

Central Minnesota RESOURCE AND DIAGNOSTIC CENTER for Developmental Disabilities

PROJECT DESCRIPTION:

Medical and office typology, which consolidates resources for the developmentally disabled.

PROJECT GOALS:

Provide for efficient access to diagnosis, treatment, education and services for the developmentally disabled.

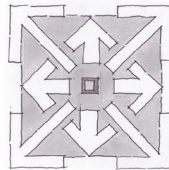
Provide for a positive psychological, physical and social well-being, through visual and physical connections with nature.

Establish an environment which is responsive to the needs of the children, their families and the staff occupying the building.

Promote social interaction and encourage network formations while responding to privacy needs.

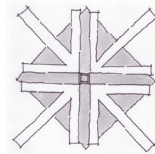
Provide spaces which support varied learning styles and abilities.

Organize the building to assist in wayfinding, and utilize healthful and sustainable materials and technologies.



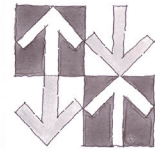
RESEARCH/MEDICAL:

This area of the building is explorative in nature and reaches outward in search of answers and cures. It represents the cognitive aspects of health.



PUBLIC SPACES:

The character of this space is supportive and social. It represents the emotional component of health and the reliance on outside forces.

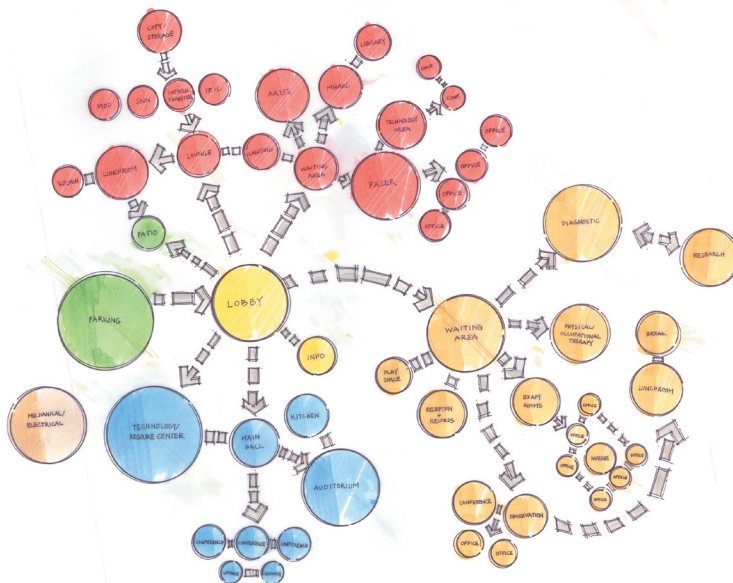


OFFICE SPACES:

The social component is represented by the offices, which work as referral sources assisting children in school, recreational and the home environment.

PROJECT CONCEPT:

The images represented above, illustrate the concept for the building. The building consists of three individual parts, which represent the cognitive, social and emotional components of health which are assessed and treated within the building. Coming together as one the units inspire triumph over the impairments.



SPATIAL ARRANGEMENTS:

The bubble diagram above illustrates the division of spaces, and the necessary connections between each. The orange spaces are associated with the research and medical area of the building, while blue represents public spaces, and red assigns organization to the office functions.

MAJOR PROJECT ELEMENTS:

Organizational Offices
Diagnostic and Medical Center
Research Facility
Medical Offices
Technology and Multimedia Center
Library
Conference and Workshop Spaces
Child Care Area
Lounges, Waiting, Reception
Accessible Restrooms
Circulation Space
Maintenance and Storage
Mechanical and Server Space

USER / CLIENT DESCRIPTION:

The building would be owned by CentraCare Health. Offices of several medical providers and researchers would be the primary users of the building. Additionally, staff of several service and volunteer organizations would be housed in the facility. Secondary users of the building would be patients and visitors of the facility. The building's program supports spaces for support groups, educational conferences, and personal research.

ORGANIZATIONAL OFFICES:

The following is a brief description of the services provided to the developmentally disabled by various offices included in the building.

