Humanitarian Architecture. **People, Place & Power**
How can architecture inform or deter to the well-being of the community it inhabits

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Abstract

Architecture today has increasingly enhanced its concern for the social. The humanitarian field has become a central concern in the architectural profession. Humanitarian architecture is a process with the purpose of helping the lowest common denominator of the population, providing an increase in welfare through improving the built environment. However, with the involvement of foreign architects, humanitarian architecture has the potential risk of being more detrimental than helpful to the community.

A participatory design process presents a possible solution to this problem. It involves a process of attempting to actively involve all users in a collaborative process. This strategy is used to create a space where the local community has a voice regarding many aspects pertaining to the end goal. Through participation they may become empowered and develop a sense of ownership in the project.

The intention of this project is to design an expansion to the existing Mercy School facilities in Chhuk village, Cambodia, creating a space for positive social engagement for the various groups within the community. The project will also investigate ways in which the school can become self-sustainable.

“You must not lose faith in humanity. Humanity is an ocean; if a few drops of the ocean are dirty, the ocean does not become dirty.” Mahatma Gandhi
This research project has been three years in the making. My interest in humanitarian architecture was initially sparked by a visit to Cambodia in 2010. At that time, I began a journey of learning and friendship with a young Cambodian man named Vuthy Nurn. I met Vuthy when he was our local tuk tuk driver in the city of Phnom Penh. After establishing a connection, he invited us back to his home village of Chhuk, where he had developed a school for underprivileged children. The school began with one man, one building and one teacher. The school now employs approximately ten teachers who teach English and life skills to a growing number of children.

I was inspired by Vuthy’s commitment and vision for his community; one with which I could align my passions and skills. Over several visits to Chhuk in the past few years I have begun to establish a strong relationship with several key people in the village. Through this journey I began to realise the impact that foreigners may have on the developing world, whether it be positive or negative. My apprehension about whether I was helping or hurting became a strong driver for this research project. It is evident that there are complex cultural, social and relational issues involved when working in collaboration with a different culture. Therefore, the success of this project is heavily weighted on the relationship and trust that has been generated over time.
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1.0 Introduction
The people of ‘Mercy School,’ located in Chhuk Village, are a group of like-minded individuals who are dedicated to helping their community. ‘Mercy School’ works with under privileged children and youths who do not have adequate access to education and English classes. An education increases their opportunity to fully participate in society. Mercy School’s current needs exceed their resources; they rely heavily on foreign aid to sustain the work they are achieving in the community.

This document seeks to approach the problem pragmatically with three strategies. The main strategy is to address the sustainable aid issues by beginning with an opportunity to discuss and communicate ideas. The goal of financial sustainability may be achieved by utilizing locally resourced products or materials that can be constructed and assembled by the community. The product can then be sold to generate an income. This may be sold locally within the village, nationally (to the larger city) or internationally.

The second strategy is to address the challenges involved in a foreign architect working alongside a developing world community. There is a potential risk of doing more harm than good; the project may be of more detriment to the community after completion than benefit. The strategy to minimize the risk of harm is to be manifested through a participatory design approach with the Chhuk community. This strategy is used to create a space where local people have a voice regarding many aspects pertaining to the end goal. This allows those who live in and utilise the building to be a part of the conversation that influences their lives. Through participation they may become empowered and sense of ownership will be enabled.

Finally, the buildings created by this project (in the long run) will bring together several social groups. The mixing of different social groups involves some type of relational connection, a common ground. This could be meeting within an area of shared work, learning, activities and interests, or it could be a shared space, a physical ground. Architecture can either inform these types of relational connections or become a boundary that gathers the connections. Therefore, architects control parts of the physical environment in which people meet and make connections. Furthermore, architecture has some influence over how people integrate, separate, meet and interact. The three social groups are: children and support staff living in a communal space of the Mercy Home orphanage, children and staff involved with the Mercy School, and the wider community group of people associated with the training centre, church facilities and social activities. The facilities will be designed to look after the individual program requirements and to facilitate social interaction in common areas that operate around them.
The first aim of this project is to investigate how to create a sustainable income for the school. This will be achieved by facilitating workshops with the local people of Chhuk to explore opportunities of how this may work within their local context.

The second aim for the mixing of programs on the same site is to set up a co-existent space for social connection within the community, an environment for the various social groups to mix, meet and interact. Because of the differing programmatic and social needs of these groups, architectural boundaries and thresholds will need to be constructed to achieve harmony of use. The aim is to show how architecture can provide the opportunity for social connection.

The objective of extending the school classrooms is to provide more space for students to learn as their current needs exceed the existing facilities.

The project will also aim to incorporate various other programmatic activities associated with the school. These will be: a vocational training centre for the wider community, a community church that can be used as a mixed-use space for larger social occasions, and a shop to sell products generated from the training centre. The architecture will be designed appropriately to the local climate, using local labour and building resources, and keeping construction and maintenance costs at a minimum.

The participatory design process will be achieved by working collaboratively with the community at Chhuk. Vuthy will be the key contact and interpreter for this project. He will be the means of communication with the wider community. This will ensure that cultural understandings are respected in a manner that aims to be more beneficial than harmful to the community.

“True compassion is more than flinging a coin to a beggar. It comes to see that an edifice which produces beggars needs restructuring.” - Reverend Martin Luther King, 1967
This project has the potential to become a reality in the future. Because of this, it is of great importance to be aware of the implications of such a project. Potential problems include: cross-cultural communication where information can be misinterpreted, designing without overstepping culture and social protocols and unintentional promising outcomes that cannot be realised. These issues should be constantly assessed throughout the design process.

In addition their will be the limitation of regular site accessibility. A sole visit to Chhuk is vital to creating a collaborative approach to the design of the project. Furthermore it is strengthen connections with this communities understanding of and gain a more specific needs in relation to facilities through architectural design.

The focus of the design thesis cannot be dependent on whether or not the project will be built. Where it begins to seriously compromise the investigation priority will be given to the necessary areas of the design thesis.
2.0 Existing Knowledge
When discussing humanitarian architecture it is important to understand the definitions of what it is to be humanitarian. The term humanitarian is defined as, “One who is devoted to the promotion of human welfare and the advancement of social reforms”\(^1\) The word architecture is defined as “The art and science of designing and erecting buildings”\(^2\). The term ‘Humanitarian Architecture’, is a rather new definition that has grown out of aid work in the 20th century. Furthermore, it is more of an umbrella term for buildings built for people in some form of need. Humanitarian architecture occurs all over the world, in different cultures, with different economies as a way of providing architectural solutions to humanitarian crises and brings professional design services to communities in need.\(^3\)

The history of humanitarian architecture does not have a definitive timeline. However, it could be said it eventuated from a time of serious disaster and need. Organisations, such as the Red Cross, established themselves around the time of the aftermath of the 1906 San Francisco earthquake and fire.\(^4\) They were one of the first agencies that helped build thousands of small wooden cottages scattered throughout the city. The cottages provided not only decent temporary shelter, but a path to home ownership for hundreds of low wage earning families.

It is difficult to say when the tradition of organised humanitarian architecture (beyond emergency shelter) took hold, but some of the earlier organised initiatives, such as Habitat for Humanity, have existed since the 1970-80s. As traveling to far-away places became more common for the western world so did the awareness of poverty and the necessity for basic structures like solid homes, sanitary buildings, places for gathering and recreational activities.

Today there are many organisations that deal with humanitarian architecture, not only on a voluntary basis. Groups such as ‘Architecture for Humanity’ are showing that humanitarian design can be profitably undertaken as a charitable business and provide employment.

Humanitarian architecture encompasses a broad spectrum of projects. Broadly there are three main categories of humanitarian architecture:

- First, temporary disaster relief, which can be defined as the urgent and temporary provision of emergency aid to reduce suffering from man-made and natural crisis. People in post-disaster situations are more than likely helpless and largely incapable of helping themselves.

- Second, there is rehabilitation humanitarian architecture. This begins immediately after the initial relief and seeks to restore people and their communities to their pre-crisis conditions.

- The final category is that of development humanitarian architecture, within which category this project for Mercy School falls. Although the school is already established it struggles with finances, education and in terms of social engagement with its community.

Development is an empowering process in which all people involved work in a collaborative process. It is a process where the helped and helpers work together, allowing the community to own the outcomes.

Quantifying the success and impact of humanitarian architecture is complex. An architectural project encompasses more than space, program, form and aesthetics; it also concerns the community and long-term social impact of the finished building. To be able to evaluate architectural success one must understand the whole picture, past, present and future.

Michael Murphy of MASS Design Group believes that humanitarian architecture is the new ‘Zeitgeist’ of the 21st century, or the new architecture of our time. It is a strategy that is rethinking the end-user and advocating for a movement to change the hegemony of architecture.

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Figure 2.13 Temporary shelter relief, Sri Lanka, 2004

Figure 2.14 Rehabilitation/transitional housing, Kobe, Japan 1995

Figure 2.15 Klong Toey Community Development project, Bangkok, Thailand, 2011
2.2 Power and Architecture

**Power:** “A person may be said to have power to the extent that he influences the behaviour of others in accordance with his/her own intentions.”

Architects have influence over the physical environment: to some extent they control how people mix, meet and interact. This position highlights the notion of ‘power’ that is bestowed on architects. This, therefore, poses the opportunity for information and intentions to be misconstrued, and ‘the architect’s sense of ‘doing good.’

For the purposes of this document it is essential to understand some of the influential debates and philosophy of the past century in understandings with regard to the idea of ‘Power’. French postmodernist Michel Foucault has been hugely influential in shaping the ideas of power, leading away from seeing power as an instrument of coercion, toward the concept that ‘power is everywhere,’ diffused and embodied in discourse. Power for Foucault is not negative it is productive. It produces things, including new ways of seeing space and people.

