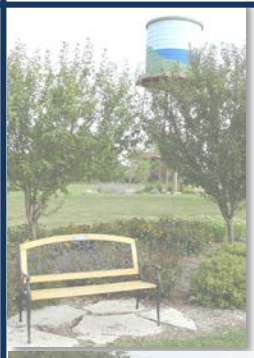


Kehoe-Henry & Associates, Inc.

Architecture & Engineering

Facilities Condition Assessment for

Lauderdale Lakes Country Club

Elkhorn, Wisconsin

25 North Wisconsin Street
Elkhorn, Wisconsin 53121
262-723-4399
www.kehoe-henry.com

KEHOE-HENRY & ASSOCIATES, INC.
ARCHITECTURE & ENGINEERING

25 North Wisconsin Street
ELKHORN, WISCONSIN 53121

Daniel R. Kehoe, Architect
Voice 262-723-2660
Fax 262-723-5986

William R. Henry, Architect-P.E.
Voice 262-723-4399
Fax 262-723-4299

August 22, 2017

Lauderdale Lakes Lake Management District
N7498 Country Club Drive
P.O. Box 828
Elkhorn, WI 53121

Attn: Mr. Scott Mason
Chairman

Re: Facilities Condition Assessment for
LAUDERDALE LAKES COUNTRY CLUB
Elkhorn, Wisconsin
Job No. 1525

Dear Mr. Mason:

We are pleased to submit herewith the Facilities Condition Assessment for Lauderdale Lakes Country Club. This document shall provide the Lauderdale Lakes Lake Management District (LLLMD) with a comprehensive assessment of the buildings and structures located on the property. The findings noted in our original draft report prepared in late January 2016 have been incorporated into the current document. The assessments will assist the LLLMD in making informed decisions regarding capital planning and budgeting over the next few years with respect to needed facilities improvements. The following summarizes our observations.

GENERAL INFORMATION

Lauderdale Lakes Country Club (LLCC) is located at the intersection of Highways 12/67 and Sterlingworth Drive approximately six miles north of Elkhorn, Wisconsin. LLCC is situated on a combined parcel of land totaling 57.05 acres. Seven separate structures occupy the site, including a Community Center (c1920), Clubhouse (c1920), Maintenance Building (c2006), Pump House, two Golf Course Shelters, and Ravenscroft Tower (c1930), a restored non-functioning water tower. The golf course and facilities are used by the residents of Lauderdale Lakes (consisting of three interconnected lakes: Green Lake, Middle Lake, and Mill Lake) and visitors to the area. Information for this assessment was gathered through site observations by the following team of design professionals.

Master Planning, Architecture & Engineering:	**Kehoe-Henry & Associates, Inc.** Elkhorn, Wisconsin William Henry, Architect-P.E. Daniel Kehoe, Architect
Golf Course Architect:	**Schreiner Golf, Inc.** Myrtle Beach, South Carolina Craig Schreiner, ASGCA, ASLA
Irrigation Consultant:	**T. J. Emmerich Associates, Inc.** Hartland, Wisconsin Tom Emmerich, Certified Irrigation Designer
Water Supply Consultant:	**Illinois Geothermal Engineering, Inc.** Urbana, Illinois Lon Hoover, P.E.
Site/Civil Consultant:	**Cardinal Engineering LLC** Elkhorn, Wisconsin Paul VanHenkelum, P.E., R.L.S.
Landscaping Consultant:	**Scheel & Associates** Lake Geneva, Wisconsin Steve Scheel, R.L.A.
HVAC Consultant:	**Liechty & Associates, Inc.** Elm Grove, Wisconsin Randall Liechty, P.E., LEED AP
Electrical Consultant:	**Czarnecki Engineering, Inc.** Waukesha, Wisconsin Alan Czarnecki, P.E.
Foodservice Consultant:	**Stewart Design Associates, Inc.** Madison, Wisconsin Rock Deering, FCSI

Additional information about the principal team members has been submitted separately.

SITE CONDITIONS

Lauderdale Lakes Country Club is located on a peninsula of land in Mill Lake, between Mill Lake to the north and Don Jean Bay to the south in the Town of LaGrange. The golf course is a public, mature 9-hole, full length course. Predominately four different zoning districts are present on the

parcel: Recreational Park (P-1), Institutional Park (P-2), General Business (B-2), and Lowland Resources Conservation (C-4). With the exception of C-4, all current uses require conditional use permits. C-4 does not allow any structures with limited construction of piers, docks, and elevated boardwalks allowed. A small portion of the site on the west side of Country Club Drive contains the pump house and is zoned R-1 Single-Family Residential (unsewered).

Lauderdale Lakes Country Club is included in the Walworth County 2035 Comprehensive Plan. This plan provides a framework outlining future development. The plan lists the golf course parcel as Commercial Land, Recreational Land, and Wetlands.

The property is covered by a Conservation Easement which divides the parcel into three zones: a Municipal Area to the north (9.5 acres), a Park Area (40.7 acres) which is the golf course proper, and a Wetland Area (6.8 acres) to the south along the shoreline of Don Jean Bay. The Conservation Easement prevents the property from being subdivided for residential development.

The different entities defining the land use for Lauderdale Lakes Country Club may use different terminology but tend to be consistent in how the parcel is viewed. Future improvements will require coordination with these entities but should not present any major obstacles to a thoughtful, well laid out master plan.

FACILITIES OVERVIEW

The Community Center is a 5,180 square foot building originally constructed as a single family residence in the 1920s. It now serves as offices for the Kettle Moraine Land Trust and the Lauderdale Lakes Water Safety Patrol, as well as offices and a meeting room for the Lauderdale Lakes Lake Management District (LLLMD). The building's interior is well maintained. The exterior is in need of repair and painting. The majority of the building consists of small rooms on non-accessible floor levels which can be used for little more than storage. The original design of a residence, with the additions built in the 1950s, hampers the efficient use of the spaces. Any renovations would need to address the lack of barrier-free design and non-code complaint wiring.

The Clubhouse is a 3,148 square foot building with the first portion built in the 1920s (1,997 SF) with an addition of 1,151 SF built to the west in the 1950s. The Clubhouse has a significant amount of deferred maintenance and barrier-free issues. The Clubhouse is popular with the golfers and has served the course and the past needs well. The deferred maintenance, combined with the current needs of the Clubhouse, would require a major renovation or full replacement of the Clubhouse.

The Maintenance Building is a 6,132 square foot structure built in 2006 which replaced an existing building. The building is well maintained and meets the needs of golf course and Lake Management District.

In addition to the Community Center, Clubhouse, and Maintenance Building, the property contains other smaller structures. The Pump House is a 69 square foot building located at the shore of Mill Lake and houses the pumps and controls for the golf course's irrigation system. The long term plan for the Pump House should be based on the long term plan for the development of the golf course and

the associated irrigation system needs. The short term plan for the Pump House should address typical building maintenance such as painting and roof repairs.

The Golf Course Shelters, one to the south and one to east, are each 256 square feet and in poor condition. Some roof deck repair and rafter repair is needed for both, with more needed to the east Shelter. After such repairs are completed, both Shelters should be painted. An anonymous donor has offered to fund the repairs to both Shelters, which is to be completed in Fall 2017.

Ravenscroft Tower is located in the center of the course and is a focal point to the course and those traveling along Highways 12/67. With a full restoration being completed in 2012, Ravenscroft Tower is in good condition and well maintained.

All totaled, Lauderdale Lakes Country Club contains approximately 15,297 square feet of building under roof. Of this, the Maintenance Building and Ravenscroft Tower are in good condition with little or no need for long range improvements other than typical maintenance activities. The Shelters are in need of framing and roof repairs, which is to be done in the next several weeks. The Community Center is in fair condition with exterior maintenance needs. However, to meet the long range needs of the Lake Management District and Lauderdale Lakes community, significant improvements, interior renovations, and possible expansions would be required. The Clubhouse and Pump House are in the greatest need of repairs and renovations, or replacement. The scope and scale of this work will be determined by the final long range master plan for Lauderdale Lakes Country Club.

Important decisions have to be made with respect to the future maintenance of, and improvements to, Lauderdale Lakes Country Club. Over the last century since its establishment in the 1920s, LLCC has been a valuable asset to the Lauderdale Lakes community. By proactively and properly addressing facility and infrastructure needs now, Lauderdale Lakes Country Club will provide recreational and social opportunities to the community for generations to come.

Respectfully submitted

KEHOE-HENRY & ASSOCIATES, INC.

William R. Henry

William R. Henry
Architect-P.E.

WRH/amw

Facilities Condition Assessment

for

LAUDERDALE LAKES COUNTRY CLUB

Elkhorn, Wisconsin

August 22, 2017

1 General Land Use

2 Community Center

3 Clubhouse

4 Maintenance Building

5 Golf Course Facilities & Infrastructure

1 General Land Use

GENERAL LAND USE

ZONING AND 2035 COMPREHENSIVE PLAN REVIEW

Lauderdale Lakes Country Club (LLCC) is located in Walworth County in the Town of LaGrange. The property consists of a single combined parcel totaling approximately 57.05 acres. The Golf Course and Clubhouse are located on the east side of Country Club Drive. The golf course extends east to Highways 12/67 and south to the shoreline of Don Jean Bay on Mill Lake. Lakefront single family residences exist along the west side of Country Club Drive.

ZONING

The majority of the property is divided into four different zoning districts. A small portion on the west side of Country Club Drive containing the pump house is zoned residential. See the enclosed zoning map. The major zoning districts are:

1. *C-4 Lowland Resource Conservation District.* The primary purpose of this district is to preserve, protect, and enhance the lakes, streams, and wetland areas in Walworth County. The proper regulation of these areas will serve to maintain and improve water quality; prevent flood damage; protect wildlife habitat; prohibit the location of structures on soils which are generally not suitable for such uses; protect natural watersheds; and protect the water-based recreational resources of the county.

2. *P-1 Recreational Park District.* The P-1 district is used to provide for areas where the open space and recreational needs, both public and private, of the citizens can be met without undue disturbance of natural resources and adjacent uses.

3. *P-2 Institutional Park Districts.* The P-2 district is intended to eliminate the ambiguity of maintaining, in unrelated use districts, areas which are under public or public-related ownership and where the use for public purpose is anticipated to be permanent.

4. *B-2 General Business District.* The B-2 General Business District is intended to provide more business and trades of a more general nature, normally serving a larger trade area.

The Golf Course proper is located in the P-1 Recreational Park District and the C-4 Lowland Resource Conservation District. The golf course is a permitted use in P-1, but golf course country clubs are a conditional use permit. The C-4 areas near the shoreline would allow construction of docks, piers, and boardwalks (on pilings), with proper permitting from Walworth County and the DNR.

The Golf Course Shelters are located in the P-1 Recreational Park District. These would be considered permitted uses because they are associated with the permitted use of golf courses. The Maintenance Building is located in the P-2 Institutional Park District. This would be considered a conditional use. Golf courses and country clubs are conditional uses and the Maintenance Building is associated with this use.

