From Dying to Living:
A Healing Garden in the
Environment Facilitating
Healing and Well-being

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26 April 2002
LA 404 Comprehensive Project
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From Dying to Living:
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LA 404 Comprehensive Project

Figure 1. AIDS Indiana.
Image adapted from Mapquest.com, 2002 and World AIDS
Day Campaign, 2002

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From Dying to Living: A Healing Garden in the HIV/AIDS Home Environment Facilitating Healing and Well-being

Abstract:

HIV (Human immunodeficiency virus), transferable through blood, semen, or other bodily fluids, attacks the body’s immune system. Months to years after a person is infected with HIV, this virus destroys the T-cells. When the T-cells are destroyed, the immune system can no longer defend the body against diseases and cancers (Yourhealth, 2002). Stress enables HIV to spread more quickly in infected persons and prevents antiretroviral drugs from restoring immune system function (Vasquez, 1999). When the body’s T-cells drop below a certain count, a person is considered to have the severe immunological disorder, AIDS (Acquired immune Deficiency Syndrome) (Dictionary.com, 2001).

There is no known cure for AIDS (Yourhealth, 2002). Nearly 10,000 Hoosiers had been diagnosed with HIV/AIDS through December 2000 (Aidswalkindianapolis, 2002). Of the people living with HIV/AIDS in Indianapolis, 73% are between the ages of 20-39, too young an age for people to be diagnosed with a fatal disease.

This master plan was created for HIV/AIDS clients of Open Door Community HIV Services of Muncie, Indiana to meet some of their physical, emotional, and psychological needs. The design began with a vision for a setting in which HIV/AIDS clients’ overall well-being could be promoted through relief from physical symptoms, stress reduction, and improvement in the overall sense of well-being (increased level of functioning) in a healing garden.

The design solution led to the creation of a series of healing garden spaces for HIV/AIDS clients in a home environment that, through the design, land, and plants, were aesthetically pleasing but also beneficial to health. In this home environment, the clients might find relief from physical symptoms, stress reduction, and improvement in their overall sense of well-being.
INTRODUCTION

“Nature is but another name for health”

- Henry David Thoreau

Overview

Healing gardens are a relatively new subtopic in the field of landscape architecture. The field is still being shaped today, and because of this fact, I believe that my study is a positive contribution to the profession. Healing gardens have been a part of the healing arts since the medieval times (Gerlach-Spriggs et al., 1998).

What is a healing garden? A Healing Garden (Cooper-Marcus and Barnes, 1999) is a green outdoor/indoor space within a healthcare setting designed for use that promotes overall well-being through:

1. Relief from physical symptoms
2. Stress reduction
3. Improvement in the overall sense of well-being (increased level of functioning).

Figure 2. Trinity Hospice.
Image courtesy of Ellerbrook, 2002
A healing garden is a healing landscape. It is intended to evoke rhythms that energize the body, inform the spirit, and ultimately enhance the recuperative powers inherent in an infirm body or mind. When recovery is not possible, intimate contact with the cycle and flow of nature may yet calm the spirit (Gerlach-Spriggs et al., 1998). There have been studies indicating that nature has a positive effect on the physical healing process.

Roger Ulrich, a psychophysicologist, conducted many studies from 1972 to 1984 on how the environment is intrinsically linked to the psyche and healing. His 1984 study entitled “View through a window may influence recovery from surgery” documented that patients who were able to see nature from their sick bed had statistically shorter stays in the hospital, lower analgesic use, and fewer complaints during recovery. In fact, they had an accelerated healing process. Ulrich also discovered that views of nature seem to provide a form of psychologically measurable stress reduction – within minutes (Gerlach-Spriggs et al., 1998). In this new way of looking at healthcare design, land and plants are not only aesthetically pleasing, but also beneficial to health. Since it is important to me that any design does more for the user than simply being aesthetically pleasing, I chose to investigate and design a healing garden.

In first looking at study groups, I was struck by the HIV/AIDS population. The main group of this disease were men and women in their 20s and 30s. Not only were these young people acquiring a disease; they were dying at a very early age. In 1998, 46,247 people were diagnosed HIV positive in the United States, resulting in 13,426 deaths that year due to AIDS (Center for Disease Control, 2001). It was hard for me to identify with other potential focus groups, such as Alzheimer's patients, because they are elderly. They have had a chance to live long lives. It was much easier to identify with HIV/AIDS individuals who were closer to my own age – and to feel their mortality hit a little closer to home.

What is HIV/AIDS? HIV (Human immunodeficiency virus) attacks the body's immune system. Months to years after a person is infected with HIV, this virus destroys the T-cells. When the T-cells are destroyed, the immune system can no longer defend the body against diseases and cancers (Yourhealth, 2002). When the body's T-cell count drops
beneath a certain point, a person is considered to have the severe immunological disorder, AIDS (Acquired Immune Deficiency Syndrome) (Dictionary.com, 2001). There is no known cure for AIDS. It is a fatal disease (Yourhealth, 2002).

Figure 3. HIV Virus.

![Image of HIV Virus](image)

Image courtesy of Russell Kightley, 1991

Nearly 10,000 Hoosiers had been diagnosed with HIV/AIDS through December 2000 (Aidswalkindianapolis, 2002). Among people in Indiana with an AIDS diagnosis, 90% are men and 10% are women (Aidswalkindianapolis, 2002). Of the people living with HIV/AIDS in Indianapolis:

- 73% are between the ages of 20-39
- 42% are African American or Hispanic
- 14% are women
- 66% of children are African American or Hispanic (Aidswalkindianapolis, 2002).

Of the HIV and AIDS cases reported in Indiana through December 2000:

- Total cases:
  - HIV-3279
  - AIDS-2706
- Adults and adolescents:
  - HIV-3209
  - AIDS-2693 (Aidswalkindianapolis, 2002).
With these overwhelming numbers, it is obvious that there is a need in Indiana, and in the Indianapolis area for resources and consideration for this particular focus group. Due to this need and the fact that I can identify to a certain degree with these people, I chose this group to be my design focus.

Huge, new technological breakthroughs in medications developed in the past six years specifically for HIV have allowed us as a society to command a small amount of control over HIV life timetables and has changed infected individuals' lives dramatically. This control has allowed those who are HIV positive to regain and maintain their health while leading independent lives in their own homes instead of being diagnosed and given an estimated six months to live. Instead of imminent death overwhelming them, they are able to go back to school, maintain or find new jobs, and are able to lead their own lives with their families and friends (Fosnaugh, 2002). Due to societal stress (fear and lack of knowledge or understanding) and the general fear of death found in young people, there are still hardships – physical, emotional, and spiritual – that the HIV population must deal with. Also, stress enables HIV to spread more quickly in infected persons and prevents antiretroviral drugs from restoring immune system function (Vasquez, 1999), which obviously is a problem for this particular group of people.

With HIV positive people leading longer, more normal lives, instead of being shipped away to a hospice or convalescent home, they are able to live at home. With fewer people getting sick and/or dying of AIDS because of the new medications, there is next to no need for hospices today (Wheat, 2001). Because of this fact, I moved my project focus from the hospice to the home environment along with the “state of the disease” – from dying to living.

**Problem Statement**

Create a series of healing garden spaces for HIV/AIDS clients in a home environment (apartment community) that, through design, land, and plants, are not only aesthetically pleasing, but beneficial to physical, emotional, and spiritual health and well-being.

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Definitions of Key Terms

- HIV – Human Immunodeficiency Virus: A retrovirus that causes AIDS by infecting helper T cells of the immune system. The most common serotype, HIV-1, is distributed worldwide, while HIV-2 is primarily confined to West Africa (Dictionary.com, 2002).

- AIDS – Acquired Immune Deficiency Syndrome: A severe immunological disorder caused by the retrovirus HIV, resulting in a defect in cell-mediated immune response that is manifested by increased susceptibility to opportunistic infections and to certain rare cancers, especially Kaposi’s sarcoma. It is transmitted primarily by exposure to contaminated body fluids, especially blood and semen (Dictionary.com, 2002).

- HOPWA – Housing Opportunities for People with AIDS.

- Healing Garden – Any green indoor/outdoor space that is designed for use while utilizing beneficial healing processes that promote overall well (Cooper-Marcus and Barnes, 1999).

- Emotional Healing – Individualized ability to cope or come to terms with traumatic situations (adapted from Cooper-Marcus and Barnes, 1999).

- Home environment – Includes the place where you live by yourself or with family, inside and out, your yard, your sense of home. Very often times this home environment is psychologically contrived (“home is where the heart is”) (adapted from Dictionary.com, 2002).

- Landscape Architecture – The profession that integrates site analysis, design, master planning, and technical skills to meet the needs of people and simultaneously promote stewardship of the natural and built environment (American Society of Landscape Architects, 2001).
REVIEW OF THE RELATED LITERATURE

Historical Perspective

The earliest healing gardens date back to medieval times and earlier. According to the Christian Bible, the very first living place for humans was a pleasure garden of sorts, where no worries existed: within the Garden of Eden. Once ordered from the Garden of Eden by God, Adam and Eve wished for the times in which there were no sicknesses or problems, to return to the healing garden.

From the “birth of history,” the restorative garden has been utilized as a “reflection of individual emotion, cultural training, and social support” in Persia, Egypt, and the Orient (Gerlach-Spriggs et al., 1998). In the middle Ages, Europe began to model these gardens. Due to a need for security, walls became a common trait of these gardens, creating what is now known as the cloister garden. These cloister gardens were divided into four squares, following Persian and the Garden of Eden traditions. These four squares were often thought to be significant of myriad things, including the four seasons. Plant material and the sky helped the occupants to keep track of seasonal change, but the closed walls were meant to encourage a reflective mood. From the cloister gardens came the monastery version of a healing garden: the paradise garden. The paradise garden was often walled, and circular in shape, with the main function being that of a meditation place. The main purpose, however, was always the same: to be closer to God. In the preparation for the last judgment, all Christians were enjoined to do good works (Gerlach-Spriggs et al., 1998). Monasteries became places of hospitality where the sick were taken care of. These monasteries became the first place in which the healing environment was coupled with nature in the form of the cloister gardens (Gerlach-Spriggs et al., 1998).

Upon the decline of monasteries as healing places, around the 1600s, the significance of the healing garden declined as well. Open spaces in conjunction with hospitals got lost for the most part. A few hospitals maintained the idea of nature incorporated with healing. Light and vegetation were also key elements in these few institutions. In St. Mary’s, a
Catholic hospital in San Francisco, historic uses were recorded as having a roof garden on which patients were wheeled in their hospital beds (Cooper-Marcus and Barnes, 1999).

As the years passed, the idea that nature and healing were linked diminished with the technical advances of medicine: surgery, medicines, drugs, and X-rays. This could also be interpreted as analogous to the ignored psyche and spirit in the treatment of illness (Cooper-Marcus, and Barnes, 1999). At a hospice, however, medical treatment is secondary to nursing and spiritual care, and a garden is often found nearby.

