

CATALOGING ACTIVE GARDENS FOR THE BYOASE PROJECT IN COPENHAGEN

A qualitative evaluation of active gardens and recreational areas as examples of green space redevelopment

> An Interactive Qualifying Project Report submitted to the Faculty of the WORCESTER POLYTECHIC INSTITUTE in partial fulfillment of the requirements for the Degree of Bachelor of Science

> > Alison LeFlore Bernard Lis Corey Randall

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Project Advisor: Peter Christopher Project Liaison: Lone Vendelhaven

Abstract

Nørrebro Agenda 21, an environmental organization in Copenhagen, Denmark, is redeveloping underutilized green space in De Gamles By. They propose sensory gardens, playgrounds, urban farms, community gardens and nature laboratories to improve the quality of life for residents and enrich relations between social groups. We investigated similar facilities and created a catalog of active gardens, their general characteristics and site-specific information. The catalog provides concrete examples to help Agenda 21 redevelop De Gamles By and bolster applications to fund redevelopment.

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Executive Summary

This report chronicles the project that we completed in cooperation with the Nørrebro Agenda 21 Center in Copenhagen, Denmark. Nørrebro Agenda 21 is an environmental organization that supports sustainable development and other environmental projects in the district of Nørrebro. The organization has been working with members of the De Gamles By (Old People's Town) community for several years on various environmental initiatives, and so a relationship has grown between Nørrebro Agenda 21 and De Gamles By. De Gamles By is a section of Nørrebro where more than five hundred elderly people live. There are also several day care centers, kindergartens, an assisted living facility and office buildings in De Gamles By. The property includes 50,000 square meters of underutilized green space between the buildings. Members of the community feel that it is a travesty to have such a large area of green space in the middle of the city that is not serving any function, so Nørrebro Agenda 21 has begun a project to redevelop the green space in De Gamles By. ByOase (City Oasis) is the name for the project that Nørrebro Agenda 21 is spearheading to redevelop the green space in De Gamles By. ByOase proposes a number of sensory gardens, playgrounds, urban farms, community gardens and nature laboratories.

In addition to encouraging people to use the green space in De Gamles By, there are many social conditions that Nørrebro Agenda 21 hopes to improve with the creation of these recreation areas. Norrebro is a diverse area of Copenhagen and the minorities are often separated from Danish society. The creation of these facilities in De Gamles By will hopefully mend social divides by creating a common experience for everyone that can highlight commonalities between groups. Many children in today's urban world have not had the opportunity to learn about nature. Facilities that give children the opportunity to learn about nature and animals with children of other ethnicities can have many positive effects on the community. The elderly are another group that is often marginalized in Danish society. There are many pensioners living in De Gamles By who have limited mobility and would benefit from improved green space in De Gamles By. Nature also provides many benefits to health, ranging from reducing stress to quicker recovery time.

Nørrebro Agenda 21 Center is seeking background knowledge to make informed decisions about the types of gardens and playgrounds they want to include. Our project involved

locating and investigating various gardens, playgrounds and farms similar to those that ByOase proposes for the area in De Gamles By. After researching the different gardens and playgrounds, we conducted interviews at thirteen of the nature labs, building playgrounds, sensory gardens, nature gardens and urban animal farms located within two hours of Copenhagen. Some types of facilities that Nørrebro Agenda 21 hopes to include in De Gamles By are not accessible from Copenhagen, but they were an important part of the research in this project. For these four locations, Internet research and telephone or e-mail correspondence substituted for interviews.

This main result of this project was the creation of a catalog of various types of active gardens based on information we obtained from research and interviews. The catalog highlights common characteristics from each type of outdoor facility. This catalog will be used to provide information to the Nørrebro Agenda 21 staff and to support their funding efforts for the ByOase project. The catalog will bolster grant applications by providing specific examples of active gardens that are similar to those that ByOase suggests for De Gamles By. The eighteen successful examples of active gardens and recreation areas demonstrate that the ByOase project is not only feasible, but beneficial to the community.

This report explains recommendations we made to Agenda 21 regarding how best to obtain additional information from each active garden and recreational areas. Each location can provide some benefit throughout the ByOase project, but certain locations will be more helpful than others. For each category, we recommended the locations that can provide the most insight and valuable knowledge as well as noting particular staff members who are particularly knowledgeable about different aspect of ByOase. All three nature parks provide excellent examples for De Gamles By, so we recommended that Nørrebro Agenda 21 staff visit all the parks and maintain contact with certain staff members at each location. We researched seven facilities that give children the opportunity to interact with animals. Many of these facilities, we have recommended that Agenda 21 staff concentrate their time and energy on working with the three facilities that are the most similar to the animal farms proposed for De Gamles By. We identified one sensory and therapeutic garden in the Copenhagen area that is an excellent example of what ByOase proposes for De Gamles By. Additionally, the staff is very knowledgeable about horticultural therapy and garden design. Since all six building playgrounds

are similar, we did not make a specific recommendation in regards to building playgrounds, but instead recommended that Nørrebro Agenda 21 staff consider the other features of each location to decide which of the playgrounds to contact. Furthermore, we recommended that Norrebro Agenda 21 staff maintain contact with the staff members at the recreational facilities that are located outside of the greater Copenhagen area.

Our project provides the Nørrebro Agenda 21 staff with important information about active gardens and recreation areas so that they can best serve the De Gamles By community through the ByOase project. With informed decision-making, Nørrebro Agenda 21 will be able to create a community center that offers a nature paradise for the residents and neighbors of De Gamles By.

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1.0 Introduction

Green spaces play an important role in human life. Communities seek to create and improve green spaces for many reasons. Green spaces are havens from the ruckus of city life and allow citizens to experience nature. They have been shown to have positive effects on quality of life as well as physical and mental health. Over short periods of time, green spaces can be very helpful in reducing stress in adults (Cooper-Marcus et al., 2001). Besides improving health, there are many other benefits from green spaces. For example, green space can provide a place for nature education, and it has been shown to help cognitive development. (Jackson, 2003).

In 2004, the City of Copenhagen made it a priority to ensure that every citizen has access to green spaces in their daily lives (Copenhagen, 2004). Towards this ideal, many environmental organizations have been working to maximize the usage and utility of the city's green spaces (Local Agenda 21, 2006). Nørrebro Agenda 21 is an environmental organization promoting these goals in the Nørrebro District of Copenhagen. One of their projects, which is called ByOase (City Oasis), is located in De Gamles By (Old People's Town). De Gamles By is a small neighborhood in Nørrebro that is composed of many retirement homes, day care facilities, preschools and office buildings. Surrounding these buildings there are 50,000 square meters of underutilized green space. The De Gamles By community would like to make better use of its green space by creating a number of active gardens and playgrounds that will improve the lives of those in the community.

The Nørrebro area has been experiencing some social unrest over the past few years. There are many minorities living in the area and they tend to become separated from the Danish. Common green spaces can provide a means to strengthen community interaction (Dickensen, 2003). Therefore, the creation of these gardens will encourage interaction between various social groups. It will also give children something constructive to do with their time. Through the ByOase project, it is hoped that De Gamles By will become an outdoor community center for the residents of Nørrebro.

Although the ByOase project is still in its infancy, Nørrebro Agenda 21 has been able to secure some funding from various sources to begin creating active gardens in De Gamles By. However, the Nørrebro Agenda 21 staff has limited experience creating active gardens and feel that they need a more substantial base of knowledge before they can make informed decisions

about how to develop the De Gamles By area. The purpose of our project is to provide a catalog of information about gardens and playgrounds. This catalog is comprised of information and photographs we collected during interviews with staff members at various gardens and playgrounds as well as our observations at each location. These interviews helped us learn more about each type of facility so that Nørrebro Agenda 21 can avoid some of the common problems and build on successful practices of similar organizations. In addition to general practices, these interviews provided our sponsor with ideas for different ways to involve the community throughout the ByOase project. The catalog also provides contact information for each location, so that Nørrebro Agenda 21 can obtain additional specific information about each location as they continue with the ByOase project.

This report describes some of the common characteristics we found in each type of recreational area. It further recommends how Nørrebro Agenda 21 can make the best use of the information available from each garden or playground. We have recommended that those involved with the ByOase project visit the facilities that are unique or provide an excellent example of what Nørrebro Agenda 21 plans to develop in De Gamles By. There is another group of facilities that are not particularly similar to the ByOase project, but have characteristics that Agenda 21 wants to include in De Gamles By. We have recommended that Agenda 21 contact individuals at these facilities to serve as consultants for the ByOase project. Additionally, some of the places we visited were interesting and can provide some information, but that information is also available from other locations. So, we have recommended that Agenda 21 staff not concentrate on these locations. These recommendations will enable Nørrebro Agenda 21 staff to effectively budget their time as they complete additional research. With the results of our project and further contact with established active gardens, Nørrebro Agenda 21 will have the background they need to plan and execute the ByOase project.

2.0 Background

This chapter begins with a description of Local Agenda 21 including a brief history of the organization, a discussion of some of the organization's constraints and how Denmark has applied the Agenda 21 concept in Copenhagen. A description of Nørrebro and De Gamles By provides insight about the project's location. A section detailing the history and development of the ByOase project then explains Nørrebro Agenda 21's many goals and our project's role in the ByOase project. This chapter highlights the benefits of green space to show the importance of preserving urban green space. The chapter ends with descriptions of various types of active gardens and playgrounds, as well as common garden design theories and characteristics.

2.1 Local Agenda 21

The Rio Declaration on Environment and Development (Rio Action Plan) is one of the major international efforts towards a sustainable future. The Rio Action Plan is also known as Agenda 21 because it outlines the goals for creating a sustainable world in the twenty-first century. It was started in 1989 and culminated in 1992 at the United Nations Conference on Environment and Development. Local Agenda 21 is outlined in chapter 28 of the Rio Action Plan and was included because the Conference realized local action would be necessary to accomplish the Agenda 21 goals (United Nations Conference on Environment and Development, 1992). Of all the provisions in the Rio Action Plan, Local Agenda 21 is one of only two provisions that have seen widespread implementation. One of the reasons that Local Agenda 21 has seen such extensive implementation is the fact that it is a flexible initiative with simple goals (Devuyst, Hens, Lannoym, 2001). The following sections will provide an overview of Local Agenda 21, highlight some of the challenges they have faced and present some information about Copenhagen's Local Agenda 21.

2.1.1 Overview of Local Agenda 21

The purpose of Local Agenda 21 is to work within communities to create and implement plans for working towards a sustainable world. Local Agenda 21 was created with the hope that eventually every municipality and state would establish Local Agendas 21 so that there would be Agenda 21 influence worldwide (ICLEI, 2002). The World Commission on Environment and

Development defines sustainability as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987). Since the definition of sustainability covers a broad range of topics, Local Agendas 21 focus on improving the resources that will be the most beneficial for their respective community (Spangenberg, 2002).

The Local Agenda 21 program is administered at the local level and has no central authority. Even though they are run locally, there are still international organizations that aid Local Agendas 21 in their various problems and projects. Some national governments have created a network of Local Agendas 21, while other Local Agenda 21s were established through municipalities (United Nations Conference on Environment and Development, 1992).

Working with the community to create a sustainability plan is often one of the first projects that new Local Agenda 21 centers undertake. The Charter of European Cities and Towns Towards Sustainability provides a series of recommended steps for creating such a plan. It is important to know what other organizations and support networks are already working towards sustainable development in the local community. With the help of the local community, environmental problems in the area are identified and prioritized. Together, the Local Agenda 21 and community then develop a vision for the community's environment, as well as create a long-term plan to realize it. (The European Conference on Sustainable Cities & Towns, 1994). The focus of each community depends entirely on the characteristics of that community, so goals can vary greatly throughout a large municipality or country. For example, Local Agenda 21 in the municipality of Herning, Denmark is focusing on the fish population in the local streams, carbon emissions, waste production and energy conservation. The Local Agenda 21 in Storstøms County focuses on the implementation of "Healthy Children – Healthy Environment," which is an initiative to reduce harmful elements in children's environments (Ministry of Environment, Danish Forest and Nature Agency 2005).

Once a community has created a long-term plan, the Local Agenda 21 creates and promotes projects that address and support the community's goals. There are many different ways that Local Agendas 21 can work towards the goals of their community. For example, they start projects such as car sharing to reduce carbon dioxide emission or work on long term projects such as upgrading local buildings to make them more energy efficient. Volunteers and

paid employees work together to secure funding, ensure that the projects are completed in a timely fashion, create new projects and update the sustainability plan when necessary. In addition to working on various projects, Local Agendas 21 also provide the community with information to help them make sustainable choices. All of these processes can be easier to implement if the Local Agenda 21 can persuade the government to establish policies that encourage citizens to make sustainable choices. Local Agendas 21 often establish mutually beneficial relationships with other local organizations in order to get outside support for their projects and help the other organizations with their projects (Australia, 2008).

Depending on their location, Local Agendas 21 work on different projects and have varying impacts. For example, in countries with a high gross national product (GNP), such as Denmark, the greatest impact was seen in the educational system between 1997 and 2002. Other areas affected were the reduction of waste, increased public awareness, improved water quality and increased energy conservation. In areas with a medium GNP, the biggest effect seen due to Local Agendas 21 between 1997 and 2002 was city beautification. However, in areas with low GNP, the biggest benefit over the same time period was an improved water supply (ICLEI, 2002). While Local Agendas 21 have had positive impacts on their communities, these successes have not come without challenges.

2.1-2 Challenges faced by Local Agenda 21

There are many common challenges that Local Agendas 21 face in different areas around the world. For example, there is sometimes a lack of national support and a small budget with which to carry out their plans. Many Local Agendas 21 feel that they do not have the ability to communicate with the government, because many governments view Local Agendas 21 as a public relations office for the governments' environmental plans. However, turning away from the government takes away a resource to help improve a community's sustainability. Another area Local Agendas 21 need to improve upon is the under-representation of minorities and trade unions (ICLEI 2002).

Local Agendas 21 also face some controversy about the role their organization should have in society. The biggest debate is whether Local Agendas 21 should operate separately from the government or as part of the government. There is some concern about Local Agendas 21 becoming too involved in politics and not being able to accomplish their goals. However, others feel that Local Agenda 21 will not succeed if they are not part of the government. (Devuyst, Hens, Lannoym, 2001). There is a small minority who feel Agenda 21 is just another attempt by the global elite to impose their will upon the world (Doyle 1998). Despite these challenges, Local Agendas 21 have flourished in many locations around the world including Copenhagen.

2.1-3 Local Agenda 21 in Copenhagen

Five Local Agenda 21 centers have been created in districts and suburbs of Copenhagen: Bispedjerg, Nørrebro, Sundbyoster, Vesterbro and Valby. Each center is implementing Copenhagen's Local Agenda 21 plan in their particular district (EPA, 2006). They have the benefit of strong support from the national government through financial support and open lines of communication (ICLEI, 2002). Furthermore, these Local Agenda 21 centers benefit from the support of their communities (City of Copenhagen, 2005).

The City of Copenhagen Local Agenda 21 plan has defined four distinct objectives (EPA, 2006). First, city officials want to develop Copenhagen into a sustainable city. This is accomplished partially through a set of goals that include improving air and water quality, improving local parks and promoting urban ecology (City of Copenhagen, 2005). The city has encouraged people to live more sustainable lives by making it convenient to use bicycles for transportation. Second, they want to establish open communication within the community. Copenhagen's plan states that there should be a way for organizations and residents to provide input about projects undertaken by their Local Agenda 21 (City of Copenhagen, 2005). The third goal is to reduce Copenhagen's environmental impact and to decrease the city's use of both global and local resources. One accomplishment is the establishment of a ride-share program for cars. Finally, the plan calls for citizens, local businesses and the government to incorporate sustainable practices into their daily lives (EPA, 2006).

While the various Local Agenda 21 centers in Copenhagen have begun work towards accomplishing all four objectives, the first goal is the most important to the ByOase project. The city has begun to fulfill its first sustainability goal by improving the green spaces of the city. City officials have said that green spaces within the city should be well maintained and increase biodiversity in the city. The Local Agendas 21 are currently working to make green space

accessible to residents without crossing a major road. In addition to being well-maintained, city parks need to provide suitable areas for outdoor recreation (City of Copenhagen, 2005). These green spaces provide opportunities for people to become active instead of staying indoors on the computer or watching the television.

The Local Agenda 21 center in Nørrebro is working on several long term projects to improve sustainability in its district. The ByOase Project, for example, plans to renovate the De Gamles By open spaces into active gardens and recreation areas (see section 2.3: *The ByOase Project*). Nørrebro Agenda 21 and its partners have arranged for a trial closing of Nørrebrogade, a major throughway in Nørrebro, to private motor vehicles for two months starting in June 2008. If successful, Nørrebrogade will be closed permanently to private motor vehicles beginning in September 2008. In addition to these and other long-term projects, members of the Nørrebro Agenda 21 staff work on various short-term projects. For example, a recent newspaper article announced that several old trees were going to be cut down in order for a parking lot to be built. Members of the Nørrebro Agenda 21 staff convinced the contractors and developers to move the trees to De Gamles By, instead of just cutting them down. All these efforts were coordinated by a small paid staff, volunteers and related organizations.

<u>2.2 Nørrebro and De Gamles By</u>

Nørrebro is a diverse district in the City of Copenhagen; many first and second generation Muslim immigrants live in the area. Many are Danish citizens, but are still very separate from the Danish society. It is often hard for Muslims to find work since they are often discriminated against and/or do not speak Danish. Due to these problems, Nørrebro has a twenty-six percent unemployment rate, much higher than the Danish average unemployment rate, which is 3.2 percent (CIA Factbook: Denmark). Often, the unemployed are seen as a drain on society. Additionally, many immigrants who are employed must work several jobs to make ends meet and so their children are left with no supervision after school. These circumstances lead to increased tension between the groups, as many Danes do not welcome the Muslims into Danish society and the Muslims bond together within their own communities. An example of this divide can be seen in the educational system in Nørrebro, which is one of the few places in Denmark to have private schools. These schools have been created by both the Danish and Muslim societies.

Many Danes fear the Muslim influence and do not want their children attending school with Muslim children. Additionally, Muslim parents feel that it is important for their children learn Arabic and are taught about Muslim culture and history. In addition to ethnic minorities, Nørrebro has always been one of the districts in Copenhagen where people with minority opinions congregate, which leads to further segmentation of the Nørrebro population.

De Gamles By is a section of Nørrebro. Figure 1 is an aerial view of De Gamles By and highlights the various elderly homes and daycare facilities in the immediate area. De Gamles By is Danish for "Old People's Town." It was developed in 1937 as the first public housing area for the elderly in Copenhagen. The area still houses and provides services for the elderly, but it has transformed into a multi-use area that includes several day care centers and schools. The area has many open grass fields located between buildings that total 50,000 square meters. This area has a few trees and benches, but is not inviting and not accessible for many of the elderly residents. Most people in the area do not ever use the green space at De Gamles By, but it is a popular area for dog-walking since the entire area is fenced in. From mid-May to late October, five sheep live in De Gamles By. The sheep are very popular with people who know they are there. Unfortunately, people who do not live or work right in De Gamles By do not know the sheep are there.



