

**REHABILITATION & TRAINING CENTRE FOR THE
DESTITUTE CHILDREN**

Konabari, Gazipur

By

Faisal Ash-Shafi

12108009

ARC 512 Seminar II

Submitted in partial fulfillment of the requirements

for the degree of Bachelor of Architecture

Department of Architecture

BRAC University

ABSTRACT

The rising issue of homeless children on the streets & children affected by extreme poverty has outstretched to such levels that measures like sheltering & training them has long been implemented in many places of our country. Such an institution is the 'Training & Rehabilitation Centre for the Destitute Children' in Konabari, Gazipur. The children are taken in as young toddlers, & cared for until they are adolescents ready to find some kind of work to keep their lives going. However, even though the care given is no less than necessary, the way in which the whole organization operates now does not always offer much choice to the children once they are of age to take care of their own needs. This hugely owes to the lack of proper infrastructure to facilitate that kind of learning & environment, & also accommodate the number of children it could hold considering the amount of area the site of the institution has.

These children are in need for extra nurturing, & an environment that aid in such kind of development. It is very important to understand that the needs & wants of these children vary greatly from a child who comes from a well off family. Many of these children go through severe mental trauma that affects their developmental psychology, which is an important part of growing up to be a responsible person in the society. However, the most significant problem remains to be the training & education they receive, which determines their future. The core agenda of such an institution lay fruitless if the children doesn't fit in & contribute to the rest of the society when they no longer belong to this institution. This report therefore, focuses on such special needs & wants, the proper kind of training & education, their integration with the society & the making of such spaces that provide these.

ACKNOWLEDGEMENTS

The completion of this project marks the end of the 5 year haul of the Bachelor of Architecture (B.Arch) course. Along the way were countless bumps & obstacles, which is also true for this project. These hurdles wouldn't have been possible to overcome without the help of the Almighty and the support of some amazing people.

I express my deepest gratitude for my family who had been so patient, supportive and helpful throughout the whole time. I am thankful my studio teachers, Mohammed Habib Reza, Naim Ahmed Kibria, Shajid Bin Doja and Shams Mansoor Ghani, for overseeing the progress of this project all along. I am also extremely grateful to my juniors, Afia Alam Toma, Faiza Ali and Adhora Ifrit Wahida without whose assistance and perseverance the project would never have been completed. I also appreciate the support I received from my friends, Nazia Rahman, Joynal Abadin, Zareef Sadaat Thakur, Ayesha Khalil and Saqif Shadman Rono.

Finally, I would like to thank all the people whom I met along this journey who have some role in shaping me positively. Thank you.

CONTENTS

1	BACKGROUND OF THE PROJECT	01
1.1	Project Brief	02
1.2	Project Rationale	02
	1.2.1 The Current Situation of the Organization	03
1.3	Aims and Objectives of the Project	04
1.4	General List of Program	05
2	DESTITUTE CHILDREN: NEEDS, DEPRIVATION AND THE SCOPE OF REHABILITATION	06
2.1	The Childhood Years: The Key to a Productive Life	06
	2.1.1 Needs and Wants of the Children	07
	2.1.2 Family and Nurture	08
	2.1.3 Environment and Experience: Learning and the Importance of Community	10
2.2	The Destitute Children	13
	2.2.1 Destitute Children in the Context of Bangladesh	13
	2.2.2 Deprivation and Risk Factors	14
	2.2.3 Hardships of the Destitute Children and Related Social Issues	17
2.3	The Scope and Importance of Rehabilitation	20
	2.3.1 The Effects of Rehabilitation	20
	2.3.2 Rehabilitation Centres: The Types and a Brief History	21
	2.3.3 Rehabilitation Centre for the Destitute Children	22
	2.3.4 Vocational Rehabilitation: The Importance of Training	24

3	SITE ANALYSIS	27
3.1	General Overview of the Area	27
3.2	Physical Features of the Site	29
3.2.1	Access to the Site	29
3.3	Site Surroundings	30
3.3.1	Road Networks and Public Density	30
3.3.2	Surrounding Building Types and Height	33
3.4	SWOT Analysis	36
4	CASE STUDIES	38
4.1	SOS Children’s Village & High School, Bogra	38
4.2	Orphanage at Ramu, Chittagong	42
4.3	Children’s Nursing Home, Tsukuba, Japan	44
5	PROGRAM DEVELOPMENT	47
5.1	Program as Specified by the Organization	47
5.1.1	Functional Flow between Zones	48
5.2	Proposed Detailed Program List	50
5.2.1	Administrative Block	50
5.2.2	Staff Quarters	50
5.2.3	Dormitory	51
5.2.4	Social Centre	51
5.2.5	School	52
5.2.6	Audio Visual Block	53
5.2.7	Training Centre	53
5.2.8	Consideration for Circulation	54

5.3	Functional Flow Diagram of Detailed Functions	55
6	CONCEPT AND DESIGN DEVELOPMENT	56
6.1	Introduction	56
6.2	Conceptualization	58
6.2.1	Self Realization	58
6.2.2	Realization to Conceptualization	59
6.3	Design Development First Phase	61
6.3.1	Using Contextual Analysis	61
6.3.2	Formation of Spaces in Site	62
6.4	Design Development Second Phase	64
6.4.1	Form Generation and Topology	64
6.4.2	Zoning and Plan Development	65
6.5	Design Drawings	67
6.6	Rendered Perspectives	73
6.6	Model Images	74
	CONCLUSION	76
	BIBLIOGRAPHY	77

LIST OF ABBREVIATIONS

BBS	=	Bangladesh Bureau of Statistics
UN	=	United Nations
UNCRC	=	The United Nations Convention on the Rights of the Child
UNICEF	=	The United Nations Children’s Emergency Fund
ECD	=	Early Childhood Development
CGECCD	=	Consultative Group on Early Childhood Care and Development
BMI	=	Body Mass Index
PM&R	=	Physical Medicine and Rehabilitation
PT	=	Physical Exercise
CEDEFOP	=	European Centre for the Development of Vocational Training
VRA	=	Vocational Rehabilitation Association
VET	=	Vocational Education and Training
ILO	=	International Labour Organization

LIST OF FIGURES

Fig.1.2.1.a. Current Administration Building

Fig.1.2.1.b. Current School Building

Fig.2.1.1.a. The Effects of Early Nutrition

Fig.2.2.2.a. The Hierarchy of Needs

Fig.2.2.3.a. Economic Profile of the Street Children of Bangladesh

Fig.2.3.4.a. Benefits of Vocational Education and Training

Fig.3.a. Aerial View of Site with Nearby Landmarks

Fig.3.3.1.a. Traffic Condition in Main Highway

Fig.3.3.1.b Light Settlements around Site Perimeter

Fig.3.3.1.c. Paths

Fig.3.3.1.d. Possible Path Connection to Site

Fig.3.3.1.e. Public Density

Fig.3.3.1.f. Possible Nodes after Connection

Fig.3.3.2.a. Building Types

Fig.3.3.2.b. Building Heights

Fig.3.3.2.c. 10 storied factory just against the wall of the site

Fig.4.1.a. Views of School and Around, with Amphitheatre, Gazebos and Ramps

Fig.4.1.b. Family Houses with Courtyard

Fig.4.1.c. Family Houses Backyard

Fig.4.1.d. Amphitheatre

Fig.4.1.e. Secondary School Corridor

Fig.4.1.f. Outdoor Circulation

Fig.4.1.g. Relationship between zones

Fig.4.2.a. Backyard

Fig.4.2.b. Indoor-Outdoor Relationship

Fig.4.2.c. Building & Playground

Fig.4.2.d. Classrooms, Good ventilation and Natural Lighting

Fig.4.3.a. Playground Around Dorm

Fig.4.3.b. View from Road

Fig.4.3.c. Plan Showing the Different Units

Fig.4.3.d. Bedroom Facades

Fig.4.3.e. Group Living Unit Plan

Fig.4.3.f. Typical Bedroom

Fig.4.3.g. Dining Room from Wash Services

Fig.4.3.h. Dining Room from Living Room

Fig.4.3.i. The Hallroom

Fig.4.3.j. Approach

Fig.5.1.1.a. Functional Flow Diagram of Broader Zones

Fig.5.3.a. Functional Flow Diagram of Detailed Functions

Fig.6.1.a. The Basic Needs of Life

Fig.6.1.b. Risk Factors Associated with the Activities of Destitute Children in Bangladesh

Fig.6.2.1.a. Immense Potential of the Free Children

Fig.6.2.1.b. A Child is Not Alone

Fig.6.2.2.a. The 3 building blocks for utilizing the potential of the Free Children

Fig.6.3.1.a. Connecting the Site with the Mosque & *Kishori Unnayan Kendra*

Fig.6.3.2.a. Hierarchy of Spaces

Fig.6.4.1.a. Breaking of a Chunky Form to Create Smaller Forms and Permeability

Fig.6.4.1.b. Connecting Forms Using Bridges & Creation of Spaces with Variety

Fig.6.4.2.a. Development in Plan

Fig.6.4.2.b. Zoning in the Site

Fig.6.5.a. Ground Floor Plan

Fig.6.5.b. First Floor Plan

Fig.6.5.c. Second Floor Plan

Fig.6.5.d. South Elevation

Fig.6.5.e. Section AA'

Fig.6.5.f. Section BB'

Fig.6.5.g. Section CC'

Fig.6.5.h. Axonometric

Fig.6.6.a. View towards Female Dorm Cluster from Secondary Play Space

Fig.6.6.b. View from the Mosque towards *Gach Tola* and Dorms

1 BACKGROUND OF THE PROJECT

The children of today are our assets for tomorrow. They are ones who will be build the world of tomorrow and that's why it is important that their development is sound. Whatever the children are going through today prepares them for the future. If they are healthy physically and mentally, they will grow up as contributing adults of the society. If neglected, they may become liabilities to the society. Therefore, it is important how the children are treated, cared and guided for tomorrow.

However, our country Bangladesh is a developing one with lots of issues like overpopulation, poverty and unemployment to name a few. These problems in turn has created a scenario where many of the children of our country are subject to ignorance and negligence. This has forced these children into destitution where they are deprived of needs and can't properly support themselves. They don't have a roof under their head and doesn't get to eat two proper meals a day. Almost 50% of Bangladesh's primary school students drop out before that complete fifth grade, as crushing poverty drives them into informal employment sector (Haq, 2013). This condition is even worse for the children living in streets without a proper home, who work for about 9-12 hours a day in the informal sector earning way below the minimum wage. As Haq (2013) points out, 5.8 million children are employed in the informal sector who doesn't have a proper home & are unable to attend school or pursue technical training due to poverty. That is about 11.3% of the total labour force of Bangladesh, as per the Bangladesh Bureau of Statistics (BBS).

1.1 Project Brief

Name of the Project: **Rehabilitation and Training Centre for the Destitute Children**

Project Type: **Rehabilitation and Training Centre**

Client: **Ministry of Social Welfare**

Location: **Konabari, Gazipur, Dhaka**

Site Area: **~ 9.4 Acres**

1.2 Project Rationale

The children deprived of basic needs and wants are forced into such a condition. They too also have the rights to live a healthy happy life amongst the society (UNCRC, 1989). The problem is on the rise given the population of our country. However, we can use this population to our advantage rather than thinking of it as a hindrance. Therefore, it is evident that the issue of destitute children who lack the basic necessities of life is worth some effort to start the wheel of change. The reach of this project is very small compared to the problem in hand, but it can be an illustration to the solution of the problem.

In a rehabilitation centre, the children will have their basic needs fulfilled, and given with opportunities that will enable them to sustain their own lives satisfactorily when they grow up.

1.2.1 Current Situation of the Organization

The Rehabilitation Centre for the Destitute Children which is currently situated in Konabari, Gazipur strives to address the issue by taking in a few of such children & caring for them. It is an organization under the Ministry of Social Welfare, with the idea of sheltering & training the destitute children until they are fit & trained to get themselves proper work in the society. The care given is warm, & the children live together as a family with their caretakers.



Fig.1.2.1.a. Current Administration Building (Author) **Fig.1.2.1.b.** Current School Building (Author)

However, the current situation of the institution seems bleak due to lack of proper infrastructure & training equipment. The school building is in poor condition for classes to be held, & there is no proper training space where the children can gain technical skills which is vital for their next stage in life. The dormitory doesn't provide enough facilities required, & the space designated for the staff is simply inadequate. This calls for a total reconstruction of the infrastructures with better capacity and condition for the efficient rehabilitation of the destitute children.

1.3 Aims and Objectives of the Project

The primary aim of the project in general terms would be to provide with the best possible care and services to the children so that they come out as fully functional individuals who are able to support themselves. The following are few major objectives that this project of rehabilitation would like to address.

- Provision of the basic needs that are required to sustain life, namely, food and water, shelter, clothing, proper sanitation and healthcare, and education
- Arrangement of proper education and training that will help them secure their future and also contribute to the society
- Provision of a positive environment and supportive community where the development of the child would be free and not hindered
- Help the children regarding different types of physical and mental trauma that they may have acquired due to deprivation or abuse
- Facilities of playing and recreation to aid in the development of the children
- Integration with the surroundings for acceptance and experience exchange between the society and these children

The project aspires to make the children independent, healthy – physically & mentally & financially secure after their voyage with the institution is over. Therefore, they will be as good as any other citizen in the country & be able to look after themselves, & contribute to the society as well.

1.4 Program

A general list of programs is laid out below according to the infrastructures required for this project:

- **Dormitory**
- **School**
- **Training Building**
- **Audio Visual Hall**
- **Social Centre**
- **Administrative Building**
- **Staff Quarters**

2 CHILDREN: NEEDS, DEPRIVATION AND THE SCOPE OF REHABILITATION

2.1 The Childhood Years: The Key to a Productive Life

According to the UNCRC (1989), a child is a human being below the age of 18 years unless the law of the region state otherwise. This age threshold known as the age of majority is different in many countries, and greatly depends on social recognition of adulthood.

Children, just like adults, have some basic needs and necessities of life if not more. It is an important stage of life where they would require the utmost care and affection. Proper development in this stage of life helps the children to grow up as a responsible and contributing member of the society. Appropriate physical growth and well-being in children would mean that they are fit enough to carry out daily life activities. However, if a child is not well developed psychologically and socially, just physical well-being doesn't help the child nor the society. Therefore, proper development would be a well-balanced situation where children are fully functioning in their minds and physically.

Bangladesh is a highly populated country, and a majority of this population is the children. Barkat et. al (2009) provides with the statistics that about 44% of the total population of Bangladesh is children under the age of 18. Therefore, it is only natural that the right upbringing of these children is the key to the future success of the country.