PACER

Parent Advocacy Coalition for Educational Rights

Services include referral, individual assistance/advocacy, workshops and training for parents. The technology center attached to this office, is used to assess what types of assistive technology, computer programs and adaptive toys/devices would benefit children with developmental disabilities best.

MNARC

Minnesota Association for Retarded Children

For over 50 years, this organization has provided services including individual and family advocacy and referral, networking with other agencies, parent education, developmental disability awareness, and recreational/social activities. Also affiliated with the organization is a large library of resources.

ARISE

A Recreational Inclusion Support Endeavor

Serves children and adults, up to age 21, with any type of disability, within 30 miles of St. Cloud. Provides assistance with school and community based programs outside the school day.

IEIC

Interagency Early Intervention Committee

A local council consisting of parents and representatives of the school district, other agencies, service providers, and county government who work together to better address the needs of children with disabilities ages birth to 5 years, and their families. This organization publishes a newsletter and sponsors projects, events, and informational workshops that empower parents and support them in making their own choices.

MARCH OF DIMES

A small office for full-time and volunteer staff, which work to educate, improve the health of babies and prevent birth defects and infant mortality.

CATHOLIC CHARITIES CARITAS

Community based services which require traditional office space. Employees of Catholic Charities work in the community and private homes of families of children with disabilities, performing childcare services.

SPECIAL NEEDS NETWORK

Primarily volunteer based, this organization establishes a referral system for families to locate doctors, educators, psychologists, etc. who work with the developmentally disabled. Additionally, this group prepares and sends mailings to educate parents on the developmental stages of infants and young children.

DISABILITY LAW

A satellite office where disability lawyers from the Twin Cities area, can provide counsel to families from the St. Cloud area, on a limited schedule.

COUNTY SOCIAL WORKERS

Similar to the disability law offices, these spaces provide temporary space for social workers to meet with families and educators.

PROGRAMMATIC ELEMENTS

DIAGNOSTIC CRITERIA

Developmental disabilities are severe and chronic neurological conditions that manifest before the age of 22, resulting in the impairment of:

GENERAL INTELLECTUAL FUNCTIONING

IQ less than 70

LIMITED ADAPTIVE BEHAVIOR

Self-care
Home Living
Social and Communication Skills
Health and Safety
Functional Academics
Leisure and Work

DESCRIPTION OF DEVELOPMENTAL DISABILITIES

AUTISM

Autism spectrum disorders (ASDs) are a group of developmental disabilities that are caused by an abnormality in the brain and encompass a broad spectrum of symptoms, usually diagnosable before the age of 3. Symptoms included impairment in social interaction and communication. Specifically, individuals with autism, often lack eye contact, isolate themselves, fail to develop peer relationships on an appropriate developmental level, and may be incapable of social and emotional reciprocity. Communication limitations include delay in, or complete lack of spoken language, and the inability to initiate or sustain conversation with others. Repetition and stereotyped behavior is common in individuals with autism. They may be inflexible in regards to rituals, routines, diet, dress, interests and activities, and may also display repetitive use of language and motor mannerisms. Many people with ASDs also have unusual ways of learning, paying attention, or reacting to different sensations. ASDs begin during childhood and last throughout a person's life. Source: Centers of Disease Control

CEREBRAL PALSY

Is a term used to describe a group of chronic conditions affecting body movement and muscle coordination. It is caused by damage to one or more specific areas of the brain, usually occurring during fetal development; before, during, or shortly after birth; or during infancy. Cerebral palsy is characterized by an inability to fully control motor function, particularly muscle control and coordination. Depending on which areas of the brain have been damaged, one or more of the following may occur: muscle tightness or spasm; involuntary movements, disturbance in mobility, abnormal sensation and perception, impairment of sight, hearing or speech, and seizures. Cerebral palsy is neither progressive nor communicable. It is also not "curable" in the accepted sense, although education, therapy and applied technology can help persons with cerebral palsy lead productive lives. Source: Disability Museum