The earliest known hospices were begun in medieval times, in Europe and in monasteries in the wilderness. They were not only for the sick and dying, but also opened their doors to the hungry traveler, the woman in labor, the needy poor, the orphan, or the leper. Eventually, a distinction was made between the hospice and the hospital. The hospice was a permanent place for the poor, orphaned, insane and the incurable. The hospital gave temporary medical care to sick people. The primary function of the hospice did not become accommodation for dying people until 1879, when Our Lady’s Hospice for the Dying was founded. The inspiration for the modern hospice was founded in 1967 – St. Christopher’s Hospice. This was due mainly to Dr. Cicely Saunders who developed work in pain control and counseling of dying patients and their families, and in turn, founded the St. Christopher’s Hospice to feature these important facets. Hillhaven Hospice, the first freestanding hospice, opened in Tucson, Arizona in 1977 (Gerlach-Spriggs et al., 1998).

Around 1979, the AIDS epidemic arrived in the United States and lent fresh urgency to the hospice movement. The gay communities of San Francisco, New York, and Boston began to establish residential hospices for those who could not be cared for in their own homes. Though segregated at first, HIV/AIDS patients are no longer being separated from other patients (Gerlach-Spriggs et al., 1998).
Relevant Theory

Due to Roger Ulrich's many studies, there is a scientific base for therapeutic gardens and the idea of a greening approach to healing. In his "View through a window may influence recovery from surgery" (Ulrich, 1984), Ulrich measured blood pressure, post-surgical days to discharge, nature and amounts of painkillers, and number of complaints. His findings noted a significant difference in patients who had a window looking out on a natural setting. They had lower blood pressure, went home sooner, asked for fewer painkillers, and had fewer complaints. Other disciplines critical to therapeutic design include: environmental psychology, nursing, social workers, health psychology, psychophysiology, psychoneuroimmunology, behavioral medicine, architecture, site planning, and interior designing. Combining these professions will allow us as designers to holistically facilitate the physical, emotional, and psychological needs of HIV/AIDS individuals.

Case Studies

- Trinity Hospice, Clapham, London (Cooper-Marcus, and Barnes, 1999 and Wood, 2002)

Founded in 1891, Trinity Hospice is the oldest hospice in England. It is located in a residential neighborhood in a Georgian building. It looks out over Clapham Common, an extensive area of public open space. This hospice offers free care to the terminally ill (the majority of which are cancer patients) of several south and central London boroughs. John Medhurst and David Foreman designed the two-acres of gardens in 1983. There are three segments: a long rectangular area, a square space, and a narrow connection between the two. The gardens are also appreciable from the rooms of patients above who aren’t mobile. A waterfall/sculptural element provides texture and sound to the gardens. The most consistent users of the gardens are relatives of the inpatients who need some meditative time. The staff also frequently
utilizes this space. Patients come out, in the summer months, alone or accompanied by family or staff. High boundary walls provide a feeling of seclusion and protection from the outside world. The gardens prove to be a valuable tool for attracting donors, with a flat lawn area for fund-raising events. The gardens appeal to all of the senses, gathering spaces exist for solitary or group interaction. The view over Clapham Common gives a sense of expansiveness, of “borrowed landscape.”

- Joseph Weld Hospice, Dorchester, UK (Cooper-Marcus, and Barnes, 1999)

Founded in 1994, the facility has fourteen beds and a day center. This hospice was funded entirely by charitable contributions and offers free service to its patients. It was designed by architect Stephen Hebb using traditional styles and materials. The site has 4.5 acres, and gardens cover approximately two-thirds of this area. The landscape architect for this project was Michael Oldham. The garden is designed in four different levels, each having its own character. A small lawn edged with trees and shrubs comprises the first level. A fountain, illuminated at night, serves as a focal point. A large waterfall of rough blocks of stone is one of two waterfalls along the pathway to the lower level channel. A mound of earth provides more enclosed site boundaries and buffers noise from trains and cars. There is a strong visual connection from the building and the surrounding landscape. The most regular users of the site are the relatives of the inpatients, who are looking for solace. Spring and summer, patients are taken around the garden. Staff also uses the gardens frequently. Fundraising also takes place onsite for about 2000 guests once a year. The garden blends functionally and works in an aesthetically pleasing manner with the hospice building. Benches are placed throughout for maximum multisensory experiences.
• Laguna Honda Hospice Memorial Garden, San Francisco, California (Cooper-Marcus, and Barnes, 1999)

This hospice was founded in 1866, and sits on a 64-acre site. It began as an almshouse for the city’s indigent population, and after the 1906 earthquake, it was rebuilt as a shelter for the indigent homeless. In 1926, the present 1,147-bed hospital was built, and today is the nation’s largest municipally owned and operated long-term care facility. The garden is found in a narrow courtyard between the ward-wings of the old pavilion style hospital. The garden is shaped like a flag on a pole. The larger, square portion is approximately 40’ x 40’. Two smaller gardens lead to an access road. The buildings themselves are five stories of buff-stucco. Many subspaces exist for an individual or a small group to find privacy. Japanese-style water features provide white noise. Special spaces are found outside “Quiet Rooms,” places where imminently dying patients and their families stay. Outside is jasmine and bamboo, along with a globe-shaped water feature, giving the Quiet Room a sense of peace and the idea of death being natural instead of a frantic and mechanized experience. The gardens are designed to appeal to all of the senses. The garden is highly used by patients, staff, family members, and volunteers, especially during warmer months. The garden is wheelchair-accessible, sheltered from the wind, and private. Too much shade created on cool days reduces the use of the garden.

• California Pacific Medical Center, Garden Campus, San Francisco (Cooper-Marcus, and Barnes, 1995)

Founded in 1915 as the Home for the Incurables, the facility has gone through a variety of changes to today’s use as a post-acute care and hospice for AIDS and other chronically ill patients. The average stay is 30 days. The original garden was a formal herb garden. Modified several times, the plan now incorporates many different spaces, including patio areas, shelters, and a volleyball/basketball court. The garden has a

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mature feel; much of the original perimeter planting remains. The garden is approximately 95’ x 135’, with one-third of this being a heavily planted embankment. The access is convenient, and draws people into the garden. The hospital building is two and a half stories tall. The entire facility has an intimate feeling, and looks like an expensive old hotel rather than a medical center. The garden creates intimacy, and an almost “forgotten” timeless feeling. The layout is such that it is equally convenient to travel from place to place using an indoor or outdoor route. Users have been observed with a preference for the outdoor route. Some staff reported that patients have requested to be moved outdoors in the last minutes, so they could die outdoors. The best aspect of the garden is the quiet atmosphere and the sense of being removed from the hospital. Aromatic plants are especially appreciated.

- The Hospice at the Texas Medical Center, Houston, Texas (Gerlach-Spriggs, et al., 1998)

The goals of this institution are to relieve the social and institutional isolation of the dying and the grieving, to adapt the techniques of modern science to their care, and to provide psychological and spiritual support and assistance to them. The hospice began with Marion Wilson. In September of 1891, Wilson had received grants and donations enough to compile a team of a nurse, a social worker, a part-time consulting physician, and trained volunteers, to develop the New Age Hospice. This team began offering free home care hospice service to patients, but this only lasted five months due to exhausted funds. The real founding year came in 1982 when Wilson was able to enroll Barbara Bush to serve as honorary chairwoman of the hospice board. In 1989, the Texas Medical Center, a nonprofit medical real estate organization, leased the mansion of former mayor Oscar Holcombe to the New Age Group, and they officially changed their name to the Hospice at the Texas Medical Center. Then, funds were raised and a 25-bed inpatient facility and chapel were built. January 12, 1995, the new inpatient center opened its doors. The hospice takes all...
corners, regardless of their ability to pay, and raises about $800,000 + a year to cover the costs of those who cannot pay. To the hospice, a garden, or simply to be in a garden, is to experience both the normal and the transcendent; gardens offer an opportunity to reaffirm life in the midst of illness. The architectural firm of Graham B. Luhn developed a Master Plan for the site so that the new chapel and hospice care center would co-exist in unity with the gardens. The plans included restoration as the guiding principle. Herbert Pickworth, landscape architect, used advice and historic precedent of Pat Flemming, the original designer, to complete the design. The buildings and a small brick wall that does not block views to a bayou conservation land beyond enclose the gardens. The design of the gardens is tasteful, sympathetic, and quiet. The garden forms and materials are taken from the estate tradition. Large trees on a lawn, hedges, gazebo, pool and a fountain comprise the main elements found in the garden. Tudor style and modern influence are harmonized in the garden style.

"Fit" of the Study

This case study will be a vessel for changing the field of Therapeutic Design. This field is but a newly emerging one, and has room for shaping it through new case studies. Therapeutic gardens can often be found in the hospital environment, and have been proven to be effective in speeding the healing process (Ulrich, 1984). This study proposes to bring nature together with therapy to enhance healing in the home environment. The state of the illness has changed rapidly in the past five years, and there is not such a grand separation of HIV infected individuals and the rest of society. Not only are they able to live independent, healthy lives, but should they come to the point where they are going to die, they want to be able to do so in a relaxing, comfortable setting: their own home. This is an area that has not been concentrated on as much in the field of therapeutic design. This case study will open up the pathway for many more to follow in the field of Landscape Architecture.
Model Projects

One of the most important case studies utilized, as a model project, was Trinity Hospice in London. From correspondence with the gardener and a personal visit to the site, I was able to determine that this particular hospice garden was successful in design and use. In addition, the head gardener, Anne Wood, shared valuable insights into design and plant materials. The gardens were used as passive healing spaces, which was one of the main goals of my design.

RATIONALE FOR SITE CONTEXT AND SITE SELECTIONS

Overview

My site, the setting for a healing garden in the home environment, is at Interurban Apartments (see Figure 4 and 8), and is located in Muncie, Indiana (see Figure 5). I chose this particular location due to its close proximity to Ball State University and the layout of the existing apartment buildings. Interurban Apartments is located on N. Granville Avenue on the Northeast side of the city (see Figures 6 and 7). There are four separate structures housing a total of 20 apartment units. Three of the four structures enclose a large, grassy courtyard where the larger part of a healing garden would be constructed. The site is in close proximity to several city parks, including McCulloch Park, the White River, and the Cardinal Greenway (see Figure 6). This allows residents to have an option of activities nearby that may not be possible in the healing garden setting, such as going for a walk or riding a bicycle.
Figure 4. Interurban Apartments

Image courtesy of Ellerbrook, 2002

Figure 5. Location Map: State Level: State of Indiana


Not to scale.

