

**Cascade Meadow Wetlands
& Environmental Science Center**
Rochester, MN

LHB General Brochure



**PERFORMANCE
DRIVEN DESIGN.**

21 West Superior Street, Suite 500
Duluth, MN 55802
218.727.8446 | 218.727.8456 Fax

63 East Second Street, Suite 150
Superior, WI 54880
715.392.2902 | 218.727.8456 Fax

701 Washington Avenue North, Suite 200
Minneapolis, MN 55401
612.338.2029 | 612.338.2088 Fax

200 Third Avenue NE, Suite 100
Cambridge, MN 55008
763.689.4042 | 612.338.2088 Fax

Firm Profile

Markets Served

- Commercial
- Education
- Government
- Healthcare
- Housing
- Industrial
- Pipeline and Utilities
- Public Works

Services Provided

- Architecture
- Civil Engineering
- Electrical Engineering
- Mechanical Engineering
- Structural Engineering
- Interior Design
- Landscape Architecture + Planning
- Land Surveying
- Historic Preservation
- Performance Metrics™

Locations

21 West Superior Street
Suite 500
Duluth, MN 55802
218.727.8446, 218.727.8456 Fax

701 Washington Avenue North
Suite 200
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612.338.2029, 612.338.2088 Fax
200 Third Avenue Northeast
Suite 100
Cambridge, MN 55008



LHB, Inc.



Cascade Meadow Wetlands and Environmental Science Center; Rochester, MN
LEED NC Platinum Certified

LHB is a multi-disciplinary engineering, architecture, and planning firm known for our design leadership and loyalty to our clients. We go beyond good intentions and focus on measurable performance. We are specialists in: public works, pipeline, industrial, housing, healthcare, government, education, and commercial design.

LHB is dedicated to being environmentally responsible, reducing long term operating costs, and improving the quality of life for our clients. With a staff of 250, we provide integrated design solutions. Since 1966, our people have focused their talents and specialize in providing creative, practical and cost-effective design solutions for our clients.

We create sustainable designs for all types of facilities and infrastructure to produce energy-efficient buildings; promote ecological use of materials; and utilize natural systems that provide healthy, cost-effective benefits from natural lighting to stormwater reuse.



- Top 500 Design Firms, ENR (Engineering News Record) Magazine
- Top 300 Architecture Firms, Architectural Record
- Hot Firm Winner, Zweig Group

LHB Staff by Discipline

Licensed Civil Engineers.....	15
Licensed Mechanical Engineers.....	11
Licensed Fire Protection Engineers...	1
Licensed Electrical Engineers.....	4
Licensed Structural Engineers.....	11
Graduate Engineers.....	19
Licensed Land Surveyors.....	2
Survey Crew Chiefs.....	9
Survey Technicians.....	13
Licensed Landscape Architects.....	4
Graduate Landscape Architects.....	4
Licensed Architects.....	32
Graduate Architects.....	14
Certified Interior Designers.....	5
A/E Design Technicians.....	50
Technical Staff.....	9
Administrative Staff.....	44
Safety Specialist	1
Planning and Development.....	1
Historic Preservationist.....	1
TOTAL LHB STAFF	250

Firm Profile Services



Architecture

Building Design
Feasibility Studies
Design Workshops
Project Management
Code Review
Building Condition Surveys
TIF Inspections
Historic Preservation
Barrier-Free Design
Construction Administration
Roof Investigation & Design
High Performance Design
Performance Metrics™

Interior Design

Tenant Improvement Design
Programming/Space Assessment
Design Charrettes
Space Planning
Code Review
Furniture and Finish Selection
Adaptive Reuse
Art Consultation
Project Management
Office Furniture Systems

Landscape Architecture & Planning

Master Planning
Parks/Plazas
Recreational Areas
Playgrounds
Residential/Decks/Gardens
Urban/Streetscape Design
Planting Design
Site Planning/Development Studies
Interpretive & Ecological Design
Trails

Mechanical & Electrical Engineering

Heating, Ventilation & Air
Conditioning System Design
Building Control Systems
Commissioning
Mechanical Retrofit
Distribution Systems
Fuel Storage Systems
Infrastructure Design
Fire Protection
Alternative Energy Production
Emergency Power Systems
Energy Analysis and Management
Energy Recovery Systems
Plumbing Systems
Special Piping Systems
Building Power Systems
Lighting Systems
Emergency Power Systems
Electrical System Design
Information Technologies
- Telecommunications/Network
Distributing Systems
Security Systems
Inspections
Traffic Signal Design

Civil Engineering

Site Design
• Environmental Assessments
• Master Planning
• Environmental Drainage Systems
• Planting Design
• Erosion/Flood Control
• Brownfield Redevelopment
• Permitting
• Subdivisions
• Platting
• Surveys
Transportation
• Highways
• Streets
• Airport
• Bridges
• Trails
• Railroad
• Traffic Studies & Control
Water Resources & Utilities
• Water Supply Systems
• Sanitary Sewer Systems
• Water & Wastewater Treatment Plants
• Storm Water Management
• Grant Writing
• Water Quality Considerations

Land Surveying

Property Surveys
Topography
Aerial Photography Control
Surveying Work for Legal Descriptions
Boundary Surveys
Platting
Construction Staking
GPS/GIS

Structural Engineering

ALTA Surveys
Industrial & Building Structures
Bridges
Skywalks
Parking Ramps
Structural Investigations
Building Condition Surveys

Pipeline Engineering

Project & Construction Management
Project Feasibility Studies
Pipeline Design
Station & Terminal Design
Design & Code Review
Specification Review & Bidding
Project Audit & Monitoring
Route & Materials Selection
Scheduling & Cost Estimating
Quantity Surveying
Boundary & Legal Surveying
Mapping using ArcView GIS
Drafting
Permit, Crossing, Environmental
Mainline Route Sheeting
Scanning & Translation into
Microstation & AutoCAD

Firm Profile Awards



Lincoln Park Middle School



USFW Necedah National Wildlife Refuge



Southern Access Stage II



Renaissance Box

2016

2016 Memorial Blood Centers (MBC) – 100 Club Award

2016 Top 500 Design Firms, Engineering News-Record (ENR), LHB Ranked 344, USA

2016 American Society of Landscape Architects – Minnesota (ASLA-MN) Merit Award for Planning and Analysis, Trunk Highway 100 Visual Quality Manual, St. Louis Park, Minnesota

2016 Minneapolis/St. Paul Business Journal's Top Architectural Firms List, LHB ranked 19 out of 25

2016 Illumination Engineering Society - Minneapolis-St. Paul Section Energy and Environmental Design Award, WITC Superior Student Commons Remodel

2016 Star Tribune Newspaper - Top Workplaces, National Standard Setting Firm

2016 The Zweig Group Fast Growth Firm List, USA

2015

2015 American Council of Engineering Companies - Grand Award, Mower County Roosevelt Bridge Rehabilitation, Austin, Minnesota

