL [n.t.s.]





northern elevation

BATH HOUSE

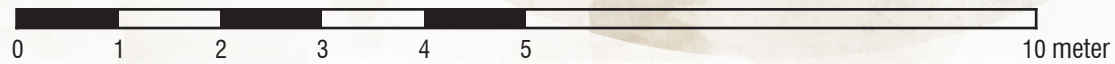
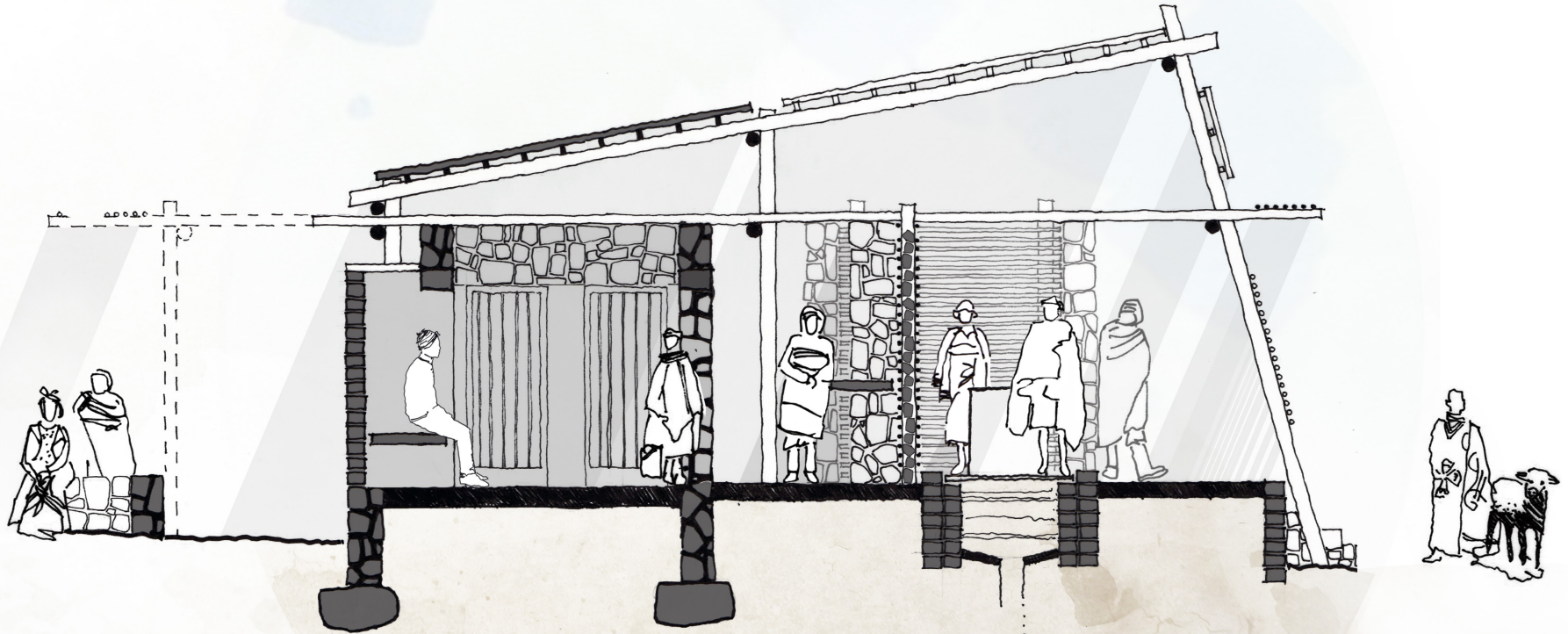