2.1.1 The Needs and Wants of the Children

The traditional list of “basic needs” includes food and water, shelter and clothing as Denton (1990) describes. These are the things that needed for the life to sustain. However, it is now accepted that sanitation, education and healthcare are also basic needs of a person. Proper sanitation keeps people clean and away from different types of diseases, and thus is necessary for physical well-being. However, as a child grows he or she will suffer from several illnesses, which is a natural process of growing up. Therefore, without healthcare, the child may become crippled or in worst cases die. Children will also need education to know and interact with their environment and support themselves in future. It is, therefore, vital for a child in his development years for all these basic needs to be fulfilled. This ensures that the development and growth in the child is positive and optimal. Tanner (1989) briefs up this whole issue by saying that the main elements that ensures that a child grows into a healthy person is by ensuring his nutrition and a positive environment.

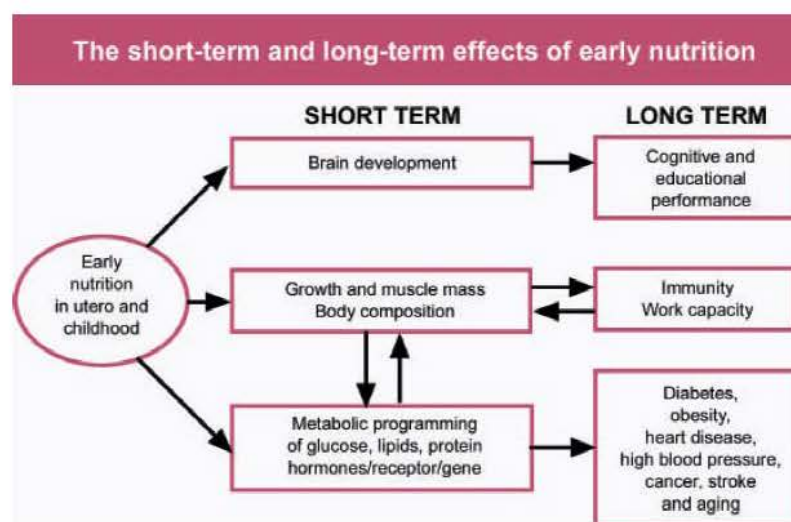


Fig.2.1.1.a. The Effects of Early Nutrition (UNICEF, 2001)

Apart from the conventional basic needs, children may have other wants and aspirations as well. Children may want a colourful dress or a flashy toy once in a while. Sometimes he or she may also want to choose what he or she eats. These are not mere wants of luxury from the children, but is the will to try out new things or to feel the experience of doing different things. These wants can many times be equally as important as the basic needs, because through these wants they also learn and perceive the world around them. Meeting these wants of the children doesn't necessarily spoil them. But it teaches them that they are valued, helps them develop trust, decreases stress and distress, assists them in proceeding down a more optimal developmental trajectory, and decreases the likelihood of developmental and behavioral problems. (Dunn and Kontos, 1997).

Nevertheless, above all material needs and wants, the often overlooked need of a child is to be loved and cared for. According to Colin (1996) a child requires meaningful attachment for positive cognitive development. The feeling of connectedness, warmth, love and security makes the child feel respected and valued. Praise, recognition, opportunities of self-expression and developmentally-appropriate exercises are important in the psychological development of children as Greenspan and Brazelton (2001) points out.

2.1.2 Family and Nurture

It is in fact of the essential wants of a children is to be cared for. And it is the parents in most of the cases who are responsible for giving this care and warmth to the children. It almost always the case that the parents are the ones providing the children

will the basic necessities of life and whatever else they want. Parents are indeed the most important people for most cases for children in the early years.

Kelly (1996) argues that time and attention from parents can be considered as a need rather than being option that the child should receive. Contribution of the parents and the family are vital for the development in children:

- A child can develop a 'sensitive attunement' with the positive support and love from a family. This means that a child will have his or her inner confidence boosted which will help them to carry out difficult tasks independently and promotes effective personal functioning (Siegel and Solomon, 2003).
- Along with the basic needs, the parents ensure the physical protection, safety and regulation of the children. This provides the children with the feeling of security, safety, stability and trust which in turn guide the development of the children's behavior in future. (Tahseen, 2012)
- Parents are also responsible for encouragement and thus stimulation of a child's abilities and act as a companion and help them in troubled times (Greenspan and Brazelton, 2001).

Greenspan and Brazelton (2001) further instigates the idea that stable, supportive and cultural continuity throughout a child's life has a long lasting constructive effect on the child. This is obviously something that can be get from living in a loving family with a supportive community. A reassuring community is very much responsible for social and cultural development in a child. Also, encouragement of positive actions

provide the children with necessary skillset and values to carry out useful tasks in the society.

2.1.3 Environment and Experience: Learning and the Role of a Community

The intelligence of a child is not merely inherited from his or her parents, but mostly develops through stimulation from the child's environment & experience, as pointed out by Mahmud (2011). His senses would begin to grow & respond better to its surroundings when he or she will have opportunities to challenge them, exercise them, & finally learn from them. There seems to be series of learning about a child's environment from birth to adulthood that he or she has to go through. Mahmud (2011) further acknowledges this by saying that it is important to realize how a child is received, accepted, stimulated & appreciated in his environment & how he learns to feel about himself have a great influence on how he lives & grows into adulthood.

All these positive experiences in a child's environment can be given by a warm community. For a child to grow up into a person who can contribute to the society means that he or she has to grow up and be integrated in such a society. Being segregated from the society as a child might mean that he will always remain segregated as an outcast or burden. This gave rise to the idea of 'child integration' which is the inclusion of children in a variety of daily activities of families and community. Paradise & Rogoff (2009) discusses that this kind of children's integration in family and community activities provides a learning environment as children are able to observe and pitch in as they feel they can. Therefore, such integration would allow the children to learn more, accept the community around him, and would to give back to the society in future. After a child is provided with the basic needs, and

then with the nurture of a family, the feeling of being integrated in a community or society makes it complete for the child to grow up as a fully functioning member of the society.

Learning begins as soon as the child is born and he or she learns to sense. In this time through interaction and experience, a child begins to gather knowledge (CGECCD, 2013). However, it is also important that a child is given some form of education from others. Education in childhood is essential to the child's physical, emotional & social development. While the perception of education may vary, it is accepted that education is a broad aspect & is very important for the children, especially till the age of 8 (CGECCD, 2013). Even though the learning continues throughout a person's life, the learning capacity is most well demonstrated in these early childhood years. Just like parents' encouragement stimulates the children, education stimulates the children's mind in similar ways. With proper stimulation, the child goes through significant psychological developments that can enhance his or her emotional, social and intellectual capabilities (Bradley, 1998). The learning experience of children during development years guides how they see the world around them in future. However, it is not just the development in these years that education provides, it also provides the children with knowledge to live and support their lives in future.

It is often forgotten that a major part of a child's education is indeed playing. In our context the concept of playing is even more fitting because playing combines both the aspect of community integration through social interaction and also the aspect of traditional education like learning how to read and write. Playing is the most effective way in which a child can learn.

When you asked me what I did in school today,
And I say, I “Just played.”
Please don’t misunderstand me.
For, you see, I’m learning as I play.
I’m learning to enjoy and be successful at my work,
I’m preparing for tomorrow.
Today, I am child and my work is play.

- (Anita Wadley, 1974)

A child can learn through playing completely by self or by playing with others. In most cases, these people are the parents, peers & teachers. It is believed by Anderson-McNamee (2010) that playing indeed is important and responsible for psychological development of the mind in a child, not to mention the physical health & growth that is related to sports and games. In young children, playing with others also helps to develop language & social skills. Playing opens up the children to new dimensions & thus they learn in the process. Communicating emotions, the ability to think, being creative & to be able to solve problems are all qualities that can be harnessed by as a child from playing in a social setting or community (Anderson-McNamee, 2010).

2.2 The Destitute Children

“Any child who is not getting proper care even if his/her parents are alive, e.g. father is a criminal and is in jail and mother is not well so there is no one to take care of the child, so the child will be called as destitute child” (Chingtham, 2014). Simply, destitute children would refer to the children who are deprived of the basic necessities of life. These children may include street children or orphans who are unable to meet their basic demands of life. As of today, according to the UNICEF, there are an estimated 100 million children living in the streets in the world who are devoid of the basic necessities.

2.2.1 Destitute Children in the Context of Bangladesh

About 26.5 million children in Bangladesh fall below the national poverty level which is about 42% of the children population of the country (Barkat et. al, 2009). And the number of homeless children in Bangladesh is around 400 thousand, and out of these about 150 thousand children do not know about their parents or lost them. (Bangladesh Songbad Sangstha, 2002). These children who lack shelter find the streets as their home. In Dhaka, vehicle terminals like Kamalapur Railway Station, Tejgaon Railway Station & Sadarghat Launch Terminals are crowded with such children lacking basic amenities of life (Jalal, 2013).

According to Chingtham (2014), there are multiple forces that drive a child into destitution. The major reason for destitute children is death of the parents. Then there is the reason of broken families which forces the children into destitution. Most times, this problem arises because of poverty which results in the families falling apart.

Along with these, other major problems include sick parents, extremely poor parents, and parents abandoning the children. In such cases, the child is completely helpless and thus forced into destitution devoid of basic needs and wants. Jalal (2013) adds a few reasons for the context of Bangladesh like disasters and famine, violence and abuse, and being lost. Therefore, it is evident that there are a lot of reasons that gives rise to destitute children.

2.2.2 Deprivation and Risk Factors

Deprivation in destitute children is broken down into categories according to the basic needs of life (Majengwa, 2016; Chingtham, 2014):

- Shelter Deprivation: This is the most common form of deprivation. For the case of destitute children, most of them are deprived of a proper roof to live under.
- Food and Water Deprivation: Starvation can be the most adverse form of this deprivation while unhygienic and insufficient foods are more common form. Sometimes, there can be scarcity of water or unhygienic water. According to Subarna et. al (2014), among the destitute children of Bangladesh, 56.7% to get to eat only once daily.
- Sanitation Deprivation: Lack of proper provision of toilets and improper sewage system.
- Health Deprivation: Lack of health services, the more problematic is the fact that the children may not understand that they have some physical illness which can be treated.

- Education Deprivation: With the destitute children lacking more fundamental needs like food, education remains a dream for them.

In congruence with statistics for Bangladesh given by Barkat et. al (2009), 57% of destitute children are deprived of sufficient food, 64% deprived of sanitation facilities, 41% lacks healthcare and 60% devoid of information.

All of these may well be very severe forms of deprivation that would affect the children, but other deprivation of wants like a family, love, attachment and social bonding can be as equally devastating for the children. During the age of growth and development, any deprivation of the basic needs and natural wants of the children manifests itself negatively in their next stage of life.

One such risk is the physical ill-being of the child later in life or during the growing years. These health problems arise from lack of basic need like proper food and water, clothing, sanitation and healthcare. One of the primary problems that children face is malnutrition due to lack of proper food and nutrition. A malnourished child will have physical problems like stunted height, thin body, very poor energy levels, swollen limbs and abdomen (UNICEF, 2010). This means he or she will not be able to perform up to his or her full potential, and more importantly it will cripple the child's future. The children will grow up with physical problems or deformity which will not allow them to join the workforce & thus can't support their own selves. According to Barkat et. al (2009), about 46% of the destitute children in Bangladesh are stunted and 40% falling under the BMI Index, meaning underweight. The same is true when children lack clean clothes, proper sanitation and water. Unclean clothes and improper sanitation are main reasons for the children to get deadly and life-

threatening diseases. If they don't have access to healthcare, the children would suffer and may develop disabilities, and in the worst cases they may lose their lives because of these diseases.

If the needs and wants of the children are not fulfilled properly, it can also give rise to psychological problems. Without the parents, family & feeling of being part of a community, a child will lose all the benefits of having those as discussed but also further develop problems like the inferiority complex. Childhood of every person is said to be the most important period of life, as the future life has great influence on it. Children from birth to age 12 are said to be highly sensitive to their surroundings & personality development occurs in this period. Being exposed to unwanted environment and deprivation in this time of life many have negative effects in behavior in their later life (Jalal, 2013). This also has the same implication as with the children with physical issues, because if the children are not mentally sound then they cannot perform their job properly to contribute to the society when they grow up. If the children are deprived of such needs it will also mean that they will not have the required knowledge, education or skillset to work in the society.

Maslow (1954) in his theory of 'Hierarchy of Needs' further clarifies this aspect that the basic needs like physiological needs and feeling of safety are bases for children to have a healthy development. Fulfilling these base needs means that the children will feel a sense of belongingness to their environment and understand their roles. This will help them keep their self-esteem boosted and therefore have a proper understanding of own self as an adult to perform and contribute to the society.

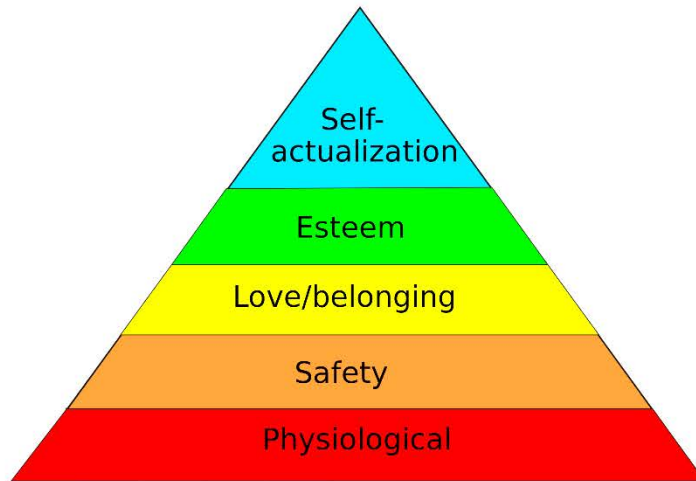


Fig.2.2.2.a. The Hierarchy of Needs (Maslow, 1954)

Disruption of needs and wants at base level of the pyramid would mean the higher attributes in the pyramid level will be difficult to be developed. Because of deprivation the children may have all these sorts of physical and psychological issues, along with the lack required knowledge. This means that they will not be able to work as functioning individuals in the society, and eventually become a burden. In worst cases, it may increase the rate of crimes and abuse in the society, and force the next generation into destitution as well creating a toxic cycle in the society.

2.2.3 Hardships of the Destitute Children and Related Social Issues

Most of the destitute children are forced to engage in different kinds of work because they have to support themselves. As per Barkat et. al (2009), about 7.4 million children are working across the country, which is one in every six children in Bangladesh. Majority of them acquire the resources needed to support life from begging and various types of dirty labour work that are rejected by the casual wage labour force (Chingtham, 2014).

