

HEALING

LIFE

Kristen Ketterling

A stylized illustration of tall grasses in shades of yellow and green, positioned in the bottom right corner of the page.

HEALING LIFE

A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

By

Kristen Marie Ketterling

In Partial Fulfillment of Requirements
for the Degree of
Bachelors of Landscape Architecture



Primary Thesis Advisor



Thesis Committee Chair

May 2012
Fargo, North Dakota

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This project aims to explore the design of healing gardens with plant materials and paths, as well as the role they play in the healing process. Landscape architects have the ability and knowledge to create usable spaces for hospitals that can encourage the healing process. Studies have shown that nature and plant materials are known to have a calming effect on patients and can be used to help in the healing process. The Jamestown Regional Medical Center will be redesigned as an example of how using plant material and suggestive paths can be applied.

Keywords: Hospitals, Healing Gardens, Health, Recovery

How can the design of an exterior or interior garden be used to encourage healing in hospital settings?

Project Typology: Healing Gardens

Theoretical Premise:

Claim

Healing gardens that primarily use plant material can encourage and help in the healing process.
Landscape architects, medical employees, hospital staff, patients, and visitors will help develop the purpose and uses of a healing garden in a hospital setting.
The healing garden will encourage self worth and motivation in life.
The healing garden will be for patients, medical employees, hospital staff, and visitors of patients.

Premise

Through the design of a healing garden with the use of plant material, patients, medical staff, and visitors will be encouraged to promote and encourage the healing process.

Landscape architects and medical employees have the knowledge and understanding to create and know how to use a garden that can benefit patients with medical issues. Healing gardens can encourage patients to move by giving them pleasant views and uplifting their spirits.
Through interactions with plants and paths patients will feel motivated and encouraged.

Conclusion:

Through the design of a healing garden within a hospital's property, individuals such as patients and medical staff will feel encouraged by having their spirits uplifted and be encouraged to help in the healing process.

Project Justification

According to World Health Design website nature has a soothing and restorative affect on people which helps them recover faster. Patients also recover faster when they have the support of family members and friends. Healing gardens give patients and visitors a place to interact in a peaceful and intimate setting. Through the use of healing gardens patients can be less stressed causing faster healing times (Marcus, 2011).

The purpose of this project is to move the landscape architecture field forward with the use of new innovations and discoveries. Hospitals need the newest technology to benefit their patients. Healing gardens have evolved with this technology and are a great advantage for any hospital. Plant material is a large part of these healing gardens to create sensory, medicinal, and emotional experiences. Growing up in a rural community, and having a dad who farms and ranches gave me an interest in and knowledge of plants. Through this thesis project I will explore how plant material can be used in a hospital setting.

This project design is intended for everyone in a hospital setting, including patients, visitors, and hospital staff. The intended use of the healing garden is to help the patients achieve better health.

This project will be owned by the hospital for which it is designed. One requirement that will need to be taken into consideration is for those who have disability requirements as well as those in the stages of recovery in physical healing. Paths and walkways will need to be wider than 48 inches. Planters in gardens should be the following heights; for wheelchairs, dimensions should be a height of between 24 and 36 inches, with room below the planter that is indented 7.25 inches and a height of 18 inches; a standing planter should be between 34 and 35 inches (images shown to the right). Also, people with mental illnesses need to be considered as well as small children for an effective design. Children have different height requirements and also see views at a different level compared to the average adult.

Peak hours for the healing garden will be during the day when patients are most active and the hospital has visiting hours. Even though the peak hours of the garden may be during the day, the garden will also be open in the evening for those visitors who are spending the night and patients who need a place of reflection and rejuvenation. Due to the climate of North Dakota, the garden will be intended for summer as the main use for patients and visitors but will have views that can encourage alter moods for positive attitudes.

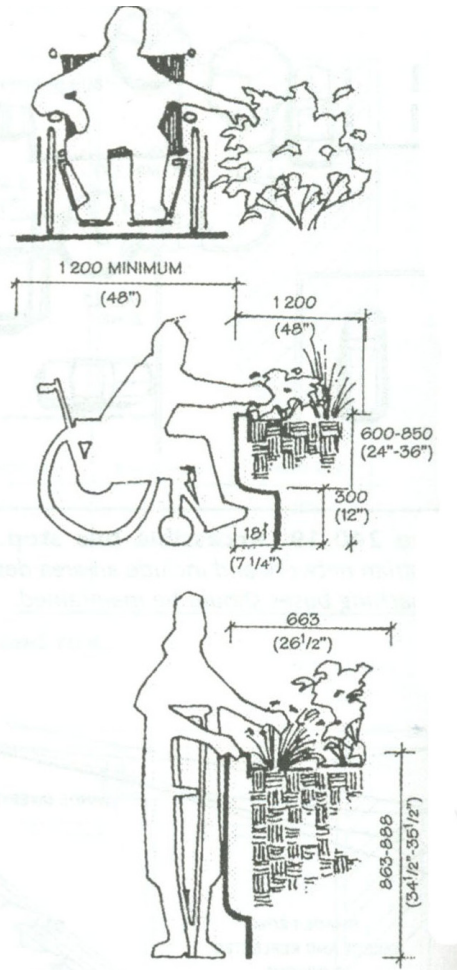


Image from Time Saver Standards

The major elements in this project include plant material and the design of micro spaces within the garden itself. These two elements will set the tone and environment of the healing garden.

Plant Material: The selection of plant material is very important in this design. Certain plants can help with different types of illnesses and diseases. Patients dealing with depression can get therapy by participating in gardening activities. The act of gardening can also help those who need to redevelop their motor skills by differentiating planter heights (Marcus, 2011).

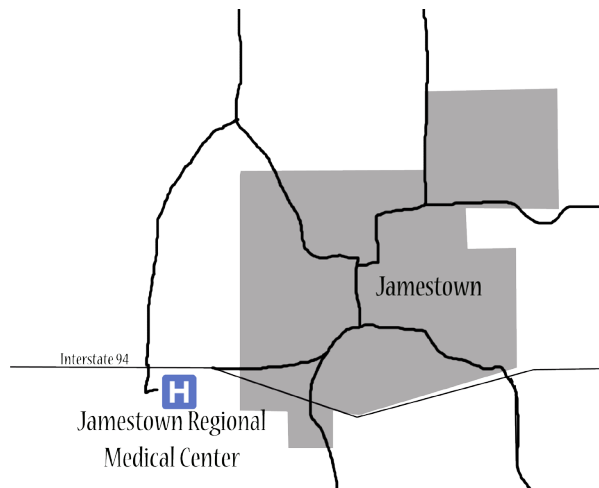
Micro Spaces: Small spaces will be designed within the healing garden to create an intimate space for patients and their visitors. According to World Health Design's website, "It is essential that sensitive planting design and site furnishings provide semi-private niches for one or two people or for a family group to be alone (Marcus, 2011)." Micro spaces allow each group of people to have its own activity to reach a personal point of healing (Marcus, 2011).

Different Paths: Providing multiple paths for patients will provide areas for physical therapy. Different types of paths can include stairways with alternating heights, ramps, and textured paths.

Jamestown Regional Medical Center

The location of the healing garden will be in the Midwest in Jamestown, North Dakota, at the Jamestown Regional Medical Center. This site has been chosen because of its wide variety of medical accommodations provided.. The Jamestown Regional Medical Center is a new facility that can serve as a guide l for future hospitals, especially with the addition of a healing garden in its vicinity. Its mission, “is to compassionately revolutionize health care in the heartland.” which shows the hospital’s dedication to improving healthcare (Jamestown Regional Medical Center, 2011).

Rehabilitation services such as physical therapy and occupational therapy are provided by the hospital. These services can be enhanced through the use of a healing garden by providing an area for patients to work at gaining strength and encouragement to improve their health. A patient care unit is another service that can benefit from the use of a healing garden by providing a place for patients and their visitors to gather in a positive setting.



The Jamestown Regional Medical Center is located in central North Dakota, therefore, it can serve as a model for surrounding hospitals. Boundaries of the Medical Center are Interstate 94 on the south and to the west, north, and east a field borders the hospital. The field allows the hospital to be a prime location for nature to be incorporated into the healing garden (Jamestown Regional Medical Center, 2011).

The Jamestown Regional Medical Center is out of the city of Jamestown by about 4 miles.

The premise of this thesis project is to promote rejuvenation through the use of plant material, textures, and paths for patients, medical staff, and visitors through a healing garden. The use of plant material and the textures of paths will be the main pieces of this design. This project focuses on the needs of patients, visitors, and hospital employees.

To continue the development of this thesis project, research will need to be done on the following topics: theoretical premise, project typology, historical context, site analysis, and programmatic requirements.

The design methodologies that will be used are the mixed method quantitative/qualitative analysis, graphic analysis, digital analysis, and interviews with medical staff, hospital patients, and visitors.

The mixed method, quantitative/qualitative approach will be done using the Concurrent Transformative Strategy. This will be guided by my theoretical premise and unifying idea. All data collected will focus on the benefits of healing gardens and how to design for a well designed healing garden. Priority of research is determined by its importance to the theoretical premise. Collecting and analyzing the data will be done at different periods, as data is collected throughout the entire project. Case studies of other healing gardens and the history of gardens will be done in the beginning of this data collection. Data results will then be shown through graphics and text after analyzing each source. Quantitative data will include data from scientific instruments or through researched information. This data includes weather, number of patients, and types of sicknesses within the hospital. Qualitative data will be obtained through direct observation and researching books, journals, and web site sources. This will include how healing gardens can work to best help the patient and the how plants offer benefits to patients through psychology.

Documenting the design process will be done through Microsoft Project. This will provide a schedule for the development of my thesis project. Tasks are organized according to importance in the development of the project.

Visual graphics such as weather and climate maps will be designed in Photoshop and InDesign. Information will be gathered and interpreted for graphic representation, including graphs and charts.

Fall Schedule

October

10-14: Literature Review

17-21: Case Studies

24-28: Finish Case Studies, Start Historical Context, Site visit(28)

31-04: Finish Historical Context, Start Site Analysis

November

07-11: Finish Site Analysis, Work on Graphics (9-11)

14-18: Design Weather Charts, Continue Working on Graphics

21-23: Project Goals

28-02: Revise All Sections, Add Missing Information

December

05-09: Proofread Booklet and Print, Booklet Due(9)

* All scheduling is subject to change

Spring Schedule

January

09-13:

16-20: Inventory/ Analysis

23-27:

30-03:

February

06-10: Analysis Review (7 & 9)

13-17:

20-24: Concept Plans

27-02: Master Plan

March

05-09: Edit Booklet, Mid-Term Thesis Reviews (6 & 8)

12-16:

19-23:

26-30: Edited Copy of Booklet Due (28)

April

02-06:

09-13: Create Boards for Final Exhibit

16-20: Add New Elements into Booklet, CD of Project Due (16)

23-27: Boards Due (23), Final Presentation (26)

May

30-04: Final Thesis Review (1 & 3)

07-11: Booklet Due (11)

* All scheduling is subject to change

SECOND YEAR

Fall 2008- Landscape Architecture I
Instructor: Kathleen Pepple
Tea Garden Project, Battle Lake Project
Spring 2009 -Landscape Architecture II
Instructor: Mark Lindquist
Winnipeg Parks Project, Fargo Street Project

THIRD YEAR

Fall 2009- Site Planning and Design
Instructor: Stevie Famulari
Regent Revitalization Project, Fargo Analysis, Snow Symposium
Spring 2010- Community Planning and Design Studio
Instructors: Kathleen Pepple & Jason Kost
Roosevelt Neighborhood Project, Campus Planning (UTTC Bismarck, ND)

FOURTH YEAR

Fall 2010- Urban Design Studio
Instructors: Jason Kost & Niki Carlson
Duluth Project (Site Design & Zoning)
Spring 2011 Remediation & Planting Studio
Instructor: Stevie Famulari
Plant Remediation on the Red River

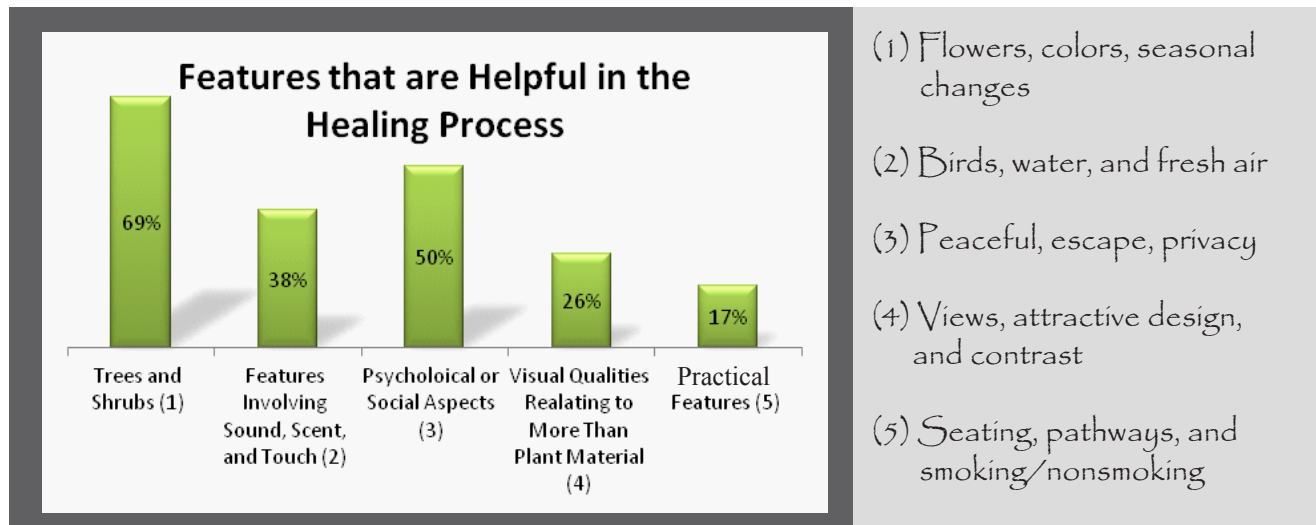
FIFTH YEAR

Fall 2011- Advanced Landscape Planning
Instructor: Catherine Wiley & Dominic Fischer
Water Property Analysis and Red River Basin Project

Healing Gardens

The book Healing Gardens by Cooper Marcus, and Barnes discusses topics such as the history of healing gardens, the statistics of healing gardens and how they benefit people, and the design philosophy behind healing gardens.

A study on the use of outdoor space in hospitals showed that 95 percent of the people surveyed had a positive mood change after spending time outside. When participants were asked what specific elements changed their moods, more than 66 percent said trees, flowers, colors, seasonal changes, and greenery made a positive impact. Half of the participants also mentioned that senses such as sound, scent, and touch also had an effect. This included elements such as fresh air, birds chirping, and the sound of water (fountains). The chart below shows a breakdown of what features are helpful in the healing process (Copper Marcus & Barnes, 1999).



Information from (Copper Marcus & Barnes, 1999)

Healing Gardens

In another study participants were asked to describe a place they went to when they felt stressed, depressed, angry, or upset. The top four answers were related to the following main points: natural settings, designed outdoor settings, enclosed spaces, and urban and built settings. When participants were asked the main reasons a specific place, from the previous question, was chosen their answers contained; natural elements (stated by 69%), sensory qualities (63%), evokes safety and comfort (61%), and provides privacy (51%). Participants were able to respond with more than one answer.

Cooper, Marcus, and Barnes also discussed the history of outdoor space in medical settings. One of the first hospital/ healing gardens occurred in the Middle Ages in Europe in monastery communities. In these gardens planters were used for healing. Plants were used for medicinal purposes, the space was also used to pray for the sick. In the 14th and 15th centuries there was a decline in using gardens for medical purposes because of plagues, crop failures, and overwhelmed facilities. Despite this decrease of gardens in hospital settings, some hospitals continued to use plants in their garden design. English hospital courts included trees planted in rows. Fresh air and views to greenery were important concepts at this time. The focus of healing gardens changed from using them as a space to ask for help through prayer to seeing nature's healing power in the form of physical healing as well. This trend continued through the next few centuries (Copper Marcus & Barnes, 1999).

Healing Gardens

During the 17th and 18th centuries, scientific medicine and Romanticism emerged in hospital settings. Outdoor spaces were seen as a component of healing, and gardens linked wards within a hospital. The 20th century design/progress was driven by profits and efficiency. Hospital designs have gone from low pavilions to highrise buildings. This made it difficult for hospitals to create an environment with a healing garden due to hospitals wanting to spend the least amount of money possible and relying on patients to find gardens elsewhere (Copper Marcus & Barnes, 1999).

These two images show how hospitals went from the low pavilion hospitals on the left to the high-rise hospital on the right. The image on the right is New York University Hospital Center. These hospitals have less interactions with the environment around them. The image on the left is the Seaview Hospital in Staten Island.



Image on the left from: http://farm3.static.flickr.com/2765/4160255533_fdc7d93d78.jpg
 Image on the right from: http://commons.wikimedia.org/wiki/File:Smilow_Research_NYU_jeh.JPG

People-Plant Relationship

The book People-Plant Relationship discusses the relationships individuals have with plants; examples include how plants can make jail prisoners healthier to how plants clean the air we breathe. Chapter sixteen discusses the impact plants have on individuals. There are two ways one can analyze the affect of plants, direct and indirect. “The indirect approach involves documenting the environment changes that result from adding plants to a particular location....The direct approach involves measuring changes in people as a result of the presence of plants (Flager & Poincelot, 1994 pg. 227).”

Indirect experiments include studies dealing with humidity and the removal of harmful gases. In two studies dealing with humidity and harmful gases, the air was affected when plants were added. Research showed that with the addition of plants the humidity levels rose. When plants were not present in the environment, the level of humidity fell below the normal comfort level for an average individual. Plants were also placed in an environment with pollutants of trichloroethylene and formaldehyde. A dramatic reduction in the amount of harmful gases was seen at the end of each experiment.

Direct approach research was done by asking gardeners why they garden. Research showed that people began to garden for rewards such as producing vegetables, but later in life tended to garden for pleasure. In one study, Roger Ulrich analyzed the benefits of having a room in a hospital facing trees rather than a brick wall. Patients who had gall bladder surgery and were facing the trees spent less time in the hospital and also took less pain medications than those who had the same surgery without views of the trees. Other studies have been done revealing how plants help in stressful situations, general sickness, organization, and creating a good first impression (Flager & Poincelot, 1994).