2015 Preservation Alliance of Minnesota – Impact Award, Mower County Roosevelt Bridge Rehabilitation, Austin, Minnesota

2015 US Green Build Council Leadership in Energy and Environmental Design (LEED) Platinum CI, Loose-Wiles LHB Office, Minneapolis, Minnesota

2015 US Green Build Council Leadership in Energy and Environmental Design (LEED) Silver O+M Certified, BASF Building Systems, Shakopee, Minnesota

2015 The Zweig Group Hot Firm List, LHB Ranked 83 out of 100, USA

2015 Top 300 Design Firms, Architectural News-Record LHB Ranked 215, USA

2015 Top 500 Design Firms, Engineering News-Record (ENR) LHB Ranked 328, USA

2015 American Society of Landscape Architects – Minnesota (ASLA-MN) Honor Award for Planning and Analysis, Mississippi Central Riverfront Regional Master Plan, Minneapolis, Minnesota

2015 American Council of Engineering Companies “National Recognition Award” LHB and the Urban Land Institute (ULI) of Minnesota were the recipients for the Regional Indicators Initiative in the category of Studies, Research and Consulting Engineering Services, Statewide, Minnesota

2014

2014 US Green Build Council Leadership in Energy and Environmental Design (LEED) Gold NC Certified, Sage Electrochromics HVM-1 Plant, Faribault, Minnesota

Firm Profile Awards



MCTC Helland Student Center



Duluth 2nd Street Reconstruction



Covanta HERC Inventory Addition



Northern Star Council Boy Scout Base Camp

2014 *The Preservation Alliance of Minnesota for Rehabilitation*, Stewart Creek Bridge and Snively Monument, Duluth, Minnesota

2014 *American Public Works Association (APWA) Disaster or Emergency Construction Repair Project of the Year*, Haines Road, Duluth, MN

2014 *American Society of Landscape Architects – Minnesota (ASLA-MN) Merit Award in General Design*, Hazelden Ignatia Courtyard, Center City, Minnesota

2014 *American Society of Landscape Architects – Minnesota (ASLA-MN) Merit Award in General Design*, Minneapolis Community Technical College (MCTC) Fine Arts Plaza, Minneapolis, Minnesota

2014 *Top 500 Design Firms, Engineering News-Record (ENR)* LHB Ranked 323, USA

2014 *Top 300 Design Firms, Architectural News-Record* LHB Ranked 221, USA

2014 *The Zweig Group Hot Firm List*, LHB Ranked 50 out of 100, USA

2014 *Minneapolis/St. Paul Business Journal's Top Architectural Firms List*, LHB ranked 20 out of 25

2014 *US Green Build Council Leadership in Energy and Environmental Design (LEED) Gold NC Certified*, University of Minnesota Morris, Green Prairie Living and Learning Community, Morris, Minnesota

2014 *Minneapolis/St. Paul Business Journal Best in Real Estate Winner: Interior Renovation – Commercial*, LHB Minneapolis Loose-Wiles Office, Minneapolis, Minnesota

2013

2013 *Finance & Commerce Top Projects Award*, design of LHB's Minneapolis Office, Minneapolis, Minnesota

2013 *Finance & Commerce Top Projects Award*, Wildwood Elementary School, Mahtomedi, Minnesota

2013 *US Green Build Council Leadership in Energy and Environmental Design (LEED) Silver NC Certified*, Minnesota Air National Guard (MnANG) Starbase, St. Paul, Minnesota

2013 *US Green Build Council Leadership in Energy and Environmental Design (LEED) Silver NC Certified*, USFW Detroit Lakes Wetland Management District Headquarters, Detroit Lakes, Minnesota

2013 *US Green Build Council Leadership in Energy and Environmental Design (LEED) Silver NC Certified*, Lake Superior College Health and Science Center, Duluth, Minnesota

2013 *ASID MN Commercial / Institutional Category*, Ordean East Middle School (OEMS): An Education Rich in History, Duluth, Minnesota

2013 *Top 500 Design Firms, ENR (Engineering News Record) Magazine*, LHB Ranked 381, USA

Project Profile

Project Type

Parking Structure and
Pedestrian Bridge
Duluth, MN

Client

Duluth Transit Authority (DTA)

Duluth Transportation Center Northwest Passage



The Northwest Passage, originally designed in 1969, serves as a vital link from downtown Duluth to Canal Park. LHB began the redesign efforts teaming with Mortenson Construction and the Duluth Transit Authority in 2013. The Northwest Passage reconstruction was a part of the Duluth Transit Authority – Duluth Transportation Center Project, scheduled to be completed by January 2016.

The Northwest Passage design strived to introduce prominence to the gateway nature of the existing skywalk, which had a very dated appearance and was showing signs of deterioration. The final design included a complete building envelope replacement. The new skywalk includes new heated concrete floors, glazing, wall assemblies, exterior metal panels, roof assemblies and new mechanical and electrical systems. The foundation piers, and structural steel are the only existing elements that are from the original walkway.

There are five sections of skywalk as you travel across the Northwest Passage from the DTC to the DECC on the opposite side of the I35 freeway. To introduce architectural significance to the structure, two of the five sections were given higher roofs with large overhangs and clerestory glazing to open up the space and let in ample daylight. The Northwest Passage now serves as a landmark and a gateway to the city of Duluth.



Project Profile

Project Type

New Police Headquarters
Duluth, MN

Client

City of Duluth
Police Department

Police Headquarters Design



New headquarters were designed for the City of Duluth Police who had outgrown their space in City Hall. To create resource and operating efficiencies, and increase collaborative efforts, the City and County came together to create the new headquarters on the site of the St. Louis County Public Safety Building. Designed by LHB in 2006, the County Public Safety Building also houses the County Sheriff and 911 departments. The site was selected as an opportunity to further consolidate law enforcement services for shared facilities and efficiencies. The pre-design study considered square footage and how well the site could accommodate the additional building area. A fire station was also considered for the site.

To create a unified, yet distinctive look, the design team of LHB and SRBL Architects considered a number of design options. The design utilizes the existing entry, but once inside, has a separate lobby/waiting area for the public from the County area.

The new headquarters houses spaces for Administration, Investigative Major Crimes, Investigative Organized Crimes, Administrative Support, Training/Licensing, and Patrol, and contains a Holding Area, Vehicle Garage, space for future units, and the Credit Union. The new space also provides for much-needed evidence storage and processing areas.

Project Profile

Project Type

New Fire Station
Duluth, MN

Client

Duluth Airport Authority and
the Minnesota Air National
Guard (MnANG)

MnANG and Duluth International Airport Joint Airfield Fire Station



LHB, in conjunction with RS&H, provided services for a new 24,040 sf. airfield fire station. LHB was responsible for the architectural, structural and electrical design on this \$6.9 million facility, which supports the Minnesota Air National Guard's aircraft fire fighting and emergency services mission and the Duluth International Airport.

The facility, constructed in two phases, provides an adequately sized and modern facility within prescribed distances and response times to airfield incidents.

The building contains an Alarm Center, Apparatus Rooms, Training Facilities, Living Quarters, Dining Room, Administrative Area, Maintenance, and Support Areas. State-of-the-art communication and security systems were installed. The facility complies with all current Department of Defense design guidelines and force protection standards.