HEARING OR VISION LOSS

Hearing loss can affect a child's ability to learn both to speak and to understand spoken language. This is especially true if the child is born with a hearing loss or loses his or her hearing before 2 years of age. People with hearing loss may communicate using speech, sign language, or a combination of both. Approximately 30% of children who are deaf or hard of hearing also have one or more other developmental disabilities, such as mental retardation, cerebral palsy, vision impairment, or epilepsy. Vision impairment means that a person's eyesight cannot be corrected to a "normal" level. It is a loss of vision that makes it hard or impossible to do daily tasks without specialized adaptations. Vision impairment changes how a child understands and functions in the world. Impaired vision can affect a child's cognitive, emotional, neurological, and physical development by possibly limiting the range of experiences and the kinds of information a child is exposed to. Nearly two-thirds of children with vision impairment also have one or more other developmental disabilities, such as mental retardation, cerebral palsy, hearing loss, or epilepsy. Partial or total hearing or vision loss may impair the development of young children, and may require special devices, education and therapy to successfully mainstream. Source: Center for Disease Control

MENTAL RETARDATION

Is characterized both by a significantly below-average score on a test of mental ability or intelligence and by limitations in the ability to function in areas of daily life, such as communication, self-care, and getting along in social situations and school activities. Mental retardation is sometimes referred to as a cognitive or intellectual disability. Children with mental retardation can and do learn new skills, but they develop more slowly than children with average intelligence and adaptive skills. There are different degrees of mental retardation, ranging from mild to profound. Source: Center for Disease Control

ATTENTION DEFICIT DISORDER

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common childhood behavioral disorders and can persist through adolescence and into adulthood. The causes are currently unknown. ADHD is a Disruptive Behavior Disorder characterized by on-going inattention and/or hyperactivity-impulsivity occurring in several settings and more frequently and severely than is typical for individuals in the same stage of development. Symptoms begin before age 7 years and can cause serious difficulties in home, school or work life. ADHD can be managed through behavioral or medical interventions, or a combination of the two. Source: Center for Disease Control

DOWN SYNDROME

Down syndrome is a chromosome abnormality, usually due to an extra copy of the 21st chromosome. This syndrome usually, although not always, results in mental retardation and other conditions. It is the most common single cause of human birth defects, with an occurrence in one out of every 660 births. Children with Down syndrome have a widely recognized characteristic appearance. The head may be smaller than normal (microcephaly) and abnormally shaped. Prominent facial features include a flattened nose, protruding tongue, and upward slanting eyes. The inner corner of the eyes may have a rounded fold of skin (epicanthal fold) rather than coming to a point. The hands are short and broad with short fingers and often have a single crease in the palm (simian crease). Retardation of normal growth and development is typical and most affected children never reach average adult height. Congenital heart defects are frequently present in Down syndrome children. Early mortality is often a result of cardiac abnormalities. Source: Medicine Plus

LOCATION AND SITE

SAINT CLOUD:

Located sixty-five miles northwest of Minneapolis, Saint Cloud is home to a thriving medical community. The population is growing rapidly, increasing the need for various local medical and social facilities to serve the needs of these families.

CENTRACARE HEALTH PLAZA:

The site for the proposed design rests on a 126-acre medical campus, just north of the heart of St. Cloud. Owned by CentraCare, the plaza currently features a three-story, 328,000 square-foot brick building with aluminum and glass accents. The design of the campus allows for expansions to the current building as well as the addition of independent structures.

SITE AMENITIES:

The land surrounding the CentraCare campus is used for a variety of functions. To the North there are several medical buildings, which include Abbot Northwestern Specialty Care Center, Center for Diagnostic Imaging, and Northwest Professional Center, new construction which will lease spaces in Fall 2005 for medical and office purposes. To the East of the site, is Hennen's furniture which is off the primary traffic artery to the site, Highway 15. To the South, is the Sauk River. The western edge of the site features a small park and single-family residences.