Table 2. Economic profile of the street children

<i>Category</i>	<i>No of Respondents (N=150)</i>	<i>Percentage</i>
<i>Doing any work now</i>		
Yes	141	94.0
No	9	6.0
<i>If yes, what type of work mainly engaged in</i>		
Begging	28	18.7
Sell flowers & newspapers	20	13.3
the road Collect things from dustbin and sell	58	38.7
Collect old papers and other things	32	21.3
Others	12	8.0
<i>How much did earn last week in BDT</i>		
100	18	12.0
300	35	23.3
400	65	43.3
500	32	21.3
<i>How many hours respondent work on the street</i>		
8-10 Hours	53	35.3
10-12 Hours	97	64.7
<i>What type of behavior passer-by shows to you</i>		
Poorly	97	64.7
Fairly	38	25.3
well	15	10.0
Average Working Hour in a Day (M) = 10.62		
Average Daily Earning in BDT (M) = 362		
*(1 BDT= 0.013 USD)		

Fig.2.2.3.a. Economic Profile of the Street Children of Bangladesh (Subarna et. al, 2014)

In Bangladesh, around 18.7% beg, 13.3% sell flower or newspapers, 60% are 'tokai' meaning they collect things from street or garbage and sell it elsewhere and the rest 8% are involved in other professions. These children work for long works, on an average of 10.6 hours a day in dirty environments, but the income very low, an average of 362 BDT daily as child work is less valued. Moreover, people are mostly behaving poorly with these destitute children with about 76.7% of these children facing some sort of harrassment. (Subarna et. al, 2014).

Of the 8% children who are involved in miscellaneous professions, many maybe related to crime and prostitution, or other similar professions where they are subject

to extreme abuse. About 41% of the destitute children have not heard about HIV/AIDS at all (Barkat et. al, 2009). And an astoundingly about 88% of these street children take some form of drug which is detrimental to their physical or mental well-being according to Subarna et. al (2014). Jalal (2013) adds to this issue by saying that these children are vulnerable to victimization, exploitation, & abuse of their civil & economic rights. These abuse & exploitation in turn lead to a corrupt society.

2.3 The Scope and Importance of Rehabilitation

The American Heritage® Dictionary (2011) gives the meaning of the word 'rehabilitate' as "to restore to a good health and useful life, as through therapy and education". Therefore, rehabilitation can be explained as the process of helping an individual achieve the highest level of function, independence, and quality of life possible. However, rehabilitation does not reverse or undo damage caused by mental or physical trauma.

2.3.1 The Effects of Rehabilitation

The destitute children, due to deprivation of basic needs and abuse, many a times develop mental trauma or poor physical health and injuries. Jalal (2013) discusses about these destitute children being victims of physical and mental abuses, and exploitation to disgraceful and dangerous work. These along with the deprivation puts them in severe mental trauma. Rehabilitating them would mean that their psychological condition can be improved with the care in a community and proper nutrition with physical exercise would restore the children to optimal health, functioning and well-being. Once the basic needs of the children are fulfilled, the children can climb up the ladder of Maslow's Hierarchy of Needs (1954) where they can have satisfactory feeling about themselves. The children will suffer less from inferiority complex, and get their hopes of being a part of the society which will motivate them to work on their well-being and future. These children when grown up will want to give back to the society. As per Senelick (2012), rehabilitation is the key

to getting back to a functioning level where one can live happily and hopefully work to support themselves.

Jalal (2013) further points this out that rehabilitating the children doesn't only give the children a better future, but will increase the employment in industries and other sectors. This will boost the overall economy of Bangladesh. Moreover, effective rehabilitation of these destitute children would mean that corrupt parties will not have any power to corrupt the society any more through children. Therefore, the unsocial activities will decrease like drug dealing, robbery, theft, prostitution, etc.

2.3.2 Rehabilitation Centres: The Types and a Brief History

Throughout histories, people who were crippled or socially unaccepted were put away from the society and into isolation. These people who were not able to contribute to the society or thought to be harming the society in some way were neglected and seen as a lost cause.

The society didn't care to fix their mistakes or restore their lost abilities until around the mid 18th century (Clark, 2007). This was mainly a movement to help people with addiction. Therefore, the first rehabilitation centres were set up which were called 'sober houses' where men lived collectively, away from the temptations of the world. This notion of rehabilitation was then also used to reform and correct criminal offenders rather than punish them and segregating them. Rehabilitation in a community rather than segregation seemed to be better at correcting the criminals.

This idea of taking in people and giving them facilities to help themselves, all in a community setting was taken in by the medical sector. Soon, around the 1950's the

idea of Physical Medicine and Rehabilitation (PM&R) came into being which is believed to improve the conditions of people suffering physical trauma and injuries (Verville, 2009). This type of rehabilitation emphasized to restore and enhance the well-being of the patient through the use of medicines.

Though the knowledge of physical therapy (PT) dates back to earlier times, it was around this period of late 1950s that physical therapy started to gain much appreciation and was taken as a tool to alleviate health conditions of people in rehabilitation centres (Klinteberg, 1992). It was used with conventional rehabilitation medicines and became a method of primary treatment in the PM&R centres. Meanwhile, rehabilitation centres claiming to cure trauma and injuries solely by using PT sprouted up and gained much popularity. This was mostly the case with rehabilitation centres dealing with disabilities.

After a few years, the idea of psychosocial rehabilitation came into being where the individuals with mental health problems were helped with community integration (Gill, Pratt, Barrett, and Roberts, 2006). Along with psychotherapy, special attention was put to supporting daily functioning and social interaction.

Today the notion of rehabilitation centre is that of a place where people can go to restore their good condition, and try to enhance it along with operation and capacity (Jalal, 2013).

2.3.3 Rehabilitation Centre for the Destitute Children

As for the case of children, a mixture of the different types of rehabilitation procedure would be required, where their physical well-being can be restored through regular

PT and psychosocial development can occur by growing up as a member of a supportive community. However, rehabilitation of children is very different from adult rehabilitation. Camden, Tétreault and Swaine (2010) stresses this point by saying that rehabilitation for children refers to all the services required to foster social participation of the children, and not solely to specialized interventions. This means that while an adult may be rehabilitated just fine through individual physical therapy, proper nutrition and care, a child will require much more interaction and social touch from the community around him or her. Also, growing children have more needs than adults and thus would require more attention and care. This calls for the need for more caretakers and staff that would be required for an adult rehabilitation of the same size.

While a rehabilitation centre for the children is quite different from an adult rehabilitation centre, a rehabilitation centre for the destitute children requires some special consideration. It is important to realize that the children come from deprivation, and the foremost thing that they require is shelter and food. The next requirements for these destitute children is proper sanitation and clothing. While other rehabilitation centres would be focused on addressing special problems like addiction, crime or disability, rehabilitation centres for the destitute children would address more general issues like making sure of the basic needs and proper development of the children from thereon. Many a times these are the only requirements of a child to grow up as healthy and functioning individuals. (Chingtham, 2014)

After the basic needs are met, then they can be given the conventional rehabilitation procedures, if needed, like physical therapy through exercises in playfields and

psychosocial development by giving proper attention in an interactive community. It can also be seen as 'children home' where a child grows up having their needs and wants meet in a social environment, just like they would in a family. The idea of community-based care can be used here. In a community-based care, children are put in a family in the community and the guardians will provide individual care and nurture in the context of a family and community. Such guardians, are sometimes designated in such rehabilitation centres, who will have a few children they will be responsible for.

But then, there can be special cases of illnesses or addiction in the children taken from the streets (Chingtham, 2014). These special cases have to be dealt separately but given all other facilities that the rest of the children are getting, which goes beyond the scope of 'children homes'. Therefore, rehabilitation centre for the destitute children has to restore a wide range of issues, considering at the same time the growth and development of the children.

2.3.4 Vocational Rehabilitation: The Importance of Training

In the year 2001, an organization in UK named Vocational Rehabilitation Association, UK (VRA) came up with the idea of 'Vocational Rehabilitation'. It is a process which helps people with various issues and obstacles to overcome barriers to accessing, maintaining and returning to useful occupations in the society ("Vocational Rehabilitation Association, UK", 2001). This means that along the same time a person is being treated for trauma, this kind of rehabilitation also prepares the person so that he or she can perform as contributing members of the society.

The rehabilitation of destitute children is further strengthened by embracing this modern concept of vocational rehabilitation. Because, this is nothing but proper vocational training given in a rehabilitation centre, and this concept has been there for long time. This is most important in the case of a child rehabilitation centre because the child will grow up to be an adult someday and cannot remain in the centre. Therefore, it is only logical that the child is given some kind of training in the years while he is in the rehabilitation centre so that he or she can perform in the society outside when the child matures. Subarna et. al (2014) recommends such ventures where the destitute children would be given education and vocational training along with the shelter during nights.

Vocational Education and Training (VET) can be defined as a link between primary vocational training and further education within a structure of lifelong learning (Rauner, 2008). Vocational Education can be called as technical education because it teaches people practical work that can be readily used in the field. Vocational Education and Training (VET) aims to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market ("Terminology of European Education and Training Policy", 2014). It is, therefore, an essentially non-formal education but has a particular application in the practical field. Jalal (2013) discusses about the vocational training of the WEMA Center by saying that the program equips the youth with basic literacy and livelihood skills ranging from tailoring and dress making, cookery to computer skill. The program helps the young people to explore opportunities for employment or setting up their own small business. The benefits of vocational training are quite a handful. According to Lettmayr & Riihimäki (2011) vocational training can help both the individual and the

country, and both economically and socially. The economic benefits at individual level can be earnings and career development. The social benefits for the individual would be satisfaction and motivation. On a larger scale, it can boost economic growth, reduce crime and increase social cohesion.

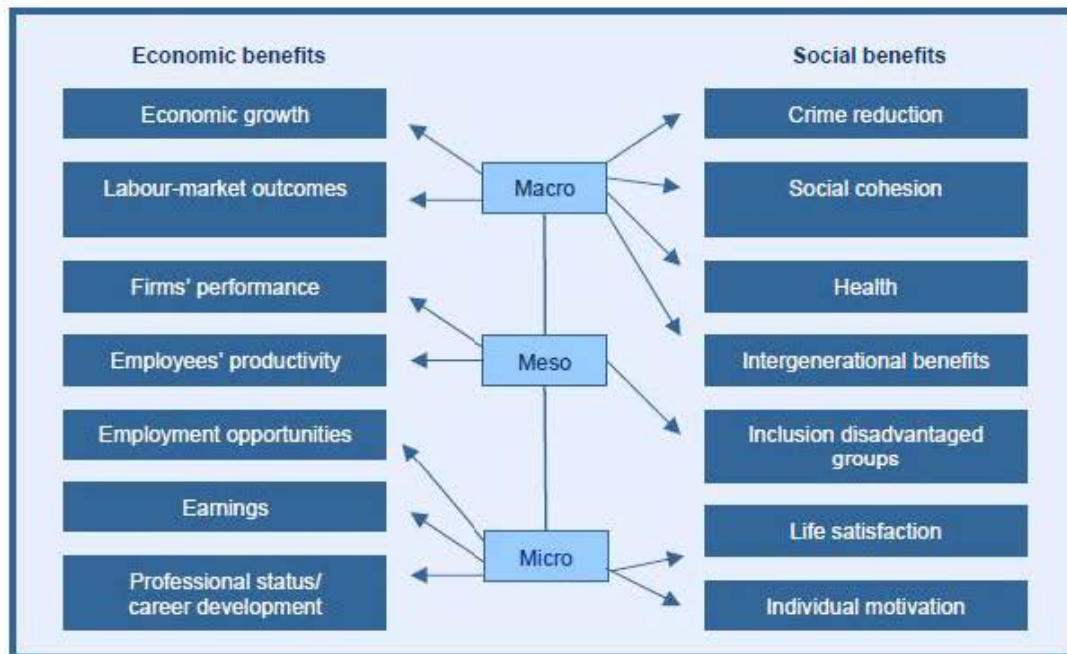


Fig.2.3.4.a. Benefits of Vocational Education and Training (Lettmayr and Riihimaki, 2011)

According to Ahmed and Khan (2014), the unemployment of rate of Bangladesh is 4.5% & under-employment rate 20.3%. Considering the rates and population of destitute children, the situation can go either ways. With negligence of these children, the situation will not improve but become even worse. But with proper rehabilitation and training, these children can change the situation of current unemployment and start the blowing the winds of change.

3 SITE AND CONTEXT ANALYSIS



Fig.3.a. Aerial View of Site with Nearby Landmarks (Google Earth, 2016)

Location: Konabari, Gazipur

Site Area: 9.4 Acres

3.1 General Overview of the Area

Gazipur is a district which is about 2 hours drive from Dhaka City. Being in the city side, it has seen much development and migration lately. Konabari is a region which falls in the middle along the Dhaka-Tangail Highway. Much of the development in Gazipur is related to industries and it is the same case with Konabari. It has become

an area of high industrial activity. A lot of factories like garments, food, metal and pharmaceuticals have grown in this region. The trend is on the uprise, more and more factories are being set up in the region. Around these factories are some residential areas where the factory workers and working class lives. In such an industrial and busy area sits the current site for the Rehabilitation & Training Centre for the Destitute Children.

3.2 Physical Features of the Site

- Topography: The topography inside the site is flat, but it is a little depressed from the road level
- Vegetation: There are lush green landscapes inside the site providing a soothing environment. But it is only inside the site, site surroundings are filled with industrial buildings, with very little vegetation
- Shape & Orientation: An overall rectangular shapes with some major fragmentations around the perimeter. The site is elongated along the north-south.

3.2.1 Access to the Site

The site is approached directly from the main Dhaka-Tangail-Jamalpur Highway. The entry is through an 18' brick soled road connected to the main highway. There are other secondary connections to the site, most of which aren't much used lately.

3.3 Site Surroundings

3.3.1 Road Networks and Public Density



Fig.3.3.1.a. Traffic Condition in Main Highway
(Author)



Fig.3.3.1.b Light Settlements around Site Perimeter
(Author)

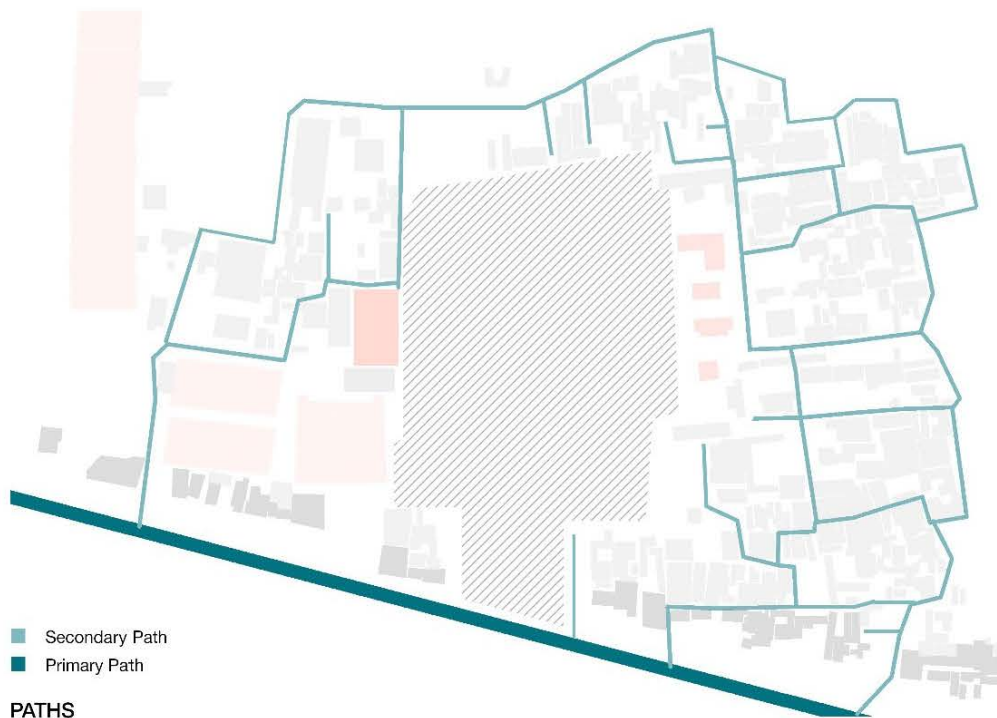


Fig.3.3.1.c. Paths (Author)

The primary path around the site would be the Dhaka-Tangail-Jamalpur highway which is around 60 feet wide. The traffic condition in this road is terrible, always congested with high traffic day and night. Therefore, the traffic movement is very slow and most times completely stuck. There are a few secondary paths, one which goes

into the side, and others in close vicinity to the site. These paths leads to some small residential zones in which there are narrow alleyways serving as tertiary paths.