Figure 1: De Gamles By

An aerial view of De Gamles By that shows day care centers (red roofs) and buildings that are a part of the elderly community (yellow roofs).

(Nørrebro Agenda 21)

Agenda 21 has been working on various environmental initiatives in De Gamles By for many years. Many of these projects have focused on improving the outdoor space in De Gamles By. One project that was undertaken by Nørrebro Agenda 21 and De Gamles By was the creation of a neighborhood exchange station. People can leave or find things that are still usable and would otherwise have been thrown away. While working on small projects such as this, people began to think about redeveloping all of the outdoor areas of De Gamles By, which led to the creation of the ByOase project.

2.3 The ByOase Project

ByOase Project is the official title of the De Gamles By project started by Nørrebro Agenda 21. ByOase translates to City Oasis; the project will create a natural haven for the Nørrebro community. It is based on the premise that green space is very important and ought to be enjoyed by everyone in the community. The 50,000 square meters of green space that surround De Gamles By are hardly being used. Nørrebro Agenda 21's goal is to transform the area into a place that everyone in the community will use and enjoy. Furthermore, they hope that the creation of therapy gardens, playgrounds, urban farms, community gardens and a nature laboratory will help to bring the community together and begin to mend some of the social divides in Nørrebro as well as create activities for the unemployed and give children something to do after school.

This project first began in 2006 when several different groups began to discuss various different ideas to improve De Gamles By. Community members felt there should be areas for the children who attend day care and school in De Gamles By to play in. Others noted how popular the sheep were and thought it would be a big improvement if there could be more animals in the area year round. Nørrebro Agenda 21 brought a group of interested individuals together to create a vision for De Gamles By that would combine these ideas as well as determine other possible uses for the De Gamles By green space. This was the beginning of ByOase.

The ByOase vision has many different focuses. The social implications regarding the minority population in Nørrebro have already been discussed. The 550 elderly living in De Gamles By would benefit greatly from an improved green space. Nørrebro Agenda 21 plans to build sensory gardens, raised flower beds, fountains with running water and outdoor fireplaces.

The active gardens may provide the able elderly with social interaction. Those confined to their rooms will be able to hear the running water or view the gardens from their window. The objective is that these gardens will make the final years of the elderly more enjoyable.

Children are also a focus in the ByOase vision. Nørrebro Agenda 21 plans to provide children with a chance to learn about nature as well as a place to go after school. There are already small plots of land in De Gamles By for school children to plant. However, Nørrebro Agenda 21 wants to add more. Children will be able to take care of animals, cook food they grow themselves and learn about different aspects of nature. Any playgrounds and structures will be made of natural materials. It is Nørrebro Agenda 21 hope that the children (as well as the whole community) will feel ownership of the area and contribute to its upkeep.

Once the vision was written, many of the people involved with its creation became involved with various other projects. This put the project on hold until Lone Vendelhaven joined Agenda 21 to reorganize and revive By Oase. Our project is one of the first steps in this process and provides background information for Nørrebro Agenda 21 about various garden types and playground facilities as they continue their ByOase project. The catalog created from our project will serve as a source of this background information as well as contacts for experts.

Currently, the ByOase Project is still searching for funding. Many donations have been towards specific goals, such as playgrounds or small gardening areas for children. However, more funding is needed before Nørrebro Agenda 21 can fully plan and complete the project. Our project is to provide background information for Nørrebro Agenda 21 about the various garden types and playground facilities that they hope to develop in De Gamles By. This information will be used to supplement funding proposals by providing tangible examples of what ByOase plans to create. These examples will prove that the ByOase Project is not only feasible, but beneficial to the community. It will further be used to help Nørrebro Agenda 21 staff learn about the various types of gardens and recreational areas that have already been developed in various locations.

<u>2.4 The Importance of Green Space</u>

This section will explain why communities such as De Gamles By should support Agenda 21 and aid in the creation of urban gardens as well as the preservation of green space. Green spaces are nature areas that provide relief from city life. However, they serve many other purposes. As this section will detail, green spaces provide benefits to individual health, the environment and the community.

Green spaces contribute to the quality of life for individuals. Those who are active and visit green spaces such as parks are more likely to report good health than those who do not (Chiesura, 2004). One benefit of active involvement in green space is that visitors receive more exposure to natural sunlight. This is important, because a lack of ultraviolet radiation impairs calcium use in the human body (Jackson, 2003). Other benefits derived from sight of nature include the reduction of stress, the improvement of recovery time and the reduction of aggression (Westphal, 2003). Studies have shown that hospital patients with the ability to view nature from their windows have shown quicker recovery time than hospital patients restricted to views of buildings (Chiesura, 2004, 129). Cognitive development also benefits from green space. Individuals find educational value in nature (Chiesura, 2004). Those with Attention Deficit and Hyperactivity Disorder have been reported as having fewer symptoms when having access to nature (Jackson, 2003). Overall, green spaces promote better health and relaxation.

The environment also benefits from the presence of green space. Green spaces serve many practical purposes such as purifying air and water and reducing wind and noise (Chiesura, 2004). They also store carbon and help with the effects of global warming (Maddocks, 2008). By absorbing water, they help reduce the amount of pollutants that reach the streams and lakes in an area. Green spaces reduce the strain on water treatment plants as well as the size of the sewer system that is needed (Bannerman, Considine, 2003). Green spaces are also beneficial to the biodiversity of an area. They support insects, birds and other animals in areas that would otherwise be unable to survive (Maddocks, 2008). Green spaces increase the types of plants that can be grown by providing a microclimate that stays damp longer than the surrounding area. Green spaces have many positive environmental effects which are important reasons for creating and maintaining them.

Green spaces bring communities together by serving as meeting places and recreational areas. Communities with green space have a greater sense of well-being and connection than the communities without green space (Westphal, 2003). These communities also experience decreased street crime, decreased domestic violence, better supervision of children and stronger

family ties (Chiesura, 2004; Jackson, 2003). The benefits previously discussed arise from community involvement in green space, which further intensifies the positive benefits that people get from green space. (Westphal, 2003) As well as bringing the community together, green spaces provide aesthetic, historical and recreational value (Chiesura, 2004).

Businesses can also benefit from green space. Business districts with green spaces are more desirable than those without green spaces in the minds of customers (Westphal, 2003). Employees who could see nature from their office felt they were more productive. Supervisors also reported that these employees were more productive (Westphal, 2003).

It is clear that green spaces are a valuable resource for the individual, the environment and the community. However, studies suggest that green spaces in disrepair negatively affect the community, instead of benefiting the community in the ways that were described above (Westphal, 2003). To prevent green spaces from falling into disrepair, communities often create structured organizations to ensure that their green space is adequately used. A variety of active gardens are often used to create the structure that prevents green space from becoming unsightly and uninviting. All active gardens establish a purpose for the green space and depending on the type of active garden, they can encourage community involvement and engage visitors.

2.5 Active Gardens

This section details various types of active gardens. Active gardens are gardens and recreational areas that are designed to engage the user in participation. We have focused our research on the following six garden types: sensory gardens, enabling gardens, therapeutic gardens, community gardens, children's gardens and urban farms.

2.5.1 Sensory Gardens

Sensory gardens enthrall visitors of all ages and abilities by enticing the senses with a number of different smells, colors, textures and sounds. Some gardens are designed specifically to engage particular senses such as smell and touch. Sensory gardens are sometimes designed to engage certain populations, such as deaf or blind people (Benson, 1999). For example, some sensory gardens work to use scent and sight to help people who are losing their memory to recreate experiences. Even though some sensory gardens are designed specifically to engage

particular senses, many have characteristics that engage all of the senses, creating a heightened sensory experience for everyone. While these gardens often include amenities for those with low mobility or those who are visually impaired, they are very inviting and usable for anyone who wishes to visit.

To ensure that the various senses are engaged, one must consider many different factors when designing a sensory garden. A key element in sensory gardens is the plant choice. Plants must be chosen for their colors as well as fragrance, sound and texture (Chicago Botanic Garden, 2006). For people who are visually impaired, vibrant, brightly colored plants that create a contrast are important. Contrasts are easily created when bright yellows, oranges and reds are arranged with green foliage or when tall and short plants are arranged together (Benson, 1999; Chicago Botanic Garden, 2006). Additionally, plants that are furry, spongy, prickly or silky are good choices for enhancing the tactile experience. The sound of moving water is very soothing, so a fountain, pond or stream is often included to create and highlight the sounds in a garden; it is also important to pay attention to the sounds that the plants make when they rustle in the wind (Chicago Botanic Garden, 2006).

The Oizumi Ryokucki Park Sensory Garden in Osaka, Japan was built in 1997 to replace their Garden for the Blind. This garden engages all the senses by including items of audio, tactile and visual interest. Figure 2 shows a portion of the garden where bright red and white flowers are planted together so that people with limited vision can appreciate the contrast between plants. It also shows how the benches are arranged to be out of the throughway. As is usual in a sensory garden, all of the flower beds are raised so that every visitor can be close to the flowers without having to bend, stoop or stretch to reach the flowers. In the Oizumi Park garden, the beds are placed between twelve and thirty-two inches above the ground. In addition to providing accessibility, the raised beds make it easier for visitors to smell the plants, even if they are just passing by. Another feature of raised beds is that the retaining walls around the gardens can double as a convenient seating area.



Figure 2: Plant Choice

Bright colors are placed near one another to create contrast.

(http://www.design.ncsu.ed u/cud/projserv_ps/projects/ sensory/img_02.jpg)

Throughout the garden, there are brightly colored tiles along the walls to help the visually impaired and blind find their way around the garden. The various paths around the garden are very well marked and sections of the garden are made clear by pillars with brightly colored ornaments and bold patterns. There are also handrails placed along the paths to guide people around the garden; all of the plant labels are placed in Braille on the backside of the metal handrail. This is to help visually impaired people find their way around the garden and reduces the number of people who get lost in the garden. The path is made of different materials in different sections of the garden is presented in both Braille and written words (Center for Universal Design, 2008).

A very interesting feature of the Oizumi Sensory Garden is its raised pond. Figure 3 shows a family enjoying the raised pond; note how easy it is for all three people to reach the water. The pond is raised to seating level so that people can be close to and experience the sound, touch and sight of the water close up. Several walkways lead out into the pond, where people can feel as if they are sitting in the middle of the aquatic environment. The raised level of the ponds makes it possible for everybody to interact directly with the water and aquatic plants (Center for Universal Design, 2008).



Figure 3: Raised Pond

The raised pond makes it easy for all visitors to experience the touch, sound and sight of this aquatic ecosystem.

(http://www.design.ncsu.edu/cud/pr ojserv_ps/projects/sensory/img_02.j pg)

2.5.2 Enabling Gardens

Gardening is a favorite pastime around the world, but there are many people who have mobility or sensory impairments that prevent them from being able to garden. Enabling gardens have been developed to allow these people to participate in gardening and enjoy gardens in a way that they would not be able to enjoy an ordinary garden. The design of an enabling garden requires some modification of general landscape planning and design techniques. Even though modifications are required, the best enabling gardens have a simple design (Benson, 1999).

There are some common modifications that many enabling gardens incorporate into their design. The most common feature is raised beds. These beds make it easier for everyone, regardless of mobility, to garden because they bring the garden closer to people's hands, thus removing the need for people to bend down or sit uncomfortably on the ground. Raised beds make it possible for people who would benefit from the therapeutic and calming effects of gardening but do not have the mobility to get down on the ground to care for a garden. Many raised beds are created in a way that a chair or wheelchair can be placed under a ledge, much like sitting at a table. Another very common feature in enabling gardens is the hard 'floor' surface that allows people in wheelchairs or with walkers to easily move around the garden. Figure 4 illustrates how a wheelchair can be placed under the garden to give easy access to the garden and also shows the use of a hard, permeable floor to make gardens accessible to those with wheelchairs and walkers (www.nycgovparks.org).



Figure 4: Raised Beds

Many raised beds have ledges so that people can garden from a chair or wheelchair.

(www.nycgovparks.org)

One example of an enabling garden that doubles as a sensory garden is the Buehler Enabling Garden at the Chicago Botanic Gardens (Chicago, IL, USA). This garden may not appear to be different from an ordinary garden, but it is specially designed to give the physically challenged the ability to garden. The garden has a brick "floor" to aide those who are confined to a wheelchair or on crutches. It is walled in and the walls have notches cut every six inches to guide the visually impaired as they roam the garden, a feature all but invisible to someone not visually impaired, but essential to those that are. Another feature for the blind are the metal grates positioned a bit above the soil level. The metal bars are placed twelve inches apart so that people can easily design plantings and place plants without seeing their work (Benson, 1990).

For people with limited mobility, the Buehler Enabling Garden also features raised beds, which are placed at a variety of heights so that people at various stages of physical mobility can work in the garden. Some of these beds are low enough that people in wheel-chairs can easily reach the soil. Seats are arranged strategically throughout the garden so people can sit while they garden. The garden's design also features hanging baskets that are on easy-to-operate pulleys and vertical wall garden so that people of all heights and with every range of motion can reach the plants. A distinguishing aspect of the Buehler Enabling Garden is that the design considers aesthetics, and the features for mentally challenged visitors are not obtrusive, but blend into the garden (Benson, 1990). The Buehler Enabling Garden also uses many characteristics of sensory gardens to engage people fully while they garden. Figure 5 shows one of the raised fountains in the Buehler Enabling Garden, the latticed passageway that leads to another part of the garden and the way that plants can be strategically placed at various levels so that anybody who wants to can

garden; these large pots can be moved to another location so that people who are immobile, or nearly so, can have the garden brought to them (Chicago Botanic Garden).



Figure 5: Enabling Garden

Plants are arranged at various levels so that people of all ages and mobility levels can garden.

(http://www.artcom.com/Muse ums/nv/af/60022.htm)

De Gamles By is primarily a residence for the elderly, who generally have low mobility and often experience sensory impairment. Many of the residents in the nursing homes are immobile, so sound will be an important element in the De Gamles By gardens. Agenda 21 aims to create gardens that will engage those who are able to go visit them, but also provide stimulation to the room-bound patients. The residences have many windows, so the sights and sounds of the gardens should be able to engage people who cannot go out to see them. There are a large number of elderly residents in the area who use a walker or wheelchair, so the De Gamles By gardens need to be accessible for people who have limited mobility. As people age their senses of sight and hearing often diminish, so characteristics developed for the blind and deaf will help to engage these visitors' impaired senses.

2.5.3 Therapeutic Gardens

Therapeutic gardens sometimes include many of the elements found in sensory gardens. However, they are placed in healing settings and are designed to make people feel better both physically and mentally. Therapeutic gardens have their roots in the field of medicine. Hospitals in the Middle Ages could be found as a part of monasteries, which were built around a sort of therapeutic garden. (Whitehouse et al., 2003) These gardens were intended to make patients comfortable as they dealt with disease. This changed when Louis Pasteur and Claude Bernard developed their germ theory of disease in the nineteenth century (Whitehouse et al., 2003). With a successful method of treating diseases, the field of medicine no longer made use of the therapeutic garden. However, recent research has lead to increased attention on using gardens for therapeutic reasons.

Studies have shown that patients who have interaction with green space recover better, which has led some hospitals to create therapeutic gardens on site. For example, the Children's Hospital and Health Center in San Diego has a therapeutic garden that uses a variety of colors and textures to help sick children relax. Uses for this hospital's gardens have included an area for stress reduction, a place for memorial services, an area for patients to become involved with nature, a place for children to play and an alternative to the waiting room (Whitehouse et al., 2003). People who visited the garden reported the following characteristics as those that they enjoyed most: the sounds of running water in the children's fountain, bright colors, the gardens, plants and greenery, the related artwork such as the windmill, shadow wall, dinosaur, constellation wall and animal tiles, the sense of enclosure provided by the garden's walls, the opportunity for multisensory stimulation and the mere fact that they were outside (Whitehouse et al., 2003). This example provides some useful information about features of a successful therapeutic garden.

Molly Furgeson, a horticulturalist at the University of Minnesota, has proposed a set of factors that should be considered when designing and building therapeutic gardens (2006). Desired characteristics include accessibility, material selection and overall garden design. Access is important, especially for gardens at hospitals and healthcare facilities. For wheelchair users, those in gurneys or with intravenous poles, proper path surfaces are needed. Paths need to be firm, smooth and provide traction. For this purpose, concrete is a good solution, but rubberized paving can be a cheaper solution. It is also important to avoid steep slopes. These factors become especially important when planning gardens for people with various disabilities. Also, path surfaces should not produce glare, which can cause difficulty for users who are visually impaired, especially the elderly. Garden designs must account for the large turning radiuses that wheelchair users require. Raised edges along paths can also cause problems for wheelchairs and gurneys. It is best to create a change in texture instead (Furgeson, 2006).

Garden layout is also essential and generally involves balancing various factors. For instance, to reduce stress a garden should be simple and stimulating to the user without being

over-stimulating. On the other hand, over-simplification creates boredom. There should be a variety of sensory stimuli. Of course, the garden needs to be aesthetically pleasing. Some methods of achieving this goal are symmetry and smooth transitions which add flow to the garden (Furgeson, 2006).

Scale is also important when designing a therapeutic garden. Many hospitals are multistoried and can be imposing to visitors and patients alike. Trees can help bring a garden back to a "human scale" while making a building feel less intrusive (Furgeson, 2006). The trees in Figure 6 show how a large building can be brought into scale and made to appear less intrusive. Space for various group activities should be provided in a therapeutic garden, as well as space for privacy. Transitions between private and public areas of the garden are good for separating these spaces. There should be as much seating as possible. Some seating may require backs and arms for users needing support (Ferguson, 2006). Landmarks can orientate visitors within the garden. All these factors should be taken into consideration in creating the garden design.



Figure 6: A Therapeutic Garden A therapeutic garden designed by Planterra

(www.planterra.com)

Plants are a vital part of any garden. When selecting plants, the designer should research the local area. It is important to know what kind of plants the area can support as well as what the native and intrusive species are. Also, there may be plants that have special meaning to those who live in the area. These particular plant types should be featured in therapeutic gardens. It is also important to have plants that engage multiple senses. However, thorny or toxic plants should be avoided, because they may become a danger for children and those with mental disorders. Also, insect and disease resistant plants are preferred, because they avoid the need for pesticides and decrease the amount of maintenance the garden requires (Furgeson, 2006).

Maintenance is also an issue with gardens. One way to make maintenance easier is to put high maintenance plants in easy to reach areas or to avoid high maintenance plants all together. Another way to make maintenance easier is to provide children with the opportunity to get involved with the garden. A study of the San Diego Children's Hospital and Health Center showed that children are willing and excited to become actively involved in garden maintenance (Whitehouse et al., 2003).