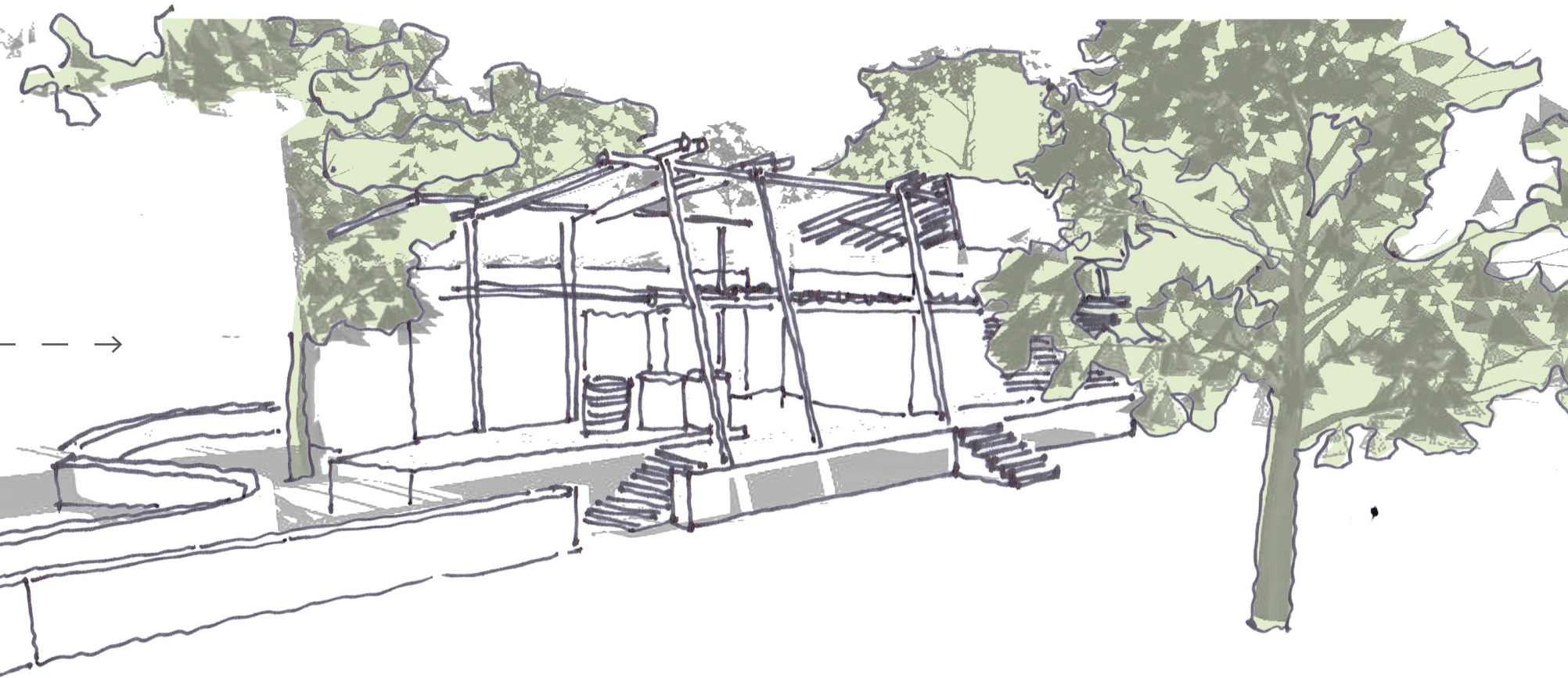


bath house

cross section

BATH HOUSE





3.3

technical resolution

STRUCTURAL SYSTEMS

2.5.3 structural systems

Two superstructures will be incorporated in constructing the rural pavilion, one stereotomic, consisting of non-load bearing stone and stabilised adobe block walls and a tectonic timber framed structure of gum-poles, supported by foundations. The initial idea is that these two systems will function independently of each other with a flexibility of possible spaces that can be created below the roof and structure. Where the systems overlap, infill panels will be used to create functional rooms with a definite divide between inside and outside through the use of infill panels. It also provides the option of extending some of the walls and spaces beyond the roof-line of the structure. Roofs will be constructed of corrugated iron, the traditional method of earth roofs, or a combination of the two. In spite of this hybrid use of structural frames and not load-bearing walls, the intent is that both construction and composition remain legible – a simple relationship between part and whole. During the early stages of exploratory research a skills and materials audit was conducted within the town of Semonkong. The outcomes of this audit informed the choice of locally available materials and construction technologies.

According to Frampton (1990: 517, 518), the poetics of construction occurs at the joint where solid stereotomic and light-weight tectonic elements meet. Details can be “material joint”, as in the case of the connection between a column and beam, or they can be “formal joints”, as in a porch acts as connection between an interior and an exterior space. The detail has a powerful role as generator of the building character, in the great features as well as the minor detail. Every detail either increases or lessens the “character of the assemblage of which it forms part of” (Nesbitt, 1996: 502).

tectonic | The tectonic consists of the timber frame system as primary super structure and the cladding, roof and glass as the secondary super structure. Traditionally, men and women cooperated in the building and maintenance of houses in Lesotho. Dwellings were initially made of reeds and grass mats in the shape of a beehive, which were later replaced by larger huts made of poles or large sticks planted upright close together to form the walls of the circular enclosure (Eldredge, 1993: 91). This tectonic load-bearing structure was then plastered or filled in with earth construction to protect from natural elements, especially wind.

timber framed structure | The use of timber in vernacular buildings has decreased over time as the availability and proximity of this material diminished. The site of the Lesala Shepherd School is located within 1km of a pine tree plantation able of producing timber that is to be treated before construction. Therefore the tectonic framed structure consists of a timber frame constructed from gum-poles, with cladding and glass as infill components. The framework will read as a lighter element to project past the building as a dematerialisation of mass and creating defined exterior spaces that are shaded from the sun – allowing a connection to nature whilst not being totally exposed to its forces and mimicking the extended threshold of the traditional Sotho hut.



