Recommendations to Improve Quality of Life at the Pakkred Home

Group Members

Thomas Battistini
Melinda Palma
Amanda Roberts
Christopher Vigneau

Advisors

Chrysanthe Demetry
Richard Vaz

Sponsor

International Support Group

Liaisons

Annie (Arunee) Suwanvanichikij
Sara Dryden

February 27, 2003

Abstract

The focus of this project was the Pakkred Home for Mentally Handicapped Girls in Bangkok, Thailand. Its goal was to assist the International Support Group (ISG) by suggesting recommendations to enhance the quality of life at the home. We conducted building assessments, behavioral observations, and interviews to identify, document, and prioritize needs in areas such as health, sanitation, safety, handicap accessibility, and personal dignity. We investigated a variety of possible improvements and provided recommendations to the ISG on how to direct their fundraising and improvement efforts.

Authorship

Throughout the duration of this project, we focused our individual efforts on the areas in which we were the most proficient. By dividing our talents, we were able to specialize in different aspects of our project to create the strongest piece of written work possible. Each group member's writing, editing and ideas have been integrated into every chapter. Therefore, we all assume authorship and responsibility for the project document as a whole and we all have contributed equally to the composition of this work.

Thomas Battistini, Melinda Palma, Amanda Roberts, and Christopher Vigneau

Acknowledgements

We would like to acknowledge the following people for their assistance during the course of our Pre-Qualifying Project and Interactive Qualifying Project.

Khun Pensai Bunyapasup

Prof. Fabio Carrera

Prof. Chrysanthe Demetry

Maggie Donovan

Sara Dryden

Ruth Gerson

Dr. Amput Intaraprasong

The International Support Group

Pakkred Home Staff and Administrators

Khun Vi Lai Rountmalai

Khun Annie (Arunee) Suwanvanichikij

Dr. Supawan Tantayanon

Khun Chuliporn Tangritpranee

Prof. Richard Vaz

Prof. Stephen Weininger

Executive Summary

Introduction

People with disabilities in developing nations worldwide are confronted with many challenges. Often, their societies do not have the resources to support them, and they frequently face social obstacles in the struggle to be recognized as equal citizens. In the year 2003, Thailand has only one government-funded facility for citizens with disabilities, the Pakkred Home. Located in the province of Nonthaburi in northern Bangkok and sponsored by Thailand's Department of Public Welfare (DPW), this facility houses about three thousand residents including blind people, babies, and both boys and girls with disabilities. The project completed and discussed in this report focuses on the Pakkred Home for Mentally Handicapped Girls.

Encompassing five separate two-story buildings, the home has approximately 500 residents. Each building houses a specific group of residents based on general age group, type of disability, and level of functionality. All of the residents suffer from cognitive disabilities and many of them are physically disabled as well. In late 2002, the International Support Group (ISG), a charitable organization involved with the home, reported that some factors affecting the quality of life of the girls needed attention. The concerns, for both the residents and staff, stemmed from issues in such areas as health, sanitation, safety, handicap accessibility, and personal dignity. In response, the ISG created a committee specifically charged with improving the Pakkred Home. In addition, they commissioned this project, the goals of which were to:

- Identify needs for improvement
- Generate a prioritized list of the needs
- Develop recommendations for improvement

The ISG will be able to use the contents of this report to procure funds and services for projects that will improve the quality of life at the Pakkred Home.

Methodology

The identification and prioritization of needs was based on information generated by over 150 total person hours of building evaluation, behavioral observation, and interviews. During building evaluation, internal structural features were rated based on their current functionality, necessity, hazard potential, and existing damage. Behavioral observations consisted of group members recording hazardous situations, conflicts, cleaning methods, bathing methods, feeding methods, and other challenges faced by the staff while performing their daily duties. Interviews with Pakkred Home staff and ISG members provided information pertaining to personal experience with children with disabilities, information about the staff, management of the home, and opinions about the major topics of concern facing the home.

The needs of each building were formally identified by consolidating and integrating all of the information discussed above. Each area of concern was then described according to the categories of health, safety, sanitation, handicap accessibility, and personal dignity and rated based on the severity of threat the concern posed, using a three-level scale. A rating of three implied the concern posed a severe threat, while a rating of one implied the concern was a minor threat.

Using this information, each building's needs were grouped into three prioritized categories: high priority, moderate priority, and low priority. For each topic of concern we identified and described multiple options for improvement. We also provided rough cost estimates and illustrations. The information was obtained from online sources.

Findings and Recommendations

The results of our study indicate that significant threats to the residents' health, safety, sanitation, handicap accessibility, and personal dignity exist at the Pakkred Home. In total, we identified and prioritized 69 issues of concern in the five buildings we studied. To address these, we developed 52 detailed recommendations at various levels of cost, scale, and commitment. Here, we will briefly describe some of the more urgent issues, and indicate some of the recommendations that address them.

Water Supply (High Priority, 4 of 5 buildings)

The water supply in many buildings was inconsistent. This was described in interviews to be due to problems with water pressure and distribution systems. In other cases, we observed the issue to be partially due to malfunctioning or missing faucet fixtures. Bathrooms were often closed off as a result of lack of water, which served to increase the human waste management problem. This problem has spawned serious issues in the areas of human waste management, cleaning the buildings, and proper bathing of the residents. Water is a precious commodity, and residents suffer without it.

Related Issues:

- Girls are often bathed with stagnant water from soiled troughs
- Many times, toilets cannot be flushed and often become clogged
- Effective cleaning of the facility is extremely difficult

Recommendations:

- Hire a professional to map out and repair the water distribution system for all buildings
- Hire a professional to design an individual water storage/supply system for each building using sealed water tanks

Human Waste Management (High Priority, 4 of 5 buildings)

Without functioning toilet facilities, the residents often use open buckets or the building floors for their toileting needs. As a result, large amounts of human waste collect on the floors and are cleaned with towels or a mop by older residents assisting the staff. Residents sitting or sleeping on the floor may be directly exposed to this waste, and were observed in some cases to handle or ingest it. In addition, soiled diapers and garments are handled and stored in unsanitary ways. In applicable buildings, diapers are stored in open buckets.

Related Issues:

- The waste is cleaned with towels or a mop by older girls, but no sanitizer or disinfectant is used to treat the soiled area unless it is readily available
- Because of the scarcity of beds in the buildings, many residents remain on the floor, where interaction with waste is frequent; in the three buildings where the most severe waste issues were observed, there was a total of nineteen beds to accommodate about 120 residents[1]

Recommendations:

- Purchase free standing commodes as toileting alternatives in areas where toilets are non-functional
- Provide more effective cleaning supplies, both equipment and consumables, to address the sanitation hazards caused by the waste management issues
- Purchase and install diaper bins where necessary, to reduce human interaction with dirty diapers and diaper waste

[1] The purpose of this fact is not to emphasize the lack of beds in the buildings. Rather, we are stressing that the high likelihood of the residents interacting with the human waste on the floors is due to ineffective waste management. Even if beds or mattresses were present in these buildings, it is likely that they would be soiled as well due to ineffective waste management.

Chemical Hazards (High Priority, 4 of 5 buildings)

Chemicals used for cleaning were often stored within reach of the residents, and were unsecured. When combined with staff limitations, this was determined to present a hazard to the health and safety of the residents.

Related Issues:

- Older girls use chemicals for cleaning the buildings, and often splash chemicals haphazardly near the faces and bodies of girls on the floor
- In buildings with few sources of entertainment, chemical containers are subject to curiosity; in one instance, a girl was observed putting her face into a bucket of chemicals, and moved only when pushed away by an older resident

Recommendation:

- Buy lockable cabinets for chemical storage. In some cases, metal lockers are already available in the buildings, but the staff do not use them. Provide training for staff on the hazards associated with the current system of chemical storage and show staff how cabinets should be used.

Conditions of Toilets (High Priority, 3 of 5 buildings)

Many of the toilets in the home were cracked, broken, dirty, clogged, or non-functional. In some cases, conditions were such that the toilets were not usable.

Related Issues:

- Non-functioning toilets contribute to the presence of human waste in bedrooms
- Placement of toilets compromises privacy, one of the factors included in personal dignity. At the home, no toilet has any type of door, curtain, or method of blocking a person from seeing what is happening in a toilet area.
- Broken porcelain, slipperiness, or lack of handicap accessibility are all potential safety hazards for the residents

Recommendations:

- Replace existing toilets with handicap accessible toilets
- Buy commode seats and place them over existing Asian style toilets
- Hire a professional to repair the plumbing system for the toilets

Damaged Window Screens (Moderate Priority, 4 of 5 buildings)

73% of the 668 screens at the home are ripped, broken, or missing. Because of the presence of mosquitoes and other insects at the home, especially during the night, damaged screens were determined to cause a health hazard. We observed that many of the girls were covered with mosquito bites.

Related Issue:

- Residents with limited physical capabilities are not able to fend off mosquitoes

Recommendations:

- Replace window screens
- Add protective window guards to prevent further damage to the screens

Violence Among Girls (Moderate Priority, 3 of 5 buildings)

Due to understaffing and the behavioral disorders of the residents, violence among girls was a common cause of concern. Residents were frequently observed hitting, kicking, and punching one another. This type of behavior is hazardous to the physical and emotional well being of the residents.

Related Issue:

- Older girls are often observed to gang up on younger or weaker residents

Recommendation:

- Provide staff training in the techniques of conflict management and discipline. Training specific to dealing with mentally disabled persons is also recommended.

Condition of Doorways (Moderate Priority, 3 of 5 buildings)

Damaged wood, mold growth, missing parts, and broken locks were observed on many of the doors in the buildings. Functioning doors are necessary for the staff to effectively control the residents within a closed area. Also, doors protect the residents from access to unsanitary or hazardous situations such as those occurring in the bathrooms.

Related Issues:

- Water damage to doors rots the wood away, creating large splintered areas
- Open doorways do nothing to prevent incoming insects such as mosquitoes and flies

Recommendations:

- Replace existing doors with doors that do not rot and cannot be easily damaged
- Hire a professional to fit the bottom of the existing doors with metal coverings to protect from further damage

Bathing Procedures (Moderate Priority, 3 of 5 buildings)

Residents are bathed in open areas on the bathroom floors of each building. The bathing process consists of splashing or hosing the residents with trough water, and soap is infrequently used. The sanitation of the residents is compromised due to the presence of garbage, cleaning equipment, and human waste on the floors on which they are bathed.

Related Issue:

- The personal dignity of the residents may be lowered by the nature of the bathing process

Recommendations:

- Hire a professional to redesign and remodel the bathroom with a designated bathing area
- Buy a shower chair and train staff to bathe the residents in it
- Curtain off a section of the bathroom for privacy
- Buy and install a shower head nozzle attached to the end of a hose

Discussion

The current quality of life at the home has been compromised by many variables. Some are very difficult for the ISG to address, especially those directly related to staff issues. Funding from Thailand's Department of Welfare is limited to staffing each floor with two caregivers. These caregivers work 48 hour shifts, and are paid less than minimum wage. In addition, only a junior high school education is required to be hired at the home, and minimal extra training is provided.

Issues including bathing and feeding procedures, conflict and violence resolution, emergency situation conduct, and human waste management all require adequate training. In addition, adherence to strict human waste management and cleaning routines requires an extremely high level of personal motivation and care for the residents. Due to the nature of their job, which involves caring for 30-50 girls for 48 hours for minimal wages, one can imagine that it is difficult for the staff to be motivated to such a high degree. These staffing issues are likely a matter that goes beyond the scope of what the ISG can address, due to the DPW's control over staff issues. They must, however, be recognized as one of the foremost areas of concern that affects quality of life at the Pakkred Home.

We are convinced that the Pakkred Home has remarkable potential to be a supportive environment for the growth and development of girls with mental disabilities. We can only hope that the motivation to make improvements does not end with the completion of this project. We believe that the documentation and description of the needs at the home is an important beginning to the improvement process. There is much work to be done, however, and what we have accomplished is only the first step in a series of many that should to be taken to improve the quality of life for the residents and staff at the Pakkred Home for Mentally Handicapped Girls.

Table of Contents

List of Figures

List of Tables

1 Introduction

People with disabilities in developing nations worldwide are confronted with many challenges. Often, their communities do not have the resources to support them and they frequently face social obstacles in the struggle to be recognized as equal citizens. In 2003, Thailand has few facilities specifically for citizens with disabilities. The lack of attention and funding received by the facilities often compromises conditions that affect the quality of life for residents.

The only government-funded facility for people with disabilities in Thailand is known as the Pakkred Home and is located in the Nonthaburi province of greater Bangkok. The home provides shelter and care for approximately 3,000 people of many ages and capabilities. This project was concerned with a section of the home known as the Pakkred Home for Mentally Handicapped Girls, which houses 500 females with disabilities. Organizations involved with the home have been concerned with the overall quality of life for the residents, including issues related to health, safety, sanitation, handicap accessibility, and personal dignity. Thailand's Department of Public Welfare (DPW), the government organization responsible for the Pakkred Home, has recognized lack of funding, staff shortages, and poor facility design as the primary reasons for the conditions at the home[2]. Understaffing and underfunding significantly limit the services and assistance available to the residents, potentially lowering their quality of life. Aspects of building and equipment design that are not accommodating to both the residents and the staff turn simple tasks into major inconveniences.

Over the past few years the International Support Group (ISG), a charitable organization, has been working to improve the Pakkred Home in various ways. The ISG works on many projects involving Thai children and adults in need. Of these projects, the Pakkred Home has the second highest available budget, as described in a recent financial report. Most recently, the ISG has confronted issues relating to the quality of life for the residents in the five buildings at the Pakkred Home for Mentally Handicapped Girls. The ISG commissioned this project to achieve a plan of specific improvements that could be implemented at the home to meet the unique needs of staff and residents and improve the quality of life for both.

The goals of this project, sponsored by the ISG and assisted by the DPW, were to identify and prioritize the issues of concern at the home. The outcome of this analysis was a set of recommendations intended to provide cost efficient and effective options for the improvement of the conditions at the Pakkred Home for Mentally Handicapped Girls. These results provide justification and suggestions for project and fundraising efforts by the International Support Group that would improve quality of life at the facility.

[2] Personal interview, ISG member, January 15, 2003.

2 Background

Our background chapter introduces relevant information to help the reader better understand many of the topics surrounding people with disabilities as well as the effects these disabilities have on their lives. One of the main ideas presented is that if sufficient accommodation is not provided for people with disabilities and their unique needs, their quality of life may be compromised on an individual basis. Individuals' disabilities and needs are considered from multiple perspectives to show in what ways their quality of life may be limited or improved.

In the first section, we present a summary of information about the meaning and types of disabilities and their social and psychological effects. As health and sanitation are both important factors in personal quality of life, we discuss those topics in the subsequent section. This is followed by a description of barrier free design, a concept involving accessible environments in modern society. This information aids in understanding how the quality of life for people with disabilities, and more specifically the residents of the Pakkred Home, can be influenced.

The second portion of our background research addresses some of the concerns facing people with disabilities in developing nations. We begin by describing how the United Nations has served as an advocate for people with disabilities in the developing world. A brief history of the civil rights movement for people with disabilities in the United States is also given to illustrate the similarities and differences between developed and developing nations. The comparison of the current situation for people with disabilities in different countries fosters a better understanding of the disparities in quality of life around the world today.

Finally, Thailand is introduced as the main focus of the project. The content of the final section conveys the challenges people with disabilities face in Thailand, and reveals the particular situation confronted in this project.

2.1 Disability and Quality of Life

Many factors contribute to personal quality of life, including such elements as health, safety, sanitation, handicap accessibility, and personal dignity. In the following sections we discuss disabilities and some factors that affect the quality of life for people with disabilities. We begin with definitions of the terms impairment, disability, and handicap. These are given for the purpose of clarifying the vocabulary used throughout this report as well as providing a better understanding of their meanings.

2.1.1 Distinction Between Impairment, Disability, and Handicap

A common misunderstanding of the terms *disabled* and *handicapped* is that they are interchangeable. The two, in fact, have different meanings. Throughout this report, both terms will be used frequently, and therefore should be clearly established as linked but distinct concepts. In the following paragraphs, definitions of impairment, disability, and handicap are given. The definition given for disability is a combination of the definitions written in the Americans with Disabilities Act (ADA) and by the United Nations. The definitions for impairment and handicap are taken from United Nations documents.

> An **impairment** is any loss or abnormality of psychological, physiological, or anatomical structure or function. An impairment can be temporary or permanent. This includes the existence or occurrence of an anomaly, defect, or loss in a limb, organ, tissue or other structure of the body, including the systems of mental function.[3]
>
> A **disability** is a physical or mental impairment that substantially restricts performance of an activity within the range considered normal for a human being. Such life activities include walking, seeing, hearing, learning, breathing, caring for oneself, or working. A disability may be temporary or permanent, reversible or irreversible, and progressive or regressive.[4]
>
> A **handicap** results from an impairment or a disability and limits or prevents the [fulfillment] of a function that is considered normal for a human being. A handicap is therefore seen in the relationship between disabled persons and their environment. Cultural, physical or social barriers to mobility within the built environment are handicaps.[5]

Although these terms have distinctive meanings, they are often applied incorrectly in everyday usage. To clarify correct usage of the terms, the following example is offered: Stairs can be considered to be a handicap to a person in a wheelchair. They are an obstacle in the environment and hinder the progress of the wheelchair user. The physiological loss of leg function is the impairment in this case, and the person's difficulty or inability to walk is the disability. A thorough understanding of these terms is very important, as they apply directly to the content of this report.

2.1.2 Classification of Disabilities

Within the definition of disability there are a variety of types of disabilities. All of these can be classified into one of five commonly used categories. The following four categories are defined by the United Nations:

- **Orthopedic** disabilities are physical in nature and affect anatomical function. They may require the person with the disability to use a wheelchair, walker, cane, or any other type of ambulatory device.
- **Sensory** disabilities affect the five senses, most commonly sight and hearing.
- **Cognitive** disabilities include, but are not limited to, mental disabilities, mental illness, learning disabilities, speech impairment, and developmental disorders. Some examples of cognitive disabilities are anxiety disorders, bi-polar, Autism, Downs Syndrome and dyslexia.
- **Multiple** disabilities refer to people who have two or more of the preceding disabilities.

[3] United Nations. Promotion of Non-handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/z15009gl/z1500901.htm> Accessed 2002 November 1.
[4] Zames-Fleischer, D., Zames, F. The Disability Rights Movement: From Charity to Confrontation. Philadelphia: Temple University Press; 2001. 93 p.
[5] United Nations, 1995, <http://unescap.org/decade/publications/z15009gl/z1500901.htm>.

Additionally, the National Institute on Disability defines a fifth category, which describes people with debilitating illnesses such as AIDS or cancer. These diseases create a disability due to symptoms that weaken a person's physical and mental state.

2.1.3 Psychological Effects of Disability

People with any type of disability may suffer from psychological problems caused by the ways in which they are judged based on their physical appearance or behavior. In this section, a few effects of the social issues related to the psychological well being of people with disabilities are examined. These psychological problems include a negative body image, negative self-concept, and depression.

People with physical disabilities often have a negative view of their bodies because it is common for society in the United States, as well as other countries, to praise attributes such as traditional beauty, health, and strength.[6] Many times, people with physical disabilities do not feel that they possess the physical beauty, health, or strength of a person without a disability. This often leads to a negative body image and a feeling of inadequacy because one's physical traits are considered by society to be undesirable.[7] However, if people with disabilities are in an accepting environment where their physical traits are not seen as anomalies, a negative body image is usually not prevalent.[8]

Self-concept is another important part of any human being's psyche. Psychologist S. F. Tam defines self-concept for a person with disabilities as "a pertinent construct that reflects the individual's degree of self-fulfillment, self-sufficiency, and self-actualization during and after the rehabilitation process."[9] Being a part of social groups and society as a whole, claims Tam, is necessary for a positive self-concept. The tendency for people with disabilities to have a negative self-concept is frequently caused by social discrimination, a feeling of inadequacy, and environmental handicaps.[10]

Depression among people with disabilities is more common than among people without disabilities for many complex reasons. Some disabilities change the physiological functions of the body and mind, which then cause chemical imbalances that trigger involuntary, non-situational depression.[11] In addition, depression can be caused by environmental factors such as societal attitudes. The negative views held by people with disabilities about themselves may be a result of social prejudice or lack of handicap accessibility as well as their feelings of inadequacy when they compare themselves to able-bodied people. Friedman and McColl claim that "society's traditional view of disability has supported the disabled individual's view of him or herself as unworthy."[12] Many times, depression is also caused by a feeling of bereavement for the loss of physical or mental function as well as loss of one's previous

[6] Taleporos, G. and McCabe, M. Body Image and physical disability –personal perspectives. Social Science & Medicine 2002; 54: 974.
[7] Tam, S-F. Comparing the Self-Concepts of Person With and Without Physical Disabilities. The Journal of Psychology 1998; 132 (1): 83.
[8] Taleporos, G. and McCabe, M., 2002, 975.
[9] Tam, S-F., 1998, 79.
[10] Ibid., 82.
[11] Friedland, J.and McColl, M. Disability and Depression: Some Etiological Considerations. Soc Sci Med 1992; 34 (4): 396.
[12] Friedland, J.and McColl, M., 1992, 396.

identity as a person without disabilities.[13] Other causes of depression for people with disabilities are side effects of medications and personal control issues. While people with disabilities are likely to suffer psychologically to some extent, the removal of handicaps from the environment can engender feelings of societal acceptance, which may mitigate psychological effects.

2.1.4 Barrier Free Design

The ideal environment, both physically and psychologically, is one that is safe and requires no additional effort to successfully perform the activities of daily living. Although safety and accessibility are extremely important to all people, they become crucial to people who might find their surroundings to be a physical barrier. Barrier free design, often referred to as handicap accessibility, is the concept that an environment can be modified to eliminate almost any obstacle or handicap that may limit or restrict a person in any way. An example of this situation is a wheelchair ramp, which allows a person with a severe physical disability to access a building where he or she would otherwise be handicapped by stairs. An environment that is accessible for those with disabilities must accommodate the five generalized groups of disabilities.[14] When all are accounted for, the design is intended for "all persons."

Many people with varying types of disabilities employ assistive devices to aid them in their activities of daily living, which include bathing, toileting, and walking, among others. These devices modify the environment to aid in a particular task. Alterations to the environment for people with disabilities are becoming increasingly common; there were 13.1 million Americans who used "assistive technological devices" in 1996.[15] Since assistive devices can be "any item, piece of equipment, or product that is used to increase, maintain, or improve the abilities of people with disabilities"[16] as defined by Learning Disabilities Online, there are a variety of assistive devices used by people with many types of disabilities.

Assistive devices for people with orthopedic disabilities are often designed to increase mobility. Common examples of assistive devices that can be used specifically for the bathroom include grab bars to provide added stability or an emergency hold and lever faucet handles to accommodate physical disabilities. Toilets and sinks can be raised or lowered for convenience. In addition, counter-weighted drain plugs, detachable bath benches, shower seats, flexible hand-held shower nozzles, and hydraulic hoists can all create bathroom independence for those with physical impairments.[17] A person with limited movement could also use a computerized wheelchair, which allows him or her to move with less difficulty.

Assistance created specifically for individuals with cognitive disabilities is in many ways similar to that created for those with orthopedic disabilities. Computer software, alternative keyboards, and other technological means may be used to assist a person with a cognitive disability in performing educational tasks. Slowly paced software and larger computer screens may be used for people with cognitive disabilities who use computers frequently.

[13] Friedland, J.and McColl, M., 1992, 399.
[14] United Nations, 1995, <http://unescap.org/decade/publications/z15009gl/z1500901.htm>.
[15] National Institute on Disability and Rehabilitation Research. The Chartbook on Disability in the United States. <http://www.infouse.com/disabilitydata/chartbook.choices.html> Accessed 2002 October 25.
[16] Learning Disabilities Online. Learning Disabilities and Assistive Technology: An Emerging Way to Touch the Future. <http://ldonline.org/ld_indepth/technology/tfl_mystery.html> Accessed 2003 February 12.
[17] Goldsmith, S. Designing for the Disabled. New York: McGraw-Hill, 1967, 12 p.

Because many people with cognitive disabilities rely on outside assistance in their activities of daily living, assistive devices that involve self-managed technology can provide these individuals with increased independence. Examples of this concept include assistance in areas such as traveling, shopping, payment of bills, use of ATM machines, and tasks involving a sequence of steps. Many technological assistive devices can also allow a person with a cognitive disability to more easily control appliances, audio and visual equipment, and accessories such as door and window locks. For people with cognitive or sensory disabilities who cannot use their voice, there is equipment that can provide alternate means of communication.

Application of assistive devices in the everyday life of an individual is not easy. Aside from obvious concerns such as high cost and difficulty of implementation, assistive devices have to be extremely flexible and easy to adapt. No two persons, even with the same disability, are alike, and therefore no single device will be able to provide for every individual with a given disability.[18] A key issue to remember is that assistive devices do not solve or remedy a disability, but attempt to work around the effects of the disability. If effectively implemented, assistive devices can help to compensate for the disability of a person and create an environment that is free of cognitive, sensory, or orthopedic barriers.

Although there are no global regulations governing barrier free design, the United Nations has researched and issued some recommendations for residential homes. In May 1995, the United Nations conducted a study on accessibility that included three cities in developing nations. The goal of the study was to take an environment which was clearly an obstacle to those with a disability, and provide an alternate barrier free design.[19] In Beijing, parts of a residential home were renovated to improve conditions. A committee of 22 members was the decisive force behind the project, and people with disabilities acted as consultants throughout the entire process. Detailed recommendations included significant attention to building features such as entrances, doors, thresholds, ramps, stairs, steps, elevators, alarms, emergency exits, sanitation fixtures, floor surfaces, handrails, windows, informational signs, lighting, devices for communication and locks.[20] People of all sizes, ages, and disabilities were considered in these recommendations. Although providing barrier free environments in developing countries is a complex undertaking, the Beijing project achieved success by using the UN recommendations in conjunction with the input of people with disabilities.

2.1.5 Health and Sanitation

Physical barriers are only one challenge facing people with disabilities. Beyond these obstacles, there are matters of personal health and sanitation that people with disabilities deal with in their daily lives. In this section, the concerns of personal health, waste management and its effect on water supply, sanitation, and proper food preparation are addressed. All of these issues are universal in nature, although some are more acutely relevant in developing countries.

People with disabilities often encounter greater than average challenges when dealing with the topics of health and sanitation. Physical and cognitive disabilities can limit a person's

[18] Arc, The. <http://thearc.org/faqs/assistqa.html> Accessed 2003 February 12.
[19] United Nations. Promotion of Non-handicapping Physical Environments for Disabled Persons: Pilot Cities. <http://unescap.org/decade/publications/pnedp/index.htm> Accessed 2002 November 1.
[20] United Nations, 1995, <http://unescap.org/decade/publications/z15009gl/z1500901.htm> .

ability to execute such activities as toileting, washing, and bathing, which are crucial in practicing proper sanitation and sustaining health. These difficulties of people with disabilities are frequently exacerbated by unfavorable health and sanitation conditions in developing countries. Moreover, governments in developing nations many times do not have sufficient staff or funding for programs that provide specialized assistance for people with disabilities to lead a healthy lifestyle.

Clean water is necessary to prevent the spread of diseases and illnesses such as diarrhea, Hepatitis A, typhoid, and cholera, among others.[21] Many of these diseases can affect expecting mothers, whose children might suffer birth defects that could lead to disability. Moreover, these diseases could also cause disability or death in small children. In March 2002, the World Health Organization reported that in the year 2000 1.3 million children under five years of age died in developing countries from diarrhea-related diseases caused by unsafe water supplies in combination with poor sanitation and hygiene.[22] Additionally, an estimated 10% of the population in developing nations is infected with intestinal parasites.[23] Clean water is also needed for personal hygiene, diminishing the risk of skin to skin spreading of viruses and infections.

Sanitation prevents contamination of water, soil, and food supplies by reducing contact with such pathogen-carrying substances as blood, feces, and chemicals. The various types of waste that can potentially contaminate water and food supplies include human waste, food waste, and chemical waste. Human waste is especially a concern in developing countries, where it can contaminate water due to overcrowded cities and inadequate sewage disposal. Traces of human waste found in the drinking water are believed to cause 80% of diseases in India. Clearly, infested water is the most prominent national health problem in that country.[24] If discarded improperly, food waste can produce cultures of bacteria harmful to humans. Bacteria cultures that develop near water sources or come in contact with humans possess the potential to spread disease. However, food waste also includes biodegradable material that, when treated properly, can be infused back into soil, actually benefiting the environment. Chemical wastes such as lead, mercury, pesticides, organic pollutants, and other chemicals can be hazardous to humans if they are exposed to these toxins.[25]

In addition to clean water and proper sanitation, safe food supplies are crucial to all humans. The requirements for food that is safe for consumption include waste management, proper food preparation and storage, and an environment free from harmful substances.[26] These food safety issues affect quality of life at any location, but can be especially relevant when dealing with populations in which individuals may not have the cognitive ability to examine food and determine the health risks.