Many specific types of therapeutic gardens have been designed for specific groups, some of these garden types can be seen in the Table 1. (Furgeson, 2006)



Table 1: Therapeutic Garden Types



2.5.4 Community Gardens

Gardening has many positive effects on health and wellness, but many people do not have access to gardens on their property. Most people in urban environments do not have space for gardening on their property and many do not have any land rights, even if they own their flat or apartment. Almost a fifth of Denmark's 5.4 million citizens live in Copenhagen (Ministry of Foreign Affairs of Denmark, 2007). Community gardens have been developed in many places around the world to ensure that people who are interested can still garden, even if they live in the middle of a metropolis. Community gardens are created to be a haven where people from the community can come together to grow flowers and food (Daly, 1998). Eating a tomato you grew yourself is a rewarding experience, but community gardens offer gardeners much more than just self-satisfaction. Community gardening gives local residents the chance to impact their environment. Gardening offers people the ability to exercise while doing something productive, improve the appearance of their neighborhood and improve their health and well-being, all while creating bonds with their neighbors (Daly, 1998; Higgins, 2008). Additionally, community gardens often lead to decreased crime and vandalism in their neighborhood (Higgins, 2008).

Community gardens come in different shapes and sizes. The organizational structure and purpose also vary greatly between gardens. Some gardens are meant to provide food for the community, while others simply provide green space for growing flowers. How the land is divided depends entirely on the community; some gardens assign plots to individuals or families, others tend to everything communally and share the harvest and many others operate with a combination of individual and communal plots. Many sensory and therapeutic gardens are also categorized as community gardens because they were created and are maintained by community members (Daly, 1998). Some city governments have agencies that run community gardens and help connect residents with their local garden, but many cities have left the administration, creation and maintenance of community gardens to the community gardening. The Department of Parks and Recreation in Washington, D.C. (USA) runs two community gardens, but does not help residents find empty plots. Community gardeners often benefit from the experience that a professional gardener or non-profit agency can provide (Higgins, 2008).

The most common type of community garden is one that has small plots of land for which individuals or families are responsible. Depending on the garden's organization, there may be a fee to use the plot of land. Generally, community gardens seek to keep these fees low and use the profits to pay for communal supplies such as wheel-barrows, mulch and compost (Higgins, 2008; Smith, 2006). If the particular garden also has a communal plot of land, the usage fees will also pay the costs associated with the communal garden. Unfortunately, it is often very hard to find an empty plot and waiting lists are often several years long. These waiting lists show how successful community gardening has become; once people get a plot, they generally do not vacate it. Cities with an umbrella organization, whether governmental or not, often have a

much better process for finding open plots (Higgins, 2008). At the Coppell Community Garden in Texas (USA), people can adopt plots ranging in size from seventy square feet to one hundred square feet. Figure 7 shows a woman gardening at the Coppell Community Garden with several children.



Figure 7: Community Garden

People of all races come together to garden at a community garden.

(http://www.ci.coppell.tx.us/c2/content. nsf/site/3%3BCommunity% 20Profile%3BCommunity%20Garden% 3B%3BAdopt%20a%20Plot?opendocu ment).

The division of labor also varies depending on the garden, but most community gardeners share responsibility for the communal areas of their garden. At the Southwark/Queen Village Community Garden in Philadelphia, PA (USA), gardeners must attend a certain number of garden meetings and participate in 'workdays' where they sweep sidewalks, prune communal trees, turn compost and dig trenches. In addition to the usual individual plots, the Southwark/Queen Village garden has a children's garden, communal plots for flowers and herbs, an apple and pear orchard, grape arbor, raspberry patch and several beehives used for honey production (Smith, 2006).

Most community gardeners are volunteers. However, some cities and towns are using community gardening as a parole requirement for non-violent lawbreakers. Many community gardeners are vigilant about tending to the garden, but having a group of people who are mandated to work a certain number of hours a week ensures that the work will be done. Community service requirements also help to incorporate law-breakers into society (Stewart, 2007). In Taylor, Michigan (USA), one of the local judges instituted the idea of a community garden as community service for law-breakers by including garden work in their parole conditions. The garden serves multiple purposes from feeding the needy to showing criminals why it is important to respect others and their property. While one of the main purposes of this garden is to give lawbreakers some responsibility, community members are also encouraged to participate in the garden, they can lease plots that are 170 square feet for ten dollars a year (City of Taylor, 2007). Figure 8 shows the Taylor Community Garden where non-violent former criminals and community members work together to care for and enjoy the garden.



Figure 8: Community Service Garden

People work alongside former nonviolent criminals at the City of Taylor Community Garden

(www.cityoftaylor.com/node/587)

Dam Head, a residential development in Manchester (UK), has a residents association that has been very successful in establishing community gardens and using their gardens to encourage community members to develop ties with one another. Dam Head has a gardening group that spends time each week caring for the communal gardens and helping to improve the area by doing general outdoor work and maintenance. Residents can participate in the association's adopt-a-flower-bed project, which enables residents who do not have time to start their own garden to care for a garden that members of the residents association planted. In an effort to reduce theft and vandalism in the communal gardens, the residents association developed a Children's Flower Bed, where local children and their school classes work with adults to plant and tend to a section of the garden (see section 2.5.5: Children's Gardens). Since this program was established, there has been no vandalism or plant theft in the gardens at Dam Head and the children take quite a lot of pride in their gardens (Dam Head Residents Association).

Members of the De Gamles By community have expressed a concern about vandalism after the area is renovated and Agenda 21 wants to ensure that individuals in the area have a sense of ownership in De Gamles By. The Dam Head Residents Association's experience is very interesting for our project because it shows that including community members in the maintenance and care of communal areas helps to reduce vandalism and encourages a sense of ownership among community members.



Figure 9: Children's Flower Bed

Residents Association members work with local children in the Children's Flower Bed

(Dam Head Residents Association).

There have been racial tensions between the Danes and minorities living in Nørrebro. Historically, mending racial divides has been very difficult and Nørrebro Agenda 21 hopes that establishing recreational and garden areas in De Gamles By will help ease these tensions. Studies continually show that increased positive interaction between races leads to improved attitudes and behaviors towards members of the other group. Interracial interactions during leisure-time activities often lead to increased positive interaction between the groups because they are more informal than many other settings and people have chosen to participate in the activities. Additionally, people can freely choose their companions without the restrictions that generally exist in more formal settings. While these interactions are beneficial, it is sometimes difficult to get people from different races to participate in the same leisure activities. However, community gardens have proven to be quite effective at bridging racial divides. Community gardening often occurs in diverse areas, such as Nørrebro. In order for a garden to survive, people must work together to address their collective concerns. In addition to the benefits of community gardens that are discussed above, community gardens give people the opportunity to identify as a member of the particular community instead of categorizing themselves based on ethnicity. A study of community gardens in the Greater St. Louis, Missouri (USA) area and published in 2008 showed that interracial contact occurred at community gardens and that both Black and White Americans found their involvement at the community gardens to be beneficial. In the

same study, both Black and White gardeners agreed that community gardening had brought together people from different groups and fostered a sense of belonging (Shinew, et al., 2008).

2.5.5 Children's Gardens

Many children spend their childhood in the city where there are not many places to garden and even more children are often told to 'look but not touch' the flowers. Children's gardens have been established to give children the opportunity to grow, touch, smell and play in nature. Just like children, their gardens come in every shape, size and form. Some gardens serve simply as outdoor play spaces, while others require the children to take an active role in gardening. There have been some gardens created to encourage children to imagine and make up stories, learn about conservation and nature or even to learn about food and clothing production (Pullman, 2005).

Similar to many community gardens, children's gardens often offer children plots of land that enable them to design and care for their own small garden. Many of these gardens focus mainly on food production, but others allow the children to grow whichever plants they choose. At the Collingwood Children's Farm (Australia), children, ages eight to fourteen, work together in groups to design, plant and care for their own gardens. The farm also has animals that visitors and gardeners alike can help to care for. Children can learn how to milk a cow or can help with any of the other chores that must be done to properly care for farm animals (shown in Figure 10). Teaching many of the same principles, kitchen gardens have been developed to teach children about good food choices and where their food comes from. Collingwood College (Australia) has developed a kitchen garden that enables inner-city children to grow, harvest and cook their own food. This garden includes vegetable plots and several fruit trees (Pullman, 2005). Many kitchen gardens include exotic fruits, vegetables and herbs to help children learn about foods from different parts of the world (Hattam, 2004).


Figure 10: Cow-Milking

Visitors and young gardeners can learn how to milk a cow at the Collingwood Children's Farm in Australia

(http://www.kidspot.com.au/files/KD_co ntent/ collingwood_children's_farm.jpg)

An additional benefit that comes from youth community gardening efforts is that children learn about different races and cultures at a younger age. It has been shown that people involved with community gardening efforts are more tolerant and have more positive opinions of people from different ethnicities (see section 2.5.4: Community Gardens). Similarly, a study of innercity youth in Minneapolis/St. Paul, MN (USA), showed that the children involved with community gardening efforts had a stronger appreciation for other cultures than those who were not community gardeners. This study also showed that the young gardeners were more willing to eat nutritious foods and try new foods than the non-gardeners (Lautenschlager and Smith, 2007).

Many schools have begun incorporating gardens into the science curriculum to help children learn about the life cycle and botany. However, Sweden has been incorporating gardens into their education system since their elementary education system was created. The Swedish system uses the garden not only to teach students how to garden, but also to develop a child's sense of beauty and appreciation for aesthetics (Åkerblom, 2004). At the University of California (USA) Hennessy School Garden, children, parents and teachers have the opportunity to interact outside of the classroom which helps everyone develop their interpersonal skills and helps children to learn how to work cooperatively with their peers, older students and adults. Figure 11 shows two young students planting together. As with any garden that encourages them to garden, children learn responsibility and develop their sense of accountability. Additionally, working in a garden can help bolster self-esteem and confidence in children, because they see how their work is beautifying their community as well as how their actions improve nature and the environment (University of California, Davis, 2008).



Figure 11: School Garden

Older and younger children work side by side to care for the Hennessy School Garden

(http://ucce.ucdavis.edu/files/filelibrar y/1808/24394.jpg)

While many children's gardens seek to educate children or require them to participate in gardening, some gardens are created to give children the opportunity to have fun in an outdoor environment. These gardens often have a theme that encourages children to imagine or focus on something in particular. One of these gardens is the Ian Potter Foundation Children's Garden at the Royal Botanic Gardens in Australia. This garden, which opened in 2004, was designed to encourage children to interact with plants to spark their imaginations. Children can splash in water, climb rocks, roll down hills, run through the gardens and most importantly, touch all of the plants in the garden. Like most botanical gardens, there are parts of the Royal Botanical Garden that do not allow people to walk on the beds; but the Children's Garden has no boundaries. Children are free to do as they please and enjoy themselves. This garden includes many different ecosystems and types of gardens so children can learn about different environments while they play. There is a rainforest that periodically fills with mist, unusual plants that create effective and interesting play and hiding areas, a natural pond complete with insects and different fish, plant tunnels, a bamboo forest, areas to splash around in water and even an 'ancient' riverbed where children can climb on tree trunks and play in the sand mulch (Hattam, 2004). Figure 12 shows children playing in the bamboo forest at the Ian Potter Foundation Children's Garden.



Figure 12: Bamboo Forest

Children enjoy playing in the bamboo forest at Ian Potter Foundation Children's Garden

(http://www.visitvictoria.com/displayobj ect.cfm/objectid. 54B1C006-4B07-4F6F-8A219D16F30DFFE0/)

Children will learn something at every type of children's garden, but some gardens emphasize the educational aspect. For example, alphabet gardens are designed and built mainly to teach children about the alphabet. These gardens are broken into sections for each letter of the alphabet and each section contains only plants whose names begin with that letter. Other places teach children about gardens and gardening as well as many other environment and nature related subjects using the gardens and grounds. At the Brooklyn Botanic Garden (USA), children participate in various crafts and activities in the garden to combine planting, gardening and harvesting. The Brooklyn Botanic Garden (USA) was the first botanical garden to create a children's garden and it remains the longest continuously operating children's garden in the world and offers many different services to children and families. There are plots for children to tend to, but they also offer many educational programs to families, children and school groups. These programs teach children and adults about topics ranging from the types of plants found in a particular garden to how our everyday lives affect the environment. Each program is catered to a different age level and they offer numerous programs for preschoolers through high school seniors. School groups can sign up for a program and go to the garden on a field trip, or parents can register with their children for summer, weekend and vacation programs. In Figure 13, several children and adults are shown working together at one of the workshops (www.bbg.org).



Figure 13: Children's Garden Workshops

Parents work with young children during workshops at the Brooklyn Botanic Garden

(www.bbg.org)

Even though children's gardens are sometimes not much different from adult gardens, they generally include brighter colors, differently shaped beds and hearty plants. Hearty plants are very important for children's gardens because children run around, play and tumble, so the plants need to be able to withstand being trampled. Also, many young gardeners are not the most vigilant or patient gardeners, so the plants they grow are usually easy to grow and tough to kill. Children need space to run around and be children, so most designers of children's gardens make sure there is ample room for play (Pullman, 2005).

2.5.6 Urban Farms

Urban farms are categorized in two main ways. They are either a particular type of community garden that produce fresh fruits and vegetables for those in the community or an animal farm in the middle of a city with various types of farm animals. There are a variety of urban farm types and no one type dominates; how urban farms are created, developed and implemented varies tremendously from place to place. Many urban farms have developed into community activities that bring the community together as they work for a common goal – food production. Even though many of these gardens were created by and for their communities, some have been developed into for-profit operations. Many of these gardens have created partnerships with local and national grocers to increase their financial viability (Kaufman and Bailkey, 2000).

The types of urban farm that we are most interested in are those with various types of animals. From mid-May to late-October, five sheep move into De Gamles By, they are a very popular attraction in the neighborhood. Everybody enjoys watching and playing with the sheep, so the ByOase project proposes that there be more animals available for the Nørrebro community to enjoy. In addition to the joy that animals provide, there are many indications that having animals around and interacting with animals can help to improve a person's mental and physical health.

Humans have had domestic animals for thousands of years. Even though the majority of research done on human-animal interaction has highlighted the negative aspects of the relationship, every culture has continued to promote and maintain their commitment to the animals they keep solely for companionship. Animals can decrease loneliness among people who are living alone and promote social interactions between people. Animals provide comfort, giving people someone to touch, hold and even talk to. Just being near an animal decreases blood pressure and causes people to relax (Beck, 1999).

Beyond the joy and benefit that people receive from being around animals, companion animals have been very helpful in reducing the loneliness, helplessness and frustration often felt by Alzheimer's patients and their caregivers. Two of the ten residential buildings in De Gamles By house Alzheimer's patients. Animals help create a homey atmosphere, while providing a diversion for the patients and staff. Animals can interact easily with people who have reduced cognitive or physical abilities (Baun and Mccabe, 2003).

Urban farms aim to connect people with nature and give them the chance to learn about farms and animal care. Many of the farms are meant for children, but adults enjoy seeing the animals and learning about farm life as well. The Tam O'Shanter Urban farm in the United Kingdom gives visitors the chance to learn about different animals and experience what work on a farm is like while teaching people about nature conservation and their local environment. People ages twelve and older can volunteer on the farm, while visitors can try their hand at a task or just enjoy the scenery and animals. The farm has a miniature pony, donkey, sheep, pig and rabbits that are kept for the public to enjoy (www.tamoshanterfarm.org.uk).

Another urban farm example can be found on the outskirts of Denver, Colorado (USA). The Urban Farm teaches urban children about agriculture and the environment. Children learn about the responsibility that comes with animal ownership, where food comes from and how their actions impact the community and environment. In addition to helping children learn about farming and the environment, The Urban Farm aims to improve the lives of urban children who live in high-risk neighborhoods by creating a sense of positive worth and self-reliance. The Urban Farm also cultivates a strong work ethic by helping them to experience the satisfaction that comes from hard work. The children also learn to respect the environment and to appreciate plants and animals. Farming is a tough job and it cannot be done alone, so the children at The Urban Farm learn about teamwork, interdependence and community. The Urban Farm works with various school groups, after school programs, boys and girls clubs and individual families to create and run programs that allow children to participate on the farm and learn about its goals (www.theurbanfarm.org).

2.6 Playgrounds

Playgrounds are another common type of outdoor recreation area. Especially in urban areas, playgrounds are generally one of the few places where people can enjoy the outdoors. Originally designed for children, the typical playground has gone through several design and pedagogical phases. Playgrounds were first developed as a place to train future members of a social democracy (Arieff, 2007). In the late twentieth century, the design of playgrounds transformed to meet safety requirements that were established in fear of litigation. A new type of playground was conceived as the world's population grew older and there was more need for recreation for the elderly. Pensioner's playgrounds have been created to give the elderly a safe place to exercise and socialize. This section first examines playgrounds for children and then moves into a discussion of pensioner's playgrounds.

2.6.1 Children's Playgrounds

Playgrounds allow children of all ages to use their imaginations and to exercise. Typical playground equipment includes slides, see-saws and swings. However, many modern playgrounds are abandoning these staple playthings due to the number of lawsuits that are brought by today's parents. The United States is not the only litigious society; parents in many different cultures are beginning to sue over injuries and scrapes, a drastic change from days gone by. Many playgrounds today are designed to prevent injuries and lawsuits, not to encourage activity and fun for children (Arieff, 2007). Most playground equipment is built about five feet high and slides are built with shallow slopes so that children do not go too fast. Many

playgrounds are mass-produced, ordered from a catalogue and assembled in a day or less. Many children aged five and six are easily bored on today's playgrounds and older children will not even consider visiting one (Arieff, 2007; Sokoloff, 2007).

Fortunately, many of these trends are changing as architects and designers focus more on ensuring that children exercise both their minds and bodies when they play. This new focus in playground design is being driven by the worldwide increase in childhood obesity and diabetes. Designers are trying to focus on what children will enjoy about the play space since traditional playgrounds are quickly losing favor with children as they are drawn to videogames. Another factor to consider is that when children are bored, they can cause trouble or create dangerous games (Olweus, 1993). Many designers are beginning to consult with children as they design and build playgrounds to make sure children will enjoy visiting their playgrounds (Sokoloff, 2007).

New playground designs come in many forms and can be found all over the world, but they often have common characteristics. Many supply building materials, natural settings and equipment designed for different stages of development. Some playgrounds have large blocks, others have sand, buckets, trucks and pullies and others even provide donated materials, hammers, nails and scrap materials. Playground designers around the world have begun to incorporate building materials into playgrounds. The idea of playgrounds that allow children to build is new to North America, but Europe has had adventure playgrounds, as they call them, since the end of the Second World War. Another idea new to North America, but quite seasoned in Europe is hired play workers, paid playground employees who make sure that everyone is safe and using the materials properly. Play workers are most common at adventure playgrounds, but are sometimes found at more typical playgrounds as well. Copenhagen has twenty-six staffed playgrounds. There are more than 1,000 adventure playgrounds with play workers all across Europe (Sokoloff, 2007).

