<table>
<thead>
<tr>
<th>Number</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Background and rationale</td>
</tr>
<tr>
<td>202</td>
<td>Overview of similar project</td>
</tr>
<tr>
<td>203</td>
<td>Problem statement</td>
</tr>
<tr>
<td>204</td>
<td>Aims and objectives</td>
</tr>
<tr>
<td>205</td>
<td>Research methodology review</td>
</tr>
</tbody>
</table>
Premise Background

The Lesotho Highlands Water Project (LHWP) was designed as a water delivery scheme between the governments of South Africa and Lesotho and is one of the five largest dam-development projects currently under construction in the world. Based on a treaty signed in 1986, the $8 billion project is funded in part by the World Bank, the African Development Bank, the European Community, and several European funding agencies, and implemented by the parastatal Lesotho Highlands Development Authority (LHDA) in Lesotho.

The water delivery scheme will include five dams linked to cross-national tunnels constructed in four phases over a period of 30 years (1987-2017). Three dams (Katse, ‘Muela, and Mohale) have been completed and two others (Pulihali, formerly Mashai and Tsoelike) are currently in the formative phases (see Fig 005). The first objective of the LHWP is to sell, transfer and deliver water from Lesotho’s Senqu River and its tributaries to the Gauteng industrial region of South Africa (which includes Johannesburg). In return, South Africa was estimated to pay approximately $55 million in royalties to Lesotho each year; however, recent reports show that Lesotho has received closer to $18 million in average annual revenues because water levels were below initial projections. The second objective is to create a hydro-electric power station allowing Lesotho to generate electricity domestically. In addition, an important documented obligation of the project is to not worsen the current standards of living of those affected by the project [Elsevier 2008].

The second phase (dams Pulihali and Tsoelike) will soon be underway. The Pulihali dam, the setting of the design intervention, is planned to be built in “Tloa re Bue” (meaning “move, let us speak”), 30 minutes outside of Mokhotlong, a remote town in the highlands of Lesotho. The
dam stands to displace some of the local people who live in the valley that will become the flooded catchment area. As part of the project, people living within the flood plain will be relocated. In addition, they will be offered remuneration packages as compensation for the loss of their land. In rural communities, land is considered to be the peoples livelihood; their dependence on it is a reflection of its importance in rural societies. The remuneration packages are supposed to be more than compensatory. It is intended that the relocated parties (often households) should be in a better position after relocation than before. The packages comprise grain issued annually per household for a term of 50 years. This is calculated at a rate of 10 000 kg per hectare of land. It comprises 70% mealie and 30% other grains as per dietary suggestion. Alternatively, the equivalent monetary value could be disbursed. In the case of the housing component, a house is built for the family unit in a location of their choice.

Certain individuals opt to move to the capital city Maseru, the capital city in search of better opportunities, whilst others choose to stay in the highlands. [Elsevier 2008]

Those who opt to move to the city often choose to have homes built in areas that are unfamiliar to them. They subsequently experience difficulty in financing their new urban lifestyles. The houses that are built for the relocated families are meant to conform to the status of other inhabitants of the chosen suburb. However, having chosen the monetary compensation, relocatees may not be able to sustain their households in respect of the adjusted leap in lifestyle. The remuneration package then becomes defeatist, where the resettlers are now living beyond their means. A fortunate few have the ingenuity to have a house built in the city while they remain in the Highlands. The city property is leased and in turn generates an income. However, being in the Highlands, the property in the city becomes difficult to manage and tenants often take advantage of the situation.

Those who remain in the Highlands join other villages and opt for the grain package, living within their means while selling some of their grain to buy other amenities. However, as family size increases the grain cannot support all members. Families are then forced to look for alternative means to support themselves. Not owning land in the new village makes it difficult to farm sustainably. Also, dependence on the grain stifles growth. People often develop a sense of conplacency as they await their monthly grain packages. Once more the remuneration package becomes counterproductive.

[Interview Phakisi: January 2009]
Overview of a similar project

The building of dams and their developmental impact have been the subject of much debate over the past ten decades. The focus of an assessment of the pros and cons ranges from the physical and ecological impacts to socio-economic factors such as the geographical distribution of electrical power and water resources, the administrative decision-making process, the inclusion of relevant stakeholders, and, in particular reference to the problem at hand, the relocation and resettlement of displaced inhabitants as well as the inherent disruption of social, cultural, and economic life in communities affected by dam construction.