---

[21] World Health Organization. Global Water Supply and Sanitation Assessment 2000 Report. <http://www.who.int/water_sanitation_health/Globassessment/Global1.htm#Top> Accessed 2002 December 1.
[22] U.S. Department of State: Office of International Information Programs. WHO Says Unhealthy Environments Kill 3 Million Children a Year. <http://usinfo.state.gov/topical/global/hiv/02030501.htm> Accessed 2002 November 6.
[23] World Health Organization, 2002, <http://www.who. int/water_sanitation_health/ Globassessment/Global1.htm#Top> .
[24] Cooper, Kenneth J. Human Waste Overwhelms India's War on Disease. <http://www.swopnet.com/engr/sanitation/India_sewers.html> Accessed 2002 November 6.
[25] U.S. Department of State, <http://usinfo.state.gov/topical/global/hiv/02030501.htm>.
[26] US Food and Drug Administration. Center for Food Safety and Applied Nutrition. <http://vm.cfsan.fda.gov/~dms/wh-food.html> Accessed 2002 December 3.

2.1.6 Challenges for Females with Disabilities

Females with disabilities face challenges beyond the previously mentioned subjects concerning disability and quality of life. This section explains some of these additional difficulties and describes ways in which they may affect quality of life.

Females with disabilities of all ages encounter many issues that men with disabilities do not. Gender-based concerns can affect such aspects of life as education, employment, psychological well-being, and societal role. In some developing nations, poverty often aggravates many issues that pose difficulties for women and girls with disabilities.

According to a report by the United Nations, educational opportunities for women and girls in developing countries are few, and many times not equivalent to those available to men and boys.[27] Education that is separated into disabled and non-disabled categories is often further segregated by gender, leading to gender-based education. For instance, girls with disabilities in vocational education are often taught trades for traditionally "female occupations."[28] This type of education can lead to less versatility in job skills and may limit potential for employment.

Many women and girls with disabilities in developing nations have difficulties in providing for themselves. A World Bank report revealed that inequality issues concerning employment may be a main cause of this difficulty.[29] In both developed and developing nations, a woman with disabilities earns half of what a man with disabilities earns.[30] If a woman with disabilities faces obstacles in providing for herself, her dependence on others may increase and her chances for improving her status in society could be compromised. This may lead to community reluctance to rehabilitate women and girls with disabilities, as they do not contribute to the work force as a person without disabilities could. Fewer employment opportunities, lack of accessibility, and gender discrimination place women and girls with disabilities at a disadvantage and may cause psychological stress.

In addition, psychological stress caused by hardships, abuse, and discrimination often trouble females with disabilities, who have a higher incidence of these issues in their population.[31] Women and girls with disabilities in developing nations face struggles for acceptance due to both their disabilities and their status as females. United Nations' research has determined that discrimination resulting from those two stigmas contributes to low self-esteem.[32] Feelings of inadequacy and loneliness may also develop when women and girls with disabilities feel shame and isolation due to lack of social support. This situation may hinder females with disabilities from seeking information about their disabilities or rights. The incidence of physical and mental abuse is more frequent in female populations with disabilities.[33] Clearly, such abuse has unfavorable psychological effects as well. With

[27] United Nations. Hidden Sisters: Women and Girls with Disabilities in the Asian and Pacific Region. <http://www.unescap.org/decade/wwd1.htm> Accessed 2003 February 9.
[28] Ibid.
[29] Elwan, Ann. Poverty and Disability. <http://rehab-international.org/publications/rivo/50/povertyanddisability.html> Accessed 2003 February 9.
[30] United Nations, <http://www.unescap.org/decade/wwd1.htm> .
[31] Ibid.
[32] Ibid.
[33] United Nations, <http://www.unescap.org/decade/wwd1.htm> .

greater understanding of these needs and more advocating to protect their rights, females with disabilities can begin to empower themselves.

2.2 Evolution of Disability Rights

Technology, religion, socioeconomic conditions, political systems, and culture all play important roles in shaping the way people with disabilities are treated and portrayed.34 In developed nations, programs and facilities exist to help integrate people with disabilities into society. However, developing nations often cannot fund or staff such programs. In these countries, where economic hardships and social conflicts are common, such issues often serve as influential factors in public opinion, political policy, and social norms regarding people with disabilities. The following sections discuss disability issues in developing nations and how they are related to education, health care, and poverty. The disability rights movement in the United States is examined in order to provide a historical description of the progress that has been made thus far by a developed nation considered to be a leader in topics concerning disability rights.

2.2.1 Disability Rights Movement in the United States

Throughout the last century, the United States has made significant advances in the acceptance and treatment of people with disabilities. This improvement of rights and treatment in society has not come without hard work and overcoming many barriers, both social and physical. Since 1935, the U.S. government has achieved three milestones that confront the issues surrounding people with disabilities: the Social Security Act of 1935, the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. A key driving force behind these governmental turning points has been advocacy groups who stand up for the rights of people with disabilities. In this section we describe the more significant actions and changes that have been made in the progression for equality of people with disabilities. This will provide a basis upon which to examine the progression of similar issues in developing nations.

One of the first advocacy groups that fought against discrimination of people in the United States with disabilities was the League of Physically Handicapped. The group was formed in the 1930s and was primarily concerned with confronting governmental and private business discrimination against people with disabilities in the workforce. People were convinced that businesses were using personal disabilities as an excuse to disqualify a person with disabilities from valid employment.[35] The Social Security Act was the first concrete law that allotted federal funding and grants to the states to help support the elderly and children with disabilities. However, there were no inclusions in the act pertaining to employment. During World War II, people with disabilities, such as the blind and deaf, were allowed to work in factories. They assumed employment positions in which their disabilities would not interfere with the task at hand. This time was short lived, however, as many people with disabilities lost their jobs to veterans returning home after the war.

During the 1950s and 1960s, the focus in advocacy was deinstitutionalization and independent living for people with disabilities. Many people who had severe disabilities

[34] Mallory, B. Changing Beliefs About Disability in Developing Countries: Historical Factors and Sociocultural Variables. The International Exchange of Experts and Information in Rehabilitation 1993; 53 : 1.
[35] Zames-Fleischer, D., Zames, F., 2001, 5 p.

were developing themselves in mainstream society. In doing so, they had to cope with a structural society that was not built with disabilities in mind. Due to this hardship, many of these developing citizens who were handicapped by the outside world became very involved in activism. This effort aimed to make society understand and comply with the necessary changes needed for handicap accessibility.

After much protest and compromise within the government, the Rehabilitation Act was signed into law on September 26, 1973. Although the signed version was modified from the original version, the furthering of civil rights for people with disabilities was greatly increased by its presence. The modifications that were made to the document were the crucial Sections 501-504. Each section safeguarded a different area of rights for the disabled, mandating employment protection of people with disabilities and barring discrimination based on disabilities. One section gave civil rights to people with disabilities in programs receiving federal funding. However, the actual implementation of these regulations was a difficult process. The struggle continued for people with disabilities to be accepted in society as first class citizens. Eventually, the Americans with Disabilities Act (ADA) made the most significant impact, upon its signing in 1990, since it federalized the legal rights of people with disabilities.[36] Differing from the Social Security Act, the ADA does not provide any financial support for people with disabilities. Rather, it seeks to eradicate any discrimination that exists against people with disabilities.

Since 1935, the United States has made significant progress in civil rights, understanding, acceptance, and encouragement of people with disabilities. Clearly, there will always obstacles for those with disabilities, but measures taken by the government such as the ADA and the Social Security Act have made these obstacles less oppressive and more conquerable. The future goal for people with disabilities is full integration into society with no social or physical boundaries holding them back from living their lives equally and to their full potential.

2.2.2 Social Factors and Limitations in Developing Nations

The environments of developing nations often make it challenging for people with disabilities to improve their quality of life.[37] Many people with disabilities suffer from a high incidence of poverty and disease and a lack information about disability. These factors can be attributed to the economic status of the developing nation in which they live.

In a report by the World Bank, it was documented that there is a higher occurrence of poverty among people with disabilities than among people without disabilities in developing nations.[38] Factors contributing to this trend include lack of environmental accommodations to enable people with disabilities to work as well as lack of educational or vocational training. Frequently, governments lack the funding and personnel for social programs that educate or train people with disabilities to work and provide for themselves financially. Also, lack of information about people with disabilities and social stigmas contribute to low employment rates for people with disabilities, especially women, according to research by World Bank.[39]

[36] Zames-Fleischer, D., Zames, F., 2001, 93 p.
[37] Ibid., 21 p.
[38] Elwan, A., <http://rehab-international.org/publications/rivo/50/povertyanddisability.html> .
[39] Elwan, A., <http://rehab-international.org/publications/rivo/50/povertyanddisability.html> .

Poverty in developing nations can lead to disability, as there may be a shortage of funding for medical care. In some developing countries, the prevalence of disease, malnutrition, and the lack of medical treatment are the leading cause of disability. In addition, maternal diseases and injuries contribute to babies in developing nations having more birth defects than babies in developed nations.[40] Because there is no funding to treat, prevent and inform about illness, many ailments are left undiagnosed or untreated. This situation creates serious health problems that many times become a disability. For example, in India, polio is the primary cause of orthopedic impairments in children.[41] Moreover, 70% of the world's people with disabilities live in developing countries, where medical care is not always provided for all.[42] In a 1999 survey by the UN of approximately 100 developing nations and a few developed countries, information concerning medical care, rehabilitation, and disability services was obtained. Out of the all countries surveyed, only 52% of all people with disabilities received medical treatment in the same system as people without disabilities, but 87% of disabled children were treated in mainstream healthcare.[43] Further inquiry into why people with disabilities were not integrated into mainstream heath care revealed such factors as funding insufficiencies, lack of staffing, social prejudices, and not enough programs serving people with disabilities, among others.[44] Furthermore, the governments of the nations that were surveyed only provided full financial assistance for medical care 65% of the time.[45]

People with disabilities in developing nations may also undergo psychological trauma as a result of harsh conditions and social difficulties. For example, all family members in developing nations must often work to contribute financially in order for the family unit to survive, in contrast to developed nations.[46] Consequently, if a child or adult family member in this situation has a disability, he or she could not contribute to the family financially as much as a person without a disability could. This can lead to social inequality and feelings of inadequacy. In extreme cases, necessity may force families to expel the person with a disability.

Social challenges and limitations for people with disabilities in developing nations play a large role in the lives of the citizens of those nations. These factors must be included when considering quality of life in such situations. Comparisons with developed nations may only be taken so far, as they may not apply to developing countries with very different social and economic structures.

2.3 Disability in Thailand

Thailand faces many of the same challenges as other developing nations in advancing social development for people with disabilities. In the following sections, we discuss how Buddhist views may affect people with disabilities and how the Thai government's legislation has begun the fight for disability rights. We also explore the Pakkred Home itself and discuss the

[40] Elwan, A., <http://rehab-international.org/publications/rivo/50/povertyanddisability.html> .
[41] United Nations. Production and Distribution of Assistive Devices for People with Disabilities. <http://www.unescap.org/decade/publications/z15001p1/z15001.htm#contents> Accessed 2002 November 1.
[42] Michailakis, Dimitris. The UN Standard Rules on the Equalization of Opportunities for Reasons with Disabilities. <http://whqlibdoc.who.int/hq/2001/WHO_DAR_01.7.pdf> Accessed 2002 November 10.
[43] Michailakis, D., 1999, <http://whqlibdoc.who.int/hq/2001/WHO_DAR_01.7.pdf> .
[44] Ibid.
[45] Ibid.
[46] Mallory, 1993, 3 p.

ways in which many charitable organizations, such as our sponsor, the ISG, have been trying to improve the quality of life for the residents at the home.

2.3.1 Buddhist Views on Disability

Because Thailand is primarily a Buddhist country, Buddhism plays an important role in the context of this project. The teachings, beliefs, and traditions of Buddhism extend into nearly every aspect of Thai culture and influence the attitudes and reactions of the Thai people, including the Thai view on people with disabilities. One of the challenging factors for people with disabilities is the Buddhist religion, which does not always favor them for reasons explained in this section.

There are two major forms of modern Buddhism: Mahayana and Theravada. Mahayana is dominant in Central and East Asia, while Theravada is the primary form of Buddhism in Southeast Asia, including Thailand.[47] Theravada Buddhists place a heavy emphasis on the Fourfold Truth and the cycle of birth and rebirth, as will be explained.[48] These ideas are likely to strongly influence how the Thai people view citizens with disabilities.

The core message of Buddhism is "liberation."[49] Through his teachings, Buddha encouraged his followers to seek and accept personal liberation. He taught that through meditation and other forms of mind training it is possible to achieve a state of freedom. A measure of this concept of personal responsibility is *punya*, or merit. *Punya* is a type of energy, or "spiritual currency" that the Buddhist carries throughout his or her many lifetimes and will eventually help him or her to reach nirvana.[50] *Punya*, which is gained through proper conduct and adherence to religious practices, can and should be shared with others. A more detailed description of the path from suffering to spiritual enlightenment is given in the following paragraphs.

Buddhism argues that suffering is a necessary and unavoidable part of everyday life, which manifests itself in many ways. Suffering stems primarily from a person's own actions and thoughts, some of which may have taken place in a previous life; a concept clearly defined in the First Teaching or First Sermon, given by the Buddha. This teaching establishes the Fourfold Truth, described as "diagnosis of the problem of existence and the prescription of appropriate therapy."[51]

The first part of the Fourfold Truth deals directly with *dukkha*, a term that can be loosely defined to mean "unsatisfactoriness" or "suffering."[52] *Dukkha* encompasses all physical and mental difficulties faced by a person throughout his or her life. The second and third parts of the Truth deal with the origin of suffering and the cessation of it, respectively. The path leading away from suffering is given in the fourth part of the Fourfold Truth. According to the Truth, *dukkha* can be gradually alleviated by following the *marga*. This path is known also as the Holy (or Noble) Eightfold Path.

---

[47] Corless, Roger J. The Vision of Buddhism. New York: Paragon House; 1989, 289 p.
[48] Hines, Richard. Theravada Buddhism. <www.wsu.edu:8000/~dee/BUDDHISM/ THERA.HTM> Accessed 2002 November 6.
[49] Corless, Roger J., 1989, 104 p.
[50] Ibid., 76 p.
[51] Ibid., 206 p.
[52] Ibid., 206 p.

Following the ideals of the path leads a person to a more wholesome and appropriate style of life. Therefore, the Buddhist attitude toward suffering is seen as one of high personal involvement. Suffering cannot be blamed on an angry deity or unfortunate environment, but is directly caused and controlled by the sufferers themselves.[53] The key to understanding this type of personal suffering is to accept and recognize it. The solution, known as reaching nirvana, is also in the hands of the individual, who can choose his or her future path in life by deciding to what extent they will follow the *marga*.

Buddhism places heavy emphasis on compassion, care for others, and personal sacrifice.[54] These characteristics can been seen in Thai cultural norms such as respecting elders and saving face, even that of enemies or inferiors. It may seem that within this attitude of compassion and kindness, a Thai Buddhist would find plentiful moral resources for the care of people with disabilities. This is juxtaposed, however, with the Buddhist perspective on the reasons behind human suffering, which adds considerable ambiguity to the Thai attitude toward people with disabilities.

An integral part of the Buddhist attitude toward suffering is the idea of reincarnation. The teachings of Buddha identify three major realms of rebirth: the sensuous realm, the realm of forms, and the formless realm. Subdividing the sensuous realm further leads to six divisions: *devas* (peaceful deities), *asuras* (wrathful deities), humans, *pretas* (ghosts), animals, and beings from hell.[55] It is possible for a human being to be reborn as any one of these entities, and it is also possible to be reborn as a human but to have qualities more readily associated with another type of being. A mental disability, for example, can be interpreted as a sign that a person has been born with the confused and partially conscious mind of an animal.[56] The cause of this type of situation can most readily be ascertained through an examination of the individual's previous life or lives. It is likely that the afflicted individual exhibited negative traits in their former existences, which caused their change of form within the sensuous realm. In this way, Buddhist karma (a concept similar to *punya*) is transferred from one life to the next, and may serve as the cause for a mental or physical disability. The fifth of the Buddha's "Five Remembrances" sums this concept: "My actions are my only true belongings. I cannot escape the consequences of my actions. My actions are the ground on which I stand."[57] From these statements, it can be understood how the Buddhist population of Thailand may view people with disabilities as "punished."

2.3.2 Legislation Concerning People with Disabilities in Thailand

In addition to facing the unique challenges posed by Buddhism, the citizens with disabilities of Thailand, like those in many countries, were not officially acknowledged by the government for many years. Although welfare for people with disabilities began in 1941,[58] it was not until the early 1990s that any major legislation was passed guaranteeing citizens with disabilities the basic human rights and privileges enjoyed by other citizens.

---

[53] Robinson, R., and Johnson, W. The Buddhist Religion, A Historical Introduction. California: Wadsworth Publishing Company; 1982. 129 p.
[54] Hanh, Thich Nhat. The Heart f the Buddha's Teaching. New York: Broadway Books; 1999. 169 p.
[55] Corless, Roger J., 1989, 142 p.
[56] Ibid., 144 p.
[57] Hanh, 1999, 124 p.
[58] United Nations ESCAP. Asian and Pacific Decade of Disabled Persons, 1993-2002. <http://www.unescap.org/decade/publications/apdcp/thailand.htm> Accessed 2002 October 24.

The first turning point for the disabled population of Thailand occurred in 1991, when the government passed the Rehabilitation for Disabled Persons Act. This act included the establishment of the National Committee for the Rehabilitation of Disabled Persons. The committee, headed by the Ministry of Labor and Social Welfare, is comprised of governmental members, the academic community, the disabled community, and representatives of non-governmental organizations dedicated to helping people with disabilities. The role of the committee is to advise the Thai government on the many issues and challenges surrounding people with disabilities. These issues include medical services, education, occupational rehabilitation, community support, and job placement.[59] Additionally, an interesting fact to note is that approximately 63% of Thai people with disabilities live in the poorest, most rural regions of the country.[60] Considering this as well as the issues mentioned above, the situation becomes all the more difficult to address.

The next major step for Thai people with disabilities occurred in 1994, when the Ministry of Labor and Social Welfare passed a regulation concerning the employment of people with disabilities. The regulation aims to integrate people with disabilities into the workforce and provide them with employment opportunities. According to the regulation, every business with over 200 employees is required to hire one person with a disability for every 200 employees without disabilities. Businesses not complying with this rule must contribute a donation to the National Committee for the Rehabilitation of Disabled Persons.[61] Due to this regulation, it was estimated that in 2002 there were 5,031 people with disabilities integrated into the Thai workforce.[62]

Disabled legislation continued to expand throughout the 1990s. In July of 1994, the Thai Cabinet declared that all vocational training schools must accept people with disabilities.[63] This mandate increased the number of people with disabilities who were receiving a useful education and provided students with disabilities with valuable skills, making them more marketable to prospective employers. Vocational schools specifically for people with disabilities have existed in Thailand since 1968, when the first vocational rehabilitation center for people with disabilities was established in the province of Samut Prakarn. The Cabinet's 1994 declaration, however, made steps toward integration of vocational education throughout Thailand.

Education for citizens with disabilities, however, is far from completely integrated. The educational system is segregated into two sections, mainstream and disabled. There are two schools serving the physically disabled, who encompass 19.6% of the disabled population and 13 schools for the hearing impaired who correspond to 13.2% of people with disabilities in Thailand.[64] There are only eight schools in Thailand serving people with learning disabilities, who represent 10% of the disabled population.[65] There are also eight schools for the visually impaired, who compose 1.9% of all Thai people with disabilities.[66] In total, there

[59] United Nations ESCAP. Asian and Pacific Decade of Disabled Persons, 1993-2002. <http://www.unescap.org/decade/publications/apdcp/thailand.htm> Accessed 2002 October 24.
[60] United Nations. Asian and Pacific Decade of Disabled Persons: mid-point ~ country perspectives. <http://www.unescap.org/decade/publications/apdcp/apdcp.pdf > Accessed 2002 November 10.
[61] United Nations ESCAP. <http://www.unescap.org/decade/publications/apdcp/thailand.htm>
[62] Ibid.
[63] Ibid.
[64] United Nations, <http://www.unescap.org/decade/publications/apdcp/apdcp.pdf > .
[65] Ibid.
[66] Ibid.

are approximately 14,200 students with disabilities in segregated education, according to research done by the United Nations, and only 3,500 students with disabilities in "mainstream education."[67]

Basic human rights for people with disabilities were further improved in the late 1990s. The 1997 Thai Constitution "guarantees the elimination of barriers to participation of people with disabilities in society."[68] Under the Constitution, Thai people with disabilities are assured voting rights, access to public facilities, freedom from discrimination, and other basic human rights. Thailand's Eighth National Economic and Social Development Plan, activated in 1997, was the first of its kind to specifically include the rights of people with disabilities. The Development Plan "promotes the rehabilitation of people with disabilities, free medical service, integrated education at all levels, and scholarships for students with disabilities."[69] A third document, the Declaration on the Rights of Thai Persons with Disabilities, was signed in 1998 by the Prime Minister of Thailand. This declaration further raised public awareness about the rights and needs of people with disabilities, and helped to define more specifically the human rights newly associated with the disabled population.[70] Understandably, these improvements are still in the beginning stages. For instance, although medical care is available for all Thai citizens, the lack of government insurance and the number of people with disabilities who are actually receiving care are causes for concern. It is clear that the legislation is a major step, but the work to be done by the Thai government is far from finished.

As Thailand continues to advance its social development, it further attempts to improve public awareness about the rights of people with disabilities. Thailand hosted the Far East and South Pacific Games for the Disabled in 1999, and in 2000 hosted both the First National Conference on Accessible Transportation and the Campaign to Promote the Asia Pacific Decade of Disabled Persons.[71] The steps Thailand has taken toward integration and the awareness of the rights of its disabled population are similar in many ways to those taken by the United States in the same effort.

2.3.3 Pakkred Home

The Department of Public Welfare of Thailand (DPW) is the governing body responsible for citizens with disabilities and for promoting their social advancement. There are 124 welfare institutions for which the DPW is accountable.[72] The Pakkred Home, sponsored by the DPW, is located in Greater Bangkok in a province called Nonthaburi (see Figure 1). Nonthaburi lies 20 kilometers northwest of Bangkok on the bank of the Chao Phraya river

[67] United Nations, <http://www.unescap.org/decade/publications/apdcp/apdcp.pdf > .
[68] National Organization on Disability. The Kingdom of Thailand's Progress Toward Fulfillment of the U.N. World Programme of Action Concerning Disabled Persons. <http://www.nod.org/cont/dsp_cont_item_view.cfm?contentId=75> Accessed 2002 October 24.
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Antaseeda P. Schemes for the Handicapped Seen to Lack Direction. Online Bangkok Post. <http://search.bangkokpost.co.th/bkkpost/1997/december1997/bp971204/0412_news22.html> Accessed 2002 October 25.

and occupies 622 square kilometers.[73] It is divided into six districts, one of which is Pakkred.[74] The town of Pakkred lies 10 kilometers away from the main city of Nonthaburi.

The specific area of the Pakkred Home with which this project is concerned is the Home for Mentally Handicapped Girls (Baan Rachawadee Ying). This part of the facility was established in 1997 and is comprised of five separate two-story residential buildings (see map in Appendix A). There is also a small network of other supporting buildings, including centers for rehabilitation and vocational training. The four year old buildings are some of the newest in the facility (see Appendix B). There are approximately fifty female residents, mostly ages 7 to 18, on each floor of each building.[75] For each of these floors there are, at most, two caregivers at any given time, yielding a 2 to 50 caregiver to resident ratio on the best days. Living spaces are divided into age and disability categories, with each building housing females with similar needs. One building, for example, houses females with cerebral palsy, while another houses those with Downs Syndrome and Autism. Residents come from all parts of Thailand, many of them rural and poverty stricken. Only a small percentage of families who send their children to the Pakkred Home visit them again. It is estimated that out of the 500 females mentioned above, approximately ten (or 2%) are visited by family members.[76]

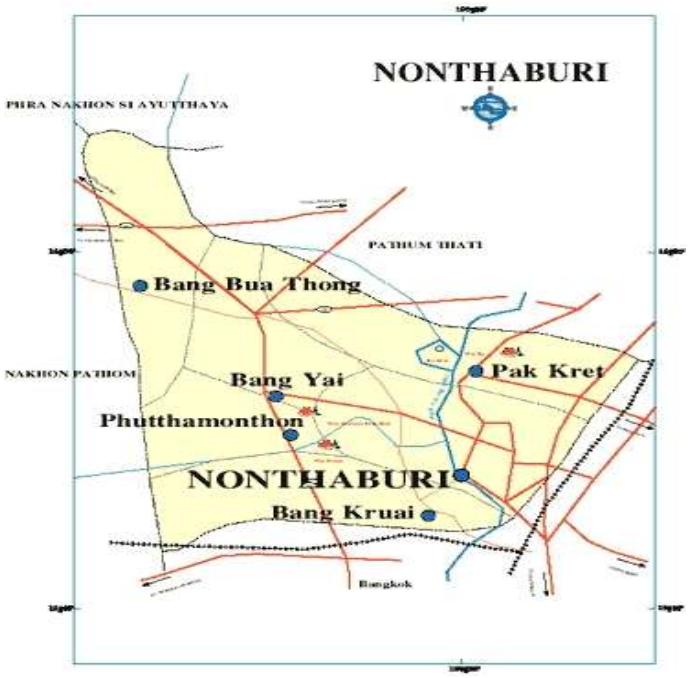


Figure 1: Map of Nonthaburi[77]

The policy of the Home for Mentally Handicapped Girls, as given in the home's informational brochure, is to "provide residential care for mentally handicapped girls whose ages range from 7-18 years who are orphans, neglected, homeless, abandon and children of

[73] Tourism Authority of Thailand. Nonthaburi. <http://www.tat.or.th/province/central/non> Accessed 2002 November 13.
[74] Note: The spelling of the town is often Pak Kret, but for the sake of uniformity, Pakkred is the spelling used in this document.
[75] Home for Mentally Handicapped Girls brochure, obtained January 14, 2003.
[76] Personal interview, ISG member, January 7, 2003.
[77] Map taken from the Tourism Authority of Thailand website. <http://www.tat.or.th/province/central/non> Accessed 2002 November 13.

distress or poverty stricken families [*sic*]."[78] This brochure can be found in Appendix C. The objectives of the Home are as follows:

1. To provide services to meet basic needs and all necessary services required for girls who are mentally handicapped
2. To provide physical, mental, holistic welfare and social rehabilitation services
3. To provide special education and vocational training corresponding to the physical and intellectual abilities of the children
4. To provide employment as deemed individually suitable within the community[79]

A complete list of the welfare services of the Home, as defined in the brochure, can be found in Appendix C.

The Pakkred Home has been identified by multiple groups as a site with high potential for charity work. The annual budget allotted by the government to the specified section of the Home is 7,633,571 Baht (US $180,681). This leaves much room for charitable donations of money and other resources.

Many attempts have been made to improve the quality of life for the children at the home, both physically and emotionally. For example, programs such as dental hygiene, art, crafts, painting, games, and language learning do exist within the Pakkred Home. However, these programs are only available to a small number of children because of the lack of funding and staff. Although there are few organized activities at the home, charitable organizations have contributed significantly to the home in many other ways.

The Christian Care for Children with Disabilities (CCD) is an organization that has a fairly deep level of involvement with the Pakkred Home. Hope for the Homeless, a subset of the CCD founded in the 1980s, has established the Rainbow House, which houses selected children with disabilities from the Pakkred Home. Hope for the Homeless aspires to provide these children with a family atmosphere in which they can grow and develop to their highest possible potential. A second objective of the program is to provide the children with the opportunity to be reunited with their original families or to be placed in new families. The Rainbow House also has day care facilities connected with the Pakkred Home. These facilities seek to care for and assist the children on a daily basis. CCD volunteers also visit the homes to assist with physical therapy and play activities. According to the CCD, the goals of the Pakkred Home program are "to increase the level and standard of care" and to "change the attitudes that currently exist towards disabled people."[80]

A second group involved with the Pakkred Home is the Family Care Foundation (FCF). The FCF, in collaboration with the Crowne Plaza Hotel, hosts performances for children with disabilities from the Pakkred Home. The group performs musical pieces and interactive dances in which the children may participate. Clowns, musicians, acrobats, and other entertainers from the group attempt to bring joy and pleasure to the lives of the children.

[78] Home for Mentally Handicapped Girls, brochure, obtained January 14, 2003.
[79] Ibid.
[80] Christian Care for Children with Disabilities. <www.cord.org.uk/worldwide/thailandhome.html> Accessed 2002 October 24.

Members and performers involved with these events are quoted as saying that there is nothing more rewarding than seeing the children smile as a result of their efforts.[81]

The Rotary Club (Bangkok South) has also donated generously to the Pakkred Home. In 2000/2001 the club contributed wheelchair cushions, a microwave, a handicapped toilet, and facilities for washing and tool storage.[82] A donation was also made by the Rotary Club, which funded the purchase of twenty wheelchairs with seatbelts. Additionally, the Rotary Club sponsors an activity known as Kids Out, which includes a day at the Royal Varna Yacht Club for over 200 of the children with disabilities from the Pakkred Home. The children are entertained, pampered, and given the opportunity to get outside on the beach.[83]

Another non-profit organization, called the International Support Group, devotes its efforts to improve the lives of the children with disabilities at the home through its "Welfare Homes Programme." Since 1988, the organization has assisted the Department of Public Welfare in helping many people in need.[84] The fifty-five members of the group obtain domestic and international donations to fund their various projects. At the Pakkred Home, the ISG has made many donations, including water coolers and physical therapy equipment.