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Figure 6. Location Map: Community level: NE Muncie (using ArcView GIS)

Figure 7. Location map: Neighborhood level (using ArcView GIS)
## Opportunities and Constraints

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<td>+ Morning sun, afternoon shade: HIV medications often lead to sun sensitivity</td>
<td>- Courtyard borders busy city street (Granville): need for buffer</td>
</tr>
<tr>
<td>+ Close proximity to parks, White River, and Minnetrista Cultural Center:</td>
<td>- Location is not within walking distance to amenities such as a grocery</td>
</tr>
<tr>
<td>opportunity for activities in large or small groups (see Figure 9)</td>
<td>store</td>
</tr>
<tr>
<td>+ Close proximity to Cardinal Greenway: opportunity to take a scenic walk</td>
<td>- Large number of apartment units exceeds the amount that is typically found</td>
</tr>
<tr>
<td>or bicycle ride (see Figures 10a and 10b)</td>
<td>in a HOPWA subsidized community</td>
</tr>
<tr>
<td>+ Located in a well-maintained, middle class neighborhood (see Figure 11)</td>
<td></td>
</tr>
<tr>
<td>+ Large, open courtyard: perfect setting for a garden</td>
<td></td>
</tr>
<tr>
<td>+ Apartment walks and entrances are handicapped accessible</td>
<td></td>
</tr>
</tbody>
</table>
Figure 9. White River as seen from Muncie, Indiana

Figure 10a. Cardinal Greenway Map
Map courtesy of Cardinal Greenway, 2002

Figure 10b. Greenway Activities
Image courtesy of Waynet.org, 2002
PROJECT REQUIREMENTS

Project Goals

1. Create a soothing, restful environment for the residents/user(s)
   a. Plants with soothing sounds (ornamental grasses, trees)
   b. Plants with pleasant scents known to improve mood
   c. Plants that stimulate and soothe through color
   d. Running water (soothing white noise)
   e. Stress reduction through aromatherapy, nature, color therapy
   f. Seating in shade for photosensitivity

2. Maintain a sense of privacy and security in physical surroundings
   a. Walls and vegetation on N. Granville Avenue to create an edge between personal space, group space, and the outside world
   b. Establish individual territories
   c. Easily recognizable landmarks around the site for orientation and security (fountain, gazebo, stream)
   d. Direct access for residents, both visual and physical, to and from indoors/outdoors
3. Provide a sense of the continuous and cyclical quality of life through use of materials and an opportunity for heightened awareness of nature, seasons, places, and time
   a. Seasonal renewal (Perennials, shrubs, trees, evergreens)
   b. Continuity (Perennials, evergreens, structures)
   c. Sustenance (edible plants such as tomatoes and herbs)
   d. Plantings with cultural and geographic interest
   e. Plantings that attract wildlife such as birds and butterflies
   f. Spirituality/Renewal through use of eastern cultural elements

4. Provide variety of passive and active amenities and opportunity for activities
   a. Seating (sun and shade)/bird watching
   b. Aesthetically pleasing security lighting at a human/pedestrian scale
   c. Container gardens for residents to instill a sense of belonging and usefulness, provide something for them to care for
   d. Open space (lawn) for games such as badminton

5. Maximize sense of independence and freedom
   a. Open environment (social and physical) for residents to maintain independent roles

Client Description and Goals

My client, Open Door Community HIV Services, is located in Muncie, Indiana. They provide care coordination for their clients to help with their medical, dental, housing, financial, and emotional needs. Open Door is a non-profit organization funded by the Indiana State Department of Health, Medicaid, and private donations.

Open Door Community Services Mission Statement: Open Door Community Services, Inc. is a multi-purpose social service agency that offers services to citizens of the City of Muncie, Delaware County and selected neighboring counties in Indiana. We serve our population through programs in three areas: health, family, development and education, and housing. Our goal in all areas is to empower our clients to move into society's mainstream.

Open Door manages a small housing community in Anderson, Indiana. The housing units are subsidized by a government agency called HOPWA – Housing Opportunities for People With AIDS. There are three buildings housing six units oriented around a central courtyard.
Open Door is an agency that maintains the confidentiality of their clients. Due to these circumstances, I chose to design a model project in a setting very similar to the existing housing units in Anderson, Indiana. Therefore, the current housing site has remained non-disclosed to the public.

The goals that Open Door requested were as follows:

- Anything that can be made special should be, especially the courtyard, incorporating plants to make it a comfortable space to be in. The HIV issue is most important: HIV positive individuals do not take things for granted
- Ample Seating
- Areas for activities for large groups (i.e. Open Door’s Wellness Group, about 10-15 people) should be included.
- Views should be created to acknowledge the fact that clients often are at home looking out of their windows
- Low maintenance

Assumptions

- The design will be maintained and used
- The city of Muncie, Indiana will allow said project to be built
- A follow-up study will be conducted to measure the success of the garden (i.e. blood pressure, heart rate, mood, behavior)
- Adequate funding will be available for construction and maintenance for this project.

Delimitations of the Project

- This study will not set up a maintenance schedule for the therapeutic garden.
- This study will not be responsible for the follow-up study of the users in the site.
- This study will not involve additions to existing buildings or design of new buildings.
- The healing garden will not be touted as a cure for the AIDS disease.

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DESIGN PROCESS

For the design process, I began by interviewing Kim at Open Door Community HIV Services. I met with her several times, noting the needs of the clients and learning about the disease. From there, I created a questionnaire to learn more about the clients' needs and desires for their surroundings (see Appendixes A and B).

While the questionnaires were in process, I did site inventory and analysis.

Figure 11. Site Base Map (using ArcView GIS)

Contextual and Site Inventory and Analysis

The inventory began with a pictorial walk around the site. The existing apartment buildings were two stories, with redwood siding (see Figure 12). A large open space bordering N. Granville Avenue was formed by the apartment buildings (see Figure 13). It was a grassy square of level grading with little to no visual interest.

The configuration of the apartment buildings created a distinct separation of outdoor "rooms" (see Figure 14). This created an interesting transition between the different spaces, and created spaces that had a definite identity of their own. A long, linear open space (see Figure 15) was located between the longest apartment building and the dilapidated privacy fence (see Figure 16).

Beyond the fence was a middle-income residential neighborhood. However, these views were not desirable, as they were looking straight into neighbors' back yards. There was limited privacy for both the apartment residents and the neighborhood residents. The
remaining surrounding context was also middle-income residential (see Figure 17) that was in good condition.

Figure 12. Two-story Redwood Apartments (interurban Apartments)

Figure 13. Large open space
Figure 14. Distinct separation of outdoor "rooms"

Figure 15. Long, linear open space

Figure 16. Dilapidated privacy fence
In addition to the pictorial inventory, I also completed a shadow study. I looked at shade information for the dates of March/September 21 (the Solstices), and June 21 (the Summer equinox). The time periods were 8 am, noon, and 4 pm. The long linear space on the east side of the site gets full sun in the morning to early afternoon and full shade thereafter. The large open space bordering N. Granville Avenue is in full shade in the morning, and full sun in the afternoon. The two northeastern units are very hot in the afternoon and need to be shaded. The small courtyard is in full to partial shade all day. It has its own microclimate, as it is warm in the morning but has no wind in the afternoon. In the mid- to late-afternoon daily, there is a narrow beam of sunlight that penetrates the space, an opportunity for a temporal sculpture.

I also looked at the opportunity to modify the pedestrian circulation patterns through the site. The existing conditions of the walkways (see Figure 18) were very rectilinear and did not relate to the existing buildings very well. I then looked diagrammatically how a more curvilinear walkway system could work on the site (see Figure 19).

Through analysis, I looked at how the different factors on the site should be approached. This included noise from traffic on N. Granville Avenue, opportunities for private and public spaces for the residents, microclimate, and buffered views from the neighbors to the east (see Figure 20). I also looked at different personal spaces within the site and public spaces (see Figure 21).
Figure 18. Existing Site Pedestrian Circulation

Figure 19. Proposed Site Pedestrian Circulation

Figure 20. Composite Analysis
The Program

Table of proposed site zones:

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>ZONES</th>
<th>AREA (S.F.)</th>
<th>% SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardscape</td>
<td>Built Zones:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Apartments (existing)</td>
<td>8,285</td>
<td>25.8</td>
</tr>
<tr>
<td></td>
<td>• Gazebo</td>
<td>144</td>
<td>0.5</td>
</tr>
<tr>
<td>Parking Lots:</td>
<td>• North</td>
<td>4,708</td>
<td>14.7</td>
</tr>
<tr>
<td></td>
<td>• South</td>
<td>1,758</td>
<td>5.5</td>
</tr>
<tr>
<td>Circulation: Pedestrian</td>
<td>• Concrete</td>
<td>4,767</td>
<td>14.9</td>
</tr>
<tr>
<td></td>
<td>• Recreational (soft surface)</td>
<td>1,828</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>Main Entry Courtyard</td>
<td>810</td>
<td>2.5</td>
</tr>
<tr>
<td>Softscape</td>
<td>Sunken Courtyard</td>
<td>2,775</td>
<td>8.7</td>
</tr>
<tr>
<td></td>
<td>Meandering Path (Garden)</td>
<td>2,287</td>
<td>7.1</td>
</tr>
<tr>
<td></td>
<td>Small Grass Courtyard</td>
<td>600</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>Open Lawn</td>
<td>900</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>Miscellaneous Planted Zones</td>
<td>4,980</td>
<td>15.7</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>32,014 s.f.</td>
<td>100%</td>
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</tbody>
</table>
Table of Zone activities and program elements:

<table>
<thead>
<tr>
<th>ZONES</th>
<th>CLIENTS' NEEDS</th>
<th>ACTIVITIES</th>
<th>PROGRAM ELEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Built Zones:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Apartments (existing)</td>
<td>Accessible entry</td>
<td>Observation from indoors</td>
<td>Patios and Balconies</td>
</tr>
<tr>
<td>• Gazebo</td>
<td>Opportunity for social interaction</td>
<td>Group gathering space</td>
<td>Covered seating Soft residential lighting</td>
</tr>
<tr>
<td><strong>Parking Lots:</strong></td>
<td>Handicapped accessible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• North</td>
<td>Handicapped accessible</td>
<td>Parking</td>
<td>12 parking spaces 1 handicap parking space</td>
</tr>
<tr>
<td></td>
<td>Easy access</td>
<td>Trash dumpster</td>
<td>Open paved area for sanitary truck</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Two access walks Vegetative buffer</td>
</tr>
<tr>
<td>• South</td>
<td>Handicapped accessible</td>
<td>Parking</td>
<td>4 parking spaces 1 handicap parking space</td>
</tr>
<tr>
<td></td>
<td>Easy access</td>
<td></td>
<td>Vegetative buffer</td>
</tr>
<tr>
<td><strong>Circulation: Pedestrian</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Concrete</td>
<td>Direct route Safe, level surface</td>
<td>Walking Meeting Place</td>
<td>Soft residential lighting Walkways that acknowledge the geometry of the buildings</td>
</tr>
<tr>
<td></td>
<td>Handicapped accessible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Recreational (soft surface)</td>
<td>Safe, level surface Handicapped accessible</td>
<td>Walking Meeting Place</td>
<td>Soft residential lighting</td>
</tr>
<tr>
<td><strong>Main Entry Courtyard</strong></td>
<td>Non slip surface Handicapped accessible</td>
<td>Wait for Ride Apartment Main Entry (First impression)</td>
<td>Bench for waiting Shade tree for microclimate Planting to buffer appts. Stamped concrete</td>
</tr>
<tr>
<td><strong>Sunken Courtyard</strong></td>
<td>Opportunity for social interaction Handicapped accessible</td>
<td>Relaxing Gathering Space</td>
<td>Yard swing Sensory plantings at different levels 8’ perforated brick wall Raised planter with seating</td>
</tr>
<tr>
<td><strong>Meandering Path (Garden)</strong></td>
<td>Opportunity for social interaction Handicapped accessible</td>
<td>Relaxing Gathering Space</td>
<td>Bridge Sensory plantings Covered garden benches Meandering stream Sculpture</td>
</tr>
<tr>
<td>Small Grass Courtyard</td>
<td>Opportunity for social interaction</td>
<td>Gathering Space</td>
<td>Small fountain &lt;br&gt;Prismatic temporal sculpture &lt;br&gt;Stepping stones &lt;br&gt;4' brick wall &lt;br&gt;Raised planter with plantings to buffer apt.</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Open Lawn</td>
<td>Opportunity for social interaction &lt;br&gt;Handicapped accessible &lt;br&gt;Opportunity for games</td>
<td>Badminton &lt;br&gt;Horseshoes &lt;br&gt;Croquet</td>
<td>Enclosed by plantings</td>
</tr>
<tr>
<td>Miscellaneous Planted Zones</td>
<td>Observation</td>
<td>Non-toxic plantings &lt;br&gt;Aesthetic views</td>
<td></td>
</tr>
</tbody>
</table>

**Design Concepts**

I investigated three different concepts (Yin and Yang, The Phoenix, and Meandering Stream) to further develop my design. Each of the unique designs had a strong identity. The concepts each had identical program elements.