technical resolution

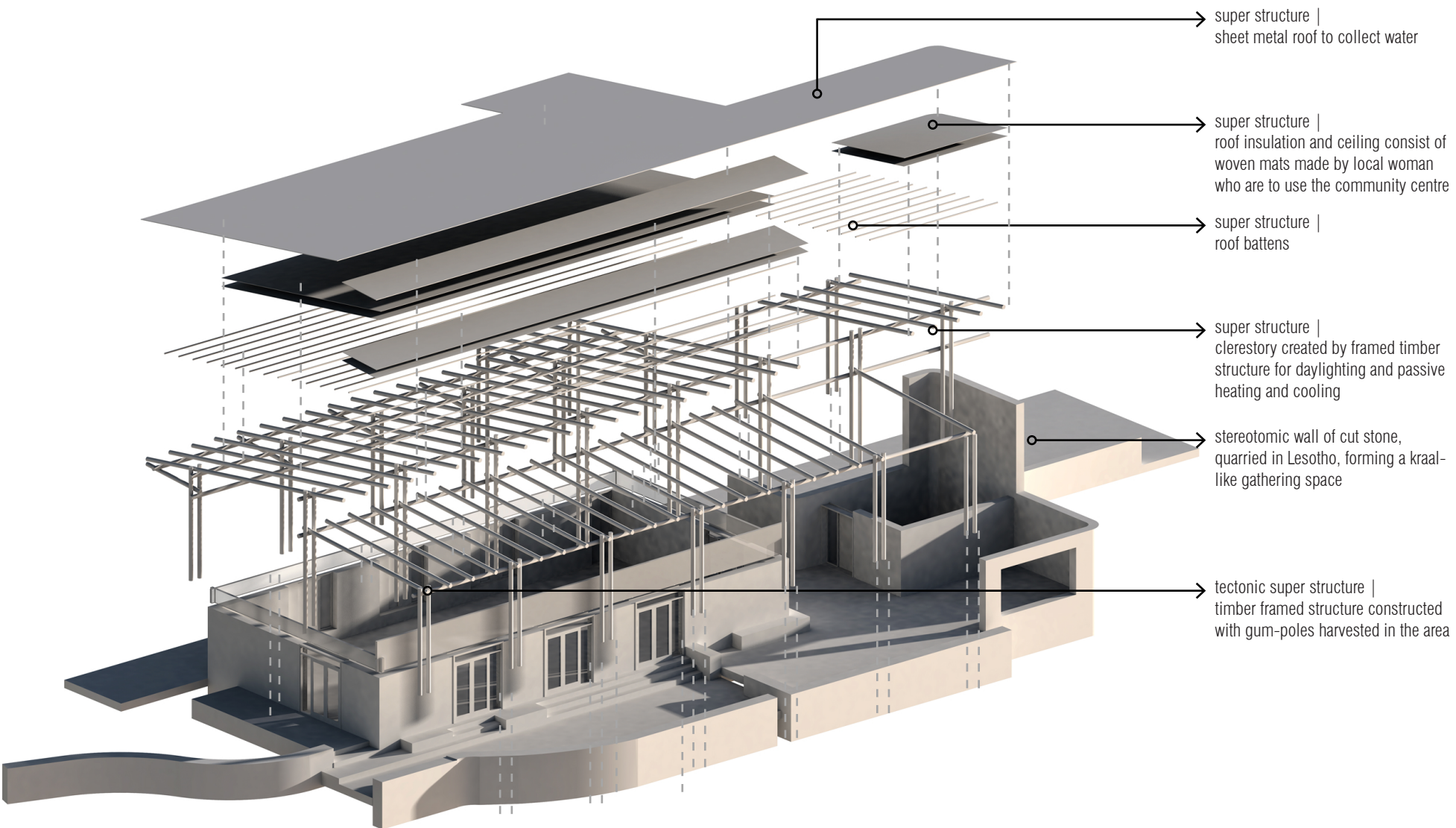
STRUCTURAL SYSTEMS

According to Frampton (1990: 517), stereotomics refer to a solid structure achieved by stacking identical units on top of each other to form a compressive mass which can either be load-bearing or not.

stone | Due to European influences, the earlier tectonic vernacular typologies of Lesotho have been replaced by more permanent stone huts and houses. The transition to stone houses created a demand for the skills of stone cutters, and building became a specialised trade of men. Members of the household continued to roof their houses with reeds and grass; however, men constructed the packed stone cattle kraals of the homestead (Eldredge, 1993: 92). Masonry structures built without using mortar is referred to as “dry stacking”. Stone provides (high) thermal mass, which has a high heat-retaining capacity and is slow to heat up or cool down; providing for cool interiors in the summer (Schmidt, 2013: 204). If additional materials need to be added for strength, lime mortar allows for the materials to be used again.

stabilised earth block | Compressed earth blocks, whether stabilised or not, is a modern version of raw earth that is compacted using a press. This type of block can be used for load-bearing or in-fill structural application. Important principles that apply to earth construction is structural stability and strength; longevity; durability; surface density; and allowing for enough, but not too much, movement (Schmidt, 2013:486). The risk of crushing stresses on these walls is limited as the earth blocks will only be used as in-fill for a tectonic framed structure. The challenges of working with earth blocks pertain to foundations, walls, openings in walls and roofs. Plinths and corners are sensitive to water dripping and splashing.

