700_design development

701  An Essay in process
702  Technical discourse
To recap the initial intention of the proposal: The scheme questions current policies that negatively affect locals with regards to a dam development in a remote area of Lesotho. It proposes a framework in which the various communities affected by the dam can utilise new and existing resources to realign their livelihoods to one that ties in with the development. Within this framework, a hotel/lodge is proposed as an income generating initiative that capitalises on the new dam and the Maluti Mountains as tourist attractions. Development of the proposal has been directed towards the site conditions and the usage of available resources by the locals. Based on this, initial approaches to the investigation as indicated in the diagram, highlights the site locale and parameters to the study, with focus on the immediate environments of the three communities catered for in the framework.

Settlement on site reflects an honest response to prevalent circumstances. These circumstances are defined by social, economic, geographic, climatic conditions. The settlement primarily depends on proximity to livelihood [i.e. farming] as highlighted in the interviews. Also, within communities, placement is hierarchic - radiating from the centre, where the centre of the village is the chief. With respect to site geography, settlements are located on mild slopes where farming is most difficult. In addition, routes towards villages are visible from these mild...
slopes, announcing visitors before they arrive. Customarily, visitors would then arrive at the chiefs’ home and announce themselves before heading to their respective host.

Peaks of hills are generally not settled on, primarily because of wind, but also because peaks are considered to be communal spaces. Climatically, settlement is predominantly on the north facing slope for heat gain, however expansion has lead villagers to settle to the east and west slopes.

It is evident that prevalent winds from the northwest, although strong, are not a deterring factor to settlement on the western slopes.

Figure 037. [LEFT]
“Process 002 - Site circumstances”
The role played by cultural customs being an important factor, lead the inquiry to look into traditional villages setups, as the model is evident in rural settlements currently. Where past models of settling on a hillside were a primarily a defence mechanism, during the unrest of the Difacane era, today they are a reception mechanism [interview: Miola 2009]. The investigation assesses the typical settlement model and explores the linear hierarchy of reception levels. Where indicated above, A is the “patlelong” a place for men of the village to sit during the day, usually defined by a tree. B is the “Lesaka” [kraal] where the cows of a village are kept and watched. In larger villages, the individual households or small groups of them would have their own “Lesaka” [kraal]. Importantly, livestock since the end of
702 Detail Exploration sketches
Stone

Stone is the primary building material, given its abundance and extensive use by the locals. It was defined as a local environment.

The topography of the Highlands and the site in particular is one of dry and class on relatively shallow fertile soils beneath that is a substrate of non-fertile soil resting on a shaly rock base.

The layering can be seen on steep cliff edges where the shale is exposed.

Shale is a sedimentary rock, which is very brittle when hammered or chipped. It forms layers.

The locals have in the past used rounded, shale boulders along river banks as it required little treatment before building unity.

The hotel consists of regularly uneven, stone wall into the landscape by nearly machined, could roughly the rock to be used to build the hotel. Local skilled rock masons would then chip the largest stones to build the walls.

Depicted, thick stone walls (2400mm) can be load bearing.

Stone can act as a thermal conductor, particularly as flooring.

Bonding the stone walls requires mortar with high lime content.

Shale stone has good water retention and therefore would require careful treatment when embarking on

Figure 054. [CENTRE]

“Process 017 - Materiality study"
Wood
The stone roofs the design in a natural material. Wood would act to complement the stone and soften the roughness of the stone aesthetically.

Steel
In contrast, steel is an element of the design, not a finish. Steel columns would provide a structural basis for the building.

Concrete
The fluid nature of concrete could be used to reveal the rustics of certain spaces.

Glass
The scenic nature of the hotel environment requires large glass panels or glazing to take full advantage of the scenic drawcard.

The north facing orientation of the building combined with the generally cold climate of Lusitano requires that the glazing acts to shield the internal spaces from the weather. Therefore double glazing would be required through but glazed areas of the building, allowing where possible a minimum one of glazing as double glazing cannot be readily cut.
Figure 055. [CENTRE]
“Process 019: Structure Study”
The design is further realised through the investigation and resolution of technical aspects. Addressing issues of circulation, materiality, structural systems, climate control mechanisms and water reticulation, the investigation continues.
During the summer months, the building's open plan and bodies of openings intend to accommodate cross breeze air flows to cool the interior spaces.

The predominantly south-facing glazing refracts heat gain from north light.

The mass of the walls allows for a gradual reduction of heat gain during the day in the evening.

Reducing winds begin on the edge will be allowed to enter through a multitude of openings on the north and east through the south.