The image to the right shows a view facing trees from a Hawaii Hospital room window.



Image from <http://dotshots.com/wp-content/uploads/2009/08/viewfromhospitalwindow02-1024x357.jpg>

Gardening for Health

The article “Gardening for Health” provided the benefits of gardening on our health. A man in his late eighties was shown to have a lower blood pressure than a man half his age. Doctors have not pinpointed the cause of the older man’s excellent health, but say his two hours of gardening each day has a linked to it.

According to Harvard naturalist and Pulitzer Prize winner Edward O. Wilson, “Nature holds the key to health (Gardening for Health, 2000).” He also believes we have a desire to look at nature because we are part of nature. Experts believe nature can lower blood pressure, boost immune function and reduce stress. A study in Uppsala, Sweden confirmed these benefits. One hundred sixty postoperative heart patients were asked to either look at a landscape, an abstract artwork, or no picture at all. The patients who looked at the landscape had lower anxiety, used less pain medication, and spent a day less in the hospital. The patients who looked at an abstract art piece did worse than those who looked at no picture.

Nature puts the mind into a state similar to meditation. Other benefits to being in nature include exercise, exposure to Vitamin D, and the exposure to light. The article recommended creating an outdoor garden in a hospital or at home by using pots where people of all ages could benefit (Gardening for Health, 2000).



Designing With Plants

Plant selection in designing a garden is very important. North Dakota has very four distinct seasons, providing a need for specific types of plants for each season, which will provide views all year long. Flowering plants are divided into three categories; spring flowering woodlands, early summer woodland edge species and late summer open meadow species. Plants that look good throughout the growing season should be included. Some of these plants include Ligularia, Rudbeckia, Salvia, and Aster. Flowers that bloom twice each growing season are also a good addition to any garden. Alchemilla mollis, Aстранtia cultivars, Campanula actiflora, and Geranium endressii are all plants that will flower twice if dead headed. For the best winter appearance, plants that have shapely seed heads and that are weather resistant are good to make a garden full-seasoned, providing plant material and texture all year.

Hospital settings illustrate the cycle of life, from the gift of birth to the tragedy of death, and gardens can represent the cycle of life as well through different seasons. The spring represents birth. It is a time of celebration and new life. Many spring flowers are bulbs. Late flowering spring plants are perennials. Life is shown through the summer months for at this time most plants have been established and are blooming. Most of these plants in early summer are low growing and clump forming. The autumn months represent the time of death. Many grasses do not flower until late autumn and provide important borders as perennials finish flowering. Purple Coneflower's seedhead multiplies as autumn ends and in a winter frost can create beautiful scenery by frosting every surface. If the autumn is dry the foliage will stand up straight, but if the autumn is wet the plants get soggy and silt. This book, Designing With Plants, based on views will help make the best selection for this thesis design project (Kingsbury, 1999).



Images from *Designing with Plants* pages 127 & 136

The Healing Garden

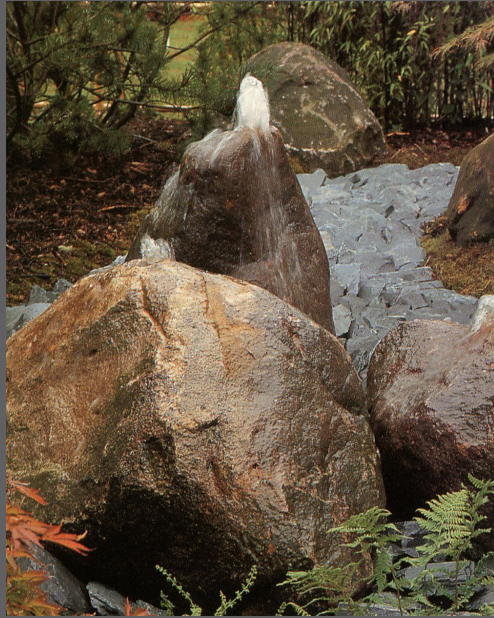
Knowing the types of plants that are recommended for each season is important and can be strengthened by knowing how to use each plant to awaken our senses. The book, The Healing Garden, explores many parts of the healing process through botany. One part is how plants can be used to awaken our senses. Other parts included the history of medicine and how plants directly affect the body physically.

Medicine was first developed in Mesopotamia around 4000 to 1500 BC. At this time disease and sickness were thought to be inflicted by the gods. In the year 2000 BC, the treatment of illness went from supernatural healing to using plant-based medicines. Egyptians also held those beliefs and developed plants as ways of healing illnesses.

Besides using plants as a with to heal, they can also be used as a way to awaken our five senses. Herbs are one way we can reach the sense of taste with their strong flavors. Color from the floor of buds, flowers, and the changing of seasons are all ways we can see shade, tints, and colors in a garden. These colors can affect one's mood and be therapeutic. Soothing sounds such as running water can also be therapeutic. Our sense of smell helps with memory and can strengthen an experience in a garden. Certain smells can remind us of places where we felt happy, and the perfume of flowers in a scented garden can directly heal. The last sense is touch. Specific plants are known for their texture and some plants surprise us with their texture. By using plants for our senses, we know that they reach each person individually with their interactions. (Minter, 1993).

The Healing Garden

Plants that are known for their scent are junipers, lavender, which is known to be relaxing and used to relieve headaches, and honeysuckle, which has a sweet fragrant scent. Different colors within a garden are related to mood. Red can mean warning, which stimulates the heart rate. Pink retains its color well into the night and is warm and inviting color. Green is a neutral color and is recommended as a long-lasting color. The color yellow can have some negative associations. This color can mean betrayal, persecution, and ill-health. Pale yellows mean kingship and wisdom. Blue represents for unlimited dreams. When designing a garden it is best to think about the pattern of colors chosen. Complementary colors are suggested. Combinations such as blue and yellow work well together, along with white mixed with greens and grays (Minter, 1993).



The image on the left shows a water feature created for the soothing sound of water. The bottom image shows how blues and yellows can work well together.



Images from The Healing Garden 188 & 199.

Conclusion

The books, articles, and websites that were chosen provided information to create a project that is well researched. They provided information about how healing gardens were used in the past, how they were defined, and how they were used as medicine. This research will also provide insight into how to design for the future by suggesting planting arrangements and statistics about what views awaken our senses to provide a positive environment, and what designs have worked well.

I have learned that garden spaces need to be places where people can interact, reflect, and be therapeutic of using different elements such as planting or encouraging walking. Views to the garden also need to be addressed so people can see the garden as passersby, but also view it from patients' windows. This will encourage those to use the garden or create a positive view for those who would rather stay inside. The research shows that this garden will be a positive influence on the users and the hospital. This is concluded from the studies that have shown people heal faster with greenery, views and participation in gardening can also help motivate and heal.

Through the research I have answered my problem statement. My problem statement was, "How can design of an exterior or interior garden be used to encourage healing in hospital settings?" Healing can be encouraged by designing through the five senses, and by selecting the right plants and texture of paths. The statistics in the studies show that greenery does make a difference and the addition in greenery of my design will encourage and help in the healing process.

By looking at past ways healing gardens were we also, learned what didn't work, so we do not repeat history. We learn from it and apply it to the design.

Conclusion

Statistics are a very important part of this research. Without the statistics we have no evidence if healing garden actually help. The statistics in this research stated that people see flowers, colors in a garden, and the seasonal changes to be a major part of the healing/rejuvenation process.

Other statistics showed that patients who had views of greenery healed a day faster and needed less pain medication than those without views. From this information we learned that greenery does make a difference to our health and it is something that our hospitals need to remember. Hospitals need to have their patients' best interests in mind, and with this knowledge we can conclude that a healing garden is a necessity in the healing process to help with pain and fast recoveries. We now know how healing gardens need to be incorporated into the hospital.

This project will show how we can incorporate this research into a healing garden that will benefit patients, hospital staff, and visitors.

Mike Utley Terrain Park

Location:
Craig Hospital - Englewood, Colorado

Completed June 2008

Size: 1220 ft^s

Designer:
H & L Architects

Built for the Craig Hospital Physical
Therapy Department Focusing on
Spinal Cord Rehabilitation



<http://www.hlarch.com/>



<http://www.hlarch.com/>

Mike Utley Terrain Park started as a dream of the Physical Therapy department at Craig Hospital to prevent patients from traveling around the city to practice physical therapy on the streets. This park is geared especially to those who are in wheelchairs and their ability to learn how to teach themselves how to become fully independent in their wheelchairs. The park includes features such as stairs, curbs, ramps, and different surfaces to give the patient areas to practice using their wheelchairs. Along with providing technical areas the park also includes sunny areas, shade areas, perennials, annuals, vegetables, and herbs and vine, which create an interest all year long (Jefferson, 2011).

Mike Utley Terrain Park

The Mike Utley Terrain Park uses a variety of textures to create a good environment for the patients to work toward recovery. One surface is a ramp of Bomanite 4"x 6" River Rock imprinted concrete. This texture challenges patients to navigate on uneven and unpredictable surfaces. This ramp is pictured to the right.



Cocoa and Omaha Tan Davis colors are used throughout the park to divide the different areas of the park as well as are it a put together look. The image to the right shows the different textures throughout the park, which divide the place into sub-spaces (Colorado Hardscapes, 2011).



Mike Utley Terrain Park

Mike Utley Terrain Park is a well-developed park that has the patients' well-being in mind. The park is a good example of how patients can interact in a garden to help with physical illness by also encouraging one to work on recovering. This case study provides insight about how to incorporate specific elements to aid in the recovery process. It is different from most healing gardens in that it provides specific challenges to help with recovery rather than just implying encouragement.



Image from www.hlarch.com

Methodist Women's Hospital Healing Garden

Location:
Omaha, Nebraska
Methodist Women's Hospital

Completed Summer 2010

Size: 33 Acres

Designer:
HDR Architects

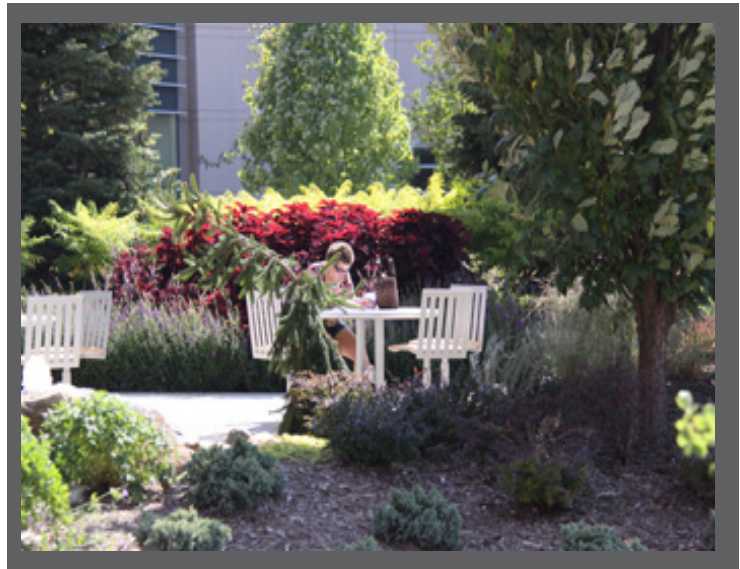
Built for the Methodist Women's Hospital focusing on enhancing the healing process



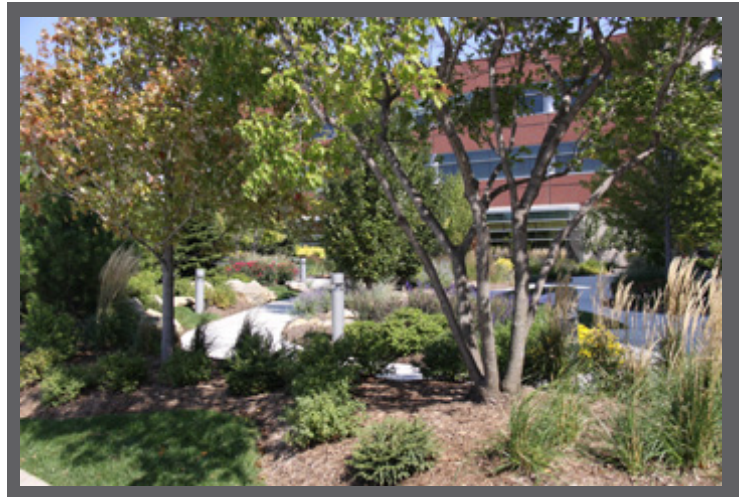
The Methodist Women's Hospital Healing Garden design is based on the scientific evidence that "exposing patients to nature can alleviate pain and alter moods" (Trivedi & McCawley, 2011). The healing garden includes children's play areas, dining areas, and sitting areas. The sound of water is incorporated to provide a tranquil atmosphere by using a water fountain with a babbling stone, a stream running over rocks, and bubbling stone. This sound of water blocks out the sound of traffic and other unwanted noises. Providing a soothing, relaxing sound is important when creating a place of rejuvenation. The image to the left shows the water feature near the hospital's entrance (Methodist Women's Hospital, 2011).

Methodist Women's Hospital Healing Garden

There are many types of seating throughout the garden. The three types of seating include visual, dining, and enclosed seating. Visual seating usually includes benches that face a feature, a specific planting, or a specific view. Picnic benches, tables and chairs all make up dining seating. The image to the right is a good example of dining seating. Enclosed seating is very important for patients and visitors because it gives patients and visitors a private place to grieve, heal, and rejuvenate (Trivedi & McCawley, 2011).



The plantings of a garden are important to the sensory experiences. Color, texture, layering, and seasonal interest all contribute to the sensory experience. Mature plantings were installed to quickly establish shade and a sense of place. The location of trees provide both sunny and shady areas, which offers both intimate spaces and open spaces (Trivedi & McCawley, 2011).



Methodist Women's Hospital Healing Garden

The Methodist Women's Hospital Healing Garden is a good case study because of its sensory features, its ability to provide diverse seating areas, and a planting plan that works well for all users by creating a space with auditory, smells, and sights that will drown out distractions and provide a soothing environment. Patients and visitors should feel comfortable and relaxed in a healing garden. To design a comfortable place for patients and visitors, intimate spaces and peaceful noises such as water fountains should be added to the design.



Image from: <http://www.asla.org/ppn/Article.aspx?id=32239>

West Seoul Lake Park

Location:
Seoul, Korea

Completed 2003

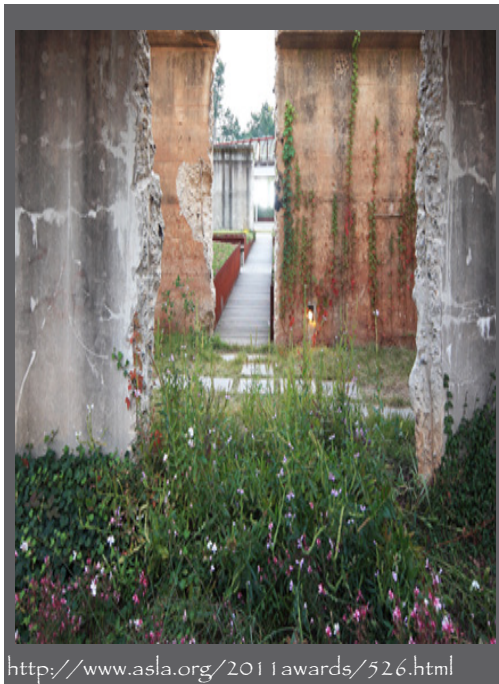
Size: Over 4.5 Acres

Designer:
Ctopos Design

This park was originally a water treatment facility turned into a park for recreation and community which, also addresses the snow and wind in the winter.



<http://www.asla.org/2011awards/526.html>



<http://www.asla.org/2011awards/526.html>

West Seoul Lake Park was chosen as a case study because it is a place that was designed for both the winter and summer seasons. Korea's winters include snow and cold temperatures with the possibility of wind. According to Weather Underground, temperatures can average during the winter months from 15 degrees to 45 degrees. This park was originally a water treatment plant, and after 50 years of vacancy it was remodeled into a park that links Seoul and Bucheon. The concept of this plan is rebirth. Old structures from the water treatment plant were used with the addition of new structures and plantings. This park has been reborn into a more usable space. The picture to the left shows how old structures were used to create viewpoints, but the edges on the stone also provide an area for snow to fall and set to make stunning winter view (American Society of Landscape Architects, 2011).

West Seoul Lake Park

The edges where the snow settles shows the history of the site. Most ground edges on this site are straight, which makes snow removal. Also, the raised planters where trees are planted protect trees from snow removal equipment and provide a tall edge to see where paths are located during the winter months.



<http://www.asla.org/2011awards/526.html>

Straight edges also make snow removal easier as opposed to clearing areas with curves and winding paths. The image to the right shows that the design has all straight edges and is in a grid form to make clearing snow less of a hassle (American Society of Landscape Architects, 2011).

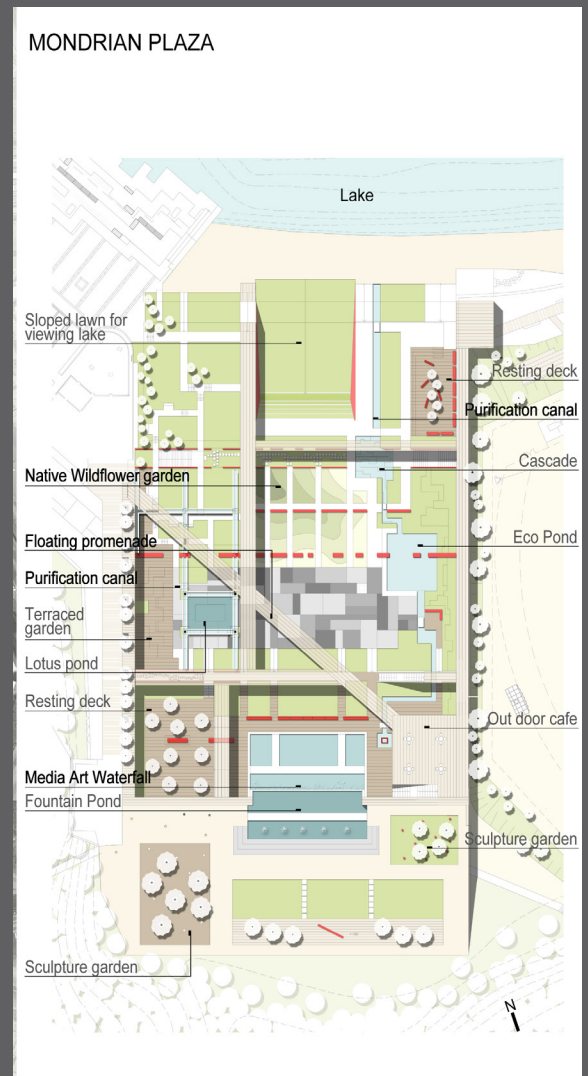


<http://www.asla.org/2011awards/526.html>

West Seoul Lake Park

The plan of the park pictured to the right shows how straight edges were used. The plan also shows how plants are placed within the grid to be protected. This case study is relevant to my design because of the weather conditions and how it uses snow to enhance the design. From this design easy snow removal is created along with interesting edges in some intersections.