Some paths when analyzed are seen to halt abruptly and suggests that it would be more convenient if those paths could be connected to the road network. One such path is the one which goes into the site and could be connected to the network of paths that are on the east side of the site, i.e. the residential zone.

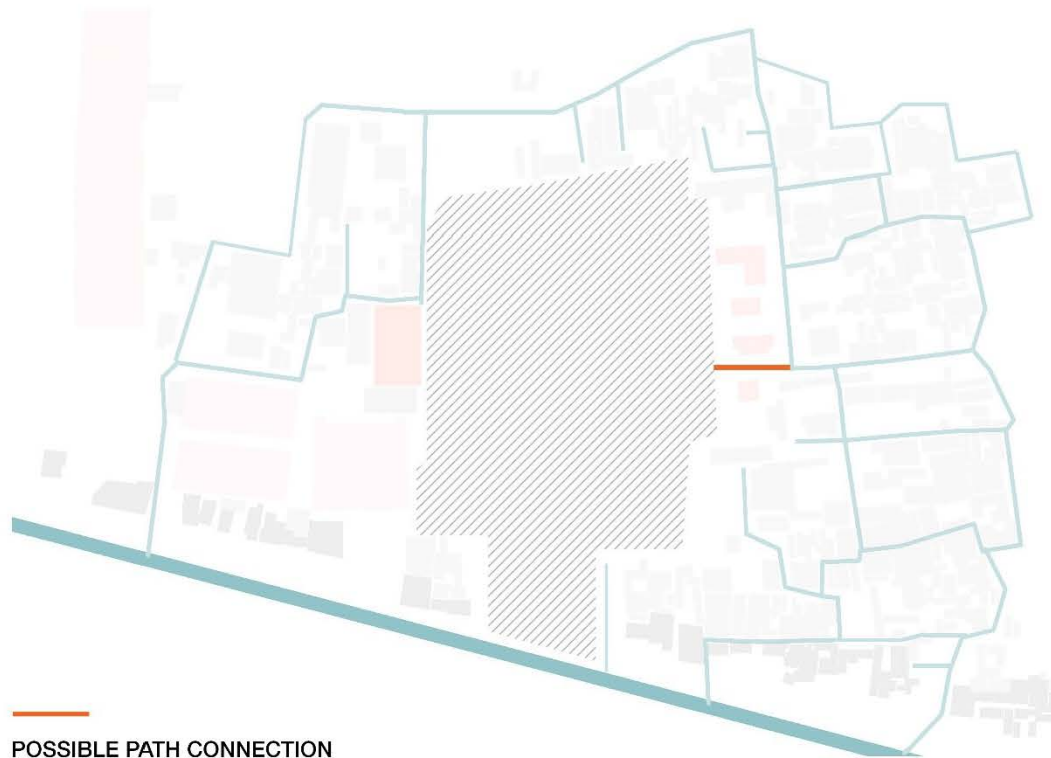
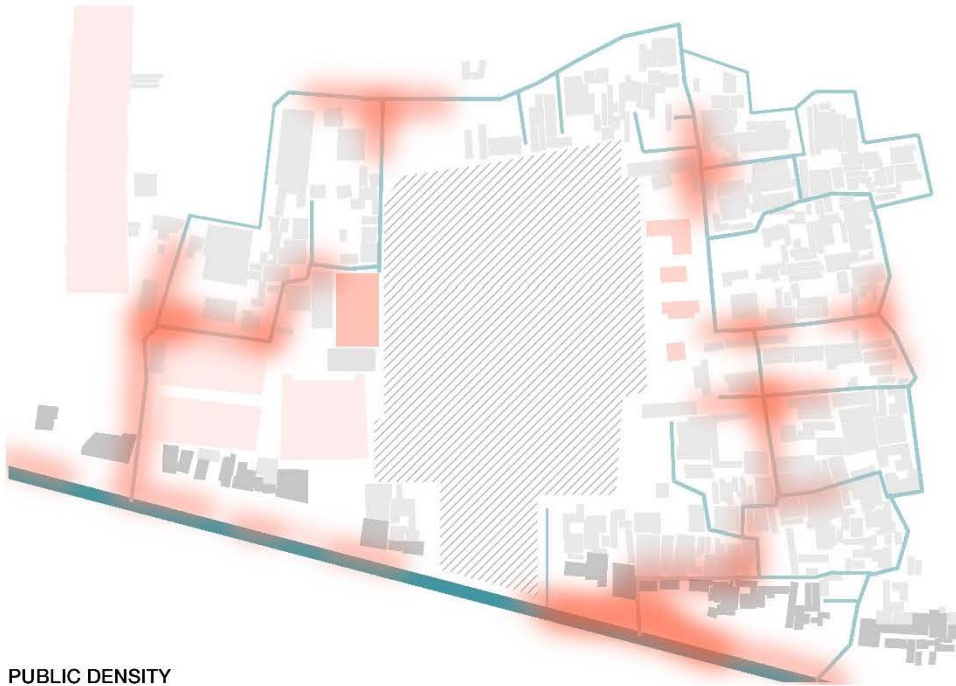


Fig.3.3.1.d. Possible Path Connection to Site (Author)

This would mean a better connection to the site and easier flow through the path networks as a whole. Another possibility could be a secondary access to the site from the main highway. This would create a loop of path inside the site meaning vehicles can entry and exit easily. There could be another connection to the site on the west side where a mosque stands. This connection would allow the children to access the mosque easily.



PUBLIC DENSITY

Fig.3.3.1.e. Public Density (Author)

When the paths are further analyzed and also compared with the public density map, some places appear where there are possibilities of nodes.



POSSIBLE NODES

Fig.3.3.1.f. Possible Nodes after Connection (Author)

This is however only true if the new connections to the paths can be made. The area is very busy and boring, and might be made lively through the gatherings that would happen in a node.

Even though it is not possible to create a path or a node, the possibility that it might happen can be given the opportunity by making way through some boundary walls.

3.3.2 Surrounding Building Types and Height



Fig.3.3.2.a. Building Types (Author)

The site is surrounded by many different types of buildings but mostly factories. These factories are mostly on the west and south of the site. These factories create huge industrial wastes which are highly toxic. It is these factories that go over 5 storeys high in many cases. There is a new factory that sprouted up on the south western side just brushing on the site's boundary wall which is 10 storey high. There is also a mosque along the western side of the side. On the north western side are a few residential houses and mostly open fields. The eastern side is mostly a residential

zone which houses the industry workers of the area. Their existence are temporary as most of these structures are light mostly of tin and not so big, and the residents are not the original owners of the place, just living there by paying rent. However just on the north eastern side is the 'Kishori Unnayan Kendra' which is a similar sort of organization.



Fig.3.3.2.b. Building Heights (Author)



Fig.3.3.2.c. 10 storied factory just against the wall of the site (Author)

The big factory building on the south west end of the site requires a buffer space so that it seems that it is a bit away and not just rose up against the edge of the site. This buffer can be created by some big thick landscape of trees keeping away the unwanted noise and sight of the factory to some extent. Another building of importance would be the mosque on the south side. The mosque can be invited and given respect by making it more visible creating a platform in front of it inside the site. This would work with the earlier idea of introduction of a new connection to the site from this mosque's side.

3.4 SWOT Analysis

Strengths:

- There is a lot of green inside the site. Once the site is entered, all the chaos and business of the road and surroundings seem to disappear because of the peaceful and serene environment inside.
- Entry to the site is direct and clear.
- The site very much visible from the main highway.

Weaknesses:

- Excessive chaos and noise while entering the site
- The main highway is always stuck with high traffic
- Big buildings on the south western side block view and wind
- Absence of a nodal point around in the surroundings

Opportunity:

- Possible space for designing suitable landscapes
- It is perfect to create a soothing and peaceful environment that is required for the rehabilitation of children
- The site area is quite big and enough for dispersion of forms
- Presence of a similar training institute on north east side of the site which can be connected to the training building in the site
- A prominent mosque on west side of the site which can be directly connected to the site & enhance its beauty

Threats:

- The industrial waste are toxic. It can be fatal for children if they are in contact.
- More industries growing up which will cause much more problems in future.
- Unplanned residential growth along north and east of side. It can block connections to the site from that side.

It is evident that there are some major strengths in the site, as well as some lacking with possible threats that may arise with time. Necessary precautions is to be taken to stop the threats from doing any harm. On the other hand, the strengths like the lush green landscapes and peaceful environment inside the site should be further enhanced to create a much more serene and enjoyable space for the children. The same natural landscapes can further be used to reduce the weakness of the site like blocking the noise & keeping the chaotic traffic outside of view.

4 CASE STUDIES

The case studies for this project are selected on the basis of similarity of programs & the context. Even though there are quite a few child rehabilitation centers around the globe, the program & policy of such centers are sometimes vastly different from this project. Therefore, projects where the programs match & the context similar are chosen even though if they are not child rehabilitation centers. The studies range from orphanages, children homes to training institutes. Some of them are studied because of their spatial arrangement, while some are seen because of their strong policies that effectively benefit the children.

4.1 SOS Children's Village & High School, Bogra

Location: Bogra, Bangladesh Architect: Raziul Ahsan Site Area: ~5 acres



Fig.4.1.a. Views of School and Around, with Amphitheatre, Gazebos, Ramps, etc. (www.archnet.com)

SOS Children's Villages was established in Bangladesh shortly after the liberation war & started to support children struggling with poverty with basic needs & training. Such

a children's village is the one in Bogra which was set up in 1995. The children's home comprises of ten family homes, an administration building, a community house, faculty residences, a primary school, and a secondary school. The school has 7 primary classrooms & 12 secondary classrooms with a total capacity of 100 children.



Fig.4.1.b. Family Houses with Courtyard
(www.archnet.com)



Fig.4.1.c. Family Houses Backyard
(www.archnet.com)

Each family house accommodate 10 children and a mother, who is responsible for looking after the needs and wants of those 10 children. Moreover, the children's village offers health counseling and training facilities.

After entry to the site comes the guard's barrack, the village director's residence, the elementary school block and the community house. These are all more public functions and arranged in a cluster. This defines the zoning the site separating the administration and residential zones, and thus creating privacy. The residential zone with the family houses are clustered in the south western part of the site. The family houses are clustered around a central courtyard which provides access to these houses. These houses are in different height levels with steps leading to each of them. The family houses have back terraces which provides a point of gathering and relaxation when the children are inside the houses.



Fig.4.1.d. Amphitheatre
(www.archnet.com)



Fig.4.1.e. Secondary School Corridor
(www.archnet.com)

The material of the building is kept to the traditional red brick walls and structure with green corrugated sheet roofs. The buildings in the site are not over 2 storey tall and shows the sensitiveness towards the surroundings and the psyche of the children. Such welcoming structures along with the lush green landscapes provides the children with a serene and calm environment where they can grow up healthily. The holistic planning of the project is such that there is spontaneity and playfulness, and at the same time there is simplicity and peace.

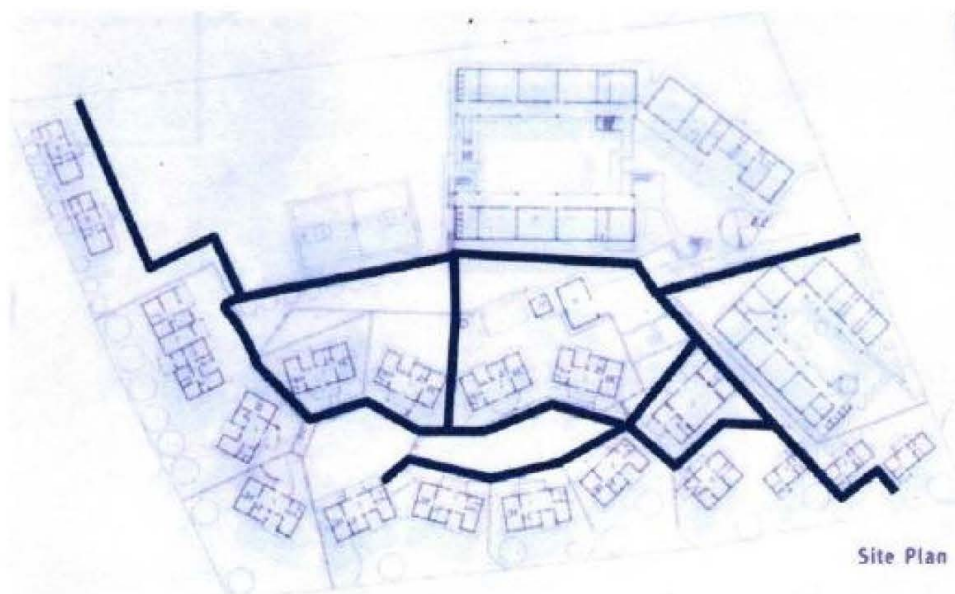


Fig.4.1.f. Outdoor Circulation (Jalal, 2013)

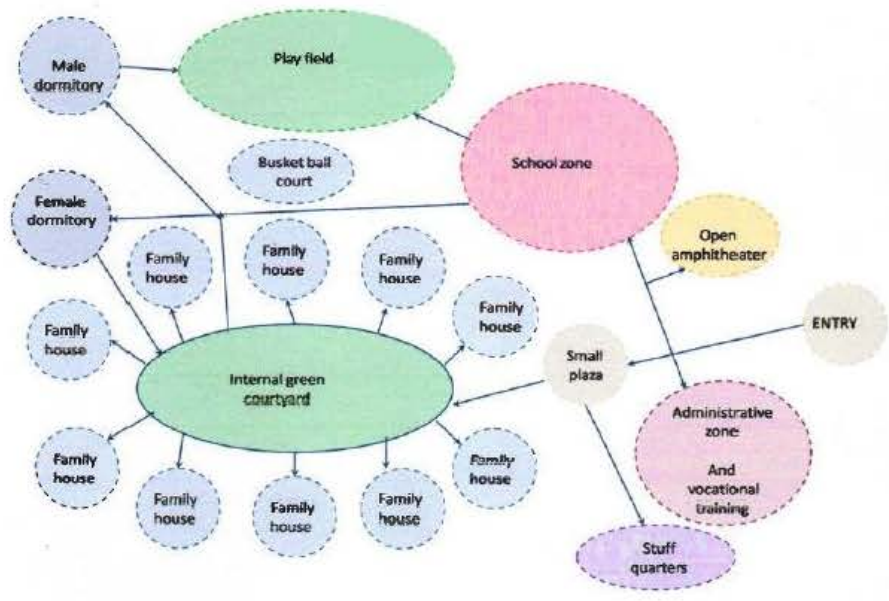


Fig.4.1.g. Relationship between zones (Jalal, 2013)

4.2 Orphanage at Ramu

Location: Ramu, Chittagong

Architect: Charles Boccara

Area: ~3 Acres

The project is on a small site area considering the children and their activities that requires wide open spaces to run and play around. However, the execution of the project created tranquil yet playful spaces amidst the nature. The site topography is flat, & the lush green landscapes surrounds the building as if it is a part of the nature itself. The roofs are flat and allows ample amount of sunlight inside the interiors that creates a bright and uplifting atmosphere.