One major example of the social impacts that large dams have is the Aswan Dam in Egypt. The Aswan Dam, a rock-fill dam across the Nile River, was completed in 1970. The dam necessitated the relocation of approximately one million Egyptian peasants and Sudanese Nubians. These people lost their homeland and were dispersed to the ‘less fertile’ government lands in Upper Egypt and Eastern Sudan. In addition to peoples losing their homes, the loss to historians and archaeologists worldwide was immense, where great Nubian monuments and historical sites were submerged and lost forever, despite ambitious rescue operations (UNESCO).

In terms of the ecology, the amount of productive land on the banks was increased, but where the annual floods used to bring rich, fertile silt down the river, there is now the danger of the Nile soil becoming unfertile. However, the Aswan Dam does have its benefits: the annual Nile flood is now controlled by man, and the flood water is impounded to irrigate thousands of new acres of land. In addition, the dam generates enormous amounts of hydro-electricity, and the reservoir supports a flourishing fishing industry.

[Aswan Case Study, 2001]

It seems that in spite of massive benefits there seems to be a need for a more comprehensive study of resettlement schemes and their adverse effect on ecology and cultural heritage. It necessitates the need for a more comprehensive approach to development and its inherent impact on rural environments.
Although smaller in scale, the Lesotho Highlands Water Project has internally taken the decision to amend and reconfigure its policies to become more encompassing. As it is phased, policy implementation is monitored and adjusted in subsequent phases. In Phase IA in particular, the affected people were moved up or downhill to make way for related dam construction activities such as power lines and road alignments. The valleys had previously been used mostly for farming and grazing purposes. Social impact assessment reports reflected that, while villagers embraced the new infrastructure, they expressed a sense of distrust and disappointment with the substance and execution of policy [refer to addendum ‘A’ Elsevier 2008 for more details]. Phase 1B proved to be more complex and subsequently required a more comprehensive policy that in many ways attempted to correct the shortcomings of policy as per Phase 1A.

In this case, specifically the setting for the intervention, communities actually lived in the valleys and gorges and oxbows that were to become the catchment area of the reservoir. Environmental Impact Studies revealed that the people would need to move out of the basin areas. The resettlement program stipulated that communities had the option to move uphill within the highland regions or to resettle in the foothills and/or even in the urban centres as pointed out in the premise background of this study. This confirmed the notion that the geopolitical structure of wealth and power disadvantaged the rural poor of the highlands of Lesotho. The increased prioritization of commercial uses of resources and reorganization of rural resources is in effect a means of displacement, leaving the rural communities to absorb the economic, ecological and social costs of their resources being re-structured [Elsevier 2008].

The LHDA is indeed taking steps to amend its policy to better remunerate rural peoples and can be expected to address the social impacts more effectively. However, it is the feeling of the author that the policies are somewhat inflexible and are imposed rather than negotiated.

203 Problem statement

Can rural environments sustain economic progress in a way that still supports the local community? Is there a way to use development to sustain local people in changed circumstances while preserving cultural heritage and the natural environment? Can phase 2 of the LHWP set a standard with regards to a positive partnership between government, rural communities and investors to enrich environments in transition?
204 Aims and objectives

The proposed thesis scheme provides a means of sustainable development to a series of communities affected to different degrees by the building of the Pulihadi dam. It proposes a framework that comprises a series of complementary elements that would enrich the lives of the communities of the area.

- Firstly, for the 26 households of the most affected community in the village of Tsekong, a relocation village is provided. As proposed, the framework suggests environmentally sustainable housing and small-scale farming based on the existing culture as well as contemporary living and farming standards.
- Secondly, the framework proposes service amenities for the three communities in the area. These would include a sports ground, a school, a day care centre, a farm including an alternative methods learning centre. In addition, a clinic and laundry, as well as communal spaces and infrastructure.
- Finally, the framework proposes a tourism intervention consisting of a hotel, with mountaineering and water sports facilities. The hotel portion of the intervention, which is the focus of the thesis, explores the prospect of turning the threat posed by the dam into an opportunity. The communities, as empowered by the LHDA, act in the capacity of shareholders partnered by hotel developers to develop the area into a tourist destination. The construction process — coupled with that of the dam — creates the prospect of using shared resources. Furthermore, the possibility exists of employing the villagers, maximizing their earning potential and giving them a sense of ownership through what would be a highly labour orientated initiative.
Where

The placement of the scheme is determined in many respects by the positioning of the dam and the impact it would have on the surrounding environment.