Plant material also needs to be considered in the winter and how it could be potentially harmed during snow removal and hard winters. Protecting plant life is one thing that can help prevent the death of plants in the garden (American Society of Landscape Architects, 2011).



<http://www.asla.org/2011awards/526.html>

Time line

The historical context explores the history of healing gardens from the first Century through the 20th Century. During this time, there were times when landscapes became an undesirable concept in hospital design and movements in which healing landscapes were designed and used daily within hospitals. During the 17th and 18th centuries outdoor space was seen as very important and included outdoor space inbetween each ward. This type of hospital design became known as a pavilion hospital. Below is a timeline of the progress of healing gardens.

1st & 2nd Centuries

500-1500 Middle Ages
Monastery Communities

17th & 18th Centuries

1600s-1750
Pavilion hospitals
incorporated outdoor
spaces between the
wards.

20th Century

1900s
Importance was
on efficiency in
technology and
saving money
instead of the
patients' recovery.

14th & 15th Centuries

1300s-1400s
Hospital views were
divided between those
of Catholic mass and
hospital courtyards.

Late 18th & 19th Centuries

1775-1800s
Fresh air was valued
(porches) along with
therapeutic experiences.

First & Second Centuries

Location:
Monastic Communities England

Time Frame:
500-1500 Middle Ages



<http://blog.metmuseum.org/cloistersgardens/wp-content/uploads/2009/04/cuxa-lawn.jpg>

According to Tyson in the Healing Landscape, the history of healing gardens dates back to the time of the Middle Ages (500-1500) with the Monastic Communities in England. In their early years hospitals used herbs, prayer, and flowers (roses, irises, and lilies) to encourage and help with healing. Herbs were used for medical reasons and flowers were used in ceremonial times. The gardens were typically divided into four quadrants with a fountain in the middle and plantings in the four sections. The green grass in these gardens was added to represent rebirth, everlasting life, and to refresh the mind of the monks. The images on the left show examples of monastery gardens and how they were divided into four quadrants with a fountain in the middle.



<http://www.find-croatia.com/blog/wp-content/uploads/2008/01/sibenik-svetilovro1.jpg>

These monasteries also had separate rooms that provided a private space (cell) with a green wall attached wherer a monk to spend time during prayer. Outside the main garden walls were usually plants, which included main food crops for workers, volunteers, and those in need. The main purpose of these gardens was to link the relationship to God through prayer by connecting to nature (Tyson, 1998).

Fourteenth & Fifteenth Centuries

Location:

Roman Catholic Hospitals

Time Frame:

1300s & 1400s

In the 14th and 15th centuries the monastic provision of medical care declined. This decline was due to periodic plagues, crop failures, and migration to the cities that overwhelmed the existing facilities. The care of patients decreased in the overwhelmed cities causing overcrowding in hospitals. Hospital staff was overworked and rushed to see as many patients as possible. Spending time in a healing garden with patients did not happen due to the overworked staff.

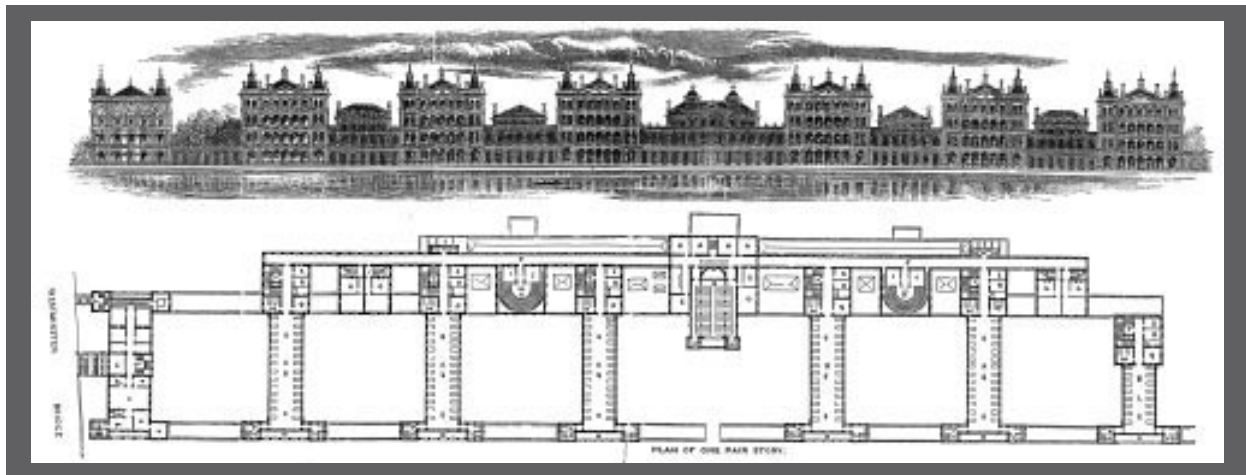
The healing gardens that once existed were now empty and seen as accidents of architecture due to the plagues that kept people from being outside in open spaces. Few used these spaces because of the contagious diseases they could catch. The responsibility of caring for the sick fell from the monasteries to the Roman Catholics due to a rise of interest in the Catholic faith. Long wards were created to make sure every room could view mass. Roman Catholics brought patients to view mass instead of nature hoping for some divine influence. Some hospitals still kept their courtyards intact, and some of these courtyards were planted with rows of trees. These hospitals admired fresh air and saw an importance in creating a garden view of the hospital (Tyson, 1998).

Seventeenth & Eighteenth Centuries

Location:
Paris, France, Europe

Time Frame:
1600s - 1750s

In the 17th and 18th centuries, scientific medicine and the Romanticism Era encouraged design and the establishment of outdoor space in hospitals. At this time infections were thought to be spread by vapors. The new designs paid special attention to hygiene, fresh air, and cross ventilation to contain contagious diseases and stop the spread of these diseases. Hospitals such as Hotel Dieu in Paris, France were designed with wards that contained patients' beds, which were connected by service corridors. These types of hospital designs were known as pavilion hospitals, because there were "incorporated outdoor spaces between the wards." The image below shows a section and a plan view of the comb-like structure with spaces in between for greenery and gardens. Also during this time, the Romantics reconsidered the "role of nature in spiritual restoration." Outdoor space was again valued as a component in the healing process (Tyson, 1998).



Late Eighteenth & Nineteenth Centuries

Location:

Philadelphia, Pennsylvania, United States

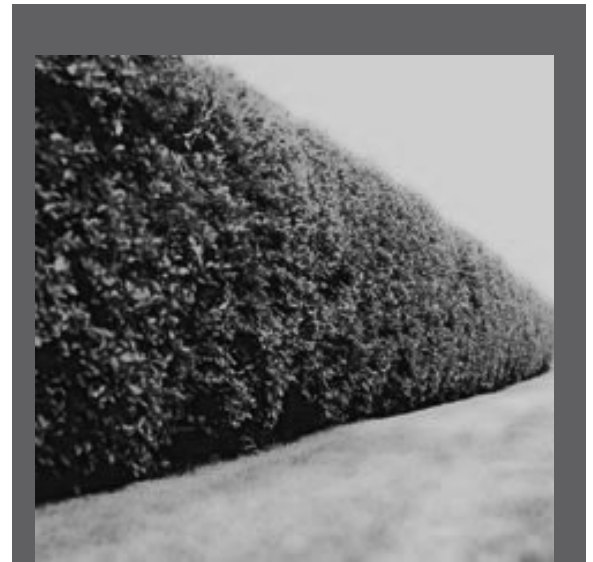
Time Frame:

1760s- 1800s

In the late 18th Century and early 19th centuries plantings and gardening were focused on psychiatric hospitals. Psychiatric hospitals' treatments went from physical punishment to psychological nurturing. New asylums were laid out with plantings bordering the grounds. This concept protected the patients from onlookers. These landscapes were also created to provide patients with therapeutic experiences in gardening, farming, and grounds maintenance as a way to improve the patient's health (Tyson, 1998).

The Friends Hospital in Philadelphia was the first hospital to use a greenhouse to treat the mentally ill, which gave patients areas to be close to plants and have the ability to use their hands in planting (American Horticulture Therapy Association).

During the beginning of the 19th century and into the 20th century the treatment for tuberculosis was fresh air and sunlight. Patients were wheeled into sun porches to recover. Catholic hospitals also put patients' beds out in the fresh air by moving them to a trellised roof garden in a hospital in San Francisco (Tyson, 1998).



The image above shows how plant hedges can be used to create privacy such as those used in psychiatric hospitals.

Twentieth Century

Location:

San Francisco, California, United States

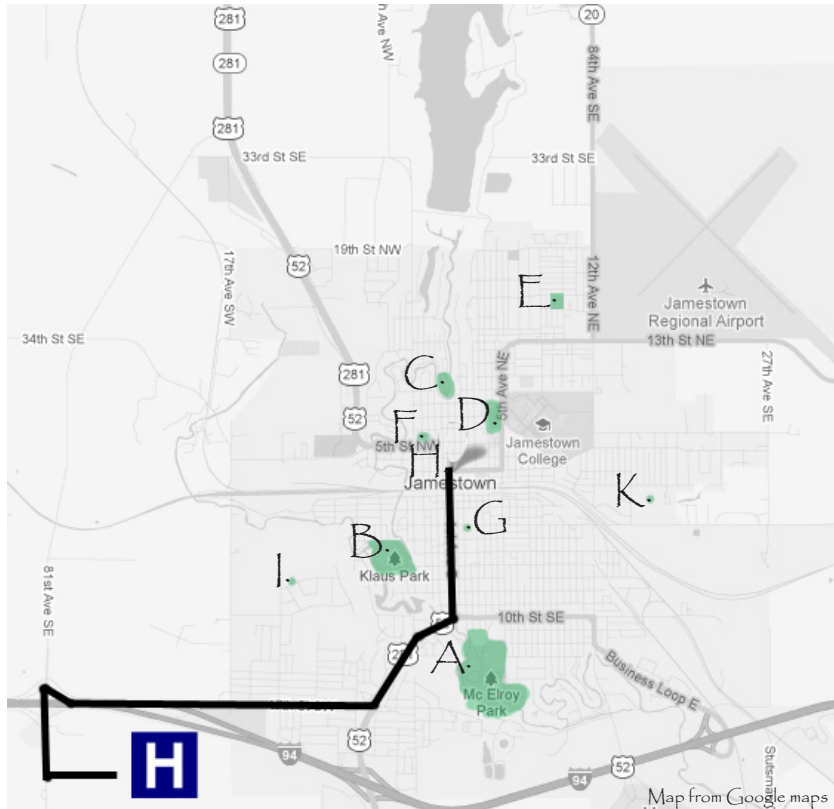
Time Frame:

1900s

The 20th century brought advancements in technology and focused on profits and efficiency in the medical world. The increasing demand of efficiency created a demand for high rise efficiency hospitals instead of low-rise pavilions. The focus of hospital design went from the patient to increasing efficiency the hospital staff. Despite the loss of catering to illnesses through therapy, the profession of occupational therapy started (Tyson, 1998).

After World War II, horticulture made an entrance into hospitals to provide therapy for veterans, the elderly, and the mentally ill. Even though gardens helped patients recover, insurance companies were against them. Insurance companies wanted to minimize the patients' stays as much as possible, making costs cheaper for the companies. Keeping patients at the hospital for recovery using healing gardens was not seen as a value to insurance companies when the patient could recover at home for a cheaper cost. The use of healing gardens or any garden by the end of the 20th Century was lost to high-tech machines, high-cost drugs, and medical specialization (Tyson, 1998).

The City of Jamestown



Downtown Jamestown
to
Jamestown Regional Medical Center

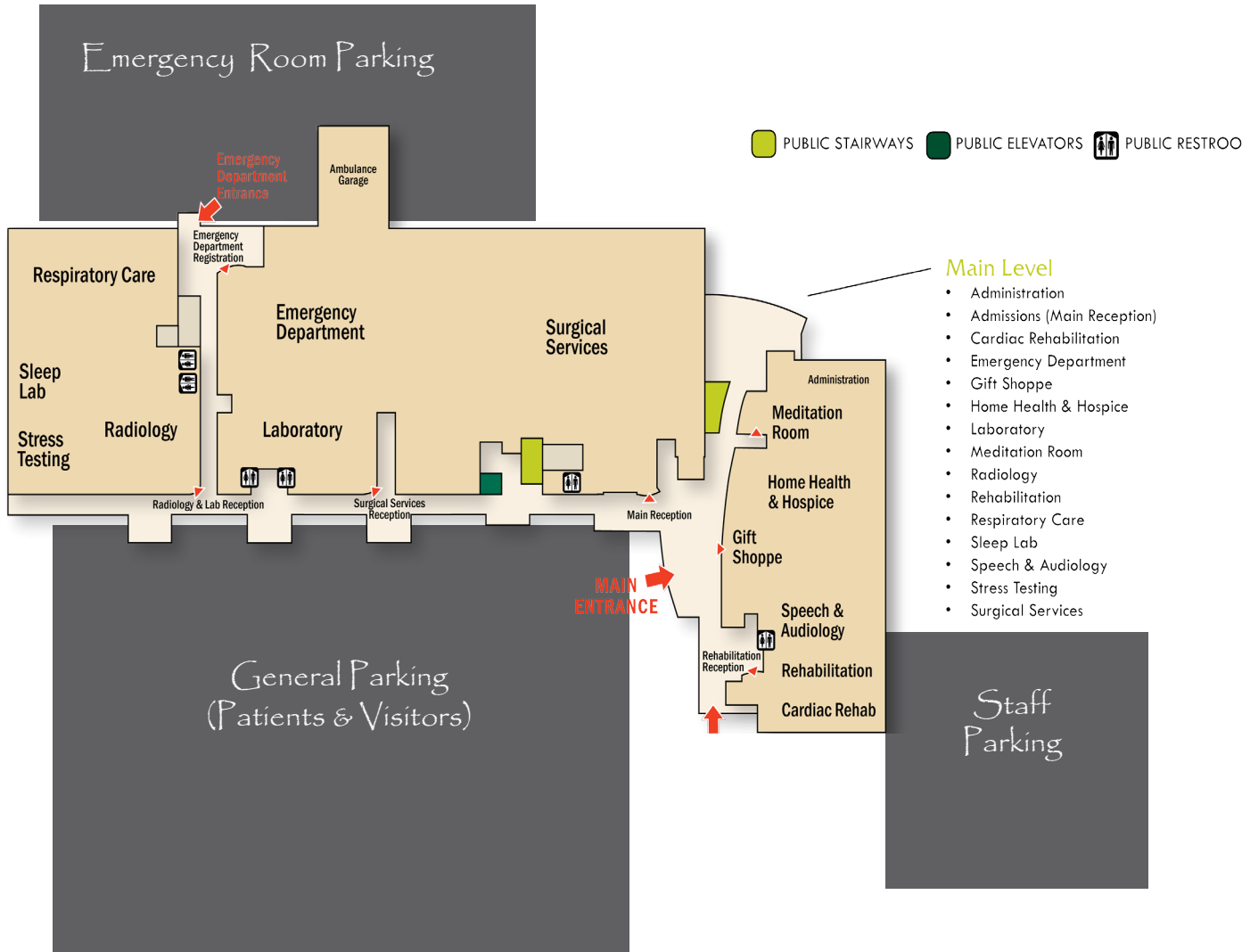
3.8 miles

11 minutes

ID	Park	Acres
A.	McElroy	63
B.	Klaus	21
C.	Nickeus	7
D.	Feton	6
E.	Leapaldt	2
F.	Dolinger	2
G.	Meidinger	2
H.	Buchholz	1
I.	Wilson Arena	1
J.	Solien-Benault	11

The population of Jamestown in July 2009 was 14,687, with an average age of 39. The percentage of males and females was 48% and 52%, respectively. All information was collected from <http://www.city-data.com/city/Jamestown-North-Dakota.html>