The pedestrians are well connected with functions from all the structures. This provides proper access to all the functions from any point of the site. The circulation also does the job of zoning and defines particular spaces. The connection and relationship between the interior and exterior is the very profound and gives life to the project. There is access behind the buildings too, so children and go around and play freely.



Fig.4.2.a. Backyard

(Tahseen, 2012)

There is courtyard in front of the building and space behind the building which provides wide natural vistas in both directions. There are also pocket spaces in the outdoors for social gathering. There is also a small playground for sports.



Fig.4.2.b. Indoor-Outdoor Relationship

(Tahseen, 2012)



Fig.4.2.c. Building & Playground (Tahseen, 2012)

Along with good indoor-outdoor relationship & transitions, the project also boasts good hierarchy of spaces, separating the public & semi-public spaces from private spaces. The spaces are also arranged with keeping in the mind the

institutional spaces and informal spaces where the children can play. The arrangement is such that the both are separated but easily accessed from one another.



Fig.4.2.d. Classrooms, Good ventilation and Natural Lighting (Tahseen, 2012)

The project also considers the climate and ensures proper cross ventilation and wind flow. This is especially highlighted in the classrooms where there is also great provision of natural lighting that is achieved by orienting the building correctly. The buildings are made of bricks and structural walls which blends with the green nature around it. The use of such material is also economically feasible for such type of projects.

4.3 Children's Nursing Home, Tsukuba

Location: Tsukuba, Japan

Architect: K+S Architects

Area: ~2 Acres



Fig.4.3.a. Playground Around Dorm
(www.archdaily.com)



Fig.4.3.b. View from Road
(www.archdaily.com)

The children's nursing home is built in the forest and the field in the Tsukuba city. 40 children live in these houses in the great nature (K+S Architects, 2014). The whole plan is composed of multiple units according to function, namely the group living units, the office and communication unit, and the training unit. All of these units are placed such that it creates a central courtyard that also acts as the play area for the children. Children inside are also able to watch the life and activity of the children through this courtyard.

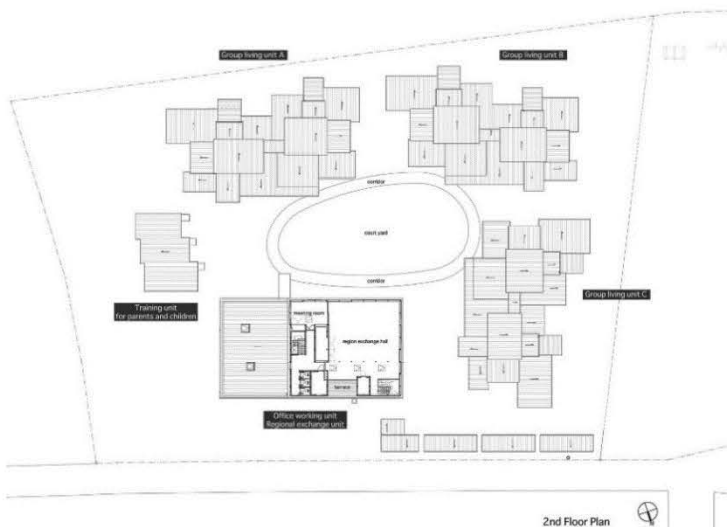


Fig.4.3.c. Plan Showing the Different Units in Site
(www.archdaily.com)



Fig.4.3.d. Bedroom Facades
(www.archdaily.com)

These units are described as follows:

- Group Living Units: There are in total 3 group living units in this project. These units consists of bedrooms for 6-7 children, a dining room, a staff room, a common room and services required by these room functions. The bedrooms are clustered in 2, & these two bedrooms are connected by a shared living room. Many of them also have access to a terrace.



Fig.4.3.e. Group Living Unit Plan (www.archdaily.com) **Fig.4.3.f.** Typical Bedroom (www.archdaily.com)

- The dining room are surrounded by the bedroom from all sides & is like the heart of a group living unit. It is in the center of the unit and invites everyone from the bedroom to this area. The dining room also invites natural light through the ceiling which always keeps it bright and radiates a positiveness in the whole unit. The dining room is connected to the living room which is further connected to the entry. This means, there is a positive distinction of semi-public and private areas in the units.



Fig.4.3.g. Dining Room from Wash Services
www.archdaily.com

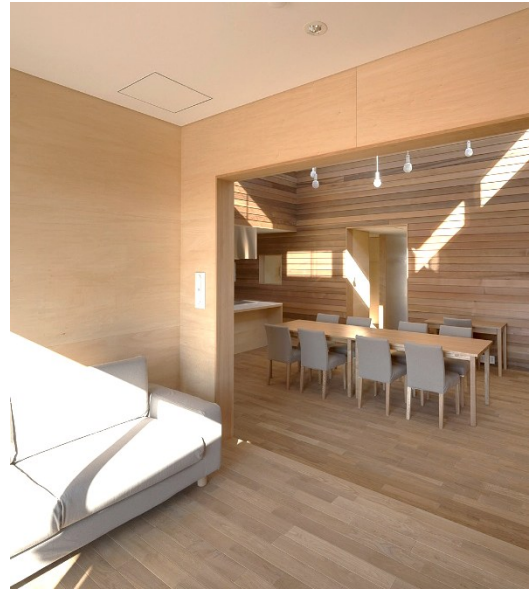


Fig.4.3.h. Dining Room from Living Room
www.archdaily.com

- The Office and Communication Unit: This is mainly the administrative unit which governs the proceedings of the organization and day to day activities. It also holds the hall room. The room is a big space created by wooden lattice beams which diffuses the direct sunlight during summer. This unit also holds the counseling and treatment room.



Fig.4.3.i. The Hallroom
www.archdaily.com



Fig.4.3.j. Approach
www.archdaily.com

- The Training Unit: The training unit has 3 rooms in total & caters both the children and their parents alike.

5 PROGRAM DEVELOPMENT

5.1 Program as Specified by the Organization

The program specified by the organization is not comprehensive but provides holistic ideas of the functions and their distribution in multiple infrastructures. The list of the programs as given by the organization is laid out below with descriptions.

- **Dormitory Building:** To shelter and accommodate the children. This would include the bedrooms, common rooms, dorm tutor rooms and required services to facilitate these functions.
- **School Building:** For formal education to prepare for exams like the secondary school examinations. The school would have a primary and secondary division with designated class rooms, along with facilities like the library and canteen. A small administrative unit would also be required for the day to day proceedings of the school.
- **Administrative Building:** To carry out official tasks and for regulation of the organization. Along with the office rooms, a meeting room and admission center would be required in this block.
- **Social Centre:** For social gathering and recreation. This block would have medical center, counseling center, indoor games zone and prayer space.

- **Training Building:** For vocational or practical training so that the children gains skills that can be used to support themselves in future. The training types would range over a variety of subjects suitable for the current work types in the country.
- **Audio Visual Building:** To accommodate an audio visual facility for various educational and recreational purposes for both the children of this institute and outsiders. Will also have guest waiting rooms, exhibition space and collection room.
- **Staff Quarters:** To accommodate the caregivers and other staff that help run the organization. Would have separate dining room & common living rooms.

5.1.1 Functional Flow between the Broader Zones

A functional flow diagram between these broadly zoned functions as stated is given below:

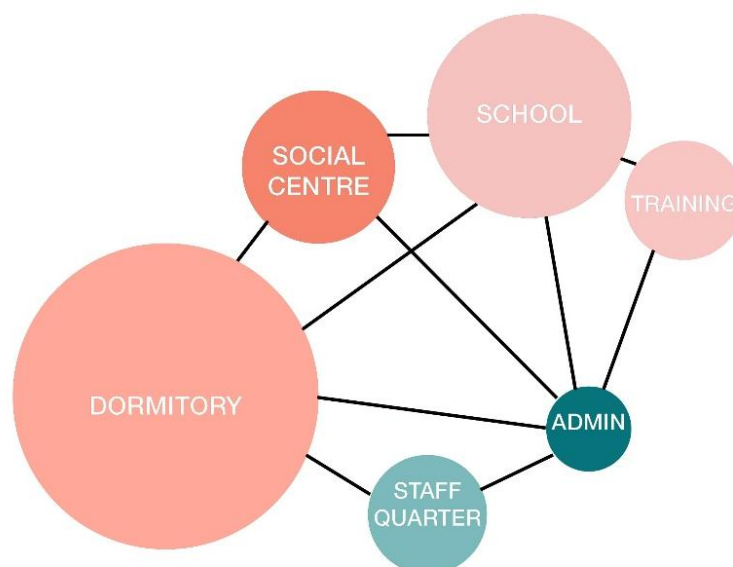


Fig.5.1.1.a. Functional Flow Diagram of Broader Zones (Author)

As the organization didn't provide a detailed list of program for the project. Therefore, it provides freedom & flexibility to produce a list of functions are most effective in creating a successful rehabilitation center for the destitute children. The case studies are taken as a reference to develop a detailed list of functions that would be suitable for a project of this kind.

5.2 Proposed Detailed Program List

5.2.1 Administrative Block

	Number of Units	Per Unit Area (sqf)	Total Area (sqf)
Administration Block			
Reception & Waiting	1	250	250
Visitor's Lounge	1	300	300
Meeting Room	1	500	500
Toilets			150
Admissions Office			
Admission Officer	1	150	150
Admission Centre	1	350	350
Student Services			
Director	1	200	200
Assistant Director	1	150	150
Office	2	300	600
Record & Transcripts	1	200	200
Toilets			70
Total Area for Administration			2920

5.2.2 Staff Quarters

	Number of Units	Per Unit Area (sqf)	Total Area (sqf)
Staff Quarters			
Bedroom	24	400	9600
Toilets	8	35	280
Living Space	4	250	1000
Dining Space	1	800	800
Total Area for Staff Quarters			11680

5.2.3 Dormitory

	Number of Units	Per Unit Area (sqf)	Total Area (sqf)
Dormitory Block			
Bedroom	32	450	14400
Toilets	25	35	875
Common Room	5	250	1250
Dorm Tutor's Room	10	200	2000
Services			
Kitchen & Store	1	1000	1000
Laundry	1	800	800
Housekeeping Storage	1	200	200
Total Area for Dormitory			20525

5.2.4 Social Centre

	Number of Units	Per Unit Area (sqf)	Total Area (sqf)
Social Block			
Toilets	6	35	210
Prayer or Quiet Zone	1	600	600
Dining Hall	1	4000	4000
Medical Centre			
Doctor's Station	1	100	100
Checkup Room	1	250	250
PT & Recovery Room	1	400	400
Toilets	2	35	70
Counseling Section			
Counseling Room	2	200	400
Group Counseling & Play Zone	1	800	800
Total Area for Social Block			6830

5.2.5 School

	Number of Units	Per Unit Area (sqf)	Total Area (sqf)
School Block			
Canteen & Pantry	1	2000	2000
Library & Storage (1000 Books)	1	2000	2000
Toilets	6	35	210
School Administration			
School Director's Room	1	200	200
School Office	1	300	300
Small Meeting Room	1	400	400
Toilets	4	35	140
Nursery School			
Class Room (15 students)	3	900	2700
Storage	1	100	100
Teacher's Room	1	300	300
Toilets	2	35	70
Teacher's Toilets	2	35	70
Primary School			
Class Room (20 students)	4	800	3200
Storage	2	100	200
Teacher's Room	1	500	500
Toilets	4	35	140
Teacher's Toilets	2	35	70
Total Area for School			12600

5.2.6 Audio Visual Building

	Number of Units	Per Unit Area	Total Area
Audio Visual Block			
Audio Visual Room	1	5000	5000
Store	1	400	400
Toilets	8	35	280
Meeting Room	1	1500	1500
Total Area for Audio Visual			7180

5.2.7 Training Centre

	Number of Units	Per Unit Area	Total Area
Training Block			
Instructors' Room	1	250	250
Toilets	8	35	280
Carpentry			
Working Area	1	1200	1200
Store	1	250	250
Automobiles			
Working Area	2	3200	3200
Store	1	300	300
Sewing			
Working Area	1	3200	3200
Store	1	250	250
Handicrafts			
Working Area	1	1200	1200
Store	1	250	250
Total Area for Training Centre			10380

5.2.8 Consideration for Circulation

The **total** of all these areas come out to be **72,115 sqf**.

This is however without considering circulation spaces. Considering circulation space of 30%, the **grand total area** of this project would be about **93,750 sqf**.