Project Profile

Project Type

Maintenance Facility
Superior, WI

Client

Enbridge (U.S.), Inc. (formerly
Lakehead Pipeline)

Lakehead Pipeline Maintenance Facility



LHB provided the design of a new 8,000 square foot pipeline maintenance facility with shop, welding bay, cold storage rooms, locker rooms, offices, and a lunch room. The design included a more comfortable and appealing work environment, on-site sewage system, safety improvements, and storage for hazardous product.



Project Profile

Project Type

On-Call Services
Duluth, MN

Client

Duluth Transit Authority (DTA)

DTA On Call AE Services 2006-2012, 2013-2018



LHB is currently on our second On-Call contract to provide architectural and engineering services to the DTA since 2006. The DTA's objective was to work with the most qualified firm while minimizing costs. LHB was able to provide all disciplines from our Duluth office so project startup and coordination were streamlined and the end product quality was maximized. Projects during this contract included: remodeling of the downtown Transit Center, lighting improvements, parking lot and bus egress at the headquarters, transit shelters, and a roof replacement at the headquarters.

Projects included:

- Downtown Transit Center Remodeling
- Downtown Transit Center Study Daycare Emergency Route
- Downtown Transit Center Roof Top Unit Replacement
- Kirby Drive Transit Stop Modifications
- Operating Center Hoist Replacement
- Operating Center Parking Lot Repair
- Operating Center Bus Wash
- Operating Center Boilers
- Operating Center Replace Roof Top Units
- Operating Center Floor Repairs
- Operating Center Lighting Study
- Operating Center Maintenance/Storage LED Lighting Retrofit
- Operating Center Floor Crack Repairs 2011, 2012, 2013
- Operating Center Troubleshoot Emergency Generator System
- Operating Center Exterior Wall Study
- Operating Center Tunnel Inspection
- Operating Center 2013 Lighting Improvements
- First Avenue East and Superior Street Bus Stop

Project Profile

Project Type

Indefinite Delivery/Indefinite Quantity (IDIQ)

Contract 2009-1014

Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Iowa, and Missouri

Client

US Fish & Wildlife Service (FWS)

US Fish and Wildlife IDIQ



The US Fish and Wildlife (FWS) Indefinite Delivery Indefinite Quantity (IDIQ) contract requires Architecture and Engineering services including planning, design, drafting and construction management for construction, maintenance, and rehabilitation of FWS facilities. The facilities are located at National Wildlife Refuges in the states of Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Iowa, and Missouri.

The facilities typically consist of small office buildings (of approximately 3000 square feet), visitor centers (of approximately 12,000 square feet), maintenance buildings for equipment and vehicles, vehicle storage buildings, bunk houses, hazardous material

storage, comfort stations, and the utilities associated with these structures, water control structures, water supply systems, raceways and holding ponds, boat landings, recreation and visitor facilities, and wildlife habitat. The contract base period is not to exceed one year with four one year option periods and a total contract value of \$2 million.

Project Profile

Project Type

Photovoltaic Solar Array
Medina, MN

Client

Hennepin County

Hennepin County Photovoltaic Solar Array



Hennepin County is providing a leadership role in generating clean and affordable electricity from a variety of renewable energy sources, including solar energy. LHB is the designer and engineer of record for the newest photovoltaic array system, the second largest in the state, installed on the roof of the Medina Public Works Building.

LHB initially provided a feasibility study to determine Hennepin County's energy needs and to develop a method to install a solar electric energy system rated to 97 kW on the roof of the Public Works Facility.

LHB worked with solar suppliers to determine which system concept would work best within the space restrictions of the roof. In addition to generating approximately 5% of the building's energy, the array benefits the environment by saving approximately 100 tons of carbon dioxide emissions on an annual basis and more than 2,500 tons of greenhouse gas over the life of the array system.

Project Profile

Project Type

Policy Development
Statewide, MN

Clients

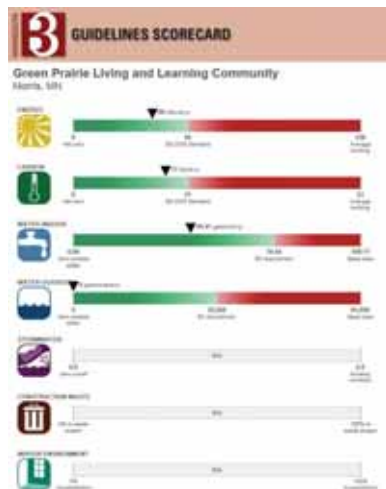
Minnesota Department
of Administration

Minnesota Department
of Commerce

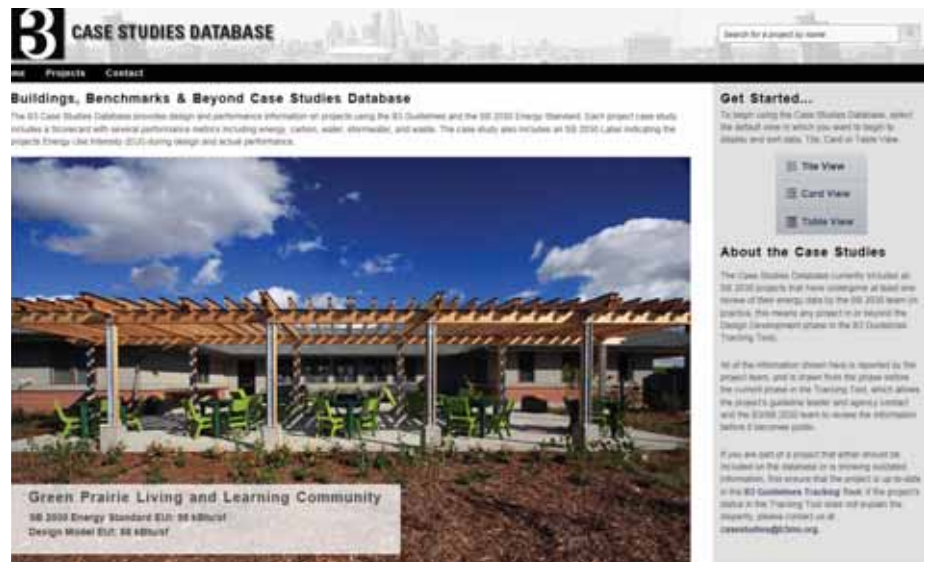
Websites

www.b3mn.org

www.casestudies.b3mn.org



Buildings, Benchmarks and Beyond (B3)



An interactive website that highlights design and performance information for B3 buildings.

LHB was selected by the Department of Administration to lead a team in developing Sustainable Building Guidelines and a benchmarking tool to meet the requirements of legislation that became effective January 15, 2003. In addition to LHB, the team includes The Weidt Group and the Center for Sustainable Building Research at the University of Minnesota.

The mandated legislation requires all new and substantially renovated state-funded buildings to meet aggressive energy reduction goals established by the Sustainable Buildings 2030 (SB2030) program. In addition to the SB2030 Energy Standard, which mandates carbon neutrality by 2030. The B3 Guidelines require projects to achieve a variety of holistic sustainability measures related to site and water, indoor environmental quality, and materials and waste.