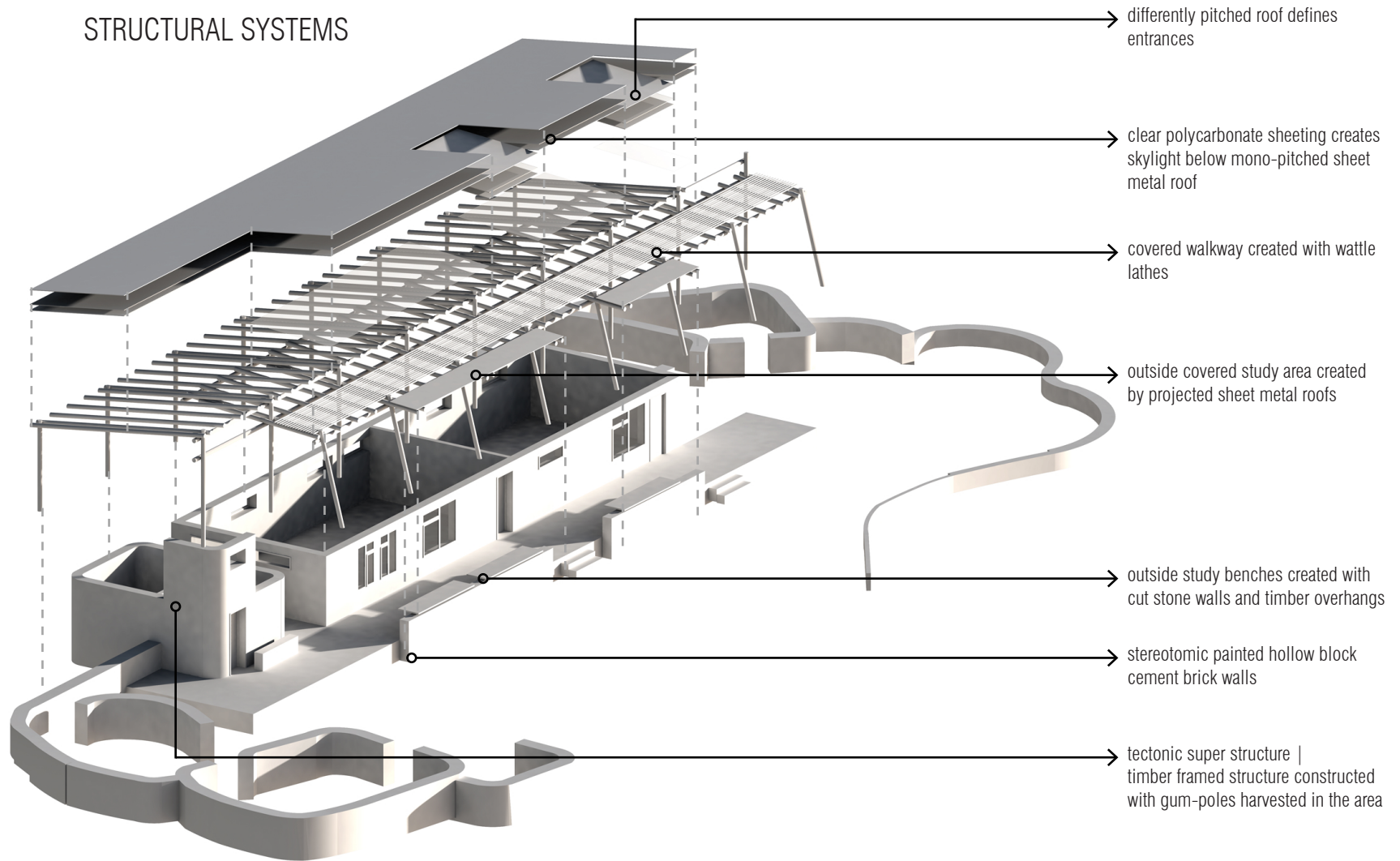
A sloped apron below the internal floor level can be incorporated along the exterior at the base of the building. Too big or too small side-bearing spaces overload the wall and can cause a weakened wall. Lintels should therefore extend past the top of openings at least 250-300 mm (Schmidt, 2013:488). Insufficient overhangs permanently expose walls to excessive weathering. Maintenance of earth walls is cardinal to the longevity and wall layers must always be able to breathe and release moisture in and out. Earth walls can be plastered with non-hardening lime wash or natural paints.