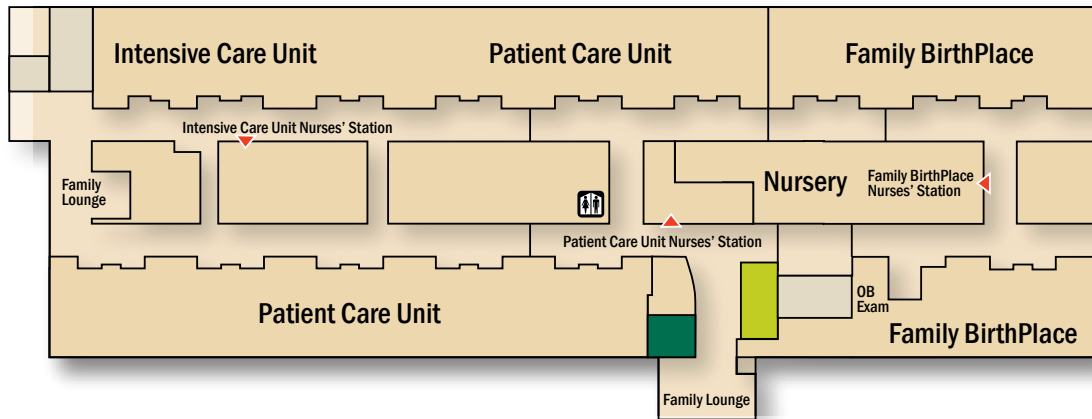
Hospital Floor Levels



Hospital Floor Levels

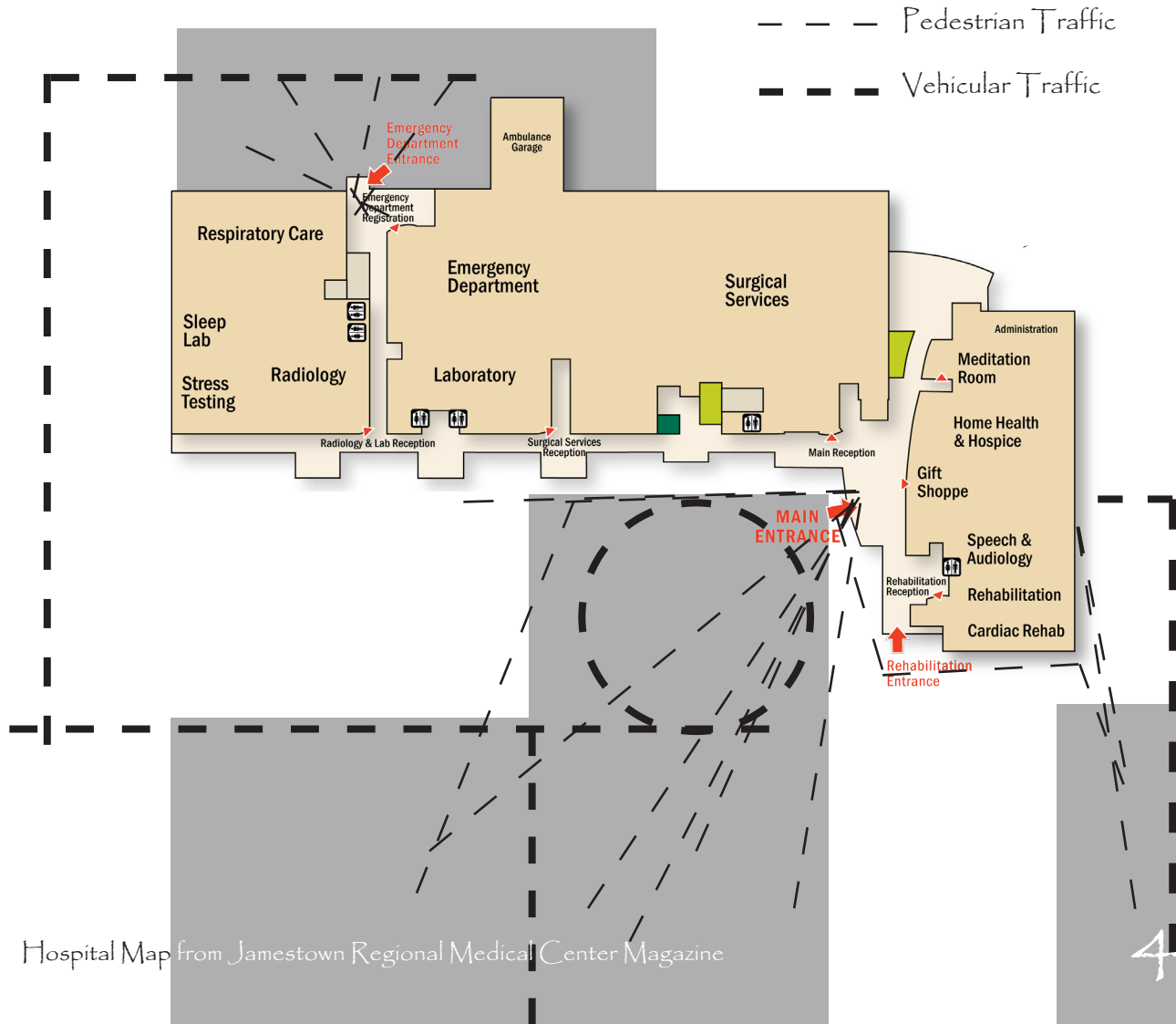
Upper Level

- Family BirthPlace
- Intensive Care Unit
- Nursery
- Patient Care Unit



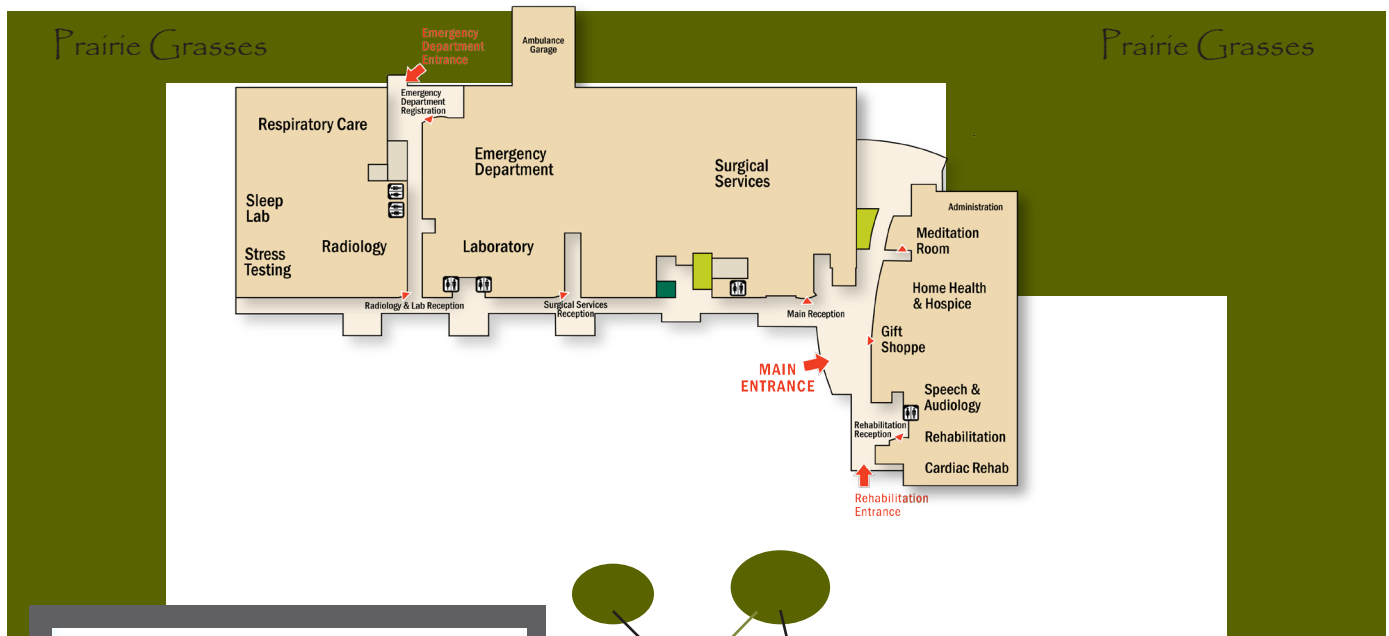
Traffic: Vehicular and Pedestrian

Vehicular traffic is mainly contained between the parking lot and the main road that goes south of the hospital. There is a road to the west of the hospital that leads to the emergency side of the hospital. Pedestrian traffic is from the parking lot to the entrances and to the small garden in the front of the hospital.

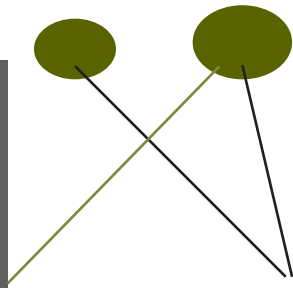


Existing Vegetation

Some of the existing vegetation includes grasses, sedum, daylilies, coreopsis, Bur Oak, Thunderchild Crabapple, and Purple Coneflower. Most plantings are along the building, and two berms are located on the south side of the hospital along with grasses surrounding the grounds of the hospital.

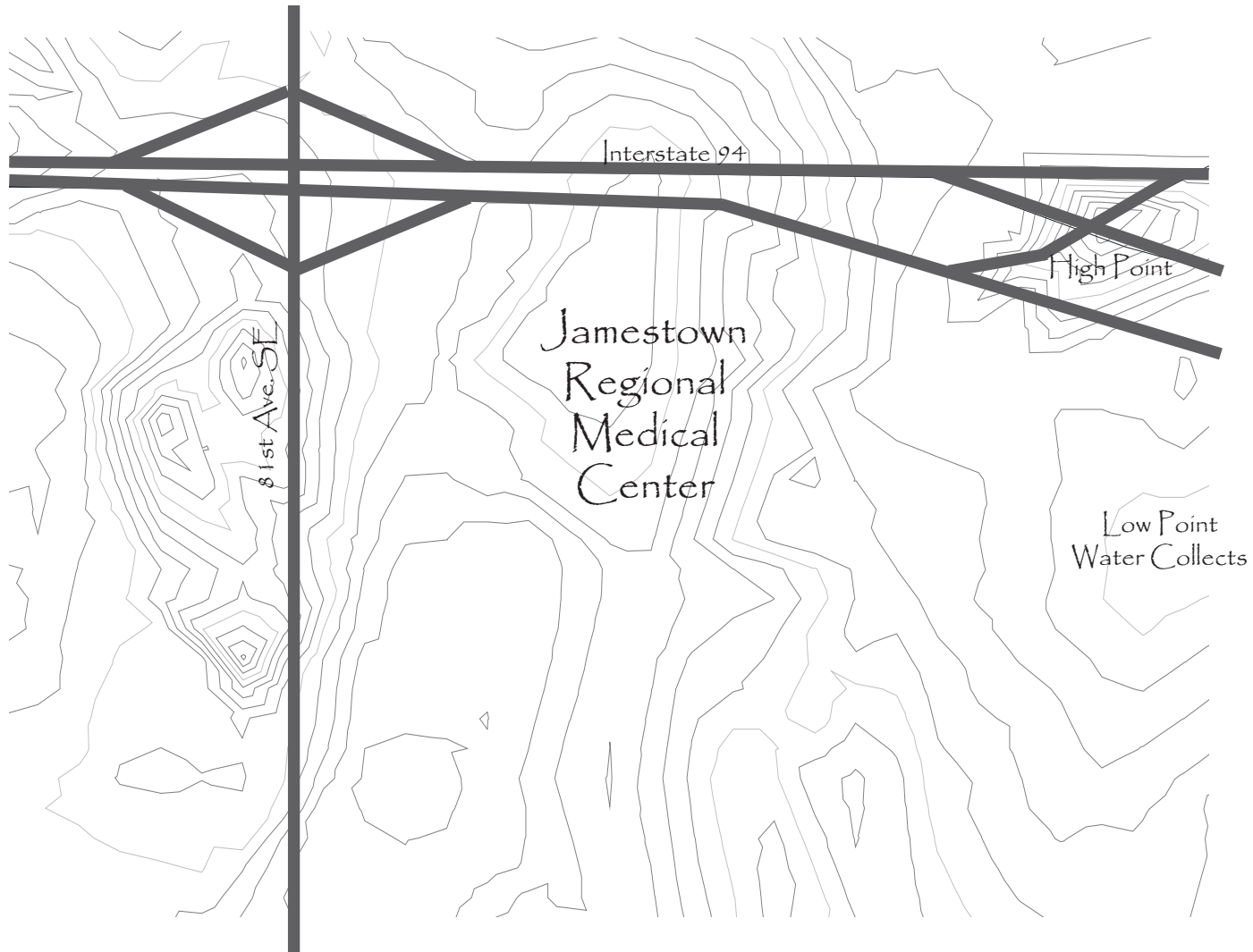


Berm planted in front of the entrance of the hospital.



Planted berms with trees in the middle

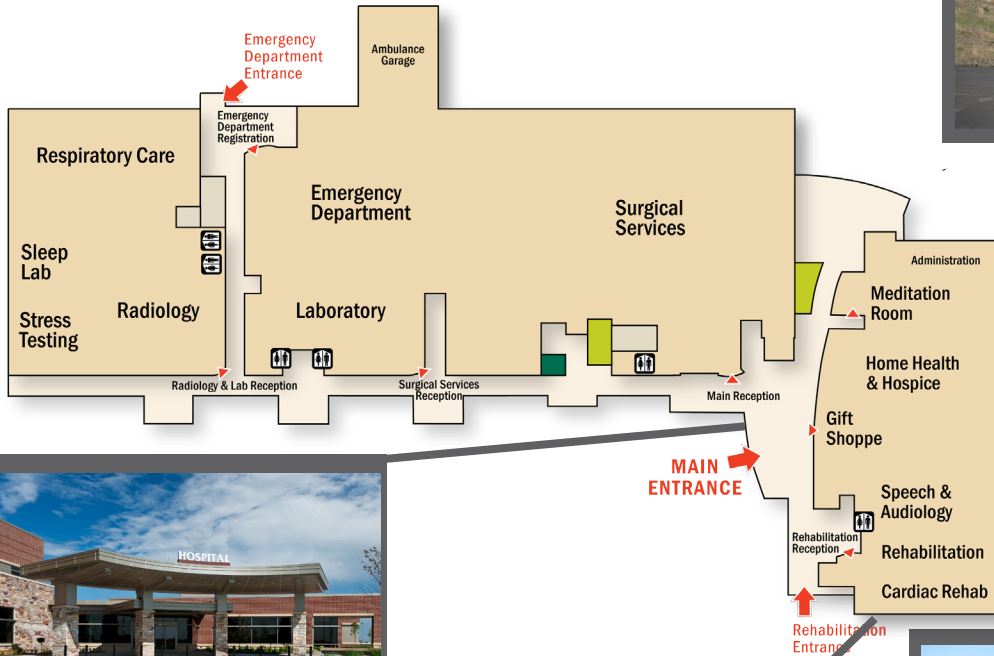
Topography



The topography of the site is taken from before the site was finished since the land around the hospital is still changing and developing as a fairly new facility.

Exterior Views

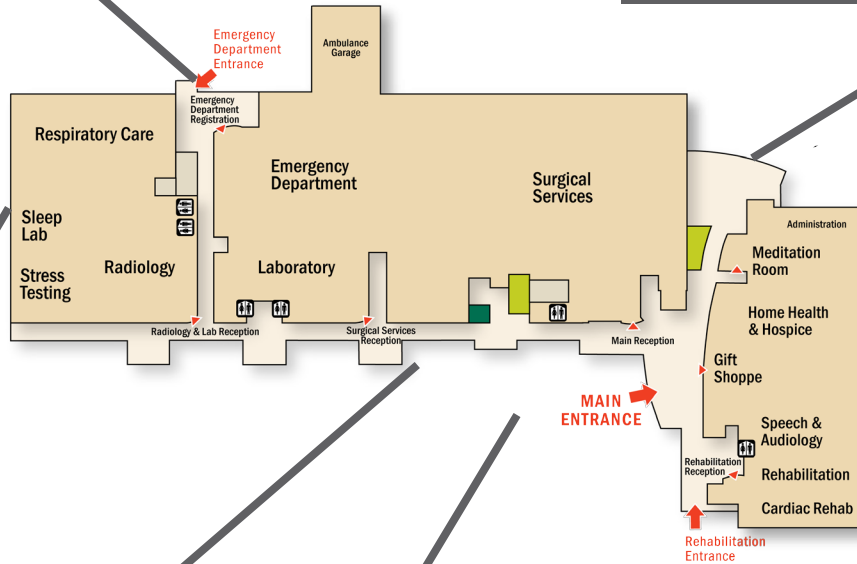
The views of the hospital and surrounding area were taken in the fall in the month of October. In the future the hospital will be surrounded with prairie grasses to give the hospital the feel of being in the prairie of North Dakota. Views from patients' rooms include fields to the south. In the images to the east a glimpse can be seen of the city of Jamestown.



Picture taken by Bill Kenedy



Exterior Views



Hospital Map from Jamestown Regional Medical Center Magazine. All pictures taken by Kristen Ketterling unless noted.

Interior Views

Within the hospital, waiting rooms are located on the first floor. There are three that expand beyond the main edge of the hospital. The image second from the top shows a waiting room from the outside of the building. The interior view of these waiting rooms faces the south, providing a large amount of sunlight. The view to the south faces a field where patients can see the harvesting in the fall and also view the growth of plants in the summer months.

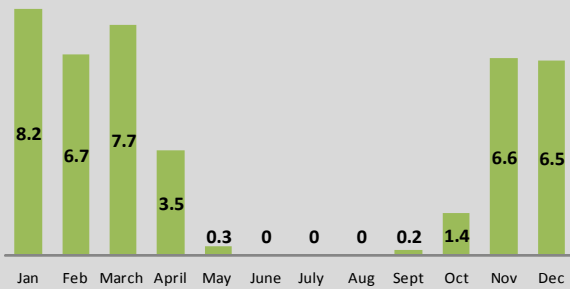
One of the waiting rooms faces a planting of trees and perennials along with a view of a fountain. This provides inspiration to how a healing garden could be linked to the existing hospital through views as well as using it by being in the space.



Weather & Climate

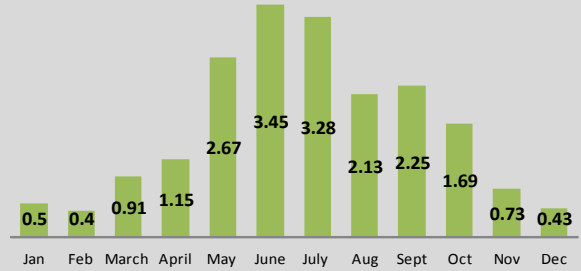
Climate and weather are very important when designing a healing garden. Temperature, wind, snowfall, and rainfall all will be considered when choosing plant material for the garden. North Dakota is known for its long winters, wind and cold temperatures.