Along with providing project management and assisting with policy development, LHB has played a key role in the design of the B3 Case Studies Database. This online tool:

- tracks design and performance data for B3 buildings;
- provides a powerful tool for comparing data across projects;
- empowers the user to filter the case studies to focus on projects that are relevant to them,; and
- highlights the stories of top performers

Project Profile

Project Type

Research and Development

Clients

Urban Land Institute MN

Minnesota Department of
Commerce

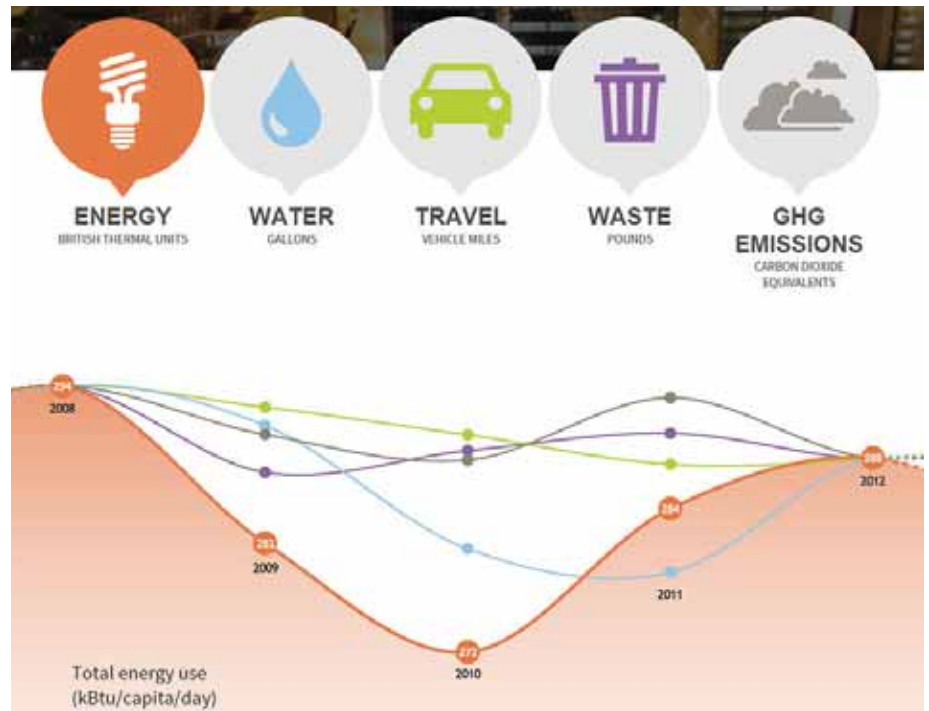
Minnesota Pollution Control
Agency

Great Plains Institute

Website

www.regionalindicatorsmn.uli.org

Regional Indicators Initiative



The Regional Indicators Initiative (RII), a program through the Urban Land Institute Minnesota, has collected seven years of energy, water, travel, and waste data for twenty seven Minnesota cities, and used this set of data to develop annual greenhouse gas inventories for each city. The initiative, which relied on local support from the Regional Council of Mayors, has earned national attention as the first effort of this scale. Its contribution to the understanding of greenhouse gas emissions at a city scale has been recognized by the Twin Cities' Metropolitan Council, which is integrating the Regional Indicators data into its strategic framework for sustainable development.

RII supports planning for sustainability by defining a baseline, tracking a business-as-usual trajectory, establishing targets, and measuring outcomes of sustainable strategies at a city-wide scale.

The RII website, designed by LHB in collaboration with doc4, clearly communicates the project background, conclusions, and next steps. In addition to using data visualizations to communicate key findings, the website also provides an interactive data exploration tool that empowers users to discover their own findings.

Project Profile

Project Type

Commissioning
Retro-Commissioning
St. Cloud, MN

Client

US Department of Veteran's Affairs

Commissioning and Retro-Commissioning Veteran's Affairs Buildings



Served as the Commissioning Agent for the mechanical energy systems and associated mechanical and electrical equipment and lighting systems. Commissioning was for the design and construction phases for nine areas. Design commissioning services consisted of a review of current contract documents to assure the design was consistent with the practices set forth in the VA Design Guide for energy systems. Construction commissioning services consisted of systematically documenting that specified components and systems were installed and started up properly, and functionally tested to verify and document proper operation through all modes. After testing, LHB developed a commissioning punch list outlining mechanical deficiencies and issues to contractors, coordinated retesting as needed to achieve performance, and issued an acceptance letter and final report.

LHB was engaged by the VA Medical Campus in St. Cloud, MN to conduct a comprehensive energy and water audit of 24 campus buildings with the express goal of finding ways to reduce energy consumption, water consumption, and greenhouse gas emissions. The effort was initiated through a study to identify existing usage conditions, type of systems currently in use, and energy usage or loss by each system. The audit is intended to review HVAC, steam, lighting, domestic water, controls, and building envelop systems. Upon completion of the study, a report will be developed to describe the overall facility systems and show estimated energy usage for each building by utility, type of systems currently in use, and energy usage or loss by each system. The report will also include proposed solutions for energy savings.

Project Profile

Project Type

Site/City Planning
Duluth, MN

Client

Duluth City Offices, DEDA

Atlas Cement Plant Survey



LHB provided the City of Duluth Economic Development Authority boundary survey of the former Atlas Cement Plant site abutting State Highway 23 in the Gary New Duluth area. Commissioner's Orders, railroad alignment, and additional MnDOT Right-of-Way (ROW) takings were integral in determining of the location of Hwy 23 and the westerly boundary of this surveyed property.

USPLSS section corner research, City of Duluth survey records for Commonwealth Avenue, and St. Louis County available records and surveys were used to determine the Hwy 23 corridor. Research relating to ROW takings was coordinated with MnDOT staff and a portion of the surveyed area was excluded from the Certificate of Title. As the location was indeterminate, documentation was provided affirming the generality of the corridor.

The project uses HARN adjusted geodetic coordinates, and is in adherence with the MnDOT Surveying and Mapping Manual.



Project Profile

Project Type

Urban Design
Wayzata, MN

Client

Wayzata Bay
Redevelopment Company

Wayzata Bay Center Redevelopment



In the redevelopment of the Wayzata Bay Center, parks and public spaces provide a focal point for retail shops and restaurants, senior and conventional housing, offices, and a hotel to create a vibrant, pedestrian-centered mixed-use district in downtown Wayzata.

LHB worked with the client, the City of Wayzata, community members, and a team of architects to shape a master plan for the district. In the plan, the 14 acre site is divided by new streets to create six blocks reflecting the idiosyncratic pattern of blocks found in downtown Wayzata. One of the blocks will become a new public space for the community, prominently located along Lake Street and becoming the centerpiece of the district and a focus for downtown activities. A park and play area along the site's easterly boundary serve project residents and visitors, as well as neighbors living to the east of the site, while enhancing a natural edge to the project.