The roof acts as insulation against prevalent weather conditions irrespective of season.

Winter, however, requires the greatest climate control: conditions due to the extreme cold conditions of the highlands.

The hotel/longe is secured with fire-riuse rooms in social spaces to create an ambient temperature.

In addition, underfloor heating will create a temperature differential from the outside, heating social spaces from beneath the floor finish.

Figure 052. [CENTRE]
"Process 020 - Climate Study"
Water is readily supplied from underground sources. A borehole could be driven and water pumped into a storage tank located in the position indicated, accommodating a water capacity of full daily consumption as recommended by Adler 1987.

The pump could be housed behind the tank. Water could then be supplied to the various sectors as indicated in the diagram. Used water, both grey & black, are then filtered through biodigesters and recycled out into the gardens. Unused water however would be treated.

Figure 023. [LEFT]
"Process 021 - Water recycling Study"
By repositioning the building over the ridge to shield it from the wind, the change in contours required that the building form ultimately had to be adjusted to fan out across the new topography. This positioning embraced the dam more with panoramic views from east to west. Now hidden from the access to the site, the hotel/lodge inherited a sense of recluse, a quality synonymous with that of a retreat as defined in the title. By concealing it from immediate view of the visitor, a play on the sense of anticipation is created and eventually, embedding feelings of arrival at the end of a long journey.
The design as extrapolated from the revised concept follows the contours to the southeast. Where initially the hotel rooms were south of the main building facing out eastwards, it appeared more appropriate to continue the journey of the tourist through the hotel along the same grain of contours, further east. Although the south facing orientation is not accommodative of much needed northern sunlight. Warm north lit social spaces had to be accommodated in the design.
In providing the series of internal and external tourist spaces, supplemented by back of house, the design concept was fleshed out to the current proposal above. The splayed walls allow for the design to fan out across the contours and subsequently create a language that runs through the entire hotel/lodge defining spaces. A concept underlying the transition of spaces in the main building refers to the typological traditional village layout. Where reinterpreted here in the hotel proposal, the spaces represent the linear transiton from the “patlellong” [reception] to the “lesaka”[lounge] on one side, “moreneng” [mangement] to the other. A series of public spaces “kopanong” [lounges] and further down to the “khotla” [conference hall].

Looking at the plan, cascading down from the perimeter of the village are a series of levels,
which define usage and the integration of back of house [servicing] and front of house [tourist area]. The circulation is legible, with secondary service units such as staff quarters, laundry and maintenance to the top, furthest away from tourist interaction. A service delivery road that diverges from the main road to the hotel. Then a primary service unit that ties the service road to stores at one end and tourist interface at the other. The road leading up the hotel is then carried on internally as the circulation spine and is flanked by a combination of primary services spaces and public tourist spaces to the north and a series of exclusively tourist-orientated spaces to the south. This circulation route leads right through the building past the conference facilities on to the hotel rooms to the far east of the hotel. Outside, between the conference facilities and the hotel rooms, a hot and cold pool caters to residents.

The cut and fill nature of the design, rests the buildings firmly in the landscape, where the rock bed is used to make up the walls of the hotel/lodge. This approach gives a quality that makes the hotel/lodge somewhat reminiscent of the cliff edge that defines the relation of the villages to the river. A landscaped roof to recreate the existing grassland, tucking the building into the topography.
The framework reached a defined legibility and attention was directed towards the hotel/lodge, where the craftsmanship of the locals coupled with contemporary interventions would present the community in a renewed light. Inspiration was drawn from the ability of the building to become one with the landscape tapping off old and forming new routes and paths. The experience of the hotel/lodge attempts to fuse the proposed language derived from the local vernacular, of an architecture terraced on the landscape, with an architecture that hugs and
essentially embraces the landscape, meandering with the contours. At points sinking into-and at others protruding from the landscape.

Phase 1 would only have 18-20 rooms catering to an average of 1.5 people per room, specifically under catering to gauge the demand for more lodging in coming holiday seasons.