Power has always been entrenched in architecture, as in most areas of society. It would be egocentric for architects to see themselves as being the saviours of society. An example of power in architecture is the characteristic of the modernist movement where the desire was to make things new and better. This thought process has been scrutinized in the architecture field as it disregarded the social and cultural needs of people. The pioneering proclamation of Le Corbusier was bold and by all means began as being well intentioned with his attempt to heal individuals and society through architecture. However, it is important for architects to understand that we have the potential to be powerful manipulators of society.

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History shows architecture as a profession that primarily designs for the top 2% of the world’s population. The humanitarian design phenomenon has begun to draw our attention to the other 98% of the population. It has also drawn the consideration and services of the architectural profession to some of the challenges facing the developing world. These ideas have the potential to be dangerous not only in cultural terms but also physiologically and socially damaging to the community on which they are visited.

However, not everyone thinks humanitarian architecture is helping this larger portion of the world’s population. Bruce Nussbaum of Parsons, The New School for Design, writes that idealists often impose universal or, perhaps, elitist solutions on a community in the interests of design, rather than in the interests of those who might benefit from design. Brent C. Brolin suggests in The Failure of Modernism that, we in the West, find it difficult to understand the importance of tradition. We look to the future for the good life, partly because we worship progress in the form of science and technology, which, we seem to feel, can solve all problems. Perhaps our modern top-down approach to architecture in the developing world needs to be readjusted. Maybe a better approach would be one where the social and aesthetic values of the user are core drivers to the design process.

To some extent humanitarian architecture implies agency, linking it to activism. Alastair Fuad-Luke defines design activism as “design thinking, imagination and practice applied knowingly or unknowingly to create a counter-narrative aimed at generating and balancing positive social, institutional, environmental and economic change.” The challenge this brings is that it influences our perception in believing that, as architects, we have the solution to the developing world based on the way we conduct our work with the top 2% of the world’s population.


Place: “the term ‘place’, expresses a strong affective bond between a person and a particular setting.” In other words, place is mixed with human values and principles. As a result, place is a particular space which is seen as meaningful and valuable by the users.

Sense of place is an important aspect that has the potential to strengthen the relationship between a person and their surroundings. It can be influenced by personal and collective values, beliefs, and behaviors. According to environmental psychologists, D. Stokols, and S.A. Shumaker, “Architects and designers should consider both emotional and functional qualities of place, the overall quality of environments is measured in terms of the richness of their psychological and socio-cultural meaning as well as in relation to physical comfort, safety, and performance criteria.”

Relational aesthetics: is a mode or tendency in fine art practice originally observed and highlighted by French art critic Nicolas Bourriaud. The idea is that instead of the artwork being the centre of attention, the artwork creates an encounter between a viewer and an object. Relational art is where the artwork creates a social environment in which people come together to participate in a shared experience. The audience is then envisaged as a community. It is hoped that this project encompasses the ideas within relational architecture and aesthetics, where the building may become a “catalyst” for creating an environment for social interaction within a community.

Relational Architecture: evolved from the ambition to critically think through modernity and its political, economical and social consequences. It is clear that architecture can no longer be considered merely an artistic and aesthetic field. Ideas about spatiality are moving away from reading physical objects and forms towards the variety of psychological social processes that flow through space. The interrelationships amongst things in space, as well as the effects produced through interaction, are becoming of greater significance than solely compositional arrangement of objects and surfaces. Now that relationality, networking, connectivity and other dynamic experiences affect the nature of the architectural project we have to start to analyse, judge and create projects on the basis of the inter-human relations they represent and produce.

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Relational architecture is one of the most humanistic, yet basic methods of creativity. It is less about form and more about solution. “Relational architecture reminds us that our social spaces are never neutral, that they are inhabited by memories of all sorts, that ephemerality is not inconsequential. It is also an architecture that will take place” Design is surely steering away from merely form and content toward context and is becoming more about the relationship and sometimes interaction between the designer and the audience. One purpose of architecture and design is to help shape and inform society and culture. Could we actually critique the quality of architecture in terms of the model of sociability it creates?

Architecture has both a social responsibility and a physical one. Principles of social value have always been a part of architecture and space-making. Architecture provides a unique avenue to social and cultural situations of untouched communities. It provides the opportunity to create a positive physical manifestation of successful top down policies and community-based design. Without both in place you merely have buildings, not architecture.

An aim for this project will be to design a building that is a place of community and social interaction. Some scholars believe that architecture is a built form of art. “Architecture is the greatest of the arts, and it encompasses thinking that other arts don’t even deal with. Like relationship of the work to the individual human being – the person who uses it; the person who experiences it; the person who sees it; and how that person perceives that space”

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“Place attachment plays a positive role in human lives and also in their care of the place. It is expected that there is difference in environmental attitudes between those who feel an attachment to a particular place and those who do not.” Mina Najafi
People: “The body of persons who compose a community, tribe, nation, or race; an aggregate of individuals forming a whole; a community; a nation.” Architecture serves a purpose beyond bricks and mortar, for meaning is established in architecture through people and community.

Participatory Design: “is an attitude about a force for change in the traditional manner of creation and management of environments for people.” It is the process of attempting to actively involve all users in a collaborative process, in order to ensure the product meets their needs and is usable. The concepts of community and participatory design pose as many problems as solutions. Neither are neutral or without a history of power through relationships/hierarchies/structures. However, generating a community-driven project is possibly one of the best ways to create ownership and to not run the risk of the building alienating and being unused. Howard Davis believes that “people who create buildings themselves are creating buildings full of meaning and value; these are the use values they establish within their community.”

When users become invested in their housing, through participation among other strategies, they become empowered and bring that much more success to the project. “When dwellers control the major decisions and are free to make their own contributions to the design, construction or management of their housing, both the process and the environment produced stimulate individual and social well being.”

Community involvement in humanitarian projects poses many challenges. This is especially true when participants and professionals are from different socioeconomic groups, or where linguistic, cognitive and other cultural differences exist. One central aspect of participation is communication. A significant question concerning the participation process is: what or who facilitates communication and what or who hampers it? In an article in Architect Leon Kaye writes about how “design with a humanitarian focus demands more than a one-off transactional relationship between demand and supply. It becomes an integrated discipline that responds to local needs more directly than conventional practice.” To be able to build something that will help a community the architect must collaborate with the community directly.

A difficult part of using a participatory design method is defining to what extent the community participates in the design process. Wandersman provided a list of significant questions considered research concerned with and related to participatory design methods, some of which are:

19 International Journal of Human Social Sciences 6:3 2011 “The Concept of place and Sense of Place in Architectural studies”
When housing is created at an individual level and a community level, it provides the connection between the individual, community and culture.” Turner, Housing by People.

Traditional Design:
- Large scale
- National/international
- Corporate or institutionally oriented
- Single-client oriented
- Building and project oriented
- Concerned with style and context
- Top-down design approach
- Exclusive

Community Design:
- Small scale
- Local
- Human oriented
- Client redefined to include users
- Process and action oriented
- Concerned with meaning
- Bottom-up design
- Inclusive

Who participates, who does not participate, and why?
How does the interaction of the person and the situation influence participation?
What is a sense of community and what are its consequences?
What are the characteristics of organizations that are active and successful versus those that become inactive?
What cross-culture comparisons are appropriate to participation in community development?

Architects’ good intentions, can sometimes be misplaced when they assume they know more than those whose housing they are designing. Building on the knowledge of the local people is key to understanding local weather, topography and materials, as well as social, economic and cultural protocols. It is imperative that humanitarian architecture must be respectful and responsive to the cultures and customs of societies and use the collective knowledge and processes of the society in order to empower the community.

On the other hand, it is equally important to realise that, even when given the proper training and materials, the poor do not necessarily generate quality architecture. Unfortunately, when given the resources and materials, many communities will try to copy the housing of the rich and do so poorly; in effect a worse copy of a copy is created.

“You need to develop social capital and cultural capital. Provide housing that the person is ready to have in which he can afford and will be able to maintain”. Gonzalo, Lizarralde, Rebuilding after disasters

Figure 2.41 Community workshop
Cambodia

Cambodia is a country with both a rich ancient history, and a tragic recent history. According to the International Fund for Agricultural Development, Cambodia is one of the poorest countries in the world. The country consists of 23 regions, the capital being Phnom Penh. Cambodia's economic drivers are textiles and tourism, although agriculture is the biggest source of income. 90 per cent of the poor live in rural areas and the highest rates of poverty are found in households where agriculture is the primary source of income. Rural people have transient work habits, which are mainly temporary and generally poorly paid.

Cambodia is also a post-conflict country, where many of the foundations for growth (physical, social, human and economic) development, have been shattered. Cambodia, as a result of the conflict, has a high percentage of young people, almost 70% of the country's population is under the age of 30. The Khmers are still healing from the scars of this devastating legacy, but remain focused and optimistic about the future. Education is highly regarded and there is a desire for school and university enrolment, although resources are scarce.

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Cambodia is a country of culture and diversity, the main religion is Buddhism, accounting for 96% of the population, with other cultural influences including French colonialism, Angkorian culture and modern globalisation. Khmer culture has distinctive styles of dance, architecture and sculpture, many of which have been shared with neighbouring Thailand and Laos throughout history. Cambodian food is based on a staple of rice and noodles, with fish providing the majority of their protein needs. Tropical fruits and soups are also eaten.

Family unity is hugely important in Cambodian culture with the livelihoods of the family nucleus dependent on one another. The children of older parents and grand parents are expected to look after them as they grow into their elder years, whether this is by working the family plot or providing by sending money back from another income source.