Innovative technologies and sustainable strategies are integrated into the project, providing heating and cooling with geothermal energy, eliminating the need for snow removal equipment and chemicals by heating streets and sidewalk to melt snow, serving the parking needs of the project without surface parking lots, creating more than two acres of green roofs, and establishing a near-zero runoff solution by infiltrating 100-year rainfall within the bounds of the site.



Project Profile

Project Type

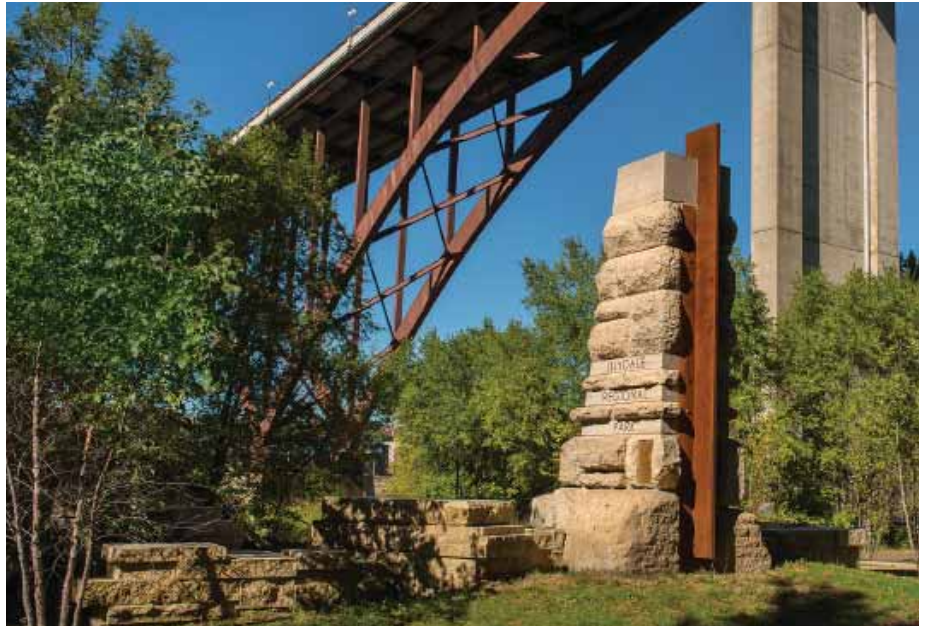
Park Development
St. Paul, MN

Client

St. Paul Parks and Recreation
Department



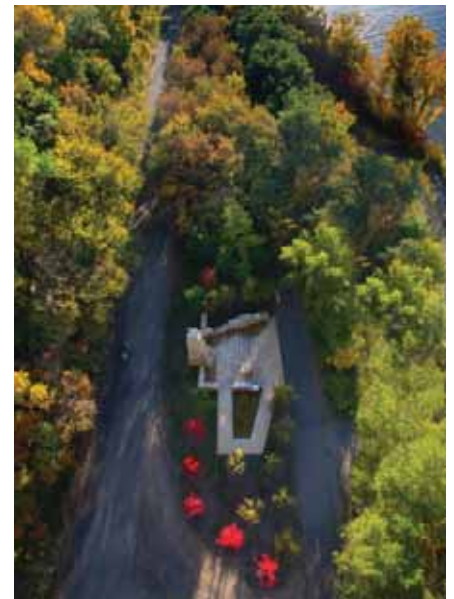
Lilydale Regional Park: Phase I Road and Trails



Lilydale Regional Park is a 636 acre park located in the south central Mississippi river flat area of St. Paul. The park provides hiking and biking trails, fossil hunting, fishing, and more.

LHB has developed a master plan through an extensive public process for the redevelopment of the park. Phase I of the master plan is presently underway. It consists of environmental cleanup of two dump sites, road, trailhead, and both on and off road trail construction. Other key design components of the park's development will be a new parkway road, additional on and off road trails, rest areas, an open space park pavilion located on the shores of Pickerel Lake, and a gateway monument. The Pickerel Clearing site will include multiple park shelters and restroom facilities. LHB is planning a network of trails, including rustic hiking, multi-use paved, and boardwalks.

With these projects, signage and environmental remediation programs will be implemented throughout the park. The Lilydale Gateway is the first project to receive funding through the St. Paul Parks Conservancy.



Project Profile

Project Type
Revitalization
Superior, WI

Client
City of Superior

GATEWAY SIGNAGE
CITY OF SUPERIOR, WI
AT BLATNIK BRIDGE
CONCEPT B SITE PLAN



City of Superior, WI Entrance Sign and Gateway Improvements Project

GATEWAY SIGNAGE
CITY OF SUPERIOR, WI



06.15.12



CONCEPT A PERSPECTIVE
AT BELKNAP STREET & HIGHWAY 2

In 2011, LHB worked with the Mayor of Superior, the City's Parks & Recreation Department and WISDOT to improve the overall appearance of the City at their most prominent gateway entrances. After a thorough site analyses of the City's primary entrances, LHB came up with a masterplan and a series of sketches illustrating how new signage, ornamental fencing, lighting and landscaping could enhance the overall aesthetic appeal of the community. With the Mayor's long-term vision in mind to improve the City's image, LHB designed two new monumental signs to be located at key locations within the City limits, one at the base of the Blatnik Bridge, the other at the intersection of U.S. Highway 2 and Belknap Avenue. Because the properties were either co-owned or abutted WisDOT land, LHB and the City worked with WisDOT to ensure state design standards were met.

The signs are currently being built and will be made out of natural, indigenous stone from the region. Not only will the lit signs become notable landmarks for the local community, they will also welcome new and returning visitors to the area.

LHB has also assisted the Fairlawn Mansion with new signage concepts that will compliment the new City's sign.



Project Profile

Project Type

Master Planning
Golden Valley, MN

Client

City of Golden Valley

Douglas Drive Corridor Study



Douglas Drive, from Medicine Lake Road at the north to Highway 55 at the south, forms the geographic center line of Golden Valley. The corridor is an important route for the community and links residential neighborhoods, major employer campuses, and a variety of retail areas. The corridor also intersects several railroads, the Luce Line Trail, and Bassett Creek, creating a varied and unique transportation corridor.

Despite its assets, Douglas Drive is an aging street, both in terms of infrastructure and development, and it has significant safety issues, especially for pedestrians. Designing a corridor for today's context but expecting it to serve the needs of the community for twenty or more years is not likely to be a successful strategy. Instead, the plan for the corridor seeks to balance immediate needs with a vision for the streetscape and redevelopment that anticipates future needs as much as possible and provides flexibility to serve those needs which can't be imagined now.

The Corridor Study suggests the form new development might take, including an industrial campus near Highway 55, ways to accommodate that development with supportive transportation, and design considerations for the streetscape and surrounding developments. Finally, it outlines strategies for implementing the vision.



Project Profile

Project Type

Recreational Trail
Mendota Heights and
West St. Paul, MN

Client

Dakota County

Dakota County North Urban Regional Trail



The North Urban Regional Trail (NURT) is multi-use, all-season recreation paved trail that connects the cities of Lilydale, Mendota Heights, West St. Paul, and South St. Paul. Dakota County hired LHB's civil engineers and landscape architects to design and prepare construction documents for Phase II of the trail, a 1.3-mile missing link section located in Mendota Heights and West St. Paul through challenging site conditions.