In October 2001 the ISG formed a committee dedicated specifically to the Pakkred Home. This committee receives a portion of the overall budget, and has the goal of making improvements for the staff and residents at the home. In December of 2002, Sara Dryden was appointed as the leader of the committee. In a connection between ISG treasurer Annie Suwanvanichikij and WPI liaison Ruth Gerson, this project was formally commissioned to assist the ISG in identifying needs and possible improvements at the home.

[81] Roxas, Percy. A Family Like No Other. <www.familycare.org/network./p21_newspaper.htm> Accessed 2002 October 27.
[82] Rotary Club Bangkok South. "Helping the Disabled." <www.bangkok-south.com/page4.html> Accessed 2002 December 1.
[83] Rotary Club Bangkok South "Projects 1999-2000." <www.bangkok-south.com/projects.HTM> Accessed 2002 December 1.
[84] International Support Group pamphlet.

3 Methodology

The goal of this project was to assist the International Support Group by suggesting possible courses of action[85] to improve quality of life at the Pakkred Home. Our group focused our assessment and recommendations on the five following factors affecting quality of life: health, safety, sanitation, handicap accessibility, and personal dignity. It was our intention to provide suggestions that would contribute to the improvement of the conditions at the home with respect to these factors.

The primary objectives of this project were to:

1. Identify needs for improvement at the Pakkred Home by performing an evaluation of the conditions affecting quality of life at the facility.
2. Generate a prioritized list of needs.
3. Develop recommendations to address each issue and present these suggestions to the ISG.

In this chapter, we will begin by defining important terminology used and then present the methods by which we accomplished each objective.

3.1 Domain of Inquiry and Definitions

Our project was limited to the Pakkred Home, and more specifically to the five buildings identified as the Pakkred Home for Mentally Handicapped Girls (see facility map in Appendix A). The home is in the town of Pakkred, which is located in the Nonthaburi province of Northern Bangkok. Our project did not address other similar homes in Thailand or other sections of the Pakkred facility.

The term "quality of life," which is used throughout the project, refers to a combination of health, sanitation, safety, handicap accessibility, and personal dignity issues that affect the lives of the residents with disabilities at the Pakkred Home. The term "quality of life" takes these factors into consideration by incorporating both psychological and physical effects. Physical effects refer to the structural aspects of the home that influence the everyday lives of the girls. Psychological effects are those issues that impact the emotional well-being of the residents.

For the purposes of our project, we also present a brief definition of each of the factors characterized as affecting quality of life. Health is characterized as the internal wellness of an individual. Safety is related to the possibility for physical injury. Although sanitation is closely related to health, we defined it separately as the cleanliness of either the individual or their surrounding environment. Handicap accessibility, as previously described in the background section, refers to the creation or destruction of barriers in the environment. Lastly, personal dignity, as defined by our group, refers to how environmental factors may influence an individual's self-respect.

[85] Note: The phrases "course of action" and "plan of action" are not a strict sequence of steps for the ISG to take while making improvements at the home. Rather, they refer to the group's suggested methods of improvement for the home. For brevity and ease of reading, these terms will be used throughout this chapter.

The temporal span of this project was from January 7, 2003 to February 26, 2003. Within this time frame, the group performed over 150 person hours of assessment, interviews, and observation at the Pakkred Home. These actions were limited to the daylight hours of Monday through Friday.

3.2 Assessment of Quality of Life Issues

This first objective was broken down into three subcategories, so as to be consistent with the information requirements of our group. The first of these categories was information regarding the physical aspects of the home, and was obtained through the completion of individual building assessments. The second type of data desired was information regarding the staff and residents' interaction with external factors, and consisted of behavioral observations at the home. The third type of data came from interviews in which we sought the personal views of staff and volunteers involved with the home.

3.2.1 Completion of Building Assessments

Because the quality of life of the residents at the Pakkred Home was believed to be strongly influenced by the structural aspects of the facility, an assessment for each floor of each residential building was performed. The group evaluated issues involving health, safety, sanitation, handicap accessibility and personal dignity. This evaluation was performed using a standardized rubric created by the group. The resulting assessment helped to define the scope of the project and provided information which, in conjunction with the interview and observation data sets, allowed the group to formally document and begin identification of the needs for improvement at the home.

Each building at the home was assessed four times, once by each group member. This repetition was used to assure that each building would be evaluated on multiple days and by multiple persons. Through this technique we sought to reduce the effects of human error and take into account building changeability from one day to the next. Using a rotating schedule, the team split up and assessed one building per day for a period of five days. The daily routine consisted of two three-hour shifts, one for each floor of the designated building. During this three hour time period, each group member completed the assessment form and made general observations, the latter of which are discussed in the next section.

The building assessment form required each member to critique many structural features on each floor. Such features included windows, floors, electrical outlets, ceiling fans, toilets, and other areas of structural importance. The selection of components to be assessed was based partially on a United Nations list of potential problem areas.[86] This list included:

- Entrances to buildings
- Doors and threshold
- Staircases and steps
- Sanitation facilities and fixtures
- Floors
- Handrails or grab-bars
- Windows and attachments
- Doors, covered handles, latches

[86] United Nations, 1995, <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> .

On the building assessment form, the group rated the status of each structural feature based on four factors: current functionality, necessity to the building, hazard potential, and existing damage. Within each of these criteria was a predetermined rating system created by the group. This rating system ranged from level one to level three. Within each category, a rating of one indicated no threat or concern, a two represented a possible threat or concern, and a three indicated a high level of threat or concern. A structural feature with a high incidence of level three ratings in all four categories was therefore more of a concern than one with a low set of ratings. For structural features that required more description, space was provided for a written assessment. The form was completed for each of the floors of the five buildings, yielding a total of forty separate assessments over the span of 120 total group data collection hours. A blank building assessment form is included in Appendix D.

3.2.2 Behavioral Observations

The second component of assessing the quality of life issues at the Pakkred Home consisted of behavioral observation. The major focus of this observation was to monitor the behavior of the staff and residents at the home in response to their living environment. These observations were considered to be especially helpful because of the linguistic and cultural barriers involved with interviewing. Observation has the potential to overcome these barriers because it does not involve written or verbal communication. Another advantage of observation is its degree of directness. Observation allows researchers to study behaviors or situations as they are occurring, and eliminates the variables that are associated with second hand descriptions.[87]

Frankfort-Nachmias identifies four types of behavior which should be considered during observation: nonverbal, spatial, extralinguistic, and linguistic.[88] The first type consists of body language and facial expressions that indicate the emotions and reactions of a person to his or her surroundings. Spatial behavior refers to a person's attempts to control the physical space surrounding his or her body. This includes actions such as moving away from or toward an object or person. Extralinguistic behaviors relate to the ways in which a person speaks, and include factors such as volume, speed, and pronunciation. Linguistic behavior refers of the content of a person's speech and the characteristics that a person assumes while speaking. Our group watched for all of these types of human behavior in an attempt to understand what aspects of the environment at the home influence the quality of life for all persons involved.

Behavioral observations were made primarily inside the buildings of the Pakkred Home. The group focused on the manner in which the residents interacted with their environment and the ways in which it limited or assisted them. Our group also observed staff interaction with the residents, the environment, and with other groups involved (such as the charity organizations and student nurses). Observations were performed during and after the building assessment process, and took up most of the three hours spent on each floor of each building. During the process of observation, the group took precautions to be as little of a distraction as possible to the people in the building. Group members attempted to observe quietly and unobtrusively so that data would not be skewed by the presence of what seemed to be an interesting or threatening stranger in the room. The group also created a list of concepts and situations to

[87] Frankfort-Nachmias, C., and Nachmias, D. Research Methods in the Social Sciences. New York: St. Martin's Press; 1996. 206 p.
[88] Ibid., 208 p.

be on the lookout for during observation. Some of these topics include bathing procedures, feeding methods, and possible safety hazards created by the environment. The goal of this list was to assist in standardizing the results, although the group also allowed for flexibility and documentation of new issues as they arose and evolved. A complete outline of observation ideas and protocol may be found in Appendix E.

3.2.3 Views of Staff and Volunteers

From the beginning of the project, our group recognized that, due to the brevity of our timeline, it would be impossible to gain a truly "inside" perspective of the Pakkred Home. Although we could assess and observe for many hours, we could never put ourselves in the same position as those who had either daily or lengthy experience at the home. In order to gain this type of information, therefore, we conducted interviews with those who worked closely with both the Pakkred Home and the ISG.

The strategies and benefits of the interviewing process were considered before the group began. Interviews were determined to serve as a personal and structured way to collect information at the Pakkred Home. The group began with informal interviews as a way to explore the topics of concern, and then moved to more structured interviews once appropriate questions had been developed from the topic pool. Confidentiality was assured during every interview. Through prior research, the group also discovered that interviews are identified as an effective way to survey populations with whom written communication (such as surveys or questionnaires) presents a challenge.[89] This principle was applied to the situation at the Pakkred Home, where the cultural and linguistic limitations of the project team created difficulties with written communication. Also, due to these limitations, it was necessary in most cases to use a translator during the interview process.

The focus of the interview questions developed by the team was to gain information about personal experience and views regarding the home. A general set of questions was used during all of the interviews with both Pakkred Home administrators and ISG members. These questions were designed to reveal previous experience with children with disabilities, positive and negative views about the current state of the facility, and further information to support or negate previous reports given regarding the conditions at the home. Specific topics discussed included staffing issues, waste management strategies, involvement of the DPW and ISG, safety and injury experiences, and personal improvement ideas. Additional questions were tailored to the expertise and position of each interviewee. Interviews with ISG members included questions about personal expectations and hopes for the project. Caregivers at the Pakkred Home were asked a shorter and more direct set of questions, due to the fact that the group did not wish to take away from time spent fulfilling their tasks and responsibilities. These questions involved experience at the home and challenges faced during employment. The questions presented in each type of interview, along with interview summaries, can be found in Appendix F.

From these personal interviews, the group collected data that represented the individual ideas and opinions of people closely involved with the home. Much of this data also served to describe the existing infrastructure and system of management at the facility. The interview data was used to provide context and outside perspective during the analysis process.

[89] Singleton, Royce A., and Straits, B. C. Approaches to Social Research. New York: Oxford University Press; 1999. 242 p.

3.3 Identification and Prioritization of Needs

Once data had been collected, the group was ready to formally identify and prioritize needs for improvement at the Pakkred Home. The focus of this part of the project was to create a prioritized list of needs based on degree of necessity and potential benefit to staff and residents. The ultimate goal of the project, the creation of a suggested plan of improvement for the ISG, would be developed based on this prioritized list of concerns.

The identification of needs began with the consolidation of raw information obtained during the data collection process. Because of the significant differences between individual buildings, it was determined that each building would be addressed separately. The process of needs identification followed the flow chart shown in Figure 2 and can be described in the following steps:

1. An individual data consolidation form was created. This consolidation form was used to take the very specific data from each individual building assessment form and create more general descriptions of the problems. At the end of this process, each group member had one generalized form for each building.
2. The individual consolidation forms were then further merged in a group meeting. Each member reported his or her findings and the group conferred to create a single master consolidation form per building.
3. The observations recorded by all four group members were examined on a building by building basis, and emerging trends in the data were documented. For example, if a situation with a chemical hazard was noted by multiple group members, it was considered to be a recurring area of concern.
4. The group met to identify the needs of each building based on the master building assessment and observation data sets. At this meeting, data was compared, discussed, and documented. The issues which appeared most frequently in the data were distinguished. The final group meeting resulted in five individual lists which served to highlight the major needs for improvement identified in each building during the building assessment and observation process.

The generalized data consolidation form referred to in steps 1 and 2 was used to describe the current conditions of the equipment and structural characteristics of each building in the facility. Instead of describing each window individually, for instance, the windows were grouped and quantified by type of problem.

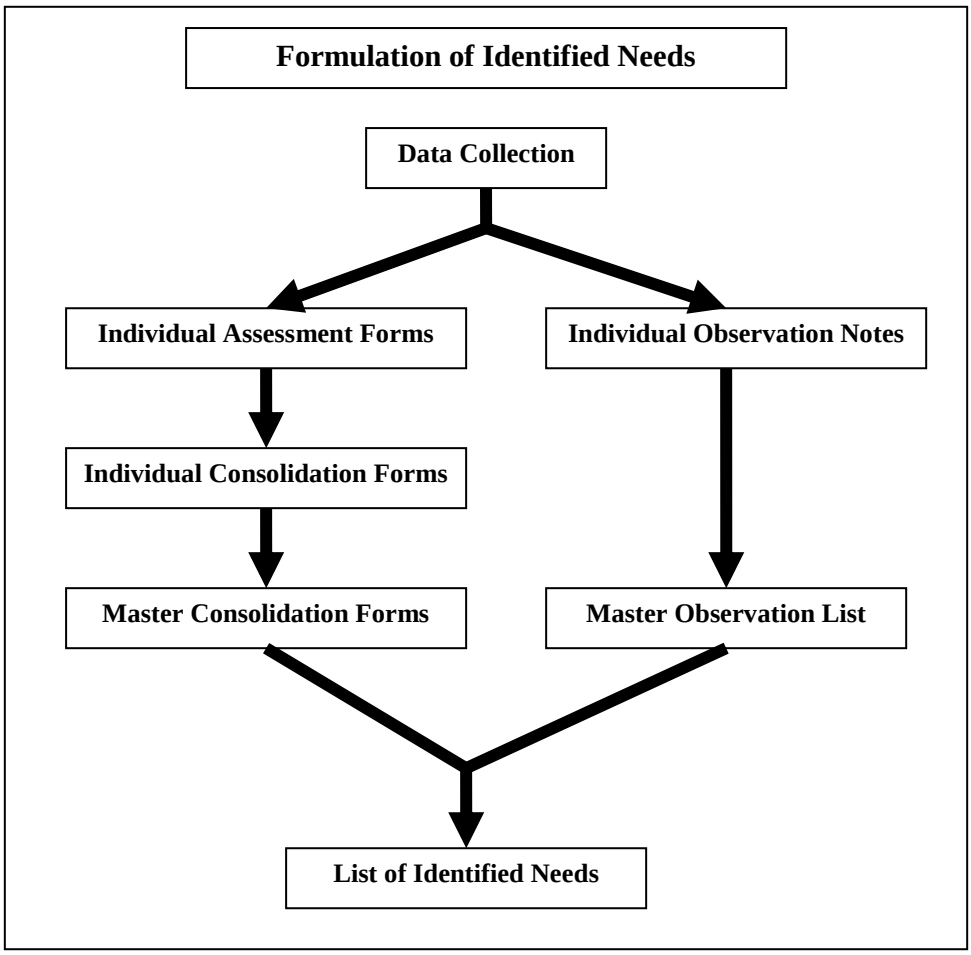


Figure 2: Formulation of Identified Needs

The flowchart shown above is a graphical representation of the steps described on the previous page. It simplifies the process into a concise visual order that accurately displays how the needs were formally identified.

The process of prioritization began with a systematic analysis of the needs, or issues of concern, identified in the previous step.[90] This analysis of the data was initiated using a categorization and rating system created by the group. Each identified need was rated according to seven categories, the first five of which were the factors previously characterized to affect quality of life: health, safety, sanitation, handicap accessibility, and personal dignity. The next category described the estimated benefit to staff if the need were to be effectively addressed. The final category was a approximation of the number of residents affected by the issue. The analysis was performed using rubrics to describe the relationship of each need with each category.

The rubric used to rate the needs was developed by the group, and was inspired to some extent by research information pertaining to human needs and priorities. Each of the five categories describing quality of life had the possibility of four levels of rating, which described the level of threat of the given issue of concern in each category (see Appendix H). A rating of three meant that the issue caused a severe threat in that category. Ratings of two and one meant that a threat or a minor threat, respectively, was posed. A zero meant that the

[90] From this point on, the terms "needs" and "issues of concern" are used interchangeably.

need created no threat or was not applicable to the category. The "benefit to staff if addressed" category used a similar four-level system, but in this case the ratings referred to benefit, not to threat. In addition, a color was assigned to each numerical rating. Red corresponded to a rating of three, orange to two, yellow to one, and blue to zero. The intent of this type of distinction was to create a visual representation of how "hot" or "cool" each topic was. All of this information was organized in a data matrix for each building (see Appendix I.)

Using the color-coded data matrices, each building's needs were then grouped into three categories: high priority, moderate priority, and low priority. This loose system of grouping was desirable due to the limitations of the group and the somewhat subjective nature of the data. In addition, the group did not feel qualified to individually prioritize the needs more specifically, but aimed to supply the ISG with helpful categories that would give a sense of urgency to each building. A description of the criteria used during the process of organizing the needs into tiers is as follows:

High priority: Needs placed into the high priority level of urgency/severity fulfilled all of the following criteria:

- The need received a rating of "3" (red) in any of the five categories reflecting the quality of life.
- The need affects either all or a high percentage of the building's population.
- During time spent in buildings, the need was easily observed as a major, frequent problem affecting the daily life of the residents.

Moderate priority: Needs placed into the moderate priority level of urgency/severity fulfilled all of the following criteria:

- The effects of the need, if not addressed, are moderately detrimental to the residents' quality of life.
- The need received at least one rating of "2" (orange) during rubric assessment.

Low priority: Needs placed into the lower priority level of urgency/severity fulfilled all of the following criteria:

- The problems related to the need are not severe, are infrequent, or pose minor threat to the quality of life of the building's residents.
- The need received numerous ratings of "1" (yellow) or "0" (blue) or both during rubric assessment.

Using these criteria, the group made three categories of needs for each of the five buildings. At that point, needs prioritization at the Pakkred Home was completed.

3.4 Evaluation and Recommendation of Options for Improvement

When the identification and prioritization of needs at the Pakkred Home were complete, the group moved on to the process of researching and suggesting options for improvement of the identified concerns. The goal was to develop a list of recommendations for the alleviation of each need. This list included multiple suggestions for each problem, with the intent of providing the ISG with a variety of options for action. It was anticipated that the availability of options that differed in financial and time commitment levels would increase the possibility that each issue would be addressed and resolved.

The group began the process of developing recommendations by researching solutions proposed by commercial or private companies and organizations. This research was conducted on the Internet. Most of the sources accessed were English language sites from the United States, Canada, and Europe. This Internet research, combined with brainstorming sessions held by the group, led to the collection of a set of recommendations for each issue identified. Individual descriptions of recommendations included general cost estimations and levels of effectiveness based on a rubric designed by the group. These ratings will be discussed in more detail in Chapter 5.

When the detailed evaluation of recommendations was complete, the group was ready to present the project findings to the International Support Group. We were able to deliver a short oral presentation at the February ISG meeting. We also presented our results in the form of an extensive written report and a formal Power Point presentation at the culmination of our project. These summaries included all of the information gathered, as well as appendices showing detailed data collection results, maps, and floor plans. Each of the previously mentioned deliverables were adjusted to provide for the needs and expectations of the audience involved.

4 Prioritized Needs

In this chapter, we present the outcome of the data collection and analysis process. General information acquired during interviews is described first, to provide a perspective for the more specific data regarding the needs identified at the home. General descriptions of each need are then given, as many of the needs were observed in multiple buildings. These general needs are organized by frequency of occurrence. Finally, prioritized needs are presented on an individual building by building basis. Photographs from the home are provided where applicable.

4.1 Pakkred Home Information

During the interview process, Pakkred Home administrators and staff as well as members of the ISG provided information about the infrastructure and management of the facility. This information, in addition to the more general information given about the home in the background sections, gives context to the issues listed and described in the remainder of this chapter.

The Pakkred Home is staffed by 38 temporary and 37 permanent employees. Forty of these employees are caregivers who deal directly with the residents.[91] To be hired as a caregiver, a person must have a junior high school education. New employees do not receive further training upon acceptance for employment. Instead, staff training occurs once a year, when personnel are brought in from outside the home for a two day instructional session. For a caregiver to advance from a temporary employee to a permanent employee, he or she must pass an evaluation which demonstrates knowledge of basic care giving techniques. According to a Pakkred Home administrator, the advantage of such a promotion is that a permanent staff member cannot be fired immediately and without compensation, whereas a temporary employee can be. In addition, a permanent employee has the option of becoming a civil servant. This change in status requires a second test, but does not produce significant further benefits. As a result, many caregivers never attempt to reach the level of civil servant.[92]

Caregivers at the Pakkred Home work 48 hour shifts. During the night, one caregiver on each floor sleeps while the other watches the residents. The pay received by these employees is said to be less than minimum wage, which is approximately 5000 Baht (US $118) per month.[93] Employees are compensated by the Thai method of payment, which does not account for the system of shifts and number of total hours worked by the caregivers. Rather, the payment is based on the total number of days worked. To qualify for minimum wage, a person must work 26 days out of each month. Since the caregivers work 48 hour shifts, they do not achieve this number of work days, and therefore do not qualify for minimum wage. There is, however, a supplemental fund set up by a charitable donor who gives each caregiver an additional 600 Baht (US $16) per month.[94]

[91] Interview with Vocational Training School Teacher, January 14, 2003.
[92] Interview with Pakkred Home Administrator, January 16, 2003.
[93] Interview with ISG Member, January 15, 2003.
[94] Interview with Pakkred Home Administrator, January 16, 2003.

According to one individual employed at the home, the turnover rate for administrative positions at the home, such as superintendent and assistant superintendent, is fairly high. The same individual stated that in the last 18 months there have been three different superintendents. The current superintendent has been active for two months, prior to which she served as assistant superintendent at the home. Turnover rates for caregivers are also said to be quite high, yielding a low number of experienced staff.[95]

The annual budget allotted to the home is used to cover all of the expenses incurred, including food, clothing, maintenance, wages, and medical care. It was estimated by one government employee that the home spends 30 Baht (US $0.71) per day to feed each girl. Every girl was also said to be given two new sets of government-funded clothing per year. One administrator stated that the home relies on outside sources for donations. These donations are used to make improvements to the grounds and buildings, as the government does very little to maintain the physical conditions of the facility. The government does have a hierarchical system for distributing funding to the various sections of the Pakkred Home, but multiple staff members interviewed stated that they had repeatedly requested various pieces of standard equipment and not received them.

Additional government involvement at the home is stated by one ISG member to include a yearly inspection of the facility. The government does not, however, provide a code of conduct or set of regulations for staff to follow.[96] The only government guideline identified by the individuals interviewed was that an employee could be fired instantly for physically abusing a resident. Government records for the residents and staff at the home are believed to exist, but were not accessible to the group due to confidentiality concerns.

Medical care at the Pakkred Home is provided by one doctor who is responsible for all of the approximately 3000 residents.[97] There is also one pediatric nurse who supervises the student nurses and is responsible for the daily care of the residents. This nurse described herself as self-educated on topics concerning disability. She estimated the average life span of a resident to be about 16 years. Of the residents with severe injuries or sicknesses, only those with a strong chance for recovery and survival are treated at a hospital. The nurse listed the numerous diseases to which the residents are prone, many of them highly contagious. She stated that initially her job was overwhelmingly difficult, but over time she has become more skilled at handling the tasks required of her, many of which go beyond her professional training.

From this information, it is evident that staffing and budget issues significantly affect the quality of life at the home. In nearly every interview conducted, the resources available to the facility were described as insufficient in meeting basic needs for both the residents and staff. This challenge was frequently identified as the major reason for any compromise in physical or psychological quality of life. It is beyond the scope and capabilities of this project to make recommendations for changes in governmental budgeting and employment policies. The group, however, felt that it was necessary to document and prioritize all of the needs identified at the home, even those for which we were not able to suggest a specific improvement method. For the sake of completeness, therefore, those needs determined to

[95] Interview with ISG Member, January 15, 2003.
[96] Interview with ISG Member, January 15, 2003.
[97] Interview with ISG Member, January 15, 2003.

relate strictly to budgeting and staff training issues are still included in our results, although they may not be addressed in our proposed improvements.

4.2 Needs Identification and Prioritization

Analysis of the raw data obtained from building assessments and observations led to the emergence of recurring themes among the identified needs. Most of the major issues were relevant to multiple buildings, although they often pertained to each building in a unique manner. For this reason, most frequent areas of concern (those found in four or five buildings) are discussed at the beginning of this section, followed by frequent areas of concern (found in two or three buildings). Prioritization data is then given for each building on an individual basis, along with descriptions of building-specific topics. More detailed explanations of the role each identified need plays in the daily life of the staff and residents in each building are also included.

4.2.1 Most Frequent Areas of Concern at the Home

The following topics were found to be of concern in four or more of the buildings at the Pakkred Home. Thus, they may be described as most frequent. They are listed in no particular order.

- Damaged or missing window screens: The windows at the home are designed to have screens to protect from insect invasion. Mosquitoes, especially, are a topic of concern, as they may carry harmful diseases. In many cases, however, these screens are damaged or missing (see example in Figure 3). Even a small rip in a screen is enough to allow the entry of an insect. We observed that many of the girls were covered with mosquito bites. During the interview process, the group also received reports of standing water (a favorable mosquito breeding ground) in the general area. Based on this data, we determined that damaged or missing window screens pose a hazard to the quality of life of both the staff and residents.

Figure 3: Damaged Window Screen

- Non-functional windows: Some windows were missing the cranks used to open or close them; in other cases the crank was present but jammed or misaligned. A staff member or resident trying to force the window open or closed could suffer from injury due to contact with metal or could break the window. We determined this to pose a hazard to both staff and residents, as the windows no longer had the capability of movement from one position to another. Mosquitoes could enter windows that were not able to be closed.

- Water supply: The water supply in many buildings was inconsistent. This was described in interviews to be due to problems with water pressure and distribution systems. In other cases, we observed the issue to be partially due to malfunctioning or missing faucet fixtures. Bathrooms were often closed off as a result of lack of water, which served to increase the human waste management problem. Lack of reliable water also caused difficulties with important tasks such as cleaning the facility, bathing residents, and washing clothes. All of these issues were of concern in the categories of health, safety, and sanitation.

- Human waste management: Depending on the specific building, this category encompasses issues such as dirty diaper storage, the presence of human waste on the floor and walls, and the procedures used to change diapers. These concerns involve health and sanitation issues that result from human interaction with waste products. In addition, the methods used in cleaning the human waste appeared ineffective and in some cases counterproductive. The concern of the group was that mismanagement of waste products could spread disease and attract harmful parasites. See Figure 4 for an example of two open buckets used for toileting needs and human waste storage.

Figure 4: Human Waste Mismanagement

- Condition of toilets: Many of the toilets in the home exhibited one or more of the following traits: broken plumbing, cracks, breaks, dirtiness, stoppage, or non-functionality. In some cases, conditions were such that the toilets were not usable. This contributed to the presence of human waste in the living areas. In other cases,

we observed that toilets were hazardous due to broken porcelain, slipperiness, or lack of handicap accessibility. See Figure 5 for an example of an unsanitary toilet. Placement of toilets and their surrounding area were also determined by the group to compromise privacy, one of the factors included in personal dignity. At the home, no toilet has any type of door, curtain, or method of blocking a person from seeing what is happening in a toilet area.

Figure 5: Unsanitary Toilet

- Condition of sinks/troughs: The group determined that the sinks and large troughs at the home were hazardous in several ways. Most of the troughs were filled with stagnant water that had much discoloration and sedimentation. Our building assessment and observation process revealed that this was a health and sanitation hazard due to the use of this water for bathing, cleaning, and waste management (drinking water is provided in separate water coolers). In some cases, broken or missing tiles on the sinks and troughs created the potential for physical injury. The group also concluded that sitting water in troughs could provide a breeding ground for mosquitoes. Refer to Figure 6 for an example of the conditions observed for many of the troughs.

Figure 6: Trough with Cracked Tiles and Discoloration

- Damaged floors: Floors at the home were often dirty and cracked, or had missing tiles (see Figure 7). We noted that this poses a safety hazard due to the interaction of sharp edges with bare feet (the girls at the home were observed to spend most of their time without shoes on). We also identified cracks and breaks as areas of potential chemical or bacterial contamination. Many of the buildings had ceramic tile floors in the bathrooms, which were observed to become very slippery and hazardous when wet. There are three areas of floor in each building: lobby, bedroom, and bathroom. Depending on the building, one or more of these areas were the main topic of concern.

Figure 7: Cracked & Missing Tiles on Stairway

- Damaged doors: Damaged wood, mold, missing parts, and broken locks were observed on many of the doors in the buildings. Examples of these conditions may be found in Figure 8. The group determined that these issues cause concerns with mosquito prevention, resident safety and sanitation, and the ability of the staff to control the constraints of the environment.

Figure 8: Series of Damaged Doors

- Chemical hazards: Chemicals used for cleaning were often stored within reach of the residents, and were unsecured. When combined with understaffing, this was determined to present a hazard to the health and safety of the residents. In one case, a resident was observed to put her face into an open chemical bucket, and only moved away when an older resident pushed her to safety.

- Bathing methods: During our building assessment and observation, we noted that residents were bathed in the open area of the bathroom. The typical procedure included splashing the girl with trough or hose water. Soap was used on an infrequent basis, as were towels. The bathing procedure involved lack of privacy and appeared to compromise sanitation. Figure 9 shows a mat used in Building 1 for bathing immobile residents on the floor.