RIVER



WOODLANDS

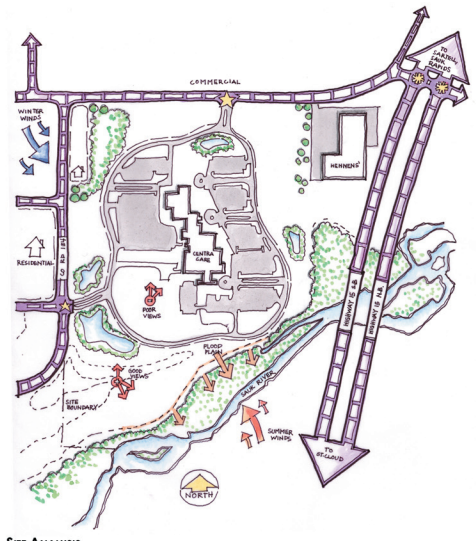


PRAIRIE

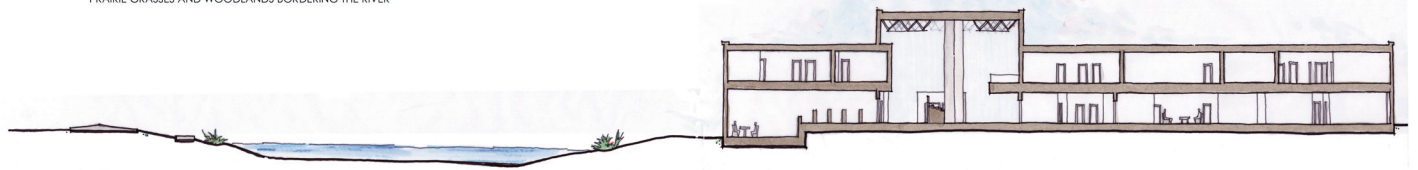
NATURAL FEATURES OF THE SITE INCLUDE THE SAUK RIVER, RESTORED PRAIRIE GRASSES AND WOODLANDS BORDERING THE RIVER



St. Cloud Vicinity Map
NO SCALE



SITE ANALYSIS
NO SCALE

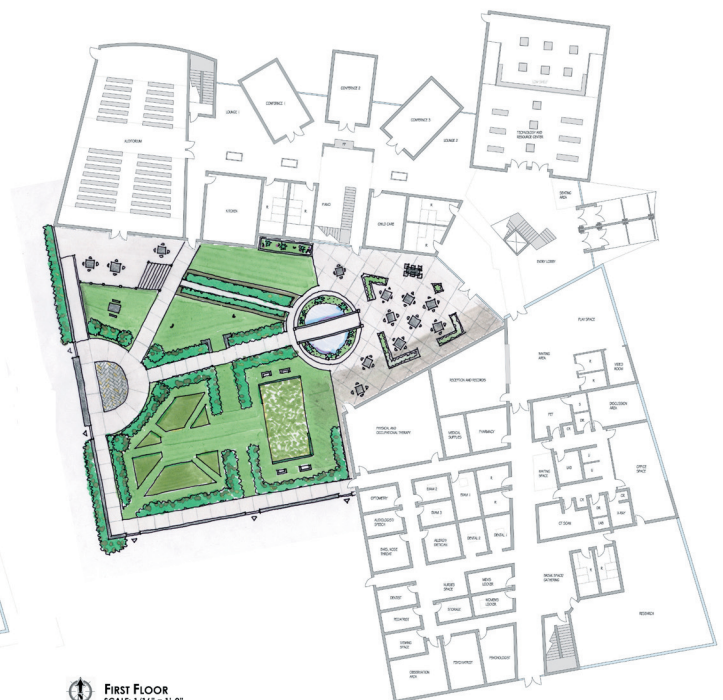


SITE SECTION
SCALE: 1/16" = 1'-0"

FLOOR AND GARDEN PLANS

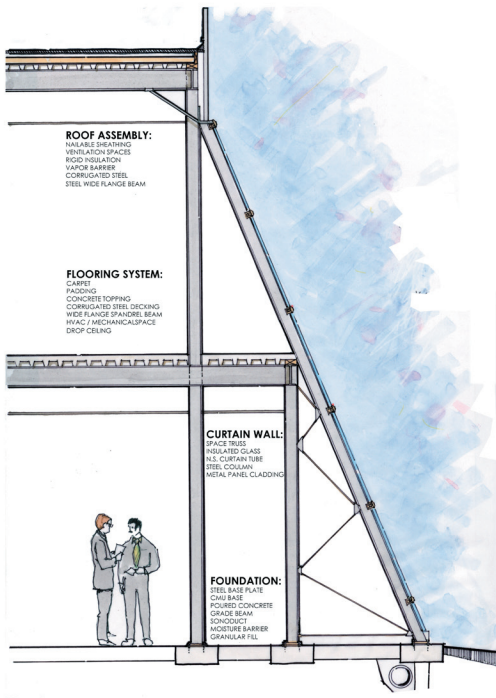


SECOND FLOOR
SCALE: 1/16" = 1'-0"