The first concept was entitled “Yin and Yang.” The big idea behind this concept was the Eastern concept of balance of opposites (see Figure 22). The walks reflected this idea using the existing rectilinear walkway patterns overlaid with a curvilinear “S,” the recreational walkway. The rectilinear walk had the advantage of providing a straightforward journey from parking to apartment, especially important for those who are ill. A serpentine wall, reminiscent of Thomas Jefferson, buffered views and noise from N. Granville Avenue. A meandering walk on the east side of the site was buffered from the neighbors, views, and noise by vegetation (see Figure 23). Planted mounds in the large open space helped to create interest through elevation changes, and helped form distinct outdoor “rooms.” The use of a water feature (fountain) in the small courtyard created a more pleasant microclimate for the warmer spring and summer days when air would not be moving to cool the area. The weaknesses of this design included the fact that the sidewalk geometries were awkward at points, and the gazebo was not very easily accessible. The design did keep two existing trees on the east side of the site.
The second concept was "The Phoenix." The phoenix was a mythical creature that was able to be reborn from its own ashes, a concept important to those who are depressed because they are nearing their own deaths. The walkways were reconfigured in a curvilinear fashion representing the phoenix "wings." Each pathway ended in a destination node. The main focal point was the phoenix "body," in the large open space bordering N. Granville Avenue. The gazebo was centrally located (the "head"), and surrounded by a rainbow of sensory planting beds. This represented the glory of the phoenix as it rose from the dead. A rectilinear brick wall formed the buffer between N. Granville Avenue and the views and noise (see Figure 24). The weaknesses of this concept included awkward sidewalk geometries.
Additionally, with the curvilinear walkways ending in destination nodes, it would be difficult for a user to know if another was already using the space and could result in awkward moments. Two of the existing trees on the east side of the site were used in the design.

The last concept was entitled “Meandering Stream.” The big design idea behind this concept was the element of water and its soothing qualities. The walkways were reconfigured in a curvilinear fashion, forming two large loops. A small courtyard was formed in the southwestern style with a fountain for cooling the microclimate and for the soothing sounds. Low walls, a typical southwestern feature, enclosed the courtyard. An aerated pond shared the large open space with a labyrinth. Both were shaded by a large weeping shade tree. A meandering stream shared the long, linear open space with a path. The stream is concluded out of sight, under an eastern-influenced sculpture. A long wall formed a barrier between N. Granville Avenue and the site. Heavy vegetation formed outdoor “rooms” throughout the site (see Figure 25). The weaknesses of this concept included the somewhat confusing walkway system. This concept kept two of the existing trees on the east side of the site.
Rationale for Selection of One Concept for Design Development

Through these conceptual designs, many solutions to the design problem were investigated. Different elements from each of the concepts stood out as pieces of a good solution to the problem. However, the Meandering Stream concept was the strongest, as far as the ideas as they satisfied the goals set for this project went. I decided to improve upon this concept with some of the most successful ideas from the other concepts into a final master plan.

Design Development

From this point, my design process began to move along very quickly. First, I had to work out my master plan design. There were several design elements that did not work very well with the clients' needs. The first was the wall bordering N. Granville Avenue. Although privacy was important, the residents did not want to feel as though they were in a prison. The wall effectively created this atmosphere by completely shutting the outside world off. Also, the parking lots were the main points of entry to the site, and they had not been taken into consideration. The existing configuration of the parking did not have any handicapped accessible spaces, and was very unorganized. The sidewalk and pedestrian circulation patterns
needed to be addressed. They needed to address the buildings and be organized in such a manner that both straightforward movement through the site (as in the Yin and Yang concept) was possible, but also that a more curvilinear, recreational walkway was present should the residents/users decide to use it. I also began investigating sensory plants (color, texture, fragrance, sound) that were also non-toxic for use in my design. The last and most important step that I made was to eliminate the program elements that did not meet the goals of the client or were simply not necessary and were just cluttering the design. This included the labyrinth and the pond.

**Master Plan**

This design was created for a specific group of people, and was designated to meet their needs. The master plan (see Figure 26) began with a vision for a setting in which HIV/AIDS clients overall well-being could be promoted through relief from physical symptoms, stress reduction, and improvement in the overall sense of well-being (increased level of functioning) in a healing garden. What I ended up designing was a series of spaces that satisfied those requirements and were aesthetically pleasing and had potential for a pleasant, relaxing atmosphere. In addition, I designed a planting plan for the site (see Appendix C). Scattered around the site are containers for plantings (see Appendix D for plant recommendations).

The three main areas are the Sunken Courtyard, the Small Courtyard, and the Meandering Path garden. The Sunken Courtyard is a recreational, semi-public space, the Small Courtyard is a semi-private space, and the Meandering Path garden is a recreational, private space. Though each has its own identity, they are linked by common elements and materials.

The Sunken Courtyard (see Figure 27) is the main activity space in this design. It is sunken approximately two feet and the retaining wall forms a six inch curb along the main walkways, which provides a small curb for wheelchairs and walkers, should a guest or resident ever need them. Solar-powered residential lights are mounted into the retaining wall every ten feet. The courtyard has many amenities:
Gazebo:
- This structure has seating for approximately 10 people.
- To the north of the gazebo is a small gathering space with a permanent grill.
- The floor elevation is level with the main walkway. The slope begins to descend at a 3% grade (handicapped accessible) as users exit to the south of the structure.
- Users may also exit the gazebo to the east using a small flight of stairs.
➢ Raised planting bed with brick retaining wall
   • This planting bed maintains a maximum height of approximately 4 feet above the gazebo floor level
   • This height allows for tactile interaction with the sensory plant material found in the beds

➢ Raised planter with seating wall
   • This planter has a concrete seating wall with a 2 foot seating area
   • A flowering Dogwood creates a vertical, ornamental element in the center of the sunken courtyard
   • The flowers and shrubs are within easy reach of the seating edge and are sensory (feathery textures, fragrances, vibrant colors)

➢ Yard swing (see Figure 28)
   • This swing offers semi-private seating
   • A Magnolia tree creates a pink-flowering, fragrant canopy
   • Fragrant and colorful shrubs and flowers surround this little nook space

➢ Planting beds (see Appendix C)
   • The ornamental trees and shrubs are selected for their wildlife attraction (birds and butterflies), vibrant colors, and seasonal attraction
   • The flowers and shrubs are sensory (feathery textures, fragrances, vibrant colors)
   • All plants selected for this design are nontoxic

The area would mainly be used during the spring-fall seasons, but has been designed for year-round seasonal interest. The following supporting graphics explain the Sunken Courtyard, as it would appear to the users (see Figures 29-32).
Figure 29. View of the Sunken Garden from the Yard Swing

Figure 30. Section A-A'

Figure 31. Section B-B'
The Small Courtyard (See Figure 33) is designed as a southwestern courtyard. It is intended for solitary to small group use (see Figure 35). It has several amenities:
➤ Stepping Stones
- These flat flagstones sit flush with the fescue surface of the courtyard
- In plan view, they connect the curvilinear path of the meandering path with the fescue path in the sunken courtyard

➤ Shade Tree
- An Eastern Redbud provides spring flowers and attractive leaves that have a vibrant fall color. This tree provides shade in the morning and soothing sounds from the leaves blowing in the wind

➤ Brick wall and Raised Planter Bed
- A 4 foot brick wall imitates the comfortable spaces of the southwestern courtyard
- The raised planting bed contains ornamental grasses (Japanese Bloodgrass) which provide a pleasant sound and flowers which are fragrant and have vibrant color

➤ Small Fountain with Sculpture
- The fountain has a small seating edge around the bottom of two tiers, and an aerator in the upper tier
- In the bottom tier, a sculpture device gives a special prismatic showing in the afternoon when the sun beams through the space in a narrow strip (see Figure 34)
The Meandering Stream garden (see Figure 36) is a private space for walking or resting. It makes use of a space that was previously wasted space. It has many amenities:

- Planting beds (see Appendix C)
  - The ornamental trees and shrubs are selected for their wildlife attraction (birds and butterflies), vibrant colors, and seasonal attraction
  - The flowers and shrubs are sensory (feathery textures, fragrances, vibrant colors)
  - All plants selected for this design are nontoxic

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➢ Meandering Stream
  • This stream is a metaphor of water, using smooth river stones in a structural bed (see Figure 37)
  • It provides an element of interest along the path
➢ Bridge
  • This element is constructed of wood and is flat and flush with the path, which is constructed of colored bituminous pavement
➢ Covered Garden Seats
  • This area allows for privacy and a quiet resting place
  • A comfortable microclimate is created by the vines that span the trellis above the seats (see Figure 38)
  • Flagstone creates a floor for this space, with the spaces between the stones filled in with thyme (see Figure 39). This plant can take moderate foot traffic
Japanese Lantern style Sculpture

- The stream ends out of sight under an eastern-influence sculpture
- A weeping White Pine provides a focal conclusion to the long, linear open space, drawing the eye down to the sculpture

Figure 40. View of Meandering Path
Conclusions

In this design, I feel that I have been successful in what I set out to do: create a series of healing garden spaces for HIV/AIDS clients in a home environment that, through the design, land, and plants, were aesthetically pleasing but also beneficial. In this designed environment, the clients might find relief from physical symptoms, stress reduction, and improvement in their overall sense of well-being.

Through this process, I have learned a lot about healing gardens, and more importantly, about a group of people whose demographics are increasing at an alarming rate. I feel that I have learned a considerable amount in the short time that I have spent here at Ball State University, and that that knowledge has been well represented in this design project.
APPENDICES

APPENDIX A

Survey of the User Needs and Desires
as They Relate to Spatial Patterns and Organization at Open Door Community HIV Services’ Housing Units in Anderson, Indiana

The purpose of this study is to gather data about the use of outdoor spaces at Open Door Community HIV Services’ housing units in Anderson, Indiana from the residents and staff who live or work there. These data will be used to support garden design guidelines for the HIV population by providing residents, staff, and the designer with a common understanding of the desire(s), needs and concerns of the primary users of these spaces. Two techniques will be used to gather the data: interviews and questionnaires.