Social activities in a rural Cambodian setting are usually centred around the preparation of food, eating and in sports activities such as volleyball, football and sey, a form of hacky sack. In most cases the social connections begin around the volleyball court where everyone congregates to share stories and interact. Other settings, such as the local food markets, are places of high social interaction between neighbours and communities.
Chhuk Village

Chhuk village is located approximately 100kms south of Phnom Penh. The area is populated by poor rural families who depend heavily on agriculture for their livelihood. An average wage for a family is approximately US$5 per day, usually only just enough to pay for basic food & shelter.

The village layout is arranged in clusters of residential dwellings. There are usually two or three generations of extended families living and working together on the same piece of land. There is an existing school facility on the site, with additional temporary classrooms that are in need of replacement. The proposed project will remain within the existing boundaries of the school site.

Agriculture plays a significant role in the household economy as an additional source of food, but also as an important source for tools, and for medicine. The majority of the land is cultivated into rice fields with the occasional sugar cane crop. Coconut, mango and banana trees surround the existing household areas, providing for food, shelter and visual privacy for outdoor living spaces.

Both the land and agriculture are influential to this project. It is important that the presence of the physical qualities of the site is maintained. Aspects of the context that are significant to the design process are the following:

- topography
- materials and texture aesthetic
- weather conditions
- seasonal climate changes
- location
- visual barriers/thresholds
Figure 2.81 Chhuk village, rural dwellings
Rural Cambodia is a place of simplistic beauty. The rural Khmer house is a perfect example of a dwelling whose simple structure serves its main functions. As well as providing a living and working area the building deals with the often harsh environment. Despite temperatures of 36° the old rural Khmer houses are very comfortable. The comfortable indoor climate is brought about by a combination of the ‘umbrella effect’ of the roof and natural ventilation. The roof shields the house against direct heat radiation, whilst the opening between the roof and the top of the walls allows a constant flow of air in and out, preventing an accumulation of warm air beneath the roof.

During the day, work and life go on at ground level, where the most effective shade is provided. The area under the house is used for eating and resting, as well as craftwork and various other tasks such as the repair of farm equipment. Dwellings are raised on stilts that sometimes extend as high as three metres off the ground. In this way annual floods do not affect the main room in the houses of rice farmers. Differences in the design are basically dependent on the financial means of a family and the materials available. Houses of simple farmers generally have walls made of palm leaf matting, the preparation of which is labour intensive but does not rely on imported materials.

Today’s population has an ever-greater need for security and prosperity. Colonial architecture introduced the idea of solid, durable buildings that could be bought, sold and inherited. The walls are made of brick and are rendered on the outside and inside. In traditional houses the ground level was previously an open area simply defined by the open framework of the building. It is now walled in. This is apparent where a modern brick house has been built next to the existing family home.

Rural houses are generally situated on the highest part of the site. It is essential that the main working area on the ground level cannot be flooded during the monsoon rains. Banana trees and coconut palms grow beside and behind the house. Vegetation around the house helps to shelter the house from the intense sun, as well as forming a break against powerful winds or storms.


3.0 Precedent Architecture
Analyzing communities’ abilities to adapt to new living and dwelling space designed for them by foreign architects will be the focus for this precedent study. The key reasons for why these design aspects were chosen will be examined.26

In a previous research investigation a questionnaire was sent out to a variety of humanitarian architectural and built environment NGO’s. Recipients were selected based on two criteria: involvement in humanitarian architecture within the developing world and involvement in the design and construction stages of the process.

The questionnaire consisted of a variety of open and closed questions. Closed and open questions are appropriate in different contexts and provide different kinds of information. The questionnaire asked participants to self-report on the changes they have undertaken, or undergone, as a result of taking part in their project(s).

The chosen case study/precedents are a collective of projects that aligned with Mercy School and the project site, chosen specifically for their relational design characteristics and community led design processes.

Precedent: Value Indicators

The following descriptions were formulated to gain a better understanding to what were the key components of a humanitarian architecture project. The descriptions will be used to compare the varying case study’s in a broad understanding. The topics are based on five core values associated with humanitarian architecture projects.

Community Involvement - Design Phase:
Input of local people/community members are an integral part of how people live within/dwell in their spaces. Within project planning and implementation community members interests and concerns are often considered.

Community Involvement - Construction Phase:
Community involvement in humanitarian projects can be challenging in areas of communication and traditional protocols, however as stated above their input are an integral part of how local people/community members live within/dwell in their spaces.

Building Use / Intentions:
Building in the developing world is never a straightforward process. Changes are constantly occurring through the construction process and adaptability is essential due to these changes. Research shows that the built form is often different to how the architect or designer envisioned.

Ownership Issues:
Ownership of land and buildings is vastly different within developing countries and cultures therefore how these are managed impact on the success of the ongoing/finished project. Furthermore ownership of land and buildings has an impact of how the occupants take care of their dwellings.

Foreign Aid Dependency:
Foreign aid has changed vastly over the past few decades and few will deny that there is a clear moral imperative for humanitarian and charity-based aid to step in when necessary; however some would argue now that certain aid is creating dependencies and slowing economic growth effectively making the poor poorer.
Excellent = 5: Exceptionally good. Being of the very best quality. As a superlative term, it requires no qualifier or adjective to increase its impact. A prime example of the best possible solution. Better than the community could have ever expected. The community are totally self sustainable.

Very Good = 4: Has been undertaken to a high standard, they have gone over and above what was required or expected. The communities were highly reciprocal and understanding of the outcomes and are on the right track to being self sustainable in the near future.

Good = 3: Average. Sufficient and satisfactory to what was expected. Adhering to or fulfilling the appropriate needs of the community. The responses from the community were of an average participation. Still require some form of aid.

Fair = 2: Could have been better. It is providing the basic needs for the occupants. The community did not respond as well as had been expected. Community may not be able to stand on their own two feet.

Poor = 1: Inferior and unsatisfactory. Lower in quality, worth or adequacy; mediocre; ordinary. Did not meet the expectations or criteria for the community. Rely heavily on foreign aid to keep them afloat.
Precedent One: Sra Pou Vocational School

Culture & Context:
Name: Sra Pou Vocational School
Location: Udong, Kampong Speu, Cambodia
Architects: Rundanko & Kankkunen

The purpose of the vocational training centre is to encourage and teach poor families to earn their own living. The new vocational school provides professional training and helps the local people create sustainable businesses together. It is also a place for public gathering and a place of social interaction for the community.

Involvement Design Phase - Fair
Involvement Construction Phase - Very Good
Building Use / Intention - Fair
Ownership Issues - Good
Foreign Aid Dependency - Fair

Figure 3.31 Sra Pou Vocational School
Materials & Building Techniques: The school building is made of local materials by the local workforce. The aim was to help the people of the area re-discover and make the most of locally available materials, so that they could apply the same construction techniques in building projects of the future.  

As the materials are scarce the red soil was utilized to make sun-dried soil bricks. The whole school is hand-made: no machines or prefabricated parts were used in the building work. This allowed for the employment of many community members. Furthermore, it meant that all techniques were simple and transferable, therefore learning and joining in was an easy process.

During the design process the architects tried to implement several building materials. Bamboo was not used in the final product, as had been planned, as the locals had too much suspicion against it and demanded that it be replaced with locally available wood. This was after a long negotiation process. Some portions of the building were not built correctly, but the architects were on site every day and were able to come up with a solution together with the builders as evidenced in the finished building.

Changes from the Design: When working with foreign cultures and training in new construction techniques, it is particularly important that all parties are willing to learn from one another through the entirety of the build project. It was agreed that the architects would visit the site one year after the initial build completion. They monitored the functioning of the school building over the year and designed necessary changes and amendments together with the community.

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“Design, if it is to be ecologically responsible and socially responsive, must be revolutionary and radical in the truest sense. It must dedicate itself to maximum diversity with minimum inventory…or doing the most with the least.”

Examples of necessary changes made were the handcrafted doors being replaced after one year. The doors were not durable enough and ran the risk of theft of the equipment and products. This was a collaborative decision, based on the experience of the community using the space daily.

Another design issue that arose after completion was that the building was not adequately designed for the local weather conditions. Understanding the climatic conditions and the effect on the chosen building material requires research, education and common sense on the part of the architects.

As a result of the excessive heat gain and lack of weather protection the community installed a large curved canopy over the main facade. The challenges that the architects faced in this situation are just one example, and may have been resolved more effectively if there had been adequate community consolation during the design stage.  

Aspects that were most positive:
- Community involvement through the construction stages gave the participants buy-in
- Local workforce up-skilling through the building process, the knowledge of adobe brick making has been used for future business endeavors
- Sustainable building materials have been exposed and accepted by the community
- The new school has provided training and income opportunities for the community

Aspects that were not addressed adequately:
- Building adaptations and changes were made through lack of communication with the community in the design process
- Security and theft arose because of material choices and further communication breakdowns

Figure 3.34 Sra Pou Vocational School, after alterations

Precedent Two: Gando Primary School

Culture & Context:
Name: Gando Primary School
Location: Gando, Boulgou, Burkina Faso, Africa
Architects: Diébédo Francis Kéré

Burkina Faso is the seventh poorest country in the world. Gando has no electricity or clean water, average life expectancy is 52 and the literacy rate is well below the national average. Access to education is scarce, especially for women. In these circumstances it is essential that progress be towards breaking the cycle of poverty, educating the population and improving living standards.

Francis Kéré is an architect educated in Germany who grew up in Gando. He learned that the small primary school in his hometown of Gando, Burkina Faso was in disrepair. In response, he started an organization dedicated to creating a better school.

"It's not only a very elegant design solution, but it's also a project that brings together the work of the community, it creates a really fabulous environment, both from a social point of view and also a constructive point of view." Enrique Norton of TEN Arquitectos

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Involvement Design Phase - Good  
Involvement Construction Phase - Very Good  
Building Use / Intention - Very Good  
Ownership Issues - Good  
Foreign Aid Dependency - Good  

**Materials & Building Techniques:**  
Community members collaborated on the erection of the school, becoming trained in construction in the process. The brick elements were hand assembled on site and the roof structure was welded without heavy machinery.