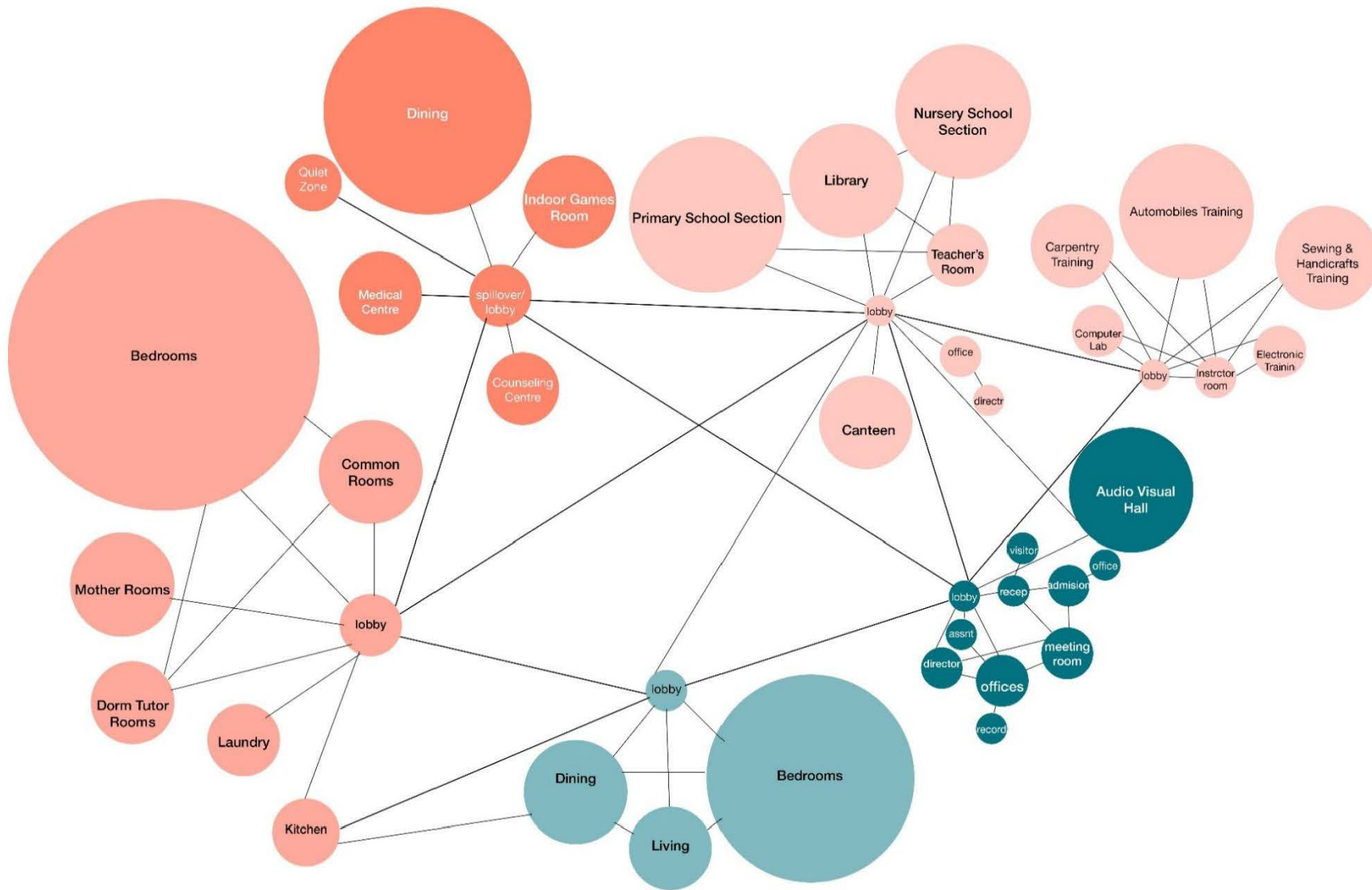


Fig.5.3.a. Functional Flow Diagram of Detailed Functions (Author)

6 CONCEPT AND DESIGN DEVELOPMENT

6.1 Introduction

A destitute child will seemingly be lacking the basic necessities of life. In this context, the target group of this organization is the children who roam around the streets seeking help from others to support their life. They somewhat manage to get by their lives by getting help from the well-off citizens of the society. However, even though they are able to somehow support their life, they would still lack proper access to the basic necessities of life as outlined by the International Labour Organization (ILO).

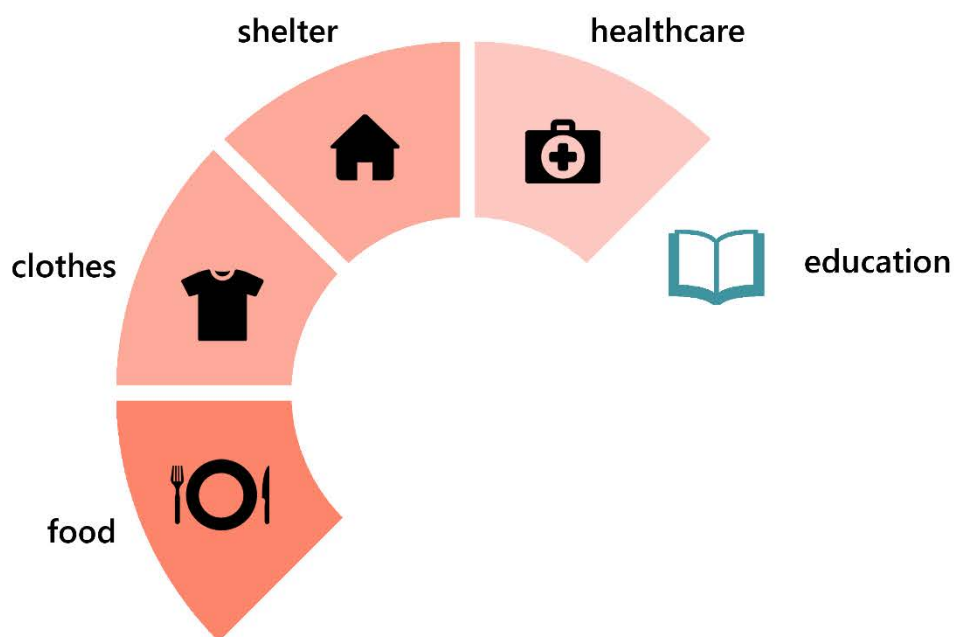


Fig.6.1.a. The Basic Needs of Life (ILO, 1976)

It is evident that a destitute child is in need of proper basic necessities of life. But as discussed, they manage to get by and there are greater pressing issues that endanger these children's lives. Because they have to support their lives, they choose any means available that will help them sustain. In many cases, they get involved in crime & are subject to abuse which puts their lives at high risk & blur their future dark.



Fig.6.1.b. Risk Factors Associated with the Activities of Destitute Children in Bangladesh

(Author)

6.2 Conceptualization

Spending time and getting to know these free roaming children of the streets about how they lead their lives, new perspectives open as how to approach a project with them in mind. Along with these new dimensions, some thoughts & realizations began to grow.

6.2.1 Self Realization

It became more fathomable to believe, by spending time with them, that these children even though in need of support from others are immensely capable of changing their situation & also of others around them. They cherish the freedom they have which allows them to have vast amount of experience in very small time. They learn the fundamentals of surviving in harsh conditions, and in many cases are much smarter than the average child of the same age. Therefore, the problem solving approach of removing destitution started to become secondary, while thoughts about how to use this great potential of theirs began to take shape.



Fig.6.2.1.a. Immense Potential of the Free Children (Author)

It also came to realization that a child even though doesn't have parents to take care after them is not alone. They have at least someone who acts as their guardian and

the child is also influenced by everyone and the society surrounding them. Therefore, it is important that this influence is more positive than something undesirable.

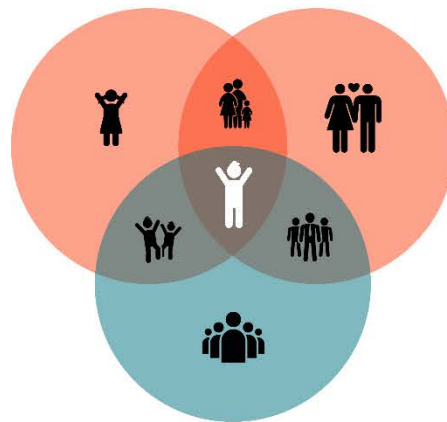


Fig.6.2.1.b. A Child is Not Alone (Author)

6.2.2 Realization to Conceptualization

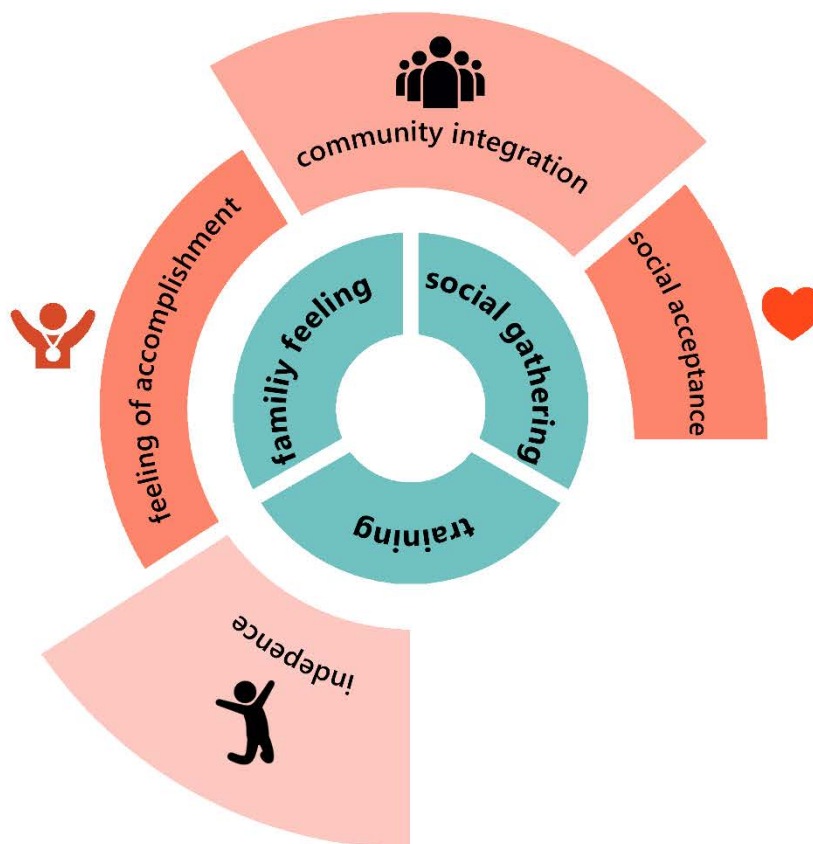


Fig.6.2.2.a. The 3 building blocks for utilizing the potential of the Free Children (Author)

From realizing their potential and issues hindering it, some key points developed that could be the foundation blocks for this project. The feeling of being in a family, a supportive community and surroundings, and proper training are what these children require to dig up their potential. Therefore, along with fulfilling the basic needs, these issues are taken as the main concept to start with the project.

From here, design development started keeping the concept, context and function in mind. The development occurred in 2 phases. Firstly, in macro scale considering the urban surroundings and creation of spaces in site from a broader point of view. The development occurred in generating the form typology and creation of spaces in and around those buildings.

6.3 Design Development First Phase

The site and contextual analysis was juxtaposed with the conceptual ideas which gave rise to considering the urban elements around the site and integrating them. This in turn helped to form ideas about how to create spaces inside the site from a broader perspective.

6.3.1 Using Contextual Analysis

The site is given direct connection to the mosque on the west side of the site. It is also connected with the Girls' Training Institute on the north eastern side of the site which also forms a new path connecting the site with the residential area of the east side.

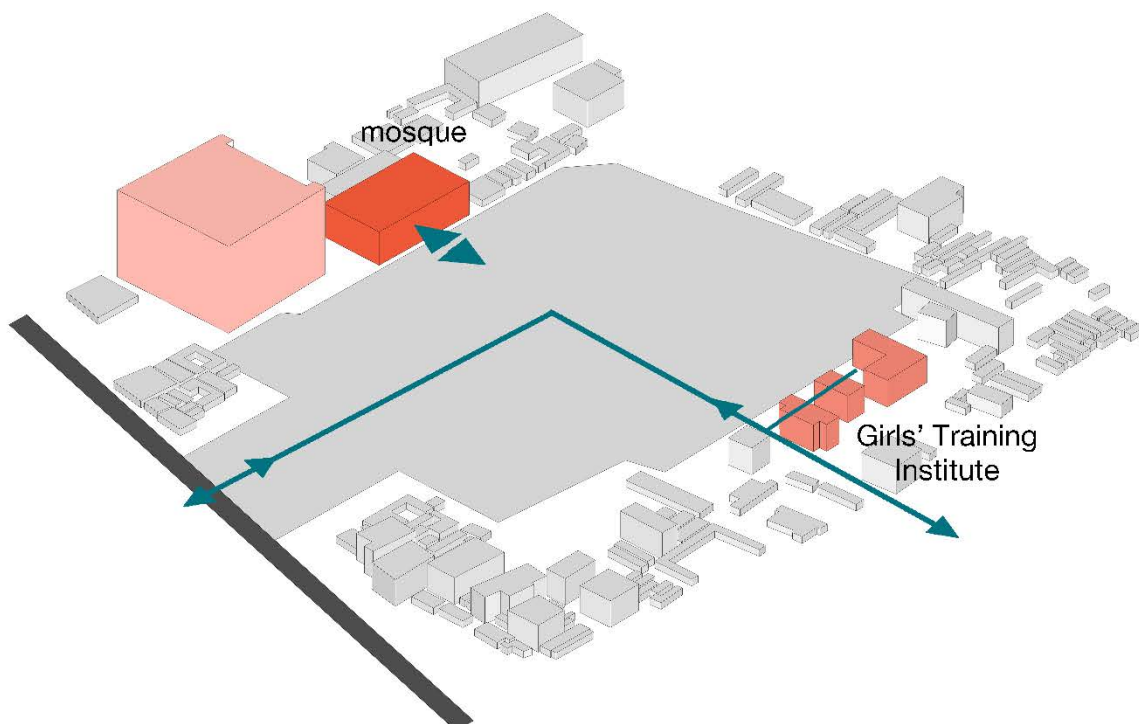


Fig.6.3.1.a. Connecting the Site with the Mosque & Kishori Unnayan Kendra (Author)

6.3.2 Formation of Spaces in Site

The spaces inside the site was arranged in hierarchy according to the activities of the children and also considering the public access from the surroundings. There would be breakout spaces in between buildings, and these spaces will be connected to secondary bigger play space which will be accessible to children from other buildings inside in the site. This secondary play space will be connected to an even bigger play field which can also be publicly accessible. Such hierarchies of spaces will allow the diverse activities of children of multiple age groups, promote individual and group activities, and also allow mixing of the children in this center with other children from the surroundings who will come to play in the field.