Interviews will be conducted to gather data directly from the residents and staff of Open Door Community HIV Services housing units. The subject matter addressed in the interviews is focused on the perceptions of outdoor and indoor space use, memories of yard use and landscape elements, and desire(s) for outdoor gardens and activity opportunities.

Questionnaires will be used to gather data from Open Door Community HIV Services staff. Subject matter of the questionnaires includes safety, perceptions of space use, desire(s) and abilities of the residents, and design ideas for the outdoor spaces. The questions that comprise this questionnaire have been taken directly from, or modified from, Tyson’s Garden Use Questionnaire (in the appendix of The Healing Landscape by Martha A. Tyson, 1998).

Approximately 6 residents at Open Door Community HIV Services housing units will be interviewed for this study, and 4 staff will fill out the questionnaire. Individual names will not be recorded on the data sheets, and no other identifying data will be collected that will connect the data with the individuals observed or interviewed.

Introductory Script
Your participation in this study is completely voluntary, and you are free to withdraw from the study at any time for any reason without penalty or prejudice from the Investigator. Your name will not be used in the presentation of the data or results from the study, and all data and results will be treated with strict confidentiality.

By participating in this study you are helping to identify needs and wishes for the development of future outdoor gardens for HIV populations in the home setting. Please feel free to ask any questions of the Investigator before, during, or after the interview process.

For one’s rights as a research subject, the following persons may be contacted: Ms. Sandra Smith, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-1600, or Dr. Sharon Paulson, Chairperson of the Institutional Review Board, Dept. of Educational Psychology, Ball State University, Muncie, IN 47306, (765) 285-8500.
Survey of the User Needs and Desires as They Relate to Spatial Patterns and Organization at Open Door Community HIV Services’ Housing Units in Anderson, Indiana

Outdoor Space Use Interview Questions
For the Residents of Open Door Community HIV Services’ Housing Units

Your participation in this study is completely voluntary, and you are free to withdraw from the study at any time for any reason without penalty or prejudice from the Investigator. Your name will not be used in the presentation of the data or results from the study, and all data and results will be treated with strict confidentiality.

By participating in this study you are helping to identify needs and wishes for the development of future outdoor gardens for HIV populations in the home setting. Please feel free to ask any questions of the Investigator before, during, or after the interview process.

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**************************************************************************
Outdoor Space Use Interview Questions
For the Residents of Open Door Community HIV Services' Housing Units

Date: __________
Interviewer: __________________

*****************************************************************************

1. Age: __

2. Gender: M  F

3. Would you describe your current physical condition as well, moderately well, neutral, moderately ill, or ill? (Circle One)

4. How long have you lived in the Housing Units?
   -☐ 0-6 months
   -☐ 6-12 months
   -☐ 1-2 years

5. Before moving into this subsidized facility, where did you live?
   -☐ Parent’s home
   -☐ Home owned by subject
   -☐ Home shared with partner
   -☐ Group housing for people with HIV
   -☐ Hospital
   -☐ Other

6. Have you lived most of your life in a town, a big city, or in the country? (Circle One)

7. Describe the kind of a yard you had:
   - as a child: ____________________________________________
   - as an adult: ____________________________________________

8. What kind of outdoor activities did you enjoy at these places?
   ________________________________________________________
   ________________________________________________________
9. What kind of outdoor activities do you like to do now?

- Bird/butterfly/animal watching
- Walking
- Sitting alone in the shade/sun
- Socializing with family/friends
- Gardening (vegetable/flower)
- Horseshoes
- Other: ____________________________

10. What do you like to look at through the windows?

- Birds/butterflies/animals
- Flowers
- Other people
- Trees and shrubs (fall color, spring bloom)
- Other: ____________________________

11. Where do you spend most of your time during the day inside?

- in the morning:
  - main bedroom
  - living room
  - kitchen
  - second bedroom
  - other: ____________________________

- in the afternoon:
  - main bedroom
  - living room
  - kitchen
  - second bedroom
  - other: ____________________________

- in the evening
  - main bedroom
  - living room
  - kitchen
  - second bedroom
  - other: ____________________________

12. Do you have sufficient opportunities for contact with other people on a casual basis in your present circumstances (i.e. friends, family, acquaintances, other)?

- very often
- often
- sometimes
- rarely
- never

13. Would you like to have additional opportunities for socialization in your present environment? Yes or no (Circle one)
13. Would you like to have additional opportunities for socialization in your present environment? Yes or no (Circle one)

14. What activities/opportunities would you like to do that aren’t presently possible?

☐ Bird/butterfly/animal watching
☐ Walking
☐ Sitting alone in the shade/sun
☐ Socializing with family/friends
☐ Gardening (vegetable/flower)
☐ Horseshoes
☐ Family visits
☐ Planned group activities
☐ Celebrations/picnics/cookouts
☐ Quiet time alone for residents
☐ Repotting plants
☐ Planting seedlings
☐ Walking outdoors
☐ Bird/animal watching
☐ Light gardening tasks
☐ Watching gardening activities
☐ Light yard work/raking leaves
☐ Watering the lawn/flowers
☐ Filling a bird feeder or bath
☐ Other: ____________________________________________

12. If any of these activities/opportunities were provided, which would you take part in?

☐ Bird/butterfly/animal watching
☐ Walking
☐ Sitting alone in the shade/sun
☐ Socializing with family/friends
☐ Gardening (vegetable/flower)
☐ Volleyball or Badminton
☐ Family visits
☐ Planned group activities
☐ Celebrations/picnics/cookouts
☐ Quiet time alone for residents
☐ Repotting plants
☐ Planting seedlings
☐ Walking outdoors
☐ Bird/animal watching
☐ Light gardening tasks
☐ Watching gardening activities
13. What are your favorite outdoor plants?

**trees:**
- □ maple
- □ sycamore
- □ ash
- □ walnut
- □ magnolia
- □ other: ____________

**shrubs:**
- □ lilac
- □ forsythia
- □ spirea
- □ burning bush
- □ yew
- □ other: ____________

**flowers:**
- □ daylilies
- □ cornflowers
- □ geraniums
- □ peonies
- □ tulips
- □ irises
- □ daffodils
- □ marigolds
- □ violets
- □ bleeding hearts
- □ lily of the valley
- □ other: ____________

Thank you for your time and effort in preparing this questionnaire. The information will be used to develop design guidelines for future outdoor spaces for HIV populations in the home setting.
Survey of the User Needs and Desires as They Relate to Spatial Patterns and Organization at Open Door Community HIV Services’ Housing Units in Anderson, Indiana

Outdoor Space Use Interview Questions
For the Staff of Open Door Community HIV Services

Your participation in this study is completely voluntary, and you are free to withdraw from the study at any time for any reason without penalty or prejudice from the Investigator. Your name will not be used in the presentation of the data or results from the study, and all data and results will be treated with strict confidentiality.

By participating in this study you are helping to identify needs and wishes for the development of future outdoor gardens for Open Door Community HIV Services housing units. Please feel free to ask any questions of the Investigator before, during, or after the interview process.

For one’s rights as a research subject, the following persons may be contacted: Ms. Sandra Smith, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-1600, or Dr. Sharon Paulson, Chairperson of the Institutional Review Board, Dept. of Educational Psychology, Ball State University, Muncie, IN 47306, (765) 285-8500.

*******************************************************************************
Outdoor Space Use Interview Questions
For the Staff of Open Door Community HIV Services

The following questions require check marks, short answers, and ranking. Please feel free to add notes to any section and/or responses if you wish to clarify your answer.

1. Windows
   Are there windows that residents are able to look out without making an extra effort, such as opening blinds, standing, or straining?
   □ yes  □ no
   If yes, then please describe where: __________________________________________

2. How often do you notice residents looking out the windows during the day?
   □ very often  □ often  □ sometimes  □ rarely  □ never

3. Please describe what you feel they are looking at most often.
   __________________________________________
   __________________________________________
   __________________________________________

4. How often do you notice that seasonal changes affect residents’ moods?
   □ very often  □ often  □ sometimes  □ rarely  □ never

5. In what ways are residents affected by seasonal changes?
   __________________________________________
   __________________________________________
   __________________________________________
6. How successful do you feel your existing outdoor space is for the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very successful</th>
<th>Not Successful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing nature/birds</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Gardening (flower and/or vegetable)</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Allowing residents to use it safely</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Small group gathering</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Easy access to the outdoors</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Visiting with family/friends</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Organized group activity</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Privacy for quiet visiting</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Privacy for quiet time alone</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

7. How often is your outdoor space used for the following activities (in good weather)?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family visits</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Planned group activities</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Celebrations/picnics</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Quiet time alone for residents</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other activities: ---------------------------------</td>
<td>------------</td>
<td>-------</td>
</tr>
</tbody>
</table>

8. When residents use the outdoor space, how often do you observe them engaged in the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting in the shade</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Sitting in the sun</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Observing nature/birds</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Watching activities</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Walking alone</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Walking with others</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Visiting with others</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Organized activity</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other observations:</td>
<td>------------</td>
<td>-------</td>
</tr>
</tbody>
</table>

Ellerbrook - 51
9. How capable do you feel most of your residents would be for the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very capable</th>
<th></th>
<th>Not capable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repotting plants</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Planting seedlings</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Walking outdoors</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Bird/animal watching</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Light gardening tasks</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Watching gardening activities</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Light yard work/raking leaves</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Watering the lawn/flowers</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Filling a bird feeder or bath</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

10. How much does your existing outdoor space encourage the following responses from residents?

<table>
<thead>
<tr>
<th>Response</th>
<th>Very much</th>
<th></th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in general awareness</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Maintaining daily life skills</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Remembering familiar events</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Respite from indoor stress</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Freedom to go outdoors</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Sense of ownership</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Independent use</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Encouragement of normal social roles</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Physical exercise</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

11. Designing the outdoor space

Your task now is to help to create an outdoor space for your residents. Please rate the following features on a scale of 1-5, with 1 extremely important and 5 not important at all.

- ☐ [ ] Patio for group gathering
- ☐ [ ] Open lawn area for games
- ☐ [ ] Quiet conversation areas
- ☐ [ ] Strolling garden
- ☐ [ ] Garden visible from indoors
- ☐ [ ] Seating areas in sunshine
- ☐ [ ] Seating areas in shade
- ☐ [ ] Area screened from noise around the site
- ☐ [ ] Other (please specify): ____________________________
Safety and security

___ Total area visible by residence from indoors
___ Security fence (views out)
___ Nontoxic plants
___ Level pathways
___ Soft residential lighting for night use
___ Other (please specify): ________________________________

Trees, flowers, and gardening

___ Shade trees/fruit trees
___ Ornamental flowering trees
___ Flowering shrubs
___ Flowers
___ Fragrant plants
___ Garden plots
___ Container gardens
___ Work area/potting shed
___ Tool storage
___ Small greenhouse
___ Other (please specify): ________________________________

Furnishings/site features

___ Benches with backs and arms
___ Lightweight movable seating
___ Clothesline for hanging laundry
___ Bird feeder
___ Birdbath
___ Fountain/pond
___ Yard art/decorations
___ Porch/yard swing
___ Other (please specify): ________________________________
Now please list the three most important items in each category.