The Community Center is located in the B-2, General Business District. The Community Center would be considered a conditional use with the use of governmental and cultural uses.

The Clubhouse is located in the B-2, General Business District. This would be considered a conditional use.

Any portion of the Community Center or Clubhouse may be improved (renovated) or demolished and replaced with a structure of similar size (footprint). However, if expansion of the facilities is desired, such expansion would require a conditional use permit and trigger compliance with current county zoning standards. Two of the most significant requirements are 6 parking stalls for each golf course hole (54 required for LLCC) and minimum 24-foot wide driveways.

The Pump House is located in the R-1, Single-Family Residence District (unsewered). This would be considered a conditional use.

As noted above, expansion of any of the existing structures would require a conditional use permit. Likewise, construction of a new structure on the current Lauderdale Lakes Country Club property would also require a conditional use permit.

2035 COMPREHENSIVE PLAN REVIEW

The 2035 Comprehensive Plan is a requirement when the 1999 Wisconsin Legislature enacted a comprehensive planning law. The intent of the law was to provide a framework for county development plans and local master plans. Thirteen of the sixteen towns in Walworth County participated in the planning process, including the Town of LaGrange. The plan provides the basis to ensure land-use decision making is broad based and consistent with the state planning law by increasing awareness and understanding of county and town planning goals and objectives.

The plan indicates Lauderdale Lakes Country Club is in lands that are shown to be:

1. Recreational Land – Consisting primarily of parks, golf courses, campgrounds, and similar outdoor recreation uses, and are generally accommodated in the P-1 Recreational Park zoning district.

2. Commercial Land – Commercial development in the identified areas would generally be accommodated through the B- 1, B-2, B-3, or B-4.

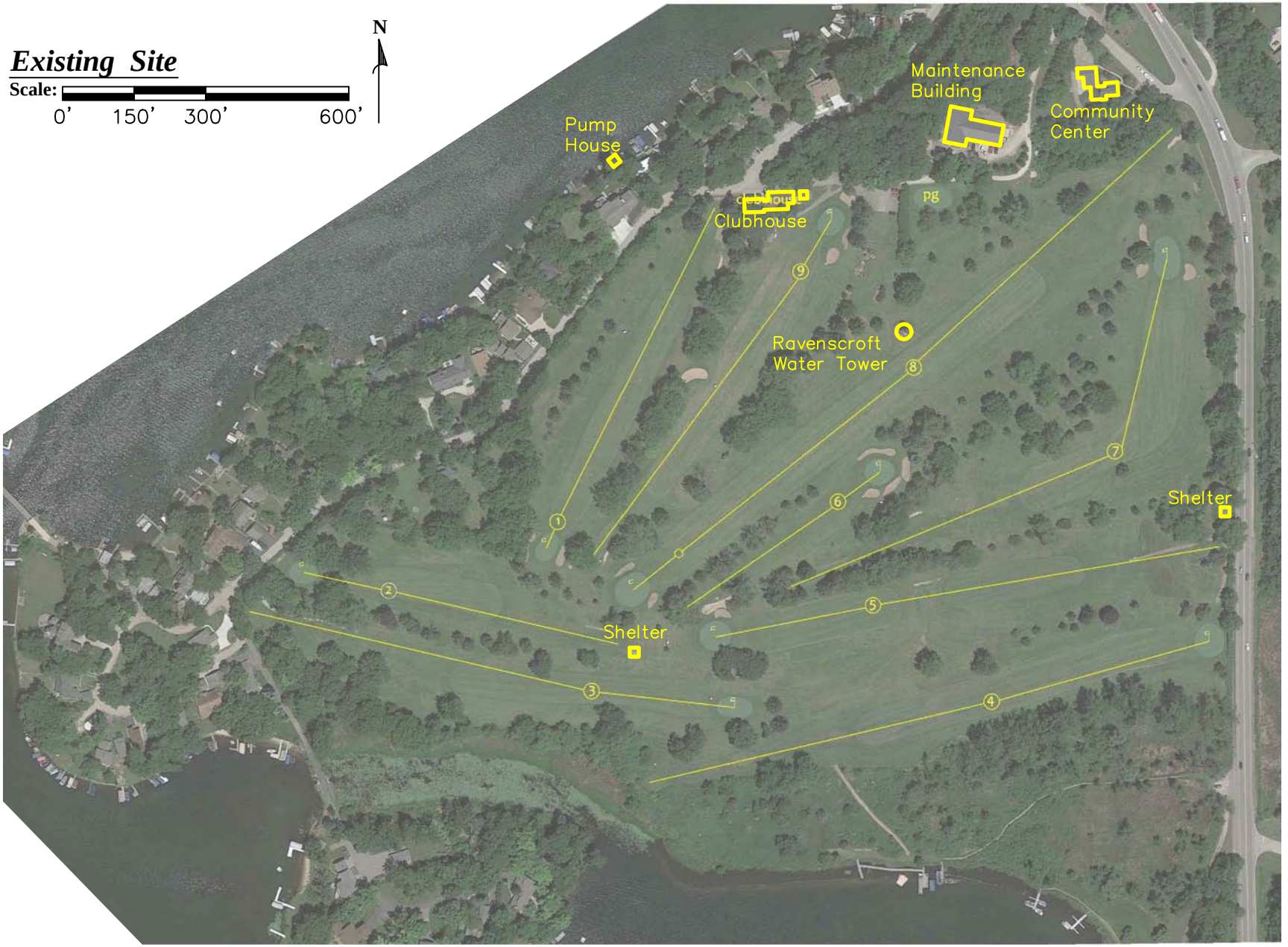
3. Environmental Corridors – The land use plan for these areas includes these provisions: Wetland and floodplain portions of the environmental corridors and isolated natural resource areas will be retained in open use, as allowed in the C-1 Lowland Resource Conservation zoning district, C-4 Lowland Resource Conservation (Shoreland) zoning district, and in 100-year recurrence interval floodplains.

Based on the above, the current use of Lauderdale Lake Country Club is consistent with both the Walworth County Zoning Map and the 2035 Comprehensive Plan.

CONSERVATION EASEMENT

The Lauderdale Lakes Lake Management District has entered into a Conservation Easement with Kettle Moraine Land Trust, Inc. which controls the use and activity of the property in perpetuity. The Conservation Easement divides the 57.05 acre parcel into three zones. The first is the approximately 9.5 acre Municipal Area to the north side of the golf course. The second is an approximately 40.7 acre Park Area that is the golf course proper. The third zone is to the south of the golf course and is approximately 6.8 acres along the shoreline of Don Jean Bay and is a Wetland Area. The easement in general allows the existing activities to continue at Lauderdale Lakes Country Club. It also allows for the maintenance and repair of the current buildings or the replacement of these facilities in their present locations. The easement also allows, with written approval, for additional moorings, piers, and boardwalks in the Wetland Area, an additional rain shelter in the Park Area (500 SF maximum), and an additional structure for municipal or golf-related activities in the Municipal Area. Although the easement has a different focus and method in determining land use, it is consistent with both the Walworth County Zoning requirements and 2035 Comprehensive Plan.

Small scale aerial photographs, maps, and a survey of the property are attached, along with a summary of the areas of the buildings and structures.

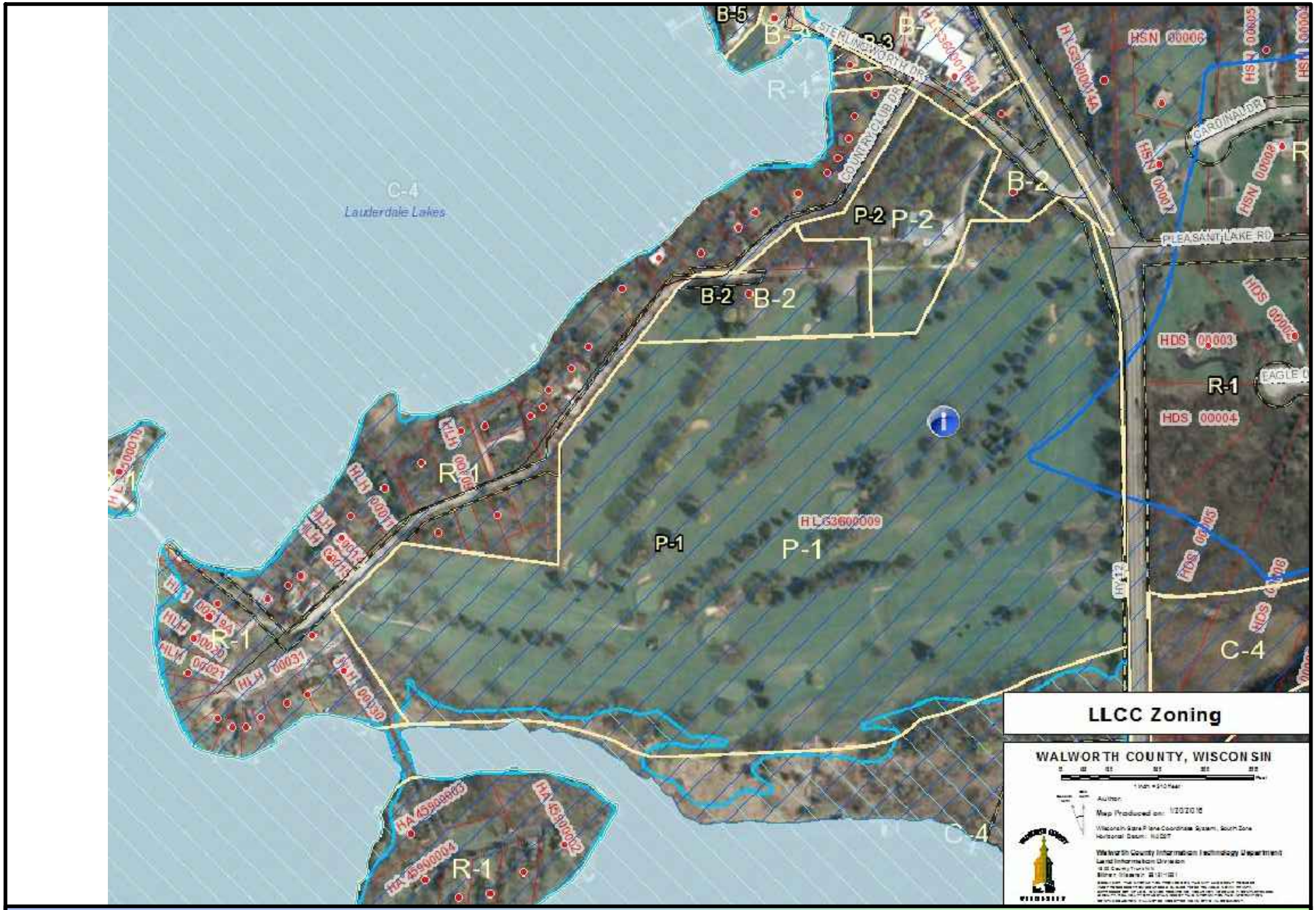


Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering — *Elkhorn, Wisconsin*