Figure 9: Example of Bathing Mat

- Violence among residents: Due partially to lack of supervision and partially to the disabilities of the residents, we observed that violence among girls was a common problem. The group noted residents frequently hitting, kicking, and punching one another. Larger or older girls would "gang up" on younger girls. This type of abuse was hazardous to the physical and emotional state of the residents. Because of staffing constraints, these conflicts were often not resolved by staff members.

4.2.2 Frequent Areas of Concern at the Home

The following topics were found to be of concern in some (two or three) of the buildings at the Pakkred Home. Thus, they may be described as frequent concerns. They are listed in no particular order.

- Coverless or non-functional drains: The drains in some buildings were clogged with debris or were not working. In many cases, water used for bathing and cleaning could not drain from the bathrooms. This resulted in the presence of stagnant and soiled water on the bathroom floors. Figure 10 shows two drains, one without a cover and one that is clogged.

Figure 10: Examples of Coverless (Left) & Clogged (Right) Drains

- Feeding methods: Feeding methods in some buildings consisted of many residents being fed from one spoon, a procedure that we determined to pose a health risk, especially considering the prevalence of contagious disease at the home. Residents were also sometimes fed while lying on their backs, which could pose a choking hazard and was in some cases observed to result in very little food actually being consumed.

- Broken window glass: The windows at the home are composed of narrow glass panes arranged in a shutter pattern. The group found that many panes of glass were chipped, cracked, or missing (see Figure 11). We determined this to be a hazard due to the presence of sharp glass edges. We also concluded that missing glass damaged the functionality of the windows, as they could no longer close completely. We established this to be hazardous due to the fact that window closure might be necessary for protection from mosquitoes or other threatening insects.

Figure 11: Example of Window with Broken Glass

- Unprotected outlets: Outlets with exposed wires, damaged covers, and/or recessed sockets were present in some buildings, and were within reach of residents. Figure 12 shows examples of exposed wires and coverless outlets. The group considered this to be dangerous due to the safety hazards associated with electricity.

Figure 12: Example of Exposed Wires (Left) & Outlet without Cover (Right)

- Mattress piles: During the building assessment process, the group noted mattresses piled on top of empty beds in some buildings and determined this to present a falling hazard. We observed girls sleeping and playing on the piles or near the beds that had piles on them. A single fall onto the very hard surfaced floor, therefore, had the potential to injure one or more girls.

- Stairs: Stairways in buildings with mobile residents posed a hazard. Although the girls could move themselves around on flat surfaces, we often observed them to have trouble with stairs. We determined that the lack of handrails or other accommodations caused safety hazards and contributed to the creation of a handicapping environment in the home. Stairs were also observed to be slippery at times, from liquids being spilled on the steps. Slippery stairs were determined to be a safety hazard to girls with limited mobility and control.

4.2.3 Prioritization by Building

The following sections present prioritized lists of needs on a building by building basis. Please refer to Appendix A for a map showing building numbers. A list is provided for each building, with the needs given in groups by priority, according to the previously established system of priority levels. Within each group, there is no distinction between individual needs, so that any single need in a priority group has been given the same level of significance as any other need within that level. Descriptions of each need are provided, so that the unique way in which the need applies to that specific building may be discerned.

Building 1 Prioritization

Building 1 houses approximately 75 females, ages five to twenty years. Most of these residents have cerebral palsy and are completely confined to their beds. There is very little mobility, and independence levels are low to negligible. Residents wear diapers and were not observed to use the bathroom facilities, except during the bathing process. Needs were identified as follows:

High Priority Needs

- **Human waste management:** Human waste management in Building 1 primarily involves diapering issues. Dirty diapers were observed to be stored in open buckets within the reach of residents, resulting in interaction between the waste on the diapers and the residents. Diapering procedures were also determined to compromise health and sanitation, as staff members change the diapers of bed-ridden residents right on the mattresses. These mattresses are often not cleaned after the procedure is complete, or are swiped briefly with a rag. This results in the collection of human waste on the mattresses, which can be hazardous to both staff and residents.

- **Transportation**: Older girls who assist the staff in Building 1 have to carry or drag residents in order to move them for bathing or physical therapy. This is often a challenge, as girls vary widely in size, with some being quite large and heavy. The transportation difficulty is further complicated by the design of the cribs in the building. During data collection, the group witnessed a total of nine separate incidents of residents being carried, four of which involved going up and down stairs.

- **Crib design**: The current crib design in Building 1 is unaccommodating (see Figure 13). Unless they are being bathed or are in physical therapy, all of the residents' time is spent in the crib. The current crib frames are metal and very heavy, and sides of the cribs can only be moved if they are completely detached from the frame, which is not an efficient or easy process to complete. Thus, the residents are commonly lifted, or swung over the sides during entrance and exit of the crib. It was observed that, due to the lack of control associated with these techniques, the residents sometimes collide with the metal frame of the crib. Staff were also subjected to the frequent task of lifting and swinging girls, which presented the potential for muscle injury.

Figure 13: Example of Cribs with Removable Railings (Crib on left has rail removed)

- **Bathing methods**: Since the residents are bedridden, the level of muscle development in the girls is usually quite low. Most of the girls cannot support themselves to sit up or perform other physical activity. When bathing occurs, the girls are laid down, unclothed, on a thin rubber sheet on the cement bathroom floor. With no privacy of any type, they are quickly hosed down or doused with sink water and returned to their crib, many times without being dried.

- **Chemical hazards**: Refer to description in Section 4.2.1.

- **Damaged screens**: Damaged and missing screens are a major concern in Building 1. More so than in other buildings, the residents here are incapable of voluntary physical movement. Therefore, when insects are in the bedroom, the girls have no means to fend them off in any way. Thus, the screens become the primary means of defense. During data collection, many of the girls were seen with large numbers of insect bites covering their bodies. It was found that 60% of the windows in Building 1 had damaged or missing screens.

Moderate Priority Needs

- **Coverless or non-functional drains**: When the residents are bathed, they are laid down on the floor of the bathroom. Clogged drains cause puddles of unsanitary liquid to collect on the floor around the bathing area. Substances in these puddles may include cleaning chemicals and human waste. Unless the drains are functioning properly and no puddles form, the residents can potentially be subject to both chemically unsafe and unsanitary environments. The condition of the drains varies from day to day, and during data collection the group witnessed both functional and non-functional drains.

- **Feeding methods:** Because of the fact that residents are confined to cribs and in many cases cannot assume a sitting position, the feeding procedure requires that food be spooned into the mouths of the girls. Swallowing was observed to be a challenge for some residents, and feeding was often somewhat ineffective, resulting in spillage of food inside the crib and over the resident's head. In addition, it is common for the same spoon to be used to feed numerous girls simultaneously, which poses a health risk for the communication of disease among the residents.

- **Girls tied to cribs:** Very few residents in Building 1 were observed to be capable of somewhat normal physical activity. Among these residents, three were tied to the frames of their cribs by the ankle with cloth restraints. The group witnessed three incidents of the girls attempting to jump out of the cribs while restrained, which could cause severe injury to the residents. Due to this constant movement, irritation and even scarring were present on the ankles of the girls who were tied to their cribs.

- **Non-functional windows:** Refer to description in Section 4.2.1.

- **Condition of sinks/troughs:** Refer to description in Section 4.2.1.

Low Priority Needs

- **Condition of toilets:** The residents of Building 1 wear diapers that are changed by the staff when necessary. In addition, the girls do not have the mobility to access or use the toilets. The fact that none of the toilets are functional is not pressing in this building due to overall lack of necessity to the residents. The staff, however, may benefit from the repair or replacement of the toilets. Toilets with flushing capabilities are an effective place to dispose of solid waste which collects in diapers or on mattresses and floors. Functioning toilets may also lead to the promotion of toilet training for those residents who may have the ability to use the toilets if assisted.

- **Damaged doors:** Refer to description in Section 4.2.1.

- **Damaged floors in bedrooms:** Refer to description in Section 4.2.1.

Building 2 Prioritization

Building 2 was observed to house approximately 70 residents, ranging in age from 7 to 20 years. The girls were all quite mobile and in many cases, were able to move outside of the building and from floor to floor.

High Priority Needs

- **Human waste management:** During the group's 24 hours of data collection in Building 2, 25 instances of the residents interacting with human waste were recorded. The residents were seen both urinating and defecating on the floor of the bedroom. The waste products were dealt with by older girls assisting the staff, and sometimes ignored completely. The improper management of the human waste created a very unhealthy and unsanitary environment for the residents, who often live on the floors.

- **Cleaning methods:** Particularly on the second floor, the cleaning methods of Building 2 were found to be ineffective. When human waste was cleaned, no disinfectant or cleaner was used to treat the soiled area. It appeared to the group that the staff had improper equipment to clean the room to a healthy, sanitary state. The lack of success in cleaning the large amounts of human waste resulted in frequent interactions of the residents with their own, and others' waste products.

- **Condition of toilets:** In addition to the description given in Section 4.2.1, it must be noted that the second floor of Building 2 uses an alternate toileting system. Often the bathroom is locked, so toilets are not readily available for the girls to use. The group observed numerous occasions of the residents using a large unsealed bucket as a toilet alternative.

- **Unprotected outlets:** The condition of the outlets in Building 2 is of great concern. Out of 21 total outlets, five had exposed wires, and were within reach of the girls. The potential hazards resulting from these exposed wires, if supplied with power and touched, is very high for the residents and staff of Building 2.

- **Chemical hazards:** Refer to description in Section 4.2.1.
- **Water supply:** Refer to description in Section 4.2.1.
- **Condition of sinks/troughs:** Refer to description in Section 4.2.1.
- **Damaged window glass:** Refer to description in Section 4.2.2.

Moderate Priority Needs

- **Damaged window screens:** Building 2 has metal grates that shield the window from damage due to the residents. They are not, however, sufficient to act as a substitute for a screen . The group recorded 72% of the 134 windows in Building 2 to have damaged or missing screens.
- **Bathing methods:** Refer to the description in Section 4.2.1.
- **Stairs:** Refer to description in Section 4.2.2.
- **Violence among girls:** Refer to description in Section 4.2.1.
- **Condition of doors:** Refer to description in Section 4.2.1.

Low Priority Needs

- **Feeding methods:** Refer to description in Section 4.2.1.
- **Condition of bathroom floor:** Refer to description in Section 4.2.1.
- **Stacked mattresses:** Refer to description in Section 4.2.2.
- **Non-functional windows:** Refer to description in Section 4.2.1.

Building 3 Prioritization

Building 3 was observed to house approximately 75 girls, ranging in age from 10 to 25 years. These girls were the most independent and mobile of the residents at the home. On most days they were not present in the building during the observation period, as they were at the vocational school. The building itself was clean and neat, and greatly resembled a residential home. This building had the least severe issues of any in the facility.

High Priority Needs

- **Condition of fans:** The ceiling and window fans in the building were metal and unprotected by metal cages. Additionally, some fans were damaged and non-functional, leaving exposed wires and broken parts out in the open. Because of the height of the girls, their mobility, and the presence of bunk beds, both unprotected and

damaged fans were determined to be within reach of the residents, and to present a safety hazard. See Figure 14 for examples of both an unprotected ceiling fan and a damaged ceiling fan.

Figure 14: Metal Ceiling Fans without Cage (Left) and with Missing Blades (Right)

- **Water supply:** Refer to description in Section 4.2.1.
- **Violence among girls:** Refer to description in Section 4.2.1.
- **Condition of sinks/troughs:** Refer to description in Section 4.2.1.

Moderate Priority Needs

- **Damaged floors:** In addition to the description given in Section 4.2.1, it must be noted that the bedroom floors in Building 3 were badly damaged. The residents of this building frequently watch television for recreation. On the first floor, the area that surrounds the television has many cracked, damaged tiles. The girls sit and stand on these tiles with bare feet.
- **Human waste management:** Refer to description in Section 4.2.1.
- **Damaged screens:** Refer to description in Section 4.2.1.

Low Priority Needs

- **Chemical hazards:** Refer to description in Section 4.2.1.
- **Coverless or non-functional drains:** Refer to description in Section 4.2.2.
- **Non-functional windows:** Refer to description in Section 4.2.1.

Building 4 Prioritization

Building 4 houses approximately 64 girls with ages ranging from 10 to 20 years. The residents are very active and most can move from floor to floor without assistance.

High Priority Needs

- **Condition of toilets:** On the second floor of Building 4, the bathroom was locked during all 24 hours of data collection. This prevented access to the toilets for the residents, and thus made them effectively non-functional. As a result, the girls present on the second level relieved themselves on the floor of the bedroom.

- **Human waste management:** Due to the lack of bathroom access, there were consistently large quantities of human waste found on the second level's bedroom floor. The waste was difficult to eliminate due to the large number of girls residing on the floor, the lack of floor space, and the lack of effective cleaning equipment. The bedroom floor was unhealthy and unsanitary for the usual 50-60 residents who were sitting there.

- **Water supply:** The staff informed the group that the second floor of Building 4 had not had running water for quite some time, and the bathroom was therefore locked. The locked bathroom was a major cause of the two previously identified needs.

- **Condition of sinks/troughs:** Refer to description in Section 4.2.1.

- **Damaged window glass:** Refer to description in Section 4.2.2.

- **Unprotected outlets:** Refer to description in Section 4.2.2.

- **Chemical hazards:** Refer to description in Section 4.2.1.

Moderate Priority Needs

- **Girls in troughs:** On the first floor, where running water was present, a girl was observed attempting to get into a trough. This was the only incident of this type witnessed during the data collection, but established that such events do happen at the home. A resident submerging her body into the main water supply of a floor is extremely unsanitary and unhealthy for all those who use the water thereafter. It is also unsafe for the resident herself, who may become stuck in the trough and even drown.

- **Damaged screens:** Refer to description in Section 4.2.1.

- **Condition of doors:** Refer to description in Section 4.2.1.

- **Bathing methods:** Refer to description in Section 4.2.1.

- **Violence among girls:** Refer to description in Section 4.2.1.

Low Priority Needs

- **Damaged floors:** Refer to description in Section 4.2.1.
- **Non-functional windows:** Refer to description in Section 4.2.1.

Building 5 Prioritization

Building 5 houses approximately 67 residents whose ages range from 5 to 16. Most of the girls are very mobile. However, some have difficulty walking and getting up and down the stairs without assistance.

High Priority Needs

- **Human waste management:** Throughout the 24 hours of data collection completed at Building 5, 16 separate incidents of the residents interacting with human waste were recorded. On the first floor of the building, the area to the right of the bathroom was notably contaminated with human waste. The girls occupying the area did not appear toilet trained, and thus there was excessive amounts of human waste on the floor around them.
- **Condition of toilets:** Refer to description in Section 4.2.1.
- **Water supply:** Refer to description in Section 4.2.1.
- **Chemical hazards:** Refer to description in Section 4.2.1.
- **Damaged window glass:** Refer to description in Section 4.2.2.
- **Condition of sinks/troughs:** Refer to description in Section 4.2.1.

Moderate Priority

- **Bathing methods:** Refer to description in Section 4.2.1.
- **Condition of doors:** Refer to description in Section 4.2.1.
- **Violence among girls:** Refer to description in Section 4.2.1.
- **Coverless or non-functional drains:** Refer to description in Section 4.2.2.
- **Damaged screens:** Refer to description in Section 4.2.1.

Low Priority

- **Stacked mattresses:** Refer to description in Section 4.2.2.
- **Condition of bathroom floors:** Refer to description in Section 4.2.1.

- **Non-functional windows:** Refer to description in Section 4.2.1.

- **Stairs:** Refer to description in Section 4.2.2.

Given the prioritized groupings for each building, the team began to research possible ways to address the concerns described above. The next chapter presents and discusses the group's recommendations for the ISG.

5 Recommendations

In this chapter, we introduce and explain those recommendations that were determined to provide potential benefit to both the residents and staff at the Pakkred Home. We hope that the ISG will be able to use the contents of this chapter to begin making effective improvements to the home.

First, we present a chart that gives easy reference to the recommendations that are applicable to each building. Multiple options are presented for each identified need, covering a broad range of scope and cost. These suggestions are the result of both Internet research and group brainstorming sessions, as well as consideration of the United Nations guidelines and other background research. As a result, examples of improvements are mainly from American or European sources. We suggest that local sources be contacted by the ISG during the implementation of the recommendations, as these sources may be less expensive and more convenient. Two lists follow this chart, one for quick reference and another that gives detailed information on each possible improvement, as well as pictures and cost estimates where available.

How to Use the Information in this Chapter:

- Reference List of Recommendations chart (Table 1): The chart lists the need topics on the left hand side, and building numbers across the top. If the topic is relevant to the building, recommendations are presented in numerical form.
- List of Recommendations (Table 2): This list is provided for easy access to descriptions corresponding to the numbers in Table 1. The improvement ideas are presented by category. Within each category, suggestions represented by the same number but with a different letter indicate options that accomplish the same goal. For example, implementing option 11a will provide the same result as implementing option 11b. Recommendations within the same topic but with different numbers represent suggestions addressing different topics within that category. For example, options 11a and 11b address fan safety, while option 12 addresses fan functionality. (Note: Recommendation 1b has three components, represented with i, ii, and iii. These three suggestions, when implemented together, will create an alternative to recommendation 1a.)
- Detailed Explanations of Recommendations: This section of the chapter describes each option for improvement in detail. Illustrations and price ranges are given where available. An approximate number of structural features the recommendation applies to is also given where applicable. This information was collected during building assessments and data consolidation. Consolidation forms can be found in Appendix G. Each option is also characterized by a table showing the following information:
    - Specific buildings the recommendation is applicable to
    - Which of the five needs affecting quality of life the recommendation may be able to improve (health, safety, sanitation, handicap accessibility, and/or personal dignity)
    - A rough description of the cost of the recommendation, according to the following rubric (the estimation is based on the cost to implement in a single building):

$ the recommendation is expected to cost US $0-$500
$$ the recommendation is expected to cost US $500-$2000
$$$ the recommendation is expected to cost US $2000 or more

- A description of the expected effectiveness of the recommendation, according to the following rubric:
  - ✓ the recommendation is expected to be effective
  - ✓✓ the recommendation is expected to be very effective
  - ✓✓✓ the recommendation is expected to be extremely effective

Table 1: Reference List of Recommendations

Issues of Concern	Building 1	Building 2	Building 3	Building 4	Building 5
Bathing Methods	1a, 1b	1a, 1b	--	1a, 1b	1a, 1b
Chemical Hazards	2	2	2	2	2
Cleaning	--	3	--	--	--
Cribs	4a, 4b, 4c, 4d	--	--	--	--
Condition of Doors	5, 6, 7, 8	5, 6, 7, 8	--	5, 6, 7, 8	5, 6, 7, 8
Drains	9a, 9b, 10	--	9a, 9b, 10	--	9a, 9b, 10
Fans	--	--	11a, 11b, 12	--	--
Feeding Methods	*33*	*33*	--	--	--
Floors – Bathroom	--	15	--	15	15
Floors - Lobby/Bedroom	13a, 13b, 14	--	13a, 13b, 14	13a, 13b, 14	13a, 13b, 14
Girls Tied to Cribs	*34*	--	--	--	--
Human Waste Management	3, 17, *37*	3, 16, 17	3, 16	3, 16, 17	3, 16, 17
Unprotected Outlets	--	18a, 18b, 19	--	18a, 18b, 19	--
Condition of Sinks/Troughs	20a, 20b, 20c	20a, 20b, 20c	20a, 20b, 20c	20a, 20b, 20c	20a, 20b, 20c
Stacked Mattresses	--	*35*	--	--	*35*
Stairs	--	21, 22	--	--	21, 22
Condition of Toilets	23a, 23c, 24, 25, 26	23abc, 25, 26	--	23abc, 25, 26	23abc, 25, 26
Transportation of Residents	27a, 27b	--	--	--	--
Violence among Residents	--	*36*	*36*	*36*	*36*
Water Supply	--	28a, 28b	28a, 28b	28a, 28b	28a, 28b
Windows – Functionality	29a, 29b, 32	29a, 29b, 32	29a, 29b, 32	29a, 29b, 32	29a, 29b, 32
Windows - Glass Damaged	--	30a, 30b, 32	--	30a, 30b, 32	30a, 30b, 32
Windows – Screens Damaged	31, 32	31, 32	31, 32	31, 32	31, 32

-- Indicates that the category of need does not apply to the building.
Numbers in italics indicate that the category of need is improvable only by staff training and education.

For a map depicting building numbers, please refer to Appendix A.

	High priority		Low priority
	Moderate priority		Not applicable

Table 2: List of Recommendations

Bathing Methods

1a. Remodel bathroom and add a shower unit
1b.i. Purchase and use a shower chair
1bii. Curtain off section of room for privacy
1biii. Purchase and use a shower head nozzle at the end of a hose

Chemical Hazards

2. Purchase and use locked cabinet for chemical storage

Cleaning

3. Provide more efficient and effective cleaning supplies

Crib Design

4a. Replace cribs
4b. Replace rails on cribs
4c. Modify crib rails
4d. Stack mattresses within cribs to add height

Condition of Doors

5. Replace bathroom doors with metal doors
6. Replace non-bathroom doors where necessary
7. Buy and install metal plates on doors
8. Replace/repair handles where necessary

Drains

9a. Create an elongated floor drain in bathroom
9b. Continuous drain maintenance
10. Add/replace drain covers

Fans

11a. Replace existing fans with safer fans
11b. Add protective cages to existing fans
12. Fix/replace existing fans where non-functional

Floors

13a. Replace floors
13b. Replace individual tiles
14. Waterproof floor near bathroom door
15. Resurface bathroom floors

Human Waste Management

16. Purchase and use a free standing commode where toilets are not useable
17. Purchase a diaper bin for used diaper storage

Unprotected Outlets

18a. Add plastic outlet covers
18b. Add metal outlet covers
19. Replace damaged switch plates

Condition of Sinks/Troughs

20a. Hire professional to build new sinks/troughs with cement structure and fiberglass or plastic inserts for water storage
20b. Remove tiles on sinks/troughs and replace with fiberglass or plastic
20c. Remove troughs and use some kind of other storage container, such as a portable sink, for holding water

Stairs

21. Buy and install handrail
22. Buy and install non-slip material on stairs

Condition of Toilets

23a. Replace toilets with basic Western-style toilets
23b. Place commode seat over existing Asian-style toilets
23c. Replace toilets with handicap toilets
24. Purchase bedpans for use
25. Buy and install new grab bars in all necessary situations
26. Repair plumbing to toilets

Transportation of Residents

27a. Purchase wheeled stretcher with rails
27b. Purchase wheelchair/stroller

Water Supply

28a. Repair plumbing professionally throughout home
28b. Purchase and install water tanks

Window - Functionality

29a. Replace non-functional windows
29b. Have window company repair windows

Window - Glass Damaged

30a. Replace broken glass panes with new glass panes
30b. Replace broken panes with Plexiglas panes

Windows - Screens Damaged

31. Replace all window screens
32. Add protective window guards to prevent further damage

Detailed Explanations of Recommendations

Bathing Methods

1a. Remodel bathroom and add a shower unit:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, sanitation, handicap accessibility, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

Often, the bathing areas at the home can be considered in need of improvement. The most expensive and effective alternative is to remodel the bathrooms in all buildings to facilitate bathing as well as to make the bathrooms more handicap accessible. Remodeling the bathrooms would involve renovating the current bathrooms through the means of a construction company. This would entail removing some of the current fixtures in the bathroom and installing a pre-fabricated shower unit, which would be adjusted to meet the unique needs of people with disabilities. In addition, plumbing work may be needed to accommodate a new water supply to the shower unit. There are two types of shower units to be considered. One option is to install a base for a shower with its own drain and use the home's original means of drawing water for a shower out of a faucet or basin. The area could then be curtained off as a designated shower area, increasing privacy and addressing personal dignity (see Recommendation 1bii). If this recommendation is implemented in all applicable buildings, eight shower units would have to be installed.

Another type of shower unit is one in which the shower is a fixture itself with walls and a drain. However, it necessitates a more involved installation. These two styles (shown in Figure 15) are made of fiberglass and could be modified to incorporate a faucet or shower head. Each one costs approximately US $ 1,350.

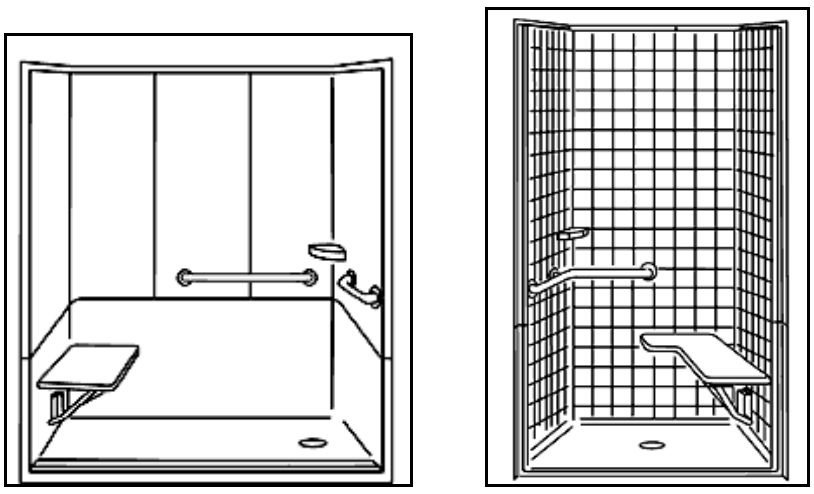


Figure 15: Two Shower Unit Designs

Pictures courtesy of Accessible Environments, Inc. 1-800-643-5906

1bi. Purchase and use a shower chair:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, sanitation, handicap accessibility, personal dignity
Cost: $
Effectiveness: ✓✓

Shower chairs allow a person with orthopedic disabilities to sit upright while bathing rather than being placed on the ground. This is recommended because of the physical limitations of the residents. When shower chairs are cleaned properly, it is more sanitary to be bathed on the chair than on the ground. Shower chairs are adaptable to any type of hose or shower head and can be moved. They may be used inside a shower unit or alone. There are various types of shower chairs commercially available with varying prices. The shower chair in Figure 16 can also double as a commode. As each bathroom would necessitate at least one shower chair, a minimum of eight shower chairs would need to be purchased for all these buildings.

Figure 16: Shower Chair/Commode

Picture courtesy of Accessible Environments, Inc. 1-800-643-5906

1bii. Curtain off section of room for privacy:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, sanitation, handicap accessibility, personal dignity
Cost: $
Effectiveness: ✓✓

An inexpensive and easy way to implement this option is to simply section off a portion of the bathroom and provide a curtain for privacy. This low cost alternative, while not ideal, does provide privacy for the resident. As each bathroom would necessitate at least one curtain, a minimum of eight curtains would need to be purchased and installed for these four buildings. These curtains should not only apply to all showering areas but all toileting areas as well.

1biii. Purchase and use a shower head nozzle at the end of a hose:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, sanitation, handicap accessibility, personal dignity
Cost: $$
Effectiveness: ✓✓

A shower nozzle (as an alternative to trough water splashed from buckets) is a way to provide effective water flow to the resident being bathed. This suggestion could be used in conjunction with Recommendations 1a and 1bi. Many shower heads have multiple pressure settings and their hose can vary in length. Moreover, increased water pressure from a shower head may facilitate bathroom cleaning. As each bathroom would necessitate at least one shower head nozzle, a minimum of eight shower head nozzles would need to be purchased for these four buildings. Shower heads such as the one shown in Figure 17 cost approximately US $ 20-$30.

Figure 17: Shower Head with Hose

Picture courtesy of CarePathways.com

Chemical Hazards

2. Purchase and use locked cabinet for chemical storage:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety
Cost: $
Effectiveness: ✓✓✓

The proper storage of chemicals is important to prevent interaction of harmful chemicals in the home with the residents. We recommend that all hazardous chemicals be stored in metal cabinets on both floors of each building. As many of the buildings presently have metal cabinets used for storing various items, one or more of these cabinets could be reserved for only storing chemicals. These cabinets should have effective and fully functional locks. If no metal cabinets are available at the home for storage, metal cabinets similar to the ones already at the home (shown in Figure 18) can be purchased for US $200-$700. Since each floor requires a chemical cabinet, ten metal cabinets are needed for chemical storage in all five buildings.

Figure 18: Existing Metal Storage Lockers at the Pakkred Home

Cleaning

3. Provide more efficient and effective cleaning supplies:

Applicable to Building 2
Needs Addressed: health, safety, sanitation
Cost: $
Effectiveness: ✓✓

This recommendation applies only to Building 2, as this building was observed to have extreme problems in the areas of health and sanitation, due to human waste on the floor and walls. Effective cleaning supplies that would assist the caregivers in performing an adequate cleaning job include mop buckets with wringers and cleaning disinfectants. The mop bucket, as shown in Figure 19, is on wheels for easy use, and has a handle for wringing dirty mops. The use of such buckets allows mops to be wrung out and rewetted, which is an improvement over the current method of wiping the whole floor in one continuous application. A mop bucket such as those shown in Figure 19 cost roughly US $50-$80. Chemical disinfectants, such as the example shown in Figure 19**Error! Reference source not found.**, are used in hospitals to remove germs, bacteria, and other harmful substances from floors, walls and equipment. Approximately four liters of this type of product, which is often sold in concentrated form, can cost from US $20-$40. The use of such products would assist in making cleaning jobs more effective, especially in buildings where waste management is extremely challenging. This addition of equipment, particularly involving the use of unfamiliar chemicals, may require staff training to be implemented.