LHB's design team fully engaged stakeholders and area residents early in the design process to provide a collaborative approach to the project. Several options for trail alignments were provided by LHB and tweaked to address the many constraints encountered with developing a regional trail in a narrow, fully developed corridor.

The trail was ultimately located in rights-of-way owned by Mn/DOT and the cities of Mendota Heights and West St. Paul, and Independent School District 197 property.

LHB coordinated closely with these parties, adjacent residents, and the owner of an adjacent mixed-use development, to meet the many demands and conditions required to construct the trail.

The project was designed, prepared, and bid in accordance with Federal and State-Aid requirements following the Delegated Contract Process (DCP) and funded with TEA-21 monies. Construction occurred in 2007 and cost approximately \$700,000.

Project Profile

Project Type

New Crosstown Bridges
Bridge Nos. 27V85,
27V86, and 27V78
Minneapolis, MN

Client

Minnesota Department
of Transportation



Crosstown Commons I-35W and TH 62 over Nicollet Avenue



For the I-35W Crosstown project LHB was hired to design three new bridges that transport Trunk Highway 62 and Interstate 35W north and south bound traffic over busy Nicollet Avenue in Minneapolis. The project required detailed phasing to allow I-35W north and south bound traffic to continue over the existing structures, as well as to maintain Nicollet Avenue traffic underneath during all phases of construction.



Project Profile

Project Type

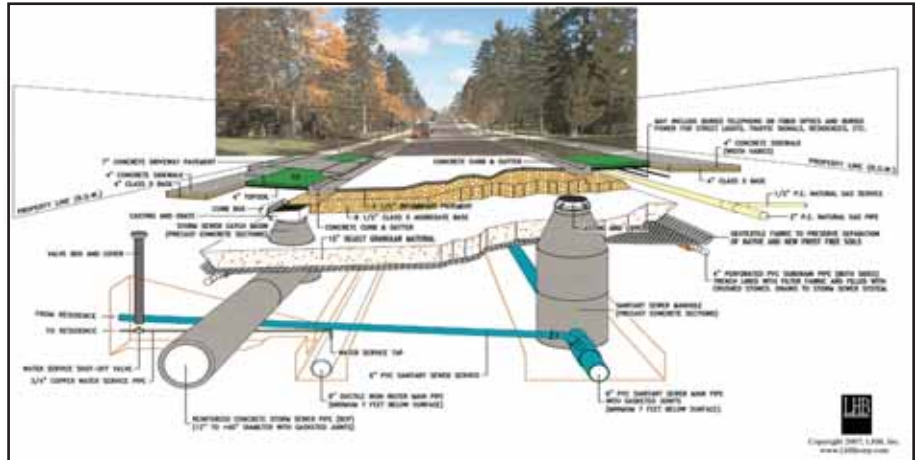
City Infrastructure Improvements
Duluth, MN

Client

City of Duluth



Duluth Street Improvement Program



LHB has provided surveying, design, staking, and construction inspection services since the beginning of the Duluth City Street Improvement Program in 1994. Projects involve street, sanitary sewer, water, and storm sewer construction. Public relations and communication has been an important aspect of this program. LHB distributes project newsletters to residents in the project area and to all levels of city government to keep them informed.

Duluth streets worked on include:

- Waseca Street
- Central Avenue
- Orange Street
- Fifth Street
- Twenty-Sixth Avenue
- Greysolon Road
- Basswood Avenue
- Michigan Street
- Woodland and Snively Avenues Intersection
- Lower Michigan Street
- St. Andrews Street
- Lewis Street
- Hardy Street
- Harvard Avenue
- Vernon Street
- Forty-Eighth Avenue West
- Fifty-Fourth Avenue West
- Central Place
- Lake Avenue South

- Buchanan Street
- Commerce Street
- Fourth Street
- Greenwood Lane
- Arrowhead Road
- Victoria Street
- Laurie Street
- Lakeview Drive
- St. Andrews Street
- Harvard Avenue
- East Sixth Street
- East College Street
- Clover Street
- East Eighth Street
- Twenty-Fifth Avenue East
- Twenty-Seventh Avenue East
- Fifth Street
- Lakeview Drive
- Vermillion Road
- Forty-Eighth Avenue East
- Forty-Ninth Avenue East
- Fiftieth Avenue East
- Cooke Street
- Dodge Street
- Jay Street
- Irving Place
- 7th Street
- 6th Street
- Allendale
- Anoka Street
- Isanti Street
- Osakis Street
- Wadena Street
- Minneapolis Avenue
- St. Paul Avenue
- Second Street

Project Profile

Project Type

Route Design
Duluth, MN

Client

City of Duluth

West Leg Gas Main



The City of Duluth needed a second primary line to deliver natural gas into its distribution system. The West Leg Gas Main provides the economy of a secondary gas source as well as the security of a redundant, emergency supply. The West Leg Gas Main consists of 7.4 miles of 16" pipe designed to accommodate the passage of internal inspection devices. The pressure regulating station at the outlet of the pipeline is equipped for flow control. The Dispatch Operator is able to remotely balance flows between two gas sources.

LHB provided:

- Boundary and legal survey for planning the route;
- Engineering design and drafting of alignment sheets for preliminary, bid and construction drawings;
- Coordination of subconsultants to complete geo-technical survey, environmental permitting, and right of-way acquisition;
- Written specifications and special provisions to the MnDOT specification;
- Design of terminal stations for the inlet and outlet of the pipeline.

All facilities were designed in accordance with the Minnesota Department of Transportation and the Minnesota Office of Pipeline Safety Regulations Part 192.



Project Profile

Project Type

New Lift Station
St. Paul, MN

Client

Metropolitan Council
Environmental Services

MCES Lift Station L-12 Improvements



Metropolitan Council Environmental Services hired LHB to provide complete Engineering services for their Lift Station L-12 Improvements project. This improvement project includes the installation of a new 16-inch forcemain, 30-inch and 90-inch sanitary sewer lines, and a new, above grade lift station.

Lift Station L-12 is the main lift station for the Southeast Metro and serves flows from the cities of St. Paul, Maplewood, and Woodbury. The 16-inch forcemain discharges into a gravity interceptor system that extends to the Metro Wastewater Treatment Facility, located approximately two to three miles downstream of the forcemain discharge. Lift Station L-12 has a firm capacity of 6.89 MGD, provided by four 45 horsepower pumps, each rated at 1,720 GPM. The 300 feet of 90-inch diameter sanitary sewer was included to provide one-hour of emergency storage during peak flows.

Design and construction of the replacement lift station were complicated not only by the steep slopes at the site and the need to keep the existing lift station in operation, but also by the presence of Burial Mounds, a neighboring Park-and-Ride lot, neighboring residences, and the highly travelled Highway 61 corridor. LHB teamed with Donohue & Associates, who provided the process mechanical and controls engineering for this project. The facility is equipped with a permanent standby generator, and the lift station is tied into the Council's existing SCADA system.