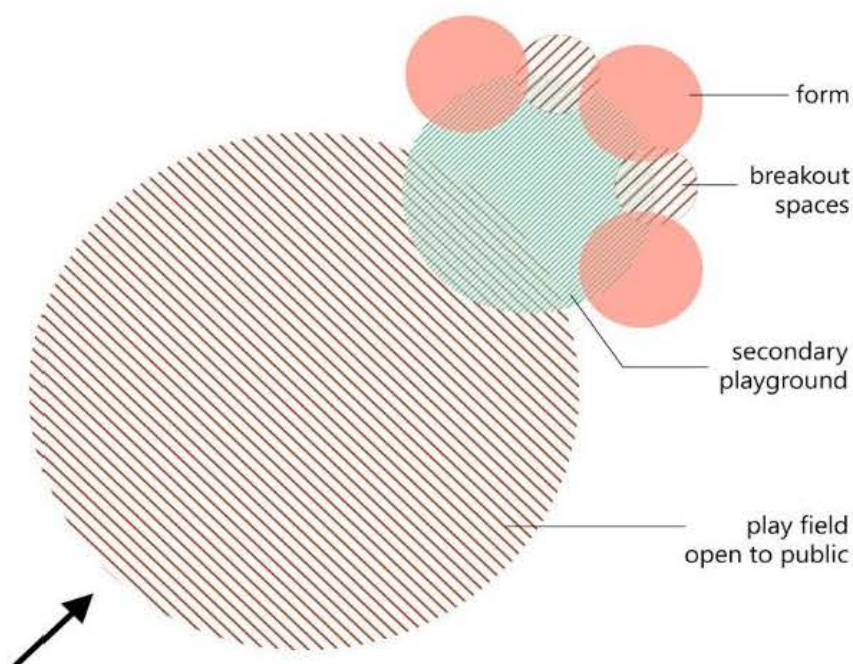


Fig.6.3.2.a. Hierarchy of Spaces (Author)

This idea of hierarchy of spaces was added with the idea of integrating with the site surroundings. When both these ideas overlapped, the zoning inside the site started to form considering the program and the type of urban fabric around the site.

The mosque on the western side and the Girl's Training Institute on east side of the site was given direct connection to the site. The mosque is important for such children and the Girl's Training Center can be integrated with the training center in the site. The forms were then dispersed in the site considering this urban context and also the considering the program that was developed. The dispersion also took into account the idea of hierarchy of spaces as discussed before. Thus, zoning of functions inside the site was formed roughly, which would be complete when the forms are generated.

6.4 Design Development Second Phase

After ideas about connection and spaces in the site were developed, spaces in and using the building masses were thought about. The typology of forms were developed, then form generated and thus spaces created in and around the forms.

6.4.1 Form Generation and Typology

The form was generated with children in mind & their variety of activities. The forms were not imposing but humble, broken down so that a child never feels trapped but can run around freely through the buildings to other places ensuring permeability.

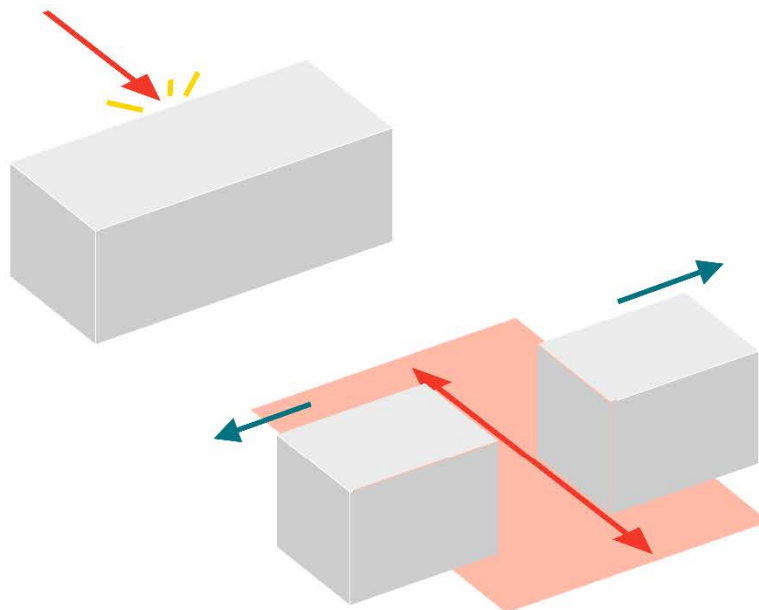


Fig.6.4.1.a. Breaking of a Chunky Form to Create Smaller Forms and Permeability (Author)

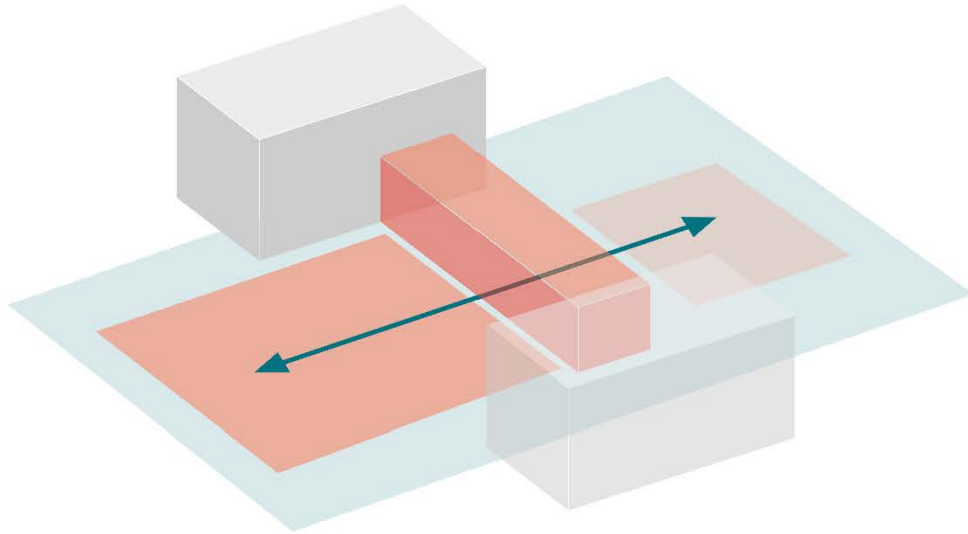


Fig.6.4.1.b. Connecting Forms Using Bridges & Creation of Spaces with Variety (Author)

When two of these forms were connected, they were connected by bridges which were permeable and formed spaces on either side of the bridge. One of these spaces would be connected to a bigger space according to the concept of hierarchy of spaces, while the other space would be intimate and cozy surrounded by vegetation.

6.4.2 Plan Development and Zoning

While the rough zoning and form typology were decided upon, definitive decision on the final masterplan came through multiple trial and errors.

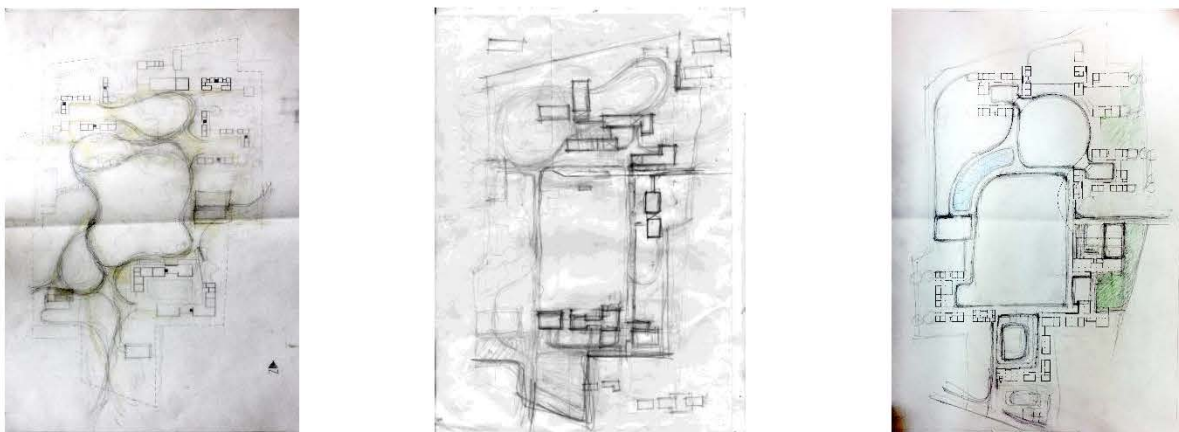


Fig.6.4.2.a. Development in Plan (Author)

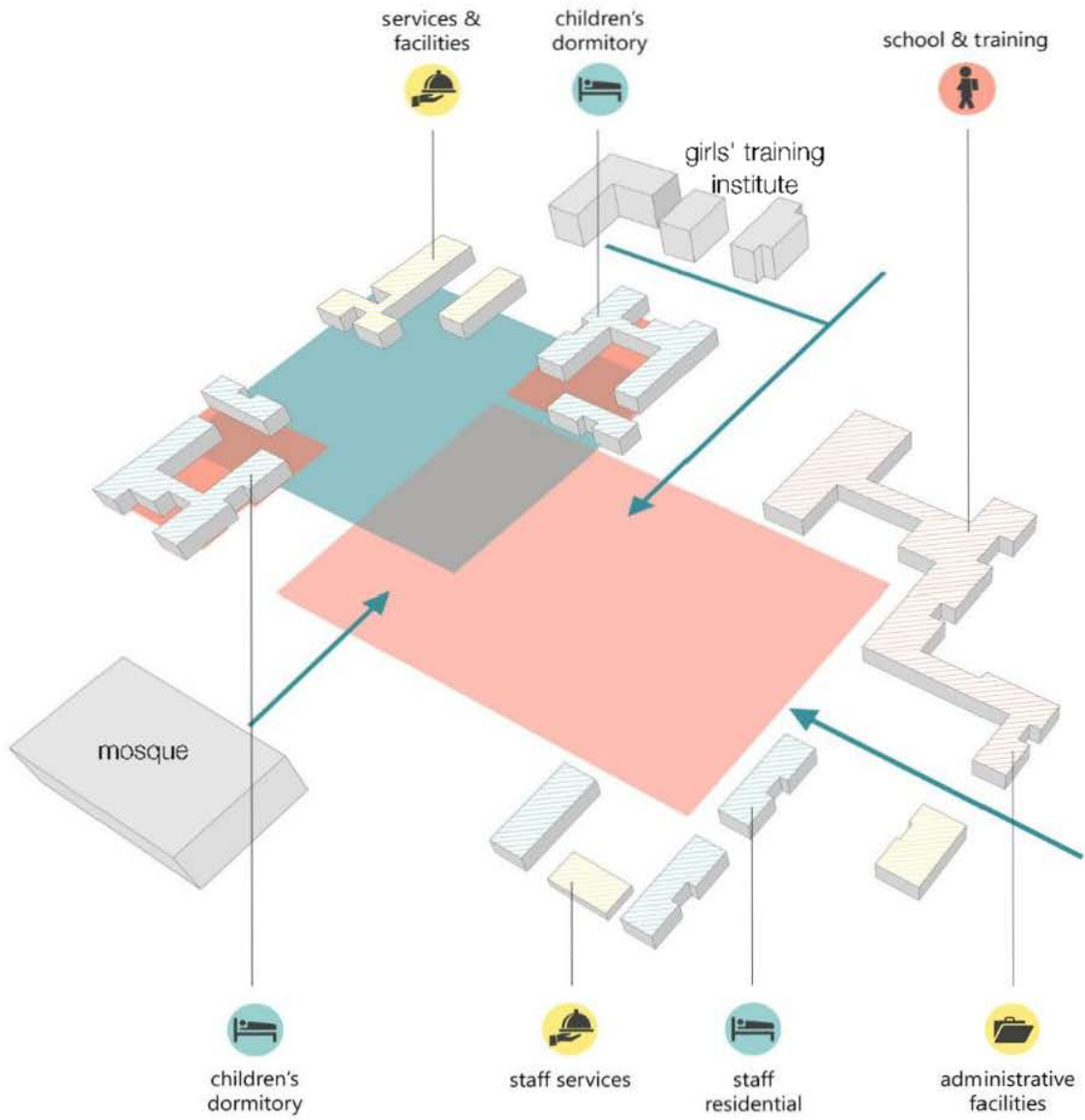


Fig.6.4.2.b. Zoning in the Site (Author)

6.5 Design Drawings



Fig.6.5.a. Ground Floor Plan, *not to scale* (Author)

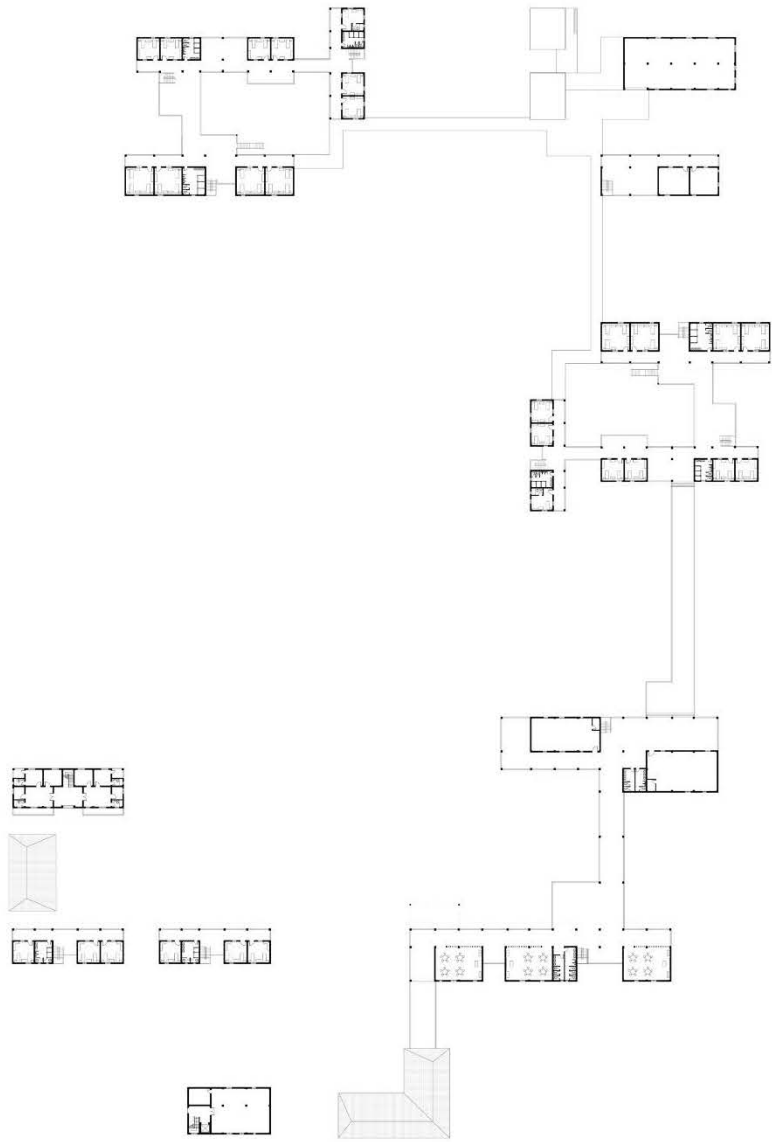


Fig.6.5.b. First Floor Plan, *not to scale* (Author)