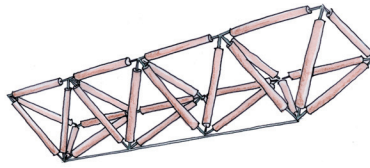
FIRST FLOOR
SCALE: 1/16" = 1'-0"

STRUCTURE AND HVAC

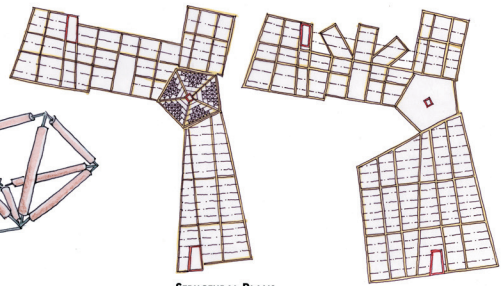


WALL SECTION
SCALE: 1/2" = 1'-0"

STRUCTURE:
The building is supported by a steel frame structure. The three-storey atrium space is reinforced by an internal space frame comprised of trusses which are covered in sound absorbing acoustical material.

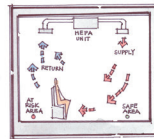


ACOUSTICAL SPACE TRUSS
NO SCALE

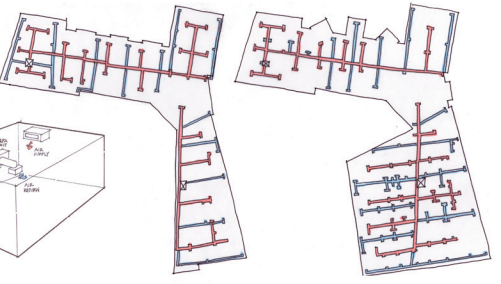
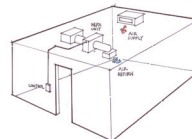


STRUCTURAL PLANS
NO SCALE

HVAC:
Due to the hypersensitivities associated with some developmental disabilities, it is necessary that the filtration system in the diagnostic center of the building eliminate allergens and pollutants in the air. A large HEPA unit is housed in the mechanical space nearest the diagnostic center, while portable HEPA filtration devices are available for other areas of the building. Additionally, office spaces can be provided with self-contained fixtures in the drop ceilings, for staff with special needs.



DIAGRAMS OF HEPA SYSTEMS
NO SCALE



HVAC PLANS
NO SCALE

ACCESS AND LAYOUT



SITE PLAN
SCALE: 1:1,100

SITE LAYOUT:

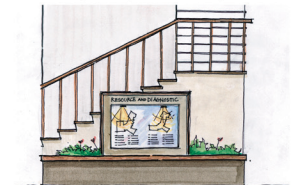
The building is placed on the southwest corner of CentraCare property, establishing itself as connected but independent from the existing facility. The gentle curve of the parking access follows the contours along one of the sites several existing ponds. The placement takes advantage of the best views on the site, while maintaining solar access to the south. The building form functions well in this orientation, as the building height steps down and allows the rear garden access to the sun, while still providing shade on the patio, along the building.

ELEMENTS OF WAYFINDING:
Essential to the design of this facility is ease of way-finding. By incorporating elements to assist in navigating through the building, visitors are saved both time and stress.



CORRIDORS:

Main hallways are marked with natural light at destination points, and their terminating points. Additionally long halls are decorated with art and vegetation to serve as visual cues in finding ones way out of the building.