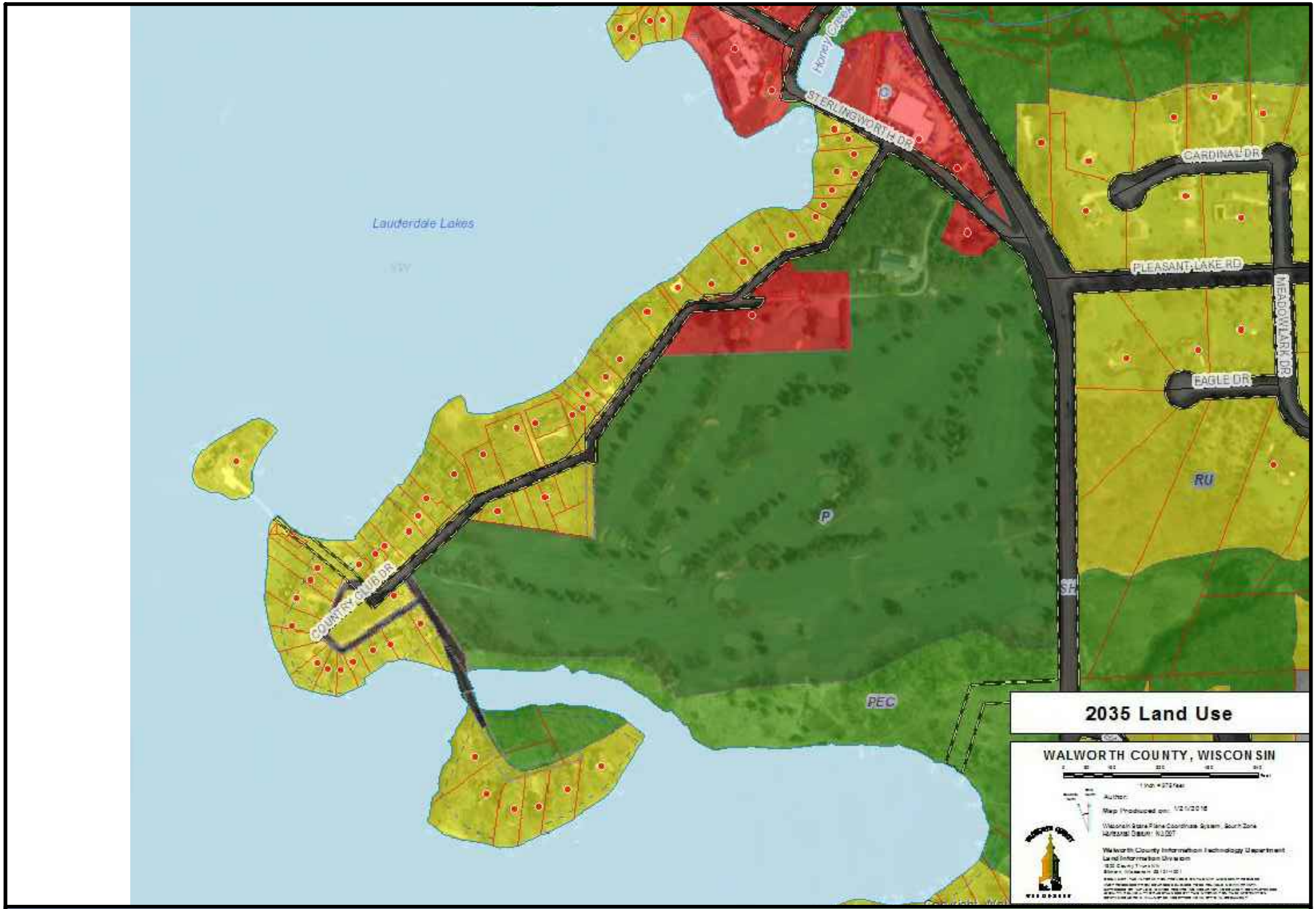


Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***

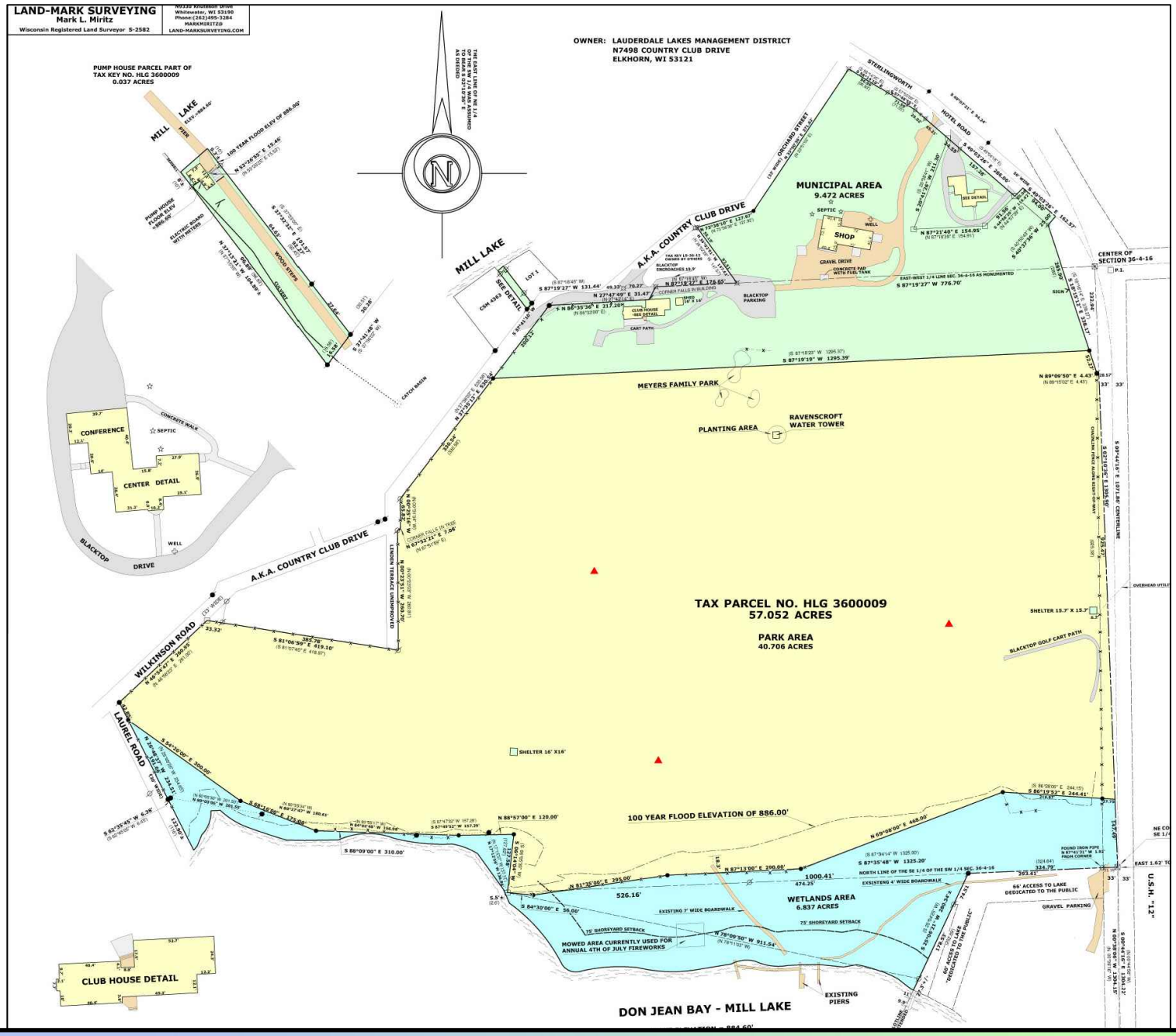


Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***



Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***

Facilities Condition Assessment for
LAUDERDALE LAKES COUNTRY CLUB
Elkhorn, Wisconsin
Job No. 1525

	COMMUNITY CENTER	CLUBHOUSE	MAINTENANCE BUILDING	PUMP HOUSE	COURSE SHELTERS	TOTAL
Building Area						
Common Areas	1,005	2,269	5,080		512	8,866
Kettle Moraine Land Trust	612					612
Lauderdale Lakes Water Safety Patrol	264					264
Auxiliary/Support Areas	2,221	964	718	54		3,957
Total Assigned Area	4,102	3,233	5,798			13,133
Mechanical/Electrical	382	0	42			424
Circulation/Walls/Misc.	696	171	334	15		1,216
TOTAL GROSS AREA	**5,180**	**3,404**	**6,132**	**69**	**512**	**15,297**

2 Community Center

COMMUNITY CENTER

GENERAL INFORMATION

The Community Center is located adjacent to the Lauderdale Lakes Country Club Golf Course in the northeast corner of the property at N7511 Sterlingworth Drive, Elkhorn, WI 53121. The building contains approximately 2,940 SF on the first floor, a partial basement of 1,080 SF, and partial second floor of 1,160 SF, for a total area of 5,180 SF. The Community Center houses several functions, including a meeting room used by the Lauderdale Lakes Lake Management District, as well as offices of the Kettle Moraine Land Trust (KMLT) and the Lauderdale Lakes Water Safety Patrol. The KMLT is an accredited 501c3 and manages several conservation easements in Walworth County, including the 57 acre Lauderdale Lakes Country Club and its wetlands along the shore of Don Jean Bay.

The original Community Center started as a single family residence constructed in the 1920s and expanded in the 1950s. The original residence houses the Kettle Moraine Land Trust, Water Safety Patrol, a kitchen, living room area, and two toilet rooms. Adjacent to this is the meeting room and a three car garage with a partial second floor above. Both the garage and second floor are used for storage. The partial basement is located under the 1920s portion of the Community Center.

SITE CONDITIONS

The Community Center originally occupied a parcel of land approximately 23,777 SF. This was combined with the overall 57 acre parcel consisting of the Lauderdale Lakes Country Club. The building is accessed from Sterlingworth Drive by an asphalt paved driveway that circles around the building to the south and re-enters Sterlingworth Drive further to the northwest. Parking for approximately six vehicles is provided in front of the garage. Other parking is not provided on site.

Sterlingworth Drive is to the north of the site, Highway 12 is to the east, the golf course is to the south, and the Maintenance Building is to the west of the site. The site is generally flat and is fairly well landscaped. Utilities present on the site include gas, electricity, telephone, and data. These access the site from the north at Sterlingworth Drive with meters located on the north side of the building.

GENERAL BUILDING SYSTEMS

The Community Center is constructed with typical residential methods. The building is of wood frame construction with both pitched and low slope roofs, slab on grade floors, and a partial basement. The basement portion is used for mechanical spaces and some storage. The foundation walls are constructed of concrete block and show signs of movement and cracking. This is evident from the presence of moisture on the floor and repaired cracks in the surface of the walls. It should also be noted that the east wall is visibly bowed in and not plumb. The wall should be structurally reinforced.