The Berkeley Marina Adventure Playground in Berkeley, California (USA) provides children the opportunity to design and build their own equipment to manipulate their environment. The playground has many child-designed forts, zip lines, boats and towers; but the real attraction is the variety of building materials that children can use to create new playthings. Hammers, saws, paint and nails are provided for children to use and the result is that children are always creating new and different things at the playground. These activities are meant to encourage children to work together, meet various physical challenges and increase their selfconfidence. Much of the material is donated, giving the playground staff the perfect opportunity to teach children about the philosophy and practice of reduce, reuse, recycle. Figure 14 shows a recent fort-building, where three staff members and ten children (all younger than 10) built a fort in forty-five minutes. Once the fort was built, the children were free to paint and decorate it however they wanted. While designed for children aged seven and older, younger children are welcome to play as long as they are within an arm's reach of an adult. There is an admission charge that helps to pay for the trained staff who help make sure that children who are with an adult stay safe and closely monitor the children who are at the after school or vacation programs without an adult (Adventure Playground). While visitors at the Berkeley Marina Adventure Playground are able to make lasting playthings, children at the Imagination Playground in New York City, New York (USA) use blocks, buckets, shovels and other equipment to create objects that they can then tear down again and use the materials to build something else (Arieff, 2007).



Figure 14: Adventure Playground

Staff and children work together to build this fort

(Adventure Playground)

Many children, especially urban children, do not often interact with nature. In order to increase children's access to nature, many designers are incorporating natural settings and playthings into their new playground designs. They include grassy slopes for children to roll down, trees for them to climb, boulders, sand, gravel and waterways for them to experiment with dam building. Robin Moore, one of America's foremost play-area designers, has found that "natural spaces and materials stimulate children's limitless imaginations and serve as a medium of inventiveness and creativity" (Louv, 2007). In addition to stimulating creativity and

imagination, researchers have found that green outdoor spaces can alleviate the symptoms of attention deficit disorder, reduce crime and improve interactions between children and adults. There are a variety of ways that designers have found to incorporate sturdy greenery into playgrounds. For example, there are certain types of soil and plants that can sustain the rough environment of a playground (Louv, 2007).

In order to captivate children, playgrounds need to be challenging environments where children can test and expand their boundaries. When children's minds are active, they play much longer and harder than they would if they were only exercising their bodies. To ensure that both mind and body are exercised, designers are now using different equipment to challenge balance and physical capabilities. The West 110th Street Playground in Manhattan, New York (USA), has added climbing and spinning equipment that has parts that wobble and sway. This equipment challenges children to develop and expand their physical capabilities (Shattuck, 2008). The new Greenfield School Playground in Edmonton, British Columbia (Canada), has Wobble Pads, Swiggle Stix and Orbiter Spinners to challenge children's minds and bodies. These three structures are placed in such a way that they resemble a bridge across the playground (see Figure 15). In Edith Cavell Elementary School's (Vancouver, Canada) new playground, children have a log-rolling structure and a Cosmic Warp. The log-rolling structure requires that children balance on tilting cylinders. The Cosmic Warp is a twisted set of monkey bars (Sokoloff, 2007).



Figure 15: Children's Playground

The Wobble Pads, Swiggle Stix and Orbiter Spinners form a bridge for children to play on

(John Ulan/Epic Photography, published in Sokoloff, 2007)

2.6.2 Playgrounds for Pensioners

In addition to these innovations in children's playspaces, there is a completely new kind of playground that is becoming popular in Europe - playgrounds for elderly people have been created in both the United Kingdom and Germany. These areas promote social and physical activity for elderly people and are commonly called '*Elderly Playgrounds*'. In an age where the average life span is increasing, people have begun to notice a need to help keep the elderly entertained and fit. All of the equipment is designed for people who are at least 1.5 meters (five feet) tall and is not meant to put excessive stress on the body, but to help elderly people remain or become more active. There are often various types of equipment meant to exercise different parts of the body (Boyes, 2006). In January 2008, the Dam Head Residents Association in Manchester (UK) opened the first elderly playground in England (pictured in Figure 16). The playground has machines that allow the elderly to perform upper body exercises, train their leg muscles, hips and stomach. There are also stations to allow people to do standing push-ups and leg-pedalling (Dam Head Residents Association).



Figure 16: Elderly Playground

The Elderly Playground at Dam Head in Manchester, England

(www.damra.co.uk)

In addition to exercise machines, the elderly playgrounds generally have places for games such as chess or cards to help seniors maintain social contacts and participate in social activities. Other elderly playgrounds even have padded Badminton courts. Many of the exercise machines and locations in the playgrounds are wheel-chair accessible. Some elderly playgrounds do not allow children at all and others allow them only if they are accompanied by an adult. One particular garden in Nuremberg, Germany does not allow anyone under sixty to be within the limits of the playground. Another movement in elderly playground design is Intergenerational Playgrounds, which have equipment for children and adults in the same area so that adults can get exercise while their grandchildren play. One of these playgrounds can be seen in Figure 17. The purpose of these playgrounds is to encourage older people to exercise and socialize with others. In fact, a study at the University of Lapland found that after of three months using a playground that had climbing frames, swings and seesaws their forty participants, aged 65 to 81, had regained confidence in their bodies and showed improvements in their balance, co-ordination and speed (Boyes, 2006).



Figure 17: Intergenerational Playground

An intergenerational playground in Germany allows grandparents to exercise while their grandchildren play

(http://www.germany.info/relaun ch/info/publications/infocus/Silve r_Gen/Silver_Generation_6.html)

2.6 Background Summary

Studies have shown that access to green space is very important to a community and that individuals are much healthier and happier when they have access to green space. Denmark has a strong history of promoting green space access. Many Copenhageners already have access to green space in their neighborhoods. However, the green space in De Gamles By is currently unorganized and underutilized. With help from our project, the area will become organized into active gardens and recreation facilities. Many factors must be considered when planning and designing an active garden for a particular community. There are many types of active gardens that benefit different groups of people and there are some that benefit the entire community.

3.0 Research Methods

This chapter outlines the process we followed to assist our sponsors with the ByOase project in De Gamles By. Nørrebro Agenda 21 has already decided on general types of gardens and playspaces they want to develop through discussion with staff and community members in the De Gamles By area. However, Nørrebro Agenda 21 does not have significant experience designing and developing either active gardens or recreation spaces. To assist them with the ByOase Project, we created a catalog of active gardens in and around Copenhagen. At each garden and recreation area, we interviewed staff members who were knowledgeable about the facility and its operations. Additionally, we contacted people at locations of interest outside of the Copenhagen region if no such facility existed within the local area. We obtained information from these outside locations through telephone and email correspondence. Once we completed our interviews, we compiled all the information into a catalog for our sponsors.

<u>3.1 Preliminary Visits</u>

There are many different gardens and recreation areas in the greater Copenhagen area. Our sponsors already had known about a number of gardens and recreation areas that may be of interest to the ByOase project. Through research and word of mouth, we learned about many more places to visit and continued to learn about others as our work progressed. However, it was not feasible to interview people at each facility. We conducted preliminary visits to garden locations within Copenhagen before deciding if we should interview someone there. At the preliminary visit, we took photographs, wrote notes and recorded our overall impression of the garden or recreation area. The photographs, notes and impressions we obtained helped determine whether or not we pursued an interview with someone at the facility.

Unfortunately, a preliminary visit was not always feasible. For those facilities that were further away, we relied on reputation and research when deciding if we wanted to interview someone associated with each organization. In either situation, if we decided that an interview would be feasible and beneficial, then we contacted a staff member or organization member to tell them about our project and asked if we may interview them.

Additionally, we knew of several types of gardens and playgrounds that have not been developed in Denmark, so we were not be able to visit them. However, our sponsors were very

excited about the information that these facilities could provide, so we relied on Internet research as well as e-mail correspondence with those involved at these locations to learn about their organization, responsibilities and community involvement.

<u>3.2 Secondary Visits and Interviews</u>

For the locations that we and our sponsors were interested in learning more about, we conducted secondary visits. The purpose of the secondary visit was to obtain more in-depth information about each facility. On these visits we interviewed a staff member or volunteer who was knowledgeable about the facility, its organization and how responsibility is assigned for its maintenance. Even if there was no one available for an interview, we spent time at the garden or recreation area since exploring the facility taught us much more about the facility than just researching it. When possible, we observed the activities or programs that facilities provided.

Since each facility offered different information and experiences, we decided to keep our interviews unstructured so that we could get the most relevant information from our interviewees about their particular facility. Although the interviews were unstructured, they did follow a basic format so we were able to learn certain information about each location. The interviews allowed us to learn as much in-depth information about a facility's structure and operation. We also identified special characteristics of each active garden or recreational area. At each location, we learned about how the garden or recreation area is run, individual responsibilities, the values they seek to instill in their visitors and whether or not they have established a sense of ownership among the community members. Additionally, our sponsor was interested in learning about obstacles that similar organizations faced as they planned and established active gardens and recreation areas, as well as how these other organizations addressed the obstacles. Given continuing social struggles in Nørrebro, the high level of unemployment and the numbers of children without constructive activities for their afternoons, our sponsor was also very interested in the experience that other facilities have had in combating similar problems through active gardens and recreation areas. Since we were relying on word of mouth to locate many of the facilities, we asked each person we interviewed if they could suggest any similar facilities that we should visit.

Nørrebro Agenda 21 wants to ensure that the gardens and recreation areas they create will be integrated into the community and that community members will take pride in their renovated green space. Since our sponsor has little experience in creating gardens and recreation spaces, they want to use the examples we provide to help determine how the gardens and recreation spaces should be organized. For example, ByOase recommends community gardens but is not experienced in creating such facilities and thus, cannot gauge how much responsibility they should put on the community for upkeep and care or how to effectively develop a sense of ownership among community members. Nørrebro Agenda 21 is planning to use the information we provide to help decide how to address problems such as these, which is why it was important for us to learn as much about these topics as possible during our interviews.

<u>3.3 Information Synthesis</u>

After completing the interviews, we had information from many different sources that we needed to bring together to create the catalog. We used our notes from each interview to create an information sheet about the location before we began to create the catalog. Using our information sheets, we were able to easily identify the most important qualities of each facility and then compile common characteristics for each category: playgrounds, farm animals, sensory/therapeutic gardens and nature parks. The following is a partial list of information acquired from each location:

- Upkeep, maintenance and organization
- How community members are involved with the location
- The values/purpose of the location
- Demographics of visitors
- Successes and failures that have faced the location
- How the location engages visitors
- Unique examples about the specific garden

Once we had organized the information, we were able to create the catalog and recommend how Nørrebro Agenda 21 can make the best use of the information each location can provide. Every facility where we conducted an interview or contacted staff is included in the catalog, but we did not recommend that Nørrebro Agenda 21 staff spend time visiting each of

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them. We recommended that Nørrebro Agenda 21 staff visit the gardens and recreational areas that are excellent examples of what they wish to accomplish in De Gamles By. Site visits will afford Nørrebro Agenda 21 staff the opportunity to experience these facilities firsthand and speak with staff members. Several of the facilities were not worth further consideration by Agenda 21 staff, but had staff members who could provide extensive knowledge about various aspects of the ByOase project.

4.0 Results

The facilities we contacted can be placed into at least one of four different categories: nature parks, animal farms, sensory/therapeutic gardens and playgrounds. While each facility we contacted had different purposes and resources, there are some key qualities and characteristics that many of the facilities in each category exhibited. This chapter describes our catalog and the information that is included in it and it discusses the characteristics and goals we found to characteristic of each category. Special characteristics of each facility are described later in chapter five.

4.1 The Catalog

Our catalog, which can be found in Appendix A, is dual-purpose; it will be included in grant applications and it will serve as a source of information about various gardens and playgrounds that have already been built and are similar to the facilities that Agenda 21 plans to include in the De Gamles By renovation. Even though some of the facilities are not in the greater Copenhagen area, we felt that it was important to include these locations because they are relevant to the ByOase Project. For that reason, the catalog includes facilities in the United Kingdom, United States and Canada. These additional facilities provide special examples of elderly playgrounds and sensory gardens. Dam Head, a residential development in the United Kingdom, also provides an example of how to create an active garden where people of all ages and ethnicities can work together.

The catalog is a compilation of active gardens that are applicable to the ByOase project. Entries for particular locations were not separated into categories because many locations fall into multiple categories. For example, Remiseparken Byggelegeplads contains both a playground and an animal farm. Therefore, the catalog's table of contents lists each active garden separately and indicates the category of each location by a color coding system. Each color represents one of the four categories of active gardens: playground, nature park, sensory/therapeutic garden and farm animals. In addition to the table of contents, we created an overview matrix so readers can easily identify which facilities have certain characteristics. The chrematistics included in the overview matrix are: animals, building playgrounds, community or children's garden, ecological or sensory garden, elderly facility and nature education. We created a summary page for each of the categories that highlight important characteristics. These pages are at the beginning of the catalog and serve to give readers an idea of what they will be reading about on the site-specific pages. Each individual garden has a page in the catalog that contains a description of the garden as well as general information such as its purpose, organization, user demographics and contact information. Photographs of the active garden are provided to give readers a better understanding of the garden's features.

4.2 Animal Farms Summary

Animal Farms are facilities that allow children to interact with and care for animals in their spare time. Students in the Copenhagen area usually finish their school day around one o'clock in the afternoon and many take part in afterschool programs. The animal farms found in our research were generally part of an afterschool program or club. Children often take ownership of an animal, either by renting or buying it, and are responsible for its care. Usually, the animal is a rabbit, but some children prefer chickens or other types of birds. Housing for the animal is often provided by the animal farm. However, one animal farm we visited requires children to build the housing for their animals under the supervision of the staff before they can own a rabbit or bird. The animal's food and veterinarian visits are provided by the animal farm. While it is the children's responsibility to feed and care for their animals, the staff ensures each animal is cared for properly. We learned through our interviews that some sort of fee, even a very small one, will help ensure children take their commitment to an animal seriously.

Not all animals are owned by a single child. Some animal farms support horses or goats as well as many other small animals for everyone in the organization. These animals are cared for by the staff and are communal animals. Children are encouraged to help care for the institution's animals, but are under no obligation to do so.

<u>4.3 Nature Parks Summary</u>

Nature parks emphasize the need for children and adults to experience and understand nature. The parks found through our research each offer a place for children to run free and play, while still learning about their surroundings. Each park organizes programs for groups of students during school hours and most remain open to the public on evenings and weekends to give the general public the opportunity to experience nature. These programs educate children about various aspects of nature, ranging from edible plants to the birds of Copenhagen. Each nature park offers children a way to connect with nature, either by simply learning more about nature and our environment or by making something that connects them with nature. Children participate in activities such as cooking, hunting bugs and building bird feeders. Further, the children are all encouraged to take their knowledge home with them and encourage their parents and families to consider nature and the environment in their everyday lives.

4.4 Playgrounds Summary

Traditionally, playgrounds are recreational areas for children consisting of swings, slides and other steel structures. However, this is not always the case. Our research focused on elderly playgrounds and playgrounds that offered unique experiences for children.

Buildings playgrounds are a special type of playground that encourage children to expand their horizons by empowering them to be creative and learn practical skills by helping the staff build and then decorate forts and other play equipment. These building playgrounds often include a place for groups of children to build their own small houses with staff assistance. Each building playground has a different stance on supervision; some take an active role in the building process, while others simply ensure that framework and flooring are secure. Every staff member we interviewed at building playgrounds agreed that children should be allowed to participate in the design and creation of their playgrounds.

Another type of playground that is very common at the nature centers are nature playgrounds. While other playgrounds often use structures made of steel, these playgrounds use natural materials for their structures. Often, these playgrounds blend into the landscape and allow children to play with water, sand and dirt. While playing in natural settings and using natural materials, children can learn about the environment.

Though we could not find an example in Copenhagen, elderly playgrounds challenge the belief that playgrounds are for children. Elderly playgrounds allow for both seniors and adults to exercise. Often, they are located near children's playgrounds and encourage all generations to enjoy the outdoors. Elderly playgrounds take up little space, and are something that could be interesting to implement in Copenhagen. They are especially interesting for the ByOase project

because it suggests facilities to improve De Gamles By, which includes housing for many elderly people.

4.5 Sensory/Therapeutic Gardens Summary

Nature has been shown to aid in the healing process and many of the gardens we visited in this category take that statement to heart. Patients are given the opportunity to interact with nature either by enjoying the garden or taking an active role in its upkeep. There are many common qualities that each garden includes. Sensory and therapeutic gardens are designed so that patients are able to easily find their way around, not get lost and have exit routes if they feel that they need it. Some patients and users become stressed if they feel closed in or there are many people in the garden, so multiple paths and exits can be very helpful. Creating different spaces throughout the garden is also a very important design element. Each of the sensory and therapeutic gardens we visited stressed the importance of creating small 'rooms' or spaces in the garden that feel smaller and have a roomy feel.

The types of plants included in these areas help to set the mood and dictate the intended use of the area. Some areas are meant for quiet contemplation or reflection and others are meant for group or restorative activities. Garden designers take care to ensure that the area has biodiversity, not only because it creates healthier environments but it also improves the appearance of the garden. Gardens are more interesting and inviting when the plants are in bloom, so the many plant types in sensory and therapeutic gardens are chosen to ensure that there is always something aesthetically pleasing to look at in the garden.

Since sensory gardens are designed to stimulate the various senses, plant choice and layout are often somewhat dictated by which senses the garden aims to stimulate. Sight is the easiest sense to appeal to and each sensory and therapeutic garden we visited worked to ensure that their garden stimulated the sense of sight. Soothing colors provide a relaxing atmosphere in areas of the garden designed for contemplation and quiet thought. Brighter colors help to encourage restorative thoughts or actions as well as physical activity. A combination of nature and aesthetics also helps reduce stress. Planting herbs and fruit trees allow the gardens to appeal to the sense of taste. Additionally, many herbs are also very fragrant and are used along with strong-smelling flowers to appeal to the sense of smell. Plant textures engage the touch. Of course, all gardens ensured that there were no harmful plants, such as thorny bushes or poisonous plants.

5.0 Analysis and Recommendations

The purpose of this project was to provide Nørrebro Agenda 21 with examples of gardens and recreational areas that could be used for the redevelopment of De Gamles By. This chapter discusses and describes each facility that we visited or contacted and gives our recommendation for how Nørrebro Agenda 21 can best obtain more knowledge. For additional information about any of these facilities, please refer to the full catalog which can be found in Appendix A.

Some gardens and playgrounds were excellent examples of what Nørrebro Agenda 21 plans to create in De Gamles By. For these gardens and playgrounds, we felt it is best for Nørrebro Agenda 21 to take a tour and talk with staff. Other gardens and playgrounds included components of what Nørrebro Agenda 21 will create in De Gamles By, but are not necessarily important to visit. However, many of these facilities have staff members who could provide valuable information to the Agenda 21 staff. For these facilities, we recommended that Nørrebro Agenda 21 invite these staff members to visit them. Individuals involved with these recreational facilities are very open and excited to share their knowledge with others who are interested in creating similar facilities. Commitment to the purpose and furthering the values of usable green space is very important to everyone we talked to and so they will be willing to help Agenda 21 by serving as consultants. Additionally, there were a few gardens and playgrounds were not worthy of further consideration by Nørrebro Agenda 21 for various reasons, either the type of garden may not have coincided with Nørrebro Agenda 21's goal, or it may not have been a welldesigned or functional garden. We included information on these gardens, but recommended that Nørrebro Agenda 21 focus on other gardens instead. We recommended that Norrebro Agenda 21 staff visit eight facilities and invite staff members from an additional six facilities to serve as consultants for the ByOase project.