SIGNAGE:

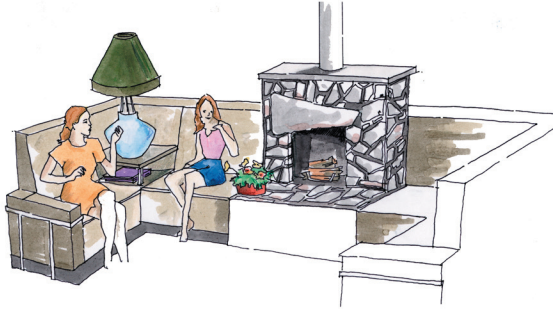
The sole entry greets visitors with a map of the layout of the building. Additionally, signs throughout the building are printed in braille to assist the visually impaired.



FORM AND VOLUME

Several visual cues are created to direct the visitor to and through the building. A canopy gives visual dominance to the entry to the building. Within the building entries to spaces are present where overhead volumes change and walls converge.

INTERIOR CHARACTER



PUBLIC SPACES:
Gathering places, such as the fireplace pictured above, promote friendship formation. Additionally, the public spaces serve to educate, and provide spaces for support groups. Each space, including the auditorium, which can seat over 300 people has views to the outdoors.



ATRIUM:
The atrium is connected to the sole entry to the building, and provides view through the building to the garden. Additionally, the space serves as a transition from outdoors to indoors, gradually decreasing the volume of the space, and introducing opaque materials.



CHILD SPACES:
The main area designated to children's activities is the medical waiting area. It features hands-on learning tools, and a video room isolated from the main space, for the visual stimulation needs of certain children.



WORKSTATIONS:
The overall configuration of spaces provides for fully accessibility of office space, and is intended to foster social contact. Work surfaces are adjustable, and equipped with voice recognition, screen magnification and other ADA devices where necessary. Additionally, task lighting, name slots, and spaces for plants and photos allow for personalization of the work environment.

PASSIVE DESIGN IMPLEMENTATION

SUSTAINABILITY GOALS

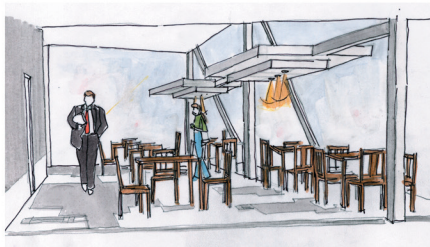
Site selection should not promote sprawl or development of agricultural lands.

Public transportation should be available to site.

Passive heating, cooling and ventilation should be maximized.

Water use should be reduced, and grey water should be reused.

Appropriate materials should be used, to minimize waste, and increase building performance.



IMPLEMENTATION OF GOALS

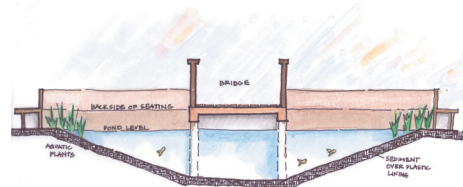
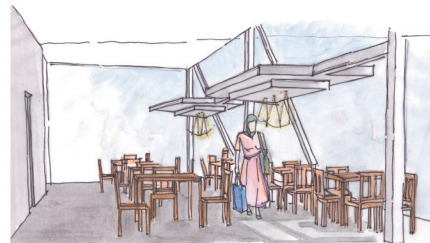
Integrated photovoltaic panels are used to heat water for the building, reducing energy needs and consumption.

Built in shading devices, reducing cooling loads demands during summer hours, while allowing for passive heat gain during the winter months.

Biological treatment of grey water is implemented at various ponds on site.

Garden pavers allow for permeability.

Natural light is abundant in interior spaces. Sky lights bring light into core of lower level.



SECTION OF GARDEN POND
SCALE: 1/4" = 1'-0"

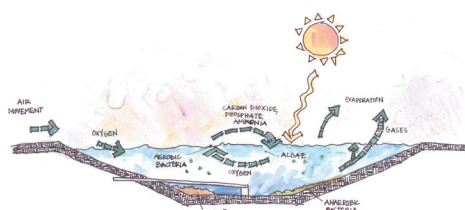


DIAGRAM OF BIOLOGICAL GREY WATER TREATMENT AT SITE



BUILDING SECTION
SCALE: 1/8" = 1'-0"