Average Monthly Snowfall in Inches



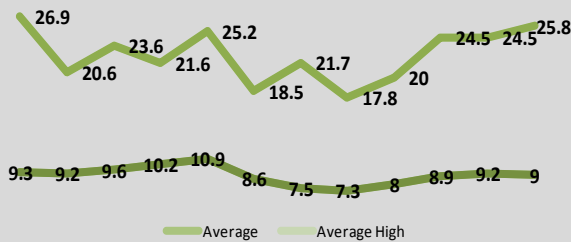
Information from: <http://www.city-data.com/city/Jamestown-North-Dakota.html>

Average Monthly Rainfall in Inches



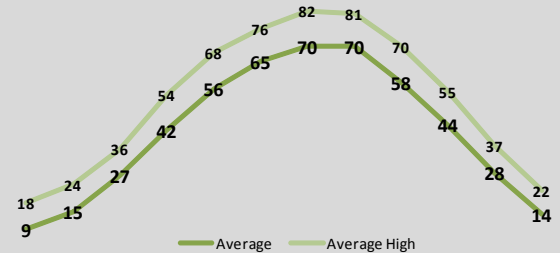
Information from: <http://weather.com/weather/wxclimatology/monthly/graph/58401>

Average Monthly Wind Speed (MPH)



Information from: <http://www.areavibes.com/jamestown-nd/weather/>

Average Monthly Temperatures

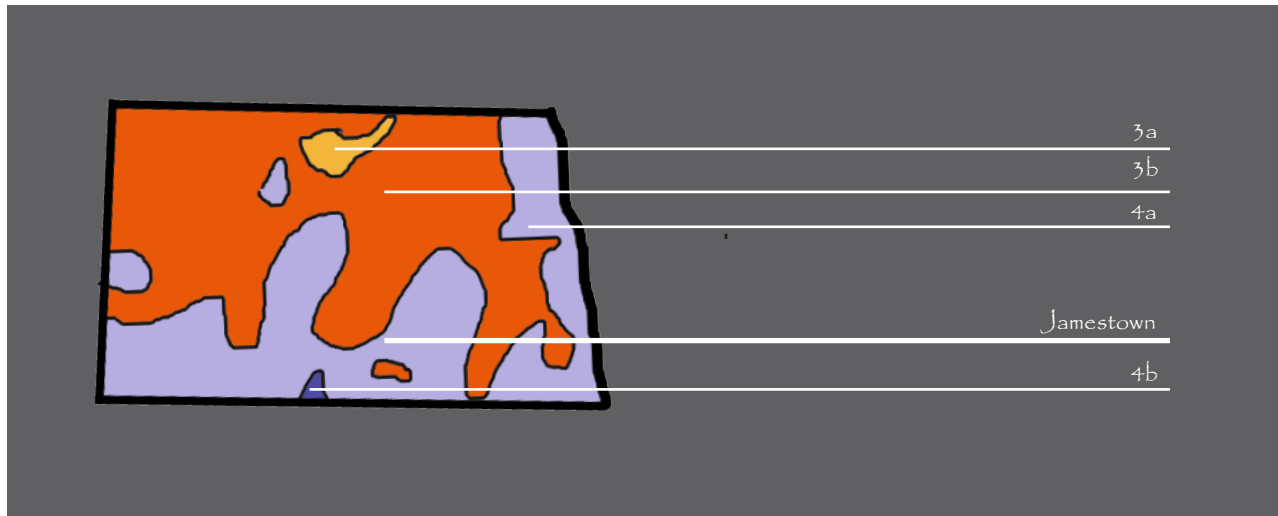


Information from: <http://www.weather.com/weather/wxclimatology/monthly/graph/58401>

Soil Type & Hardiness Zone

Due to North Dakota's cold temperatures it is important to keep the zone hardiness in mind. Jamestown is located in the zone of 4a, which means that plants can tolerate temperatures up to negative 30 to negative 20 degrees.

The soil in the Jamestown area is mostly sandy loam and loam soils. Sandy loam soil is good for backyard gardening, roses, and has a large amount of organic matter. This soil is known as the select fill soil, and where it is used to fill around buildings and houses. Loam soil is the universal soil in growing plants and most plants grow well in loam soil. Loam soil has equal parts of sand, silt, and clay making it a well-rounded soil.



Map information from: <http://www.gardenality.com/Articles/689/Resources/Temperature-and-Hardiness-Zones/USDA-Plant-Hardiness-Zone-Map/default.html>

Through the research and from the design process I plan on creating a template that healing gardens in the Midwest can use as an example and base their design on. I hope from this project that hospitals, clinics, and nursing homes can see the importance of a healing garden and its effect on patients. Goals of this project include views, selecting the right plant material to enhance senses and promote a positive environment, and selecting path material to encourage walking and the healing process, which can enhance health and the process of healing when designed in the right way.

Academic Goals

While finishing this project and finishing my final year in the Landscape Architecture program I plan to gain as much knowledge as possible by keeping a good work ethic, continuing project research, and learning graphic design programs to further my design and education.

Professional Goals

Upon the completion of this thesis project I plan to use this project in my portfolio to obtain a job in the landscape architecture field. A job that focuses on the direct relationship between land and people is one interest of mine along with topics in the health and agricultural fields.

Personal Goals

My personal goals are to maintain a good work ethic and to continue the process of learning wherever I find a job. Technology is constantly changing, and we as designers need to keep ourselves educated, which is why it is important to be constantly learning.

Within this design the requirements are:

A place of seclusion. Places where patients, visitors, and staff have less distraction than in open spaces.

A healing and positive environment. The selection of colors, choices of flowers, and sun/shade amounts will determine the environment of the healing garden.

A direct relation to the hospital. The hospital will be linked to the healing garden either through paths or a main view that will show the healing garden to promote usage.

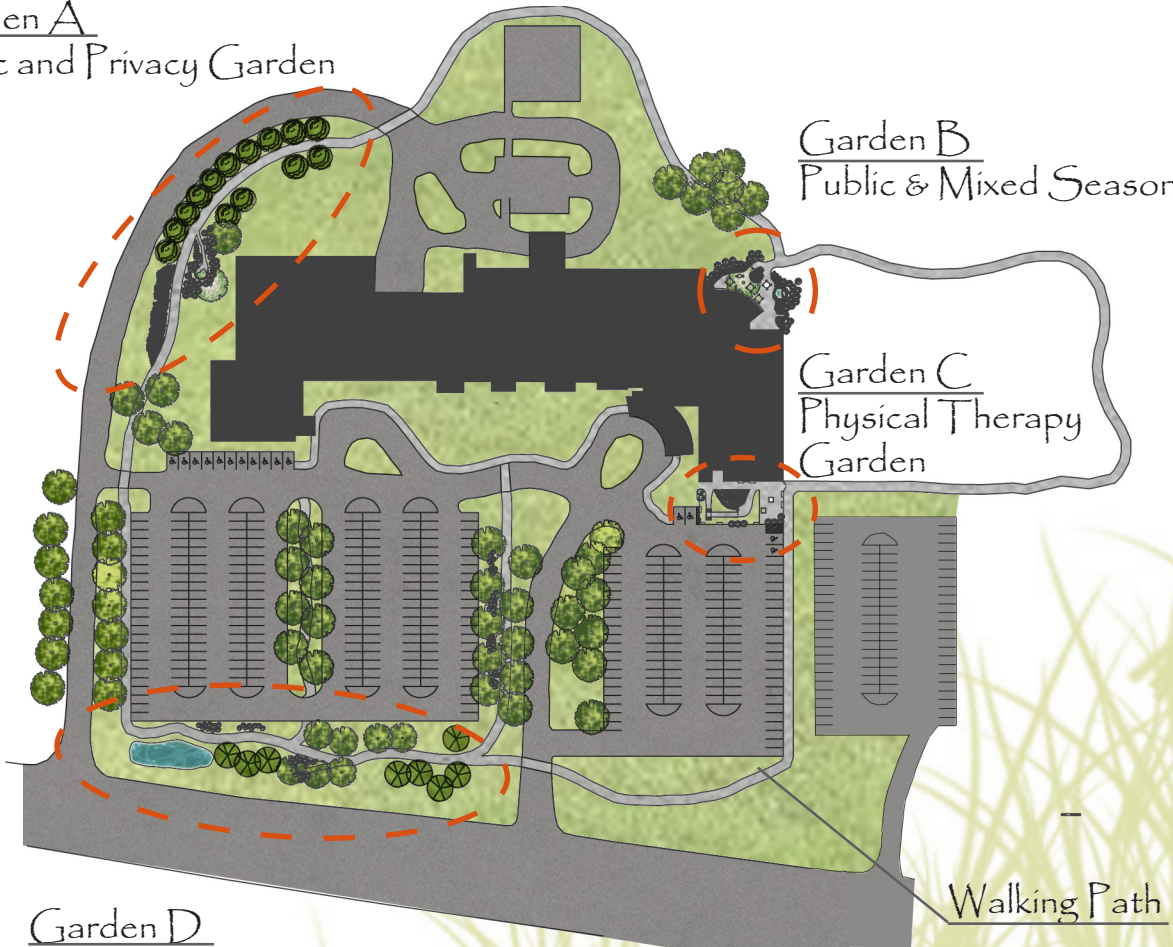
The encouragement of activities. Activities such as gardening can help patients going through physical therapy, and activities such as walking will also be encouraged.

Master Plan

Garden A
Clinic and Privacy Garden

Garden B
Public & Mixed Season Garden

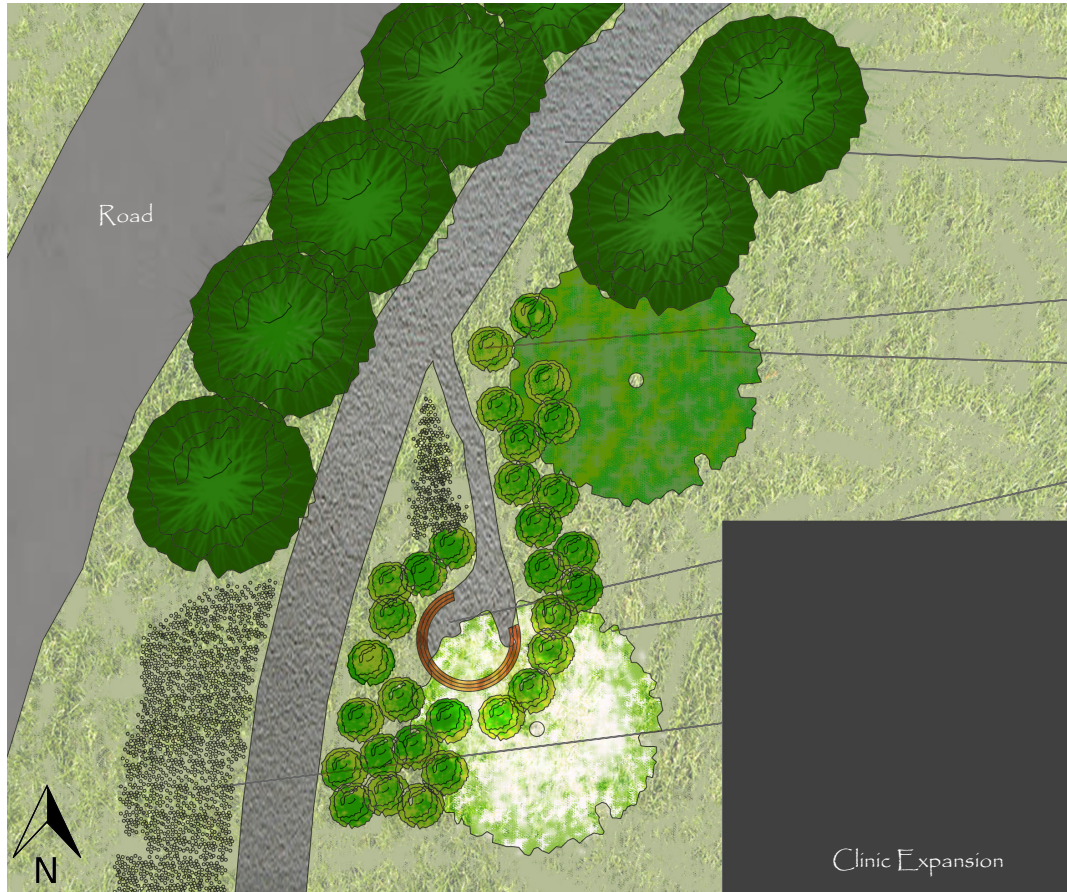
Garden C
Physical Therapy
Garden



Garden D
Patient Viewing Garden

Walking Path

Garden A
Clinic and Privacy Garden



evergreen trees

walking path

shrubs

bur oak

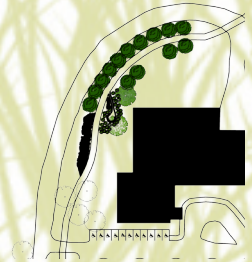
private sitting area

spring snow crab-apple

karl forester grass

Clinic Expansion

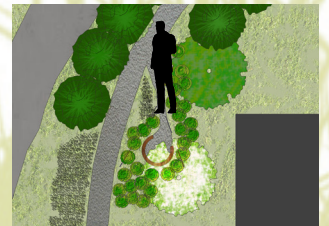
The Clinic Garden focuses on the use of private spaces and views from windows. Due to the possible addition of a cancer center private spaces and walking paths are important. These patients and visitors spend many days in the hospital. This garden will provide an escape and a place of rejuvenation.



Garden A Clinic and Privacy Garden



Privacy areas are made for a maximum of six people. These areas are for small groups or family members to have spend time with one another. These areas can also be used by those who would like relaxing time alone and need an escape from the business of the hospital and clinic. Privacy areas are located in gardens A, B, and D. This perspective is from a privacy area in garden A.



Garden A

Clinic and Privacy Garden

Spring Snow Crab-apple (*Malus* x 'Spring Snow'). This tree will provide shade with white flowers in the spring. <http://www.ci.sl.c.ut.us/Publicservices/Forestry/images/trees2/SpringSnowCrabflower.jpg>



Sugar Plum Lilac (*Syringa* "Sugar Plum Fairy") is a fragrant soft lilac pink flowers, its a great flowering hedge and accent in the garden. Height is around four feet and with a width of four feet. (<http://plants.oaklandnursery.com/12130001/Plant/3305>)



Black Hills Spruce (*Picea glauca* var. *densata*) This trees is a medium size spruce tree very hardy and good for wind blocks. A variety developed by North Dakota State University. Image from: http://www.sharplessauctions.com/05_08_10/BlackHillsSpruce.jpg



Bur Oak (*Quercus macrocarpa*), is a large shade tree, with yellow leaves in the fall. <http://www.coopext.colostate.edu/4dmg/Trees/buroak.htm>

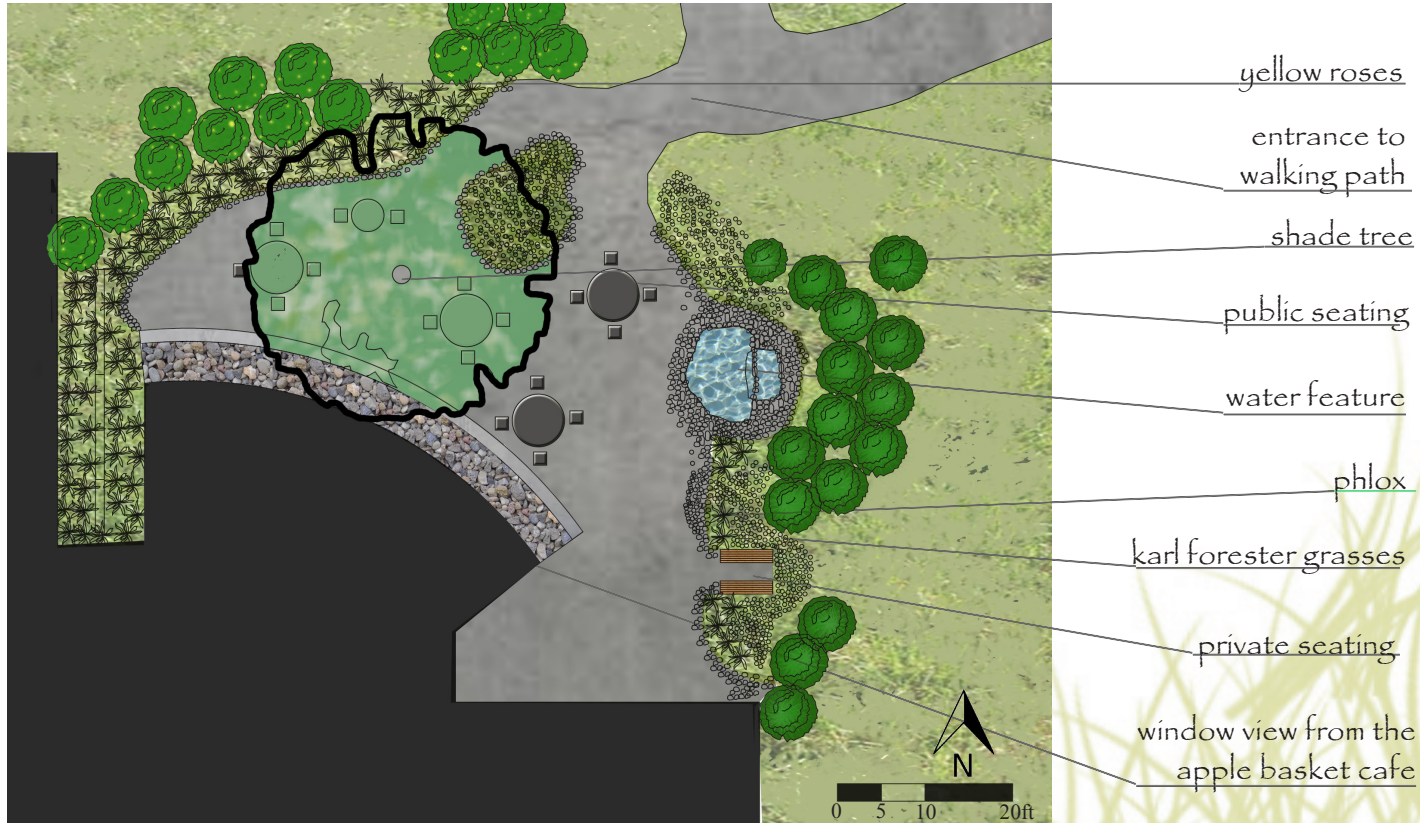


'Karl Forester' - Feather Reed Grass. (*Calamagrostis acutiflora*) This grass grows 4' tall and does well in dry and wet areas. Some grasses reach 7' tall. <http://pics.davesgarden.com/pics/2006/07/29/dwarfconifer/68c605.jpg>



Garden B

Public & Mixed Season Garden



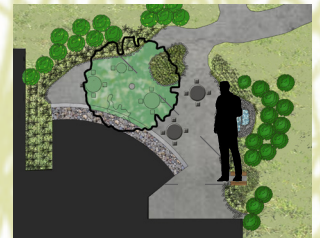
The Public & Mixed Season Garden provides public spaces along with private spaces. This garden will have outdoor seating in the winter along with different plant material in bloom throughout the seasons. Plants on the west side of the plan help create a distance of users of the garden from office windows by also still providing a view to the garden from the office windows. Seating in this area provides seating for around 30 people.