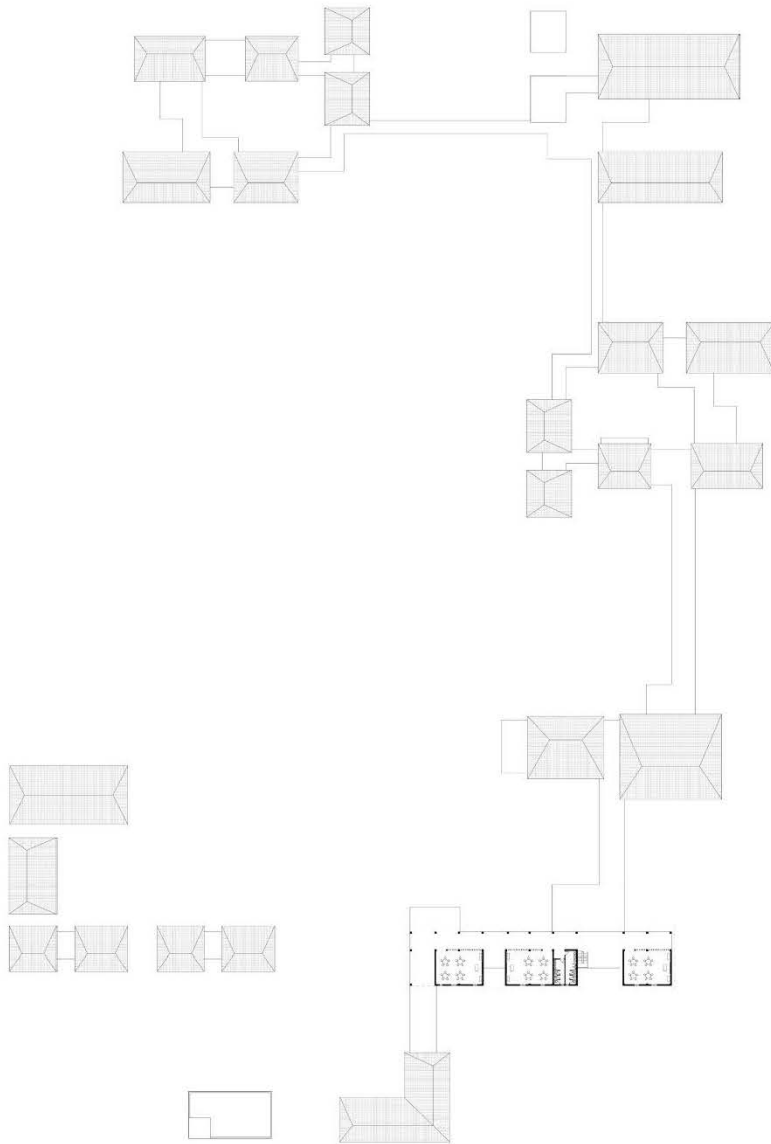


Fig.6.5.c. Second Floor Plan, *not to scale* (Author)



Fig.6.5.d. South Elevation, *not to scale* (Author)



Fig.6.5.e. Section AA, *not to scale* (Author)

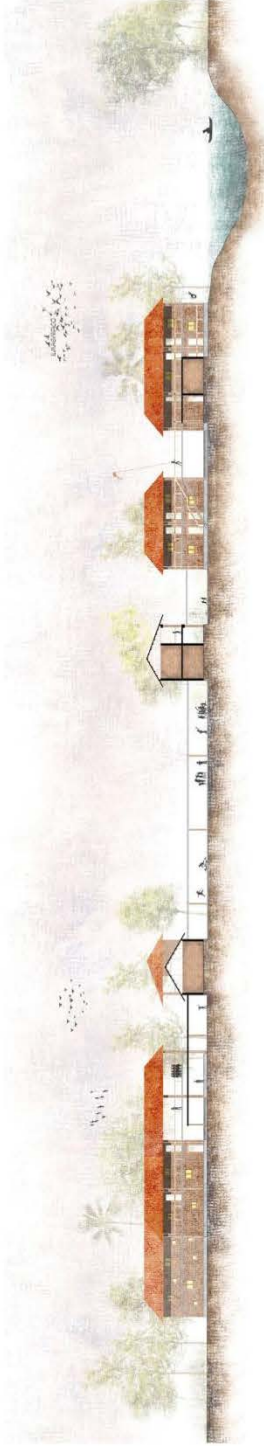


Fig.6.5.f. Section BB, *not to scale* (Author)

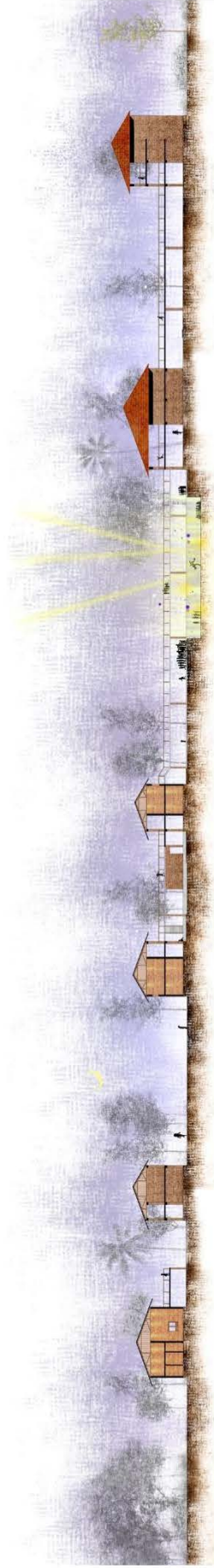


Fig.6.5.g. Section CC, *not to scale* (Author)

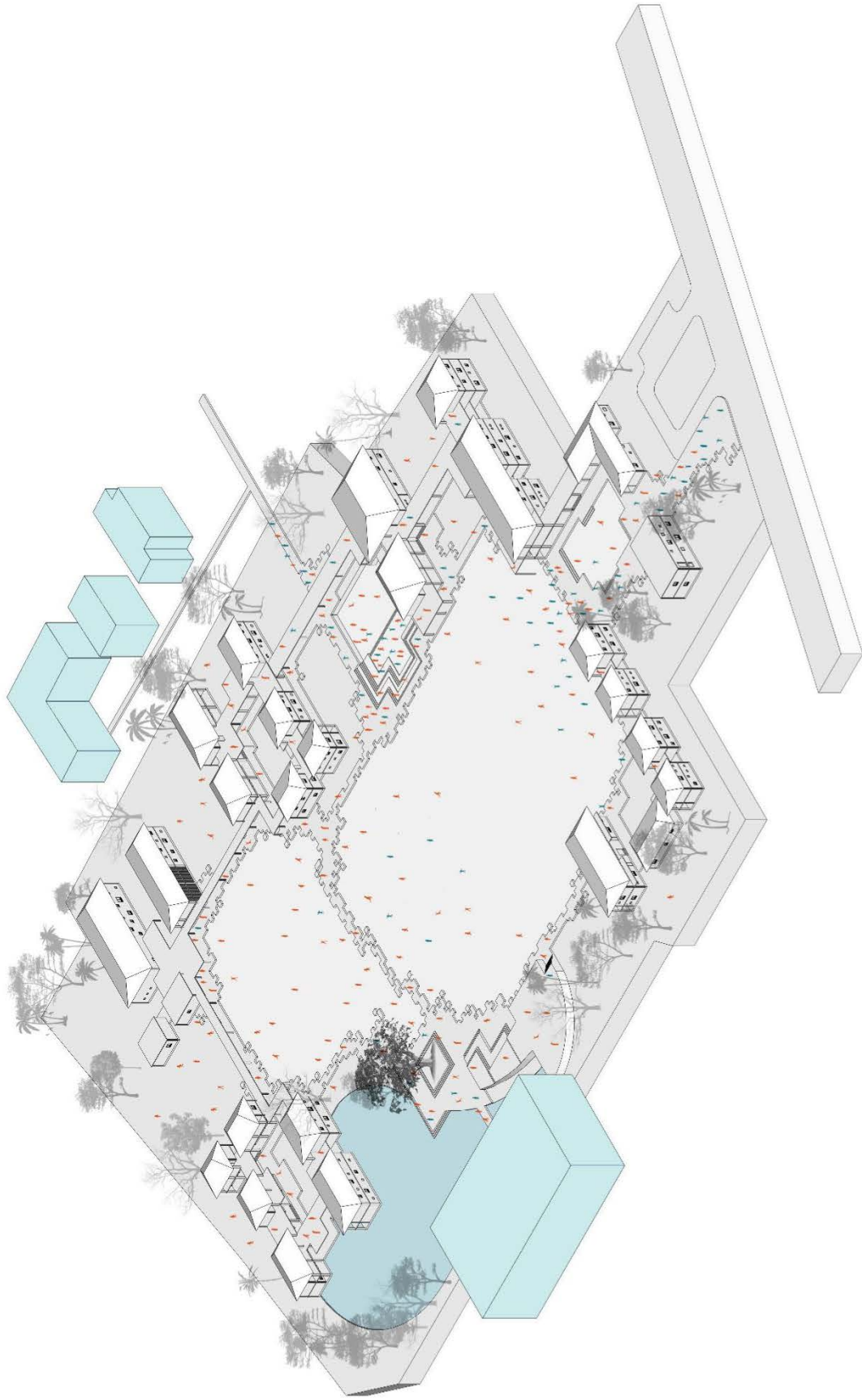


Fig.6.5.h. Axonometric, not to scale (Author)

6.6 Rendered Perspectives



Fig.6.6.a. View towards Female Dorm Cluster from Secondary Play Space (Author)



Fig.6.6.b. View from the Mosque towards *Gach Tola* and Dormitory Facilities (Author)

6.7 Model Images





CONCLUSION

The journey from the inception project to the finish had been a fabulous one. The children who roam about the streets of the cities hold much more than what they show. This self-realization that these children are highly potent than needy is considered to be the core learning from this project. More time was spent knowing them and collecting information about their lives than just designing the centre, which grew naturally as time progressed out of conscience. The design emerged as a standard rehabilitation centre for such children which may be used as a prototype to shelter and train such children throughout the country. The approach and implementation was simple, but well-thought, based upon the learning gained from the children themselves. After all, architecture belongs to its users.

BIBLIOGRAPHY

Convention on the Rights of the Child. (1989, December 12). *The Policy Press, Office of the United Nations High Commissioner for Human Rights*. Retrieved from http://www.hakani.org/en/convention/Convention_Rights_Child.pdf

Barkat, A., Poddar, A., Rahman, M., Mahiyuddin, G., Halim, S., Karim, A., Hussain, A.-A. (2009). *Child Poverty and Disparities in Bangladesh*. *Human Development Research Centre*.

Denton, J. A. (1990). *Society and the Official World: A Reintroduction to Sociology*. Rowman and Littlefield Publishers.

Tanner, J. M. (1990). *Foetus into Man: Physical Growth from Conception to Maturity*. Cambridge, Massachusetts: Harvard University Press.

Dunn, L., and Kontos, S. (1997). *Research in Review: What Have We Learned about Developmentally Appropriate Practice?* *Young Children*, 52(5).

Colin, V. (1996). *Human Attachment*. Temple University Press.

Brazelton, B. T., and Greenspan, S. I. (2001). *The Irreducible Needs of Children: What Every Child Must Have to Grow, Learn, and Flourish*. Cambridge, MA: Perseus Book Group.

Siegel, D., & Solomon, M. (2003). *Healing trauma: Attachment, Mind, Body, and Brain*. New York, NY: Norton, W. W. & Company.

Tahseen, S. M. (2012). *SOS Shishu Polli*. BRAC University.

Paradise, R., & Rogoff, B. (2009). *Side by Side: Learning by Observing and Pitching In*. *Journal of the Society for Psychological Anthropology* 37 (1). doi:10.1111/j.1548-1352.2009.01033.

Bradley, S. (1998, April). *Snapping Synapses in the Early Years*. *IDRA Newsletter*. Retrieved from <http://www.idra.org>

The Consultative Group on Early Childhood Care and Development. (2013, March). *The Importance of Early Childhood Development to Education*. Dakar

UNICEF (2010). *Facts for Life* (4th ed.). New York, NY: United Nations Children's Fund (UNICEF).

Maslow, A. H. (1954). *Motivation and Personality* (1st ed.). Harper & Brothers.

Jalal, S. (2013). Child Rehabilitation Centre. *BRAC University*.

Subarna, N. F., Biswas, A. K., Shikdar, K., & Hassan, A. (2014). **The Social Life of Street Children in Khulna City of Bangladesh: A Socio-Psychological Analysis**. *Asian Journal of Social Sciences & Humanities*, 3(1),

rehabilitation. (n.d.) *American Heritage® Dictionary of the English Language, Fifth Edition*. (2011). Retrieved July 10 2016, from <http://www.thefreedictionary.com/rehabilitation>

Senelick, R. (2012, March 6). *Why Rehabilitation is Important*. Retrieved July 10, 2016, from <http://blogs.webmd.com/chronic-conditions/2012/03/why-rehabilitation-is-important.html>

Clark, J. (2007, September 6). *How Rehab Works - The History of Rehab*. Retrieved July 10, 2016, from <http://people.howstuffworks.com/rehab1.htm>

Verville, R. (2009). *War, Politics, and Philanthropy: The History of Rehabilitation Medicine*. United States: University Press of America.

Klinterberg, M. (1992). **The History and Present Scope of Physical Therapy**. *International Journal of Technology Assessment in Health Care*, 8(1), 4–9. doi:10.1017/s0266462300007856.

Gill, K. J., Pratt, C. W., Barrett, N. M., and Roberts, M. M. (2006). *Psychiatric Rehabilitation* (2nd ed.). Amsterdam: Elsevier/Academic Press.

Camden, C., Tétreault, S., and Swaine, B. (2010). **Rehabilitation for Children - How is it Different from Rehabilitation for Adults?** *International Encyclopedia of Rehabilitation*.

Chingtham, T. (2014). **Causes and Facilities of Destitute Children in the Children Homes.** *IOSR Journal of Research and Method in Education*, 4(6), 50-53.

Vocational Rehabilitation Association, UK. (2001). Retrieved July 10, 2016, from <http://www.vra-uk.org>

Calleja, J., & Dorn, B. (2014). *Terminology of European Education and Training Policy* (2nd ed.). Luxembourg: European Centre for the Development of Vocational Training (Cedefop).

Lettmayr, C., & Riihimäki, T. (2011). **The Benefits of Vocational Education and Training.** doi:10.2801/43027

Ahmed, S. S., & Khan, R. K. (2014). **Employment and Unemployment situation in Bangladesh: A Dismal Picture of Development.**

SOS Children's Village and High School at Bogra. (2004). Retrieved July 27, 2016, from ARCHNET, http://archnet.org/sites/4408/media_contents/14566

Ueda, H. (2015, January 19). **Children's Nursing Home "Tsukuba-Aiji-en" / K+S Architects.** Retrieved July 27, 2016, from <http://www.archdaily.com/588946/children-s-nursing-home-tsukuba-aiji-en-k-s-architects>