Project Profile

Project Type

Wastewater Treatment Facility
and Sanitary Collection System
Sturgeon Lake, MN

Client

City of Sturgeon Lake

Sturgeon Lake Wastewater Treatment Facility and Sanitary Collection System



LHB planned, designed, and oversaw construction of a new city-wide sanitary system for the City of Sturgeon Lake. The sanitary system includes a wastewater treatment facility (WWTF) and a collection system that will serve 260 residential units, a 200 space campground, and a nearby prison. The WWTF is a three-cell stabilization pond with a rapid infiltration system. The collection system includes seven miles of gravity trunk sewer, 120 manholes, five miles of force main, and seven lift stations. Construction was completed in 2008.

LHB worked with the City of Sturgeon Lake to obtain grants through Public Facilities Authority and the US Army Corps of Engineers to assist in funding the projects. No assessments were imposed on city constituents.



Project Profile

Project Type

New Construction
Duluth, MN

Clients

Duluth Public Schools, ISD 709
Johnson Controls

Lincoln Park Middle School



Duluth Public School District constructed several new and remodeled buildings. LHB was selected to provide architecture and engineering services for the newly constructed Lincoln Park Middle School Building designed for 1,000 students, grades 6-8. The project scope includes: an auditorium, pool, gymnasium, evening community use, and recreational fields.

As part of the same round of district improvements, LHB also provided architecture and engineering services for the renovation of the district's Ordean East Middle School designed for 1,200 students.



Significant Features

- Building orientation selected to reduce site impact, control daylighting and solar gain, and provide views of Lake Superior
- All classrooms have natural daylight and ventilation
- Daylight controls and occupancy sensors
- Low VOC paints and materials
- Displacement Ventilation
- 95%+ efficient condensing boilers with radiant heat
- Natural prairie grasses and wetlands

Project Profile

Project Type

Addition and Renovation
Student Center
Minneapolis, MN

Client

Minneapolis Community and
Technical College (MCTC)

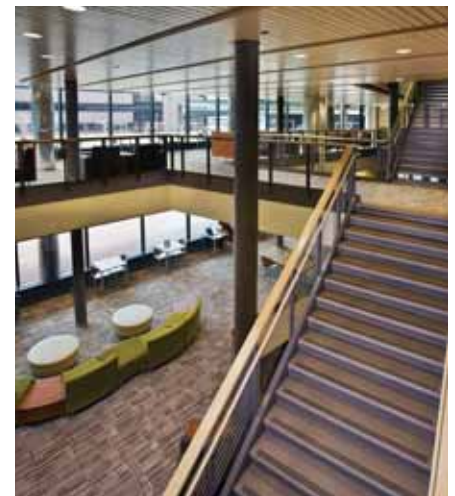
Helland Student Center



LHB in conjunction with Workshop Architects provided design and construction administration services for the Minneapolis Community and Technical College Helland Student Center. The facility is a 16,800 sq ft addition and a 23,000 sq ft renovation project located in Minneapolis, Minnesota. The project began as a Student Senate led initiative to bring a much needed focus on wellness to MCTC while expanding a Student Life area into a Student Center.

Some key points the renovation and addition will focus on are designing a much needed place for commuter students to land with a strong focus on wellness and union; creating a design that will enhance the campus' identity; providing dynamic spaces within a small footprint; and designing a multi-purpose room that efficiently consolidates programs into one space while creating a campus amenity.

The multi-purpose space opens up and spills out into Loring Park on the Main Level. In addition to the multi-purpose space, the student center will include study lounges, student organizations, student senate, retail and coffee, and a health clinic.



Project Profile

Project Type

Pipeline Construction
Superior to Delevan, WI

Client

Enbridge (U.S.) Inc./Lakehead
Pipe Line Company

Southern Access Southern Lights Stage One



In the spring of 2006 Enbridge (U.S.) started the first stage of their major heavy crude oil pipeline expansion projects to bring the crude oil from the Tar Sands of Alberta, Canada to the lower United States. Stage 1 consisted of constructing a 42" crude oil line and a 20" diluents line from Superior to Delevan, Wisconsin. The project was constructed on and adjacent to 320 miles of existing R.O.W. The project was completed in the fall of 2008. LHB services to Enbridge for this \$800,000,000 project included:

- Staked out 276 miles of extra work space for R.O.W. agents and timber assessors.
- Provided design survey for six pump stations from Superior to Delevan Wisconsin.
- Designed the largest automatic pig sender and receiver in the United States. The sender was constructed in Superior, Wisconsin and the receiver was constructed in Delevan, Wisconsin.
- Performed survey auditing services during the construction of the pipeline.
- Assisting with the acquisition of R.O.W. and easements. This work included property research in 15 counties, the section break down of 136 government sections and developing easements and exhibits for 237 tracts.

Project Profile

Project Type

Pipeline Construction
Delevan, WI to Flanagan and
Streator, IL

Client

Enbridge (U.S.) Inc./Lakehead
Pipe Line Company

Southern Access Southern Lights Stage Two



In the fall of 2006 Enbridge (U.S.) started the second stage of their major heavy crude oil pipeline expansion projects to bring the crude oil from the Tar Sands of Alberta to the lower United States. Stage 2 consisted of constructing 139 miles of a 42" crude oil line from Delevan, Wisconsin to Flanagan, Illinois and 120 miles of a 20" diluents line from Delevan, Wisconsin to Streator, Illinois. The project was built entirely on new R.O.W "Green Field." The project was completed in spring 2009.

LHB services to Enbridge for this \$400,000,000 project included:

- Providing preliminary detailed design survey which included a topographical field survey of the entire 139 miles of new pipeline by 150 feet wide. Developed the detailed CADD mapping and pipeline alignment used in the final construction plans.
- Performing the constructability field review of the entire 139 miles of new R.O.W.
- Creating the detailed design survey and mapping for 93 water body crossings, 139 road crossings, and two interstates.
- Managing the asbuilt survey for Enbridge during the construction. This work included tracking and documenting where all the survey crews (up to 32) were on a day-by-day basis, auditing billings, creating a tracking spreadsheet, approving additional staffing, and decommissioning staff.
- Assisting with the acquisition of R.O.W. and easements. This work included property research in two states and five counties, the section break down of 152 government sections, and legal descriptions and exhibits for 467 tracts for purchasing the new R.O.W.



PERFORMANCE
DRIVEN DESIGN.

Project Profile

Project Type

Addition
Minneapolis, MN

Client

Covanta Energy



Covanta HERC Inventory Building Addition



LHB designed a 31,500 square foot addition for Covanta Energy's Inventory Building. The addition to the existing facility includes space for Inventory Storage and District Energy.

LHB's mechanical engineers designed a system to work with the existing fire suppression water line below the planned addition. The design included the mechanical requirements for the elevator, dock lift, toilet and sink, floor drains, roof drains, heating, cooling, fire protection, and modifications for existing louvers and pipes that were affected by the proposed addition.