The above image shows the calculations and resolution of the spaces and how they work together. Intentions lead to applying the programme and space planning exercise to the framework. The process attempted to apply this
programme to the initial intuitive sketches of the author. The framework sketch appeared too small to accommodate the programme requirements and was therefore increased. In addition, the authors premise that simply because the people in the region have become accustomed to the prevailing wind the tourists will also be able to withstand it was incorrect. The prevailing winds represent a discomfort to someone who may not be from the area. Attempts to buffer the wind appeared futile given the high wind speeds; the building thus had to move.
The proposal [left] indicates design intentions towards space planning. Once component accommodation had been addressed far enough to begin space planning, the proposal was set into place. On entering the proposed framework at village B, a laundry facility using a nearby stream was proposed as well as a farm in the heart of the remaining arable land portion. The laundry proved not to be feasible to serve the hotel in the current location and was then relocated. Furthest south of the peninsula, initial space planning accommodated the relocated village in relative proximity to their old village. The relocated village looks in part to the north, in line with the communities' climatic considerations, while in part to the west towards their old village in memory. North of the new village, a central area was proposed for community and tourist interaction, where activities could be planned and administered by community members. North of the circle, a school and soccer field was proposed, however their proximity to the proposed hotel required that this design be reassessed and was subsequently moved. Initially the intention was to integrate the community as much as possible with the tourists, tapping off existing routes and encouraging the tourists to explore the peninsula and walk through the village. The cross-pollination of programs would ultimately clash and the holiday lifestyle of tourists would inevitably disrupt and be disrupted by the everyday life of the villagers.

The hotel as indicated in red, would comprise a central building that is strung to a series of embankments of hotel rooms, which would create mini clusters of hotel rooms linked by a road around the area.
In a revised proposal the process took a direction that centralized the services into a town square where the school defines a central courtyard on one side and a string of retail on the other. Central to this, a multipurpose hall is proposed, that can be used by the school as well as the community. Above the retail portion, just beneath the hotel, a church that can be used by the community and also by the hotel guests is proposed. North of the square the proposed farm remains, the new framework proposes that the hotel rooms face east, where the ridge stands as a soft boundary between the community and the tourist resort shielding the tourists from the wind. This is comprised of a central building and a series on hotel room embankments. The rooms closest to the main building would be built as phase one. Subsequent phases would be constructed as demand for lodging increases.
A critically important consideration was to define in full, the parameters of the hotel/lodge. It is assumed that investors would partner with a hotel group that would eventually manage and market the hotel/lodge under their banner and would fund the hotel/lodge. The consortium would then be required to train and employ the local community members in the construction and day-to-day running of the hotel. In exchange, the lease agreement would give exclusive rights of tourist development on the peninsula and surrounding waters to the consortium, requiring that the locals ensure their area is always well maintained.

In terms of services to the hotel/lodge, the hydroelectric power station proposed by the dam would cater to the lodge and communities electrical requirements. A borehole would allow access to underground water that could eventually be reused in the watering of gardens and the landscape. The farm produce would be sold to the hotel/lodge and seasonality would determine the menu. Small delivery vehicles would go to and from the airstrip where goods would be delivered by chartered aeroplane. The hotel/lodge would be the fifth lodging development in the region east of the Caledon border. In this growing environment of tourism, the Drakensberg ridge and the surrounding highlands are becoming an increasingly popular tourist destination. One of the two most popular, Afriski, west of the proposed hotel/ lodge, offers skiing in the winter season and is often overbooked as it is only able to accommodate 60 guests. Tourists have to travel over an hour southeast to either Senqu hotel or Mokhotlong inn in the town of Mokholong for lodging. The second most popular tourist attraction is the Sani pass lodge, which is currently earmarked for upgrading in late 2009/early 2010. In future it will accommodate 40- 60 people. The Sani Pass is an hour and a half south of Mokhotlong town and offers breathtaking views, hiking and pony trekking. The proximity of the four lodging facilities to each other allows relatively short travel distances between tourist attractions. There in is an opportunity to tap in to the Afriski market during the winter, and the Sani pass market in the summer.

Tourism developments in Lesotho tend to under cater so to ensure that beds are always filled which consequently provides exposure to other lodging facilities nearby. The hotel/lodge would be midway between Afriski and Sani Pass and would offer hiking and pony trekking in the summer as well as water sports on the western banks of the peninsula. To the east of the peninsula, boat trips upstream to other villages on the banks
could provide other tourist activities such as fishing nooks and camping trips. In the winter however more internally orientated activities would be accommodated. Restful areas with fireplaces would make for a cosy picturesque getaway retreat. Amply sized communal areas would allow for restful social spaces for elders while accommodating children in others. Conferencing facilities of a hall and auditorium would also be provided. Guests could either drive in for a weeklong workshop or fly in and be picked up at the airstrip, have their meeting and fly back out later the same day.

Once a concept for the hotel/lodge was conceived and accommodation schedule proposed, design intuition guided by research into hotel spatial norms took the fore [space normes and guidelines extracted from Adler 1969: 36_1- 36_2]. It proved to be an analogical design method that negotiated sizing of spaces and the interrelation thereof. Finding a medium that draws from the vernacular while still applying to the seamless operational efficiency of a hotel in this setting. The ultimate goal relative to hotel design being a clearly defined integration of back of house; the servicing area, and front of house; the tourist interface.