The first and second floors are of framed walls with wood shake exterior siding, plaster or gypsum wall board at the interior walls and ceilings, and wood or carpeted floors. The roof construction is asphalt shingles over the pitched portions of the roof and membrane roofing over the low slope portions. The residential kitchen is still intact, as are the bathrooms. Some areas appear to have been updated with newer fixtures and finishes. It appears the original residence, believed to be constructed in the 1920s, is a two story structure with a full basement and detached garage. At some point in time, believed to be in the 1950s, an addition (or additions) was added to the original structure to connect it with the garage. These were slab on grade construction and detailed to complement the existing residence. The interior has been well maintained over time.

However, the exterior shake shingle siding and wood trim is in need of repair and painting. This is evident by mildew staining, chipped/peeling paint, and trim with decay present. The conference room between the garage and the "house" is aesthetically pleasing with its stone fireplace and Cathedral ceiling; but the room has limited capacity (approximately 35 persons with tables and chair seating or approximately 50 for a social event or meeting), and the fireplace was permanently capped several years ago due to operational issues and is no longer functional.

The administrative office activities being placed inside of an existing residence does cause some work flow and efficiency issues. The primary use is offices for the Lake Management District, Kettle Moraine Land Trust, and the Water Safety Patrol. These offices are housed in first floor of the Community Center. The conference room is adjacent to these office functions. The circulation through the first floor is not barrier-free and is hampered by narrow doorways (28" to 32") and multiple levels without ramps. The majority of the square footage in the basement and on the second floor is used for storage.

Given the age of the building, prior to any demolition or construction activities, testing for hazardous materials (asbestos and lead) should be completed.

PLUMBING SYSTEMS

The Community Center is served by a private well and a pressure tank located in the basement mechanical room. Domestic hot water is provided by a natural gas fired water heater, which is also located in this room. A water softener is present, as well. The water distribution system provides water to the basement, toilet rooms (first and second floor), kitchen, and alcove sink next to the conference room.

Sanitary waste is collected in a private, onsite holding tank which requires periodic pumping.

The fixtures in the building include:

- 1 water softener
- 1 utility sink
- 2 water closets, 2 lavatories, and 2 showers; 1 each in the Land Trust and Water Safety Patrol

Toilet Rooms:

- 1 sink and 1 dishwasher in the kitchen
- 1 water closet and 1 lavatory in the conference room toilet room
- 1 sink in the conference room alcove
- 1 water closet, 1 lavatory, and 1 shower in the second floor toilet room

The plumbing system and most fixtures appear to be original to the buildings at the time of construction. Any renovation project should include replacement of the fixtures.

HVAC SYSTEMS

The building is currently used as administrative office and meeting space.

Heating & Cooling

The offices are heated with a natural gas fired "York" high efficiency furnace installed in 2013. Cooling is provided through the furnace ducted distribution system with a DX evaporator coil installed on top of the furnace, and a 2.5 ton R-410A air cooled compressor/condensing unit mounted on grade.

The meeting room is heated with radiant floor heat utilizing PEX tubing and an "A.O. Smith" domestic hot water heater. The relief valve is leaking and should be repaired. A boiler should be utilized for this application. Domestic water heaters are not designed for space heating service and are not constructed to the same standards as boilers. Boilers are constructed with higher pressure ratings, modulation, and safety features.

Ventilation

Toilet rooms are exhausted with exhaust fans locally controlled at the light switch. The current code requires that toilet rooms be exhausted continuously during the normal hours of building occupancy. The kitchen exhaust fan is not operational. There is no exhaust in the upper floor toilet room.

Ventilation code requirements were met with natural ventilation (openable windows) as the building was originally designed. The current code does not permit natural ventilation for offices and meeting areas.

The office fireplace chimney is capped. The gas piping to the fireplace should be removed.

Temperature control for the systems described above utilize an "Ecobee" thermostat with wireless communication allowing adjustment and monitoring via a smart phone.

The meeting space is cooled with a Fujitsu 1-ton DX wall mounted split system with a remote air cooled compressor/condensing unit mounted on grade. Temperature control and start/stop is wireless between the condensing unit and the indoor wall mounted unit but is not capable of remote communication.

The garage area and attic above are used for storage and are unheated. The garage area is not exhausted and is exempt from the exhaust requirement due to size.

ELECTRICAL SYSTEMS

Electrical Service

The Community Center is served overhead by WE Energies at 120/240 volts, single phase, 3 wire to a meter on the north side of the building. The service travels from the meter to the basement and feeds a residential load center with 100 amp main breaker. This load center has capacity of 30 circuits. All circuits are used. The load center has a circuit directory. A counter has been installed below the electrical panel which impedes the clearance required by the National Electrical Code. This should be removed. The panel is in fair condition and is approximately 20 years old.

Electrical Distribution

Wiring is extended from the panel into the building using BX and Romex. It is clear that some wiring has been installed by volunteers rather than licensed electricians. Some of the Romex in the basement and in the garage is unsupported. This is a code violation.

For the most part, an adequate number receptacles exist in the Community Center. A few plug strips were noted. Many non-grounding type duplex receptacles were noted. In the kitchen it does not appear that all receptacles are GFI protected. A number of open junction boxes were noted in the garage and the basement. These should be sealed.

Lighting

For the most part, lighting is original. The Community Center was originally a residence and most fixture types are residential in appearance and use incandescent sources. Lighting levels are adequate. There are no occupancy sensors or controls for lighting reduction as required by the current energy code.

Fire Alarm

The only fire alarm components in the Community Center are self-contained, battery operated smoke detectors.

Data Cabling

The Community Center has an adequate amount of data cabling. Cabling for the most part is CAT6, installed free air and fished into cavities in the walls and ceilings, although some is exposed. The source for internet access is a DSL line in the adjacent shop building. There is a wireless link between the Maintenance Building and the Community Center.

OBSERVATIONS AND LIMITATIONS FOR LONG-TERM USE

The Community Center has limited space to accommodate larger groups. No areas are accessible to persons with physical disabilities, and it would be costly to bring the building, or even the first floor, up to code in this regard.

The building would be acceptable as a residence, but would require extensive remodeling of the structure and significant upgrades to the mechanical and electrical systems to comply with current codes and to function effectively as administrative offices and public meeting spaces for the long term.

There is a space available on the site around the building for expansion, but such expansion would most likely require significant parking facilities to comply with county zoning. With the existing Community Center located so close to Sterlingworth Drive, the parking would have to be located to the west or south. This would either require removal of existing trees to the west or locating the parking lot between the building and the golf course, potentially blocking views from newly expanded or remodeled rooms.

A space analysis of the existing Community Center is attached, along with small scale floor plans.

EXISTING SPACE UTILIZATION – COMMUNITY CENTER

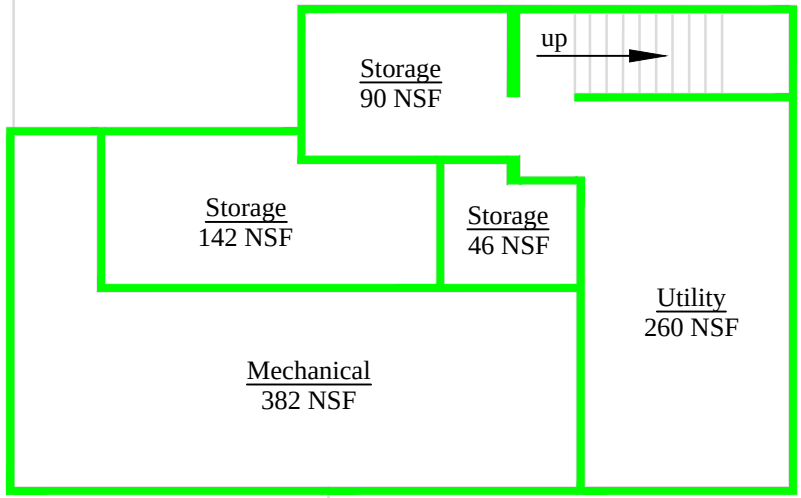
PROGRAM AREA	AREA	NO.	TOTAL
Common Areas			
Conference Room	552	1	552
Meeting Room	332	1	332
Entry	64	1	64
Alcove	27	1	27
Toilet Room	30	1	30
Total Common Areas			**1,005**
Kettle Moraine Land Trust			
Land Trust Office	276	1	276
Kitchen	112	1	112
Office	185	1	185
Toilet Room	39	1	39
Total Kettle Moraine Land Trust			**612**
Water Safety Patrol			
Office	200	1	200
Toilet Room	64	1	64
Total Water Safety Patrol			**264**
Auxiliary/Support Areas			
Basement Storage	278	1	278
Basement Utility	260	1	260
Garage Storage	749	1	749
Garage Storage Second Floor	625	1	625
Second Floor Storage	117	1	117
Second Floor Storage	157	1	157
Second Floor Toilet	35	1	35
Total Auxiliary/Support Areas			**2,221**
Total Assigned Area			**4,102**
Mechanical/Electrical			
Basement Mechanical	382	1	382
Total Mechanical/Electrical			**382**
Circulation/Walls/Miscellaneous		17%	**696**
TOTAL GROSS AREA			**5,180**

Existing Community Center

Scale: 0’ 2’ 4’ 8’ 16’