Climatic comfort is ensured by the building’s orientation, by the nature of the wall materials and by a design that allows the unimpeded flow of air between the roof structure and the ceiling. Cross-ventilation is further enhanced by an abundant use of shutters on the walls. The basic principle behind the design was to take the traditional clay construction building, originally erected as a temporary measure, and turn it into a permanent building with high climatic suitability by employing new materials and construction principles.

Kéré’s design was dictated by the climate and by the desire that the building be constructed by human power only. Earthen bricks, with a small admixture of cement for increased durability, were hand pressed using a simple machine; concrete beams run across the load-bearing brick walls under a ceiling of more earth bricks.
“I shall never forget how the village community threw themselves into the adventure of constructing their own school out of clay and using only the most primitives tools with an indescribable eagerness and enthusiasm and with a commitment that they had never shown before” Diébédo Francis Kéré

Roof Design: The roof for Gando Primary is constructed of corrugated metal sheets above a lattice steel truss made up of a series of steel re-bars in small sections. Metal roofing is the most popular roofing material in the region on account of its durability. However, metal roofing as a material has some disadvantages, not only does it cause acoustic problems, it also has an adverse effect on room temperatures.

The architect’s solution to the problem of heat gain was to raise the metal roof covering from the main building form. This was achieved by using the open metal truss system and an adobe ceiling to generate maximum airflow. Circulating air between these two levels substantially reduces over heating in the classrooms, and the broadly projecting roof protects against sun and pelting rain. The roof design is a simple solution to a complex situation.31

Aspects that were most positive:

• Climate comfort / considerations, an innovative roof design / structure was implemented for cross ventilation through the roof, ceilings and window openings
• A community cooperative effort and collaboration through the construction of the building, full buy in was important by all
• Local workforce up-skilling through the building process has provided the community with new building opportunities elsewhere
• Low cost construction was integrated with western technology and traditional building techniques
• Communication with the designer and community was handled appropriately

Precedent Three: Kouk Khleang Youth Centre

**Culture & Context:**

**Name:** Kouk Khleang Youth Center  
**Location:** Phnom Penh, Cambodia  
**Architects:** KOMITU Architects

Kouk Khleang Youth Center is located on the western outskirts of Phnom Penh, Cambodia. The area is made up of low income, working class families: education levels are limited with many children dropping out at a young age to help support their family. Healthcare and services are also scarce in the local area.\(^2\)

The building site is approximately 15x30 metres in size and is a former sewage pond. The youth centre was initiated by a group of young architects from Finland who were motivated by a design studio at Aalto University. Their aim was to create socially and ecologically sustainable architecture together. The group founded KOMITU architects in 2010 and has funded almost the whole project through sponsors.

Design Process: KOMITU followed the principles of participatory design. The future users of the building and members of the surrounding community actively participated in the design process through several workshops. The aim was to create a sense of ownership of the building and empowerment through participation.

Valuable information was gathered on the community members’ needs for the centre, on local social conditions and on their aesthetic preferences for the architecture.

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Materials & Building Techniques:

Construction of the centre began in 2012. The youth centre was planned together with, and will be operated by, Cambodian Volunteers for Society (CVS) and Khmer Kampuchea Krom for Human Rights and Development Association (KKKHRDA)

Bamboo was used as the main façade, portraying readable tectonic details. The bamboo material has been connected together to form a series of post and beams that support the stairs and porch areas. Bamboo is one of the most widely used building materials in the world, mainly by low socio-economic groups. However, it is still perceived as a ‘poor man’s’ material, even among the poor. The general practice would be to build a house of bricks and mortar.

The aim of the project is to change the bad reputation of bamboo and inspire people and architects by showing that it is a beautiful material which is also suited for making modern architecture. The local builders from Kouk Khleang working on the youth centre found the material a little foreign to begin with as they were not accustomed to using it as a structural material.
Materials & Building Techniques: The main structure of the building is constructed of concrete post and beams with steel reinforcing. The architects decided to use a locally produced interlocking compressed earth brick as the wall infill. The costs of the bricks are substantially higher than standard clay fired brick, but can be exposed to the elements untreated. The bricks have a beautiful earthy quality to them. However, the community decided that they wanted to plaster over the walls, as that is common practice for them.

20 builders are employed on site most days. The community was only really involved at the start of the project, treating and preparing the bamboo for construction. The budget has risen to around US$80,000 and is 100% funded by the Finnish Government and NGO’s.

Aspects that were most positive:
- Perceptions of bamboo were changed and it was established as a possible construction material for future endeavors
- Local workforce up-skilling through the building process, the learning of adobe brick making has been used for future business endeavors.
- Sustainable building materials have been exposed and accepted by the community
- Local workforce was used, providing income generation and up-skilling of new building methodologies
- The new school has provided training and income opportunities for the community

Aspects that were not addressed adequately:
- Costs were not addressed adequately at the outset, meaning supplementary funding had to be sought
- Reliance on foreign aid to build and run the centre, a sustainable strategy has not been addressed adequately
Overview & Analysis - Precedents:

Community Involvement - Design Phase
The chosen case studies all had varying degrees of community participation through the design stages of their projects. It feels as though the initial conversations and workshops were well implemented and demonstrated community involvement. However, in the two Cambodian projects it seems that after this stage there was a slight distancing from the inhabitants. The architects involved took over direction with their design and typically moved forward into a built form model without further consultation with community members.

Information from architects involved revealed that it was difficult to gain feedback from communities whilst asking complex questions about design and functionality. Community members typically responded in a 'yes' or 'no' format. The architects found that the community members responded better when they were presented with a variety of design models that they could choose from and critique.

Community Involvement - Building Phase
Based on their information from the case studies there was a general difficulty in ensuring ownership of the project for the purposes of empowering community members. This is due to different people having different levels of education and training.

Of the case studies the most successful was Gando Primary School due to the architect's ability to motivate the community members. For example, construction of the rammed earth bricks required full participation of the community members. This was a simple yet effective way to involve the community members in a construction process that required many hands.

In the project of Kouk Khleang Youth Center the decision was made to employ a head contractor to oversee the project for the purposes of deliverables and meeting budgets. This in effect gave the community limited opportunities to be involved in the construction process and as a result they were connected to the project.

Building Use / Intentions - Design Phase:
Generally all three case study buildings are being utilized for their original purpose. Sra Pou Vocational School has particularly adapted and changed to suit the community. This caused a slight inconvenience as changes were made post construction.

Two of the case studies revealed that designing for a foreign community posed difficulties, particularly Sra Pou Vocational School. However, in this case, the architect's design ideas took priority over the building's weatherproofing. Inconsistencies were either caused by the community not speaking up about design faults because they felt they could not, or because they did not have the opportunity to voice their opinion. Understanding the existing context of social hierarchies and being able to communicate effectively is a key insight to working in these cultures.
Ownership Issues: Ownership of land and buildings is vastly different within different countries and cultures. The issue of ownership has been at the forefront of humanitarian discussions on aid and development effectiveness in recent years. However, ownership does not always mean that the occupants will have a change of mindset regarding how they look after a building. The architects involved with the Sra Pou Vocational School said: “The villagers are not used to maintaining buildings. They have always lived in shacks that last for a couple of years. Thus they do not care for dirt or broken ceilings, or believe in maintenance.” Understanding these issues can determine the success of the finished/ongoing project and can also change, or effect, how the occupant takes care of the facilities.

Foreign Aid Dependency: Foreign aid can be a conundrum in regards to humanitarian build projects. The cost of building is near impossible for most communities to implement without foreign aid assistance. However those providing aid often have a pre determined understanding of what a building should be, should look like, and how it should perform.

The following comment from the architect involved in the Sra Pou project illustrates these points: “We were too often perceived as a source of money since we were from Europe, which was harmful to the planning work. It was important to convince to the community, that our job is to plan with them how to use the aid money in a wise way, instead of being able to fulfill whatever wish they come up with.”

Figure 3.6 Sra Pou vocational school
Overview: Mercy Home, Stage 1

Culture & Context: Mercy Home is a charitable school and orphanage run by an organization called YWAM (Youth with a Mission), which is located in Chhuk village. Mercy Home was initiated by a young local man, ‘Vuthy’, who was motivated by a vision for a better life and education for his community. Through several visits to Chhuk village, initiations began to help implement the design and construction of Mercy Home in January 2012.

The school site area is around 2800m² and is mainly surrounded by rice fields and coconut trees. The school currently relies heavily on foreign aid from teams that visit and teach English during short-term stays. The community’s vision is to establish a vocational training centre where they can learn skills and trades in order to earn an income and become self sustainable.

Involvement Design Phase - Poor
Involvement Construction Phase - Good
Building Use / Intention - Good
Ownership Issues - Good
Foreign Aid Dependency - Poor
Building Conception: Mercy Home developed from a small vision that inspired others to join and bring life to it. The author was part of a small group that visited from New Zealand in 2010. Vuthy was the Tuk Tuk driver for the group’s time in Phnom Penh and invited us to visit his village for a weekend. It was here that the group were immersed in the culture of Chhuk and heard of Vuthy’s vision and goals for his community.

Spending time in Chhuk allowed for firsthand experience to gather information on the school’s needs for the centre, on local social conditions and building construction techniques. Designs were produced following the trip and followed up with a trip in January 2012 to start the build of Mercy Home. Local builders and laborers undertook the build with an elder overseeing the project management on site.