5.1 Bredegrund Byggelegeplads



Figure 18: Bredegrund Byggelegeplads (Photo: Alison LeFlore)

Bredegrund Byggelegeplads is a playground with two sections: an ordinary playground and a building playground (See Figure 18). The building playground was the focus of our interview as it is most similar to what Nørrebro Agenda 21 plans to develop in De Gamles By. There is no age requirement, children of all ages are allowed into the building park and as long as they behave. Children learn to cooperate and respect each other through playing with children of all ages. In fact, older children often look out for the younger children to make sure that they are safe and having fun.

The building playground section of Bredegrund Byggelegeplads does not have to follow the same safety regulations a traditional playground would need to abide by. So, the building playground has structures that are more dangerous than a typical playground would have. However, children are kept safe through supervision and they have never had a serious injury occur on the playground. The building playground is only open during the weekdays when the staff is present.

The main structures in the building playground were built by the staff and older children. These structures include a large wooden ship, climbing platforms and a zipline. All children can help build small play houses and forts. To make sure that the house is safe, the staff creates the floor and skeleton. Children are then allowed to add whatever they want under the supervision of the staff. Different elements can be added to the houses. In addition to the houses built by small groups of children for their own use, there are several larger houses that were built by large groups of children and the staff for different attractions and activities. One of these houses has a water wheel-fountain combination, while another has a solar-powered weather station. Bredegrund Byggelegeplads also has a large garden where children can have their own little gardens. However, there is a lot of room in the garden, because very few children use the garden since it requires so much attention and care.

Bredegrund Byggelegeplads is a very interesting facility where many children enjoy spending time. While it has several unique aspects such as the solar-powered weather station that gives children the opportunity to learn about weather and weather forecasting, it does not have much in common with what ByOase plans to create in De Gamles By. There are other locations that can provide good examples of building playgrounds and children's gardening so we have recommended that the Nørrebro Agenda 21 focus their attention on other building playground facilities.

5.2 Broparkens Byggelegeplads



Figure 19: Broparkens Byggelegeplads (Photo: Alison LeFlore) Broparkens Byggelegeplads. is one of many after-school clubs for school-aged children from ages eight to eighteen that we visited (See Figure 19). In addition to the after school club, there is a day care center for younger children that shares the building and yard with Broparkens Byggelegeplads. Since our interest lies with their building playground and animal farm, our interview focused on the outside area. The animal farm had many different animals including three goats, chickens, birds

(both indoors and out), rabbits and two hamsters. Some of the rabbits were rented or owned by individual children, but the goats, chickens, hamsters and birds are owned by the institution so everyone can help care for and interact with them. The staff provides food, shelter and medical care for all the animals, even the rabbits that are rented or owned privately. Children who have rabbits are required to feed and care for their rabbits, which includes ensuring that they get exercise and attention. If the child cannot attend to their rabbit due to a holiday or illness, the child can arrange for the staff to take care of the rabbit. Even though the rabbits are each child's responsibility, the staff routinely checks on each rabbit to ensure that they are properly cared for.

Broparkens Byggelegeplads also has a small fenced-off building playground that only the older children may work in. Here, children can work on their houses or cook simple foods over a fire. The staff provides supplies and tools for building and different foods for the children to cook. The staff supervises activities in this area and tests the houses for safety.

Broparkens Byggelegeplads is similar to many of the other after school clubs that we visited. While it is a place that children enjoy and can learn about animals, there are other places that are a better example of what the ByOase project plans to accomplish. For that reason, we do

not believe this is a location that Nørrebro Agenda 21 staff needs to visit. Instead, we recommend that Nørrebro Agenda 21 staff and others involved with ByOase talk with Broparkens Byggelegeplads staff to learn about the activities that they hold with the children and how they have developed an atmosphere where children can freely interact with farm animals and build their own play houses.

5.3 Buehler Enabling Garden



Figure 20: Buehler Enabling Garden (www.chicagobotanic.org) The Buehler Enabling Garden, part of the Chicago Botanic Garden, has 500,000 visitors a year (see Figure 20). All year round, the garden is open to the public, and is accessible to the physically challenged. Public programs allow visitors to use tools to interact with the garden's 600 varieties of plants. Public tools are maintained by the staff and kept in a shed. Any activities involving public tools are supervised by the staff.

The Buehler Enabling Garden is often used for private group programs. Groups of up to fifteen individuals from various healthcare agencies can pay for private programs. These programs focus on therapeutic activities that can be held in the garden and are created and presented by the garden's full time horticultural therapist. The following is a list of activities and programs visitors can participate in at the garden and how they stimulate the senses (Chicago Botanical Garden).

Plant propagation – Participants learn how to use a stem-cutting to create a new plant. This helps participants to improve motor skills and hand-eye coordination.

Herb harvesting – Participants taste, touch and smell herbs they harvest themselves. This helps Participants to enhance social interactions and sensory stimulation.

Fresh or dried flower arranging – Participants create seasonal flower arrangements. This gives them the opportunity to express themselves creatively as well as to practice hand-eye coordination and other motor skills.

Birdseed making – Participants harvest seeds from a variety of plants to make birdseed. This activity fosters awareness of nature, develops fine motor skills and stimulates the senses.

These programs are only offered from May through October, because the garden does not have a greenhouse to support private programs during the winter. Other private functions at the garden include special event rentals for weddings, corporate events, and VIP lunches.

To help keep visitors safe, the staff chooses not to use chemical pesticides. Instead, they select plants that have strong natural defense against disease and insects. However, they do use chemical fertilizers during the year. The staff chooses not use compost, since compost sometimes contains human diseases which could adversely affect visitors with compromised immune systems.

The Buehler Enabling Garden appears to be very well run and can provide excellent examples of how to make an accessible garden that also provides therapeutic programs. The information that can be learned from the Buehler Enabling Garden will be most applicable for the ByOase project when designing gardens for the elderly. In an ideal situation, Norrebro Agenda 21 staff could visit the Buehler Garden; however, since the garden is located in the United States, this is not feasible. For this reason, we recommend that Agenda 21 maintain contact with staff members at the Buehler Enabling Garden.

5.4 Byggelegepladsen Rønneholm



Figure 21: Byggelegepladsen Rønneholm (Photo: Alison LeFlore)

Byggelegepladsen Rønneholm is another after-school club for children ages eight to eighteen (see Figure 21). The area provides indoor activities, a building playground, bicycle repair shop and farm animals. Each family pays a thousand kroner (about \$200 USD) a month per child for their membership in the club. They have one hundred and twenty members. The building itself provides areas for indoor activities such as play-acting, dressing up, sewing and arts and crafts. The upstairs area houses a day care and kindergarten for younger children. Both the indoor and outdoor facilities are closed to the public, even when the programs are not in session.

As with the other interviews, our focus was on the outdoors area of Byggelegepladsen Rønneholm. The yard is shared by the young children and club members and houses a goat,

chickens, birds and rabbits as well as a bicycle repair shop, fire pits, an ordinary playground and a building playground. The ordinary playground is mainly used by the younger children. Similar to the other building playgrounds, groups of older children are allowed to build and design their own play houses. The staff ensures that the construction is safe; but beyond that, children can do whatever they want with their houses. There is a small bicycle repair shop where staff members teach children how to build and repair their own bikes and a woodworking shop where children can make small crafts and other wooden items. The older children use the fire pits nearly every day to make simple snacks and treats.

Byggelegepladsen Rønneholm has a goat, rabbits, chickens and birds for the children to help care for and enjoy. Their goat has a pen in the middle of the yard, but is allowed to roam the area on a tether. The chickens have a coop, but generally wander the yard freely. The birds are in a large central cage, but the children can go into the cage to interact with the birds. All of these animals are owned by the institution and cared for by the staff with the help of the children. There are many rabbits, which the children can rent for a fee of fifteen kroner (about \$3 USD) a month. When they age out of the club, their rabbit moves home with them if they choose. Every day, the staff portions out feed for each rabbit and leaves it for the child to give the rabbit. While each child is responsible for their rabbit, the staff ensures that each rabbit is being properly cared for.

Byggelegepladsen Rønneholm provides a good example of how to integrate children of all ages with different animals. The staff noted that the children and animals develop strong bonds and that the animals help children to cope with a bad day a school or problems with friends. The children really enjoy the company of the animals and the animals help to foster social interactions between children. However, it is very similar to many of the other after school clubs, so we feel that it would be most beneficial for people involved in the ByOase project to concentrate on developing relationships with only one or two of the after school clubs. While none of the afterschool clubs provide an exact example of what Nørrebro Agenda 21 plans to create in De Gamles By, we found that the mentality and values presented at Byggelegepladsen Rønneholm were most similar to the values that Nørrebro Agenda 21 plans to create. For this reason, we recommend that those involved with ByOase contact Byggelegepladsen Rønneholm to discuss how they were able to foster the relationships between children and animals.

5.5 Dam Head Elderly Playground



Figure 22: Dam Head Elderly Playground (www.damra.co.uk)

Unlike anything we found in the Copenhagen area, Dam Head has created a playground for the elderly (see Figure 22). This elderly playground is adjacent to the playground for children ages five and under. This allows parents and grandparents to exercise and socialize while monitoring their children. The creators of the elderly playground chose this location in hopes that since parents and grandparents have something to do now that there is the elderly playground, they

will be more inclined to take their children and grandchildren to the playground.

The playground equipment, which was purchased from SMP Playgrounds Limited and Playworld Systems Europe Limited, is made of steel and is very sturdy. There are not many provisions made to prevent risk because the playground is for adults. However, the equipment is low impact to minimize the chance of injury. Low impact machines protect elderly bones and joints and encourage people who may be out of shape to exercise. The equipment that is included on the elderly playground in Dam Head is listed below (Dam Head Residents Association).

- 1) The Massage (Upper Body Exercise)
- 2) The Skate (Trains Leg Muscles)
- 3) The Ski (Trains Hips)
- 4) The Press (Trains Stomach & Legs)
- 5) And Two Stations:
 - Standing Push Ups which enhances:
 - a. Upper Body Strength
 - b. Chest
 - c. Shoulders and Upper Arms
 - Leg Pedaling which enhances:
 - a. Lower Body
 - b. and provides a warm-up. (a gradual warming of the muscle to reduce risk of strain)

The Dam Head Elderly Playground is an excellent example of how to encourage elderly people to exercise and socialize. Additionally, many elderly people suffer from Vitamin D deficiency and the playground gives them an outdoor area that they can go to and socialize. More than five hundred elderly people live in De Gamles By and hundreds more live in the areas surrounding it. Nørrebro Agenda 21 is very excited about including an elderly playground in the plans for De Gamles By so the Dam Head playground is an excellent example for Nørrebro Agenda 21 to model their playground after. However, due to distance, it would not be feasible for the Nørrebro Agenda 21 staff to visit the Dam Head playground, so any contact will need to be via e-mail or telephone. We recommend that Norrebro Agenda 21 staff maintain contact with the members of the Residents Association that created the elderly playground.

5.6 Geelsgård Skolen



Figure 23: Geelsgård Skolen (Photo: Alison LeFlore) This sensory garden was designed for the physically and mentally challenged students at Geelsgård Skolen (see Figure 23). The garden features smooth paths and raised flower beds for those in wheelchairs. Hedges enclose the garden and create the enclosed feeling of a small room. Cherry trees, strawberry plants, apple trees and other edible plants are located throughout the garden. There are also plants that appeal to the senses of touch and smell. Those children without physical handicaps are able to

play in a large tree grove that creates a small room under its branches and between its trunks. Outside the garden, there is a small fountain that is cut out of a rock. The sound and feel of water is soothing to the children.

The Geelsgård Skolen sensory garden is very small and shows how what is possible to create in a small area. However, the garden did not appear to be well maintained, as there were dried leaves and weeds all over the garden. While the children of Geelsgård Skolen enjoy the sensory garden, it is not the best example for ByOase. We recommend that Nørrebro Agenda 21 staff concentrate their time and effort on visiting other sensory/therapeutic gardens.

5.7 Kløvermarken



Figure 24: Kløvermarken (Photo: Bernard Lis)

Kløvermarken is a six thousand square meter nature playground and educational area located in Copenhagen (see Figure 24). With its outdoor facilities and educational programs, it is a very popular fieldtrip location. More than ninety percent of the children that visit Kløvermarken are in kindergarten through third grade, but occasionally older students and mentally challenged adults attend programs. The programs at Kløvermarken focus on environmental

stewardship and sustainability. Participants learn about different kinds of wildlife, native Scandinavian plants and edible plants that can found at the nature park. It is un-staffed on evenings and weekends, but anyone can go to have a picnic, play on the playground or just enjoy the scenery at any time.

The playground seamlessly runs into the landscape and is made entirely of natural materials. There is an obstacle course, little forts, a slide and climbing wall built into the hill and a tree maze. Additionally, many of the gardens are planted in a way that makes it interesting and fun for children to run around and play in them. There are several outdoor stoves and fire pits, which allow the staff to incorporate cooking into their programs. They cook simple foods with the children to demonstrate that our food comes from nature and not just from the supermarket. There is also a strong environmental focus, waste is composted and the building is designed to reduce rain water run-off and has solar panels and a windmill. The roof has plants on it, also to reduce rain water runoff.

Kløvermarken relies mainly on volunteers to do the gardening and upkeep, but there are also a few paid full-time staff members. The staff and volunteers are responsible for all the gardening; children who visit Kløvermarken are not expected to help with the gardening at all. Some of the gardens are planted with a specific purpose and others have been allowed to grow naturally. Many of the gardens feature edible plants and others have only plants native to Scandinavia. A hill has been created around the perimeter of Kløvermarken to reduce the city noises.

When Kløvermarken first opened ten years ago, they experienced some vandalism and theft which prompted the staff to discuss locking and closing the facility. In the end, the Kløvermarken staff decided to keep the facility unlocked for public use and there have not been any more instances of vandalism. Vandalism is a concern for the De Gamles By community, but Nørrebro Agenda 21 very much hopes to keep the area open to the pubic; so learning about experiences such as these will be very helpful for all involved with the ByOase project.

Kløvermarken features many of the characteristics that Nørrebro Agenda 21 plans to include in the renovation of De Gamles By, so it would be an excellent place for the staff and others involved with ByOase to visit. There are many knowledgeable staff members, including Torkild Pedersen who specializes in growing Scandinavian plants. We strongly recommend that Norrrebro Agenda 21 staff visit Kløvermarken and develop relationships with their staff members.

5.8 Lions Wellness Park



The Lions Wellness Park is a recreational area for fitness and social interaction (see Figure 25). It is quite similar to the elderly playground in Dam Head. The Wellness Park is a small section of a large park and is located near several other recreational facilities in the park. There is a rubber surface to cushion the area around the equipment. The leg and arm cycle mimics the motion of pedals on a bicycle and exercise the muscles in the arms and legs. The thigh, calf, hamstring, upper

back and shoulder stretch equipment are used to stretch various areas of the body. There are many benches in the park and a handicapped accessible picnic table.

The Lions Wellness Park can provide an excellent example of how to develop an exercise area for the elderly who live in De Gamles By. Unfortunately, the wellness park is located in Canada so it is not feasible for Nørrebro Agenda 21 staff to visit the park. Thus, we recommend that Agenda 21 staff contact staff at the wellness park via e-mail or telephone to learn more about this facility.

5.9 Psykiatrisk Center Skt. Hans



Figure 26: Psykiatrisk Center Skt. Hans (Photo: Alison LeFlore) The therapeutic garden at Psykiatrist Center Skt. Hans is one of the few therapeutic gardens we visited (see Figure 26). It serves as a place for the patients rehabilitate and do something productive. The garden caters to many different people, since the hospital has patients with mental disorders and chemical dependencies. The garden is able to benefit both these groups while still blending into the surroundings. The garden offers patients both restorative and rehabilitative areas, which gives

patients the opportunity to interact with the garden and other users as much or as little as they choose.

The restorative area uses soothing colors, such as yellow, blue and pink to encourage calm thoughts. Portions of the garden are designed to cater to patients whose conditions may worsen with conformity and structure. These areas of the gardens are designed to feel wild. Plants are rarely planted in rows and are instead grouped. The curator at the garden noted that elderly people tend to prefer structure, even in restorative areas of gardens because it allows them to see nature and human work mixed together. Water provides both a relaxing and dynamic experience and most patients enjoy the fountains and basins that are located throughout the garden.

The rehabilitative area of the garden allows patients to interact with nature and other patients if they so choose. There are many pathways through the garden that allow patients to touch, smell and taste plants. Many patients are scared of interacting with others, so the multiple paths allow them the freedom to explore without worrying about meeting someone else. Patients are given tasks and take part in the garden's maintenance. There are edible plants, such as tomatoes, potatoes and blueberries that patients help care for and harvest.

There is ample seating throughout the garden, often in secluded areas where people can feel safe and comfortable. Seating in the garden supports the back so that people can be comfortable. The garden design stresses how important it is to create areas outside that resemble rooms, so that people can feel safe and enclosed. In addition to the outdoor gardens, there are several indoor facilities, including two large greenhouses, where patients can help garden and plants are grown from seedlings or forced during the wintertime.

The garden at Psykiatrisk Center Skt. Hans is one of the few examples of a therapy garden we found and is an excellent example for Nørrebro Agenda 21. The garden is well kept and well planned. The staff is incredibly knowledgeable and can be an excellent resource throughout the ByOase project, but especially during the planning stages. The Psykiatrisk Center Skt. Hans Garden exemplifies many of the characteristics that Nørrebro Agenda 21 hopes to include in De Gamles By. Community members, in this case patients, are invited and encouraged to participate in the gardening. The garden focuses on providing a safe and calming environment for visitors and stimulates the various senses with different plants, textures and designs. The staff at Psykiatrisk Center Skt. Hans could provide much knowledge for Nørrebro Agenda 21, so we strongly recommend that Nørrebro Agenda 21 staff visit the Psykiatrisk Center Skt. Hans as well as invite its staff to assist with the sensory and therapeutic gardens in De Gamles By.

5.10 Remiseparken Byggelegeplads



Figure 27: Remiseparken Byggelegeplads (Photo: Alison LeFlore)

Remiseparken Byggelegeplads the largest staffed playground in Copenhagen (see Figure 27). Entrance to the facility and the programs they offer are all free, since it is funded by the city. Anyone can visit the playground at any time, but kindergartens and other large groups must sign up with staff before visiting the garden so that the staff is adequately prepared to handle the number of children. Remiseparken Byggelegeplads features both a building playground and an animal farm in addition to other recreation areas such as a mini-golf course and

picnic area. These two features are located in different areas of Remiseparken Byggelegeplads. The animal farm is included in the section for young children, while the building playground is included in the section for older children.

The animal farm is located next to the young children's playground. This part of Remiseparken Byggelegeplads has old farm buildings that are maintained to show the history of the area. Currently, these buildings house chickens, pigs, three horses, a cow and rabbits. The animals are cared for by the staff. Rabbits can be privately owned by the children, who must feed and care for their rabbit. There is an open area nearby where all children can play with the rabbits. There are large fenced areas for the horses, cow and goats. Children are able to ride the horses in a small ring or take a ride in the carriage.