N

Basement Floor
1,080 GSF

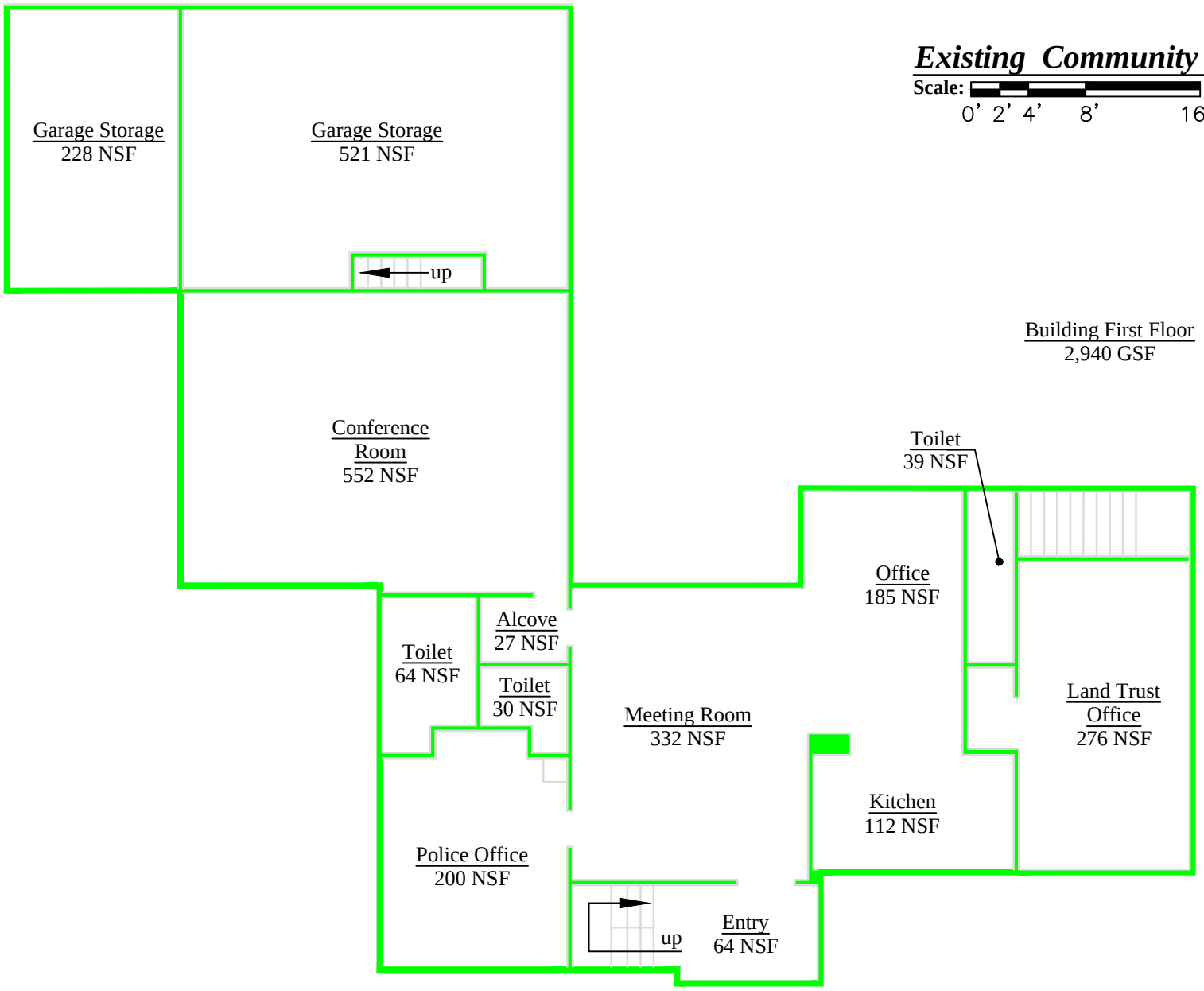


Lauderdale Lakes Country Club

Elkhorn, Wisconsin

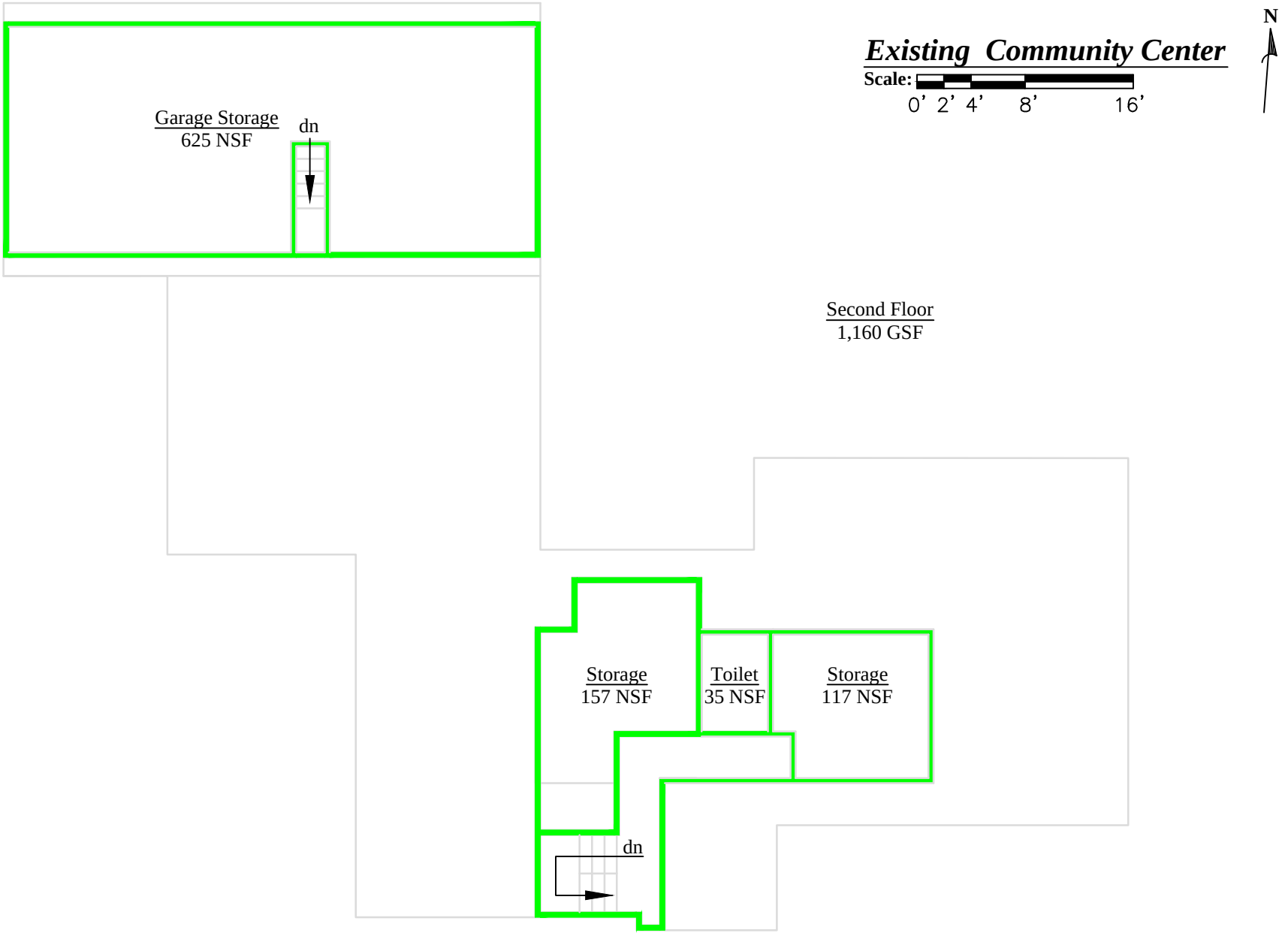
Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***



Lauderdale Lakes Country Club
Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.
Architecture & Engineering *Elkhorn, Wisconsin*



Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering *Elkhorn, Wisconsin*

3 Clubhouse

CLUBHOUSE

GENERAL INFORMATION

The Lauderdale Lakes Country Club (LLCC) golf course is served by a 3,148 SF Clubhouse located at N7498 Country Club Drive, Elkhorn, WI 53121.

The original Clubhouse (east portion) was built in the 1920s and is approximately 1,997 SF. An addition (west portion) of 1,151 SF was added in the 1950s. The Clubhouse is used only during the golf season. The Clubhouse is the starter house for golfers and contains two social areas, each with its own bar. The social area in the addition provides limited food and full beverage service. The bar area in the original portion of the Clubhouse appears to be underutilized. Other spaces include an office, a storage space (entered from the exterior only and not used), a women's toilet room, a men's toilet room with eight lockers, and a limited commercial kitchen. Golf pull cart rental and storage occurs in an adjacent 256 SF building. The storage building has limited electrical service and is also used seasonally.

SITE CONDITIONS

The golf course is to the south and east of the Clubhouse. The site is generally flat with some drainage and fall to the west and north. Utilities present on the site include gas, electricity, telephone, and data and are from Country Club Drive with meters located on the north side of the building. The immediate area around the Clubhouse is well populated by mature, large hardwoods. The north side of the building is heavily landscaped with conifers, screening its view from the street.

The site has limited parking along the north side of the building for approximately 15 to 20 vehicles. In fact, this parking area is not even part of the LLCC property. It is a small, triangular-shaped parcel owned by a private party who has been kind enough to lease space to the Lake Management District for parking adjacent to the Clubhouse. The parking lot connects to the Maintenance Building by a gravel road to the east. The main entry to the building (not barrier-free) is on the north side of the building off of the parking lot. It is accessed by a flagstone paved walk and up four steps. An employee entry (four steps up) is also on this side of the building. Four additional entries are on the north side of the building. The first entries are opposite the parking lot entry which also is not barrier-free. Likewise, this is up four steps and has a similar flagstone walk. The second and third entries are in the 1950s addition. One door exits directly into the golf starter area for employees only and the other leads to the social space in the addition. Although not completely barrier-free, this would offer the best option to gain barrier-free access to this portion of the building. A barrier-free route would need to be established from the parking area to this entry.

A 670 SF patio is to the south of the social space. Adjacent to the patio is a 1,400 SF asphalt paved golf cart return/storage area.

GENERAL BUILDING SYSTEMS

The original building is a single story with a partial crawl space and full attic. The walls are conventional stud framing with the roof framing made of traditional rafters and ceiling joists. The roof is well pitched with asphalt shingles and one large dormer on the south side. The dormer is not visible from inside the Clubhouse.

The original building exterior is wood shake shingles. The windows are of wood construction with single pane glazing. The doors are wood with wood frames. Most doors have exterior screen doors and side lites.

The interior finishes of the original building, as well as the addition, are similar and complement each other well to provide a unified look. Floors are carpeted in most areas, including the toilet rooms (which is not permitted by code). The kitchen is vinyl asbestos tile and the bar area is brick pavers. A brick paver tiled area is in the social area in front of the stone fireplace. The fireplace dominates the room and is well designed and proportioned. The firebox is open with a portable metal screen and natural gas log insert. The brick and concrete hearth is raised slightly with a low concrete mantel that spans from window to window on the west elevation.

Wall finishes are primarily wood paneling with some painted plaster and gypsum board walls. The ceilings are stained or painted wood. The ceiling of the addition is exposed heavy timber trusses with an exposed wood deck ceiling.

The office is located in the original building and provides adequate space and could be considered the size of an executive office. The office provides views to the social area through borrowed lites, as well as views of the golf course to the south and east. The office is furnished with a combination of movable desks and built in shelving. Adequate heating and cooling may be lacking as the office has a through window air conditioner and a portable space heater. The ceiling is painted wood bead board, the walls are a combination of painted gypsum wall board and stained vertical joint wood paneling, and carpeting on the floors. In general, the wood paneling should be cleaned and resealed, walls repainted, and the existing carpeting removed and new flooring installed.

The exterior storage room connected to the original building is primarily accessible from the exterior with a second door leading to the women's toilet room, which is locked from the toilet room side. This is currently not used but was used at one time by the Water Safety Patrol. Given the location of the space and lack of access from the main areas of the original building, this area would be suited to a function that would have little or no interaction with the other functions of the building. It could serve as an expansion for the toilet rooms, an employee area, a small meeting room, storage for golf bags, pull carts, or other nonrelated uses. The walls and ceiling are stained wood paneling and the flooring is exposed concrete slab on grade. In general, the wood paneling should be cleaned and resealed and, depending on the use, new flooring installed over the existing concrete slab on grade.

The toilet rooms require an extensive rework and would not be considered part of the maintenance program. The existing fixtures, partitions, equipment, and furnishings are all in need of replacement. The doors to the rooms and layout of the toilet facilities do not meet current Americans with Disabilities Act (ADA) standards for barrier-free design. The scope of the work in the toilet rooms to bring these up to current codes would require complete demolition of the existing rooms, including the entry doors, and providing a new layout, as well as all new flooring, walls, ceiling, ventilation, fixtures, and furnishings. There is no salvage value or the opportunity to reuse any materials from the existing toilet rooms.