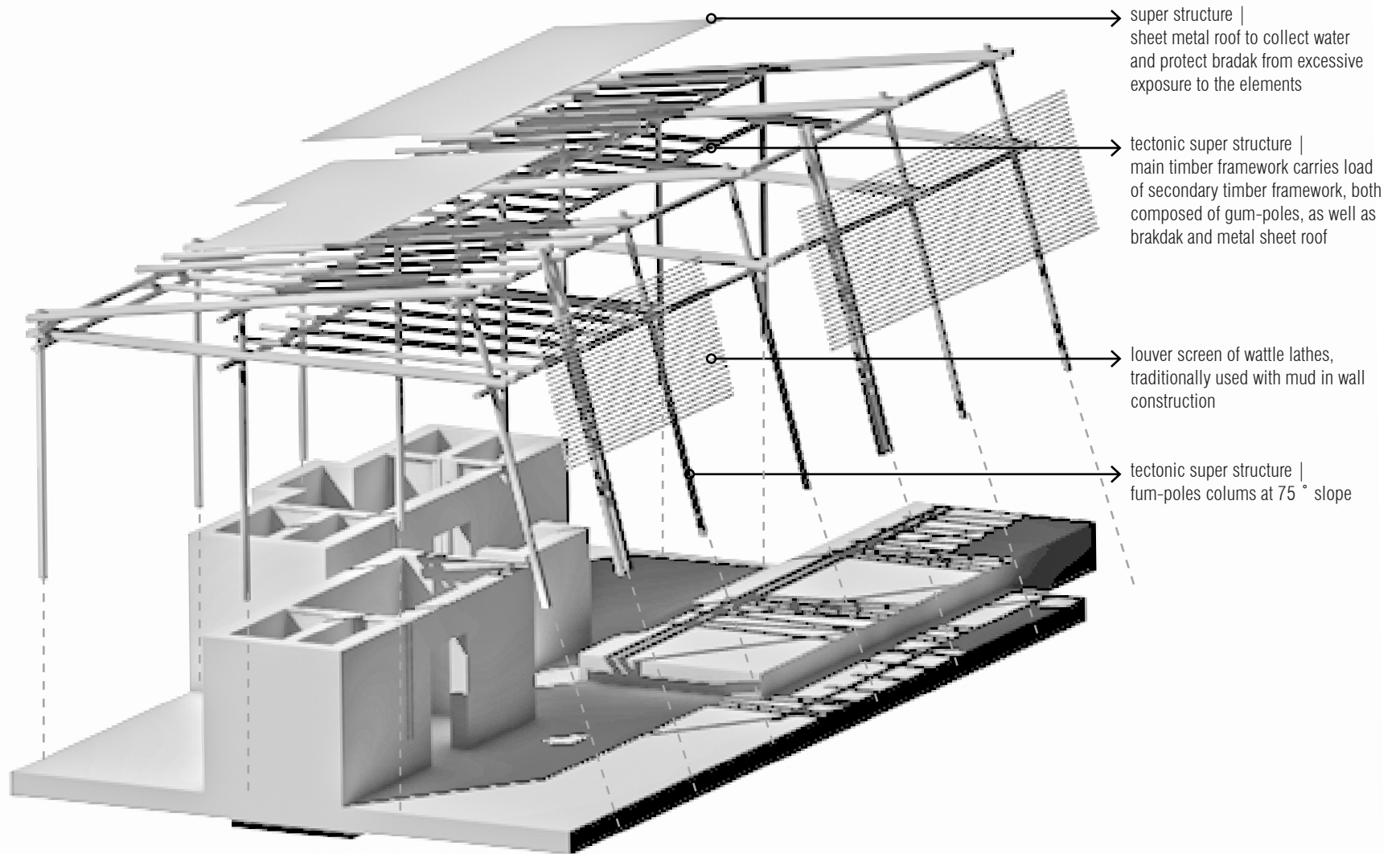
exploded axonometric of the community hall

technical resolution

STRUCTURAL SYSTEMS



exploded axonometric of the shepherd school



exploded axonometric of the bathhouse



fig. **01**
Design details and colours are rich in meaning and symbolism,
such as corn symbolising wealth and fertility.

[Pinchetti & Tettamanti, 2013: online]

PART 04

reflection and evaluation

The current cultural climate of an evolving community structure within the landscape of rural Lesotho and the socio-economic problems that accompany this should be embraced as opportunity to reconstruct the environment in providing for these changing needs. Architecture can be used as a medium for change and social awareness, interjection and transformation within this milieu.




reflection and evaluation

The Rural Community Pavilion and Shepherd School offers educational services and an environmental consciousness to individuals and the community, as well as opportunities for social interaction and the meeting of basic sanitation needs. The building's efforts to be a positive image by facilitating community and public engagement cannot be evaluated at this point in time. I do, however, believe that this community complex is a well-designed with thought through structure that subtly fits into the context – not only topologically, but also typologically, morphologically and in its theoretical grounding. It is hoped that users will be able to relate to the building easily in order to utilize it well – as the need for this is apparent.

The project allows its users to take part in a visual dialogue of known materials and adapted form giving in order to construct a narrative of memory, reconciliation and restoration. The architecture becomes a means for the two user groups to once again become aware of each other's circumstances, without necessarily being coerced into one social entity. The community is offered a glimpse of the forced freedom that shepherd boys are subjected to, while on the other hand the nomadic shepherd boy is offered a window of opportunity into what community and belonging can possible mean. This will hopefully give both groups the freedom to learn, express themselves without restrictions and grow in understanding.