Figure 19: Cleaning Chemical and Mop Bucket

Pictures courtesy of Parish Maintenance Supply, (http://www.parish-supply.com)

Crib Design

4a. Replace cribs:

Applicable to Building 1
Needs Addressed: safety, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

Replacing the existing cribs wherever applicable is the most expensive solution. The residents are too large to exist comfortably in conventional "cribs," which means that institutional beds should be purchased, or new cribs need to be designed and fabricated. Both methods would prove to be very costly; however, either replacement choice could provide an effective long term solution to the need. Replacing all the cribs in Building 1 would require purchasing 35 new cribs.

4b. Replace rails on cribs:

Applicable to Building 1
Needs Addressed: safety, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

Replacing the rails is an expensive procedure that can really only be tested for success on a trial and error basis. Many companies offer moveable, easily collapsible bed rails that would prevent residents from falling out of the bed. Replacing the rails with this type of detachable option would decrease the strain on the staff while lifting and placing a resident in the bed. It could also decrease the risk of an injury occurring while being swung over the rail. Prices of bed rails were found to be in excess of US $100 per rail. Replacing the rails on the cribs in Building 1 would require purchasing 35 sets of rails.

4c. Modify crib rails:

Applicable to Building 1
Needs Addressed: safety, personal dignity
Cost: $$
Effectiveness: ✓✓✓

Existing rails may be modified for easier use. Since they already are detachable from the beds, creating a design would not be difficult. The rails could be modified to be fixed at one end and placed in a pivot, allowing the opposite end of the rail to swing open and closed like a door. This method would require the design or purchase of a pivot, fabrication, and then installation. Alternatively, tracks could be added to the ends of the bed frame for the rail to slide up and down. Tracks would not eliminate the lifting portion of moving the rail, but it would allow for total access to a bed and the residents. Implementation of this idea would require the same steps as the pivot method. Both of the modification ideas use existing resources at the home, and do not require expensive purchasing and shipping costs. However, design and fabrication costs may be expensive. Modifying all the cribs in Building 1 would require fabricating 35 sets of rails.

4d. Stack mattresses within cribs to add height:

Applicable to Building 1
Needs Addressed: safety, personal dignity
Cost: $$
Effectiveness: ✓

Stacking more mattresses on top of the existing mattresses inexpensively lowers the vertical height that the staff must lift the residents over the bar and out of the crib. This tradeoff in cost exists in the elimination of the bed rail's effectiveness in protecting the residents from falling out. Although the bed rail would still exist, it would not provide the same amount of protection from falling out of the crib. Depending on a particular resident's physical capability, this could be hazardous. This suggestion is, however, the least expensive and easiest to implement. It must be noted that this process is very easily reversible. In order to implement this recommendation, extra mattresses would be needed for 35 cribs in Building 1.

Doors

5. Replace bathroom doors with metal doors:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety
Cost: $$
Effectiveness: ✓✓✓

Because of clogged drains, bathrooms at the home often have large puddles of water. Prolonged and frequent contact with water can severely damage wooden doors. We recommend that the bathroom doors be replaced with rust resistant, lightweight, metal doors. However, these doors should be completely metal and should not have any glass windows of any kind. It is also advisable that the frame be metal as well. Metal doors are durable, but expensive. A standard metal door costs approximately US $300. If each bathroom door is replaced with a metal door, eight metal doors would need to be installed for these four buildings.

6. Replace non-bathroom doors where necessary:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety
Cost: $$
Effectiveness: ✓✓

Many doors at the home need to be replaced; the majority of the damaged doors belong to the bathrooms, as noted by Recommendation 5. We recommend that all of the damaged doors be replaced with wood or metal doors. Glass doors are not a practical replacement because of the hazard they would pose if they were to break. We also recommend that all of the new doors have locks and easy to use handles/doorknobs. The door locks should not be within the reach of residents and the handles/doorknobs should facilitate opening/closing the doors in case of an emergency. There are twelve doors at the home with severe damage that need to

be replaced. All of these doors are in Buildings 1, 2, 4, and 5. This estimate possibly includes severely damaged bathroom doors.

7. Buy and install metal plates to doors that are currently in good condition:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety
Cost: $
Effectiveness: ✓

Metal plates can be fitted to the bottom of standard size doors to prevent water damage and other types of breakage. An example is shown in Figure 20. They are screwed into doors and are removable. Metal plates are usually made of aluminum or stainless steel. They are durable and usually rust resistant. Their heights vary and prices range from US $28-$60. In these four buildings, there are 19 doors in fair to good condition that would benefit from adding a metal guard.

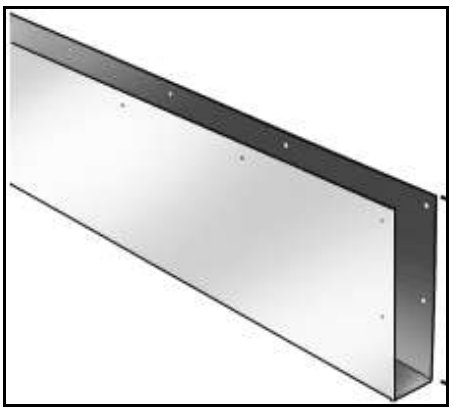


Figure 20: Metal Plate on Door

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

8. Replace/repair handles where necessary:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety
Cost: $
Effectiveness: ✓✓

Many handles and doorknobs at the home need to be repaired or replaced. We recommend repairing all broken handles/doorknobs. In the case of replacement, handicap accessible handles/doorknobs should be used. Handles/doorknobs that are functional and easy to use are necessary for everyday living as well as for safe exiting and entering in case of an emergency. We also suggest that locks be installed on every door that needs a lock or does not have a functional lock. Figure 21 shows a metal handle designed for ease of use by people with disabilities. For these four buildings, there are eleven doors that do not have handles/doorknobs. The approximate number of locks needed is not known.

Figure 21: Handicap Accessible Door Handle

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

Drains

9a. Create an elongated floor drain in bathroom:

Applicable to Buildings 1, 3, 5
Needs Addressed: health, safety, sanitation
Cost: $$$
Effectiveness: ✓✓✓

Drains with no covers are susceptible to being clogged with foreign objects relatively easily and frequently. Clogged drains in these three buildings can be avoided by widening the drain along the length of the floor. This requires a trench to be cut into the floor to allow room for a long but shallow box with a slanted bottom to be inserted. The drain pipe could affix to the deeper end of the box to permit flow. The box would feature a grate on top, which will collect most foreign objects. Another screen could be placed over the lower end of the trench acting as a trap for collecting additional matter. The trench can be opened to clear the additional matter by detaching the grate cover from the trench box. This only allows personnel with appropriate tools to open the grate for cleaning. Approximately 30 drains are located in these three buildings.

9b. Continuous drain maintenance:

Applicable to Buildings 1, 3, 5
Needs Addressed: health, safety
Cost: $
Effectiveness: ✓✓

We recommend that the clogged drains causing water-backup undergo a routine cleaning by a professional plumber. This recommendation could be carried out either independently or in conjunction with Recommendation 10. The methods we suggest range from chemical corrosion of the blockage to using a drain auger to pull the blockage out. Also we recommend that the home purchase an auger like the one pictured in Figure 22 for future blockage. Approximately 30 drains are located in these three buildings.

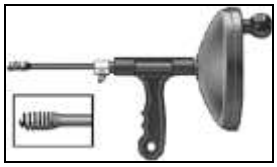


Figure 22: Drain Auger

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

10. Add/replace drain covers:

Applicable to Buildings 1, 3, 5
Needs Addressed: health, safety, sanitation
Cost: $
Effectiveness: ✓

Many of the thin metal drain covers are currently missing or severely damaged. We recommend replacing the present covers with circular covers made of material such as nylon or plastic as shown in Figure 23. Approximately 30 drains are located in these three buildings. The price for a single nylon cover unit is about US $8, and a single plastic (PVC) unit costs US $7.

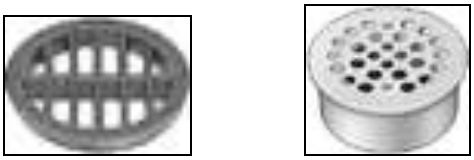


Figure 23: Two Examples of Drain Covers, Nylon (Left) and Plastic (PVC – Right)

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

Fans

11a. Replace existing fans with safer fans:

Applicable to Building 3
Needs Addressed: safety
Cost: $$
Effectiveness: ✓✓✓

The fan shown in the Figure 24 can be purchased in a variety of diameters and with single or multiple speed settings. The protective cage (shown in Figure 25)must be purchased separately in this case. Protected fans in Building 3 will prevent the older mobile residents from coming into contact with fan blades while standing on bunk beds. If this recommendation is only implemented in Building 3, 12 ceiling fans will need to be replaced.

Figure 24: Fan with Large Blades

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

11b. Add protective cages to existing fans:

Applicable to Building 3
Needs Addressed: safety
Cost: $$
Effectiveness: ✓✓✓

Similar cages to those seen on several of the existing fans may be available from the original fan manufacturer. In this case, the guards would be pre-made to fit the existing fans. If not, protective coverings from a different manufacturer could be purchased and modified to fit if necessary. This could incur the additional cost of modification. The fan guard shown in Figure 25 is designed to fit over fans of varying diameter. The guard costs about US $50-$200 depending on diameter, and is described as easy to install. This alternative cuts out the necessity of replacing the fans completely. If this recommendation is implemented in Building 3, seven ceiling fans will need protective cages.

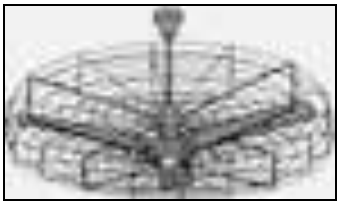


Figure 25: Protective Fan Guard

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

12. Fix/replace existing fans where non-functional:

Applicable to Building 3
Needs Addressed: health, safety
Cost: $$
Effectiveness: ✓✓✓

Replacing the non-functional fans in the buildings could include contacting the manufacturer of the existing fans to purchase similar (but protected) fans. If this is not an option, purchasing a new brand of fan would be the next step. See Recommendation 11a for details on the second option. In Building 3, only one ceiling fan is non-functional.

Floors

13a. Replace floors:

Applicable to Buildings 1, 3, 4, 5
Needs Addressed: health, safety, sanitation
Cost: $$$
Effectiveness: ✓✓✓

The benefit of replacing floors would be greater in areas of high traffic and frequent exposure to water. Installing a seamless industrial floor system protects the underlying floor from corrosion and increases the structural durability of the floor. A floor system of this type resists the growth of substances that compromise the health and sanitation of the residents and staff. Due to complicated installation procedures, the costs associated with this option are expected to be high.

13b. Replace individual tiles:

Applicable to Buildings 1, 3, 4, 5
Needs Addressed: health, safety, sanitation
Cost: $$
Effectiveness: ✓✓

Given the present condition of the existing linoleum flooring in the lobby, bedroom, and stairs, we recommend that all broken, split, peeling or severely gouged tiles be replaced. This recommendation of replacing only the damaged or missing tiles presents the option of spending less time and money than replacing the entire floor.

14. Waterproof floor near bathroom door:

Applicable to Buildings 1, 3, 4, 5
Needs Addressed: health, safety, sanitation
Cost: $$$
Effectiveness: ✓✓✓

The areas surrounding the bathroom doors in many buildings frequently have water damage, causing many floor tiles to need repair or replacement. If this area is treated with a water resistant coating, the water will not damage the floor or concrete substructure as easily. There are many compositions available for use in waterproofing including different epoxies and cement based floor toppings. . One should be chosen with safety of the residents and staff in mind.

15. Resurface bathroom floors:

Applicable to Buildings 2, 4, 5
Needs Addressed: health, safety, sanitation
Cost: $$$
Effectiveness: ✓✓

The cracked, chipped, and slippery tiles that exist in the bathrooms of these buildings compromise the safety of the residents and staff. We recommend removing the tiles and using the same flooring system as in Buildings 1 and 3. The concrete is much stronger than ceramic tiles and is also less slippery when wet.

Human Waste Management

16. Purchase and use a free standing commode where toilets are not available:

Applicable to Buildings 2, 3, 4, 5
Needs Addressed: health, safety, sanitation, handicap accessibility, personal dignity
Cost: $
Effectiveness: ✓✓

A free-standing commode is recommended for use in buildings where toilets are clogged, broken, or not available for use. Commodes such as the one pictured in Figure 26 may be purchased in a variety of sizes, from child to adult. This particular commode is designed for use as a raised toilet seat, free-standing commode, or shower chair. It is possible that it could be implemented in all three of these forms, making it an effective recommendation in these four buildings. The commode pictured costs US $138. Since one commode per floor is needed at minimum, eight commodes would need to be purchased for these four buildings.

Figure 26: Free Standing Commode Chair

Picture courtesy of Accessible Environments, Inc. 1-800-643-5906

17. Purchase a diaper bin for used diaper storage:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety, sanitation, personal dignity
Cost: $
Effectiveness: ✓✓

Diaper bins with vertically rotating lids and odor seals are available from a number of companies. These bins vary widely in complexity and price. Simple and inexpensive bins are recommended for use at the home. One or more bins, depending on the number of girls who wear diapers, should be placed in the appropriate buildings. An example of a very

simple and inexpensive bin is shown in Figure 27. This dirty diaper storage unit costs US $13. For every floor of these four buildings, one diaper bin at a minimum would need to be purchased. However, the number of bins per floor should correspond to the need for dirty diaper storage.

Figure 27: Diaper Bin

Picture courtesy of CarePathways.com

Outlets

18a. Add plastic outlet covers:

Applicable to Buildings 2, 4
Needs Addressed: safety
Cost: $
Effectiveness: ✓✓

We recommend purchasing outlet covers because they are an effective way to protect the residents from electrical hazards and still allow the staff to use the outlets. Plastic outlet covers are the least expensive way to cover the outlets and are quite durable, although they are not as durable as metal outlet covers. Plastic outlet covers replace the existing outlet cover and the portion over the prong holes simply slides to the side for access. Plastic covers are commercially available for a price of US $3-$5. For these two buildings, there are 35 outlets within reach of the residents, thus necessitating outlet covers.

18b. Add metal outlet covers:

Applicable to Buildings 2, 4
Needs Addressed: safety,
Cost: $$
Effectiveness: ✓✓✓

A type of outlet cover that is very durable and secure, but more expensive than plastic outlet covers is a lock-box metal outlet cover. This type fits over the existing outlet cover and must be unlocked for access (see Figure 28). Like plastic outlet covers, the metal alternative is commercially available. One manufacturer sells metal lock-box outlet covers for approximately US $50. For these two buildings, there are roughly 35 outlets within reach of the residents, thus necessitating outlet covers.

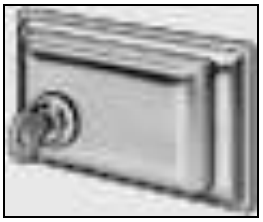


Figure 28: Metal Lock Box Outlet Cover

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

19. Replace damaged switch plates:

Applicable to Buildings 2, 4
Needs Addressed: safety
Cost: $
Effectiveness: ✓✓

In Buildings 2 and 4, there are 11 existing outlet covers that are broken. These broken covers leave the electrical wires exposed and are easily accessible by the residents. We recommend that these covers be replaced as soon as possible in order to minimize the electrical hazard posed by exposed wires. For these two buildings, 11 outlets with pushed-in switch plates or exposed wires need to be replaced with new switch plates.

Sinks/Troughs

20a. Hire a professional to build new sinks/troughs with cement structure and fiberglass or plastic inserts for water storage:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety, sanitation
Cost: $$$
Effectiveness: ✓✓✓

Many of the sinks and troughs in the home are badly damaged. The most expensive and drastic recommendation would be to replace them. Since the sinks and troughs are covered in tiles, they pose a hazard because of their cracked tiles as well as the water damage they have suffered. The sinks could be entirely removed and new cement sinks and troughs could be installed. Then, in order to prevent breakage and water damage, the inner part of the basins would contain a fiberglass or plastic insert. Because fiberglass and plastic are resistant to water damage and very durable, they are a more practical alterative to tiles. The outer portion of the sink/trough would be left cement, as it is highly durable against water damage and breakage. For all five buildings, there are 31 sinks/troughs that would need to be replaced.

20b. Remove tiles on sinks/troughs and replace with fiberglass or plastic:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety, sanitation,
Cost: $$$
Effectiveness: ✓✓✓

A cheaper and less drastic alternative to total replacement is to modify only the exterior of the sinks and troughs. It is believed that the sinks and troughs in the home consist of cement underneath the tiles. These tiles could be removed and in their place, a plastic or fiberglass shell would be placed over the cement foundation. This is a less involved alternative and would be safer than the tile exterior. For all five buildings, there are 31 sinks/troughs that would need to be replaced.

20c. Remove troughs and install an alternate storage container, such as a portable sink, for holding water:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety, sanitation,
Cost: $$$
Effectiveness: ✓✓✓

This alternative involves replacing the sinks with a nonpermanent fixture. The existing troughs and sinks could be removed and portable industrial sinks could be used. Industrial sinks are large, durable and can be expensive. Many types and styles of large sinks are commercially available. Depending on size, material, and number of bowls, prices may vary from US $300-$800. The sink shown in Figure 29 costs US $300 and is made of stainless steel. For all five buildings, there are 31sinks/troughs that would need to be replaced.

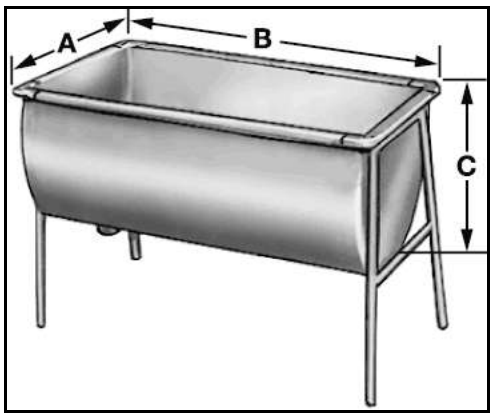


Figure 29: Portable Sink

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

Stairs

21. Buy and install handrail:

Applicable to Buildings 2, 5
Needs Addressed: safety, handicap accessibility
Cost: $$
Effectiveness: ✓✓✓

To facilitate the use of the stairways in these buildings, we advise that handrails compliant with United Nations dimensions be installed (see Appendix J for pictures and dimensions.) Handrails of the proper dimensions can enable a person with orthopedic disabilities to grip

the rail properly and may prevent many of the falling hazards present without handrails. There are many types of handrails commercially available that are compliant with the United Nations guidelines. Handrails for the stairs, however, need to be fitted to the building's structure and prices may vary. There is one set of 18 stairs for each building. If this recommendation is implemented, handrails would need to be installed in two buildings.

22. Buy and install non-slip material on stairs:

Applicable to Buildings 2, 5
Needs Addressed: safety, handicap accessibility
Cost: $
Effectiveness: ✓✓

To reduce slipping hazards and increase friction, textured surfaces should be applied to the stairs in these buildings. These non-slip surfaces reduce the chance of slipping on the stairs, which makes the lives of the residents and staff safer. We recommend that grip material be applied to the whole surface of each stair to facilitate the transport of the non-ambulatory girls from floor to floor. This application may also make the stairs more slip-proof for staff and ambulatory residents. Since there are many types of non-slip materials, we recommend non-slip material such as vinyl be used that will not damage the residents' feet, as they do not wear shoes. For reference, one manufacturer charged US $24 per meter for the model designated C in the Figure 30. This particular style is made out of vinyl. In Buildings 2 and 5, there are a combined total of 36 stairs that would need non-slip material installed on them.

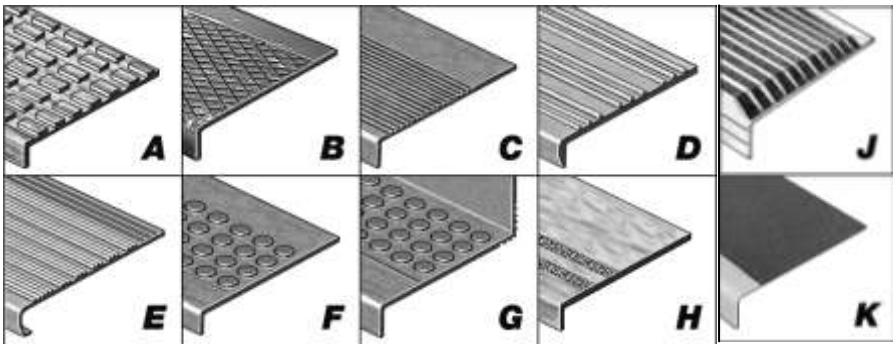


Figure 30: Non-slip Stair Coverings

Picture courtesy of McMaster-Carr Maintenance Supply, 2003, (http://www.mcmaster.com)

Toilets

23a. Replace toilets with basic Western style toilets:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety, sanitation, handicap accessibility
Cost: $$$
Effectiveness: ✓✓

In our research, we found many ways to convert Western style toilets into handicap accessible toilets, but no such information was found for Asian style toilets. Thus, we

recommend that broken or Asian toilets be replaced with Western style toilets, as a first step in improving toileting issues. In Appendix J, we provide United Nations information about converting a Western style toilet into a handicap accessible toilet. For these four buildings, 11 Asian style toilets would need to be replaced. Also, only ten toilets from these buildings are functional.

23b. Place commode seat over existing Asian-style toilets:

Applicable to Buildings 2, 4, 5
Needs Addressed: health, safety, sanitation, handicap accessibility
Cost: $
Effectiveness: ✓✓

Another alternative to replacing an Asian toilet would be to modify its structure. This could be accomplished by placing an accessory over the existing toilet to facilitate the user in sitting rather than squatting. As the figure below shows, the accessory would need to be modified from its original structure. For instance, the bottom of the pail on the accessory would have to be removed and the commode itself would be placed directly over the Asian toilet. Figure 31 displays one type of commode. There are other types commercially available. The one shown costs approximately US $80. Because there are 11 Asian style toilets in these four buildings at the home, 11 commodes would need to be purchased. Also, only ten toilets from these buildings are functional.

Figure 31: Commode Seat

Picture courtesy of Accessible Environments, Inc. 1-800-643-5906

23c. Replace toilets with handicap toilets:

Applicable to Buildings 1, 2, 4, 5
Needs Addressed: health, safety, sanitation, handicap accessibility
Cost: $$$
Effectiveness: ✓✓✓

We recommend that all toilets should be handicap accessible. This could be directly accomplished by modifying existing toilets or replacing toilets with pre-made handicap

accessible models. For information about what a handicap accessible toilet is, please consult Appendix J. If this recommendation is implemented, 15 total toilets in these four buildings will need to be replaced. Also, only ten toilets from these four buildings are functional.

24. Purchase bedpans for use:

Applicable to Building 1
Needs Addressed: health, sanitation
Cost: $
Effectiveness: ✓

For the non-ambulatory, verbal residents, we recommend bedpans to be used in lieu of diapers. This suggestion applies to Building 1, which is the only building where a significant number of residents are non-mobile. Bedpans are inexpensive and fairly easily maintainable. Waste could be emptied and flushed down the toilets, eliminating the concerns created by dirty diaper storage and handling. Bedpans are commercially available for US $7-$15.

25. Buy and install new grab bars in bathrooms:

Applicable to Building 1, 2, 4, 5
Needs Addressed: safety, handicap accessibility
Cost: $$
Effectiveness: ✓

In adapting a bathroom to be handicap accessible, grab bars are considered to be important. When grab bars of the appropriate dimensions are installed at the correct locations, toileting is much easier for a person with orthopedic disabilities. They can lower or raise themselves independently for a smoother transition from standing to a sitting position. Please refer to Appendix J for more information about the location and design of bathroom grab bars. As more than one type of grab bar is needed for the bathroom, prices may vary. Figure 32 shows a grab bar designed for mounting next to a toilet fixture. They are commercially available and the grab bar shown below costs US $66. Currently, there are only three toilets at the home without grab bars.

Figure 32: Typical Grab Bar for Toilet Fixture

Picture courtesy of Accessible Environments, Inc. 1-800-643-5906

26. Repair plumbing to toilets:

Applicable to Building 1, 2, 4, 5
Needs Addressed: health, sanitation, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

As many of the toilets do not have functioning plumbing, an unreliable water supply leads to the toilets being unsanitary and often going unused. These sanitation and neglect issues underlie a greater concern, which is broken plumbing. We recommend that the plumbing to the toilets be fixed. A functional plumbing system will accommodate the installation of more handicap accessible fixtures. Out of 15 total toilets in these four buildings, ten are functional.

Transportation of Residents

27a. Purchase wheeled stretcher with rails:

Applicable to Building 1
Needs Addressed: safety, handicap accessibility, personal dignity
Cost: $$
Effectiveness: ✓✓

For the transportation of the residents, we suggest a stretcher on wheels, similar to those used by hospitals and emergency response units. This device would be at a height appropriate for transport and would include rails to prevent accidents. The stretcher would be used to wheel the residents of Building 1 to and from the bathroom or physical therapy and would make the tasks of the staff considerably easier.

27b. Purchase wheelchair/stroller:

Applicable to Building 1
Needs Addressed: safety, handicap accessibility, personal dignity
Cost: $$
Effectiveness: ✓✓

One option for wheeled mobility design is to use a wheelchair or stroller created especially for use with children and young adults. Figure 33 shows one example of a child sized, foldable wheelchair designed for quick transport. The chair in this design is smaller and less bulky than a typical wheelchair, and straddles the border between wheelchair and stroller Chairs with more stroller-like designs were not considered appropriate for Building 1, as they did not provide the torso support necessary for the residents of that building.

Figure 33: Stroller for Children with Disabilities

Picture courtesy of Convaid Inc. (http://www.convaid.com)

Water Supply

28a. Repair plumbing professionally throughout home:

Applicable to Buildings 2, 3, 4, 5
Needs Addressed: health, sanitation, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

We recommend that a professional plumber be hired to evaluate the five buildings. This professional should assess what work can be done on the pipes to improve flow, better the quality of the current water supply, and begin to map out the plumbing system. This professional should be capable of recommending any further steps to fix the present system to provide increased water flow and quality to the buildings. Faucets and other bathroom fixtures at the home should also be assessed for functionality. There are approximately 16 broken faucets in all five buildings.

28b. Purchase and install water tanks:

Applicable to Buildings 2, 3, 4, 5
Needs Addressed: health, sanitation, personal dignity
Cost: $$$
Effectiveness: ✓✓✓

To combat the issue of intermittent water, we recommend the installation of water tanks to improve the supply of available water to the buildings. With these holding tanks of enclosed water on hand, the troughs may be drained after use to prevent discoloration in the water. The available volumes of water tanks range from 113 to 37,800 liters. We suggest asking the supplier to estimate what the needs are of each building versus the entire home. We then suggest investing in the most cost effective way to either implement tanks to all five buildings individually or to implement one larger volume tank to service all five buildings as a whole.

Window Functionality

29a. Replace non-functional windows:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety
Cost: $$$
Effectiveness: ✓✓✓

One option is to replace all of the non-functional windows, although this would be a very costly improvement. With the addition of protective window grates (see Recommendation 32), however, the new windows would suffer minimal damage from the residents and may last much longer than the existing windows. If this recommendation is implemented, 309 windows would need to be replaced.

29b. Have window company repair non-functional windows:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety
Cost: $$
Effectiveness: ✓✓✓

We recommend that all non-functional windows be repaired. These repairs should be done by a professional. It may be possible to contact the manufacturer of the existing windows and arrange for maintenance to be performed. The related costs would be determined by the manufacturer. Out of 668 windows in all five buildings, approximately 309 windows are non-functional and would need to be repaired.

Window Glass

30a. Replace broken glass panes with new glass panes:

Applicable to Buildings 2, 4, 5
Needs Addressed: safety
Cost: $$
Effectiveness: ✓✓

To remove the hazard of broken glass from the buildings, we suggest the replacement of all broken glass panes. This would require purchasing new glass panes and paying for the labor to have them installed. Out of 402 windows in these three buildings, approximately 61 windows have broken glass and would need to be repaired.

30b. Replace broken panes with Plexiglas panes:

Applicable to Buildings 2, 4, 5
Needs Addressed: safety
Cost: $$
Effectiveness: ✓✓✓

We propose that replacing the glass in all of the windows with a safer and more durable material such as Plexiglas may provide a long term improvement to the broken glass hazard. It is recommended that Plexiglas pieces be cut to the same size as the existing glass panes, so that a direct replacement may be implemented. The costs incurred would be those involved with purchasing the new material, sizing and cutting it, and installing it in all of the windows at the home. If this recommendation is implemented in these three buildings, 402 glass windows would need to be modified.

Window Screens

31. Replace damaged/missing window screens:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety
Cost: $$
Effectiveness: ✓✓

As missing and broken screens allow insect invasion, we recommend that all missing and broken screens be replaced with metal screens of the same style that are installed at the home already. Because these screens are important to preventing insect invasion, they must be protected from resident damage. Means for screen protection are given in Recommendation 32. In all five buildings, there are 490 windows out of 668 that need new window screens.