Garden B

Public & Mixed Season Garden

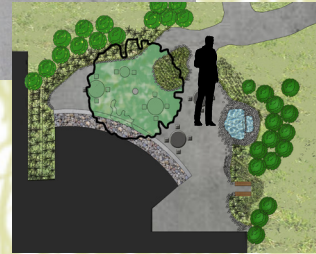


This spring/ summer perspective shows the large public space. This garden will be used for all seasons. A window view from the cafe inside is addressed along with seating for out door dining, scented plans, privacy for offices by the use of a trellis and vines, and a water feature for tranquil sounds, muting cars and louder voices. The Spring Snow Crab-apple will provide shade and good spring color to the garden.



Garden B

Public & Mixed Season Garden



The water feature found is next to a privacy area (located to the right of the water feature) to muffle the sound of people and traffic. Evergreens block the wind from affecting the flow of water. Draining tiles are also located under the rocks to gather excess water that wind may blow. Grass and phlox are both used around the water feature. During the winter months the water feature will be turned off and empty due to cold temperatures.

Garden B

Public & Mixed Season Garden

Spring Snow Crabapple (*Malus x 'Spring Snow'*). This tree will provide shade with white flowers in the spring. Image from: <http://www.ci.slc.ut.us/Publicservices/Forestry/images/trees2/SpringSnowCrabflower.jpg>



Harison's Yellow Rose (*Rosa harisonii*). These roses are known for their scent and will compliment the dark purples and pinks in the rest of the garden. Height can be up to 5' to 6' tall. These shrubs are used where there is minimal interaction of people and can be used as an edge to keep people from specific areas such as near office windows. http://members.fortunecity.com/cnetter/rose_tour/images/d2i23.jpg



These perennials are used in front of roses and as a border in the front area of the privacy area. These plants do best when moist which is important that they are on the north side of the hospital. Phlox in this garden is also used for its very strong scent.



'Franz Schubert' (*Phlox paniculata 'Franz Schubert'*) has a lilac flower color and will grow 30 inches tall

'Russian Violet' (*Phlox subulata*) has a violet purple flower.

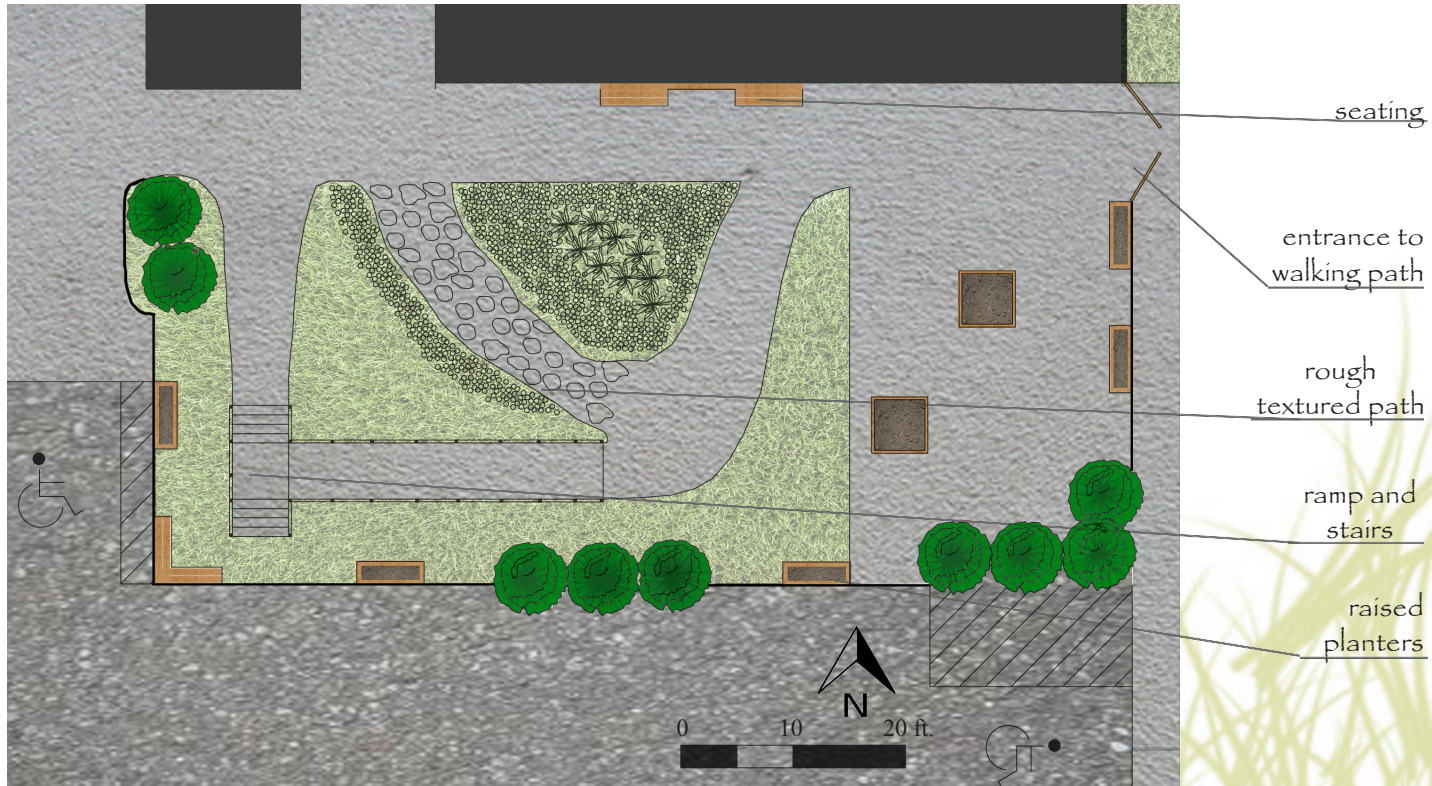
'Karl Forester' - Feather Reed Grass (*Calamagrostis acutiflora*) Grasses are used for the sense of touch as a person walks by on a path, one can reach out their hand and touch the grasses. This grass grows 4' tall and does well in dry and wet areas. Some grasses have reach 7' tall. <http://pics.davesgarden.com/pics/2006/07/29/dwarfconifer/68c605.jpg>



Garden C

Physical Therapy Garden

Hospital - Physical Therapy Department



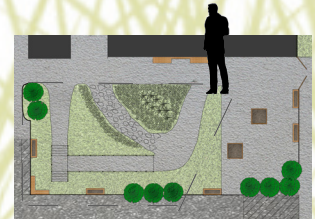
The Physical Therapy Garden focused on providing a place for patients to recover. Ramps, stairs, textured paths, and raised planters all provide an aid in the process of therapy. There are three stations within this garden: stairs and ramp, textured path, and the raised planter area. This allows for a separate area for a patient to work with their therapist.

Garden C

Physical Therapy Garden



Elements that are used in this garden for physical therapy include a ramp, stairway, and raised planters. Raised planters are set at different heights for those with physical disabilities and for those that need to stand for physical therapy. All these elements are to prepare and imitate day to day activities.



Plants in the planters include annuals such as vegetables (tomatoes and beans) and flowers (petunias, impatiens, and geraniums).

Garden C Physical Therapy Garden



This perspective is facing the southeast from the hospital. Heated pavers will be used on the sidewalk, textured path and ramp to provide safety to patients and staff. The corner where the raised planters are located will serve as an area to store excess amounts of snow since planters will not be used during the winter months. On the left side of the image is where the sidewalk will connect with the walking path that surrounds the whole campus.

Garden C

Physical Therapy Garden



wood fence and planters:

The wood fence will be used to block views and create privacy. The planters within the fence will serve as an area for standing therapy at the planters and also selected views making sure the place doesn't feel trapped or too enclosed.



textured path:

The textured path is made up of a river rock imprinted concrete. This path is to help patients adjust to uneven surfaces that they will come across out of therapy. Patients will include those in wheel chairs and those with walkers. In winter months this path will be heated. Due to the textured being stamped will allow for a heated pavor underneath. Image from http://www.dowdconstructionsupply.com/images/SmallRiverRock_2_.jpg



metal hand railing:

This hand railing was chosen because of its durability compared to wood and plastics. The round railing makes for an easy grab in any direction. The railing will be coated in rubber to help with the coldness that comes with touching metal in the winter. Image from <http://nameesco.info/> and info from plastidip.net



push gate:

This gate will be between the main walking path and healing garden C. This will keep walkers from entering this garden, to keep the usage to patients and staff. Located on the east side of the garden.

Garden C

Physical Therapy Garden

helianthus, lemon queen:

Helianthus annuus. This type of sunflower can grow up to 8 feet high. The area it is located in the garden is between the grass along the path. This flower with in the grass will give the garden a natural feel that goes along with the surrounding area. Image from <http://www.burpee.com/perennials/perennial-plants/helianthus-lemon-queen-prod002470>.



karl forester grass:

Calamagrostis acutiflora. This grass grows 4' tall and does well in dry and wet areas. This plant was selected inbetween paths because of it touch. Passer-bys are able to touch the plant with out getting hurt. Image from <http://anastasilandscaping.com/wp-content/uploads/2011/02/Ornamental-Grass-Karl-Foerster.jpg>



holmstrup arborvitae:

Thuja occidentalis 'Holmstrup'. This evergreen shrub can get 8-10 feet tall and around 5 feet wide. The shrub will be used as a boarder around the edge of the healing garden giving privacy and greenery. Image from <http://www.affordabletrees.com/trees?type=&keywords=arborvitae>

* Other plants will include those for the raised planters. Annuals will include vegetables such as beans and tomatoes and flowers such as petunias and inpatients.

Garden D

Patient Viewing Garden



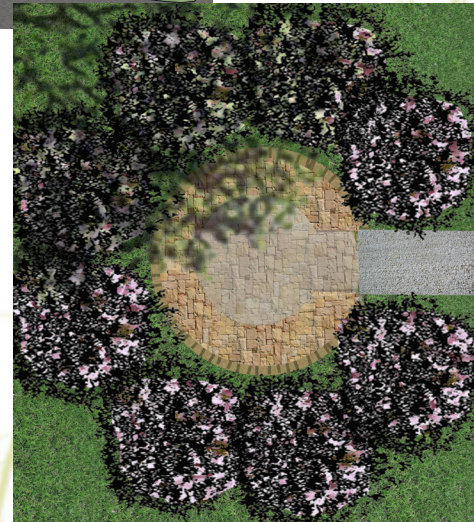
sugar plum lilac

autumn blaze maple

black hills spruce

privacy area

The enlarged plan to the right shows the privacy area. A circled bench area will be surrounded by shrubs to give a sense of seclusion with the addition of a tree to provide shade. The privacy area will be a path off of the main walking path to provide for privacy.



Garden D Patient Viewing Garden



This perspective is from one of the patient's room up on the second floor. The view faces the viewing garden which is near the road entrance. Large trees such as maples and evergreens can be seen from this view. Patients can also see the walking path and be encouraged to venture outside if able to.

Garden D

Patient Viewing Garden

Sugar Plum Lilac (*Syringa* “Sugar Plum Fairy”) is a fragrant soft lilac pink flowers, its a great flowering hedge and accent in the garden. Height is around four feet and with a width of four feet. (<http://plants.oaklandnursery.com/12130001/Plant/3305>)



Black Hills Spruce (*Picea glauca* var. *densata*) This trees is a medium size spruce tree very hardy and good for wind blocks. A variety developed by North Dakota State University. Image from: http://www.sharplessauctions.com/05_08_10/BlackHillsSpruce.jpg

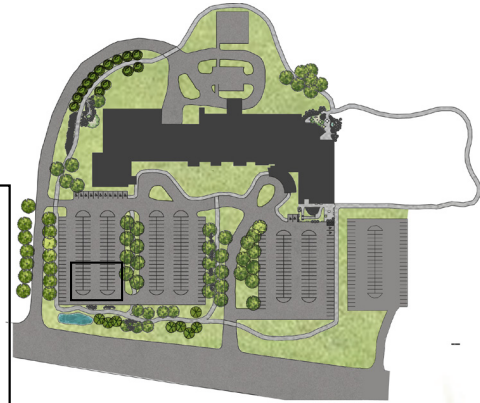
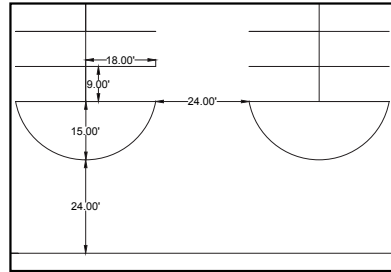
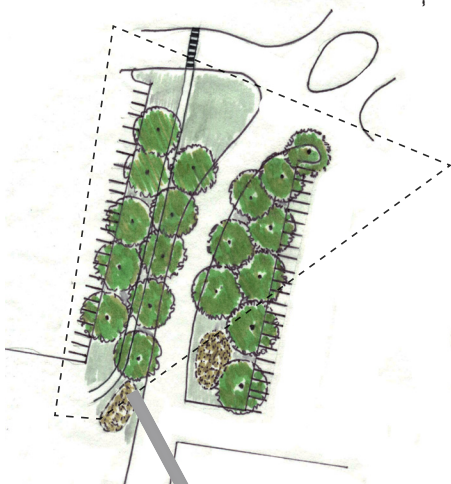


Autumn Blaze Maple (*Acer x freemanii*) This tree is added to the garden because of its brilliant fall color that will be seen from patient's windows. The tree will also provide shade along the walking path. Image from: http://www.aboutmapletrees.com/autumn_blaze_maple_tree.shtml



Parking Lot Redesign

hospital entrance



Existing parking currently holds about 130 cars with the addition of the new parking lot it will hold 240 additional cars



Bur Oaks will line the walking path between the parking lots. Oak signify strength is needed to get through life's obstacles and is an important symbol for the hospital.

Walking Path



WALKING SPEEDS

full walking path
~1/2 mile
~11 minutes

starting at clinic
entrance - ending
at garden B.
2262 ft.
~9 minutes

starting at garden C -
ending at garden B.
2530 ft.
~10 minutes

starting at hospital -
ending at clinic
1015 ft.
~5 minutes



Walking times are all
based on an average
speed of 3.5 mph.
Information from
eatrunplay.com

Walking Path



Typical Section of the walking path



The walking path material will be concrete with a heated pavor underneath for winter time use.



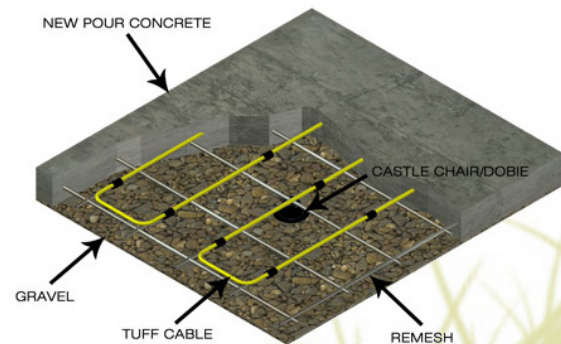
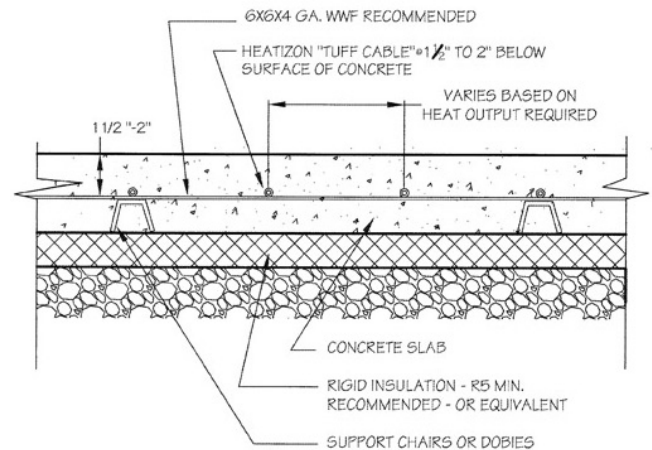
Bur Oak (*Quercus macrocarpa*), is a large shade tree, with yellow leaves in the fall. <http://www.coopext.colostate.edu/4dmg/Trees/buroak.htm>

Heated Pavers

Snow melting on paths and sidewalks is more than a luxury also prevents dangerous conditions. Stairs and ramps become the most popular area for low voltage heating because of their increased hazardousness. Snow that is 4"-6" can be melted through this system

There are two ways that the heating tiles can be turned on:

1. Automatic Controls- the system turns on when weather conditions reach a specified point.
2. Timers- these help keep the system on after winter weather conditions are no longer present and sidewalks and paths still need to be cleared.



Above Image from: Diagrams from: <http://www.tilewarming.com/images/diagrams/TC-New-Concrete.jpg>

Left Image and information from: <http://www.tilewarming.com/snow-melting.html>

Elements of a Healing Garden



Private Spaces:
This provides a place for patients to spend time with their visitors.



Inspiring Paths:
Paths inspire patients to walk and move around the site.



Public Places:
This space should be an area where a large amount of people can congregate.

Water Features:
Are used to mute out unwanted noises and aesthetic purposes.



Raised Planters:
These provide therapy for patients by keeping them active and getting them outside.



How can the design of an exterior garden be used to encourage healing in hospital settings?

Within a hospital setting plant material, inspiring paths, private spaces, public spaces, and physical therapy equipment can all encourage the healing process, both emotionally and physically. At the Jamestown Regional Medical Center, “Healing Life” uses these elements to meet the needs of a Midwest culture and climate in a design which improves the well being of patients, staff and visitors.

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North Dakota State University is a great place to find yourself, discover your strengths and build your character.