The commercial kitchen requires an extensive rework and would not be considered part of the maintenance program. The kitchen is outfitted with a deactivated Ansul fire suppression system, a three compartment sink, a residential refrigerator, several reach-in chest type refrigeration units, and laminate work surfaces. The existing foodservice equipment is not reusable. It appears separate hand wash sinks are not provided. The scope of this work would greatly depend on the future direction of the food and beverage service of the Clubhouse. The minimum work would be to remove the unused equipment and repaint the walls and ceiling. Additional work could include replacement of all the existing equipment and new finishes to meet the current level of service. A third option would be changing the kitchen function to a catering kitchen function where outside caterers would bring in all food and use the kitchen for staging and serving only. A fourth option would be a complete redesign of the food and beverage concept of the Clubhouse and developing a kitchen to support that concept. Any remodeling work would require abatement of the vinyl asbestos floor tile.

The first social area in the original building is located off the main entrance from the parking lot. The interior office is also adjacent to this social area. The ceiling is painted wood bead board. The walls are a combination of painted gypsum wall board and stained vertical joint wood paneling. Carpeting is on the floors. The bar area appears to be underutilized and secondary to the bar in the second social area. In general, the wood paneling should be cleaned and resealed, walls repainted, and the existing carpeting removed and new flooring installed. The first social area was originally an open porch with a sloped floor for drainage when rain blew in. The space was enclosed at some point to extend the number of days the room could be used, but the floor was left as is and it slopes to this day. In fact, it appears to slope a little more each year. General Manager Chris White reported that over this past winter, the floor in his office adjacent to this enclosed porch settled 1.5 inches. This indicates that the wood framing in the crawl space below is continuing to deteriorate.

The second social area is located in the 1950s addition. The bar in this area provides full beverage service, as well as some snacks. In addition to the food and beverage service, this bar also is used by the golf course starter. This is the main social area with a patio to the south, fireplace to the west, and takes advantage of the golf course views. The seating area has tables and chairs to comfortably seat 30 to 40 guests. The fireplace is in good condition and is the main feature of the room. In general, the wood paneling should be cleaned and resealed, walls repainted, and the existing carpeting removed and new flooring installed. The wood truss roof structure would most likely require repairs and reinforcement. In fact, several years ago our firm was called upon to design repairs to one of the trusses above the stairs leading down into this area. Steel plate connectors and bolts were added to strengthen the joints where the truss members connect.

With a construction date of the 1920s for the original building and the 1950s for the addition, the Clubhouse as a whole is suffering from deferred maintenance. Items to be considered in a maintenance program include the following.

- The exterior siding needs repair in some areas, as well as cleaning and refinishing throughout.

- The roof shingles appear to be in good condition. However, some of the wall to roof flashings over the entry from the parking lot are in the need of repair/replacement.

- The exterior of the wood windows, doors, and trim made to be repainted. Additionally, the glass of the windows needs to be reglazed.

- The exterior porches at the parking lot entry and golf course entry need to have the carpeting removed and replaced. Portions of the wood under the carpeting may also need repair once exposed for inspection.

- The carpeted floors are in need of replacement. A more durable and easily maintained flooring other than carpet should be considered. The subfloor of the former open porch needs to be removed, the floor joists repaired/replaced, leveled, and new subfloor provided.

- Interior wood walls and ceilings are generally in good condition. These should be resealed. Plaster/gypsum board walls and painted ceilings should be repainted.

Given the age of the building, prior to any demolition or construction activities, testing for hazardous materials (asbestos and lead) should be completed.

PLUMBING SYSTEMS

The plumbing system of the Clubhouse is served by a private well with 1 inch service and a pressure tank located in a mechanical closet in the exterior office. Domestic hot water is provided by a 52 gallon electric water heater located in the closet of exterior storage #1. It does not appear a softener or other water filter systems are present. The water distribution system provides water to the toilet rooms, commercial kitchen, and bar of the second social room.

Sanitary waste is collected in a private, onsite holding tank which requires periodic pumping.

The fixtures in the building include:

- 2 water closets and 2 lavatories in the women's toilet room
- 3 water closets, 2 urinals, 2 lavatories, and 1 showers in the men's toilet room
- 1 three compartment sink and 1 hand sink in the kitchen
- 1 four compartment sink in bar #2.

The plumbing system and fixtures appear to be original to the buildings at the time of construction. Any renovation project should include replacement of the fixtures.

HVAC SYSTEMS

The building is currently used as a seasonal structure. Water lines are drained and the building is not heated during the winter.

Heating & Cooling

The bar and gathering space is heated with a natural gas fired "Lennox" standard efficiency furnace. Cooling is provided with a horizontal DX evaporator cooling coil and an R-22 air cooled compressor/condensing unit mounted on grade. Distribution ductwork is limited. Most of the air is distributed to the lower bar and main seating area adjacent to the fireplace. A couple of uninsulated branch ducts are routed through the attic to ceiling grilles in the locker and upper bar area. Duct work supplying heat and cooling in the attic should be insulated. Temperature controls are single temperature electric thermostatic control.

The gas fireplace is functional.

Thru-the-wall cooling units are employed in the office and kitchen. Strip electric baseboard has been added, and portable electric heaters are being used. Temperature control is unit mounted.

ELECTRICAL SYSTEMS

Electrical Service

The golf Clubhouse is served overhead by WE Energies to a meter on the north face of the building. Power is extended from the meter to a 40 circuit Square D load center located near the bar. This panel is recent. This panel has surge suppression installed. All circuits are in use. The panel is in very good condition. This panel has a sub feed to a small panel located in the kitchen. The kitchen panel is very old and is only fair condition. The kitchen panel has been installed above a counter, which violates the working clearance required by the National Electrical Code. Wiring from the main panel is in electrical metallic tubing. Wiring from the kitchen panel is a mix of electrical metallic tubing, BX, and Romex.

Electrical Distribution

There are an adequate number of receptacles in the building. Many non-grounding type receptacles were noted. It is evident receptacles have been added as required over time. However, one instance was noted where an extension cord runs from a receptacle over a door, under a rug, and out of a room to feed power to an adjacent area. This should be discontinued immediately. Open junction boxes, unsupported cable, and a general lack of good electrical maintenance was noted in the Clubhouse.

Lighting
Lighting for the most part is incandescent and residential in appearance. In general, the character is of a 1920s cottage. There are no controls for occupancy sensing or lighting reduction as required by the Energy Code.

Emergency Lighting
No emergency lighting exists in the building. Current code requires emergency lighting.

Fire Alarm
There are no fire alarm devices in the building.

Data Cabling
Some data cabling exists in the building. It is fed via an overhead DSL link from the shop building.

General
This building has a large amount of deferred electrical maintenance. Where outlets have been added recently, it appears they were done by an electrical contractor. The building has annual fire inspections. There are no outstanding inspection violations.

OBSERVATIONS AND LIMITATIONS FOR LONG-TERM USE

The Clubhouse has limited space to accommodate larger groups. No areas are accessible to persons with physical disabilities, and it would be costly to bring the building up to code in this regard. In our opinion, it would not be a wise use of Lake Management District funds to attempt remodeling of the east original portion of the Clubhouse. The kitchen and toilet facilities in this area need to be demolished and completely rebuilt, or preferably replaced with a new facility. There is no reusable foodservice equipment in the existing Clubhouse. New food and beverage service equipment could be designed for bar service only with snacks, Bistro or "Pub and Grub," or a full service catering kitchen.

The area around the current Clubhouse is extremely limited. It is confined by the main access drive and Country Club drive to the north, and the 1st tee and 9th green of the golf course extending from the southwest to southeast. Any expansion of the Clubhouse footprint to accommodate larger groups, provide better food and beverage service opportunities, or clean and modern toilet facilities would require significant parking facilities (54 stalls for 9 holes per county zoning ordinance) and reconfiguration of the golf course routing to make room for the new facilities (shortening of hole numbers 1 and 9).

A space analysis of the existing Clubhouse is attached, along with a small scale floor plan.

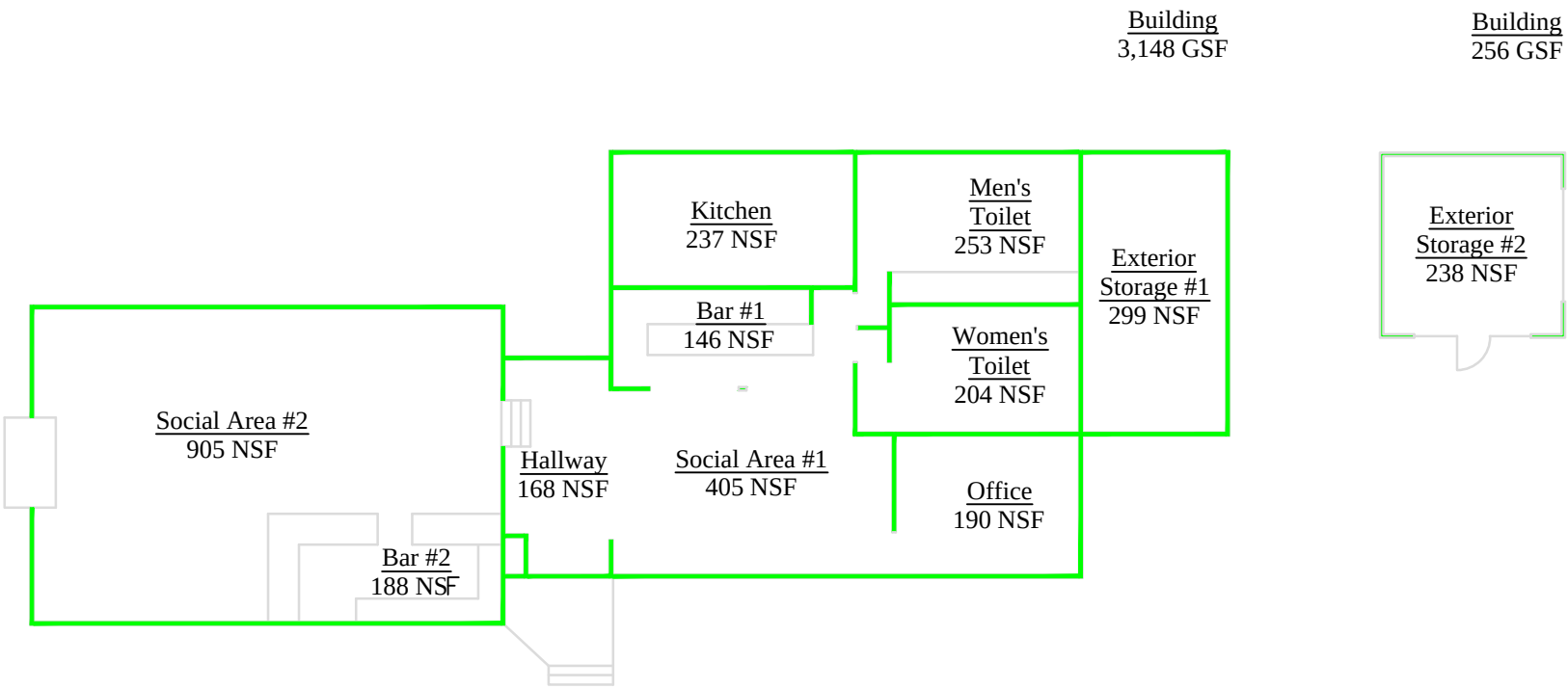
EXISTING SPACE UTILIZATION – CLUBHOUSE

PROGRAM AREA	AREA	NO.	TOTAL
Common Areas			
Social Area #1	405	1	405
Social Area #2	905	1	905
Hallway	168	1	168
Women's Toilet Room	204	1	204
Men's Toilet Room	253	1	253
Bar #1	146	1	146
Bar #2	188	1	188
Total Common Areas			**2,269**
Auxiliary/Support Areas			
Kitchen	237	1	237
Office	190	1	190
Exterior Storage #1	299	1	299
Exterior Storage #2	238	1	238
Total Auxiliary/Support Areas			**964**
Total Assigned Area			**3,233**
Mechanical/Electrical			**0**
Circulation/Walls/Miscellaneous		**5%**	**171**
TOTAL GROSS AREA			**3,404**