32. Add protective window guards to prevent further damage:

Applicable to Buildings 1, 2, 3, 4, 5
Needs Addressed: health, safety
Cost: $$$
Effectiveness: ✓✓✓

In order to protect glass, insect screens, and window mechanisms from damage, interior window guards should be installed in every building. We recommend that indoor window guards of a similar type to those in Buildings 2 and 5 be installed (see Figure 34). There are currently 120 windows, which already possess window grates (in Buildings 2 and 5); thus, only 548 windows would need protective metal grates.

Figure 34: Protective Window Guards in Building 2

Issues Related to Staff Training and Development

33. Feeding procedure (Buildings 1, 2): Our recommendation is that staff be trained in the hazards associated with feeding multiple residents from the same spoon, as well as educated in possible alternatives, such as washing spoons between individual feedings. We also recommend that staff in the CP building (Building 1) be trained in methods of feeding individuals who cannot sit up without assistance.

34. Girls tied to cribs (Building 1): Our recommendation is that staff be trained in the hazards of this procedure and in the use of restraint methods which are safer and less of a threat to personal dignity.

35. Stacked mattresses (Buildings 2, 5): We recommend that staff be trained in the consequences of allowing residents to play on or near piles of stacked mattresses, as well as given an idea of alternative mattress storage methods.

36. Violence among girls (Buildings 2, 3, 4, 5): Because this is a major problem in many buildings, we recommend that staff receive adequate training on techniques of conflict management and discipline. We recommend that training on dealing with mentally disabled persons is also provided, so that staff can better understand the unique challenges of the residents with whom they work.

37. Diaper changing methods: Most of the residents who wear diapers at the home are bedridden. When diaper changing occurs, human waste comes in contact with the mattresses where the girls sleep, thus creating a health and sanitation hazard. We recommend that staff be trained in the hazards posed by the interaction of human waste with the mattresses as well as proper cleaning methods for this waste.

Concluding Remarks

Since this project focuses solely on the Pakkred Home for Mentally Handicapped Girls, it is easy to mistakenly regard the conditions at the home as isolated phenomena. However, the quality of life issues that affect the residents at the Pakkred Home are related to those present in welfare homes in developing nations all over the world. With the help of both the United Nations and non-governmental organizations, the governments of developing nations continue to endeavor for more advanced social development. The governmental agencies that oversee welfare homes and serve as advocates for people with disabilities are in their germinal stages, however. The histories of disability rights movements in developed nations offer the evidence that societal change and the development of programs and services for people with disabilities require time, patience and effort. Often, many decades pass before change can be seen. Many organizations and individuals worldwide persistently strive to lessen the disparity in the quality of life for people with disabilities in developing nations. Action driven by strong motivation can achieve the goal of eliminating social and physical barriers for people with disabilities wherever they live.

In this project, we have attempted to clarify the needs for improvement at the Pakkred Home. These needs span a broad range of topics, and include both structural and staffing issues. We

hope that a catalytic step has been taken in our documentation and description of the needs that can be addressed by the ISG. Our recommendations serve as a starting point for charity efforts to obtain the funding and resources necessary for improvement at the home.

During our project, we have been challenged both intellectually and emotionally by our work at the home. At times, it was difficult to witness the conditions in which the residents lived, and we felt overwhelmed and even stifled by our surroundings. From watching the residents interact and exist in the conditions at the home, we developed a great respect for the girls. We admired their strength for many reasons. They not only cope with the difficulties caused by their disabilities on a daily basis, but they also face the challenges of living in an institutionalized environment. It was amazing to be greeted with smiles from girls who had encountered so much adversity in their lives. They remain the inspiration for this project and without those small and significant displays of encouragement, our work would have been far more discouraging.

We are convinced that the Pakkred Home has remarkable potential to be a supportive environment for the growth and development of girls with mental disabilities. We can only hope that the motivation to make improvements does not end with the completion of this project. There is much work to be done, and what we have accomplished is only the first step in a series of many that should be taken to improve the quality of life for the residents and staff at the Pakkred Home for Mentally Handicapped Girls.

Bibliography

Antaseeda P. n.d. Schemes for the Handicapped Seen to Lack Direction. Online Bangkok Post. <http://search.bangkokpost.co.th/bkkpost/ 1997/december1997/ bp971204/0412_news22.html> Accessed 2002 October 25.

The ARC. <http://thearc.org/faqs/assistqa.html> Accessed 2003 February 12.

Cooper, Kenneth J. Human Waste Overwhelms India's War on Disease. 1997 February 17. <http://www.swopnet.com/engr/sanitation/India_sewers.html> Accessed 2002 November 6.

Corless, Roger J. The Vision of Buddhism. New York: Paragon House, 1989.

Christian Care for Children with Disabilities. n.d. <www.cord.org.uk/worldwide/ thailandhome.html> Accessed 2002 October 24.

Elwan, Ann. Poverty and Disability. n.d. <http://rehab-international.org/publications/rivo/50/ povertyanddisability.html> Accessed 2003 February 9.

Frankfort-Nachimias, Chava and David Nachmias. Research Methods in the Social Sciences. New York: St. Martin's Press, 1996.

Friedland, J. and McColl, M. Disability and Depression: Some Etiological Considerations. Soc Sci Med 1992; 34 (4): 395-400.

Goldsmith, S. Designing for the Disabled. New York: McGraw-Hill, 1967.

Hanh, Thich Nhat. The Heart of the Buddha's Teaching. New York: Broadway Books, 1999.

Hines, Richard. Theravada Buddhism. 6 June 1999. <www.wsu.edu:8000/~dee/ BUDDHISM/ THERA.HTM> Accessed 2002 November 6.

LD Online. Learning Disabilities and Assistive Technology: An Emerging Way to Touch the Future. <http://ldonline.org/ld_indepth/technology/tfl_mystery.html> Accessed 2003 February 12.

Mallory, Brian. Changing Beliefs About Disability in Developing Countries: Historical Factors and Sociocultural Variables. The International Exchange of Experts and Information in Rehabilitation 1993; 53: 1-24.

Michailakis, Dimitris. The UN Standard Rules on the Equalization of Opportunities for Reasons with Disabilities. n.d.<http://whqlibdoc.who.int/hq/2001/ WHO_DAR_01.7.pdf> Accessed 2002 November 10.

National Institute on Disability and Rehabilitation Research. The Chartbook on Disability in the United States. n.d. <http://www.infouse.com/disabilitydata/ chartbook.choices.html> Accessed 2002 October 25.

National Organization on Disability. The Kingdom of Thailand's Progress Toward Fulfillment of the U.N. World Programme of Action Concerning Disabled Persons. n.d. <http://www.nod.org/cont/ dsp_cont_item_view.cfm? contentId=75> Accessed 2002 October 24.

Robinson, Richard, and Willard Johnson. The Buddhist Religion, A Historical Introduction. California: Wadsworth Publishing Company; 1982.

Rotary Club Bangkok South. "Helping the Disabled." n.d. <www.bangkok-south.com/page4.html> Accessed 2002 December 1.

Rotary Club Bangkok South "Projects 1999-2000." n.d. <www.bangkok-south.com/projects.HTM> Accessed 2002 December 1.

Roxas, Percy. "A Family Like No Other." 7 June 2002. <www.familycare.org/network./ p21_newspaper.htm> Accessed 2002 October 27.

Singleton, Royce A. Jr and Bruce C. Straits. Approaches to Social Research. New York: Oxford University Press, 1999.

Taleporos, G. and McCabe, M. Body Image and physical disability –personal perspectives. Social Science & Medicine 2002; 54: 971-980.

Tam, S-F. Comparing the Self-Concepts of Person With and Without Physical Disabilities. The Journal of Psychology 1998; 132 (1): 78-86.

Tourism Authority in Thailand. Nonthaburi. 2000. <http://www.tat.or.th/province/central/ non/index.htm> Accessed 2002 November13.

United Nations. Asian and Pacific Decade of Disabled Persons: mid-point ~ country perspectives. n.d. <http://www.unescap.org/decade/publications/apdcp/apdcp.pdf > Accessed 2002 November 10.

United Nations. Hidden Sisters: Women and Girls with Disabilities in the Asian and Pacific Region. 2000 May 8. <http:www.unescap.org/decade/wwd1.htm> Accessed 2003 February 9.

United Nations. Production and Distribution of Assistive Devices for People with Disabilities. n.d. <http://www.unescap.org/decade/publications/ z15001p1/z15001.htm#contents> Accessed 2002 November 1.

United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. n.d. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

United Nations. Promotion of Non-handicapping Environments for Disabled Persons: pilot projects in three cities. n.d. <http://unescap.org/decade/publications/pnedp/index.htm> Accessed 2002 November 3.

United Nations ESCAP. Asian and Pacific Decade of Disabled Persons, 1993-2002. 2002 January 8. <http://www.unescap.org/decade/publications/apdcp/thailand.htm> Accessed 2002 October 24.

U.S. Department of State: Office of International Information Programs. WHO Says Unhealthy Environments Kill 3 Million Children a Year. 2002 March 5. <http://usinfo.state.gov/topical/global/hiv/02030501.htm> Accessed 2002 November 6.

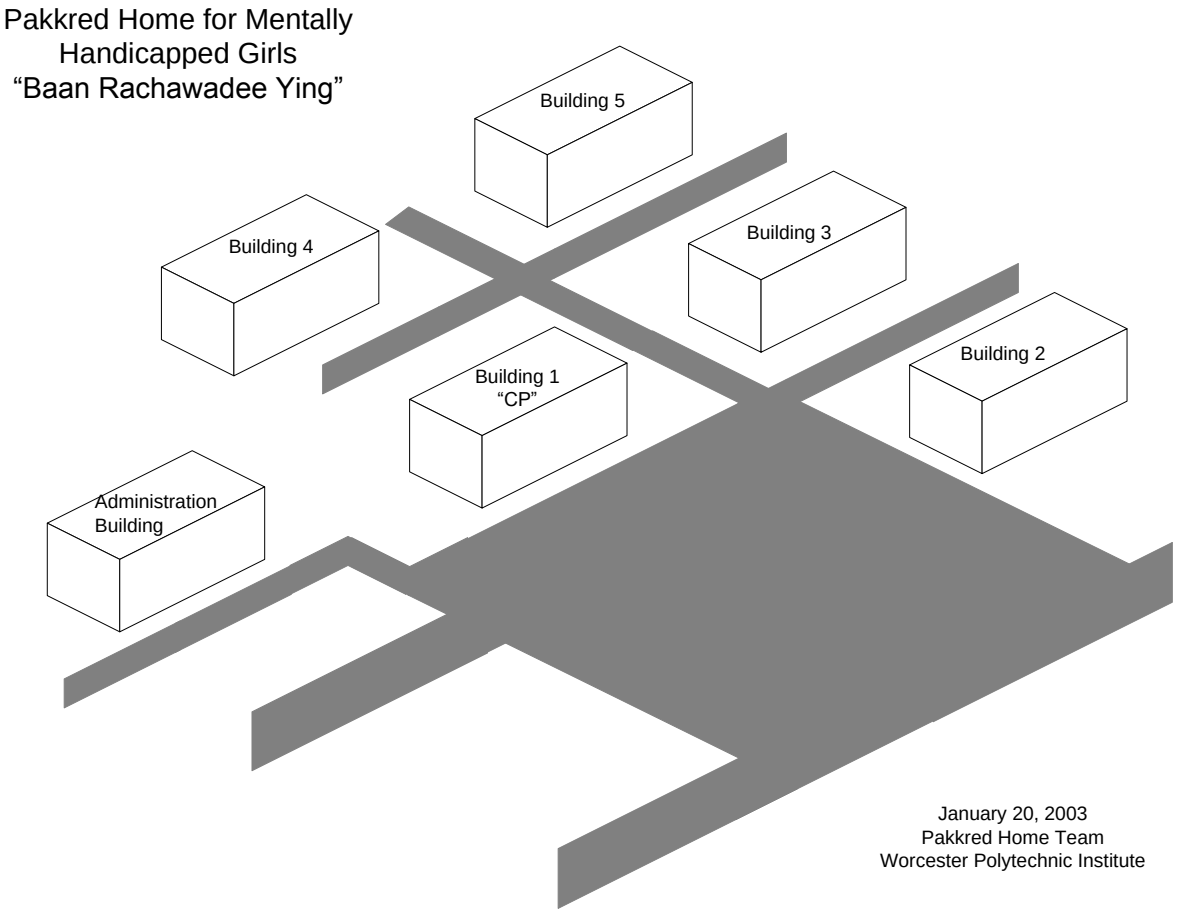
US Food and Drug Administration. Center for Food Safety and Applied Nutrition. 2001 July 12. <http://vm.cfsan.fda.gov/~dms/wh-food.html> Accessed 2002 December 3.

World Health Organization. Global Water Supply and Sanitation Assessment 2000 Report. n.d. <http://www.who.int/water_sanitation_health/Globassessment/Global1.htm#Top> Accessed 2002 December 1.

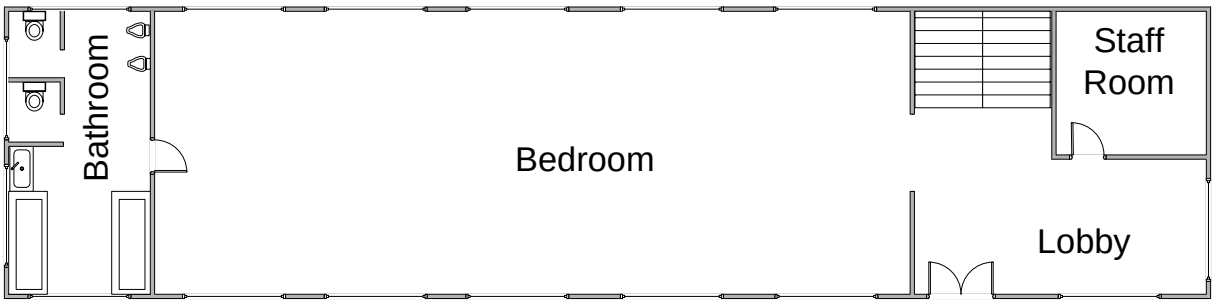
Zames Fleischer, D, Zames, F. The Disability Rights Movement: From Charity to Confrontation. Philadelphia: Temple University Press; 2001. 93 p.

Appendices

Appendix A: General Map of Facility



Appendix B: Typical Floor Plan



This floor plan represents the typical layout of the first floor of each building at the Pakkred Home. The second floors are similar; however, the entrance doors are not present on these floors. Building 2 is the only building that exhibits a layout at all different from this plan. The layout of this building, however, is only altered in orientation, and may be easily conceptualized by picturing a mirror image of this layout with the mirror held at the top of the drawing.

Appendix C: Pakkred Home Brochure

- Organizing special group in the Home for children who are ready to study integration empowerment with normal children from stream school outside the Home and training on social discipline and social perception which are helpful in daily living.
- Providing education outside the Home in main stream school with other children and excepted into special education school for use disabled who requires.
- Providing vocational training special schooling in the Home for the children who are skilled to be train such skills as rug making, mat weaving, cooking, beauty salon, artificial flower making, laundry. By which, the children will have a chance to practise and receive vocational skills and earn income from services provided on selling their products they makes.

4. Social Work services

- Consideration of admitting and discharging of each child
- Make case study and recording of each child's development.
- Solving problems and giving counselling for children who have problems both individual and group level.
- Provide mental and social rehabilitation service through various activities in and out the Home on special occasion and recreation activities such as games, camping, music and dance.

5. Providing employment placement for children.

- Finding employment outside in private enterprises and government offices for these children on they have complete vocational training.
- Refferal to other suitable welfare institutions.
- Being employed appropriately to their abilities.
- Follow up and return back to their own families.

Home for Mentally Handicapped Girls
Ban Rabluaddee Ying
Rehabilitation For The Disabled Division
Department of Public Welfare
Ministry of Labour And Social Welfare
Telephone : 0-2583-4846,0-2583-6731 Fax : 0-2583-4592

Established : Since 20th October 1997

Policy : To provide residential care for mentally handicapped girls who ages range from 7-18 years who are orphans, neglected, homeless, abandon and children of distress or poverty stricken familes.

Objective :

1. To provide service to meet basic needs and all necessary services required for girls whom are mentally handicapped.
2. To provide physical, mental, holistic welfare and social rehabilitation services.
3. To provide special education and vocational training to corresponding their physical and intellectual abilities of the children.
4. To provide employment as deemed individual suitable within the community.

Welfare Services :

1. High level of residential care.
2. Medical service and health care, such as a general check up, medical treatment, operation, physical rehabilitation, physical therapy, speech therapy and nutrition or diet needs.
3. Educational Services and vocational training
   - Provide early stimulation of the children increase intellectual abilities to learn or to be trained. The development therapeutic group are also arranged by the Home, for stimulation which is fundamental in their daily life activities, improvement speech therapy and intellectual and social activities.

เอกสารแนะนำ
สถานสงเคราะห์เด็กพิการทางสมองและปัญญา (หญิง)
(บ้านราชวิถีหญิง)
สำนักงานคณะกรรมการพัฒนาคุณภาพผู้พิการ
กรมประชาสงเคราะห์
กระทรวงแรงงานและสวัสดิการสังคม

เลขที่ 78/15 หมู่ที่ 1 ถนนติวานนท์ ต.บางตลาด
อ.ปากเกร็ด จ.นนทบุรี 11120
โทร. 0-2583-6731, 0-2583-4846 แฟกซ์ 0-2583-4592

Appendix D: Building Assessment Form

Building: _____ Floor: ____ Starting Time: _____ Ending Time: _____ Date: _____

Observer: _____

GENERAL:

Apparent # of Residents: _____

Apparent Age Range: _____

Mobility:
None Leave Beds
Some Leave Beds
All Leave Beds

Number of Staff: ____

Number of Extra Care Givers: _____

Functionality:
1 = Functional
2 = Somewhat Funct.
3 = Non-functional

Necessary
1 = Not necessary
2 = Somewhat necessary
3 = Very Necessary

Hazard:
1 = Not hazardous
2 = Possible hazard
3 = Very hazardous

Damage:
1 = Not Damaged
2 = Somewhat damaged
3 = Severely damaged

D = Door O = Outlet S = Screen T = Toilet U = Urinal W = Window

Windows:

Number of Windows: _____

Condition of windows: _____

Description		Functionality	Necessary	Hazard	Damage	Notes

Windows:

Description		Functionality	Necessary	Hazard	Damage	Notes

Doors: Number of Doors: ____ Material: _____

Condition of Doors: _____

Keep in mind: area around door, width of door, condition of handles and locks

Description		Functionality	Necessary	Hazard	Damage	Notes

Floors: Keep in mind: cracks in floor, substance on floor, methods of cleaning floor

Lobby:
Material:
_____
Condition of floors: _____

_____
_____
_____
_____
_____
_____
_____

Bedroom:
Material:
_____
Condition of floors: _____

_____
_____
_____
_____
_____

_____
_____

Bathroom:
Material:

_____
Condition of floors: _____

_____
_____
_____
_____
_____
_____
_____

Beds: Number of bed types: _____ Mattress on floor _____ Bed with frame
_____ Crib _____ Bunk Bed

Notes: _____

_____
_____
_____

Ceiling Fans: Number of fans: _____
Condition of fans:

Description		Functionality	Necessary	Hazard	Damage	Notes

Window Fans: Number of fans: _____
Condition of fans:

Description		Functionality	Necessary	Hazard	Damage	Notes

(Building Assessment pg. 5of 6)

Outlets: Number of Outlets: _____

Condition of Outlets:

Description		Functionality	Necessary	Hazard	Damage	Notes

Bathrooms:

Toilets: Number of toilets: _____ Western _____ Check if
_____ Eastern _____ equipped
_____ Urinal _____ w/ Grab
_____ Empty Stall _____ Bars

Notes: _____
_____
_____
_____

Condition of toilets:

Description		Functionality	Necessary	Hazard	Damage	Notes

Sinks: Number of sinks: _____ Small Sinks _____ Check if
_____ Large Troughs _____ equipped w/ Grab
_____ Missing Sinks _____ Bars

Notes: _____
_____
_____
_____

Keep in mind: bottom of trough, tile condition of trough, drains, contents of trough, area around trough

Condition of Sinks:

(Building Assessment pg. 6 of 6)

Description		Functionality	Necessary	Hazard	Damage	Notes

Appendix E: Observation Ideas, Protocol, and Schedule

While observing in the buildings of the Pakkred Home for Mentally Handicapped Girls, the following categories will be kept in mind:

1. Bathing procedures: How are the residents bathed? What are the challenges that come up during the procedure? What are the benefits of the procedure? How are staff and residents affected during the process?
2. Toileting procedures: How do the residents use the bathroom? If they do not use the bathroom, what alternatives are presented? What are the challenges that come up during the procedure? Does the toileting procedure create any hazardous situations? What are the benefits of this procedure? How are staff and residents affected by the toileting procedure?
3. Feeding procedures: How are the residents fed? What are the challenges that come up during the procedure? Does the feeding process create any hazardous situations? What are the benefits of this procedure? How are staff and residents affected by the toileting procedure?
4. Cleaning procedures: How are the building and furniture cleaned? What are the challenges or hazards presented by this procedure? What are the benefits of the procedure? How are the staff and residents affected by the cleaning process? How effective is the cleaning effort?
5. Interactions with outlets: How and when do residents and staff use or otherwise interact with the outlets in the building? Are there any hazards associated with the outlets? How are residents and staff affected by the presence of the outlets? Do residents have access to the outlets?
6. Interactions with fans: How and when do staff and residents interact with the fans? Are there hazards associated with the fans? How are residents and staff affected by the presence of the fans? Do residents have access to the fans?
7. Interactions with windows: How and when do staff and residents interact with the windows? Are there hazards associated with the fans? How are residents and staff affected by the presence of the fans? Do residents have access to the fans?
8. Transportation inside building: How are residents transported inside the building, for example from bed to bathroom? What hazards or challenges does this pose? What are the benefits of such procedures? Do procedures differ depending on staff members or resident capabilities?
9. Transportation outside building: How are residents transported outside the building, for example to the physical therapy building? What hazards or challenges does this pose? What are the benefits of such procedures? Do procedures differ depending on staff members or resident capabilities?
10. Presence of safety hazards: Are there any safety hazards present in the home, such as accessible chemicals or piles of mattresses? How are these safety hazards handled by staff and residents? What is the likelihood of an accident occurring?
11. Staff and resident interactions: How, when, and why do staff and residents interact with one another? What are the consequences or benefits of these interactions? How do the extra caregivers, such as nurses and CCD members, interact with the residents?
12. Interactions between residents: How do residents interact with one another? What are the benefits of this interaction? If conflicts arise, how are they handled? What are the challenges of interaction between residents?

Any other observations will be made as necessary or appropriate. The observation period will occur simultaneously with the building assessment and continue until the end of the allotted time period.

Observation Schedule

	Building 1	Building 2	Building 3	Building 4	Building 5
January 21	Battistini	Roberts	Palma	--	--
January 22	Roberts	Battistini	Vigneau	Palma	--
January 23	--	Vigneau	Battistini	Roberts	Palma
January 24	Vigneau	Palma	--	Battistini	Roberts
January 27	Palma	--	Roberts	Vigneau	Battistini
January 28	--	--	--	--	Vigneau

Appendix F: Interview Structure and Results

General Interview Questions and Procedure:

Hello _____, our names are Tom Battistini, Melinda Palma, Amada Roberts, and Chris Vigneau. We are all students from Worcester Polytechnic Institute and are currently working on a project assignment here in Bangkok concerning the Pakkred Home. Our project is sponsored by the International Support Group (ISG), and we will be staying in Thailand until the beginning of March. We hope to accomplish positive changes in the community with our work before we leave. Our main focus is the creation of a report to be given to the ISG that will act as the catalyst for the generation of funding for projects intended to improve the conditions that make up the quality of life at the Pakkred Home. This report will be completed with the help of the assessment of the home and interviews like this. We would like to thank you for sharing this time with us in the interest of helping the residents and staff at the Pakkred Home. We assure you that your identity will be kept confidential throughout this entire process.

- What initially interested you about the Pakkred Home? From your experience, what is your favorite thing about the Pakkred Home?
- Had you ever worked with children with disabilities before?
- How long have you been involved with the Pakkred Home?
- What is your impression of the current waste management system at the Pakkred Home? How about the methods of bathing/cleaning?
- How are the staff hired and trained?
- What challenges face the staff?
- How would you describe the quality of care for the residents at the Pakkred Home?
- Have you ever seen a resident bathing inside the basins in the bathroom? If so, was there a worker there?
- How available is the demographic information of the residents? What about the blueprints of the buildings?
- How much involvement does the DPW actually have with the Home?
- Have you ever felt that there are extreme conditions that needed immediate correction?
- While spending time in the buildings, have you ever seen extreme safety issues that need immediate correction? Have you ever witnessed serious injury or safety issues at the Pakkred Home?
- Drawing from your experience at the home, what are, in your opinion, the most pressing issues currently facing the Pakkred Home?
- If you were able to make certain changes to the home, what would they be?

Interview with International Support Group Member #1

January 9, 2003; Pakkred Home

Supplemental Interview Questions:

- How old are the five buildings with which we will be working?

- What is the annual budget for this section of the home, as determined by the Department of Public Welfare?

Interview Summary:

This ISG member has lived in Thailand for 13 years and has been involved with the Pakkred Home for nine years. She volunteers once a week in Building #1 spending time with the young girls there who have cerebral palsy. The girls at Building #1 are ages 7-18 years old. Some days, the ISG member takes the girls on outings. She explained that she does not know much about the other girls in the other buildings at the Home. She is currently the chairwoman of the Pakkred Home projects committee of the ISG.

ISG member #1 has never had experience with children with disabilities before the Pakkred Home. She previously worked as a history teacher in her native country.

The interviewee sees that a lack of staff and monetary support are the main reasons for a compromised quality of life at the Pakkred Home. Often, the toilets, fans and playground equipment are broken. Maintenance of equipment is always an issue. She also informed us that the beds need sliding rails and the lifting of the children is often difficult and done by the more mobile girls at the Home. In addition, she feels that although the staff are caring, the girls' physical needs come first and often the emotional needs are not attended to. This can be attributed to the shortage of staff.

The ISG member provided some information about the buildings, about some of the girls at the Home, and about the budget of the Home. The five buildings that the girls occupy now are four years old. The girls lived with the boys before new buildings were constructed. Many girls live at the home until the age of 18 and then some girls are transferred to a different facility. Some girls, however, are allowed to stay at the home longer than 18 years. The ISG member was unaware of the criteria involved for who stays and who leaves. Some of the girls are also selected to attend school at the vocational education building and at the Boys' Home. The budget for the year 2002 for the home was 7,663,571 Baht (US $180,681).

Interview with Teacher at the Pakkred Home

January 14, 2003, Vocational Center at the Pakkred Home

Supplementary Interview Questions:

- Have you heard of any accidents occurring as a result of unsafe conditions at the Home?
- How are water tanks used in the rehabilitation center to provide water throughout the day?

Interview Summary:

The interviewee is a teacher at the vocational training school at the Pakkred Home. She has been working at the home for 18 months and is employed by the Thai government through a philanthropic program with the Volunteers Service Overseas (VSO). She also works as a support advisor in training new staff. She is a member of the advocacy group DREAMIT (Disabled Rights Empowerment Access Mobility Indonesia Thailand.)

Prior to working at the Pakkred Home, this teacher worked with adults with disabilities for five years and at a nursery home for two years in the United Kingdom.

The interviewee has identified problems such as lack of staff, lack of funding, and limited training for staff that affect the factors surrounding the quality of life at the Pakkred Home. There are 65 staff members at the home, 40 of which provide direct care to the girls

themselves. They alternate a work schedule which involves working a 48 hour shift and then 48 hours off. At night, one staff member on each floor sleeps, while the other staff member watches the girls.

Safety issues involve rodent control (snakes and mice), insects, and the transport of the girls. Cockroaches, ants and mosquitoes are bothersome, but do not create a large problem. She does feel that screens are important in the living rooms. Doors are closed at night while the children are sleeping and security does not appear to be a problem. Serious accidents have not happened in the past 18 months. Many problems concerning safety are caused by misbehavior of the girls, sometimes injuring themselves. The interviewee did inform us that children are hit by other children as well as staff at the home. Carrying the girls to other floors or to other places within the building is a safety issue. Many staff have the more mobile girls to move the non-ambulatory girls around.

The interviewee sees problems concerning bathing/toileting to be lack of privacy and the dumping of waste on the property. She believes that more accessible showers are needed. The home does have sewer treatment and garbage is picked up once or twice a week.

She stated that the home receives 30 baht a day to feed one girl three times a day.

There is one water tank at the home to the interviewee's knowledge. The 200 liter tank is in the physical therapy building and automatically fills up when depleted.

Often, girls sleep on the floor because of the severe lack of mattresses and beds in some buildings.

Also, superintendents change frequently at the home (approximately every 8 months to 2 years.) Since this interviewee has been at the home, there has been three different superintendents.

Interview with International Support Group Member #2

January 15, 2003; International Support Group

Supplemental Interview Questions:

- What are your expectations and hopes for our project to accomplish?
- Is there anything specific that you would like our team to focus on?
- What is the next step for the Pakkred Home after our project is complete?
- What are some of the ISG's other projects?
- What priority does the Pakkred Home project have?
- Is there anyone else that you can think of that would be able to help us with gathering information about the Pakkred Home?
- There may be times, specifically when interviewing the staff, when translation will be necessary. What are our options, and how do you suggest we solve this problem?
- What are the names of the people (i.e. supervisors, etc) of the people we should interview at the Pakkred Home?