Places:


Safety:


Trees:


Features:


Thank you for your time and effort in preparing this questionnaire. The information will be used to develop design guidelines for future outdoor spaces for HIV populations in the home setting.
APPENDIX B

Survey of the User Needs and Desires
as They Relate to Spatial Patterns and Organization at Open Door Community HIV Services’ Housing Units in Anderson, Indiana
Investigator: SuLin Ellerbrook

Outdoor Space Use Interview Questions
For the Residents of Open Door Community HIV Services’ Housing Units
Conducted March 01, 2002-March 21, 2002
By Heather Fosnaugh

Respondents: Resident (5) and Non-Resident (6) Clients of Open Door Services.

1. Age Ranges: 36-55 and 24-43.

2. Gender: Male: 100% and 50%, Female: 50%.

3. Current physical conditions:
   Well: 20% and 16%,
   Moderately well: 40%,
   Neutral: 33%,
   Moderately ill: 20% and 16%,
   Ill: 20% and 16%.

4. How long have you lived in the Housing Units (or Present Housing Situation)?
   0-6 months: 60% and 16%,
   6-12 months: 20%,
   1-2 years: 20% and 33%,
   More than 2 years: 16%.

5. Before moving into this subsidized facility, where did you live?
   Parent’s home: 40%,
   Home owned by subject: 0%,
   Home shared with partner: 16%,
   Group housing for people with HIV: 0%,
   Hospital: 0%,
   Other: 60% and 83%.
6. Have you lived most of your life in:
   A town: 20% and 66%,
   A big city: 80% and 16%,
   The country: 33%.

7. Describe the kind of a yard you had:
   - as a child: Big to Medium Yard, vegetable garden, flowers, no trees.
     Big to Medium Yard, plain, trees, wildlife, or farm setting.
   - as an adult: Large to Small Yard, apartment yard.
     Small yard, flowers, trees.

8. What kind of outdoor activities did you enjoy at these places?
   Sports, sledding, sitting in the sun/rain, biking, hiking on trails, cookouts, swimming.
   Swimming, fishing, camping, biking, watching birds/animals, walking, softball, sitting outside.

9. What kind of outdoor activities do you like to do now?
   Bird/butterfly/animal watching: 40% and 33%,
   Walking: 60% and 66%,
   Sitting alone in the shade/sun: 80% and 33%,
   Socializing with family/friends: 80% and 50%,
   Gardening (vegetable/flower): 20% and 33%,
   Horseshoes: 16%,
   Other: 20% (Cookout) and 33% (Hiking, breeding dogs/birds).

10. What do you like to look at through the windows?
    Birds/butterflies/animals: 60% and 83%,
    Flowers: 60% and 33%,
    Other people: 60% and 100%,
    Trees and shrubs (fall color, spring bloom): 60%,
    Other: 20% (Snowfall).

11. Where do you spend most of your time during the day inside?
    - in the morning:
      main bedroom: 20% and 16%,
      living room: 40% and 50%,
      kitchen: 40% and 16%,
      second bedroom: 16%,
      other: 0%.
- **in the afternoon**
  main bedroom: 0%,
  living room: 40% and 66%,
  kitchen: 20%,
  second bedroom: 0%,
  other: 40% (Work) and 33% (Outside, work, taking kids to/from school).

- **in the evening**
  main bedroom: 60%,
  living room: 40% and 83%,
  kitchen: 0%,
  second bedroom: 0%,
  other: 16% (Home office).

12. **Do you have sufficient opportunities for contact with other people on a casual basis in your present circumstances (i.e. friends, family, acquaintances, other)?**
   very often: 20%,
   often: 40% and 50%,
   sometimes: 20% and 33%,
   rarely: 20% and 16%,
   never: 0%.

13. **Would you like to have additional opportunities for socialization in your present environment?** Yes: 100% and 50%, No: 50%.

14. **What activities/opportunities would you like to do that aren’t presently possible?**
   Bird/butterfly/animal watching: 20%,
   Walking: 16%,
   Sitting alone in the shade/sun: 16%,
   Socializing with family/friends: 53%,
   Gardening (vegetable/flower): 20%,
   Horseshoes: 20%,
   Family visits: 20% and 50%,
   Planned group activities: 60% and 50%,
   Celebrations/picnics/cookouts: 100% and 66%,
   Quiet time alone for residents: 20%,
   Repotting plants: 40% and 16%,
   Planting seedlings: 40%,
   Bird/animal watching: 0%,
   Light gardening tasks: 20%,
   Watching gardening activities: 20%,
   Light yard work/raking leaves: 60%,
   Watering the lawn/flowers: 40%,
   Filling a bird feeder or bath: 60% and 16%,
   Other: 0%.
15. If any of these activities/opportunities were provided, which would you take part in?
   Bird/butterfly/animal watching: 16%,
   Walking: 0%,
   Sitting alone in the shade/sun: 16%,
   Socializing with family/friends: 66%,
   Gardening (vegetable/flower): 40%,
   Volleyball or Badminton: 60% and 66%,
   Family visits: 20% and 66%,
   Planned group activities: 60% and 66%,
   Celebrations/picnics/cookouts: 100% and 100%,
   Quiet time alone for residents: 20%,
   Repotting plants: 20% and 16%,
   Planting seedlings: 40%,
   Bird/animal watching: 0%,
   Light gardening tasks: 40% and 16%,
   Watching gardening activities: 20% and 33%,
   Light yard work/raking leaves: 40%,
   Watering the lawn/flowers: 20% and 16%,
   Filling a bird feeder or bath: 40%,
   Other: 0%.

13. What are your favorite outdoor plants?

   trees:
   Maple: 60% and 50%,
   Sycamore: 40% and 16%,
   Ash: 20%,
   Walnut: 20% and 66%,
   Magnolia: 60% and 33%,
   Other: 20% (Pine, Weeping Willow, Cherry).

   shrubs:
   Lilac: 40% and 83%,
   Forsythia: 20% and 33%,
   Spirea: 40% and 33%,
   Burning bush: 40% and 33%,
   Yew: 0%,
   Other: 0%.
flowers:
Daylilies: 20% and 50%,
Daffodils: 40% and 16%,
Cornflowers: 50%,
Marigolds: 80% and 35%,
Geraniums: 80% and 16%,
Violets: 20% and 66%,
Peonies: 40% and 66%,
Bleeding hearts: 20% and 16%,
Tulips: 60% and 50%,
Lily-of-the-valley: 20% and 33%,
Iris: 60% and 50%,
Other: 40% (Roses, Petunias).
Outdoor Space Use Interview Questions
For the Staff of Open Door Community HIV Services' Housing Units

Conducted March 01, 2002-March 21, 2002
By Heather Fosnaugh

Respondents: Employees (2) of Open Door Services.

1. Windows
   Are there windows that residents are able to look out without making an extra effort, such as opening blinds, standing, or straining?

   ☒ yes      ☐ no

   If yes, then please describe where: Living room, Kitchen

2. How often do you notice residents looking out the windows during the day?

   ☐ very often   ☐ often   ☒ sometimes   ☒ rarely   ☐ never

3. Please describe what you feel they are looking at most often. No response.

4. How often do you notice that seasonal changes affect residents' moods?

   ☐ very often   ☒ often   ☐ sometimes   ☐ rarely   ☐ never

5. In what ways are residents affected by seasonal changes? Rain, snow, cold makes most residents more likely to stay indoors - less physically active. Nice weather usually makes them more likely to be outside or socialize with other residents.
6. How successful do you feel your existing outdoor space is for the following?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very successful</th>
<th>Not Successful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing nature/birds</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Gardening (flower and/or vegetable)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Allowing residents to use it safely</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Small group gathering</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Easy access to the outdoors</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Visiting with family/friends</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Organized group activity</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Privacy for quiet visiting</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Privacy for quiet time alone</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

*Note: Outdoor space is open area; no privacy. No seating or other area for group gathering.*

7. How often is your outdoor space used for the following activities (in good weather)?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family visits</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Planned group activities</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Celebrations/picnics</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Quiet time alone for residents</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Other activities: *Residents rarely, if ever, use outdoor space. There is nothing to attract them there.*

8. When residents use the outdoor space, how often do you observe them engaged in the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very often</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting in the shade</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sitting in the sun</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Observing nature/birds</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Watching activities</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Walking alone</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Walking with others</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Visiting with others</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Organized activity</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Other observations: *The only outdoor activity [staff] has seen is residents sitting on their porches (in shade).*
9. How capable do you feel most of your residents would be for the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very capable</th>
<th>Not capable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repotting plants</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Planting seedlings</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Walking outdoors</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Bird/animal watching</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Light gardening tasks</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Watching gardening activities</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Light yard work/raking leaves</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Watering the lawn/flowers</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Filling a bird feeder or bath</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

Note: Most residents would be physically capable, but very few would be motivated to do so.

10. How much does your existing outdoor space encourage the following responses from residents?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very much</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in general awareness</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Maintaining daily life skills</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Remembering familiar events</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Respite from indoor stress</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Freedom to go outdoors</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Sense of ownership</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Independent use</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Encouragement of normal social roles</td>
<td>☒</td>
<td>☒</td>
</tr>
<tr>
<td>Physical exercise</td>
<td>☐</td>
<td>☒</td>
</tr>
</tbody>
</table>

11. Designing the outdoor space

Your task now is to help to create an outdoor space for your residents. Please rate the following features on a scale of 1-5, with 1 extremely important and 5 not important at all.

1. Patio for group gathering
2. Open lawn area for games
3. Quiet conversation areas
4. Strolling garden
5. Garden visible from indoors
6. Seating areas in sunshine
7. Seating areas in shade
8. Area screened from noise around the site  
   Note: very quiet existing neighborhood
9. Other.

Ellerbrook - 62
Safety and security

- Total area visible by residence from indoors
- Security fence (views out)
- Nontoxic plants
- Level pathways
- Soft residential lighting for night use
- Other.

Trees, flowers, and gardening

- Shade trees/fruit trees
- Ornamental flowering trees
- Flowering shrubs
- Flowers
- Fragrant plants
- Garden plots
- Container gardens
- Work area/potting shed
- Tool storage
- Small greenhouse
- Other (please specify): Important that trees, etc. be low-maintenance.

Furnishings/site features

- Benches with backs and arms
- Lightweight movable seating
- Clothesline for hanging laundry
- Bird feeder
- Birdbath
- Fountain/pond
- Yard art/decorations
- Porch/yard swing
- Other.
Now please list the three most important items in each category.