- American Horticulture Therapy Association . (n.d.). Horticulture Therapy Education Program. Retrieved December 2, 2011, from <http://www.ktalbot.com/ht.html>
- American Society of Landscape Architects. (2011). West Seoul Lake Park. Retrieved November 3, 2011, from American Society of Landscape Architect: <http://www.asla.org/2011awards/526.html>
- Colorado Hardscapes. (2011). Mike Utley Terrain Park. Retrieved October 28, 2011, from Colorado Hardscapes: http://www.coloradohardscapes.com/case_studies/hospitals_medical/craig.htm
- Copper Marcus, C., & Barnes, M. (1999). Healing Gardens. New York: John Wiley & Sons.
- Flager, J., & Poincelot, R. P. (1994). People-Plant Relationships. Binghamton, NY: Food Product Press.
- Furgeson, M. (n.d.). Sustainable Urban Landscape Information Series. Retrieved August 11, 2011, from Healing Gardens: <http://www.sustland.umn.edu/design/healinggardens.html>
- Gardening for Health. (2000). Retrieved November 2, 2011, from Web MD: <http://www.webmd.com/healthy-aging/features/gardening-health?page=3>
- Haggard, L., & Hosking, S. (1999). Healing the Hospital Environment. New York: E & FN Spon.
- Jefferson, E. A. (2011, February 16). Denver Post. Retrieved October 16, 2011, from Craig's Healing Gardens: http://www.denverpost.com/recommended/ci_17366110
- Kingsbury, N. (1999). Designing with Plants. Portland, Oregon: Timber Press Inc.

- Marcus, C. C. (2011). Landscape design: Patient-specific Healing Gardens. Retrieved September 21, 2011, from World Health Design: <http://www.worldhealthdesign.com/Patient-specific-Healing-Gardens.aspx>
- Methodist Women's Hospital. (2011). Retrieved October 25, 2011, from Methodist Women's Hospital: http://www.bestcare.org/mhsbase/mhs.cfm/SRC=SP/SRCN=serv_detail/GnavID=28/SnavID=/TnavID=/servid=357/hospid=21
- Minter, S. (1993). The Healing Garden. Boston: Charles E Tuttle Company Inc.
- Trivedi, D. (ASLA), & and McCawley, M. (ASLA). (Summer 2011). Healthcare and Therapeutic Design Newsletter, Summer 2011. Retrieved October 16, 2011, from Methodist Women's Hospital healing Garden, Omaha, Nebraska: <http://www.asla.org/ppn/Article.aspx?id=32239>
- Tyson, M. M. (1998). The Healing Landscape: Therapeutic Outdoor Environments. New York: Mc Graw Hill.
- (2011). Retrieved September 27, 2011, from Jamestown Regional Medical Center: http://www.jamestownhospital.com/getpage.php?name=custom_index

Inventory & Analysis Presentation

gardens vs. healing gardens

methodist women's hospital healing garden

HEALING LIFE

How can design of an exterior garden be used to encourage healing in hospital settings?



Private Spaces:
This provides a place for patients to spend time with their visitors.



Inspiring Paths:
Paths inspire patients to walk and move around the site.



Public Places:
This space should be an area where a large amount of people can congregate.



Water Features:
Use used for noise and aesthetic purposes.

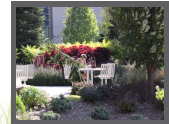


Raised Planters:
These provide therapy for patients by keeping them active and getting them outside.



The Methodist Women's Hospital Healing Garden is a good example of a healing garden because of the features it contains. The bottom left image is of a water feature in the garden. This water feature is designed to block the sound of traffic along with creating a sound for relaxation. The picture in the bottom right shows an image of a public space. This space is to be used by patients, visitors, and hospital staff. Along with these features the garden also contains enclosed seating as well. The Midwest Region has many low healing garden examples. The Jamestown Regional Medical Center will serve as a great location for a healing garden due to its location toward the services it provides.

Location:
Owatu, Nebraska
Methodist Women's Hospital
Completed Summer 2010
Size: 55 Acres
Design:
HPC Architects
Park for the Methodist Women's Hospital focusing on enhancing the healing process.



Kenneth Katerling
LA 172

Image from: <http://www.methodistwomen.org/healthcare/our-services/our-services-2010>
Image from: <http://www.methodistwomen.org/healthcare/our-services/our-services-2010>
Image from: <http://www.methodistwomen.org/healthcare/our-services/our-services-2010>

INVENTORY/ANALYSIS Jamestown Regional Medical Center

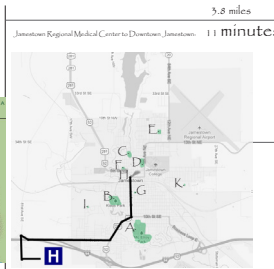


Information: <http://www.jrmed.com>

The Jamestown Medical Center was built one and half years ago and is located in South Central North Dakota. It has 24 beds, 24-hour emergency care. It provides care to over 7,000 people in one different counties by providing certain health care by sending medical staff to each one. This is why the Jamestown Regional Medical Center would serve as a prime location for a healing that can act as a template to other hospitals in the area.
<http://www.methodistwomen.org/healthcare/our-services/our-services-2010>



Map from: <http://www.gisdata.com/northdakota>



Map from: <http://www.jrmed.com>

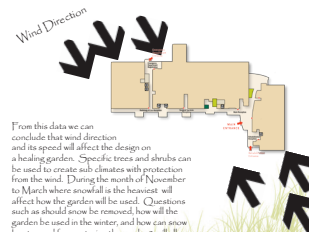
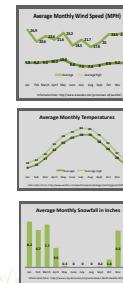
3.8 miles
the city of Jamestown
11 minutes

The population of Jamestown as of July 2007 was 14,427 with an average age of 57 years old. Percentage of males and females are respectively 48% and 52%. All information was collected from <http://www.city-data.com/city/Jamestown.html>

ID	Park	Acres
A	McFoy	5
B	Klaus	1
C	Nicklaus	7
D	Fetzer	6
E	Leopoldt	2
F	Doblinger	2
G	Meslinger	2
H	Buehlsch	1
I	Wilson Arena	1
J	Sulzen-Bernardt	11

All parks contain paved areas along with recreation area such as playgrounds and sport fields. Only one running track exists throughout all the parks.

weather/ climate

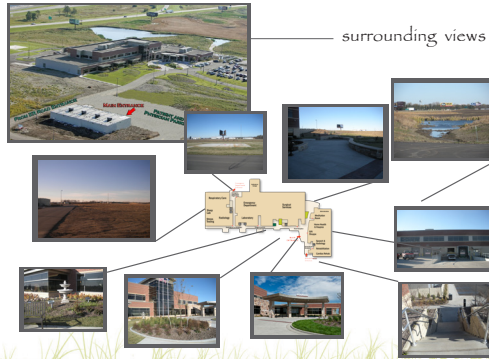
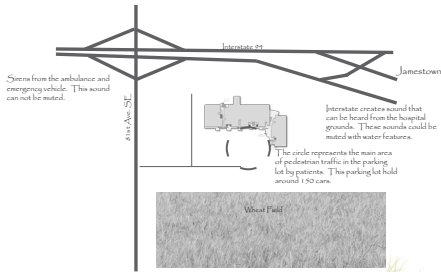


From this data we can conclude that wind direction and its speed will affect the design on a healing garden. Specific trees and shrubs can be used to create sub-climates with protection from the wind. During the month of November to March where snowfall is the heaviest will affect how the garden will be used. Questions such as should snow be removed, how will the garden be used in the winter, and how can snow be stopped from entering the garden? will all need to be answered.

INVENTORY/ANALYSIS

jamestown regional medical center

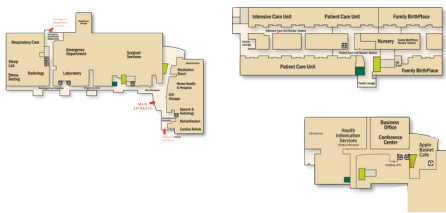
Sound Obstacles and Traffic Circulation



interior components

INVENTORY/ANALYSIS

jamestown regional medical center



The Jamestown Regional Medical Center offers many services. The services that pertain to a healing garden include:

Rehabilitation Services

Autology
Physical Therapy
Occupational Therapy

Cardiac Rehab



services

existing plants & materials



Some of the existing vegetation includes

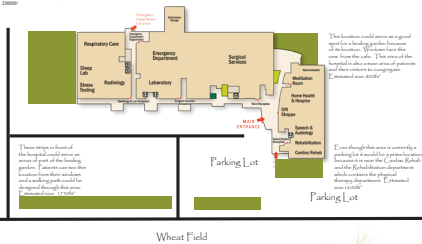
Perennials:
Karl Forester Grass, Sedum, Daylilies, Coreopsis, and Purple Coneflower
Trees:
Bur Oak, Thunderchild Crabapple

Most plantings are along the building two burns are located on the south side of the hospital along with grasses surrounding the whole grounds of the hospital.

THE NEXT STEP

potential garden locations

This spot serves as a potential location because it is not in the line of high pedestrian or vehicle traffic, which prevents safety for patients and their visitors. This area also contains a high amount of trees that can be used for many different uses. Estimated size: 2000sq



Proposed Plants:

Trees
Firs and Junipers can be used for the strong scent and their ability to provide a screen and create a micro climate. In winters these buffers can also act as snow fences as well.

Perennials
Lilies, day lilies, roses, and phlox can all be used for their strong scents that they emit.

Annual Plants

Various kind of vegetables (carrots, beans, peas, and tomatoes). These provide an edible reward for patients. Various kind of annual flowers (impatiens, droniums, petunia, & sweet potato ivy)

potential elements

The needs of the Physical Therapy Department:

Areas for walking: Indoor facilities usually use a treadmill
Tasks that are specific for using for using specific motor skills

Such as using your hand to garden
Lifting weights to build strength for arms
Steps for using for knee movements



Heated Pavors:

Snow melting on paths and sidewalks is more than a luxury is also prevents dangerous conditions. Stairs and ramps become the most popular area for low voltage heating because of their increased hazardousness. Snow that is 4"-6" can be melted through this system. There are two ways that the heating tiles can be turned on:

1. Automatic Controls: the system turns on when weather conditions reach a specified point.

2. Timers: these help keep the system on after winter weather conditions are no longer present and sidewalks and paths still need to be cleared.



potential elements



Proposed Lighting:

Proposed lighting will be on the outside of the building or added lights along the side walk to help light up public spaces in the garden to make it a safe place to visit during the night.

Mid-Term Presentation

Inventory/Analysis

JRMC (Jamestown, ND)



Picture taken by Bill Kennedy



Map from <http://www.groceriesincartime.com/images/us/north-dakota.jpg>

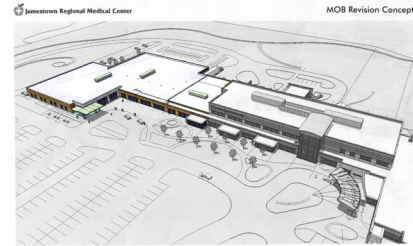
Main Services:

- Physical Therapy
- Rehabilitation
- Cardiac Rehab

Serves:

9 different counties affecting 55,000 people
Out Patient Care, Sending staff to smaller towns near by

Inventory/Analysis



April 2011 Revised
Architects

MOB Revision Concepts

© 2011 Architects

The Expansion and Additions Will Include:

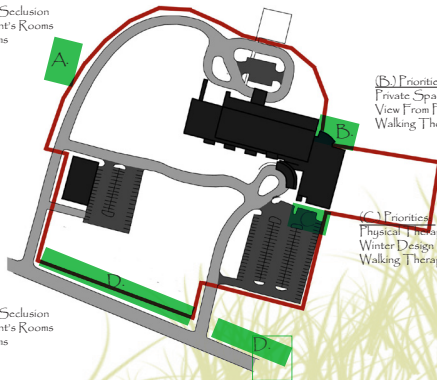
- Clinic
- Possible Cancer Center
- Addition of Parking Lots
- New Views to Address

Concept Planning

priorities met

(A) Priorities:

- Private Spaces/ Seclusion
- Views From Patient's Rooms and Waiting Rooms
- Winter Design
- Walking Therapy



- (B) Priorities:
- Private Spaces/ Seclusion
 - View From Public Space
 - Walking Therapy

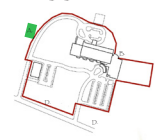
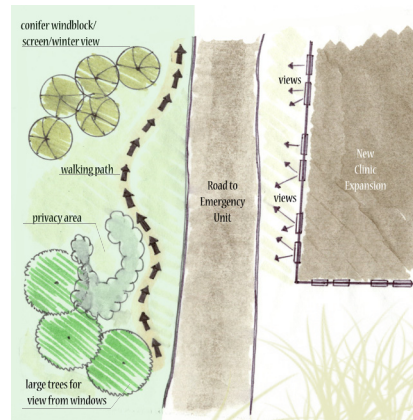
- (C) Priorities:
- Physical Therapy
 - Winter Design
 - Walking Therapy

(D) Priorities:

- Private Spaces/ Seclusion
- Views From Patient's Rooms and Waiting Rooms
- Winter Design
- Walking Therapy

Concept Planning

healing garden A



Priorities:

- Private Spaces/ Seclusion,
- Views From Patient's Rooms and Waiting Rooms, Winter Design, and Walking Therapy

Concept Planning

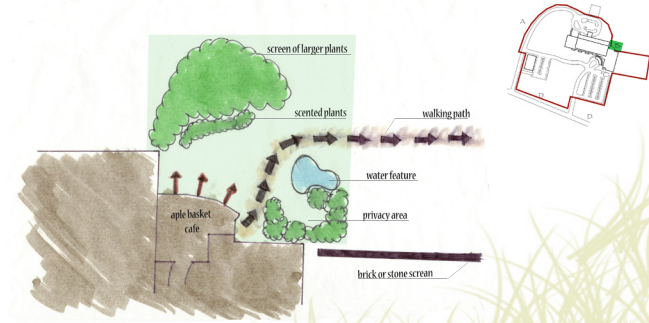
healing garden A



Materials: Bur Oaks will signify strength, heated pavers to melt snow and keep pathways clean, lighting structures the same along already installed sidewalks to create unity throughout the hospital campus.

Concept Planning

healing garden B

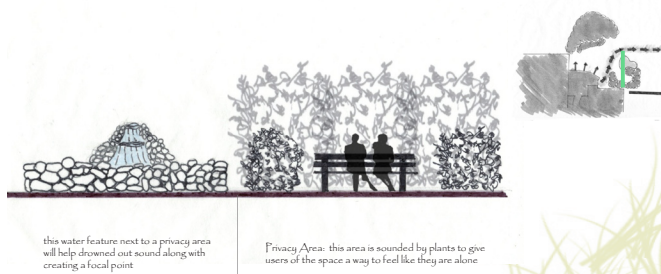


Priorities:

View From Public Space,
Walking Therapy, and Private
Spaces/Seclusion

Concept Planning

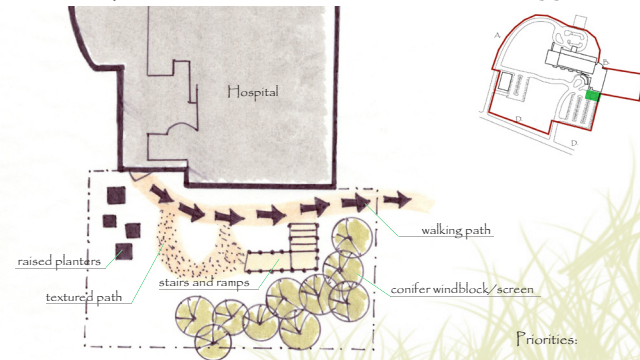
healing garden B



Materials: rock for water feature. (rocks should be similar to those in the fields to match the wheat fields around the perimeter of the hospital campus, shrubs will be dense and of medium size.

Concept Planning

healing garden C

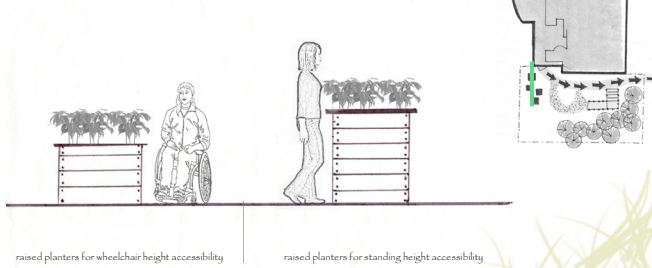


Priorities:

Winter Design,
Walking Therapy, and
Physical Therapy

Concept Planning

healing garden C



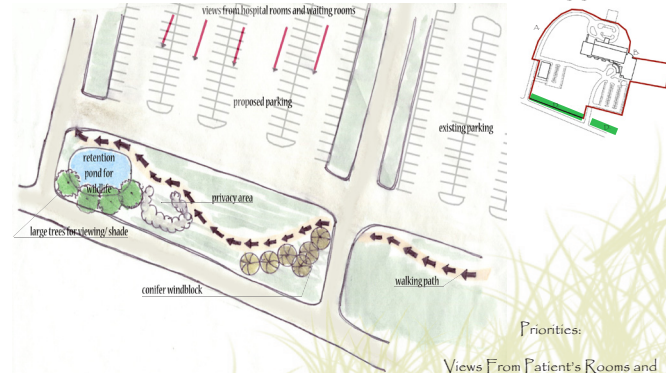
raised planters for wheelchair height accessibility

raised planters for standing height accessibility

Materials: planters will include soil and can be made out of cedar creating a color that will match the exterior of the medical center. another material for the rest of this healing garden will include a type of stamped concrete.

Concept Planning

healing garden D



Priorities:

Views From Patient's Rooms and Waiting Rooms, Winter Design, Walking Therapy, and Private Spaces/ Seclusion

Concept Planning

healing garden D



trees and shrubs create privacy and shade

sitting area

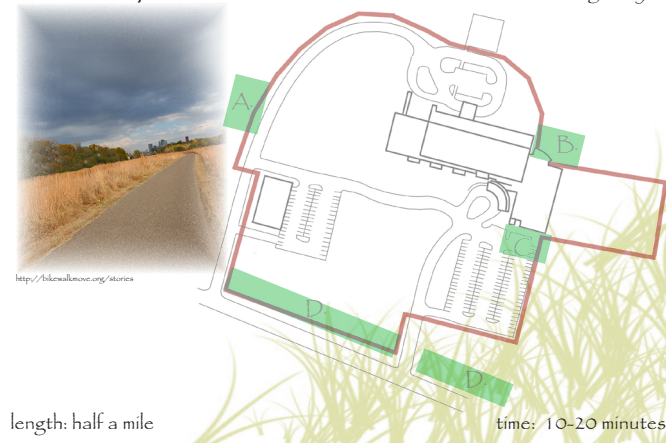
privacy area in the ground helps create more privacy and protection from wind

walking path

Materials include large shade trees (conifers and deciduous trees such as maples for a fall color), large dense shrubs, the red brick used on the hospital's exterior for the sitting bench, heated pavers for the walking path, and lighting for the walking path as well.