Construction of Mercy home finished in May 2012 with a total build cost of US$14,000. The home is operated by Vuthy and the Mercy School volunteers and overseen by YWAM. The construction process was a large learning curve for the author as a foreign designer. Construction techniques differed hugely from New Zealand building techniques. The design was based on observations of construction methods from the visit in 2010. The design was for a simple concrete and brick foundation and walls with standard timber truss construction roof. The building differed from my preconceived ideas for a number of reasons. The picture shown below was given to the building team and together we plotted out where the building would sit on the site.
The basic idea behind the design was to create a solid building that could house up to 24 orphaned children at one time, with additional washing, cleaning, cooking and eating areas. This program was derived with two sleeping wings and a central mixed-use core area, which was to be open with a raised roof to allow for ventilation in the hot months. How and what the building was made out was left completely up to the community. However the construction methods used were replications of other construction they already knew or had seen around.

**Materials & Building Techniques:** The building was constructed as follows: foundations were made up of horizontal and vertical steel cages, poorly mixed concrete and rocks to minimize the need for cement as much as possible. The walls and structure were constructed with concrete poured post and beams with unreinforced clay fired bricks as the wall infill. The roof was made from hollow channel steel trusses, fabricated on site with corrugated roofing and flashings on top. The walls were finished with a cement plaster and painted. Windows and doors were placed in areas they thought applicable.
Cross Analysis - Mercy Home vs Case Study’s:

Mercy Home was a project built from a large vision and on a bit of a whim, although the commitment and passion for the project was always well intended. Mercy Home is fundamentally functioning as intended. However, reflecting on the outcomes from the project now, there were probably a set of skills and knowledge lacking from the outset. Having further researched and critically evaluated each individual precedence/case study I have been able to analyze the outcomes of the Mercy Home project in Cambodia.

It was evident post construction that there could have been some changes to the building’s design and construction that could have made it even more successful; some of these are listed below:

Mercy Home - Aspects that were not addressed adequately:

- The community involvement in the design stages was minimal, a final design was presented without subsequent correspondence
- No building contractor was hired; the consequence of this was a lack of leadership and drive
- Material choice was limited to the local building yard
- Kitchen location and construction was inappropriately ventilated
- The roof design meant that heat radiation built up, inadequate ventilation was provided
- Weather proofing and flashings were not installed adequately
- Security became an after thought, this could have been integrated into the building fabric
Three of the key learning outcomes from the cross analysis of Mercy Home and the case studies are as follows:

**Design process**: is a vital factor to how successfully the building fits into the context of the community and the resulting use. Time and communication were lacking in the conception stages of the Mercy Home project. These factors resulted in a design that "I" (the designer) made design decisions based on what 'I' thought was best suited to the community. Consequently, the lack of communication in the design phase resulted in changes by the community builders during the construction stages.

**Perception & Education**: Materials and construction choices were solely based on what community members knew. Education of an aspect that could have been easily improved. Realizing the community's abilities whilst working with the knowledge they have required to up-skill and further educate in a practical manner that can be used in the future.

**Adaptability**: All communities change socially and physically over time, most likely more so in the developing world. Designing and implementing build projects that are open ended means that the community is able to adapt the building/dwelling spaces based on their current needs, a key aspect in achieving successful architecture.
How communities have adapted to live/dwell within the spaces designed for them was one of the key drivers for this research topic. This has been achieved by gaining knowledge and understanding from designers in the field of humanitarian architecture. The information gathered has provided an insight into the tools needed to work in the humanitarian architecture field.

Humanitarian architecture requires a new set of practitioners trained in the appropriate and relevant areas. Furthermore, they need to be professionals who are humble and capable of motivating a community through all facets of a build project. "By designing with people, instead of for the people, we discover what is relevant and important to them, the use our design expertise to realise it in a robust, useful and beautiful package".  

We, as architects, influence parts of the physical environment where people mix, separate, meet, and interact. This position highlights the notion of ‘power’ that is bestowed on architects. This, therefore, poses the opportunity for information and intentions to be misconstrued, and the architect’s sense of ‘doing good.’

The situation with foreign designers involved in humanitarian architecture is that power is extenuated further as it is further enhanced by being in a different culture and context. The intervention of the experts/designers in these communities is still a form of domination. However, I feel the attention to the subject is positive; it draws the consideration and services of the architecture profession to the real problems that are present facing the developing world.
It is easy to get caught up in the potential harm that can be bestowed on the communities we are working with and give up before we have even started. The idea behind this research was to gain an understanding of the difficulties and challenges with humanitarian architecture and use the skills that previous architects have learnt and developed.

Architects and designers have to possess many more skills than they probably ever expected but if one is equipped to the best of his or her abilities with an understanding of ‘helping, not hurting’ a good foundation has been laid. Through this process, “Humanitarian architecture can alleviate suffering and transform conditions into collectively preferred ones; it acts to create a built environment that is for the betterment of society.”

Placing humanitarianism in the realm of architecture makes the process particularly challenging. Humanitarian architecture has ideas attached that connect and create a built environment that links people at a human level and community level. Therefore, this idea implies that humanitarian architecture should be improving the welfare and happiness for people through the practice of designing the built environment the community inhabits.

“The main difference between success and failure is the degree to which poor people themselves are involved in determining the quality and quantity of the services they receive.” World Bank, 2004

The design process for this project is of just as much importance as the final design outcome. A community led design process has been implemented; this requires a presence and involvement from the designer in the actual village/town. In order to plan the design for the buildings in the most functional way without any unnecessary expenses, the context of climate and ground conditions must be examined for the best outcome. The available materials and resources of the area must be investigated, as well as studying the building vernacular and local construction techniques. It is also important to learn from the community first before imposing foreign ideas and technology upon them. Rural Cambodian architecture is one that has been refined and adapted to the needs of the inhabitants. All the above aspects are highly important for the project to succeed. In addition the use of local materials, building techniques and work force means the financial benefits are secured to the local community. The engagement of the community through the initial workshop phase will be indicative of how far they will be motivated to participate through the proceeding aspects of the project. It is of vital importance that the project is as much about human relationships and learning from each other as it is about the actual building. Furthermore, when engaging with rural, poor communities one must be able to step into the other’s shoes and as an architect design from bare necessities. The building needs to be maintained once the designer leaves. Therefore, teaching strategies such as sustainable buildings, building techniques, water systems, reuse into building elements and natural ventilation are all essential parts of the initial engagement. The goal must be to help the community develop in a sustainable way and, hopefully, leave behind something that empowers and increases their wellbeing.
What design methodologies should be used when working with a developing world community? To be driven solely by one person seems inappropriate as it implies the notion of ‘power’. Such an approach is inadequate for the complexities and relationships involved in such cultural and social contexts.

An undertaking of this type of project must be approached with modesty and must acknowledge a couple of things at the outset. The first is that participatory design is conceived and defined as numerous different solutions. For the purpose of this project the analysis will be through the lens of a community participant design process with the designer in a facilitative role, overseeing the design outcomes. Second, it is impossible to measure accurately and comprehensively the final outcomes, however, we must see the holistic picture, seeking to understand the social impacts of the built environment.

The purpose will be to design alongside the community in a participative design process to enable the community to have a sense of ownership over their school. Establishing regular contact with a ‘liaison’ in the community to enable a collaborative design approach and feedback on the progress of the project is essential. Once establishing a criterion for both parties it would be important to analyse each design stage and the community’s comments. Questions such as:

- What does the role of facilitator involve?
- How much input does the community have?
- When do you choose to step in and move forward with an approach to the design?
- Do I agree with their suggestions?
- What type of information should be relayed
Of all the activities and aspects of the three social group areas investigated the following conclusions have been drawn:

- The communal spaces need to be viewable to the wider community outside the school boundaries for there to be mixing and interaction.
- It is important to have communal, shared space where interactions and discussions can be initiated.
- There need to be spaces which accommodate all activities involved with the type of programs involved within the site.
- The transition between inside and outside the boundary threshold is important, especially from the public spaces to the semi-public spaces.
- There needs to be a separation from active communal spaces to quieter slow-pace areas of the orphanage where child well-being and security is prevalent.
- The site needs to be arranged and flexible enough for the possibility of large gatherings such as weddings, funerals and celebrations.
- There also needs to be a space for community meetings that is neutral to all.

An issue of generational growth is becoming prevalent in this community with family plot sizes becoming reduced as family sizes grow and land is passed down to the next generations. The issue with this is that the traditional plot size could easily produce enough income for one family, but is not sustainable for four families. This has been a particular issue with the Mercy school as it was previously a rice producing income for the parents. It is now, however, the responsibility of the school to support the parents.
The local area is characterized by a low-lying central alluvial plain, surrounded by uplands and low mountains. The site is 2800m² and the ground is raised from an existing rice field where the soil was refilled from the adjacent pond excavation. The soil is poor and sandy. Water tables rise in the monsoon season, allowing the surrounding rice paddies to fill up and irrigate the rice during the warmer months.

The approach to the village is from the main southern highway linking Phnom Penh to the south coast of Kampot. Villages are usually made up of extended families that have been in the area for generations. Individual plots of family land separate the villages. The family land usually consist of one or two houses in an area of trees and vegetation, providing food, shelter and visual privacy. The rest of the land is primarily cultivated into rice fields, with the occasional sugar cane crop.
The main road is made from compacted earth where the width is enough for a single vehicle; small roads branch off for access to nearby households, however they are only wide enough for a motorbike, or tuk tuk.