- The village cluster of Ha konki, Tsekong and Litsotsong is located east of the banks of the place known as “Meteanong”, where the river Khubelu (pronounced “kgubhedu”) meets the Senqu River. The intention of the dam development is to dam up the river valley at “Meteanong” and flood the river basin. As a result, the rise of the water line would encroach on the village cluster, impacting each village to a different degree. The proposed waterline forms a peninsular of the cluster that juts out into the dam, creating a setting for the proposed intervention.

Who

The scheme attempts to provide a sustainable alternative to current frameworks for displaced communities.

- It is primarily directed at the villages of Ha Konki and Tsekong, as they are two of the five villages in Mokhotlong affected by the dam development. They are in a keen position to use their transformed environment to their immediate benefit.

- Secondarily, the usage of service amenities is extended to the village of Litsotsong through facilitation as well as job opportunities.

- Finally, the tourist acts as a subsidiary client in that the hotel should have international appeal by adhering to contemporary design standards and current hotel trends. The design will attempt to redefine local architecture and combine it with current day technologies to create a unique fusion of Basotho vernacular with western appeal.

Figure 010. [LEFT]
“Lesotho woman”
How

The communities are enabled to act collectively as opposed to individually as separate households. Highlands compensation sets a platform for negotiations that impact the community as an entity. Through a cooperative of communities as aided by the Highlands Water Authority and the government of Lesotho the following can be accomplished:

- By keeping the community [of Ha Konki specifically] together under one chief to whom the residents entrust their representation, the communities are in a position to enter into negotiations with the Highlands Water Authority. In planning their remuneration collectively, the relocation keeps them together in close proximity to the dam. As owners they can then develop their lucrative asset in the form of waterfront property.
- Firstly, the village of Ha Konki is relocated to an area where it will not be directly impacted by the water level and flood line of the dam.
- Secondly, the grain packages or the monetary value thereof are translated into investment capital to develop the area by providing service amenities and refurbishing the existing rural infrastructure.
- Land owned by the cooperative is leased to developers as the easiest means of earning a profit. Monies are either reinvested or paid out in dividends.
- Apart from the economic logistics of how the scheme will be funded and implemented, local labour will be utilized so as to encourage community participation through labour intensification. A further benefit of this would be that it would instil a sense of ownership in the community. Extensive use will be made of available resources, including materials and technologies. As mentioned earlier, the alignment of the construction processes to utilize resources most efficiently would serve to aid the implementation of the scheme.
<table>
<thead>
<tr>
<th>When</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td>The construction program of the dam forms the basis of how the development of the scheme will be undertaken. Where the construction programme is synchronised with that of the dam so that machinery from the dam can be used to excavate areas where required. Also engineers hired on the dam as well as other specialists and consultants can assist on and supervise sections of the retreats construction. The process is outlined in broad overleaf.</td>
<td>The aims of the proposed intervention are as follows:</td>
</tr>
<tr>
<td></td>
<td>• To question the current framework and propose an alternative that takes an approach that is contextually more viable.</td>
</tr>
<tr>
<td></td>
<td>• To demonstrate to communities that there are alternatives to the lure of the city to achieve economic sustainability.</td>
</tr>
<tr>
<td></td>
<td>• To instil a renewed sense of identity in local rural communities.</td>
</tr>
<tr>
<td></td>
<td>• Most importantly, to explore the possibility of an architecture that is current and appealing yet respectful and nurturing of local culture.</td>
</tr>
<tr>
<td></td>
<td>• People of rural environments often regard city culture and western models as symbols of prosperity. A hotel constructed from predominantly local materials would act as a tool to represent western appeal while still being contextually relative. The aim would be to encourage locals to renew their appreciation of indigenous architecture. Also, as a skills transfer exercise, locals employed by the construction would be exposed to alternative western building methods that may be more attuned to their own environment. The ultimate objective of the project would be to counteract the negative aspects of modernization and the misappropriation of technologies in unsuitable environments.</td>
</tr>
</tbody>
</table>
205 Project Synergy

resettlement and compensation agreement to be repossessed, and revised to include proposed development