Places:  
Patio for group gathering  
Seating areas in sunshine  
Seating areas in shade

Safety:  
Nontoxic plants  
Level pathways  
Soft residential lighting for night use

Trees:  
Shade trees/fruit trees  
Flowers  
Greenhouse  
Flowering shrubs  
Low-maintenance

Features:  
Bench with backs and arms  
Fountain/pond  
Yard art/decorations  
Porch/yard swing
## APPENDIX C

### Plant List

#### TREES-DECIDUOUS

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CER CAN</td>
<td>CORNHUSK CORN</td>
<td>Eastern Redbud</td>
<td>2</td>
<td>6' ht.</td>
<td>B&amp;B</td>
<td>Tree form</td>
</tr>
<tr>
<td>COE FLO</td>
<td>CORN FLOWER</td>
<td>Căpșia Divundu</td>
<td>1</td>
<td>6' ht.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>GLE TRI</td>
<td>SELF-PRUNING</td>
<td>IMPERIAL HONEYSCENT</td>
<td>3</td>
<td>2 1/2 GAL.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>MAG BET</td>
<td>MAGNOLIA</td>
<td>BETTY MAGNOLIA</td>
<td>1</td>
<td>5' ht.</td>
<td>B&amp;B</td>
<td>Red flowers</td>
</tr>
<tr>
<td>MAG STE</td>
<td>&quot;STELLATA&quot;</td>
<td>&quot;ROYAL STAR&quot; MAGNOLIA</td>
<td>1</td>
<td>5' ht.</td>
<td>B&amp;B</td>
<td>White flowers</td>
</tr>
</tbody>
</table>

#### TREES-EVERGREEN

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHA NOO</td>
<td>CHAMAECYPARIS WIDMANNI</td>
<td>&quot;BRIGHT&quot; FALSE CYPRESS</td>
<td>1</td>
<td>6' ht.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>PIC GLA</td>
<td>PICEA GLAUCO</td>
<td>&quot;CONICA&quot;</td>
<td>16</td>
<td>6' ht.</td>
<td>CONT.</td>
<td>Dwarf evergreen</td>
</tr>
<tr>
<td>PIN PEN</td>
<td>PICEA STROBUS</td>
<td>&quot;PENDULA&quot;</td>
<td>1</td>
<td>6' ht.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>PIN STR</td>
<td>PICEA STROBUS</td>
<td>&quot;PENDULA&quot;</td>
<td>1</td>
<td>5' ht.</td>
<td>B&amp;B</td>
<td></td>
</tr>
</tbody>
</table>

#### SHRUBS

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>APL ADR</td>
<td>APLONIA SUSINNIFER</td>
<td>&quot;BRILLIANTISIMA&quot;</td>
<td>5</td>
<td>6' ht.</td>
<td>CONT.</td>
<td></td>
</tr>
<tr>
<td>AXL NIG</td>
<td>AURRA NIGRINA</td>
<td>&quot;WINTER GEM&quot;</td>
<td>17</td>
<td>6' ht.</td>
<td>CONT.</td>
<td></td>
</tr>
<tr>
<td>CAL OCA</td>
<td>CALOCARPUS OCA TOBA</td>
<td>&quot;PARULUS&quot;</td>
<td>6</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td>Purple fruit</td>
</tr>
<tr>
<td>CLE ALN</td>
<td>CLEISTE A. ALN</td>
<td>&quot;HUMMINGBIRD&quot;</td>
<td>5</td>
<td>4' ht.</td>
<td>CONT.</td>
<td>Fragrant, White flowers</td>
</tr>
<tr>
<td>COM PER</td>
<td>COMANTA PERICENNA</td>
<td>&quot;SWEETHEART&quot;</td>
<td>10</td>
<td>4' ht.</td>
<td>CONT.</td>
<td>Fragrant, Moist Soil Rejectant</td>
</tr>
<tr>
<td>EUKCOM</td>
<td>EUKARYON ALATA &quot;COMPACTA&quot;</td>
<td>&quot;ORANGE BUTTERFLY&quot;</td>
<td>10</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>FOR INT</td>
<td>FORSYTHIA X INTERMEDIA</td>
<td>&quot;LINDWOOD GOLD&quot;</td>
<td>16</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td>Yellow flowers</td>
</tr>
<tr>
<td>MAY AQU</td>
<td>MAYANA AQUIFOLIA</td>
<td>&quot;OREGON GRAY&quot;</td>
<td>11</td>
<td>4' ht.</td>
<td>B&amp;B</td>
<td>Evergreen</td>
</tr>
<tr>
<td>PIN MOG</td>
<td>PIAUS HUGO</td>
<td>&quot;MOG&quot;</td>
<td>4</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td>Evergreen</td>
</tr>
<tr>
<td>RHO PIA</td>
<td>RHODODENDRON SCANDENS</td>
<td>&quot;BLACK JET&quot;</td>
<td>10</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td></td>
</tr>
<tr>
<td>RUG ADR</td>
<td>RUGUS ARCHONTICA &quot;GRO-LOW&quot;</td>
<td>&quot;GRO-LOW&quot;</td>
<td>5</td>
<td>2' ht.</td>
<td>CONT.</td>
<td>Fragrant</td>
</tr>
<tr>
<td>ROS ICE</td>
<td>ROSA &quot;MELANIC&quot;</td>
<td>ICE MELANIC Rose</td>
<td>10</td>
<td>2' ht.</td>
<td>CONT.</td>
<td>White flowers</td>
</tr>
<tr>
<td>ROS PIN</td>
<td>ROSA &quot;MELANIC&quot;</td>
<td>PINK MELODY ROSE</td>
<td>5</td>
<td>2' ht.</td>
<td>CONT.</td>
<td>Pink flowers</td>
</tr>
<tr>
<td>ROS PIA</td>
<td>ROSA &quot;MELANIC&quot;</td>
<td>PINK MELODY ROSE</td>
<td>5</td>
<td>2' ht.</td>
<td>CONT.</td>
<td>Red flowers, Everblooming</td>
</tr>
<tr>
<td>ECH PAT</td>
<td>ECHINACEA PATA &quot;PENN PRAIRIE&quot;</td>
<td>&quot;GRO-LOW&quot;</td>
<td>5</td>
<td>2' ht.</td>
<td>CONT.</td>
<td>Fragrant, Evergreen</td>
</tr>
<tr>
<td>VIB CAR</td>
<td>VIBURNUM CARDBURG</td>
<td>&quot;WOODWARD VIBURBUM&quot;</td>
<td>5</td>
<td>2 1/2 ft.</td>
<td>B&amp;B</td>
<td>Fragrant</td>
</tr>
<tr>
<td>VIB DEN</td>
<td>VIBURNUM &quot;DENTATUS&quot;</td>
<td>&quot;WOODWARD VIBURBUM&quot;</td>
<td>2</td>
<td>4' ht.</td>
<td>CONT.</td>
<td>White flowers</td>
</tr>
<tr>
<td>VIB FL</td>
<td>VIBURNUM &quot;PLUM&quot; &quot;TETRACORN&quot;</td>
<td>&quot;MARIE&quot;</td>
<td>1</td>
<td>5' ht.</td>
<td>B&amp;B</td>
<td>White flowers</td>
</tr>
</tbody>
</table>
### GRASSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAL ACI</td>
<td>CALAMAGROSTIS ACUTIFLORA KARL. FOERSTER</td>
<td>KAAR. FOERSTER'S FEATHER REED GRASS</td>
<td>23</td>
<td>#2</td>
<td>CONT.</td>
<td>24° O.C.</td>
</tr>
<tr>
<td>CHA LAT</td>
<td>CHASMANOTHUM LATIFOLIUM</td>
<td>NORTHERN SEA OATS</td>
<td>17</td>
<td>#2</td>
<td>CONT.</td>
<td>24° O.C.</td>
</tr>
<tr>
<td>JPB CY</td>
<td>HIRBARIA CYLINDRICA 'RED BARON'</td>
<td>JAPANESE BLOOD GRASS</td>
<td>33</td>
<td>#1</td>
<td>CONT.</td>
<td>18° O.C.</td>
</tr>
<tr>
<td>JPB YAR</td>
<td>KOEAMENZU 'YAKU JIRA'</td>
<td>YAKU JIRA MAIDEN GRASS</td>
<td>18</td>
<td>#2</td>
<td>CONT.</td>
<td>24° O.C.</td>
</tr>
<tr>
<td>PEN ALO</td>
<td>PENNSETUM ALTERNIFOLIUM 'HUMILIS'</td>
<td>DWARF FOUNTAIN GRASS</td>
<td>6</td>
<td>#2</td>
<td>CONT.</td>
<td>24° O.C.</td>
</tr>
</tbody>
</table>

### HERBACEOUS

#### ANNUALS

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMT MAJ</td>
<td>ANNUALANNA MAJUS</td>
<td>CHERRYBLOSSOM</td>
<td>26</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., MULTICOLORED FLOWERS</td>
</tr>
<tr>
<td>DAV VIJ</td>
<td>DAVIDIA SP. 'GEOGRAPHIC'</td>
<td>DAVID DENDRUM</td>
<td>22</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., ORANGE FLOWERS</td>
</tr>
<tr>
<td>JPB NEW</td>
<td>IMPATIENS SP. NEW GUINEA</td>
<td>NEW GUINEA IMPATENS</td>
<td>30</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., ORANGE FLOWERS</td>
</tr>
<tr>
<td>JRB MAP</td>
<td>LAVARELLA MARSSER</td>
<td>SHEET AYLOMUM</td>
<td>53</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., PURPLE FLOWERS</td>
</tr>
<tr>
<td>JPD FUL</td>
<td>PLUMBAGO AFRICAN 'GROSFANIA'</td>
<td>BLACK-PEELED GROUND</td>
<td>126</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., ORANGE FLOWERS</td>
</tr>
<tr>
<td>TIN SAD</td>
<td>ZANTEANS STOECHIA</td>
<td>DWARF ZANTEA</td>
<td>21</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., MULTICOLORED FLOWERS</td>
</tr>
</tbody>
</table>

#### BULBS

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAS SPP</td>
<td>NARCISSUS</td>
<td>PEARL WHITE</td>
<td>8</td>
<td></td>
<td>BULB</td>
<td></td>
</tr>
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#### FERNS

<table>
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<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADJ MEK</td>
<td>ADONIUM MEKATUM</td>
<td>MAIDENHAIR FERN</td>
<td>7</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C.</td>
</tr>
<tr>
<td>ATH POC</td>
<td>ATHYRUM POGONIUM 'PIONEER'</td>
<td>JAPANESE PAINTED FERN</td>
<td>12</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., RED-SILVER FOLIAGE</td>
</tr>
<tr>
<td>OSM CIN</td>
<td>Osmunda CINAMOMA</td>
<td>CINNAMON FERN</td>
<td>7</td>
<td>#1</td>
<td>CONT.</td>
<td></td>
</tr>
</tbody>
</table>

#### VINES

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLE MDN</td>
<td>CLEMATIS MONTANA VAR. QUINSE</td>
<td>PINK FLOWERED AMERICAN CLEMATIS</td>
<td>5</td>
<td>#1</td>
<td>CONT.</td>
<td>24° O.C., PINK FLOWERS</td>
</tr>
</tbody>
</table>