The building playground at Remiseparken Byggelegeplads is not similar to the other building playgrounds since all the forts and structures are built by the staff. Children may paint and decorate the forts, but they do not participate in the building activities.

While Remiseparken Byggelegeplads is very popular, it is not the best example of what Nørrebro Agenda 21 wish to create in De Gamles By. The animal farm is cramped and animals are enclosed behind tall, metal fences. The enclosures are not grassy, so the animals are in mud all the time. Other animal farms offer programs that allow children to learn about animals and nature, but Remiseparken Byggelegeplads does not offer nature programs. It is very interesting that anyone can take a riding lesson or have a ride in a carriage, but those are the only animal programs that Remiseparken Byggelegeplads offers. For these reasons, we recommend that Nørrebro Agenda 21 not spend time visiting Remiseparken.

5.11 Rødovre Byggelegeplads



Figure 28: Rødovre Byggelegeplads (Photo: Corey Randall)

Rødovre Byggelegeplads is a great example of an animal farm and building playground (see Figure 28). It is a community based facility. Most of the 230 members are from the local community, but if space allows, children from outside the community are sometimes allowed to join. Each member pays a monthly fee of six hundred kroner (about \$120 USD). Members are children between the ages of seven and eighteen, who arrive at Rødovre Byggelegeplads after school. Rødovre

Byggelegeplads' main building contains a kitchen, bicycle repair shop, woodworking area and various other indoor activities. However, it is the animals that are the main attraction of Rødovre Byggelegeplads.

Every member of Rødovre Byggelegeplads has the opportunity to care for animals including horses, goats, chickens, birds and rabbits. Horses and goats are cared for by both the

staff and children. Each day, up to three children volunteer to care for the horses and goats. In exchange, they receive priority on horseback riding lessons. Horseback riding lessons are included in the membership cost, but are very popular, so there is a very long waiting list.

Chickens, birds and rabbits are owned and cared for by individual children. In order to own an animal, the child first needs to build an enclosure for the animal. Children can own as many animals as they wish, provided that they have built each one a sufficient enclosure. Pairs of children are given a small piece of land in one of four districts in Rødovre Byggelegeplads. Each district is run by staff members, who supervise the children as they create their animal housing. The staff and children develop very close relationships with each other and the animals in the district. The animal enclosures are mainly made of wood from used shipping crates. Crates are broken down and their nails are removed before the children can use them. This helps lesson the cost and recycles old materials.

After building an animal enclosure, the child pays 25Ø (about .05\$ USD) a day for their animal. This price is obviously, very low and is a symbolic payment that helps to cover animal care and food, which is provided for the children to give their animals. When a child cannot visit their animal on a given day, the staff cares for their animal. Once a member turns eighteen, they can no longer be a member of the club and their animal generally moves home with them. In the case that a member cannot take their animal home with them, the staff will care for it until another child adopts it. The staff of Rødovre Byggelegeplads purposely keeps the cost of animal ownership very low so that all their members can afford to have an animal. However, they have realized that even a small cost will ensure that children take responsibility for their animal. In their opinion, this philosophy has worked since children do a very good job of caring for their animals.

Rødovre Byggelegeplads is a facility that can provide a great deal of knowledge and advise for the ByOase project. The system that they have created is an excellent example of how animals can be incorporated into De Gamles By. We strongly recommend that the Nørrebro Agenda 21 visit Rødovre Byggelegeplads to learn about their system and how they have instilled the sense of responsibility in their members.

5.12 Saxoparken



(Photo: Corey Randall)

Saxoparken was created almost two years ago by the Vesterbro Agenda 21 Center. It is a five hundred square meter garden and nature center for the Saxoparken community (see Figure 29). Local schools can also register and attend educational programs focusing on the local environment, conservation or the flora and fauna of Copenhagen. Different programs are offered and range on topics from birds in the park to edible plants. Most

of the classes attending programs at Saxoparken are kindergarten through grade three. There are many of minorities in the Saxoparken neighborhood, so the staff has developed supplemental materials to help children who do not speak Danish to fully understand and enjoy their visit to Saxoparken. The nature center is closed and locked when staff members are not there, but people are encouraged to use the park and gardens at any time.

Children who visit Saxoparken learn about various nature and environmental issues. A set of programs are developed for each fall and spring and each program runs for about a month. This spring's programs teach children about birds, bats, rats and insects and focus on the species found in Saxoparken. It is important to the staff that the children have fun and run around while they are learning. Each program has hands-on activities where children can create objects and take them back to school with them. For example, in the Birds of Saxoparken program, children make a simple bird feeder. Currently, the only playground area at Saxoparken is a large wooden sculpture and a few man-made hills but the staff plans to build a more substantial playground.

There is one full-time paid staff member at Saxoparken and she has one assistant who helps to run and create programs part-time. The City of Copenhagen provides minimal maintenance and gardening support, but everything else is up to the two staff members. When Saxoparken was first created, they had several weekends where the community was invited to help with the planting. Since then, the two staff members have been doing the vast majority of the gardening and upkeep. However, the community is still interested in participating in the work at Saxoparken, so they are in the process of creating a club for gardeners. During some of the programs, children help plant new beds. For such a small area, there are a lot of gardens. Some gardens provide food for the cooking demonstrations and other gardens support biodiversity, animal life or insects.

The lone building at Saxoparken is a renovated public toilet. Everything possible is reused and many parts of the old building remain. The raised beds, animal houses and furniture are all made of items found in the park or salvaged from local donations. There is a rainwater collection system on several of the neighboring buildings and the water is used for irrigation and in a water garden.

Saxoparken is an excellent model for the ByOase project. It exemplifies many of the community interactions that Nørrebro Agenda 21 hopes to foster in De Gamles By and has many of the same goals as the ByOase project. With such a large immigrant population, the Saxoparken area has many of the same difficulties that Nørrebro is facing. The community has begun to take pride and feel ownership for Saxoparken. There has not been vandalism at Saxoparken because the neighbors look out on the garden and ensure that the garden is treated properly. The only problem has been dogs digging in the beds, which will be a concern in De Gamles By because it is a popular dog-walking area. Especially since Saxoparken is the result of another Agenda 21 Center's work, it will be an invaluable resource throughout the ByOase project. For these reasons, we strongly recommend that Nørrebro Agenda 21 staff visit Saxoparken to learn as much as possible about this facility.

5.13 Skolelandbruget



Figure 30: Skolelandbruget (Photo: Alison LeFlore) Skolelandbruget is an educational animal farm that provides both children and adults with the opportunity to interact with animals such as pigs, goats, sheep, cows, chickens, rabbits and guinea pigs (see Figure 30). Larger animals are enclosed in fields, but have indoor stalls and enclosures as well. Smaller animals, including newborns, are housed inside the main farm building. Children from the ages of one to seven visit the farm with day care groups, afterschool clubs or classes.

Skolelandbruget offers a variety of educational programs for these groups and children get to
help out with daily farm chores such as feeding the animals. On the weekends, many parents or grandparents visit the farm with their children or grandchildren.

The programs begin with a talk in the classroom located in the main barn. It is there that children learn about the different animals on the farm, as well as the benefits that each animal provides for human beings. Then, the children take an active part in various farm activities. Children are given small wheelbarrows to move hay and small brooms to help clean. Children that are afraid to interact with big animals can spend time with guinea pigs. The guinea pigs are small, calm and make noises. Shy children enjoy spending time with the guinea pigs because they are not threatening or scary and will sit quietly to cuddle with a child. Often, once a child has spent some time with the guinea pigs, they are less afraid of the other animals. One program allows school children to care for chickens. In pairs of two, the children visit once a week for eight weeks and feed their chicken. They measure the chicks and record how much food the chick has had. This information is used in their mathematics classes. When the chickens are full-grown, they chickens are slaughtered and the children make a meal for their parents at the school.

Most animal farms focus on animal care and feeding, but Skolelandbruget mixes this with animal education by focusing on the entire lifecycle of an animal. This provides an excellent example for Nørrebro Agenda 21 since they are interested in educating children about all aspects of farm animal care. Children learn which animals provide their food, clothes and other benefits. These are all aspects that Nørrebro Agenda 21 wants to teach in De Gamles By. We strongly recommend that Nørrebro Agenda 21 staff visit Skolelandbruget and work as closely as possible with its staff throughout the ByOase project.

5.14 Skovhaven



Figure 31: Skovhaven (Photo: Alison LeFlore)

Skovhaven is a small garden, only about 330 square meters, that is designed to sustain itself and exhibit the principles of permaculture (see Figure 31). Permaculture Denmark is the organization that designed and maintains Skovhaven. The principle of permaculture is to balance human influence and nature. However, the garden is no longer a true example of permaculture since Permaculture Denmark's funding was reduced in 2001, so they are unable to pay anyone to care for the garden. Members of the group visit the site only a few times a year, so areas of the garden have fallen into disrepair.

Skovhaven is divided into five zones, which are at the core of permaculture theory. The first three zones are human made and are the zones that humans use the most often. Zone 4 indicates that humans use the zone to harvest wild fruits and vegetables. In a perfect example of permaculture, zone 5 is left entirely to nature and humans never even enter it, let alone interfere with or cultivate it. These zones are mimicked in Skovhaven. Zone one contains a small building that looks out onto the garden. This building features a place for compost, and a roof that was intended to redirect rainwater into a manmade pond. However, the design for the roofing was flawed and the compost is rarely used. Zone two is the area surrounding the building. The area originally featured an herb spiral as well as a fruit and vegetable garden. However, these have become wild due to the lack of maintenance in the garden. Zone three contains an orchard that was designed to contain various types of fruits that are native to Scandinavia. However, the types of plants that were purchased and planted were not the ones originally planned for; instead they were the cheapest that could be found so the fruits grown in the orchard are generally not edible. Zone four contains plants that obtain resources deep underground where most plants do not reach. When these plants die or are harvested, they deposit nutrients in the top soil. This helps the environment to support zones one through three. Zone five is kept wild, and features thorny bushes that help prevent human interference.

Skovhaven is not a great example of permaculture, but is a great example of how gardens can be used to support sustainability and improve the environment. Nørrebro Agenda 21 can learn much about sustainable gardening from speaking with a member of Permaculture Denmark. This organization is always willing to help organizations design sustainable and permaculture gardens, so they will probably be very excited to help Agenda 21 with the ByOase project. Norrebro Agenda 21 is very interested in decreasing the negative impact that humans have had on the environment. Sustainable gardens help to do that and are not very hard to create. While the principles exhibited in Skovehaven are great, the garden itself shows how much care and effort a garden needs. Even though some of the principles of permaculture are no longer functioning, the garden has continued to sustain itself very well. We strongly recommend that

Norrebro Agenda 21 staff not only visit Skovehaven, but contact and develop a relationship with Permaculture Denmark.

5.15 Stengårdens Byggelegeplads



Figure 32: Stengårdens Byggelegeplads (Photo: Alison LeFlore)

Stengårdens Byggelegeplads is an after-school club for children ages nine through fourteen (see Figure 32). To be a member of the club, families pay four hundred kroner a month (about \$80 USD). It is operated on the principle that children should be free to enjoy their after school time with their friends; children are encouraged to participate in one of the many activities that are available at the center, but they are allowed to

do whatever they choose. The facility is very similar to the other after-school clubs we visited. They have a large building with a sewing room, woodworking room, video games and computers for the children to use. Each day, the staff prepares several little snacks that the children can purchase at the café for a small price. The facilities are open each weekday from nine to five, two hours on Saturday and one hour on Sundays and holidays for people to care for the animals.

The relevant part of Stengårdens Byggelegeplads is found outside where they have a variety of animals and a building playground. They have three goats that are allowed to wander the enclosed yard. These goats are owned by the institution and are cared for by the staff members, although children can help if they choose. There are several chickens that are housed in a large coop. As with the goats, the chickens are owned communally by the institution and cared for by the staff. Additionally, there are about a hundred rabbits owned by the institution. However, the children can rent a rabbit for a monthly fee of fifty kroner (about \$10 USD), which goes towards the cost of food and housing for the rabbit. Each child who rents a rabbit is responsible for its care and may take the rabbit home for weekends and holidays. The staff checks on each rabbit to ensure that they are being cared for properly. The building playground is a place where groups of children can build their own play house. The staff monitors construction to ensure that the forts are safe, but the children are allowed to build whatever they choose.

While Stengårdens Byggelegeplads offers many interesting qualities, we feel it is not important for Agenda 21 staff to visit. People involved with the ByOase project can learn a lot about animal care from the staff at Stengårdens Byggelegeplads in a telephone call or interview, if necessary. There are many similar places in Copenhagen, so the information that could be learned from Stengårdens Byggelegeplads can be obtained from many other locations.

5.16 S:t Hansgården



Figure 33: S:t Hansgården (Photo: Corey Randall) S:t Hangården is a facility that uses its nature park to educate children ages ten to twelve (see Figure 33). S:t Hangården also has farm animals that the children can interact with and help to care for. Sheep, goats and rabbits are housed in a large barn. The chickens have their own coop. The sheep, goats and chickens are cared for by the staff but the rabbits are all privately owned and their owners must care for them.

Nearby schools visit and classes are held in the morning to teach children how to live in nature. The kitchen garden contains many plants that are used in cooking as well as for other projects, such as creating shampoo. Children participate in gardening chores such as harvesting all the crops, which include everything from grapes to pumpkins. The garden also includes areas for the children to cook food in outdoor fire pits. There is an oven for baking bread.

S:t Hangården uses sustainable practices whenever possible. The building uses solar power and a windmill to recharge batteries that also provide electricity to the building and barns. The two barns in S:t Hangården are built using natural material and materials are reused whenever possible. For example, in the main barn, many of the ceiling beams are reused and the walls are made with a mixture of clay, manure and hay.

S:t Hangården is an excellent example of what Nørrebro Agenda 21 hopes to develop in De Gamles By. The barn is a great example of how to build with reused and natural materials. The staff member who designed the building would be a good source of information. The combination of nature and animal education is something Nørrebro Agenda 21 very much wants to create in De Gamles By. S:t Hangården has accomplished this and can provide valuable

information throughout the ByOase project, so we recommend that Norrebro Agenda 21 staff visit S:t Hangården.

5.17 Tagensvej Skolehave



Skolehave (Camilla Friedrichsen camillafr@telenet.nu)

Tagensvej Skolehave is one of eight school gardens in Copenhagen (see Figure 34). The staff members teach children about nature, the environment and the importance of eating healthy foods. The garden runs two different programs to teach children about these topics. One of the programs teaches the various topics to children who visit the garden on school field studies. Children on field studies at the garden spend the day learning about a variety of topics, including insects, animals and plants. The garden staff has created lessons that incorporate activities and

play with the material so that children enjoy the lessons.

The second program offered at Tagensvej Skolehave runs for a season and involves children's gardens. The children in this program rent a plot for one hundred and sixty-five kroner (\$33 USD) a season. Season begin in May and last into September. Throughout the season, the children care for their gardens; they are responsible for everything, including planting, weeding, watering, composting and harvesting. Each child has the same plants in their garden. The gardens feature a variety of plants including flowers, herbs and vegetables such as carrots, sunflowers, parsley, pumpkins and onions. The garden also has fruit trees, berry plants and nut plants. Towards the end of the season, children learn to preserve foods through various activities such as making jam. At the end of the season, the children prepare a harvest feast for their parents with the help of chefs from a local restaurant.

Tagensvej Skolehave is an excellent resource for Nørrebro Agenda 21. The staff have experience creating programs that teach children about nature and the environment using a variety of activities. They also have experience developing and maintaining a garden in the city of Copenhagen. There are several day care centers, kindergartens and schools in the De Gamles By area and Agenda 21 is very interested in including these organizations in the ByOase project.

We recommend that Nørrebro Agenda 21 staff visit the Tagensvej Skolehave and invite members of their staff to participate in the ByOase project.

5.18 William E Carter School Garden



Figure 35: William E. Carter School Sensory Garden (Photo: Tom Holzell)

The William E. Carter School is a Boston public school for children with severe learning disabilities (see Figure 35). In 1998, the Carter School began a project to create a safe and accessible outdoor environment for the students that would help the children learn and stimulate their senses. This project resulted in a sensory garden on the school's campus.

The garden has many features. It contains three gazebos that can be used as classrooms. Their raised vegetable gardens allow children to reach the plants and help with the gardening,

even if they are confined to a wheelchair. Children can sit in either of two seating areas or enjoy many water features, such as a rainbow mist walk, a fountain and a leaping water feature. They can also play on the swing-set that has been installed in the garden or play on the garden's xylophone. To help the children move through the garden, there are hard paths with a contrasting strip on the side to highlight the edges. These features help to keep the children safe while providing an outdoor world for them to explore.

In addition to the raised vegetable gardens, there are numerous trees, shrubs, perennials, groundcover, vines, herbs, ferns and grasses to stimulate the senses. There is a river of blue plants, outlined by sea-toned rocks. Blueberry and strawberry plants are grown in the garden to help stimulate the children's sense of taste. A raised bed of grass makes it easier for the students that use wheelchairs or walkers to feel the grass. The garden is full of fragrant flowers for the children to smell. They can also hear the wind blowing through the leaves of the trees in the area.

The Carter School garden has much in common with what Nørrebro Agenda 21 is planning to create in De Gamles By. The project was led by a group of dedicated citizens who wanted to improve their local area. They created a safe area where people with special needs can safely experience nature in the middle of a city. This area, although it does not focus on nature education, is also used as an outdoor classroom, which is an important feature in the ByOase project. Additionally, while many of the same principles apply in creating general sensory gardens, this garden was created specifically for children with learning disabilities so the Carter School may have included some characteristics that would not be necessary in De Gamles By. This location is a good example for Nørrebro Agenda 21 and we recommend that they contact staff at the Cater School Sensory Garden; however because of the distance it is only feasible to contact the staff by email or telephone.

6.0 Conclusions

Our project lays the groundwork for the ByOase project by providing concrete examples of facilities that have already been created and are similar to the facilities that ByOase proposes for De Gamles By. The catalog provides basic information about nature parks, playgrounds, animal farms and sensory gardens along with detailed information about the specific locations we visited. Whenever possible, the examples we provided are close enough to Copenhagen that Nørrebro Agenda 21 staff can easily visit them. However, we could not find recreational facilities for the elderly in the Copenhagen area, so we researched projects in other countries and included them in the catalog. We found two sensory and therapeutic gardens in the Copenhagen area, but supplemented our catalog with two examples located in the United States.

From our visits and interviews, we were able to recommend how those organizing the ByOase project can best use the information that each facility provides. Each facility can provide at least some assistance to those working on the ByOase project, but certain facilities can provide extensive information on a variety of topics. Within each category of recreation area, we have recommended which facilities can provide the most benefit to ByOase. In every category, these are the facilities that have the most values in common with ByOase, have the strongest organization and are environmentally conscious. Other than these key factors, we based our recommendations for each category on a variety of other characteristics and observations.

In addition to recommending which facilities will be the most helpful, we have also identified staff members at particular facilities who will be valuable resources for the ByOase project. The facilities and staff members we recommended as the most beneficial are highlighted in this chapter. Several of the facilities we visited fall into multiple categories. Facilities that provide excellent examples of more than one category or have had success with promoting community involvement and developing environmentally responsible citizens are also discussed.