constant monitoring of progress and implementation of proposed development

policies of proposed development to align with management plan

community consultation, guidelines to be sent to investors

documentation framework and hotel in anticipation of construction process

equipment leasing for framework to be part of tender award

tender for concrete work on building to be issued to dam contract winner

framework construction employment option provided to locals

project commencement

28 Feb 2009 - 1 Mar 2009 feasibility study completion

2009

1 June 2009 - 31 Jan 2010 Agreements drawn up

resettlement and compensation

finance arrangements

hydro electric options

1 June 2009 - 31 Oct 2010 survey and mapping

1 Aug 2010 - 1 Apr 2011 design procurement

1 Apr 2010 - 31 Jul 2010: environment management plan

resettlement and compensation plan and implementation

livelihood and income restoration plan and implementation

1 Apr 2010 - 31 Jul 2010: environment and social impact

2010

2011

2012

1 Apr 2011 - 31 Mar 2013 design and construction tender issue stage
Figure 011. [CENTER] "programme synergy" aligning process of construction to optimise usage of machinery and resources
After having outlined the issues in full, a research method by way of a systems approach to problem solving will be utilized to guide the development process. Due to the multifaceted, complex nature of the problem, a critical synthesis of information derived from the following will form the essence of the discourse:

Where the site and its location are concerned, climatic and environmental constraints and advantages should be taken into consideration, in order to make the best use of available resources to benefit locals as well as visitors. This should be done with the intention of maximizing the potential for engaged solutions to enable social dialogue through architecture.

The analysis of the site will form a strong base for the scheme. The thorough analysis presented later will highlight and take full advantage of the available resources. Extended to include the context and proximity of further resources that could be tapped into, it will be a key element in the success of the legibility of the scheme. A critical site analysis and consultation with the locals, will serve to unlock the potential of the site. The site would then form the cornerstone of the scheme.
Locals | settlers | clients

Engaging with the people who are currently settled in the area will form a key element in understanding the site and its usage, taking cognizance of the possibility of them playing a role as clients and the potential wealth of cultural resources that they represent.

Attention should be given to the concerns and expectations of the local people where a design intervention of this nature is concerned. Focused interactions with locals through interviews will gauge their perspective on the proposed intervention. As a result, much needed light will be shed on possible alternative options they may be able to pursue. Furthermore, the locals and their interactions with visitors are undoubtedly crucial to the scheme, so an investigation of the interactions amongst the locals is necessary to determine how communal space would cater for that.

Historical background

The outcome would be a settlement framework that provides for social interaction and transfer of knowledge between the locals and visitors.

The history of the Lesotho / Basotho nation and its people forms an integral part of the scheme in that certain events denote influences and shape architectural responses to specific problems. The history therefore becomes the narrative of the regional architecture and identity. Key events are highlighted, illustrating their significance and influence on the architecture of Lesotho. This will serve to inform an approach to the design that allows for future growth while being mindful of age old traditions.
Theoretical Premise

The theoretical premise is focused on the hotel/lodge design intervention. The theoretical discourse addresses the hotel retreat as an element that stands as an intermediary, announcing the identity of a culture within a modern paradigm, where rural pragmatic and vernacular design meets contemporary and environmentally responsive architectural innovation. Established theory acts as a re-interpretive measure that mediates between the two, contextually informing the design process.

- A sound embodiment of the spirit of place, its ‘genus loci’, occurs where the design intervention expresses the identity of its context. The design is sensitively mindful of the undulating landscape of the highlands of Lesotho and its effect on forming the lifestyles of its people.

- A critical-regionalist interpretation of traditional forms is used to establish a new architectural language, drawing form historical and cultural fundamentals that are reassessed and applied to current circumstances. The result would be an architectural language that is measured against itself in a changing environment.

- Reference is made to precedents that have had to accommodate similar circumstances, and had to negotiate vernacular identity in a modern context.

Later on in the site analysis and framework conceptualization, established theory is used to address the implementation of the framework in terms of vernacular principles of place making and those of normative small-scale urban development. They are juxtaposed and their outcomes are evaluated against Lynchean principles of space definition as well as patterns of settlement as per Christopher Alexander.
Environmental and climatic response

The isolation of the site coupled with the self-sufficient lifestyle of the local people lends itself to be complemented by an environmentally responsive architecture. A lack of infrastructure and services should not hinder development in remote areas. A golden opportunity exists to explore the potential of remote self-sustaining developments. The project aims to investigate the potential of channelling resources and climatic conditions towards the most environmentally responsive solution:

- Where the human impact is least harmful.
- Where the application of traditional climatic responses to contemporary interventions can be harnessed
western influences

theoretical perspective

appropriate response