The landform of Chhuk consists of expansive, flat rice paddies with somewhat swampy areas that are filled from the adjacent ponds and streams. To the north of Chhuk the site is surrounded with uninhabited hills. This formation of large, flat areas separated by small mountains is repeated around the surrounding provinces. The open land has a sense of isolated loneliness with the occasional high peaked hat of a Cambodian rice farmer tending to their crops. The flat, open areas have been utilised for rice paddies that are also used for grazing. The animals often stand completely motionless or quietly graze. This stillness in the landscape is captivating. It is not until some altitude is achieved from the surrounding hills that an idea of how the space is arranged in plan becomes clear.
Community Workshop: Sustainability & Independence

Mercy School is currently set up as an NGO (non-government organization). This means that the school is run on a skeleton budget. Children do not pay to learn as the school’s focus is strongly towards supporting the less privileged younger generation. Subsequently, this has a series of implications. The school relies heavily on foreign aid to pay for administration costs, teacher’s wages, uniforms and stationery. The aid money that does come in is very sporadic. Teachers are paid a small monthly wage, however, when there is no money the teachers do not get paid. Consequences of this include high staff turnover as teachers are expected to provide a wage for their family, relationships with students are broken and education is affected.

The purpose of this workshop was to identify and create ideas where the school could work towards becoming self-sustainable (financially independent). We looked into aspects such as: challenges, motivations, local skills and networks that are associated with them. Communication was not too bad as I am pretty sure most of them understood me. However, getting answers sometimes proved a bit challenging. The group brainstormed together and asked questions about some of the daily challenges they face. Some key ideas that eventuated from this workshop were:

- A training centre to teach and upskill community members
- Textile production, selling goods: bags, bracelets, clothes
- Agriculture production, selling produce
- Restaurant/Stall, food production and training
- Raising animals: chickens, ducks, fish

“when you speak to a community the number one thing that they want is not a house; it is a job. The big question to be solved is how to create employment and financial stability. Then people can think beyond just a roof over their heads and begin to plan for school and medical systems.”

Cameron Sinclair, Architecture for Humanity.
Engaging the community in the master planning process is key to participatory design. Allowing the user to become invested in their community, through participation, they are free to make their own contributions to the design and they become empowered, stimulating individual and social well-being.\(^\text{36}\)

The purpose of this workshop was to establish a criterion of program wants and needs. In this workshop the community was asked the question: If they could envisage their school in 5-10 years-time, what would it look like? As part of this we talked about what programs and facilities they would like and where these would go. Once the programming needs were established the attendees were separated into two groups to formulate and arrange two separate planning options.

**Program Requirements:**
- Mercy Home (existing orphanage)
- Training/skills Building
- Classrooms x 3
- Library
- Bathrooms
- Kitchen
- Playground
- Church
- Food Stall
- Bike Storage
- Volleyball Court

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36 Turner, Freedom To Build.
While financial poverty is the biggest visible factor limiting a child’s future choices, many children suffer from a chronic, debilitating lack of aspiration, irrespective of their material situation. It seems that many children, both rich and poor, have lost the ability to dream. Poverty of aspiration steals their joy, their child-like belief, vision and hope.\(^{37}\)

The aim of this workshop was to provide the students with space to dream. I gave the students molding clay and asked them to make an object that represented them or who they wanted to be. As part of the workshop we also looked at inspirations that could help them with their own creativity possibilities. We worked together to create a string installation, bringing a little brightness and colour to what would be a plain classroom.

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The fourth workshop was a space for open discussion with the wider community, future users of the building and members of the surrounding community who are actively involved with the school. The participants were local elders, builders and labourers who were familiar with local building materials and techniques. The discussions were to learn the pro’s and cons of the local building materials, how the materials were used traditionally, and how development of modern materials has changed traditional, rural construction.

Discussions also involved looking at further possibilities of how their local materials could be used in different and effective ways that they may not have been exposed to. The aim was to help the locals re-discover locally available materials, such as bamboo and earth bricks, and to make the most out of them, so that they could apply the same construction techniques in building projects of the future. The effectiveness of whether these ideas worked or not with this particular community is something that needs to be further consulted during the design and building process.
Workshop Planning - Program Symbols

Figure 4.6.1 Program planning symbols
Workshop Planning - Group 1a

Group 1a Comments:
- The participants were worried about not having enough space so their layout shows the buildings on the perimeter of the site.
- The kitchen is positioned next to the pond for easy access to cleaning water.
- Bathroom and wash area is hidden away for privacy.
- A clear visual to the church from the main gate.
- Stall/Shop next to the road for street side selling of goods.

Analysis:
- The layout establishes a long narrow corridor space that could potentially be unused.
- Dead zones are created behind and beside the existing Mercy home.
- Training centre (public) is turned into the more private zone.
- The classrooms obstruct public view lines into the courtyard space where community activities may happen.
Group 1b Comments:
- The group wanted to create a courtyard zone where kids & community could congregate.
- Stall / Shop next to the road for street side selling of goods.
- Worried about not having enough space for the training centre.
- Libraries integrated with classrooms.
- Bathrooms & Kitchen as part of the training centre.
- Big play space.
- Church being a focal point to the community.

Analysis:
- The Church becomes individualised and seen to the greater community.
- A visual separation of Mercy home is created with the classrooms turning the back on it.
- A centralised courtyard.
- Large open views into the community space, could potentially create stimulation and excitement for the community. (ie. volleyball games are used as a common ground for community interaction.)
Workshop Planning - Group 2a

Group 2a Comments:
- The participants like the idea of the classrooms looking out towards the ponds so they can look and watch during the day.
- The church was said to be an important building in the community, placing it close to the main road for the community to see and here.
- Kitchen segregated to just the orphanage.
- Classrooms have a visual to the main gate (security is best seen)
- Stall / Shop next to the road for street side selling of goods.

Analysis:
- All buildings are separated and individualised. Mostly set back off the boundaries.
- Bathroom is in an inappropriate and exposed area.
- Public & private areas are very intertwined (this is potentially risky & exposing to the orphanage children)
- There seems to be a lack of coherency and defined spaces.
Workshop Planning - **Group 2b**

**Group 2b Comments:**
- The kitchen & bathrooms relocated close to the Orphanage.
- Two storied classrooms to gain more space for play activities.
- Large open play spaces in an 'L' shape.
- Training centre hidden away in the corner with the church.
- Classrooms at the front of the site.

**Analysis:**
- The outside community have limited views into the site for awareness of activities.
- This is the only group with the classrooms at the front of the school, it separates itself from the orphanage a lot more.
- The public spaces are centralized in the site.
- Training centre and church are hidden from the main road. Will require public to walk through school space to get to the buildings.
- The layout does create some large open spaces, however, the buildings are arranged a bit back to front.

Figure 4.65 Space planning Group 2b
Workshop Outcomes: Criteria

The site facilities will predominantly operate as a school centre, providing education for underprivileged children that may not have the opportunity otherwise. The school will also work conjointly with several other activity types. The mixing of varying social group activities is one that requires great spatial consideration.

The main requirements for a facility of this configuration is that it is flexible enough for fluctuations of varying activity groups, The facilities need to accommodate spaces appropriate for small learning groups, but also large enough for community gatherings of up to 200 people at any given time. The area will also need to be separated from active communal spaces into private areas of the orphanage as child well-being and security is paramount.

Participatory requirements:
Establishing criteria that can quantify aspects of the design process in order to get a comparative scale to the humanitarian precedent projects:
• Involvement design phase
• Involvement construction phase
• Building use / intention
• Ownership issues
• Foreign aid dependency

2. Spatial / Social Requirements:
• A facility for teaching, training and producing goods to sell
• A hub for relational interaction, communal shared spaces for of all groups
• The communal spaces need to be viewable by the wider community
• A definitive transition between inside and outside the different social spaces, this is most important from the public spaces to the semi public spaces.
• Secure living environment for the children, separation from active communal spaces to private residential areas
• Site flexibility, enough for the possibility of large gatherings such as weddings, funerals and celebrations
• A neutral meeting space
3. Program Requirements:
- Mercy Home (second level)
- Extra sleeping area
- Dining area
- Communal space
- Training/skills building (self sustainability):
  - Group teaching space
- Textile production space (sewing machines)
- Food preparation space
- Storage areas
- Meeting, rest areas
- Classrooms x 2
- Library, reading space
- Bathrooms, Boys and girls
- Kitchen facility (Mercy Home)
- Open play space (100 children)
- Church / Community building (50-200 people)
- Water collection and storage
- Food and textile stall / shop
- Bike storage (20-30 bikes)
- Volleyball court (9mx18m)
- Rest / viewing areas

4. Aesthetic & Construction Requirements:
The aesthetic requirement of each space/building element needs to respond to the context it is engaged with. For example, the aesthetic may be responding to the spatial activities enclosed in the building, qualities like openness, calmness, movement and protection. Building criteria:
- Ventilation from heat radiation
- Protection and shelter from heavy seasonal rains
- Flood protection
- Sustainable materials, (easily sourced and replaced)
- Community workforce and participation
- Practicality, can be built and repaired with the resources the community have at hand
- Security of facilities housing people and products
- Adaptability, spaces that can be arranged to suit varying activities
- Water collection and education, emphasised through the architecture
- Architecture that facilitates various performative functions

5. Client / Designer Relationship Criteria:
- Helping not hurting
- Being specific about give and take
- Providing opportunities for the community to partake
- Being a facilitator, as opposed to a dictator
- Empowering the community
- Thoughtful architecture that responds to its context
- Managing the transformation
5.0 Design
The architectural design process was developed through various scales concurrently, the design outline being at the scale of master planning, whilst also detailing connections through model making.

The design section deals with scale, space, planning, aesthetics and materiality. These have been broken down into five sub categories:

Place planning – contextual master planning, designing for the future.

Space planning – site layout, relationships, circulation, integration.

Form exploration – local resources and materials to create engaging forms.

Materials and details exploration – tectonic relationships using local materials.

Visual thresholds exploration – boundaries, barriers and thresholds that can impede or open visual apertures.
Cambodia is developing at a rapid rate. It is bitter sweet. Money is flowing into the country and life is getting easier for some. However, development can come at a price. A big part of our visits to Chhuk in the last 5 years has been noticing the growing development. Areas of agriculture that were predominantly used for rice production are slowly disappearing with new buildings being erected.