LHB's electrical engineers created a design around the existing duct bank and detailed the new electrical vault access. LHB worked with Covanta to determine the electrical source for the addition and to provide a conduit

route through the new construction for the District Energy service. Power was provided for the elevator, dock lift, overhead door, lighting, general receptacles, and pallet scale. Lighting was designed for all new interior spaces. Two telephone and two fiber-optic data lines were designed for the Office and Controlled Environment Storage. Communication lines were included for the elevator.

LHB provided the required mechanical and electrical designs, details, drawings, and technical specifications to facilitate Covanta in applying for building permits, creating a construction cost estimate, and constructing this project. Construction Phase services included shop drawing review and creating as-built drawings.

Project Profile

Project Type

Design Services
Boswell Energy Center
Cohasset, MN

Client

Jamar Company

SCR Critical Lift Analysis



LHB's Industrial Group designed the critical lifts for the air system manufactured by Jamar Company using this 400-foot crane at a Minnesota Power energy center. The Mammoet crane is one of the largest mobile cranes in the world and is capable of lifting 1,000 tons. The crane was used to erect a new structure and equipment that will help lower emissions.

Regional utility Minnesota Power, an ALLETE company, understands the importance of protecting the environment and its customers. It was no surprise, then, when the company elected to install additional advanced emission control equipment to reduce mercury, nitrogen oxide and sulfur dioxide at one of its energy plants. LHB's Industrial Group provided civil engineering and structural steel design, as well as piping engineering

services for hundreds of feet of emission control process piping. "The upgrade builds on our track record of environmental stewardship in a region that is home to the Boundary Waters Canoe Area Wilderness, Voyageurs National Park, and the Apostle Islands National Wilderness Area," noted former ALLETE CEO Don Shippar. Minnesota Power already operates all of its coal-based facilities at 70 percent below current air emission requirements.

The new emission reduction installations are addressing new requirements that will take effect over the next several years. The improvements are targeted to reduce mercury emissions by up to 90 percent and cut nitrogen oxide and sulfur dioxide emissions by more than 80 percent.

Project Profile

Project Type

New Construction
Manufacturing Facility
and Offices
Faribault, MN

Client

Sage Electrochromics, Inc.

Recognition

LEED Gold Certification

Sage HVM-1 Plant



Sage Electrochromics' vision of its first High Volume Manufacturing (HVM-1) facility came to fruition through the design efforts of LHB's Commercial Group. The 324,000 square foot energy efficient and high performance facility is LEED Gold Certified.

Sage and LHB have taken great consideration into designing a facility that is socially responsible and fits into the surrounding environment. The HVM-1 facility will be a showcase facility with innovative features and highlights, and a particular emphasis on employee comfort and health.



Project Profile

Project Type

Office Building
Bloomington, MN

Client

Donaldson Company

Donaldson Company Office Building



LHB was hired by Donaldson in the fall of 2010 to develop plans to completely renovate the cafeteria, kitchen, and courtyard of a building located on the corporate campus of this multi-national engineering and manufacturing company. In addition to the renovation, the program included an expansion of the seating area in order to increase capacity, and to provide more seating and dining options for the staff, guests, and employees. Café seating, booths, stand-up, and bar seating were planned to provide a variety of seating choices to be used for meetings and casual gatherings in addition to daily eating.

The existing facility had original finishes that were outdated and more appropriate for an institutional food service rather than a dining area for a highly skilled workforce. The kitchen was fully redesigned to provide more choice and healthy options and includes made-to-order offerings in addition to self-serve.

The project consisted of three phases in order to accommodate the employee's needs and minimize the disruption to food service activities.



Project Profile

Project Type

Clinic Remodel
Superior, WI

Client

Essentia Health St. Mary's/
Duluth Clinic Health System

Twin Ports VA Clinic



The existing Twin Ports VA clinic is located in Superior, Wisconsin, within a building owned by St. Mary's/Duluth Clinic Health System. During the summer and fall of 2009, LHB assisted St. Mary's/Duluth Clinic in an analysis of the space leased to the Veteran's Administration to determine if the existing building could be renovated to meet the current and future needs of the VA in the Duluth/Superior area. Based upon a space requirements document provided, LHB developed a conceptual fit plan of approximately 22,000 sq. ft. that demonstrated the existing facility could be remodeled to accommodate current clinical needs. An analysis of the structural, mechanical, and electrical building systems was also performed to assure the existing building met requirements of the Veteran's Administration.

Clinical services incorporated into the design include general practice exam, behavioral health (both group therapy as well as private therapy), physical and occupational therapy, ophthalmology and audiology. Support spaces include a lab, blood draw, and administrative spaces.

In December, 2009, LHB initiated design for the renovation of the existing facility by engaging in a two-day design charrette. Architects and engineers from LHB engaged staff from both the Veteran's Administration and SMDC Health System to develop a conceptual layout for the remodeled clinic. At the completion of this process, a conceptual plan was presented and approved for further development. Final phase of construction was completed in spring, 2013.



Project Profile

Project Type

Historic Rehabilitation
Affordable Housing
St. Paul, MN

Client

Aeon

Recognition

LEED NC Gold Certified
2013 American Institute of
Architects (AIA) Affordable
Housing Design Award

Renaissance Box



Aeon selected LHB for the rehabilitation of the historic O'Donnell Shoe Company into affordable rental housing in downtown Saint Paul. Constructed in 1914, the seven story brick and concrete building has been converted into seventy efficiency, one, and two bedroom apartments. The historic character of the structure's concrete mushroom columns is celebrated in the wide, daylit corridors. Community spaces are located in a new first floor addition with glazing that provides a connection with both the street and the interior courtyard.

The design team worked with the State Historic Preservation Office to meet the requirements of the National Park Service while at the same time targeting LEED NC Gold Certification. Many sustainable strategies are used in the design, notably resource conservation by the adaptive re-use of an existing building and the project's urban location adjacent to public transportation and amenities within walking distance.

Additional sustainable principles include an energy-efficient heating and air conditioning system to minimize operating costs, innovative landscape features and a vegetated roof to keep stormwater on-site, and encouraging use of alternative transportation by eliminating parking.



Project Profile

Project Type

New Construction
Supportive Housing
St. Cloud, MN

Client

St. Cloud Housing
Redevelopment Agency

Recognition

National Association of
Housing and Redevelopment
Organizations (NAHRO) 2006
Award of Merit in Housing and
Community Development
Affordable Housing Finance
Magazine - Finalist for Best
Affordable Housing Projects

Al Loehr Veterans and Community Studio Apartments



LHB worked with the St. Cloud Housing Redevelopment Authority and the Veteran's Administration to design a three story, 45,000 square foot apartment building. The single-occupancy rooms are available to veterans who are in transition from a chemical dependency treatment facility and in need of supportive services and housing.



The building contains 60 efficiency units, each with a kitchenette and bathroom in 500 square feet of living space. Amenities include a caretaker apartment, media rooms, a communal kitchen, a community room, storage lockers, and offices for case aides. Sustainable design principles such as geothermal heating and cooling and extensive daylighting are included in the project.