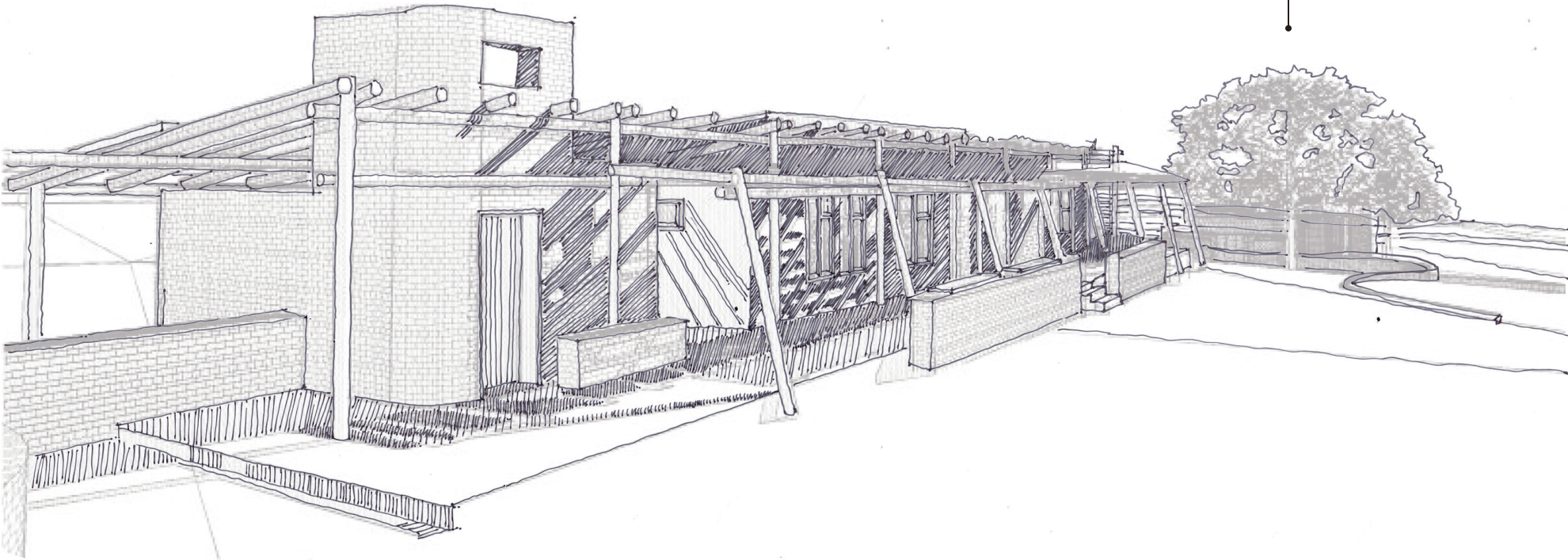
The course and content of this project offered me the opportunity to broaden my views on not only architecture, but also my ideas and observations on human nature and interaction. I found the course topic stimulating, yet difficult, as designer and user do not share in background, cultural foundation or thought process. The course was initiated with the specific aim of not imposing certain ideas or ideals on a specific site or people, but rather to expose both the site and its people's inherent qualities through the process of architecture.

Meeting the client and user on site was used as a yardstick to measure certain design approaches and decision making. The quality of life with or without this architectural intervention remained a form giving question throughout both the research and design process. Solving these problems meant extensive research on the history and cultural background of Lesotho and its people. This made a small but apparent difference in serving users and clients that do not adhere to the Western perspectives of society or the ethics of justice, per say. Involving influences and opinions from external entities in the process effectively broadened by understanding of addressing the project polemics.



Therefore, I come to the conclusion that
Architecture can and should be used as
instrument for the making of meaningful place
in the evolving cultural landscape of Lesotho.