Interview Summary:

The interviewee has been a member of the International Support Group for approximately nine years. She is currently the treasurer. Her involvement with the Pakkred Home dates back approximately 1-2 years (?). The Pakkred Home's situation was brought to her attention by her dentist. The dentist began a dentistry program at the home and informed the International Support Group of the hardships and unsanitary conditions there.

It this ISG member's experience that the Department of Public Welfare has not done much to improve conditions for the home. She believes also that there are DPW records for

each girl at the home, but she is not sure what kind of information is in them. The DPW that runs the home does have a system of inspection for its welfare homes and a hierarchical system for distribution of funds to these types of homes. The interviewee wishes that the residents were treated better, but she is doubtful that the DPW has enough money or technology to help everyone on an individual basis.

The interviewee has not had prior experience dealing with people with disabilities before the Pakkred Home.

There are 3,000 girls at the Pakkred Home and only one doctor to care for them. There are medical care, physical therapy and tuberculosis testing services available to the girls who live at the home.

Staff problems at the Pakkred Home include lack of training, low pay (less than minimum wage which is 5,000 baht a month) and high turnover rate. Because of the difficulty of the job and the staff's lack of experience and training, the staff does not always know how to treat the girls. Often, the conditions at the home depend on the quality of the superintendent in charge. This ISG member believes that the biggest challenges facing the staff at the Pakkred Home are cleaning, feeding and watching the girls as well as dealing with the lack of staff. She also sees the need for a set of rules for staff as well as chores to perform.

The interviewee has never seen a girl inside a basin in the bathroom. The girls are mostly bathed on the floor for convenience.

The International Support Group's expectations for our project are that we provide as many suggestions as possible (in the areas of the bathrooms, bathing, moving people, etc.) and then meet with the group to discuss our suggestions. These suggestions might be broken up into smaller projects to find donors or sponsors. The International Support Group does not rank the importance of each project, so the Pakkred Home project is just as important as any other project.

Interview with Home for Mentally Handicapped Girls Administrator #1

January 16, 2003
Pakkred Home
Translated by ISG Member

Supplemental Interview Questions:

Interview Summary:

When asked what her favorite things about the home were, the administrator replied that she liked the area in which the home was located, more specifically the open space and placement of the grounds.

She has been working as a civil servant under the Department of Public Welfare at three different homes over the course of her career, mostly in administrative and project planning positions. The first home was the Mentally Retarded Home for Boys, which was followed by the Chumburee Boys Home when it was newly opened. The third and present home the interviewee has worked at is the Pakkred Home for Mentally Disabled Girls for which she has been there for four years. She has been in her position for the two months prior to this interview.

The interviewee was asked about the hiring process for the care givers at the Pakkred Home. Her response was that the young women are required to have at least a junior high school education and that they do not receive civil servant status. At first the young women are employed as temporary staff, and must pass an evaluation to be promoted to permanent staff. The evaluation involves a test of basic care giving knowledge. The main benefits the permanent staff receives over the temporary staff are that they get second chances after making a mistake and also to receive compensation. In addition, the permanent staff members receive the opportunity to gain civil servant status, by taking a test, but most staff members do not because of the small difference it makes. The interviewee added that there are presently 38 temporary and 37 permanent staff members employed at the home. The only training the staff receives are 2 days a year where someone from outside comes into the home to do training. An additional 600 baht per month is given to baby sitters by a fund set up by a charitable woman willing to donate the money.

When asked what the biggest challenges the staff faces at the home the interviewee responded that it was in fact tough work for the babysitters and that the 1 to 25 ratio of staff to girls is the main challenge. In addition, the lack of budget from the government only allows limited resources. For example, two pairs of clothing are budgeted to each girl every year, which mentally handicapped girls will rip clothes after one day. Also damage to the buildings makes that staff's job harder. The home relies on donations to mend things because of the limited government budget. Other challenges the staff members deal with are the girls with behavioral problems who can hurt the care givers as well as the other girls. Other problematic situations to be prevented are girls breaking glass in the windows, keeping the television out of harm, and not allowing the fans to be pulled down.

As for other problems with the facilities, the administrator gave an example of the broken/missing mosquito screens for the windows. These screens are constantly being repaired by maintenance workers. Having the screens installed is important to keep the children from being bitten by insects at night.

When asked about the problems surrounding wall outlets, the assistant superintendent thought they could be placed higher up but she has never heard of any injury due to misuse by the girls.

The baby sitters have been known to abuse the kids and the administration watches out for these occurrences. If caught hitting a girl, a baby sitter will be sent away from the home by the administration.

Addressing more of the main problems in the home, the interviewee said the cause is a limited budget for up keeping the facility. She also spoke about the bathrooms, saying that these problems aren't dealt with by the baby sitters. Instead they will find ways to work around the problems, because it is not their job to fix maintenance issues.

Answers to some additional questions are: Resident records can not be disclosed for demographic research; Blue prints or layouts will need to be requested through the superintendent; Serious injuries include falling downstairs and hitting windows and breaking them; and the two main issues she feels we can deal with are the bathrooms and the transportation of the girls both within the buildings and the facility.

The interviewee's biggest wishes are to see more physical therapy for the girls, because when they reach a certain age the PT won't be as effective. Only approximately 20 girls see PT now.

Other projects the Pakkred Home is undertaking are to build another building and to repair the cafeteria. Money to install a big water tank was raised by Sara Dryden, which has been put in. The water tanks them selves allow for alternate times of water flow, and the water is filtered but part of the system is broken.

Interview with Home for Mentally Handicapped Girls Administrator #2

January 27, 2003

The interviewee has been in the position for just over 2 months. Previous to being appointed the position she served in a different administrative position for four years at the home. Before working at the facility, the interview has never worked with children with disabilities.

This administrator graduated from school with a concentration in agriculture and was hired by the Department of Public Welfare to work in Baan Fuang Fai (Home for Babies). After nine years at Baan Fuang Fai, she was asked by the DPW to transfer to work in the welfare home, Pakkred Home for Mentally Handicapped Girls.

The interviewee feels the two most important issues concerning the home are to improve the children's development and to have care givers to attend to the girls' physical needs. When asked about the waste management system she replied that the system is not ideal and that it is due to miscommunication during the planning of the facility. She also mentioned that there was no organized, central planning of the buildings which were designed by the main office of the Department of Public Welfare.

The interviewee feels the reason that the children are bathed and cleaned with the current methods because there is a limited number of staff to undertake the extra labors. Also, the heads of each building report directly to her. Her response regarding the biggest challenges the staff face was that about 44 care givers must handle about 500 girls. In addition, the superintendent mentioned that the care givers must finish junior high as a requirement to be hired, which is equivalent to 9^{th} grade.

If the superintendent could make certain changes at the home, she would incorporate more activities and vocational training. Also, she replied that she could not think of any safety issues at the home. If anything is needed by the home, the administrator stated that a report is given to the DPW. An additional tie with the DPW is that the home's budget is allocated by the department.

The only accident at the home that the interviewee could recall was the facility nurse falling into the water tank. As for layouts of the facility or blue prints, the superintendent said the originals could take a while to acquire. She added that all plumbing work done since erection on the buildings is not mapped on the plans due to the plumber hired. This freelance plumber apparently did all the planning in his head, and did not sketch any layouts of the system whatsoever. The water department has attempted to help fix problems depending on their availability. The interviewee believes the mentally disabled girls put things into the drains and toilets to cause such problems as clogging and flooding.

Interview with Staff Member 1

January 28, 2003, Pakkred Home

<u>Questions from Abbreviated Interview</u>

- Had you ever worked with children with disabilities before?

- How long have you been involved with the Pakkred Home?
- Drawing from your experience at the home, what are, in your opinion, the most pressing issues currently facing the Pakkred Home?
- What do you think about the bathrooms?
- What are the greatest challenges you face in your job as a staff member?
- While spending time in the buildings, have you ever seen extreme safety issues that need immediate correction? Have you ever witnessed serious injury at the Pakkred Home?
- If you were able to make certain changes to the home, what would they be?

Interview Summary

This staff member has never worked with children with disabilities before the Pakkred Home and has worked there for 10 years.

The staff member stated that one of the most important problems at the home is the unpredictability of the girls. The biggest challenge that this staff member faces is that she is very tired because of the difficulty of the work. She feels that working at the home for such a long time has also made her tired. If possible, she would like the home to receive strollers and new beds.

The staff member claims that the drainage is poor in the bathroom and although she uses a drain cleaner, it does not help. Regarding safety issues and injuries, she informed us that the electricity has been cut off to the outlets within reach of the girls.

Interview with Staff Member 2

January 28, 2003, Pakkred Home

Questions from Abbreviated Interview

- Had you ever worked with children with disabilities before?
- How long have you been involved with the Pakkred Home?
- Drawing from your experience at the home, what are, in your opinion, the most pressing issues currently facing the Pakkred Home?
- What do you think about the bathrooms?
- What are the greatest challenges you face in your job as a staff member?
- While spending time in the buildings, have you ever seen extreme safety issues that need immediate correction? Have you ever witnessed serious injury at the Pakkred Home?
- If you were able to make certain changes to the home, what would they be?

Interview Summary

This staff member used to work with children without disabilities before the Pakkred Home. She has been working at the home for 5 years.

One of the most pressing problems she sees at the home is that it is difficult to trust even the most capable of the girls. Other issues include lack of mosquito screens on the windows and mosquito screen doors to the bedroom. This staff member believes that the bathrooms are not a problem.

Her biggest challenges as a staff member include a high stress level, girls damaging property (glass in windows) and the girls fighting amongst themselves. Another challenge is that the girls have "fits" because many have become resilient to their sedating medications. She feels that protective screens on windows make cleaning more difficult. She does not see her duty as cleaning to be a problem.

Interview with Staff Member 3

January 28, 2003, Pakkred Home

Questions from Abbreviated Interview

- Had you ever worked with children with disabilities before?
- How long have you been involved with the Pakkred Home?
- Drawing from your experience at the home, what are, in your opinion, the most pressing issues currently facing the Pakkred Home?
- What do you think about the bathrooms?
- What are the greatest challenges you face in your job as a staff member?
- While spending time in the buildings, have you ever seen extreme safety issues that need immediate correction? Have you ever witnessed serious injury at the Pakkred Home?
- If you were able to make certain changes to the home, what would they be?

Interview Summary

This staff member has never worked with children with disabilities before. She has been at the Pakkred Home for 5 years.

One of her biggest challenges includes trying to understand the girls. She feels that her job is routine now and she is used to the issues at the home. She states that showering the girls is difficult.

This staff member does not have many safety concerns because the girls she supervises are confined to a bed.

She feels that equipment to carry girls is needed, as many of the girls are very heavy to lift. She would like to see bed pans installed so the girls do not have to be transported to the bathroom.

She informed us that the beds are moved away from the outlets within reach of the girls. Outlets are still on in this building.

Interview with Staff Member 4

Medical Personnel
January 16, 2003, Building 1

Interview Summary

This staff member specializes in pediatric medicine and has been there 4 years. She has never worked with children with disabilities before the home.

She informed us that many of the girls suffer from such ailments as tuberculosis, diarrhea, pneumonia, blindness, ear infection, Dengue fever, hearing loss, epilepsy, anemia, cerebral palsy, colds, and bronchitis. The kids are given Valium for seizures and cerebral palsy. They are on medication to calm them down to or they could hurt themselves.

When the girls require more medical care, they are sent to the hospital and operations are only performed on those who have a chance for survival. The average life span is 16 years and there are approximately two deaths per month.

The interviewee says the most challenging aspects of her job are the difficulty of communicating with the girls, and her self-education in the area of disabilities.

Appendix G: Consolidation Forms

Building 1

Windows:		Percentage
Number of windows	134	
Number of windows with broken screens	80	59.70%
Number of windows with broken glass	2	1.49%
Number of windows that don't function	7	5.22%

Doors:		
Number of doorways:	7	
Number of doors without knobs	2	28.57%
Number of doors with minor damage	3	42.86%
Nuber of doors with significant damage	2	28.57%
Number of doors with severe damage	2	28.57%

Floors:					Material Found	Drains
		Cracked	Missing Tiles	Scratched	on Floor	Not Funct
Lobby		no	no	yes	no	na
Bedroom		yes	yes	yes	no	na
Bathroom		no	no	no	waste	yes

Beds:				
	Crib	Mat on Floor	Bunk Bed	Beds w/ frame
Number of Beds	35	0	0	13
Are mats stacked on beds			yes	

Fans:		
Ceiling		
How many	11	
How many without cages	3	27.27%
How many functional	9	81.82%
Window		
How many	10	
How many Functional	9	90.00%
How many missing	0	0.00%

(Building 1 Consolidation Form cont'd)

Wall		
How many	10	
How many Functional	7	70.00%
How many missing	0	0.00%
How many without cages	3	30.00%
How within reach	0	0.00%

Outlets:				
	Total	Within reach	Exp. wires	Pushed in
How many	41	20	0	1
		48.78%	0.00%	2.44%

Bathrooms:							
Toilets							
		Western	Eastern	Urinal	Missing		
How many		4	0	4	0		
With Grab Bars		4	0	2	0		
How many function		0	0	0	0		
		Clogged	Brkn/Chipped	Missing prts	Running wtr	Soiled	
Conditions		1	4	2	2	4	
		25.00%	100.00%	50.00%	50.00%	100.00%	
Sinks:							
		Small	Large	Missing			
How many		2	4	4			
					Discolored		Broken
		Clogged	Brkn/Chipped		Water	Soiled	Faucets
Conditions		1	6		4	6	2

Building 2

Windows:		Percentage
Number of windows	134	
Number of windows with broken screens	96	71.64%
Number of windows with broken glass	15	11.19%
Number of windows that don't function	75	55.97%
How many windows gates	96	71.64%

Doors:		
Number of doorways:	8	
Number of doors without knobs	3	37.50%
Number of doors with minor damage	3	37.50%
Number of doors with significant damage	3	37.50%
Number of doors in severe condition	2	25.00%

Floors:					Material Found	Drains
		Cracked	Missing Tiles	Scratched	on Floor	Not Funct
Lobby		yes	no	yes	urine	na
Bedroom		yes	no	yes	human waste	na
Bathroom		yes	no	yes	human waste	yes

Beds:				
	Crib	Mat on Floor	Bunk Bed	Beds w/ frame
Number of Beds	0	varies	0	24
Are mats stacked on beds			yes	

Fans:		
Ceiling		
How many	11	
How many without cages	9	81.82%
How many functional	11	100.00%
Window		
How many	13	
How many Functional	8	61.54%
How many missing	0	0.00%

(Building 2 Consolidation Form cont'd)

Wall		
How many	1	
How many Functional	1	100.00%
How many missing	0	0.00%
How many without cages	0	0.00%
How within reach	0	0.00%

Outlets:				
	Total	Within reach	Exp. wires	Pushed in
How many	21	16	5	2
		76.19%	23.81%	9.52%

Bathrooms:							
Toilets							
		Western	Eastern	Urinal	Missing		
How many		0	3	0	3		
With Grab Bars		0	1	0	1		
How many function		0	3	0	0		
		Clogged	Brkn/Chipped	Missing prts	Running wtr	Soiled	
Conditions		2	1	0	0	3	
		66.67%	33.33%	0.00%	0.00%	100.00%	
Sinks:							
		Small	Large	Missing			
How many		2	4	4			
					Discolored		Broken
		Clogged	Brkn/Chipped		Water	Soiled	Faucets
Conditions		0	6		4	6	5

Building 3

Windows:		Percentage
Number of windows	132	
Number of windows with broken screens	110	83.33%
Number of windows with broken glass	5	3.79%
Number of windows that don't function	62	46.97%

Doors:		
Number of Doorways:	8	
Number of doors without knobs	1	12.50%
Number of doors with minor damage	5	62.50%
Number of doors with significant damage	3	37.50%
Number of doors with severe damage	0	0.00%

Floors:					Material Found	Drains
		Cracked	Missing Tiles	Scratched	on Floor	Not Funct
Lobby		yes	yes	yes		na
Bedroom		yes	yes	yes		na
Bathroom					water	

Beds:				
	Crib	Mat on Floor	Bunk Bed	Beds w/ frame
Number of Beds	0	0	36	5
Are mats stacked on beds		no		

Fans:		
Ceiling		
How many	12	
How many without cages	7	58.33%
How many functional	11	91.67%
Window		
How many	9	
How many Functional	3	33.33%
How many missing	1	11.11%

(Building 3 Consolidation Form cont'd)

Wall		
How many	7	
How many Functional	7	100.00%
How many missing	0	0.00%
How many without cages	2	28.57%
How within reach	7	100.00%

Outlets:				
	Total	Within reach	Exp. wires	Pushed in
How many	35	31	0	2
		88.57%	0.00%	5.71%

Bathrooms:							
Toilets:							
		Western	Eastern	Urinal	Missing		
How many		0	4	3	0		
With Grab Bars		0	4	3	0		
How many function		0	4	0	0		
		Clogged	Brkn/Chipped	Missing prts	Running wtr	Soiled	
Conditions		0	0	0	0	0	
		0.00%	0.00%	0.00%	0.00%	0.00%	
Sinks:							
		Small	Large	Missing			
How many		3	4	3			
					Discolored		Broken
		Clogged	Brkn/Chipped		Water	Soiled	Faucets
Conditions		0	4		3	2	0

Building 4

Windows:		Percentage
Number of windows	134	
Number of windows with broken screens	119	88.81%
Number of windows with broken glass	24	17.91%
Number of windows that don't function	84	62.69%

Doors:		
Number of Doorways:	8	
Number of doors without knobs	5	62.50%
Number of doors with minor damage	1	12.50%
Number of doors with significant damage	2	25.00%
Number of doors with severe damage	5	62.50%

Floors:					Material Found	Drains
		Cracked	Missing Tiles	Scratched	on Floor	Not Funct
Lobby		yes	yes	yes		na
Bedroom		yes	yes	yes	trash	na
Bathroom					water, urine,	yes
					feces	

Beds:				
	Crib	Mat on Floor	Bunk Bed	Beds w/ frame
Number of Beds	0	19	0	22
Are mats stacked on beds		yes		

Fans:		
Ceiling		
How many	11	
How many without cages	10	90.91%
How many functional	9	81.82%
Window		
How many	0	
How many Functional	0	0.00%
How many missing	0	0.00%

(Building 4 Consolidation Form cont'd)

Wall		
How many	4	
How many Functional	4	100.00%
How many missing	0	0.00%
How many without cages	0	0.00%
How within reach	4	100.00%

Outlets:				
	Total	Within reach	Exp. wires	Pushed in
How many	35	19	2	2
		54.29%	5.71%	5.71%

Bathrooms:							
Toilets							
		Western	Eastern	Urinal	Missing		
How many		0	4	0	0		
With Grab Bars		0	3	0	0		
How many function		0	3	0	0		
		Clogged	Brkn/Chipped	Missing prts	Running wtr	Soiled	
Conditions		0	0	0	0	4	
		0.00%	0.00%	0.00%	0.00%	100.00%	
Sinks:							
		Small	Large	Missing			
How many		2	4	4			
					Discolored		Broken
		Clogged	Brkn/Chipped		Water	Soiled	Faucets
Conditions		0	6		4	6	3

Building 5

Windows:		Percentage
Number of windows	134	
Number of windows with broken screens	85	63.43%
Number of windows with broken glass	22	16.42%
Number of windows that don't function	81	60.45%

Doors:		
Number of Doorways:	8	
Number of doors without knobs	1	12.50%
Number of doors with minor damage	3	37.50%
Number of doors with significant damage	2	25.00%
Number of doors with severe damage	3	37.50%

Floors:					Material Found	Drains
		Cracked	Missing Tiles	Scratched	on Floor	Not Funct
Lobby		yes	yes	yes		na
Bedroom		yes		yes	urine, feces	na
Bathroom		yes	yes	yes	human waste	yes

Beds:				
	Crib	Mat on Floor	Bunk Bed	Beds w/ frame
Number of Beds	0	16	0	8
Are mats stacked on beds		yes		

Fans:		
Ceiling		
How many	12	
How many without cages	2	16.67%
How many functional	12	100.00%
Window		
How many	10	
How many Functional	9	90.00%
How many missing	1	10.00%

(Building 5 Consolidation Form cont'd)

Wall		
How many	4	
How many Functional	0	0.00%
How many missing	0	0.00%
How many without cages	3	75.00%
How within reach	4	100.00%

Outlets:				
	Total	Within reach	Exp. wires	Pushed in
How many	39	18	3	1
		46.15%	7.69%	2.56%

Bathrooms:							
Toilets							
		Western	Eastern	Urinal	Missing		
How many		0	4	0	0		
With Grab Bars		0	4	0	0		
How many function		0	0	0	0		
		Clogged	Brkn/Chipped	Missing prts	Running wtr	Soiled	
Conditions		4	0	0	0	4	
		100.00%	0.00%	0.00%	0.00%	100.00%	
Sinks:							
		Small	Large	Missing			
How many		2	4	4			
					Discolored		Broken
		Clogged	Brkn/Chipped		Water	Soiled	Faucets
Conditions		1	5		4	6	6

Appendix H: Classification and Ranking System

Factors Affecting Quality of Life:

- Health (internal physical health)
- Sanitation
- Personal Safety (due to external factors)
- Handicap Accessibility (creation of a barrier free environment)
- Personal Dignity

Other Factors Included:

- Number of Residents Benefited
- Benefit to Staff

Health

3. severe threat
    - Any situation that would result in the necessity of professional and experienced medical attention. If the situation is not treated, the result could have permanent damage to one's health.
2. threat
    - Any situation that would require appropriate medical attention, but there is no risk of permanent damage, treated or untreated.
1. mild threat
    - Any situation that does not require medical attention, but has minor short term effects.
0. not applicable; not a threat

Sanitation

3. severe danger from contamination
    - Any situation that would result in the necessity of professional and experienced medical attention, caused by harmful bacteria, chemicals, etc. with the potential to cause severe health problems.
2. danger from contamination
    - A situation that would require appropriate medical attention, but is not a risk for causing permanent damage, treated or untreated. An area compromised by harmful bacteria, chemicals, etc. with the potential to cause moderate health problems, which do not require emergency or urgent medical care.
1. mild danger from contamination
    - A situation that does not require medical attention, but has minor short term effects. An area compromised by bacteria, chemicals, etc. with the potential to cause minor health problems. Also, the area holds a potential for contamination.

0. not applicable; not a danger

Personal Safety

3. severe threat
    - Any act or situation that would result in the necessity of professional and experienced medical attention. If the situation causes injury that is not treated, the result could have permanent damage to a person's ability to function normally.
2. threat

- An act or situation that would require appropriate medical attention, but there is no risk of permanent damage from the injury, treated or untreated.

1. mild threat
    - An act or situation that does not require medical attention, but the injury has minor short term effects.

0. not applicable; not a threat

Handicap Accessibility

3. severely handicapping
    - Any situation resulting in seriously limiting activity, hindering access, or creating any other type of obstacle which greatly restricts or harms a person's physical capability.

2. handicapping
    - Any situation resulting in limiting activity, hindering access, or creating any other type of obstacle which restricts or harms a person's physical capability.

1. mildly handicapping
    - Any situation resulting in minimally limiting activity, hindering access, or creating any other type of obstacle which does not restrict or harm a person directly.

0. not applicable; not handicapping

Personal Dignity

3. severely degrading
    - Any act or situation that psychologically harms a person's pride in his/her sense of self severely, causing damaging emotional stress and requiring a therapist's attention.

2. degrading
    - Any act or situation that psychologically harms a person's pride in his/her sense of self, causing moderate emotional stress that may require a therapist's attention.

1. mildly degrading
    - Any act or situation that psychologically harms a person's pride in his/her sense of self, resulting in temporary emotional stress and not requiring a therapist's attention.

0. not applicable; not handicapping

Number of Residents Benefited

This category describes the approximate number of residents in the building who will benefit from the alleviation of this problem.

Benefit to Staff

3. great benefit
    - The alleviation of this problem will make the jobs of the staff members much easier and allow them to perform daily tasks in a more efficient and effective manner.

2. benefit
    - Alleviation of this problem will make the jobs of the staff members easier.

1. minor benefit

- Staff members will benefit to a small degree from the alleviation of this problem.

0. not applicable; not handicapping

Appendix I: Prioritization Data Matrices

Building #1 Prioritization Matrix

	Health	Safety	Sanitation	H. Access	P. Dignity	Staff	# Res
Problem							
Transportation	0	3	0	1	2	3	75
Chemical hazard	3	1	1	0	0	1	75
Bathing	1	1	3	2	3	2	75
Human waste management	2	1	3	0	2	1	75
Damaged screens	3	1	0	0	0	1	75
Damaged Windows	2	1	0	0	0	1	75
Broken doors	0	1	0	0	0	2	NA
Floors in bedroom	0	2	1	0	0	1	75
Non-functioning toilets	0	0	1	0	0	1	NA
Sinks	1	1	3	0	0	1	75
Drains	2	1	2	0	0	1	75
Cribs (non-moving sides)	1	2	0	3	1	3	75
Girls tied to cribs	1	3	1	3	2	0	3-5
Feeding procedures	2	1	1	0	1	0	75
Water supply	1	0	2	0	1	3	75

Top Tier
Transportation
Bathing
Chemical hazard
Damaged screens
Cribs (non-moving sides)
Human waste management

Middle Tier
Drains
Feeding Procedures
Damaged Windows
Sinks
Girls tied to cribs
Water supply

Lower Tier
Non-functioning toilets
Broken Doors
Floors in Bedroom

Building #2 Prioritization Matrix

Problem	Health	Safety	Sanitation	H. Access	P. Dignity	Staff	# Res
Human waste management	3	1	3	0	2	2	60
Water supply	1	0	2	0	1	3	60
Chemical Hazard	3	2	1	0	0	1	60
Troughs/sinks	2	1	3	0	0	1	60
Stairs	0	2	0	2	1	1	15-20
Cleaning	3	1	3	0	1	0	60
Window screens	2	1	0	0	0	1	60
Window functions	1	1	0	0	0	2	60
Damaged window glass	0	3	0	0	0	2	60
Doorways	2	1	0	0	0	3	60
Outlets	0	3	0	0	0	1	60
Toilets	3	2	3	1	1	2	60
Stacked mattresses	0	2	0	0	0	0	25-30
Violence	0	2	0	0	2	1	60
Feeding	2	0	2	0	0	0	40
Bathing	1	1	2	0	2	0	60
Bathroom floors	1	1	2	0	0	0	60

Top Tier
Human waste management
Cleaning
Toilets
Chemical Hazard
Water supply
Troughs/sinks
Damaged window glass
Outlets

Middle Tier
Stairs
Violence
Doorways
Window screens
Bathing

Lower Tier
Feeding
Stacked mattresses
Window functions
Bathroom floor

Building #3 Prioritization Matrix

	Health	Safety	Sanitation	H. Access	P. Dignity	Staff	# Res
Problem							
Human waste management	1	0	1	0	1	0	85
Chemical Hazard/Cleaning	1	0	0	0	0	0	85
Window screens	2	1	0	0	0	1	85
Non-functioning windows	1	1	0	0	0	1	85
Fans	0	2	0	0	0	0	85
Troughs/sinks	1	0	2	0	0	1	85
Floors	0	2	1	0	0	1	85
Drains	1	0	1	0	0	0	85
Violence	0	2	0	0	2	1	85
Water Supply	1	0	2	0	1	3	85

Top Tier
Water supply
Violence
Fans
Troughs/sinks

Middle Tier
Floors
Human waste management
Window screens

Lower Tier
Chemical hazard/cleaning
Drains
Non-functioning windows

Building #4 Prioritization Matrix

Problem	Health	Safety	Sanitation	H. Access	P. Dignity	Staff	# Res
Human waste management	2	1	3	0	2	2	61
Window screens	2	1	0	0	0	1	61
Damaged window glass	0	3	0	0	0	1	61
Windows non-functional	1	2	0	0	0	2	61
Toilets	3	1	3	1	1	1	61
Outlets	0	3	0	0	0	1	61
Doorways	2	2	0	0	0	3	61
Floors	0	2	1	0	0	1	61
Bathing	1	0	2	1	2	2	61
Violence	0	3	0	0	2	1	61
Girls on Beds	0	2	0	0	0	0	61
Girls in troughs	2	3	3	0	0	1	61
Water supply	1	0	2	0	1	3	61
Troughs/Sinks	2	1	3	0	0	1	61
Chemical hazard	3	2	1	0	0	1	61

Top Tier
Toilets
Human waste management
Water supply
Troughs/sinks
Damaged window glass
Outlets
Chemical hazard

Middle Tier
Violence
Girls in troughs
Window screens
Doorways
Bathing

Lower Tier
Girls on beds
Floors
Non-functional windows

Building #5 Prioritization Matrix

	Health	Safety	Sanitation	H. Access	P. Dignity	Staff	# Res
Problem							
Human waste management	2	1	3	0	2	2	70
Troughs/Sinks	2	1	2	0	0	1	70
Stacked mattresses	0	2	0	0	0	0	35
Violence	1	2	0	0	2	2	70
Chemical hazard	3	2	1	0	0	1	70
Bathing	1	1	2	0	2	0	70
Stairs/transportation	0	2	0	2	1	1	20
Window screens	2	1	0	0	0	1	70
Non-functioning windows	1	1	0	0	0	2	70
Toilets	2	1	3	1	2	2	70
Doors	2	2	1	0	0	3	70
Bathroom floors	1	1	2	0	0	0	70
Water supply	1	0	2	0	1	3	70
Damaged window glass	0	3	0	0	0	1	70
Drains	1	2	2	0	0	2	70

Top Tier
Human waste management
Toilets
Water supply
Chemical hazard
Damaged window glass
Troughs/sinks

Middle Tier
Bathing
Doors
Violence
Drains
Window screens

Lower Tier
Stacked mattresses
Bathroom floors
Non-functioning windows
Stairs/transportation

Appendix J: United Nations Regulations

The following[98] is an abbreviated form of the United Nations design recommendations for people with disabilities. The UN recommendations have been shortened to supplement the recommendations given in this report.