Ellerbrook - 66
# Perennials

<table>
<thead>
<tr>
<th>Code</th>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Quantity</th>
<th>Size</th>
<th>Condition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACU CHR</td>
<td><strong>Cynoglossum virginianum</strong></td>
<td><strong>Cynosperum</strong></td>
<td>$4$</td>
<td>$1$</td>
<td>Cont.</td>
<td>2&quot; O.C., Yellow Flowers</td>
</tr>
<tr>
<td>AMF SCH</td>
<td><strong>Antennaria dioica</strong></td>
<td><strong>Silver Mound</strong></td>
<td>$10$</td>
<td>$2$</td>
<td>Cont.</td>
<td>3&quot; O.C., Silver Foliage</td>
</tr>
<tr>
<td>AMF PAN</td>
<td><strong>Astilbe x arendsii</strong> <strong>Falalin</strong></td>
<td><strong>Falalin Astilbe</strong></td>
<td>$28$</td>
<td>$1$</td>
<td>Cont.</td>
<td>3&quot; O.C., Red Flowers</td>
</tr>
<tr>
<td>AMF JAP</td>
<td><strong>Astilbe x arendsii</strong> <strong>Peach Blossom</strong></td>
<td><strong>Peach Blossom Astilbe</strong></td>
<td>$5$</td>
<td>$1$</td>
<td>Cont.</td>
<td>6&quot; O.C., Pastel Pink Flowers</td>
</tr>
<tr>
<td>AMF WHT</td>
<td><strong>Astilbe x arendsii</strong> <strong>White Glory</strong></td>
<td><strong>White Glory Astilbe</strong></td>
<td>$21$</td>
<td>$1$</td>
<td>Cont.</td>
<td>3&quot; O.C., White Flowers</td>
</tr>
<tr>
<td>AMF NOV</td>
<td><strong>Asperula odorata</strong> <strong>Wood's Pink</strong></td>
<td><strong>Wood's Pink Aster</strong></td>
<td>$54$</td>
<td>$1$</td>
<td>Cont.</td>
<td>3&quot; O.C., Pink Flowers</td>
</tr>
<tr>
<td>AMF LYO</td>
<td><strong>Asperula odorata</strong> <strong>Wood's Pink</strong></td>
<td><strong>Wood's Pink Aster</strong></td>
<td>$18$</td>
<td>$1$</td>
<td>Cont.</td>
<td>3&quot; O.C., Pink Flowers</td>
</tr>
<tr>
<td>AMF SPE</td>
<td><strong>Dicentra spicata</strong></td>
<td><strong>Old Fashioned Bleeding Heart</strong></td>
<td>$28$</td>
<td>$2$</td>
<td>Cont.</td>
<td>3&quot; O.C., Pink Flowers</td>
</tr>
<tr>
<td>AMF LPP</td>
<td><strong>Echinacea purpurea</strong> <strong>Magnus</strong></td>
<td><strong>Magnus Coneflower</strong></td>
<td>$100$</td>
<td>$1$</td>
<td>Cont.</td>
<td>6&quot; O.C., Purple Flowers</td>
</tr>
<tr>
<td>AMF GOO</td>
<td><strong>Calypso bulbosa</strong></td>
<td><strong>Sweet Woodruff</strong></td>
<td>$48$</td>
<td>$2$</td>
<td>Cont.</td>
<td>3&quot; O.C., White Flowers</td>
</tr>
<tr>
<td>AMF JOH</td>
<td><strong>Geranium 'Johnson's Blue'</strong></td>
<td><strong>Johnson's Blue Geranium</strong></td>
<td>$17$</td>
<td>$1$</td>
<td>Cont.</td>
<td>24&quot; O.C., Blue Flowers</td>
</tr>
<tr>
<td>AMF CAT</td>
<td><strong>Hemerocallis 'Catherine Woodbury'</strong></td>
<td><strong>Catherine Woodbury Daylily</strong></td>
<td>$58$</td>
<td>$1$</td>
<td>Cont.</td>
<td>4&quot; O.C., Pastel Pink Flowers</td>
</tr>
<tr>
<td>AMF HAP</td>
<td><strong>Hemerocallis 'Happy Returns'</strong></td>
<td><strong>Happy Returns Daylily</strong></td>
<td>$82$</td>
<td>$1$</td>
<td>Cont.</td>
<td>24&quot; O.C., Yellow Flowers, Repeats at Bloomer</td>
</tr>
<tr>
<td>AMF LPP</td>
<td><strong>Heuchera 'Palace Purple'</strong></td>
<td><strong>Purple Palace Coral Bells</strong></td>
<td>$95$</td>
<td>$1$</td>
<td>Cont.</td>
<td>24&quot; O.C., Purple Leaves</td>
</tr>
<tr>
<td>AMF ROO</td>
<td><strong>Hosta 'Krossa Regal'</strong></td>
<td><strong>Krossa Regal Plantain Lily</strong></td>
<td>$5$</td>
<td>$2$</td>
<td>Cont.</td>
<td>24&quot; O.C., Silvery Foliage</td>
</tr>
<tr>
<td>AMF LAV</td>
<td><strong>Lavandula angustifolia</strong></td>
<td><strong>'Jean Davis' Lavender</strong></td>
<td>$37$</td>
<td>$1$</td>
<td>Cont.</td>
<td>12&quot; O.C., Fragrant</td>
</tr>
<tr>
<td>AMF SYL</td>
<td><strong>Phlox stolonifera</strong></td>
<td><strong>Fenwic Pinky</strong></td>
<td>$20$</td>
<td>$1$</td>
<td>Cont.</td>
<td>9&quot; O.C., Blue Flowers</td>
</tr>
<tr>
<td>AMF ATP</td>
<td><strong>Perovskia atriplicifolia</strong> <strong>Furman</strong></td>
<td><strong>Russian Sage</strong></td>
<td>$14$</td>
<td>$1$</td>
<td>Cont.</td>
<td>32&quot; O.C., Silver Foliage</td>
</tr>
<tr>
<td>AMF PAN</td>
<td><strong>Phlox paniculata</strong></td>
<td><strong>Moss Pink</strong></td>
<td>$41$</td>
<td>$1$</td>
<td>Cont.</td>
<td>32&quot; O.C., Lilac Flowers</td>
</tr>
<tr>
<td>AMF TSM</td>
<td><strong>Thymus serpyllum</strong></td>
<td><strong>Creeping Red Thyme</strong></td>
<td>$31$</td>
<td>$1$</td>
<td>Cont.</td>
<td>32&quot; O.C., Ground Cover</td>
</tr>
<tr>
<td>AMF COR</td>
<td><strong>Tanacetum corylifolium</strong></td>
<td><strong>From Flower</strong></td>
<td>$19$</td>
<td>$1$</td>
<td>Cont.</td>
<td>3&quot; O.C., White/Pink Flowers</td>
</tr>
<tr>
<td>AMF VIN</td>
<td><strong>Veronica minor</strong></td>
<td><strong>Blue Whistler</strong></td>
<td>$192$</td>
<td>$2$</td>
<td>Cont.</td>
<td>32&quot; O.C., Evergreen</td>
</tr>
<tr>
<td>AMF JCH</td>
<td><strong>Thymus serpyllum</strong></td>
<td><strong>Creeping Red Thyme</strong></td>
<td>$49$</td>
<td>$1$</td>
<td>Cont.</td>
<td>32&quot; O.C., Blue Flowers</td>
</tr>
</tbody>
</table>
## APPENDIX D

List of Suggested Container Plants

### GRASSES

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calamagrostis Acutiflora ‘Karl Foerster’</td>
<td>Karl Foerster’s Feather Reed Grass</td>
<td>Upright habit</td>
</tr>
<tr>
<td>Chasmanthium latifolium</td>
<td>Northern Sea Oats</td>
<td>Attractive seed</td>
</tr>
<tr>
<td>Imperata cylindrica ‘Red Baron’</td>
<td>Japanese Blood Grass</td>
<td>Red foliage</td>
</tr>
<tr>
<td>Miscanthus sinensis ‘Yaku Jima’</td>
<td>Yaku Jima Maiden Grass</td>
<td>Dwarf variety</td>
</tr>
<tr>
<td>Pennisetum alopecuroides ‘Hameln’</td>
<td>Dwarf Fountain Grass</td>
<td>Foxtail fruit</td>
</tr>
</tbody>
</table>

### ANNUALS

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ageratum houstonianum</td>
<td>Floss Flower</td>
<td>Purple flowers</td>
</tr>
<tr>
<td>Antirrhinum majus</td>
<td>Snapdragon</td>
<td>Multicolor flowers</td>
</tr>
<tr>
<td>Apium petroselinum</td>
<td>Parsley</td>
<td>Edible</td>
</tr>
<tr>
<td>Begonia semperflorens-cultorum</td>
<td>Wax Begonia</td>
<td>Red or pink flowers</td>
</tr>
<tr>
<td>Calendula officinalis</td>
<td>Pot Marigold</td>
<td>Yellow-orange flowers</td>
</tr>
<tr>
<td>Cleome hasslerana</td>
<td>Bachelor’s Button</td>
<td>Blue flowers</td>
</tr>
<tr>
<td>Coleus x hybridus</td>
<td>Coleus</td>
<td>Ornamental foliage</td>
</tr>
<tr>
<td>Dahlia spp. ‘Vulkan’</td>
<td>Vulkann Dahlia</td>
<td>Orange flowers</td>
</tr>
<tr>
<td>Dianthus barbatus</td>
<td>Sweet William</td>
<td>Pink flowers</td>
</tr>
<tr>
<td>Impatiens spp. ‘New Guinea’</td>
<td>New Guinea Impatiens</td>
<td>Orange flowers</td>
</tr>
<tr>
<td>Ipomea purpurea ‘Blackie’</td>
<td>Black Sweet Potato Vine</td>
<td>Ornamental purple foliage</td>
</tr>
<tr>
<td>Lobularia maritima</td>
<td>Sweet Alyssum</td>
<td>Purple flowers</td>
</tr>
<tr>
<td>Lunaria annua</td>
<td>Money Plant</td>
<td>Ornamental seeds</td>
</tr>
<tr>
<td>Pelargonium x hortorum</td>
<td>Geranium</td>
<td>Multicolor flowers, fragrant</td>
</tr>
<tr>
<td>Portulaca grandiflora</td>
<td>Moss Rose</td>
<td>Succulent foliage</td>
</tr>
<tr>
<td>Rudbeckia fulgida ‘Goldsturm’</td>
<td>Black-eyed Susan</td>
<td>Orange flowers</td>
</tr>
<tr>
<td>Salvia splendens</td>
<td>Scarlet Sage</td>
<td>Red flowers</td>
</tr>
<tr>
<td>Senecio cineraria</td>
<td>Dusty Miller</td>
<td>Ornamental foliage</td>
</tr>
<tr>
<td>Tagetes spp.</td>
<td>Marigold</td>
<td>Yellow-orange flowers</td>
</tr>
<tr>
<td>Viola x wittrockiana</td>
<td>Pansy</td>
<td>Multicolor flowers</td>
</tr>
<tr>
<td>Zinnia angustifolia</td>
<td>Dwarf Zinnia</td>
<td>Multicolor flowers</td>
</tr>
</tbody>
</table>
APPENDIX E

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Book Sources:


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III. Cardinal Greenway. "Muncie Trail Head."


    January 2002).

Interview Sources:


II. Mary, R.N. Telephone Interview. 11 January 2002.

III. Westphal, Dr. Joanne, Ph.D., M.L.A., M.D. Workshop Interview. 16 November


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