EXISTING TREE





reference list

1. Ando, T. 1991. Towards new horizons in architecture. In: Nesbitt , K. (ed.).1996. Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory 1965-1995. New York: Princeton Architectural Press: 458-463.
2. Architecture SA (Unknown author). 1994. 'Huisse Laubscher, groepsbehuising skema'. Architecture SA. Vol: November + December. Pg 18
3. Baanen, T. 2015. (Head of Semonkong Children's Centre). Personal communication on the Lesala Shepherd School and Methodist hospital complex. Children's Centre, Ha Lesala, Lesotho, 18 January.
4. Barker, A. [n.d.] Craft and intellect: materiality in the domestic architecture of Gawie Fagan. Department of Architecture, University of Pretoria, Pretoria.
5. Barker, A. [n.d.] Heterotrophic syntheses: mediation in the domestic architecture of Gabriel Fagan. Department of Architecture, University of Pretoria, Pretoria.
6. Barker, A. [n.d.] Typological form in the architecture of Gabriel (gawie) Fagan (1925-). Department of Architecture, University of Pretoria, Pretoria.
7. Broodryk, J. 2002. Ubuntu: Life lessons from Africa. National Library of South Africa. p. vi, 76.
8. Cilento, K. 2010. Delwara Community Toilets / Vir.Mueller Architects. Archdaily. [online]. Available from: <http://www.archdaily.com/61393/delwara-community-toilets-vir-mueller-architects> [Accessed on 20 September 2015].
9. 2013. Climate of Lesotho. [online]. Lesotho Meteorological Services. Available from: <http://www.lesmet.org.ls/cimatology/climate-lesotho> [Accessed 13 April 2015].2015. Empowering women through construction. [online]. Available from: <https://orkidstudio.co.uk/blog/empowering-women-through-construction/60/> [Accessed on 6 August 2015].
10. Coates, N. 2012. Narrative Architecture. John Wiley & sons Ltd. p. 1, 5.
11. Lynch, G. 2014. Curator. [online]. Available from: <http://curiator.com/art/hans-haacke/condensation-cube> [Accessed on 20 September 2015].
12. Ellenberger, F. 1992. History of the Basutho: Ancient and Modern. Morija Museum & Archives. Morija Printing Works: Morija, Lesotho. p. 294, 297.

13. Eldredge, E.A. 1993. A South African kingdom: The pursuit of security in nineteenth-century Lesotho. Michigan State University. Cambridge University Press: Great Britain. p. 184, 188, 193.
14. Elson, D. 2005. Transcript of lecture "Unpaid work: creating social wealth or subsidizing patriarchy and private profit?". Forum on Social Wealth - The Levy Economics Institute, University of Massachusetts, Amherst.
15. Frescura, F. 1992. Process and Product in Rural Architecture: A Southern African Case Study. [online]. Open House International. Cardo, Newcastle University, Vol 17, No 3 and 4, p. 10-18. Available from: <http://www.sahistory.org.za/franco/indiginous-processes-product.html> [Accessed 15 May 2015].
16. Frescura, F. [n.d.] The Process of Rural Architecture. [online]. Indigenous Southern African Architecture. Available from: <http://www.sahistory.org.za/franco/indiginous-processes-rural-arch.html> [Accessed on 15 May 2015].
17. Frescura, F. [n.d.] Southern African Regions of Rural Building Technology. [online]. Indigenous Southern African Architecture. Available from: <http://www.sahistory.org.za/franco/indiginous-southern-african-regions.html> [Accessed on 15 May 2015].
18. Frescura, F. [n.d.] Structure, Settlement and Society. [online]. Indigenous Southern African Architecture. Available from: <http://www.sahistory.org.za/franco/indiginous-structure-settlement.html> [Accessed on 15 May 2015].
19. Gill, S. J. 1993. A Short History of Lesotho. Morija Museum & Archives: Lesotho. p. xiii, 28, 29, 47, 48, 178, 179, 222, 224.
20. Gilligan, C. 1982. In a Different Voice. Cambridge, Mass.: Harvard University Press. p. 14.
21. Hall, D; du Toit, L; Louw, D. 2013. Feminist ethics of care and Ubuntu. Department of Obstetrics & Gynaecology, Stellenbosch University, Stellenbosch, South Africa.
22. Joubert and Bakker. 2009. 10 years + 100 buildings. Cape Town: Bell Roberts. P. 38-41
23. Juodinyte-Kuznetsova, K. 2011. Architectural Space and Greimassian Semiotics. Socialiniu Mokslu Studijos. Vol. 3 Issue 4, p1272.

24. Kastner, J. and Wallis, B. 1998. *Land And Environmental Art*. Phaidon Press: London. p. 53.
25. Kühn, C. 2012. *Typology Quarterly Schools*. [online]. *Architectural Review*. February 2012, Vol. 231, Issue 1380. Available from: <http://www.architectural-review.com/essays/typology-quarterly-schools/8625738.article> [Accessed on 30 June 2015].
26. Letlatsa, G. M. 2004. *Geological Conditions and Environmental Impact of the Mohale Dam, Lesotho Highlands Water Project*. [online]. Available from: <http://etd.uovs.ac.za/ETD-db//theses/available/etd-03282006-084308/unrestricted/LETLATSAGM.pdf> [Accessed on: 16 August 2015].
27. Lesotho Mission. 2013. [online]. Available from: <http://lesothomission.org.za/> [Accessed on 14 January 2014].
28. Louw, D. J. 2006. *The African Concept of Ubuntu and Restorative Justice*. In: Sullivan, D. and Tiftt, L. (eds.). *Handbook of Restorative Justice: A Global Perspective*. Routledge: London and New York. p. 161, 163, 168.
29. Lynch, K. 1960. *The Image of the City*. The Technology Press & Harvard University Press: Cambridge. p. 4
30. Makhudu, N. 1993. *Cultivating a climate of co-operation through Ubuntu*. *Enterprise magazine*. August. p. 40.
31. Majoro, J. 2015. (Teacher at Lesala Shepherd School). Personal communication on the Lesala Shepherd School and shepherd community. Lesala Shepherd School, Ha Lesala, Lesotho, 17 January.
32. Metz, T. 2010. *African and Western Moral Theories in a Bioethical Context*. *Developing World Bioethics*, volume 10, number 1, p 49-58.
33. Mkhize, N. 2006. *Communal Personhood and the Principle of Autonomy: the Ethical Challenge*. *Continuing Medical Education*, Volume 24, number 1, January. p. 28.
34. Moore, R. 2012. *Why We Build*. Macmillan Publishers Limited, London. p. 18, 95.
35. Murove, M. F. [n.d.]. *African Ethics: An Anthology of Comparative and Applied Ethics*. University of KwaZulu-Natal Press. p. 308, 309.
36. Noddings, N. 1992. *The challenge to care in schools*. New York: Teachers College Press. p. 20.
37. Nesbitt, K. 1996. *Theorizing a New Agenda for Architecture: an Anthology of Architectural Theory 1965-1995*. Princeton Architectural Press: New York. p. 412, 414, 418, 421-422.