United Nations' Explanatory Note:

Design recommendations are divided into major subject headings (titles). All measurements in the reference figures are in millimeters. The measurements indicated are for reference and should not be viewed as absolute standards.

Space Allowance for Wheelchairs

These recommendations are for people who necessitate the use of a wheelchair.

Recommendations:

- Adequate space should be allocated for persons using mobility devices, e.g. wheelchairs, crutches and walkers, as well as those walking with the assistance of other persons (Fig. 0-1, 0-2 and 0-3)
- The range of reach (forward and side; with or without obstruction) of a person in a wheelchair should be taken into consideration (Fig. 0-4, 0-5, 0-6 and 0-7)
- Attention should be given to dimensions of wheelchairs used locally.

Reference Figures:

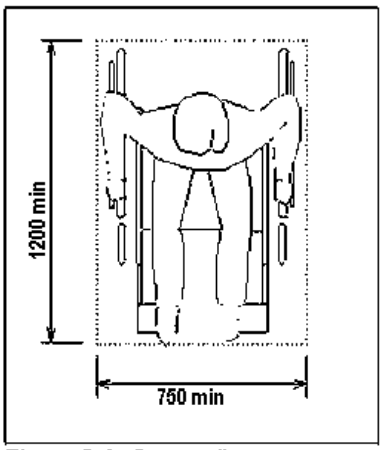


Figure 0-1: *Space allowance*

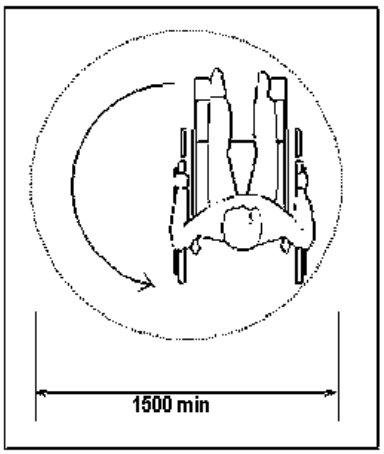


Figure 0-2: *Space allowance*

[98] Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

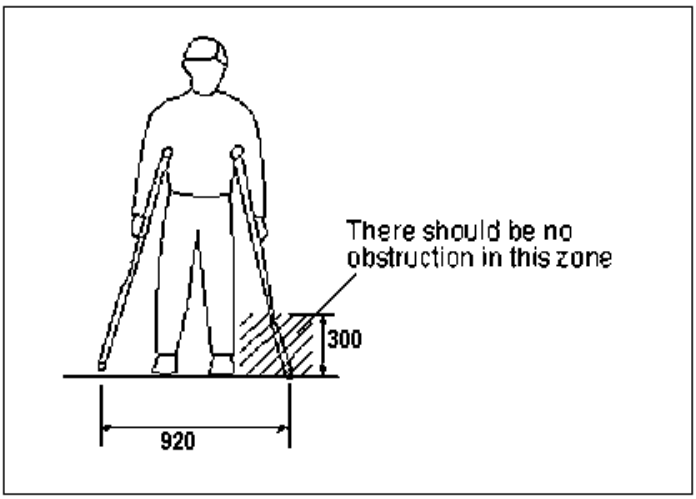


Figure 0-3: *Space allowance*

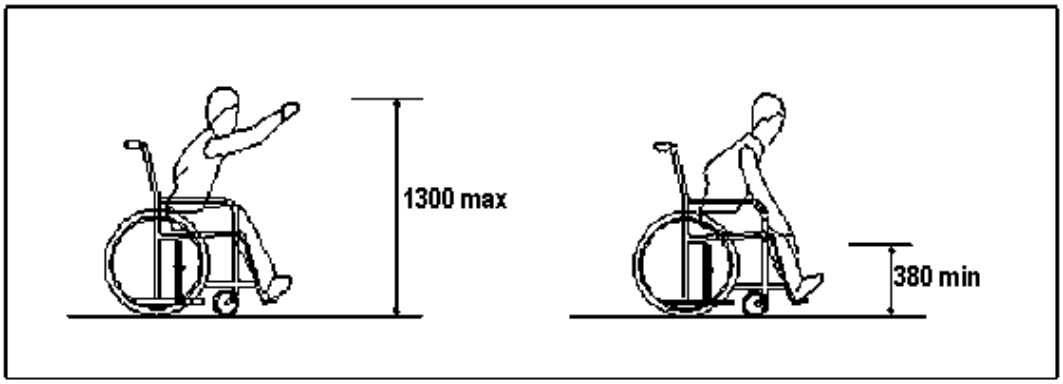


Figure 0-4: *Forward reach without obstruction*

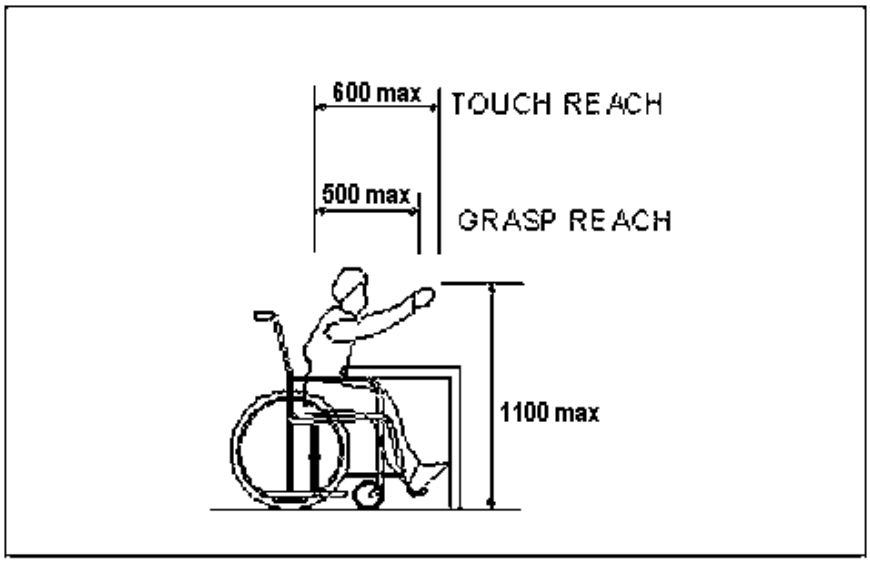


Figure 0-5: *Forward reach over obstruction*

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

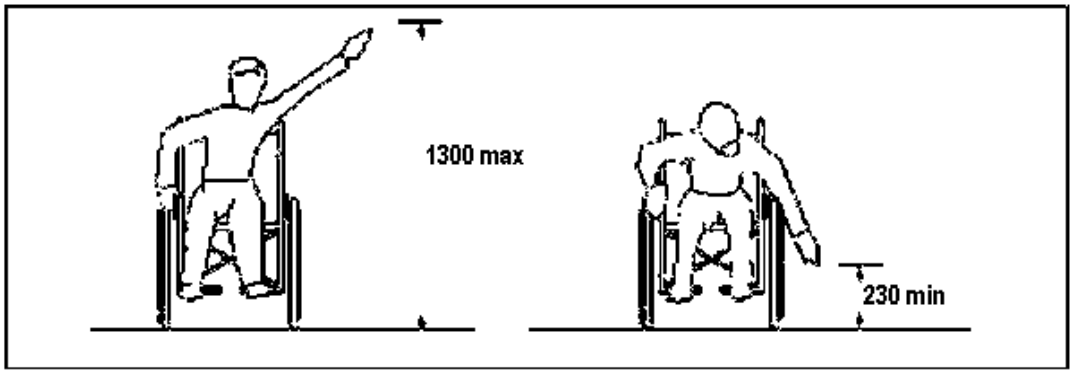


Figure 0-6: *Side reach without obstruction*

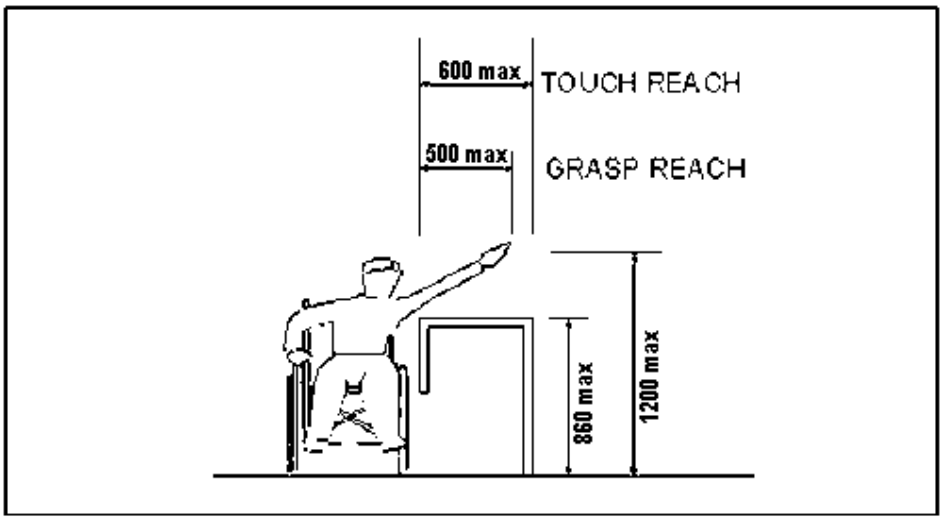


Figure 0-7: *Side reach over obstruction*

Ground and Floor Surfaces

These recommendations apply to people with hearing, visual, physical and intellectual disabilities.

Recommendations:

- Ground and floor surfaces (along accessible routes and in accessible rooms and spaces, including floor, walks, ramps, stairs, and curb ramps) should be stable, firm and slip-resistant.
- Vertical level changes up to 6 mm may not need edge treatment.
- Changes in level between 6 mm and 13 mm should be leveled off with a slope no greater than 1:2.
- If gratings are placed in pathways, they should have spaces no bigger than a wheelchair's wheels (e.g. 13mm).

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

- If carpets or carpet tiles are used on a floor surface, they should be securely attached to it. Long, thick rugs should not be laid in areas likely to be frequented by persons with mobility and sight impairments.
- Edges of paths can be clearly defined by using different colors and textures.
- Street furniture, trees, lighting and dustbins should be located on one side of pathways. The surface texture and color surrounding may be changed to indicate the approach to those items.

Handrails/Grab Bars

These recommendations apply to people with physical, visual and intellectual disabilities.

Recommendations:

- A handrail or grab bar should be of a diameter/width and strength so that it may easily be grabbed and used as a support (Fig. 1-7-1).
- If handrails or grab bars are mounted adjacent to a wall, clearance space between the walls and the grab bar should be provided.
- If handrails or grab bars are mounted in a recess, the maximum depth and minimum height of the recess must be considered (Fig. 1-7-1)
- A small plate in Braille should be provided at the beginning and at the end of each handrail/grab bar to indicate its position to persons with visual impairments.
- Handrails/grab bars should be in a color that contrasts sharply with the surrounding area.

Reference Figure:

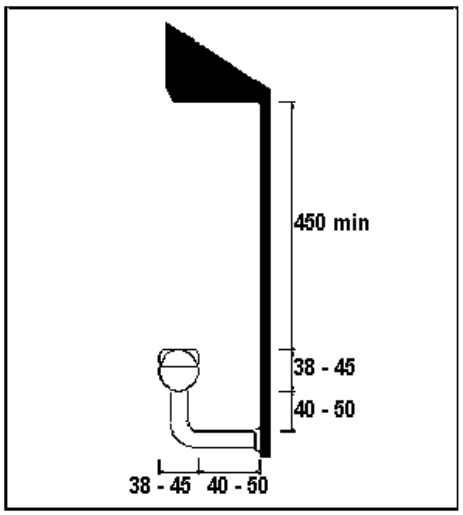


Figure 1-7-1: *Handrails/Grab bars*.

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Steps and Stairs

These recommendations apply to people with physical, hearing, visual and intellectual disabilities.

Recommendations:

- A flight of stairs should have uniform risers and goings.
- A flight of stairs should be of gentle gradient.
- A flight of stairs should have no open risers.
- Nosing of stairs should project as little as possible.
- Handrails for stairs should be installed on both sides.
- Handrails for stairs should be easily gripped at a suitable height from the stair going.
- Handrails for stairs should extend beyond the top and bottom of the stairs.
- The rise of a flight between landings should be of an appropriate height.
- An intermediate landing should have a width and depth of at least the width of the flight.
- Other requirements for handrails should comply with the guidelines for "Handrails".
- Treads of stairs should comply with the guidelines for "Ground and Floor Surfaces".
- Stair edges should be in bright contrasting colors.
- Stairs should be adequately illuminated.

Doorways

These recommendations apply to people with physical, intellectual and visual disabilities.

Recommendations:

- Doorways should be wide enough for wheelchair users (900 mm. minimum).
- Space to maneuver should be provided in front of doors, including sufficient space for moving past door handles.
- Thresholds of doorways should not exceed 20 mm. Raised threshold and floor level changes at doorways should be leveled off with a slope on each side of a threshold. The slope may be a simple, movable ramp.
- Handles, pulls and other opening devices are to have a shape and height that is easy for a person with reduced strength and dexterity to control.
- Lever handles and push type mechanisms are recommended. When a sliding door is fully open, handles should be usable from both sides.
- The use of color to distinguish doors from surrounding walls is very useful for people with visual impairments.
- Glass doors must have a bright, colored motif at eye level.
- Where revolving doors or turnstiles are used, an alternative wheelchair-accessible entrance must also be provided.

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Reference Figures:

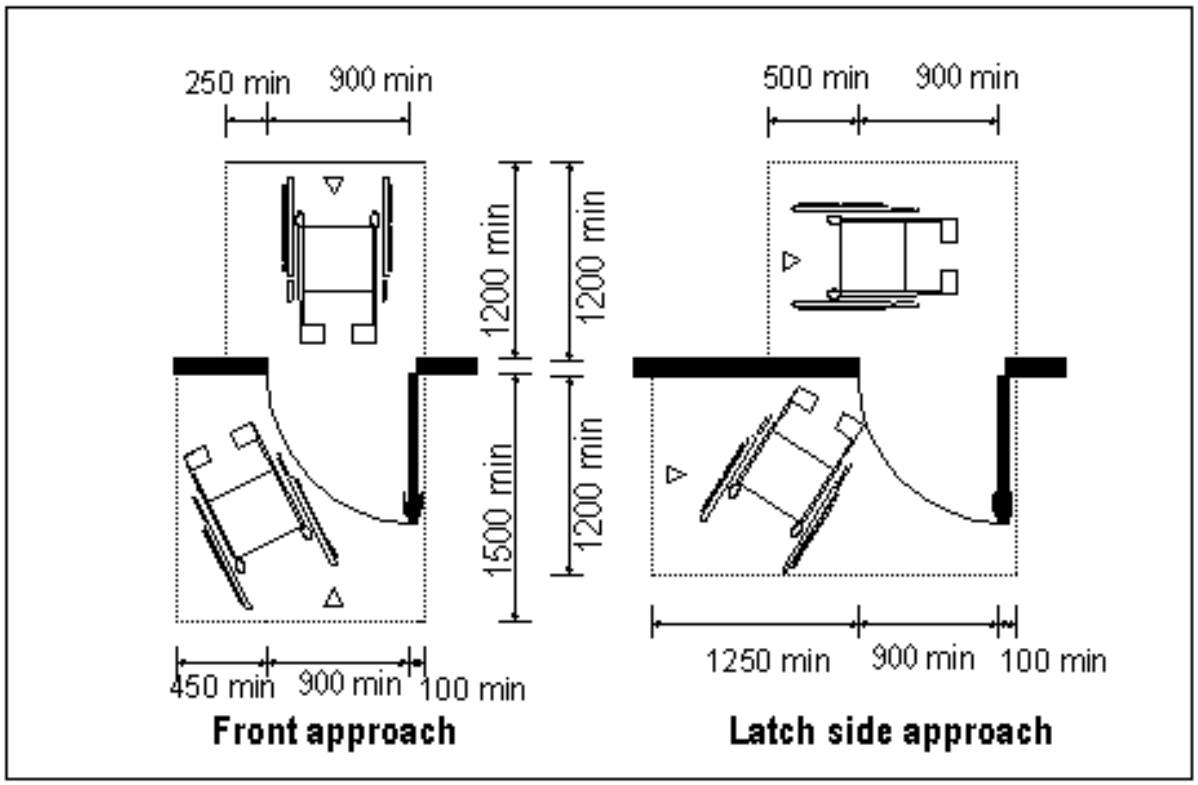


Figure 1-11-2: *Doorways.*

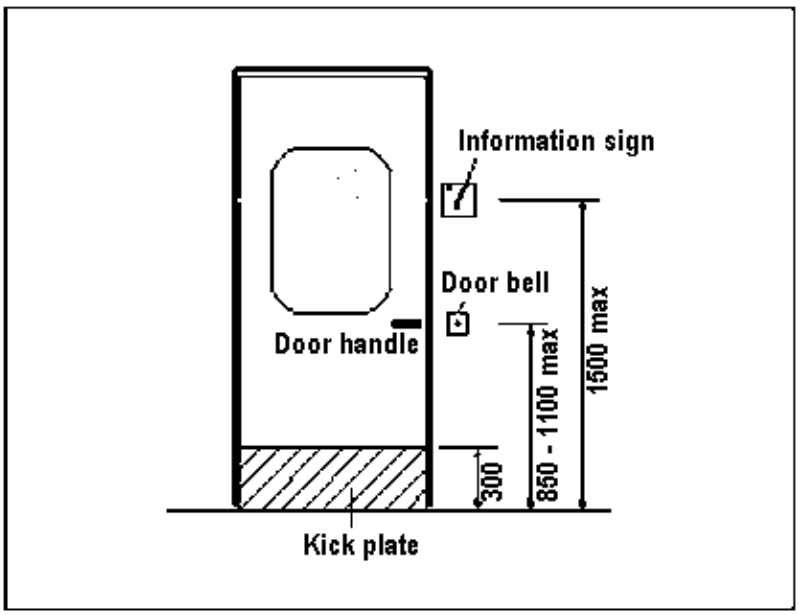


Figure 1-11-3: *Outside of door.*

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Water Closets

These recommendations apply to people with physical disabilities.

Recommendations:

- Accessible public toilets should have the universally accepted symbol for wheelchair access displayed outside.
- WC or toilet compartments should have enough floor space for wheelchair users to enter and exit.
- The toilet bowl should be of a type (e.g. wall-hung) and in such a position as to permit easy approach by wheelchair users.
- The seat of the toilet bowl should be at the correct height for wheelchair users.
- WC compartments should have support rails at a position and height suitable for wheelchair users and other persons with physical disabilities. Upward-folding support bars are recommended to allow lateral transfer from a wheelchair.
- A toilet paper dispenser should be so installed as to be easily used by a person with physical impairments sitting on the toilet.
- Fittings, such as soap dispenser, electric hand dryer and mirror, should be low enough for a wheelchair user to use comfortably.
- The wash basin should be at a height that is easily accessible for wheelchair users.
- Lever-type taps should be installed to wash basins.
- Floor finishes should be of non-slip material.
- Doors should be either of the sliding or outward-opening type.
- Locks to toilet doors or cubicles should be a type that can be opened from outside in case of emergency.

Reference Figure: (next page)

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

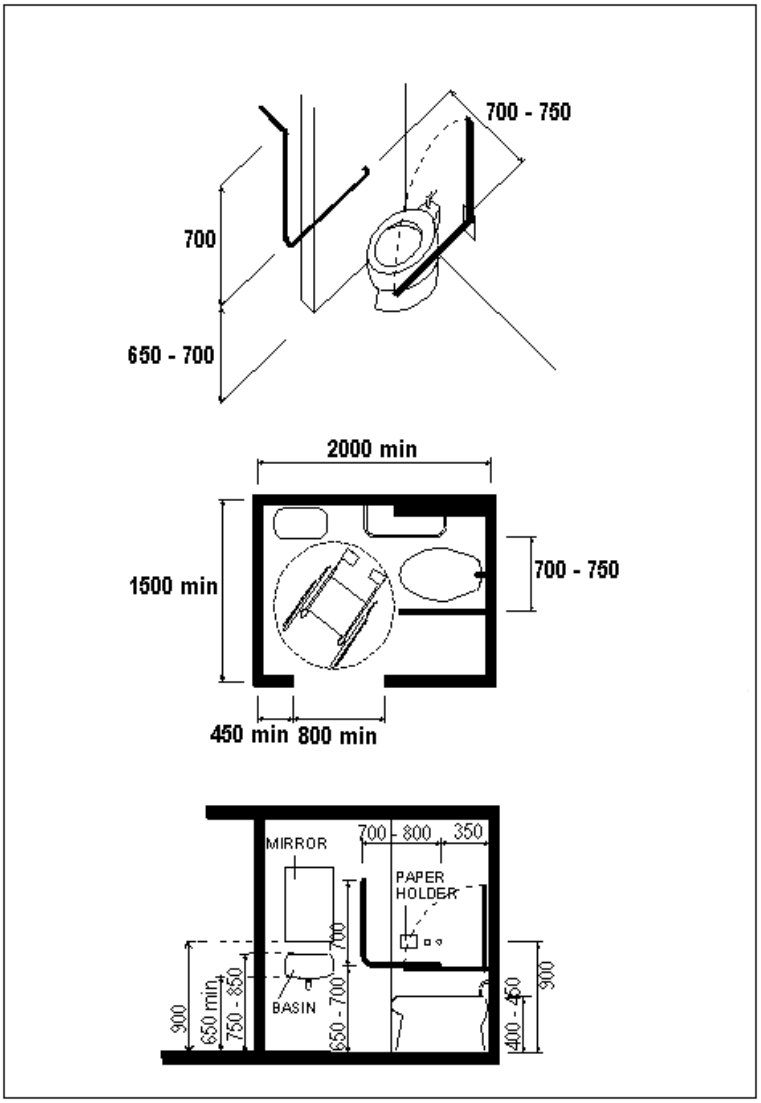


Figure 2-1-1: *WC.*

Bedrooms

These recommendations apply to people who necessitate the use of a wheelchair.

Recommendations:

- The space around the bed should be adequate for access by wheelchair users.
- The space around the bed should be large enough for transfer by a wheelchair user, or for a helper to assist in the transfer.
- The bed should be at a height from the ground that permits wheelchair users to transfer easily.

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Reference Figure:

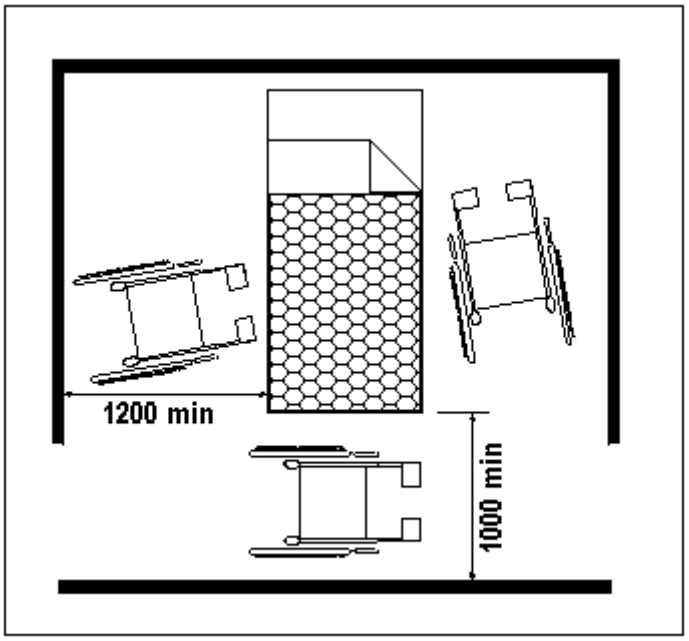


Figure 4-2-1: *Bed room.*

Showers

These recommendations apply to people who necessitate the use of a wheelchair.

Recommendations:

- Shower cubicles should have seats whose width and height facilitate easy transfer by wheelchair users.
- Shower cubicles should have grab rails at a height and position that allow for easy gripping by wheelchair users.
- Shower cubicles should have call buttons or other signal devices at a height and position easily reached in an emergency.
- Sufficient space should be provided beside shower cubicles for transfer by wheelchair users.
- Shower doors, locks or catches should be of a type that can be opened from the outside in an emergency.
- Shower doors should preferably be of a sliding or outward opening type.
- These recommendations are relevant for communal bathing facilities for low-income households.

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Reference Figure:

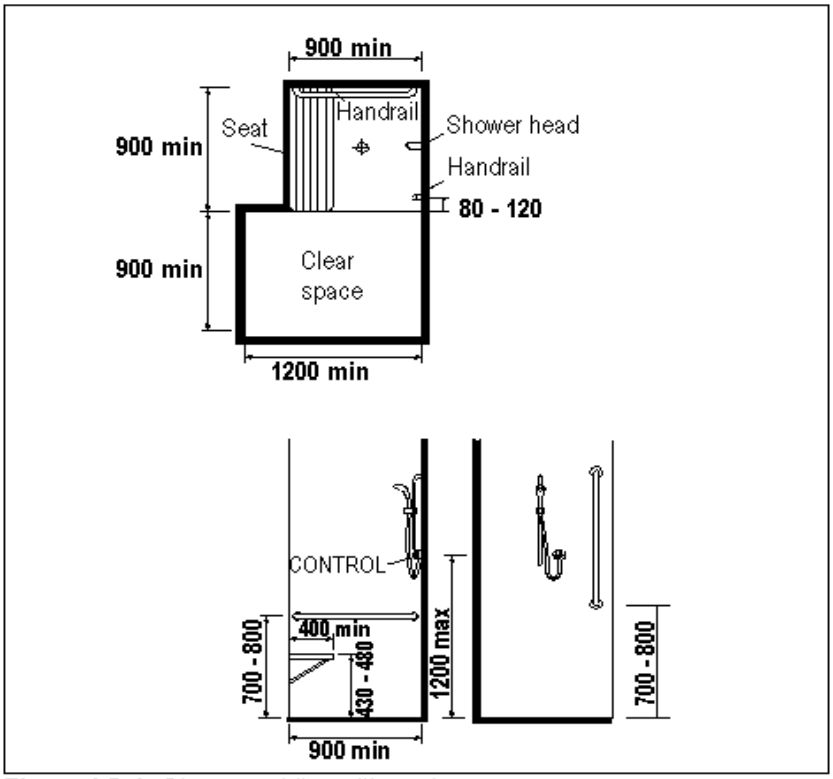


Figure 4-3-1: *Shower cublice with seat*

Basins

These recommendations apply to people who necessitate the use of a wheelchair.

Recommendations:

- The basin should be installed at a height and position for convenient access by wheelchair users.
- The basin should have appropriate knee clearance and foot clearance space for wheelchair users.
- Sufficient clear space for wheelchair users should be provided in front of the basin.
- The mirror should be so installed as to permit its use by wheelchair users.

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.

Reference Figure:

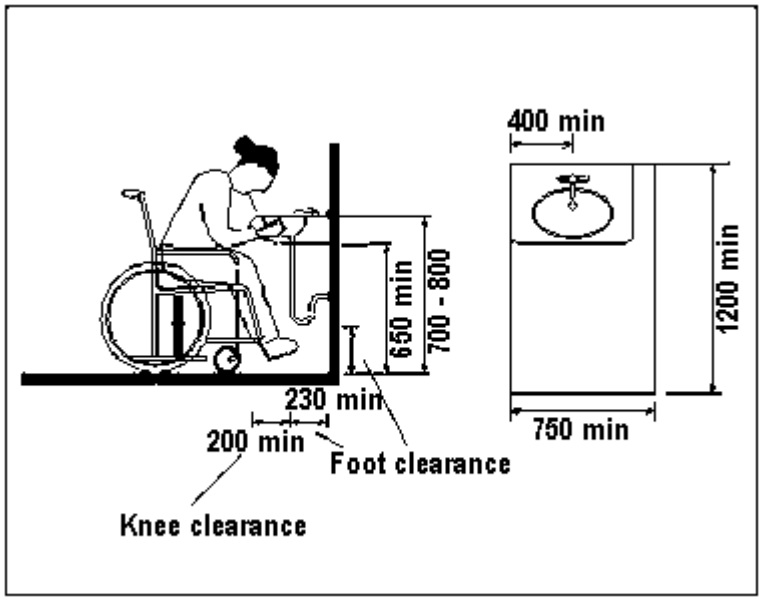


Figure 4-4-1: *Basin.*

Taken directly from: United Nations. Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines. <http://unescap.org/decade/publications/ z15009gl/z1500901.htm> Accessed 2002 November 3.