Space norms were calculated for 100 guests. This was ideal in that space sizes could then be adjusted based on percent. Where in the case that the hotel only accommodates 60 guests then the hotel/lodge would be 0.6 the initial calculations. The figure was also based on receiving a maximum capacity of two tour buses seating 45 each during day visits [total 90 guests during a day visit]. Tour operators in Durban, South Africa usually charter trips sightseeing in Lesotho, from Sani pass up to Afriski [interview: Phakisi. 2009]. Apart from residing guests, “Fly bys” [tourists sightseeing during the day] would make up a large portion of the market.

Thus a careful compromise between sizing of public spaces accommodating day visitors, and number of hotel rooms provided would have to reached, from an investment point of view, considering that the profitability of a hotel rests on people staying in beds over night, more than one night in particular. This is based on the principle that the amount of money gained over two nights marginally outweighs the amount of money spent on accommodating a tourist over that time. So the longer a tourist stays, the more profitable [Interview Crafford : 2009]. But given that water would be a readily available abundant resource, and electricity supply would be subsidized by the LHWA for the community and their initiatives as part of their remuneration, the reduction in running costs would thus act in the favour of investors who would be able to marginally capitalize on day visitors too.
the Difacane were sent to “Mophatong” where young herd boys would tend to them away from the villages open grazing pastures, only bringing them home to be milked, have calves or be slaughtered for celebratory purposes. C is the “Khotla” where the villagers meet for discussions and feasts. And finally D is “Moreneng” the chiefs’ home. Following on is the settlement of the villagers.

A sports ground is proposed; for community interaction, a communal farm, whose produce will be sold at low prices to the community members. In addition, a clinic, a learning centre for farming methods, a school, the tourist resort, and a series of communal spaces where tourists can interact with locals are provided. Finally the proposal accommodates the potential for a water sports facility with a club house.

It is anticipated that through a partnership of the Lesotho Highlands Water Authority LHWA and the government [through rural upliftment programmes] the broad framework will be funded.

- Where community A has to be relocated, houses provided by the LHWA will be built as per their policy.
- The LHWA policy also proposes its own community upliftment programmes in the form of crop seeding and fish farming programmes.
- The remuneration packages for land will be offered to the locals as share ownership of specific implementations, i.e. shops, community farms, etc., so to keep the income generative.
- Government rural upliftment programmes will provide funds to build projects such as schools.
- Members of the community will be trained as educators and medical care givers in the time leading up to the building of the schools and clinic. They will be contractually bound to work for a period of time post training.
- Land for the hotel will be placed under a trust and leased out to investors to build. The dividends will then be paid out to the community members.
- The communities will be employed in the construction and day to day running of the framework proponents. Where possible, materials sourced on site will be used to reduce cost. All the while instilling a sense of pride in their indigenous building method and providing a sense of identity to the area.
- The scheme would be aligned with the construction of the dam so as to utilize heavy-duty construction equipment/machinery where necessary.
Refining the framework, as indicated above, the proposal suggests that the amenities be strung between the new relocated community of Tsekong and the existing community of Ha Konki. The activity spine would tie the two communities together. Central to the spine, equidistant from either community, the hotel would be positioned. Explorations in this direction indicated that the framework would to be directly in the path of the wind. Also, its positioning championed the interests of Communities A and B well above those of C, which would have to be catered for in the framework. A different direction would ultimately have to be explored. Above, on the right however, an initial impression was proposed for the framework in the current location.
Figure 040. [LEFT]

"Process 005 - Framework Proposal"
Further exploration fleshed spatial requirements of the components to accommodate the required elements of each building. This was done so to determine sizing, which would impact placement and the spatial requirements of each building. With reference to the school for example, classroom sizes were based on a percentage of average household members that may require schooling. This applied to various schooling grades, provided preliminary estimations to sizing of school class rooms. In subsequent calculations, the housing to be designed was determined by the land portion each relocated household may require.

Drawing directly from the current lifestyle of the locals, the houses as designed were intended to be adequately accommodative with out being detached from the environment as current
trends tend towards. Inspiration was drawn from hillside settlements and farming methods of the locals. A language of terraced embankment was conceived and applied as a potential style for the hotel. The thatch roofs and gum poles however, were derived from current tourist trends in Lesotho. These “trend derivatives” initially appeared to be un inventive and were explored in depth. The underlying ideal was to refresh and reinvent existing architectural paradigms.