38. Norberg-Schultz, C. 1979. *Genius Loci: Towards a Phenomenology of Architecture*. Academy Editions: London. p. 18, 19, 45, 46, 22, 23, 45.
39. Norberg-Schultz, C. 1985. *The Concept of Dwelling: On the Way to Figurative Architecture*. Electa/Rizzoli: New York. p. 15.
40. Pinchetti, S. Tettamanti, J. 2013. *The Basotho Blanket: A Style Signature in Lesotho*. *The Other: Home of Subculture & Style Documentary*. [online]. Available from: <http://www.the-other.info/2015/south-africas-tribal-basotho-blanket-for-herdsmen-and-royals-alike>. [Accessed on 20 September 2015].
41. Porter, K. Soffel, J. 2013. *Herders of 'The Kingdom in the Sky.'* CNN. [online]. Available from: <http://edition.cnn.com/2013/09/26/world/africa/prince-rescue-child-shepherds-lesotho/> [Accessed on 6 September 2015].
42. Porter, K. Soffel, J. 2013. *Princes unite to help Lesotho Herd Boys of 'The Kingdom in the Sky.'* CNN. [online]. Available from: <http://edition.cnn.com/videos/bestoftv/2013/09/23/spc-inside-africa-lesotho-herd-education-b.cnn> [Accessed on 6 September 2015].
43. Porter, K. Soffel, J. 2013. *Boys Travel Miles for Education of 'The Kingdom in the Sky.'* CNN. [online]. Available from: <http://edition.cnn.com/videos/bestoftv/2013/09/23/spc-inside-africa-lesotho-herd-education-c.cnn> [Accessed on 6 September 2015].
44. Psarra, S. 2009. *Architecture and Narrative: The formation of space and cultural meaning*. Routledge: London. p. 2.
45. 2012. *Real sheeps wool insulation information*. [online]. Higgins insulation. Available from: <http://www.higginsinsulation.com.au/cart/indexmain.php?do=menu2&lmid=1> [Accessed on 15 August 2015].
46. SA Architectural Digest (Unknown author). 1998. 'Group Housing Pretoria'. *SA Architectural Digest*. Vol 2. Pg 86-90.
47. 2009. *Safe Haven Bathhouse/ TYIN Tegnestue Architects*. Archdaily. [online]. Available from: <http://www.archdaily.com/29116/safe-haven-bath-house-tyin-tegnestue> [Accessed on 20 September 2015].
48. 2009. *Safe Haven Library/ TYIN Tegnestue Architects*. Archdaily. [online]. Available from: <http://www.archdaily.com/30764/safe-haven-library-tyin-tegnestue> [Accessed on 20 September 2015].
49. Sanjeev, S. 2008. *Jugaad*. [online]. Available from: <http://www.sanjeevshankar.com/researchdata/pdf/Jugaad%20project%20report.pdf> [Accessed on 20 September 2015].

50. Sentebale. 2015. [online]. Available from: <http://www.sentebale.org> [Accessed on 14 January 2015].
51. Sykes, A. K. 2010. *Constructing a New Agenda: Architectural theory 1993-2009*. Princeton Architectural Press: New York. p. 392-393.
52. 2015. Toigetation/ H&P Architects. Archdaily. [online]. Available from: <http://www.archdaily.com/584886/toigetation-h-and-p-architects> [Accessed on 20 September 2015].
53. von Meiss, P. 1998. *Elements of Architecture: From form to place*. Routledge: New York. p. 101.
54. 2011, Wolff, H. A Case Against the Construction of a Cultural Identity. [online]. International symposium: Global City - Local Identity, Dar es Salaam, Tanzania. Available from: <http://www.wolffarchitects.co.za/2011/02/a-case-against-the-construction-of-a-cultural-identity/> [Accessed on 20 June 2015].