The locals say that part of this change in Chhuk is because of the development of the school. Economically and socially, people want to be close to it. Opportunities have already been taken with two families setting up shops outside the school, selling treats to children and teachers as they pass.

Understanding that assumptions are being made an effort was made to analyze the site in its context by looking towards the future. How will it change and transform and how will this affect the design and layout? The school has a great potential to become a hub of activity, a catalyst for relational interaction with the greater community.
Figure 5.24 Twenty year prediction
5.3.1 Space Planning - Analysis

The following analyses are sketch overlays of the master-planning workshop. The drawings are represented diagrammatically and are portrayed differently through line weights and texture.

The dotted areas, in accordance with the circled areas, show where people will most likely congregate dependent on the building uses. Solid red lines show the main axis points on the site. Arrowed lines show access in and out of the site with potential hard boundaries and problem areas shown in a dark scribed line. The dotted lines represent visual view paths to and from the site. In some cases red and black arrows show the view cones from an outside perspective (for example group 2a with the strong visual link of the church on the corner of the site).

Initial analysis shows some key points of interest. Some of these are:

- The site layout and boundary being in an ‘L’ shape dictates a hard edge on the internal corner; in several scenarios this was further emphasised with a building being placed on the corner.
- An outsider’s perspective through the main gate is determined by how dense the buildings are around the front boundary; this layout could be seen negatively as the potential for the wider public to engage with the social activities are limited.
- The axis of the site determines that the main intersecting point is situated on the internal corner of the site: this area has the potential to be designed as a pivotal communal area or a place of importance.
- Most design layouts show a strong visual link to the main, west entry of the site.
- The secondary access from the eastern boundary seems to dictate the spatial layout of the courtyard, if the entry is in the middle of the boundary it seems to split the site into two zones.
- Visual views to the external environment are generally looking out towards the ponds and adjoining rice fields.
- The western entry zone is a high traffic zone, with the addition of buildings to this space the design layout for people moving through this space will need to be well thought (i.e. the church or stall)
- Dead zones are created behind and beside the existing Mercy Home; these spaces could potentially be used for more private activities, such as cooking and washing.

“When housing is created at an individual level and a community level, it provides the connection between the individual, community and culture” Turner, Housing by People.
Figure 5.3.1 place planning analysis sketches
Space Planning - Concept A

Non Negotiables:
- An open activity space (e.g. volleyball court) where people can gather and interact.
- The church was said to be an important building in the community, and needs to be situated in a prominent position for the community to see and hear.
- There was a recurring pattern of the training centre being in a central position on the site.
- Privacy and security for the Mercy Home children.

Negotiables:
- The classrooms seem to have been placed in several different locations, as long as they have a visual connection to the play space.
- Kitchen and bathroom locations are negotiable; however, the general consensus was to hide them away.
- The stall needed to be on a road frontage, but could be in several locations.
- Bike storage area, enough for around 20 bikes.
- The size of the training centre.
- Extra space for the Mercy Home.
Feedback and analysis of the critique, suggested that the curved form of the training centre establishes a focal point that leads to nothing. The central courtyard space also seems to feel a bit empty and does not have a direct purpose; perhaps more investigation is needed into how each of the social spaces within the site will function. It was also suggested by the critiques that the boundary treatment should be looked at, how could these spaces be separated visually and physically?
The purpose of this stage of the design process was to develop engaging, interacting forms that could be derived through the use of readily available local materials. This model looks into parabolic forms created through straight elements. This could be achieved through bamboo as it is a cost efficient straight material, commonly used for claddings and screening. The straight lines do not actually create the curve, they merely approximate it. The parabola is the envelope of the straight lines. These forms could potentially be used in situations such as shelters, pavilions, and ceilings with the possibility of screening off spaces.

The adjacent model investigates how a simple bamboo structural frame could be used to create a shelter/pavilion space. The form is pivoted and arrayed from the single point creating a potential curved roof form.
Figure 5.44 Form Model, Fan concept
The design process began concurrently with the conceptualisation of master planning and the scale of detailing and connections in a model making form. The aim of this design method was to begin to understand the scale and tactile nature of the project. By implementing this design process of the two varying building scales an understanding could be built up of the tectonic junctions of the building and how the designs would affect the layout of the master planning design.

The material palette chosen was primarily a result of the community workshop outcomes and analysis. Choice of materials also has a large part to play in the effectiveness of the participatory process with the ability for the community to feel comfortable with the products they are using. Practicality and common sense also prevailed over sustainable romantic ideas of the community making their own building products. The choice of using readily available kiln dried (red) bricks over making our own earth bricks was one that as an architect of “power” I had to take a sensible approach to, not forcing a material on the community with which they were not comfortable or familiar. Steel was another material that was compromised on, as dressed timber in Cambodia is comparatively more expensive.

Materiality also had an influencing factor on how the building designs would be driven; the differing material characteristics such as strength, texture and aesthetics began to influence the scale and layout of the buildings. Structural qualities in materials such as steel and timber were used to lay out primary structure, whilst textural materials such as bamboo and rattan began to influence the aesthetics of the building form.
Kiln dry (red) Brick
Corrugated metal roofing
Steel hollow sections
Bamboo (treated)
Timber poles
Retan (palm leaf)

Figure 5.52 Materials Pallette, development
This model explores the tectonic relationships between the versatility of bamboo and the solidity of brick. It explores the elements of mass and tectonic frame as the elements for expression. It investigates the ground connection and the idea of the threshold and barriers in the process of entering into the building space. It also considers climate control, such as ventilation, flooding and rain protection.
This section model furthers the exploration of the performative façade of the building relationship to the social communal spaces. It considers the interaction between active space and the built elements. This design consideration was an interpretation of the bamboo pavilion that currently sits on the site, a space used for rest, sleep and interaction. This concept is an investigation into how the current social elements of the pavilion can be incorporated into the architecture of the classrooms. It considers scale appropriate for a youth, as well as areas of privacy and contemplation.
The planning has taken the form of a courtyard. The courtyard becomes an event or a centre in the wider community. Like a window focuses and controls our view, openings in the boundaries control views into the site and outwards into the landscape. From the main entrance there is a view into the school activities through the length of the site. From the south looking north into the site there is a view into the communal hub of activities. The church building is positioned to obstruct views into the private areas of the orphanage. Further investigation is required to separate bounding spaces by both attaining visual barriers and crossing physical thresholds from the external to internal environment. Topologically a threshold can be seen as a shift, a critical point of entering one space from another. Thresholds are key points of an enfolding as they mark the twist of the interior becoming the exterior and vice versa. As such, they mark the successive stages of entering immersion from first impression to total engagement.

The sketches below show initial concepts and investigation into how the view paths and thresholds can reveal, or close off, spaces. The top sketch is an investigation into visual depth of field, placement of objects and differing depths can shut out view lines. Sketch 2 investigates the threshold markers penetrating the view line, allowing partial views into spaces. Sketch 3 investigates threshold markers that reveal only glimpses of spaces.

Figure 5.61 Threshold Sketches

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Figure 5.62 Visual threshold site sketch
This model looks at how visual privacy might be generated through the use of bamboo shutters and screening. The nature of the bamboo makes reference to the vernacular building type of the area. The set out of the bamboo can form fragmentary visual openings similar to a window; there is a low level of visual penetration rather than being clear and cohesive. It also creates variable shading devices dependent on...
the spacing.

The adjacent models and drawings propose a concept treatment of the fence/boundary to the site. The visual barrier of the fence is apparent from a low angle approach to the space. However, the visual aperture from the approach at a low angle reveals the space behind. This type of treatment could be possibly used to reveal spaces of public social activities, whilst creating visual privacy for the private spaces.
Developed Design
Feedback from the community has been limited. However, initial conversations were conducted by email with further discussions and explanations over Skype. These conversations revolved around programming of the school. How would the school function with new facilities being added to the site, what spaces would need to be kept open and, furthermore, what spaces would need to be kept private? The first comments from the community were generally positive, they appreciated the open courtyard space. However, they suggested that the orphanage would need to be screened off further from the rest of the facilities. Further issues raised included the children’s outside washing and resting areas being too exposed to the wider community. Additional comments included being unsure of the placement of the kitchen and bathrooms on either side of the orphanage. The community felt that this was taking up too much of the space designated for animals and vegetation.

A large part of the conversation revolved around the choice of materials and construction techniques. The community members were intrigued by the proposal to use bamboo and earth bricks, yet, apprehensive of commitment to using the materials. Enquiring further, it was disclosed that the fear was around the use of bamboo as a structural element. Additional discussions developed into ideas of how steel could be used as the main structural element, with the bamboo being used as a screening device. Another topic of discussion was the proposal of the community to produce their own adobe earth bricks, this being a material with many benefits of sustainability and cost, whilst also being a renewable resource. In spite of this the feedback suggested that the community would not be willing to attempt the process of brickmaking as there are readily available kiln dry bricks in close proximity. Kiln dry bricks are being used as the main building material and it is possible that the community does not want to be seen using a lesser quality material.

Positive feedback was displayed to the treatment of the performative spaces at the front of the classrooms. The community resonated with the idea of a multipurpose space that was part of the whole building, likening it to the traditional rural Cambodian home with a multipurpose ground floor space.
In order to organise the site into a comprehensive whole, some sort of unifying element is needed to tie the spaces together. The proximity to the internal corner of the site, determines the spaces that surround it. This position would provide the starting point for the site layout and design.

An axis was chosen to pivot the spatial layout from the internal corner of the site. This formed the layout of the volleyball court as the central point of the main social space. This axis faces north/south, with the training centre giving the building its orientation, acting as a connector to the public and semi public spaces.