Existing Clubhouse

Scale: 0' 4' 8' 16' 32'

N



Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***

4 Maintenance Building

MAINTENANCE BUILDING

GENERAL INFORMATION

Lauderdale Lakes Country Club grounds keeping operations are based in a 6,132 SF Maintenance Building located on the north side of the golf course roughly at the corner of Sterlingworth and Country Club Drives. The Maintenance Building was built in 2006 and houses equipment repair areas, an employee room, offices, unheated storage, toilet and mechanical rooms.

SITE CONDITIONS

The Maintenance Building is located between the Clubhouse and Community Center. Access is provided by a gravel drive that connects the parking lot at the Clubhouse, travels along the south side of the Maintenance Building, then turns north to Sterlingworth Drive. The Community Center is located to the east, the golf course is to the south, and the Clubhouse is to the west. A wooded portion of the property owned by LLCC is to the north of the building. This portion of the site is identified as the approximately 9.5 acre Municipal Area on a December 18, 2014 survey completed by Land-Mark Surveying. Utilities present on the site include gas, electricity, telephone, and data which are from Country Club Drive with meters located on the south side of the building. Parking and outdoor storage is provided around the Maintenance Building on gravel lots. Two of the five overhead doors have concrete aprons. Off-season storage for the Lauderdale Lakes Lake Management District weed harvesting machines and Water Safety Patrol boats are accommodated on site. South of the building is a gasoline and diesel fuel storage tank on a concrete pad in a secured, fenced area.

GENERAL BUILDING SYSTEMS

The Maintenance Building is typical pole barn construction with a poured concrete slab-on-grade floor. Vee-rib metal panels cover the roof, exterior, and the majority of the interior walls. Exceptions would include the offices, employee room, and mechanical room (gypsum wallboard), with the toilet room having fiberglass reinforced wall panels. The offices, employee room, toilet room, and mechanical room are wood frame construction with a small mechanical mezzanine area above.

Of the 6,132 SF, 3,400 is conditioned with 2,732 SF being used for unheated storage. The main work area is where the typical maintenance operations take place, making use of compressed air and a Manitowoc Hydraulic Lift. The offices, employee room, toilet and mechanical rooms are also contained within the heated portion of the building. The unheated portion of the building is used for equipment storage and battery charging.

Given the relatively new age of the building, construction type, and materials selected, the Maintenance Building is in good condition. Other than normal repair and building maintenance items, no significant defects or issues were noted.

PLUMBING SYSTEMS

The plumbing system of the Maintenance Building is served by a private well service and a pressure tank located in a mechanical room. Domestic hot water is provided by a 10 gallon electric water heater located in mechanical room. This space also houses a water softener. The water distribution system provides water to the toilet rooms, employee room, and heated work area.

Sanitary waste is collected in a private, onsite holding tank which requires periodic pumping.

The fixtures in the building include:

- 1 water closet, 1 urinal, 1 shower, and 1 lavatory in the toilet room
- 1 sink in the employee room
- 1 utility sink, 1 eye wash station, and 1 hose bibb in the heated work area

The plumbing system and fixtures appear to be original to the building at the time of construction. All fixture and plumbing equipment appear to be in good working order.

HVAC SYSTEMS

Heating and Cooling

The work areas are heated with "Reznor" natural gas fired unit heaters.

The office, utility area, and toilet are heated and cooled with a natural gas fired high efficiency "Comfortmaker" furnace installed on the mezzanine with a horizontal DX evaporator cooling coil and an R-22 air cooled compressor/condensing unit mounted on grade. Distribution ductwork is insulated flexible duct. Temperature control is single temperature electric "Honeywell" thermostat control without programming capability for temperature setback. There is no outside air introduced to the office air handling system. Offices adjacent to vehicle storage and repair are required to have positive pressure.

Ventilation

There is exhaust provided in the toilet room and janitor closet. On/off control is manual.

There is currently no exhaust from the heated work area or unheated storage area. Vehicle repair and maintenance areas require exhaust 12 inches above the floor and make-up air to be provided to the space. Per the Wisconsin Building Code, indoor vehicle storage also requires scheduled periodic exhaust and detection for carbon dioxide or nitrogen dioxide. foot of floor area.

Outdoor Fuel Storage

The existing fuel storage and fill areas appear to be code compliant.

ELECTRICAL SYSTEMS

Electrical Service
The Maintenance Building is served underground by WE Energies at 120/240 volts, single phase, 3 wire to a meter pedestal on the south side of the building. The meter pedestal feeds a Square D 40 circuit load center in the mechanical room on the outside wall. The panel was installed in 2006 and has an up-to-date directory. The panel is full except for one space; however, there is room for another panel adjacent to the original panel. No storage was taking place in front of the panel. The service is in very good condition.

Electrical Distribution
An adequate number of receptacles were noted. There is no history of electrical problems in the building. Wiring method is predominately thin wall conduit. No code violations were noted. No extension cords or plug strips were noted. All receptacles are grounding type.

Lighting
The lighting is fluorescent. No occupancy sensors or controls for lighting reduction were noted. Lighting levels are good.

Emergency Lighting
Exit lights in the shop are battery type and have two integral heads to provide emergency lighting. It is unlikely that the exit lights alone provide the levels of emergency lighting required by code.

Fire Alarm
No fire alarm devices are installed in the building.

Cabling
Underground DSL cabling enters this building. It terminates on headed equipment that is linked to the Community Center and Clubhouse via a wireless link.

General
No electrical maintenance has been required in the building. There are no problems noted. Annual fire inspections occur at the building. There are no outstanding violations.

OBSERVATIONS AND LIMITATIONS FOR LONG-TERM USE

The Maintenance Building is the newest structure on the LLCC property. It appears well maintained and is expected to meet the needs of the Lake Management District and Golf Course for years to come.

A space analysis of the existing Maintenance Building is attached, along with a small scale floor plan.

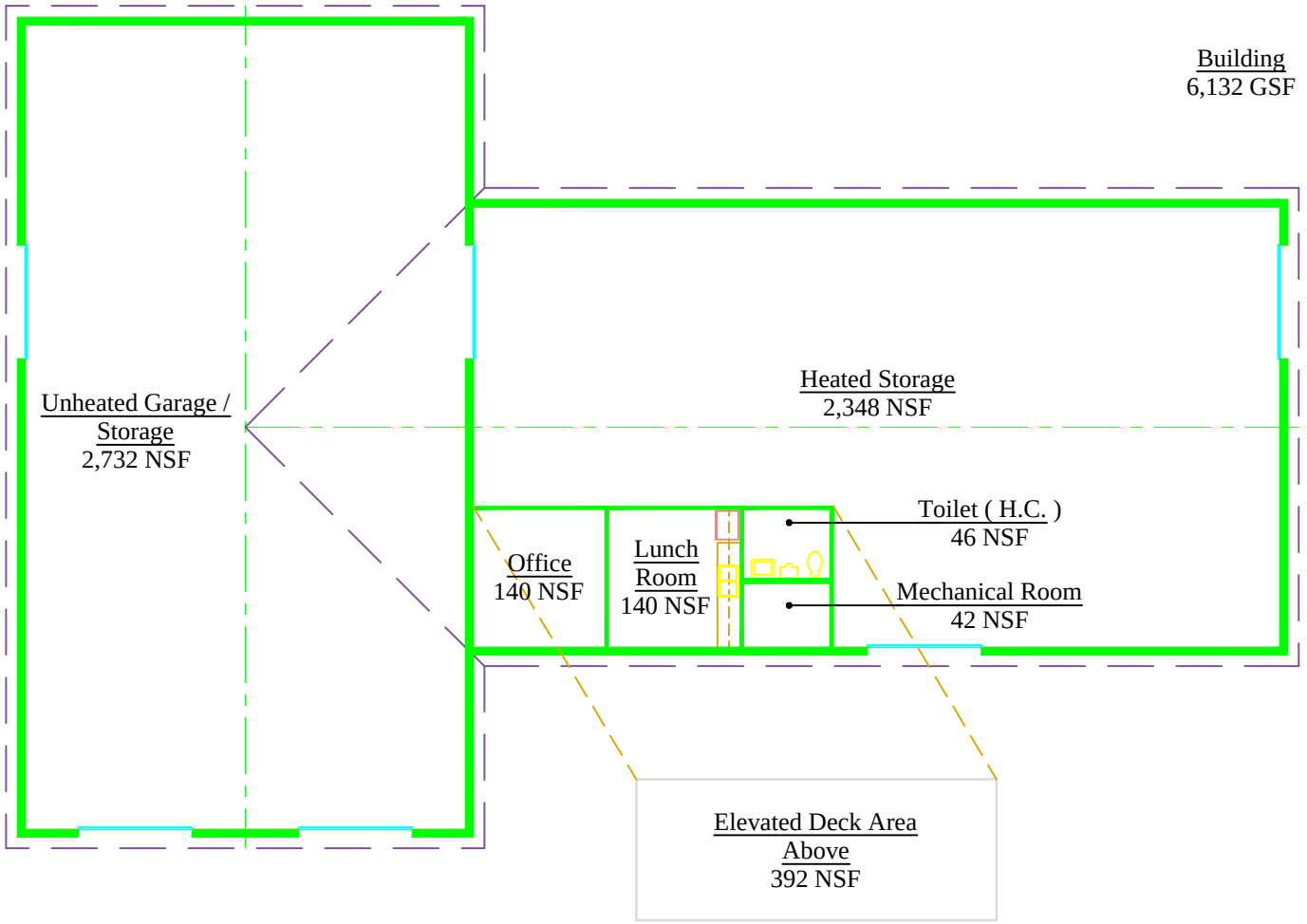
EXISTING SPACE UTILIZATION – MAINTENANCE BUILDING

PROGRAM AREA	AREA	NO.	TOTAL
Common Areas			
Heated Storage	2,348	1	2,348
Unheated Storage	2,732	1	2,732
Total Common Areas			**5,080**
Auxiliary/Support Areas			
Office	140	1	140
Employee Area	140	1	140
Toilet Room	46	1	46
Elevated Deck Area	392	1	392
Total Auxiliary/Support Areas			**718**
Total Assigned Area			**5,798**
Mechanical/Electrical			**0**
Mechanical Room	42	1	42
Total Mechanical/Electrical Area			**42**
Circulation/Walls/Miscellaneous		**6%**	**334**
TOTAL GROSS AREA			**6,132**

Existing Maintenance Building

Scale: 0' 4' 8' 16' 32'

N



Lauderdale Lakes Country Club

Elkhorn, Wisconsin

Kehoe-Henry & Associates, Inc.