Animal Farms

We visited many facilities that gave children the opportunity to interact with farm animals. Of these many facilities, three stood out to us as good examples of what Nørrebro Agenda 21 plans to create in De Gamles By. Skolelandbruget, S:t Hansgården and Rødovre Byggelegeplads are the three animal farms that will provide the best examples of what ByOase proposes. Rødovre Byggelegeplads and S:t Hansgården both give children the opportunity to own and care for their own animal but also interact with larger farm animals that are communally owned. They differ in the way that the privately owned animals are cared for. At Rødovre Byggelegeplads, the staff helps children with their animals and will care for the animal if the child is on holiday or ill. Another very interesting characteristic of Rødovre Byggelegesplads is that children must build an enclosure for their animal before they can get a rabbit or bird. S:t Hansgården staff members do not help with the privately owned rabbits and instead children must rely on their fellow classmates to care for their rabbit in case of illness or holiday. Even though there are some differences between the facilities, each location encourages children to develop relationships with animals and emphasizes what humans can learn from being close with an animal.

Even though we feel that Rødovre Byggelegeplads and S:t Hansgården have much to offer the ByOase project, Skolelandbruget is the best example of an animal farm. Skolelandbruget has the most common characteristics with Nørrebro Agenda 21's vision for De Gamles By. All the animals at Skolelandbruget are owned by the organization and mainly cared for by staff members. However, school groups and children from the community can help with the daily chores. In addition to teaching school groups about general nature topics, Skolelandbruget focuses on what animals offer humans and the different ways that we benefit from animals. Visitors are invited to help with daily chores or experience various special events such as the birth of a calf or sheep shearing. To help children relate to the different products we get from animals, they can work with wool right off the sheep or eat meat that was recently slaughtered. Skolelandbruget also has programs for older children to use their experience at the farm in their mathematics and science classes. Additionally, Skolelandbruget gives children the opportunity to interact with docile animals and learn about the relationships that humans develop with their animals.

Nature Parks

Kløvermarken, Saxoparken and S:t Hansgården are all excellent examples of what a nature park and education facility can be. Each location includes a variety of characteristics that Nørrebro Agenda 21 plans to include in the ByOase project. The values and goals of each facility align very with what Nørrebro Agenda 21 feels is important. All three locations teach visitors

and students about nature and why it is important to our daily lives. These facilities all use interactive techniques to ensure that visitors get the most from their experience and can easily use their new knowledge in their everyday lives.

In addition to promoting the same goals as Nørrebro Agenda 21 wants to promote in De Gamles By, these three locations are running programs that are very similar to those that Agenda 21 hopes to incorporate into ByOase. Students can visit any of the three locations for a field study about various aspects of nature ranging from simple topics such as herbs or the birds of Copenhagen to more complex topics such as energy conservation and alternative energy. Even very young children can learn about nature through programs and projects such as cooking simple foods using fire pits and outdoor stoves. Edible plants are included at each of these three locations and children can learn about fruits, herbs and vegetables by seeing them grown and eaten. Saxoparken and S:t Hansgården even give children the opportunity to grow vegetables, fruits and herbs themselves. While all the gardening at Kløvermarken is done by staff and volunteers, visitors and community members at Saxoparken and S:t Hansgården are often offered the opportunity to assist with the gardening responsibilities.

All of the nature parks use sustainable techniques to build and develop their facilities. For example, the building at Saxoparken was converted into a nature classroom and reused many of the materials that had been used in the previous building. The buildings at S:t Hansgården and Kløvermarken have succulent plants on the roof to reduce rain-water runoff and use alternative energy sources. Using sustainable practices is very important in the ByOase project and these four locations provide excellent examples of sustainability in action.

Saxoparken provides an excellent example of how a green space can be used to develop unity and create a sense of pride in the neighborhood. It is located in an area of Copenhagen that has high drug use and many immigrants. Saxoparken is a project that was created by another Agenda 21 center. This makes it especially helpful because they had to go through the same processes before they could build Saxoparken, so they have experience in these aspects of developing a nature center. Before Saxoparken was created, the plot of land it is on was not used for anything and was avoided by community members; today the park is a popular location for community members to relax and have social gatherings. When Saxoparken was first created, the community was invited to help build the garden. Many people joined in the work and went beyond what the original plans had called for. People in the community quickly developed a sense of pride in their garden because they could see the results of their efforts in creating something beautiful.

Kløvermarken is another garden that is fully open to the public, which is a priority for the ByOase project. Nørrebro Agenda 21 hopes that there will be no need to lock up the area at night or weekends so that the Nørrebro community can enjoy De Gamles By whenever they choose. Also, the way that Kløvermarken has created its programming and gardens is exactly what Nørrebro Agenda 21 plans to incorporate into ByOase to give children the ability to run and play while learning about nature. One of the staff members at Kløvermarken, Thorkild Pedersen, is very knowledgeable about edible plants and native Scandinavian plants. A kitchen garden is included in the ByOase vision to help children learn more about food and eating healthily. Additionally, to promote sustainability and teach children about Scandinavia, Nørrebro Agenda 21 very much wants to include native plants in the gardens at ByOase. Since he is knowledgeable about both these topics, Mr. Pedersen could be an excellent resource throughout the ByOase project.

S:t Hansgården incorporates nature education and farm animals. Their facility includes a variety of gardens as well as goats, sheep and chickens. The children at S:t Hansgården are encouraged to help with the gardening as well as animal care. Nørrebro Agenda 21 plans to include an animal farm where urban children can learn about life on a farm and learn how to care for animals. Since S:t Hansgården has an animal component, it is also included in the Animal Farms section and will be further detailed later in this chapter.

Playgrounds

There are many children that attend school and day care in De Gamles By, so playgrounds are an important aspect of the ByOase project. In addition to the playgrounds at nature centers, we visited a large number of building playgrounds. Each location aims to teach children cooperation and practical skills while they are working on fun activities. Universally, staff members at the building playgrounds assist children with construction and ensure that the structures are safe. Since each building playground promotes similar values and teaches children many of the same skills, we recommend that if Nørrebro Agenda 21 staff is interested in learning more about building playgrounds that they visit any of the playgrounds we have visited. Of the nature playgrounds we visited, Kløvermarken provides the best example for ByOase. Kløvermarken's playground blends seamlessly into the landscape and uses nature to create an interesting play space. The playground includes several different features including a slide, obstacle course, climbing wall, small forts and a tree maze. Portions of the gardens are also built in a way to encourage play and let children run free in nature. In addition to its value as a nature center, we strongly believe that Kløvermarken is also an excellent resource for the design and development of the nature playgrounds in De Gamles By.

Sensory and Therapeutic Gardens

Psykiatrisk Center Skt. Hans provided the best example of a sensory and therapeutic garden. Their garden includes all the characteristics that Nørrebro Agenda 21 plans to include in De Gamles By. There are different sections of the garden where patients can sit and reflect, garden or participate in group activities. The garden is designed to be comfortable to everyone and appeal to all the senses through a variety of methods.

Additionally, their curator, Susanne Friis-Redersen has several degrees in therapeutic horticulture and can be a great resource for the ByOase project. She is very knowledgeable about how gardens can be used to help many different people and will be able to provide great insight throughout the process of developing the sensory gardens.

Our project has completed an important step in the ByOase project by giving Nørrebro Agenda 21 staff concrete examples of what is possible for the green space in De Gamles By. Our catalog and report compile information about a variety of facilities and the different services they offer. Even though the Nørrebro Agenda 21 staff has known about many of the facilities we contacted, they are always very busy and balancing several projects so they have never had the time to go and visit each one. By visiting the various facilities, we have saved the staff valuable time and provided them with in-depth information for the ByOase project. Since we have recommended which are the best facilities to visit, Nørrebro Agenda 21 staff will not waste their time contacting and visiting a location that has nothing in common with ByOase and its goals. In addition to learning about the various locations, we found that many staff members at these facilities can provide insight and knowledge to particular aspects of the ByOase project. Through our interviews, we have made valuable contacts for the Nørrebro Agenda 21 staff to use throughout the ByOase project.

Our recommendations discussed the various goals and values that Nørrebro Agenda 21 plans to include in De Gamles By and we provided examples of facilities that promote these goals. Neither Nørrebro Agenda 21 nor our project team was in the position to recommend where the facilities should be located in De Gamles By. These decisions will be made by the community. With the information that we have been able to provide, Nørrebro Agenda 21 will be able to lead conversations with the community about the various options for De Gamles By.

The ByOase project will never become a reality if Nørrebro Agenda 21 is not able to secure grants or funding for the project. When applying for various funding sources, it is always beneficial to have concrete examples of what already exists to show that it is possible. The catalog created will also be included in grant applications as Nørrebro Agenda 21 continues to apply for funding to complete the ByOase project.

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<u>Appendix A</u> <u>The ByOase Catalog</u>



Agenda 21 Center Nørrebro

ByOasen





Playgrounds



Nature Centers

Gardens

Animal Farms



A collection of gardens, nature centers, playgrounds and animal farms as examples of the possibilities in De Gamles By

Agenda 21 Center Nørrebro

Tel. 50 94 76 16

lone@norrebro.nu

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- 3 Byggelegepladsen Rønneholm
- 4 Skovhaven
- 5 Remiseparken
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9 8 Unless otherwise noted, all photographs were taken by Alison LeFlore, Bernard Lis or Corey Randall

Overview

A \star indicates a facility's membership in the particular category

Name	ANIMALS	Building Playground	Community or Children's Garden	Ecological or Sensory Garden	Elderly Facility	NATURE EDUCATION
Bredegrund Byggelegeplads		*	*			
BROPARKENS Byggelegeplads	*	*				
BUEHLER ENABLING GARDEN				*		
Byggelegepladesen Rønnehlom	*	*				
CARTER SCHOOL SENSORY GARDEN				*		
DAM HEAD PARK			*		*	
GEELSGÅRD SKOLEN				*		
Kløvermarken				*		*
LIONS WELLNESS PARK					*	
Psykiatrisk Center Skt. Hans				*		
Remiseparken Byggelegeplads	*	*				
Rødovre Byggelegeplads	*	*				
Saxoparken			*	*		*
SKOLELANDBRUGET	*					*
SKOVHAVEN				*		
S:T HANSGÅRDEN	*		*	*		*
Stengårdens Byggelegeplads	*	*				
TANGENSVEJ SKOLEHAVE			*			*



Stengårdens Byggeleplads



Kløvermarken





Skolelandbruget

Skt. Hansgården Hospital

Building Playgrounds

Stengården Byggelegeplads

Bredegrund Byggelegeplads





Some of the many play houses. Each has the same basic structure, but others have additional floors, decks and decoration.

Bredegrund Byggelegeplads





Bredegrund Byggelegeplads

Rødovre Byggelegeplads





Many of the building playgrounds have a woodshop where children can make smaller woodcrafts and where all the tools can be stored.



Building playgrounds are very common in the Copenhagen area, and offer children the opportunity to design and build their own play spaces. Children must work together in groups to build their house and then they share it once it is complete. Staff always assist the children with their work to build

stable floors and frames. Beyond ensuring safety,

most building playgrounds give children free reign over their designs.

Rødovre Byggelegeplads requires that children build an animal house before they can own their rabbit, chicken or bird.



Byggelegepladsen Ronneholm





Children and Animals

Skolelandbruget



Some institutions have small, calm animals to help young children become comfortable with animals.



Rødovre Byggelegeplads



Byggelegepladsen Rønneholm

Some children have their own birds and it is common for institutions to have large bird enclosures so that children can go into the cage to interact with the birds. Some after school clubs even have birds inside for the children to play with. These birds often have a cage, but are generally free to

roam the indoors.



Rødovre Byggelegeplads

Most children love animals and are excited to have the opportunity to interact with one. Keeping various farm animals at after school clubs is fairly common. Most of the locations had one or two goats, chickens and rabbits. It is also very common for children to be able to rent or buy a rabbit from the institution and get help caring for it from the institution staff. Some institutions offer children the opportunity to own a bird or chicken.

Caring for an animal teaches children about responsibility. Even children who do not have their own rabbit often help to care for the rabbits. The staff is responsible for taking care of the institution's animals, but many children help by feeding or exercising the animals.



Many institutions have incentives for children to help with chores. The children who clean stalls (shown left) and help with other chores get first priority on riding lessons at Rødovre Byggelegeplads. Club members at S:t Hansgården earn money for their group by gardening or doing other chores.

Rødovre Byggelegeplads





Skolelandbruget

Broparkens Byggelegeplads





All the animals have pens or cages, but there are larger areas where they can get exercise. Goats and chickens usually run free in the yard. Skolelandbruget and S:t Hansgården both have large pastures where the goats, sheep, cows and pigs can exercise and graze.



Children develop very as well as with other who are involved with the animals.

strong bonds with animals children and staff members

Rødovre Byggelegeplads

Gardens

Gardens are very common at nature parks and educational facilities. Gardens are used for many purposes, such as demonstrating sustainable practices, teaching children about nature and food or creating nature environments for them to play in.

Many of the gardens are cared for by the staff, but others have children help with the gardening. Some locations even have gardens that community members can plant themselves.



Raised beds filled with purchased soil ensure that the plants used for cooking and eating are not growing in

Saxoparker



S:t Hansgården



Planting annuals in small gardens such as these is very common in nature programs.



This water garden at Kløvermarken collects run-off rainwater from the roof and creates a great environment for water-loving plants, small animals and amphibious reptiles.



Saxoparken





S:t Hansgården



Kløvermarken



Kløvermarken



Herb spirals are an easy way to increase garden size, create different environments for various plants and are fun for children to play on.

6

Nature Education



Kløvermarker



Bredegrund Byggelegeplads

Cooking simple foods such as pancakes, popcorn and bread is one of the most common traits of nature education. Kløvermarken, Saxoparken and many of the after school clubs have outdoor fire pits and stoves so that children can learn about cooking.

During nature programs, cooking is often one of the methods used to show children that nature is a part of their everyday lives. Cooking also gives children something tangible to do during their lesson, since they get to eat when they are done



Kløvermarken

Each nature park had at least one compost pile where children learn about conservation by composting the excess materials from cooking, crafts or other projects.

This greenhouse at Kløvermarken allows children to enjoy the garden even when they have to stay inside.

Many of the nature parks and farms offer educational programs about nature and the environment. These programs are designed for younger children, the vast majority of the groups are grades 0-3. Occasionally, groups of older students will visit and sometimes groups of mentally challenged adults have programs. Programs offered range from the Birds of Copenhagen to lessons on environmental sustainability and alternative energy. At each park, they use the various outdoor facilities for programs and only offer indoor programs when the weather is especially bad.

Skolelandbruget

Kløvermarken



The classrooms are designed for interactive programs. They include things that children can touch, such as animal horns and wool.



Gardening is another common element of nature education centers. Children often get to help with the gardens on their visits.



Bredegrund Byggelegeplads



Skt. Hans Gårder

Environmental energy forms are often highlighted during nature education programs. Each site had solar panels and some even had wind turbines.

S:t Hansgården





Sensory/Therapeutic Gardens

Sensory/Therapeutic Gardens use nature to help visitors relax and connect with nature. Their design focuses on creating separate areas for restorative and rehabilitative areas. Further, their design can be modified to appeal to particular user groups. For example, some gardens include multiple pathways throughout so that users do not feel confined and can avoid other visitors if they choose to.

Geelsgård Skolen

Geelsgård Skolen



Skt. Hans

Creating outdoor rooms is very important when designing sensory and therapeutic gardens, as they make visitors feel comfortable by creating a sense of separation from the large outdoors.

Geelsgård Skolen





Many sensory/therapeutic gardens include raised beds so that people who must sit or are in wheelchairs can garden as if they were sitting at a table.



Skt. Hans

Skt Hans

Skt. Hans



Too much structure can be a negative characteristic in sensory gardens, so there are often some areas where plants are allowed to grow naturally and other areas where plants are cultivated and organized.

kt Hans

Skt. Hans

Geelsgård Skolen



Geelsgård Skolen





Skt. Hans





Seating is provided throughout the Skt. Hans Sensory Garden. The seating supports the back and is situated so that nobody can approach from behind.





Bredegrund Byggelegeplads

Bredegrund 8, 2300 København S Telephone: 32 59 81 86 Contact: Ole Bendt Petersen







Bredegrund Byggelegeplads is divided into two separate areas, one is a typical playground and the other is a staffed building playground. In the staffed area, there is a very large ship that is connected to a variety of play equipment, a wood shop, forts that the children have built, a garden, campfire, obstacle course and a weather station.

The staff builds the floor and the initial framing for the forts, but then the children build the rest; they add the siding, doors, windows, additional floors and even decks if they choose. The staff monitors construction and ensures that the buildings are structurally sound.

The ship area was built by the staff and some of the oldest children. The ship is connected to the rest of the playground by a plank bridge. In addition, there is an over-sized slide made of an oil pipeline, a zipline and various other attractions on the playground.

Children of all ages play together in the building playground and the older children generally look out for and play nicely with the younger children.



Most of the wood used for building is recycled, so children learn to reuse items to reduce waste





There is an obstacle course that challenges children's motor skills by requiring them to climb over walls and jump over hurdles.



Children can have a plot of land in this garden to raise their own plants. They are responsible for taking care of their area, including planting, watering and weeding.



Broparkens Byggelegeplads

Lisbjergvej 3, 2610 Rødovre Telephone: 36 37 81 51 Contact: Susanne Eilsø







Broparkens Byggelegeplads has an after school program for all school aged children and a daycare/kindergarten for younger children. In addition to the farm animals, there is an area only for older children where they can build forts and use a wood-working shop. There is a staff member dedicated to this area to make sure that tools are being used properly and that the forts are safe. There is also a fire pit in this area where the children make simple snacks. The playground is open to the public evenings and weekends.

They have many rabbits, three goats, birds and some chickens. Children can have their own rabbits, but the chickens and goats are communal animals. The children help the staff to care for all the animals.



The rabbits live in hutches (below) but the children are expected to play with the rabbits in a large outdoor area (above).



Inside, they have two hamsters and a bird that the children play with and help to care for.





Older children can build in the workshop (right) or work on their own forts (above).







Buehler Enabling Garden

Location: Glencoe, Illinois, USA Contact: Gene Rothert E-mail: grothert@chicagobotanic.org





The Buehler Enabling Garden is part of the Chicago Botanic Garden. It features many of the common characteristics of enabling and sensory gardens along with other unique aspects. As with all sensory gardens, many different textures, sounds and smells are used to engage the various senses. The garden includes many features that ensure that physically challenged visitors can find their way around and safely maneuver.

Unlike most botanic gardens, The Buehler Garden invites all its visitors to actively participate in gardening activities. In addition to raised beds and wall gardens, the Buehler Garden uses large garden pots so that the garden can be cared for anywhere and then placed in the garden. The garden was not designed as a therapy garden, but there is a full-time horticultural therapist who runs programs for private groups. In addition to the garden staff, many volunteers help with the gardening responsibilities.



The tool shed is open to the public and has many tools designed specifically for physically challenged individuals.



Raised beds and wall gardens make plants easy to reach from a wheelchair. All the raised beds have wide walls to that gardeners can sit while they work without straining to reach the plants.