Concept Planning

walking unity



<http://bitwalkmore.org/stories>

length: half a mile

time: 10-20 minutes

Final Presentation

Inventory & Analysis

JRMC (Jamestown, ND)



Picture taken by Bill Kennedy

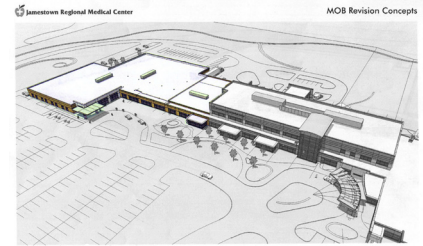
Main Services:
 Physical Therapy
 Rehabilitation
 Cardiac Rehab
 Services:

9 different counties affecting 55,000 people
 Out Patient Care, Sending staff to smaller towns nearby



Map from <http://map.grodnal.com/online.com/images/usa/northdakota.jpg>

Inventory & Analysis



Proposed Expansion Perspective

The Expansion and Additions Will Include:
 Clinic
 Possible Cancer Center
 Addition of Parking Lots
 New Views to Address

Inventory & Analysis

research



Private Spaces:
 This provides a place for patients to spend time with their visitors.



Raised Planters:
 These provide therapy for patients by keeping them active and getting them outside.



Inspiring Paths:
 Paths inspire patients to walk and move around the site.



Public Places:
 This space should be an area where a large amount of people can congregate.



Water Features:
 Are used to mute out unwanted noises and for aesthetic purposes.

Statistics:

A study in Sweden on postoperative heart patients found that those who look at a landscape during their healing process had lower anxiety, used less pain medication, and spent less time in the hospital compared to patients who didn't look at a landscape. Patients who looked at an abstract piece of art did worse than those who had no abstract art or landscape. (Gardening for Health, 2000).

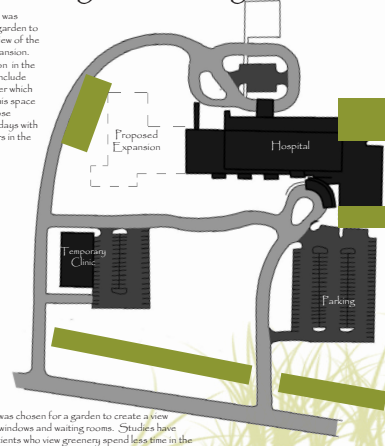
A survey was conducted which asked people what features were helpful in the healing process. The top two results included flowers, colors, and seasonal changes (69%) and birds, water and fresh air (50%) (Copper Marcus & Barnes, 1998).

Image from: <http://www.healthcareexpansion.com/abstract-art-landscape-therapy>
 4th Picture from: http://www.humanities.ca/images/Health_Parkway_01.jpg
 Public Place image from: <http://www.ahg.org/ahg/ahg020201>

Inventory & Analysis

location selections

This location was chosen for a garden to address the view of the new clinic expansion. The expansion in the future could include a cancer center which would make this space usable for those spending long days with family members in the cancer unit.



This location was chosen as a healing garden because this area serves patients, visitors, and staff. From a window in the hospital a view can be framed by also encouraging visitors, patients, and staff to go outside and use the garden for rejuvenation.

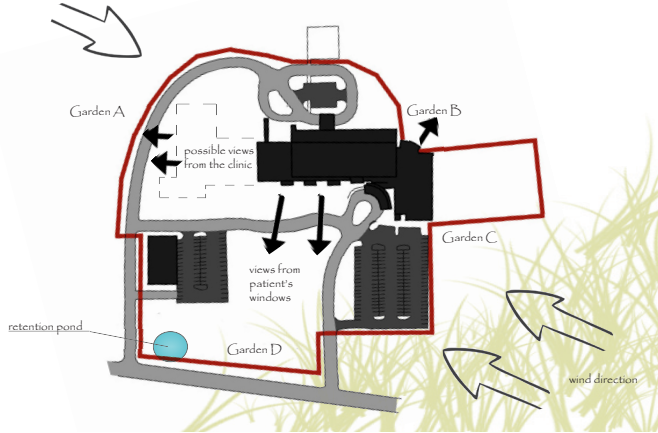
This location was chosen for a healing garden because of its close location to the cardiac rehab department and physical therapy department. Both of these departments can benefit from a healing garden containing specific equipment.

Green areas show proposed gardens

This location was chosen for a garden to create a view from patient's windows and waiting rooms. Studies have shown that patients who view greenery spend less time in the hospital and recover faster.

Healing Gardens

concept map



Master Planning

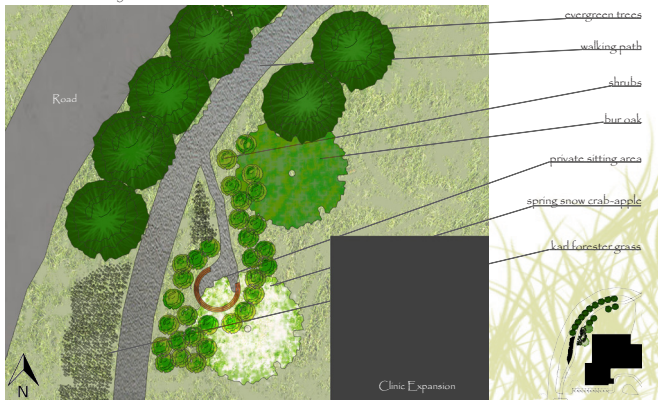
healing gardens



Healing Garden A

Clinic and Privacy Garden

master plan



Healing Garden A

privacy area perspective



Privacy areas are made for a maximum of six people. These areas are for small groups or family members to have spend time with one another. These areas can also be used by those who would like relaxing time alone and need an escape from the business of the hospital and clinic. Privacy areas are located in gardens A, B, and D. This perspective is from a privacy area in garden A.



Healing Garden A

plant material

Spring Snow Crab-apple (Malus x 'Spring Snow'). This tree will provide shade with white flowers in the spring. <http://www.cals.utah.edu/PublicServices/Forestry/images/trees2/SpringSnowCrabflower.jpg>



Sugar Plum [Iloc (Syringa 'Sugar Plum Fairy')] is a fragrant soft lilac pink flowers, its a great flowering hedge and accent in the garden. Height is around four feet and with a width of four feet. (<http://plants.calsdnursery.com/1213000/T/loc/3303>)



Black Hills Spruce (Picea glauca var. densata) This trees is a medium size spruce tree very hardy and good for wind blocks. A variety developed by North Dakota State University. Image from http://www.abrplssociations.com/01_08_10/BlackHillsSpruce.jpg



Bur Oak (Quercus macrocarpa), is a large shade tree, with yellow leaves in the fall. <http://www.azcpet.com/california/ohio/4/day/Tree/BurOak.htm>



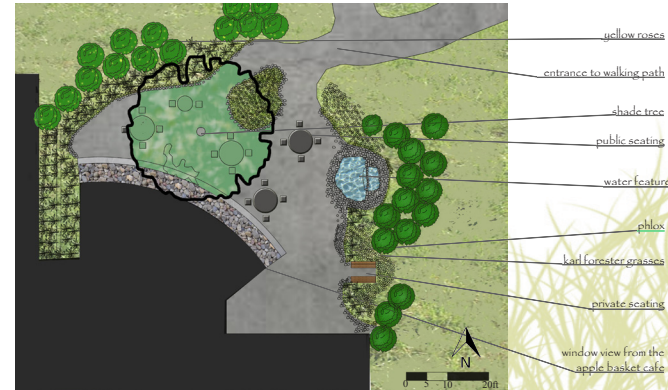
'Karl Forester' Feather Reed Grass (Calamagrostis acutiflora) This grass grows 4' tall and does well in dry and wet areas. Some grasses reach 7' tall. http://www.landscapeonline.com/files/2006/07/257_dwarfcalm105/681605.jpg



Healing Garden B

Public & Mixed Season Garden

master plan



Healing Garden B

public space perspective



This spring/ summer perspective shows the large public space. This garden will be used for all seasons. A window view from the cafe inside is addressed along with seating for outdoor dining, scented plants, privacy for offices by the use of a trellis and vines, and a water feature for tranquil sounds, muting cars and louder voices. The Spring Snow Crab-apple will provide shade and good spring color to the garden.



Healing Garden B

water feature perspective



The water feature found is next to a privacy area (located to the right of the water feature) to muffle the sound of people and traffic. Evergreens block the wind from affecting the flow of water. Draining tiles are also located under the rocks to gather excess water that wind may blow. Grass and phlox are both used around the water feature. During the winter months the water feature will be turned off and empty due to cold temperatures.



Healing Garden B

plant material

Spring Snow Crabapple (*Malus 'Spring Snow'*). This tree will provide shade with white flowers in the spring. Image from <http://www.ci.lakota.us/PublicServices/Forestry/images/trees2/SpringSnowCrabflower.jpg>



Harrison's Yellow Rose (*Rosa harrisoni*). These roses are known for their scent and will compliment the dark purples and pinks in the rest of the garden. Height can be up to 9' to 6' tall. These shrubs are used where there is minimal interaction of people and can be used as an edge to keep people from specific areas such as near office windows. http://members.fortunecity.com/creative/rose_bush/images/d223.jpg



These perennials are used in front of roses and as a border in the front area of the privacy area. These plants do best when moist which is important that they are on the north side of the hospital.

Phlox in this garden is also used for its very strong scent.



Franz Schubert (*Phlox paniculata* Franz Schubert) has a lilac flower color and will grow 30 inches tall.

Russian Violet (*Phlox subulata*) has a violet purple flower.



Karl Forester - Feather Reed Grass (*Calamagrostis acutiflora*). Grasses are used for the sense of touch as a person walks by on a path, one can reach out their hand and touch the grasses. This grass grows 4' tall and does well in dry and wet areas. Some grasses have reach 7' tall. <http://pics.themagickline.com/pics/2006/07/22/shrub/calm07-08-003.jpg>

Healing Garden C

summer perspective



Elements that are used in this garden for physical therapy include a ramp, stairway, and raised planters. Raised planters are set at different heights for those with physical disabilities and for those that need to stand for physical therapy. All these elements are to prepare and imitate day to day activities.

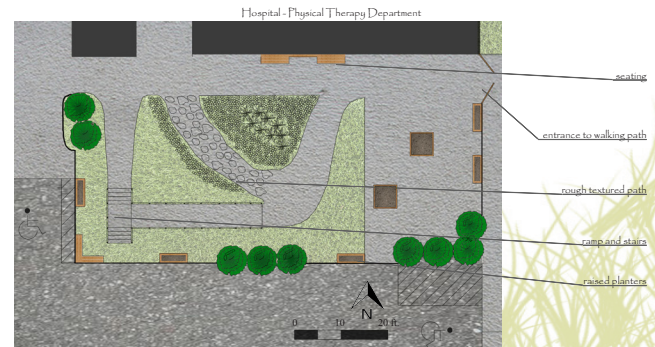
Plants in the planters include annuals such as vegetables (tomatoes and beans) and flowers (petunias, impatiens, geraniums).



Healing Garden C

Physical Therapy Garden

master plan

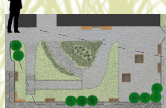


Healing Garden C

winter perspective



This perspective is facing the southeast from the hospital. Heated pavers will be used on the sidewalk, textured path and ramp to provide safety to patients and staff. The corner where the raised planters are located will serve as an area to store excess amounts of snow since planters will not be used during the winter months. On the left side of the image is where the sidewalk will connect with the walking path that surrounds the whole campus.



Healing Garden C — materials

wood fence and planters:



The wood fence will be used to block views and create privacy. The planters within the fence will serve as an area for standing therapy at the planters and also selected views making sure the place doesn't feel trapped or too enclosed.

textured path:



The textured path is made up of a river rock imprinted concrete. This path is to help patients adjust to uneven surfaces that they will come across out of therapy. Patients will include those in wheel chairs and those with walkers. In winter months this path will be heated. Due to the textured being stamped will allow for a heated pavor underneath. Image from http://www.donadconstructionsupply.com/images/SmallRiverRock_2.jpg

metal hand railing:



This hand railing was chosen because of its durability compared to wood and plastics. The round railing makes for an easy grab in any direction. The railing will be coated in rubber to help with the coldness that comes with touching metal in the winter. Image from <https://www.enca.com/and/info-from-plasticip.net>

push gate:



This gate will be between the main walking path and healing garden C. This will keep walkers from entering this garden, to keep the usage to patients and staff. Located on the east side of the garden.

Healing Garden C — plant material

helianthus, lemon queen:

Helianthus annuus. This type of sunflower can grow up to 8 feet high. The area it is located in the garden is between the grass along the path. This flower with in the grass will give the garden a natural feel that goes along with the surrounding area. Image from <http://www.burpee.com/personally/personal-plant/helianthus-lemon-queen-prod002470>



Karl forester grass:



Calamagrostis acutiflora. This grass grows 4' tall and does well in dry and wet areas. This plant was selected in-between paths because of its touch. Passer-bys are able to touch the plant with out getting hurt. Image from <http://www.austlandscaping.com/wp-content/uploads/2011/02/Ornamental-Grass-KarlForester.jpg>



holmstrup arborvitae:

Thuja occidentalis 'Holmstrup'. This evergreen shrub can get 8-10 feet tall and around 5 feet wide. The shrub will be used as a boarder around the edge of the healing garden giving privacy and greenery. Image from <http://www.atlantablendecor.com/wordpress/wp-content/uploads/2012/08/Thuja-occidentalis-holmstrup.jpg>

* Other plants will include those for the raised planters. Annuals will include vegetables such as beans and tomatoes and flowers such as petunias and impatiens.

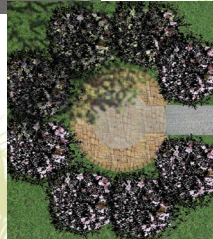
Healing Garden D — master plan



sugar plum lilac
autumn blaze maple

black hills spruce
privacy area

The enlarged plan to the right shows the privacy area. A circled bench area will be surrounded by shrubs to give a sense of seclusion with the addition of a tree to provide shade. The privacy area will be a path off of the main walking path to provide for privacy.



Healing Garden D — patient's window perspective



This perspective is from one of the patient's room up on the second floor. The view faces the viewing garden which is near the road entrance. Large trees such as maples and evergreens can be seen from this view. Patients can also see the waking path and be encouraged to venture outside if able to.

Healing Garden D

plant material

Sugar Plum Lilac (*Syringa "Sugar Plum Fairy"*) is a fragrant soft lilac pink flowers, its a great flowering hedge and accent in the garden. Height is around four feet and with a width of four feet. <http://plants.usda.gov/nature/12133001/Plant/5305>



Black Hills Spruce (*Picea glauca var. densata*) This tree is a medium size spruce tree very hardy and good for wind blocks. A variety developed by North Dakota State University. Image from http://www.abnplantsolutions.com/03_08_13/BlackHillsSpruce.jpg

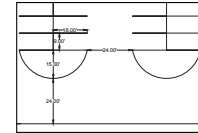
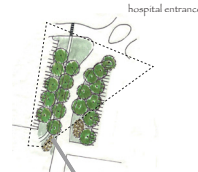


Autumn Blaze Maple (*Acer x freemanii*) This tree is added to the garden because of its brilliant fall color that will be seen from patient's windows. The tree will also provide shade along the walking path. Image from http://www.aboutmapletrees.com/autumn_blaze_maple_tree.shtml



Parking Lot

parking redesign



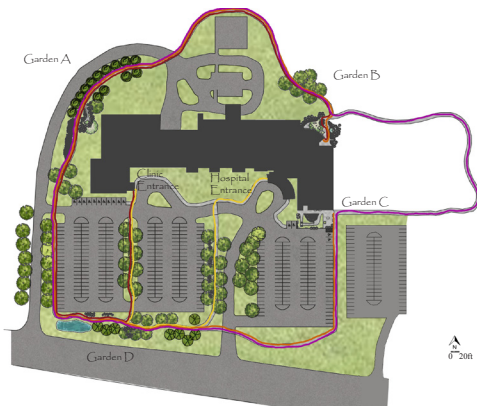
Existing parking currently holds about 130 cars with the addition of the new parking lot it will hold 240 additional cars



Bur Oaks will line the walking path between the parking lots. Oak signity strength is needed to get through life's obstacles and is an important symbol for the hospital.

Walking Path

time paths



WALKING SPEEDS

full walking path
~1/2 mile
~11 minutes

starting at clinic entrance - ending at garden B
2262 ft.
~9 minutes

starting at garden C - ending at garden B
2550 ft.
~10 minutes

starting at hospital - ending at clinic
1015 ft.
~3 minutes

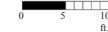
Walking times are all based on an average speed of 3.5 mph. Information from ustrunplay.com

Walking Path

day & night



Typical Section of the walking path



The walking path material will be concrete with a heated pavor underneath for winter time use.



Bur Oak (*Quercus macrocarpa*) is a large shade tree, with yellow leaves in the fall. <http://www.coopercolostate.edu/long/11marchbur oak.htm>

Priorities of Healing Gardens

Jamestown Regional Medical Center



Private Spaces:
This provides a place for patients to spend time with their visitors.



Inspiring Paths:
Paths inspire patients to walk and move around the site.



Water Features:
Are used to mute out unwanted noises and aesthetic purposes.



Raised Planters:
These provide therapy for patients by keeping them active and getting them outside.



Public Places:
This space should be an area where a large amount of people can congregate.

Healing Life



How can the design of an exterior garden be used to encourage healing in hospital settings?



Within a hospital setting plant material, inspiring paths, private spaces, public spaces, and physical therapy equipment can all encourage the healing process, both emotionally and physically. At the Jamestown Regional Medical Center, "Healing Life" uses these elements to meet the needs of a Midwest culture and climate in a design which improves the well being of patients, staff and visitors.