Architecture & Engineering ***Elkhorn, Wisconsin***

5

Golf Course Facilities & Infrastructure

GOLF COURSE FACILITIES & INFRASTRUCTURE

GENERAL INFORMATION

Lauderdale Lakes Country Club features a family friendly, yet challenging 9-hole golf course which is open to residents of the Lake Management District and the general public. The golf course occupies almost 41 acres of the entire 57 acre property. It extends from Highways 12/67 on the east to Country Club Drive on the west, and from the Community Center and Maintenance Building on the north to the wetlands along the shoreline of Don Jean Bay at the south.

In addition to the Clubhouse, other building facilities on the golf course include two shelters and a water tower which has been on the site for over 80 years, but is no longer in use. The major infrastructure on the golf course is its irrigation system. Water for the irrigation system is currently supplied from the lake via a pump house located on the shore to the west side of Country Club Drive.

GOLF COURSE SHELTERS

General Information

Lauderdale Lakes Country Club contains two shelters on the golf course. One is located in the south center of the course near the 2nd tee and the other is located on the east side of the course near the 5th tee.

General Building Systems

Both shelters are similar in design, size, and construction. The shelters are approximately 16 feet square, with four open sides, gravel floor, and pitched roof covered by asphalt shingles. The shelters' main supports are 16 x 16 inch cast-in-place concrete columns at the corners with conventional 2 x 6 roof framing bearing on 4 x 8 beams which bear on the concrete columns. The roof is approximately a 12/12 pitch with asphalt shingles on bead board sheathing.

The primary difference in the two shelters is the east shelter has electrical power available through a 100 amp electrical service panel with two 20 amp circuits. The electrical service is fed overhead from Highways 12/67 to the east to the southeast corner of the shelter. The electrical power is used for a beverage vending machine located in the shelter.

Both shelters are showing signs of deferred maintenance. Both appear to be structurally sound, but some of the rafter tails of the roof framing members are in need of repair/replacement, as well as some of the deck boards, particularly near the eaves. Due to this, the shelters should be reroofed.

Much of the roof would need to be removed to make the deck and framing repairs. All of the wood framing members and decking material are in need of repainting. The south shelter is in better condition than the east shelter.

An anonymous donor has offered to fund the repairs at both shelters. This work is to be completed in Fall 2017, along with landscaping improvements in both areas.

RAVENSCROFT TOWER

General Information

The 50 foot high water tower at Lauderdale Lakes Country Club, located along the west side of the 8th fairway, has been part of the golf course landscape since the early 1930s. It originally provided water to the small clubhouse. As time went by, a private well was drilled and a functioning water tower was no longer needed. After years of neglect, the wooden tank, steel tower structure, and concrete footings began to decay.

To honor Edward Ravenscroft, Lauderdale Lakes resident, Larry Myers envisioned a restored water tower as part of a park that could be enjoyed by golfers before or after their round or used for outings and receptions. Funds for the restoration and adjoining Myers Family Park were donated by the Lawrence Abbott Myers family, descendants of Mr. Ravenscroft.

General Building Systems

Our firm designed the restoration, which began in November 2011 after the golf season. Work continued through the winter so that the project would be completed before the next golf season got into full swing. Lead-based paint on the steel tower structure and wooden tank had to be carefully removed. Reconstruction of the footings had to be sequenced so as not to impact the tower's stability during high winds that could accompany winter storms.

A new catwalk was constructed on the original steel outrigger supports. Access to the catwalk was provided by a new steel ladder with safety cage. The upper foot of the wooden tank was rotted and had to be removed. Multiple layers of plywood were formed to the inside diameter of the tank to provide nailer support for a new roof structure on top of the tank. A lightning arrestor system and custom paint job that reflects the Lauderdale Lakes Country Club logo completed the water tower restoration.

Scheel & Associates, our landscape consultant, provided the design for the accompanying park area, which contains extensive plantings, benches, and a water feature. Ravenscroft Tower is once again a landmark in the Lauderdale Lakes Area. Given the recent completion of the restoration, Ravenscroft Tower is in very good condition and should remain a focal point of the golf course.

FENCING

General Information

Woven wire (chainlink) fencing exists along the east and west boundaries of the golf course. The fencing along the east boundary sits atop a large segmental block retaining wall and is parallel to Highways 12/67. The fencing along the west boundary is at grade and is parallel to Country Club Drive. Smaller sections of fencing are present in the southern areas of the golf course near the wetlands and as protection for number 7 tee from the par three 6th hole.

Site Conditions

The fencing along Highways 12/67 is exposed to view and shows a significant amount of rust. The fence will most likely require replacement within the next five to ten years (or earlier if the current appearance is objectionable). Also, a portion of the large segmental block retaining wall along Highways 12/67 has settled significantly. We believe the retaining wall is located within the public right-of-way and, therefore, the responsibility of the Wisconsin Department of Transportation. Any repairs to the wall should be completed by the DOT. Replacement of fencing may be affected by this work.

The fencing along Country Club Drive is in similar condition to that along Highways 12/67 (rust, etc.). However, existing plantings have grown into the fencing extensively creating a visual screen for the residences on the west side of Country Club Drive. Replacement of this fencing would require significant landscaping to create a similar visual barrier.

IRRIGATION SYSTEM

General Information

The current irrigation system at LLCC has the fairways watered with sprinkler heads in a single row configuration and the greens covered by three sprinkler heads. The single row configuration does not allow watering of the rough or other areas between and adjacent to the fairways. The existing system does not allow modulation of the irrigation rates or coverage areas.

Replacement System

The proposed new golf course irrigation system at Lauderdale Lakes Country Club would have the fairways watered in a double row configuration with the sprinkler heads spaced 80 feet on center. The greens would be covered by four full circle sprinkler heads spaced 60 feet on center. There would also be four surround heads per green to allow for irrigation of the green surrounds without having to water the putting surface. The tees would also be covered in a double row configuration with the heads spaced 60 to 65 feet on center.

Existing Pump House

The current irrigation system is supplied with lake water via a pump house located at the shoreline off of Country Club Drive, west of the Clubhouse. The Pump House contains the main irrigation pump for the golf course watering system.

The site for the Pump House is approximately 17 feet wide by 97 feet deep. It consists of a wooden ramp and stairs leading down from Country Club Drive to Mill Lake of Lauderdale Lakes. The narrow site is flanked on the east and west sides by single family residences. Mill Lake is to the northwest and Country Club Drive is to the southeast. The site falls approximately 20 feet to the water level. Electricity is the only utility present on the site and comes from Country Club Drive with meters located on the south side of the building.

The Pump House is approximately 69 SF and wood framed, plywood sided with a flat roof and slab on grade floor. A single door swings in to gain access to the pumps and controls. The equipment is positioned in a manner that does not allow the door to open completely. A wood pier extends out into the lake to the approximate location of the end of the water intake.

The Pump House is in fair condition. Any changes or maintenance to the Pump House should be dependent on the modifications of the golf course and changes to the irrigation system. Possible maintenance considerations would include scraping and painting the exterior of the Pump House and reworking/replacing the door to provide better access. The wood ramps and stairway should be cleaned and anti-slip strips applied to the leading edges.

The Pump House is served underground by WE Energies at 120/240 volts, single phase. Service terminated on a meter pedestal mounted to a backboard adjacent to the Pump House building. Service extends from the meter to a weatherproof fused disconnect adjacent to the meter pedestal. Service extends from the disconnect to a panel inside the Pump House and extends from there to the pump. The service is in fair condition. Wiring within the Pump House is in electrical metallic tubing. No code violations were noted.

New Water Source

The new replacement irrigation system described above would require a minimum 450 gallon per minute water source. The lake is infested with zebra mussels. Zebra mussels in the larvae stage get into the piping system and grow to full size. They die when the irrigation system is winterized. In the Spring, their shells plug nozzles and cause problems with valves. For the long term, we recommend not using any lake water to supply the golf course irrigation system.

The best option would be to develop a high capacity well and pump directly into the irrigation system. The geologic profile of the site indicates the existence of several layers of water-bearing sand and gravel in the glacial drift. These formations vary in depth from very shallow (25 to 60 feet) to 220 feet, with additional water-bearing sands up to 300 feet in depth. Wells at these depths are currently serving the residences in the area with adequate capacity, but these "shallow" depths are not capable of providing the minimum 450 GPM needed for a new irrigation system. The new water supply system would have to make use of the "deep" Sandstone layers which underlie the site.

After a review of a possible location adjacent to the wetlands area in the southwest corner of the property, and a discussion with the State Hydrologist (Dave Johnson), we must stay a distance from the low area of the wetlands. Therefore, a location on the higher elevation near the existing Maintenance Building is recommended.

The deep Sandstone aquifers available beneath this site at a depth of 1,000 to 1,100 feet have sufficient capacity to allow us to size the pump to meet the minimum 450 GPM flow requirements of the new irrigation system without the need for a storage pond and booster pump. The new high capacity deep irrigation well will have no impact on local residential wells. Design and construction of the new irrigation well will be with steel casings and grout to seal out the source of water from the shallow well aquifers (i.e., wells of 50 to 250 feet in depth). Then the well drilling will continue to a depth of perhaps 1,000 to 1,100 feet to encounter the deeper Sandstone aquifer underlying the entire southeast corner of Wisconsin. At that depth, the Sandstones of the St. Peter Aquifer and the Galesville Sandstone Aquifer can provide the higher capacities needed to drive the new irrigation system without interfering with the shallow aquifers above serving residential and small commercial applications. In between these aquifer systems lies a thick aquitard formation (Maquoketa Shale). This formation restricts the shallow formation above from "leaking" or "draining" into the deep Sandstone aquifer below.

OBSERVATIONS AND LIMITATIONS FOR LONG-TERM USE

We see no value in making any changes or improvements to the existing pump station and pump house other than to keep them operational until a new irrigation water source can be brought on line.

The new irrigation water supply and the new irrigation system should be done before, or in conjunction with, any improvements to the golf course. The new water source (high capacity deep well) could be connected to the existing irrigation system until the Lake Management District is in a position to move forward with a replacement system and further golf course improvements.