Staff in the garden often offer programs for the public. These programs teach visitors about many different topics, such as flora arrangement and plant propagation.



These hanging baskets are mounted on the wall and attached to a pulley system that allows them to be easily raised or lowered so that anyone can reach them.

All photographs on this page are public domain and taken from http://www.chicagobotanic.org/



Byggelegepladsen Rønneholm

Rønneholmsvej 2, 2610 Rødovre Telephone: 36 41 06 94 Contact: Flemming Rasmuseen



Byggelegepladsen Rønneholm is an after school club for children ages eight to eighteen. A kindergarten and day care share the building with the club. In addition to their indoor facilities, they have a playground, building playground and animals. All the children share the outdoor area which includes a bicycle repair shop, woodshop, building playground, a traditional playground, animals and a small football court. Their one goat has a pen, but is often roaming the area. The chickens also roam most of the time. The birds are caged, but the children can go into their enclosure. Similar to the other after school clubs, children can rent or buy a rabbit and must care for it. Staff members care for the chickens and goat as well as ensure that the rabbits are cared for properly.

Children can make handicrafts in the woodshop and staff in the bicycle repair shop teach children basic bicycle maintenance. Staff members ensure that the forts are safe and help groups of children with construction.







All the pens are big enough for children go to in to play and interact with the animals. The goat and chickens are often loose in the yard, but have large pens. The rabbits each have a hut but they also have large exercise pens (above, right). The bird house is partially indoors and partially outdoors (above, left).



Even small children enjoy the animals and can learn how to care for them.



The staff portions out food for each rabbit and puts it in a red box for the children to feed the rabbits.



Working on forts or in the woodshop and bicycle shop teaches children practical skills and how to work together.





Carter School Sensory Garden

Location: Boston, Massachusetts, USA Contact: Marianne Kopaczynski E-mail: mkopaczynski@boston.k12.ma.us

The Carter School is a public school in Boston, MA (USA) for children with severe physical, mental and learning disabilities. In 2007, they opened a sensory garden to serve as an outdoor classroom. The garden has many characteristics to ensure that the handicapped students can enjoy the garden safely and independently. The garden is also designed to reduce maintenance and rainwater runoff. It is funded by The Friends of William E. Carter School Foundation.

The garden is 1500 square meters. Throughout construction, as much material as possible was re-used. Many of the plants that were already planted on the property were preserved in the new garden design. Seating throughout the garden is made of granite that was already on the site.



The garden includes raised beds so that children can easily plant their own plants and vegetables. (Design Drawing Credit: David Berrarducci)



All of the paths in the garden are made of a smooth material and are very wide so that handicapped students can easily maneuver throughout the garden. The wide, white lines along the edges create contrast to help visually impaired students identify the edge.



Simple instruments allow children to create their own sounds in the garden. Water and wind elements are also used to create interesting sounds.



Bright, contrasting colors make the garden interesting for all vistors, regardless of visual ability.

All photographs on this page credit Marianne Kopaczynski, Photographer: Tom Holzell



Dam Head Park

Manchester, United Kingdom Contact: Joan Fitzgerald E-Mail: joanfitzgerald@btinternet.com

Dam Head is a residential development that has a very active Residents Association that has initiated several projects to improve their neighborhood. They have community gardening activities and a young gardeners program where school children maintain their own little plots of land. One of the most popular community gardens programs is the Adopt-A-Flowerbed program where families or individuals can take responsibility for a garden that has already been planted. To help maintain public gardens and areas, there is a group of residents who volunteer to care for all the common outdoor areas. They garden each week, but they also paint and complete other tasks when necessary.

The Dam Head Residents Association recently opened an elderly playground in the park. The playground is adjacent to a playground for children under 5. This proximity allows parents and grandparents to exercise while they monitor the children. In choosing this location, members of the Residents Association hoped that having an area to exercise near the children's playground would encourage parents and grandparents to take their children to the playground.





In the young gardeners program, children work with adults, generally pensioners, to cultivate and care for gardens. Some school classes also have gardens that they care for.

There are six different types of equipment in the playground. The equipment is low-resistance so that elderly people do not get injured while using it. There are several main stations where people can do many different exercises, including standing push -ups and leg pedaling.



The Ski tones the hip muscles.

The Skate trains the leg muscles.





All photographs on this page credit Daniel Ilisevic and are from Dam Head Residents Association Website (www.damra.co.uk).



Geelsgård Skolen

Kongevejen 252, 2830 Virum Telephone: 45 11 40 55 Contact: Benny Mollerup-Jensen





Geelsgård Skolen is a school for handicapped children. Some of the students have mental disabilities and others are physically disabled. The school built the garden in 1998 to help their students engage with nature. It is designed so that students can experience nature through taste, smell, touch and sight. The garden itself is closed in to make the user feel that they are in a room. In addition to many other features, the garden includes raised beds, differently textured pathways, sculptures and wind chimes. Just outside the garden is a wild garden area, where they do no maintenance, they just let it grow. Throughout the spring, summer and fall, different plants bloom there. They also have a small orchard with apple trees.

There are no organized activities in the garden, however some of the classes use the garden for various lessons. Additionally, in the courtyard they have features of a kitchen garden where there are table beds so that children in wheelchairs can plant and care for their own gardens.



Children hide and play in between these trees.



The sensory garden is enclosed by these tall bushes. The rocks and sand create an interesting texture for students to experience.





This area just outside the garden is left natural. Different plants grow there each season. Students enjoy seeing the various plants that grow there throughout the year.



Edible plants, such as chives, are planted throughout the garden so that students can taste them. Of course, there are not poisonous plants.

The wind chime, rock fountain and rustling leaves create sound in the garden.







Kløvermarken

Kløvermarksvej 35, 2300 København S Telephone: 20 66 80 05 Contact: Thorkild Pedersen







Kløvermarken is a nature playground that runs programs for groups of school children. These programs teach children about a variety of topics ranging from native Scandinaian plants to environmental stewardship. Kløvermarken is closed to the public during the week when school groups are visiting, but anyone can visit on weekends or evenings. They had a couple instances of vandlism when they first opened and considered locking the yard, but they decided not to and have had no problems since.

The nature playground is a highlight for younger visitors who enjoy sliding down and then climbing up a hill, running through the tree maze, running up and down the herb sprial and enjoying the feeling of wilderness.

In addition to the the nature playground, there are numerous gardens. Some of the gardens are designed around a theme such as Scandinavian plants, herbs or types of onions.



The pond and gardens are an outdoor laboratory where children explore nature and learn about wild plants and animals.

The building has plants on the roof to reduce run-off and teach children about the water cycle.





The playground equipment is all made naturally and blends into the landscape. The slide and climbing wall are built into the hill.



The tree maze is popular with everyone!

All of the plants in this bed are different kinds of onions.





Lions Wellness Park

Delta, British Colombia, Canada Contact : Jim Levin E-mail: JLevin@corp.delta.bc.ca

The Lions Wellness Park was developed and built by the Tsawwassen Boundary Bay Lions Association. The Wellness Park is designed to improve users' physical and psychological fitness while giving the elderly a place for recreation and social interaction. Playground designers worked with people at Trinity West University School of Human Kinetics to design the playground. In a survey, the local residents said that they were most interested in improving their strength and flexibility, so the playground equipment is designed for stretching and flexibility exercises.

The wellness park is located near the center of town within a larger park that has sports fields, a children's playground and a fitness center. It is very close to a housing complex for seniors and adjacent to a nursing home.



The wellness park includes a walking path that has markers that say how far users have walked.



The wellness park features several exercise and stretching stations on a rubber chip surface. The equipment is designed to prevent falls and injuries, but offers various levels of difficulty based on the user's current physical ability.





THIS IS AN EXERCISE PROGRAM DESIGNED TO MEET THE NEEDS OF WELLNESS-MINDED SENIORS. EXERCISE COMPONENTS IMPROVE FLEXIBILITY, CHALLENGE STRENGTH, AND MAINTAIN AGILITY. BEFORE PARTICIPATING IN ANY EXERCISE PROGRAM, CONSULT YOUR HEALTHCARE PROVIDER.

People at The Trinity West University School of Human Kinetics created an exercise program for the seniors who use the wellness park.







There is a children's playground, baseball diamond, community garden and lawn bowling club in close proximity to the wellness park. This location was chosen because designers wanted the wellness park to be in a central area.

All photographs credit Jim Levin: Parks Development & Operations Office, The Corporation of Delta



Psykiatrisk Center Sct. Hans

Boserupvej 2, 4000 Roskilde Telephone: 40 62 42 67 Contact: Susanna Friis-Pedersen



The Skt. Hans Mental Center Sensory Garden serves as one of the treatment centers for patients suffering from a variety of mental ailments. Since the patients have such a variety of illnesses, the garden must be comfortable for everyone. For example, there are multiple paths though each garden to ensure that patients never feel trapped.

The garden has two separate functions, rehabilitative and restorative. In the restorative section of the garden, patients do not have high levels of interaction with nature, they just enjoy it. In the rehabilitative section, patients interact with nature by gardening and caring for plants around the garden.

The grounds include several large gardens, seating areas, two greenhouses, a garden house with potting areas inside, a courtyard and an orchard. They also have a few sheep and chickens.



Many of their patients fear structure and order, so plants are often grouped instead of aligned. However, most elderly people prefer structure and order so they can see how humans have worked with nature.





Seating in the garden is situated so that patients do not worry about being approached from behind.





The two large greenhouses and indoor potting rooms create areas for patients to garden and relax year round. Many seedlings are forced in these areas before being planted outside in the spring.





Remiseparken

Peder Lykkes Vej 71-73, 2300 København S Telephone: 32 58 67 70











This large

area is

where

children and

rabbits

interact.

Remiseparken is the largest staffed playground in Copenhagen. Each year, between 80 and 100 thousand people visit the park to work in the building playground, see the animals or play in their wading pool. It is open to the public daily and visitors are free to participate in any of the activities offered at the park. The indoor facilities include a playroom for small children, an art studio, computers and a pool table. The outdoor activities are far more numerous and include the building playground, sports fields, farm animals, a wading pool in summer and picnic areas. The buildings in Remiseparken are historic farm buildings and the staff works to maintain the historical characteristics.

Instead of only having one type of animal as many farms today do, Remiseparken keeps many different animals to show children how farms used to be. There are chickens, rabbits, three ponies, two pigs, a cow and several goats living at Remiseparken. The animals are enclosed, but children can enter the pens to interact with the animals.



There are many ways to interact with the animals. There are wagon rides and horseback riding for those who are interested.



Elderly residents from the senior center often come sit in this garden.







The buildings are historic farm Buildings. The staff works to maintain their characteristics. These stalls are built to resemble stalls from the 1860s.



When there are not baby goats, children can go into the goat yard. The kids in the pictures are 1 and 2 days old.



Rødovre Byggelegeplads

Nyholms Allé 49, 2610 Rødovre Telephone: 36 41 05 90 Contact: John Hansen











Rødovre Byggelegeplads is an after-school club for ages eight to eighteen with a building playground and farm animals. It is much different than the other clubs. Some of the children build forts, but most build animal enclosures since they cannot have an animal without one. Similar to the other clubs, members at Rødovre Bygglegeplads can own their own rabbit or bird. However, before a child can get an animal, they must build an enclosure for it.

In addition to the private animals, Rødovre Byggelegeplads has several goats and two horses. Horseback riding lessons are included in the membership fee and are very popular, especially with the girls. The staff helps children care for their own animals and take primary responsibility for the goats and horses. Inside the club building, they have a parrot and fish in addition to a kitchen, café area, woodshop and rooms for crafts, video games or hanging out.



The land is divided into sections and pairs of children share small plots for their structures and animals. Staff members are assigned to certain areas so the children, staff and animals can develop strong relationships.



Club members help with the chores for all the animals.



This very large bird enclosure houses a variety of birds, including peacocks.



The size and type of enclosure children build depends on the animal

they want to own. When children are too old for the club, their animals move home with them.




Saxoparken

Saxogade 17, 1666 København V Phone Number: 36 92 25 02 Contact: Marianne Mark









Saxoparken was developed by the Vesterbro Agenda 21 Center about a year and a half ago. The park is quite small, 500 square meters, and is used as a nature classroom for children as well as a place for the neighbourhood to enjoy. The neighbours have taken great pride in Saxoparken, as they helped to plant it when it first began. They are in the process of creating a volunteer group to regularly help with the gardening and maintenance responsibilities.

Saxoparken is a popular field trip location for children in kindergarten through third grade. Its goal is to promote sustainability, teach children about nature and help them learn to take responsibility for our environment. To teach children about these topics, staff prepare four or five different lessons each fall and spring. Currently, the programs are: birds, rats, bats and insects.

The area around Saxoparken has a very large immigrant population and many children do not speak Danish. To help these students understand everything at Saxoparken and learn some Danish, their classes get a box with items they will be learning about on their visit for them to work with in class prior to their field study.



The nature house has a fireplace, toilet, books and toys.



In the spirit of conservation, everything possible is reused; these insect and animal houses were built with materials found in the park.





They have areas for children to play in. The sculpture is made from a tree that died (left) the tree maze is still growing (below).



To ensure that the food is safe, vegetables are planted in raised beds with purchased soil.







Skolelandbruget

Stavnsholtvej 171, 3520 Farum Telephone: 44 95 07 68 Contact: Susanne Lund-Larsen



Skolelandbruget is an educational farm where children and adults learn about farm animals and where our food comes from. They have pigs, goats, sheep, cows, chickens, rabbits, guinea pigs and a cat. Schools visit the farm on field studies and the children help with everyday farm tasks and spend time with the animals.

Several times a year, the farm holds open houses where the public can come and experience different farm events. For example, the sheep are sheared at an open house and people can make small crafts with the wool. For older children, there is a program that incorporates chicks and mathematics. Classes visit the farm once a week for eight weeks and pairs of students are assigned a chick to weigh and measure. The amount of food they have eaten and how much they grow are incorporated into mathematics classses back at school. At the end of eight weeks, when the chicks are full grown, they are slaughtered and the children make a meal for thair parents to learn more about the food we eat. At the open houses, anyone can learn about the farm through programs that include small crafts like this lamb wreath.





They have farm equipment in all sizes, so even small children can help with chores.





Each spring, many animals are born on the farm and are very popular with the children. These pigs and goat are two months old.



Children who are scared of the large animals often enjoy spending time with the guinea pigs and rabbits.





Skovhaven

Hammelstrupvej 100, 2450 København SV Telephone: 39 29 66 15 Contact: Poul Erik Pedersen



Skovhaven in Valbyparken is one of the seventeen themed gardens. The garden was built and designed in 1996 and is approximately 330 square meters. It is designed using several of the permaculture principles. Different areas of the garden represent the five zones that are at the center of permaculture theory. When it was first built, it included a house, small vegetable garden, herb spiral, water garden, fruit trees, a forest and an orchard. The orchard includes wild apple trees, walnut trees and elderberries.

The funding for the garden has been decreased, so the group in charge of it is no longer able to do as much upkeep in the garden. The vegetable garden and herb spiral no longer exist and the building is not enclosed. The garden was designed to feature only plants native to Scandinavia, but unfortunately, many of the plants are not native due to a miscommunication between the designer and builder.



The indoor-outdoor compost illustrates that heat produced from compost can be used to help heat a building.





The plants in the garden do not require much attention because Skovhaven mirrors the natural progression of plants that grow in different stages of a forest's development.

The garden provides a habitat for many kinds of wildlife.



The water garden collects rain water and releases it slowly into the ground. Many plants and animals thrive in this wet environment.

When a tree dies or falls, it is left in the forest so that nature can go through its cycle.





S:t Hansgården

Svenshögsvägen 25B, 22642 Lund, Sverige Telephone: 046-35 53 20 Contact: Marie Greco









The S:t Hansgården afterschool club has many gardens and farm animals. School classes can visit the nature center during the day to learn about different topics, often edible plants and outdoor cooking. Afterschool, club members help to care for the animals and with general garden maintenance. The farm houses goats, sheep, chickens and rabbits. The animals are all privately owned, but the rest of the animals belong to the institution. Similar to other afterschool clubs, the children must care for their rabbit. However, unlike the other clubs, the staff members do not help with their care, other children help out with rabbits if their owner is ill or on holiday.

The gardens feature edible plants throughout. The fruits, vegetables and herbs are used for programs and food at the club. The herb gardens are located closest to the building and the orchard is furthest away. They have all kinds of herbs and fruits, including thyme, basil, grapes, apples, elderberries and pears.

The club uses alternative energy whenever possible, they have solar panels and wind turbine.



The greenhouse is attached to the barn and is used to grow plants all year and has a balcony that leads to the second floor. The goats are mountain goats, so they enjoy their two-story stall.



The buildings are built ecologically and using traditional building techniques. There are succulent plants on the roofs reduce run-off.



Fire pits (left) and bread ovens (right) are used during school programs to teachstudents about cooking.





They have several fields and rotate where animals graze so that all the grass does not get eaten.



Stengårdens Byggelegeplads

Stengårds Plads 6, 3650 Ølstykke Telephone: 47 17 56 68 Contact: Grethe Weidich







Stengården's Byggelegeplads is an after-school institution for school-aged children. They offer a variety of indoor activities and they have a cafe where children can purchase snacks.

There is playground equipment, a football field, building forts and farm animals outside. The staff helps groups of children to build forts and makes sure the forts are safe.

The institution owns the three goats, rabbits and several chickens. Children are encouraged to help the staff care for all the animals, but do not have responsibility for the chilckens or goats. Children can rent rabbits or chickens for a monthly fee. They are then esponsible for the care of their animal and may take them home for weekends and holidays. The staff checks on each animal everyday to ensure that the children are caring for their animals.







All of the animals have plenty of space to exercise. The rabbits have indoor cages and outdoor play pens, the goats run freely on the property and the chickens have a large coop



Rabbits are very social animals; they have plenty of room that they can run around together both inside and out.





The playground includes an obstacle course, part of which is shown here.



Tangensvej Skolehave

Tagensvej 186, 2400 Kobenhavn NV Telephone: 26 81 08 47 Contact: Camilla Friedrichsen





Tangensvej Skolehave is a school garden where children can learn to garden and while learning about nature. Children rent a plot of land for 166kr a season and it is their responsibility to plant and care for their plot. Every child at the garden must grow the same plants because they all take the same lessons. The gardens have vegetables, flowers and herbs. The most common vegetables in the Tangensvej gardens are onions, radishes, potatoes and pumpkins. Throughout the season, children learn about food through doing. They plant the seeds, care for them as they grow and then harvest the food. Children learn about nature, plants, healthy foods and how to prepare them.

There are a few paid staff members at Tangensvej, but most of the work is done by volunteers who coordinate programs and help children with their gardens.





Children's



In addition to growing and reaping their own foods, children cook over fires and learn how to preserve foods.



Children participate in all garden activities including planting, weeding and harvesting.







Through working in their own gardens, children learn about composting, the water cycle and how to work together.





Professional chefs help children cook a harvest feast for their parents each year using plants grown in their own gardens.

All photographs credit Camilla Friedrichsen (camillafr@telelet.nu)