The site planning generally uses the perimeter building facilities to form a shared courtyard. The courtyard functions as common ground. Each facility’s activities generally take place on its area of the shared space. The courtyard generates an enclosure to the site; the aim is to use it as a connecting space, while allowing the various facilities a sense of autonomy. From within this enclosure focused views can be seen into each opposing social space. These focused views allow for connection to the whole site, but also a sense of separation from the differing groups. The outer community can also have focused views into the social spaces. It is hoped this shared space will create opportunities for informal social connections for the entire community through the mixed use of everyday social activities.

Figure 6.21 Space planning section sketch
Figure 6.22 Space planning site analysis
Figures 6.31 Development Site concept
In the public space the church building sits against the southern boundary with the western face being peeled back to create an open boundary edge from the main road approach. The layout of the building is formulated from the off axis grid to the main courtyard space. The church orientation allows for large gatherings to spill out into the public space if needed. The intention by the workshop participants was to have the church facility individualized, becoming the main focal point as one approaches the site. The geometries of the building are formed in a somewhat familiar shape to a typical gable roofed church, not only for visual familiarity, but also to further stress the importance of the building adjacent to the other facilities.

Feedback in the critique suggested pulling the building forward slightly as the buildings behind were being revealed too much. The planning layout also did not show how people would move from the public to semi public spaces, perhaps more investigation should be carried out into how this space could accommodate 200+ people.
The existing structure of the Mercy Home was designed so that it may have an additional storey added to it in the future. The idea would be to disassemble the existing steel roof structure and elevate with a new post and beam structure. The solidity of the existing building will be broken up with possible bamboo aesthetic screening. An open second floor structure allows for the unimpeded flow of air between the roof structure and the ceiling. Cross-ventilation is further enhanced by an abundant use of shutters and screens on the walls. The roof shields the house from direct heat radiation whilst the central roof is raised slightly, preventing an accumulation of warm air beneath the roof.
It was originally envisioned that the Mercy Home facility would be separate from the rest of the site activities; this was to be done through a solid bounding element. However, through investigation into the treatment of residential rural dwellings it became apparent that security and privacy were established through vegetation and landscaping. Trees such as coconut and mango could be used to provide a visual break from the semi public space to the more private space of the orphanage. The trees also bring a sense of scale that is appropriate to a rural dwelling, a place of familiarity and security to those children that are most vulnerable.
The structural relationships of the bamboo and steel are distinguished as primary and secondary structures; the variety in the connections will allow each joint to be read as a part in a series. The aesthetic properties of the bamboo pertain to the material being used as a screening or a decorative façade, hollow section steel elements replace the typical vernacular timber post and beam construction, the accessibility and ease of construction is one that the locals were keen to work with.

An intimate, quiet space is created above the main deck with the purpose of it being a small sanctuary space, scaled to the size of a child.

Bamboo screens are used for the walls of the classrooms with the potential for them to open up into the shared courtyard space. The solid threshold wall element can be pivoted to unfold the physical crossing into the opposing spaces.
The bathroom facility is centralised, with the two adjacent classrooms on either side. The facility is in a shared format, the outside deck space becoming a performative connection to the social spaces of the courtyard. The deck space is multifaceted with the space being designed to have numerous uses e.g. areas of relaxation, quiet time and play.

A sloping roof form was created to emphasise the importance of water collection. It was decided to integrate the traditional clay water pots with the more ‘modern’ roof forms. The pots have a distinctive form, which is attached to a cognitive cultural understanding of what they are and their purpose; the positioning clearly articulates the collection of water.

The elevation reflects the perceived idea of a bright emotive screen facade; this is also another facet towards the participatory design process with the children being able to stamp their creativity on their own building. Surplus materials from the textile training centre could be used to weave patterns in between the bamboo elements.
Spatial planning for the training centre was determined by the perimeters set out in the master-planning workshop. One of the primary needs for the school is a facility that can generate an income to support the work they currently carry out in the community. The plausible programs generated from the workshops were a textile production program and a food and hygiene program. These facilities will be formed under one umbrella, but acting as separate functions.

The training centre is positioned on the internal corner of the site with the purpose of activating the surrounding spaces. A communal deck is positioned to create a link with the two training facilities; pivot screens allow the internal spaces to unfold the threshold, crossing into the social deck space. The raised deck edge forms another opportunity for social interaction as it creates a viewing platform onto the volleyball court.
The internal planning is simple in function, with the main teaching space open plan for preparation and production tables. The textile building has the added function of a mezzanine floor with sewing machines and over-locking equipment set up. Storage areas are also accessible in each building, with the ability for the rooms to be secured at nighttime.

The design of the training centre was influenced by the climate combined with the desire that the building be constructed primarily by human power. The main structure of the building is a self supporting post and beam structure. Walls are constructed with infill brick and mesh screens that can be produced from local business nearby. A large roof spans over the communal deck space to provide protection from the radiating heat, this also allows for ventilation and airflow of the hot air build up.
The majority of Cambodia is situated within the tropics; its southernmost points sit slightly more than 10° above the equator. Shade is an important necessity in Cambodian living conditions so it is important to understand where and how there will be exposure to the sun and to create shade. Another important factor to establish is where the sun will lie at the time of communal activities. This is a time of day for people to view and interact together. Adequate shading is needed away from the sun. However, shading onto the court is not desired.

The sun rises from the east and sets in the west, the sun angle deviates 10° at the lowest point in the winter. The setting sun dictated the positioning of the volleyball court from the west, playing time is between 4pm and 6pm.
Developed Design - Shadowing Analysis

Figure 6.72 Shadowing Analysis, summer solstice, 12pm

Figure 6.73 Shadowing Analysis, summer solstice, 6pm
Developed Design - Design Outcome

The design objective for this project was to explore how architecture can influence the well-being of the community, mixing various social programs on the same site, to set up a co-existent space for social connection within the community. The proposed design has explored different methods of approaching this issue.

The final planning has been a development process of refinement that originated from the community workshops. The desire was to form a place of community and social interaction, a place that could be measured by the richness of its socio-cultural encounters, and its relation to the physical context. The planning is in the form of a courtyard space is connected with the opposing public and private areas. The courtyard becomes the shared space for informal interaction and activity. To further the ideas of relational architecture the buildings face inward towards the space, encouraging attention to relationships. Furthermore, the buildings that enclose the courtyard have specific functions that are the programmatic functional spaces to the running of the school.

The duality of the visual separation and integration of the varying spaces is an important part of the functionality of the overall site use. Combining the two social spaces means that there is an introduction of the public realm into an educational realm However, the scenario also raises issues of security. The separation between the two realms is dealt with by visually shutting the public out of the private spaces, providing visual boundaries and barriers through the courtyard transitional space. This allows a visual connection from the public realm into the educational realm without detriment to the well-being of the children.

Sustainability of material choices began as a key driver to the design of the buildings. Earth bricks, bamboo structures and waste material re-use were all considered, but proved to be idealistic thoughts. Conversations with the community revolving around these materials were met with apprehension. Feedback and discussions revealed that they were open to ideas of different material choices; however, they would prefer to use materials that could be easily understood and accepted by the community. The choice of using common building materials was established with the purpose of expanding their thoughts on how these materials could be enhanced to better their buildings.

Continuity of architectural language was also achieved, not only through both material choice and design aesthetics. The nature from which the architecture is derived references the context of the vernacular rural house,
light post and beam structures with bamboo wall partitions and screening devices being a common design strategy throughout the facilities. However, a modern language was chosen for the roof designs to all but one of the new building facilities, this being a climatic response for the enhancement of ventilation and heat disbursement.

This project is about the community driving their own design outcomes. The final success of the design depends greatly on how well it provides for its users. There are several factors that could determine the long-term success of the project; the main needs of the community are met, the buildings and their functionality, the financial sustainability of the project, the building process, involvement and buy in of the community.
Conclusion - Design Process

The initial conversations and workshops produced a thorough understanding of the initial wants and needs of the school. The workshops also successfully demonstrated community participatory involvement. However, as a result of being geographically separated during the participatory design process, there was a challenge to engage with the community in the developed design phase. This resulted in a slight, unintentional, distancing from the inhabitants, “which is contrary to one of the main principles of participatory design process.” The initial understanding from the research gathered was that to have a thorough participatory design process one must include the community in all design decisions.

The community and participatory design process has revealed limitations and challenges that could not be fully perceived before, or even during, the initial stages. The choice to always

Figure 7.01 Participatory workshop, Chhuk
re-check and question the project, whether it is helping or hurting has been thought-provoking. The proposition of hope is one that needs to be treated with care. Challenging scenarios have been evoked through this process. The question of how designs and information should be portrayed to the community became a predicament. Images of finalised building designs provide a series of implications; the images can come loaded with potential misleading promises. From the designer’s perspective this may not be intended, but with many finished rendered images a sense of finality is proposed. Hope can possibly be attached quickly to the image; the participant may begin to picture him or herself in a scenario that they could not before.

It was at this point where an architectural judgment was needed. The decision not to provide the community with final design outcomes, instead providing conceptual plans and images as shown in section 5 ‘space planning concepts’ left them a space for interpretation. This decision is one that suited the situation at present. However, it may be appropriate to reveal the full designs to Chhuk community in the future. The beauty of designing in a participatory setting is that it makes the architect go back to basics: it makes one question why one does things in a certain way. There is no right or wrong answer, only to be judged successful by how well the architecture provides for its users and, secondly, by how the community responds. The poet William Carlos Williams said that the best architect was the person “with the most profound insight into the lives of the community”.39

Providing the Chhuk community with options was not something they had experienced before. It gave them a vested interest in their school and a sense of ownership that may not have been there previously. In the end it was not only about engaging the community in the design process, it was about empowering the community to be self-sustainable and to use their own resources and strengths to enhance their quality of life.

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